LASERJET PRO MFP

Troubleshooting Manual

M125-126

M127-128

M127-128

HP LaserJet Pro MFP M125, M126, M127, M128

Troubleshooting Manual

Part number: CZ183-90907

Edition 1, 9/2013

Conventions used in this guide

TIP: Tips provide helpful hints or shortcuts.

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

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

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

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1 Theory of operation

- Basic operation
- Formatter-control system
- Engine-control system
- Image-formation system
- Pickup, feed, and delivery system
- Scanner system
- Document feeder functions and operation
- Fax functions and operation

Basic operation

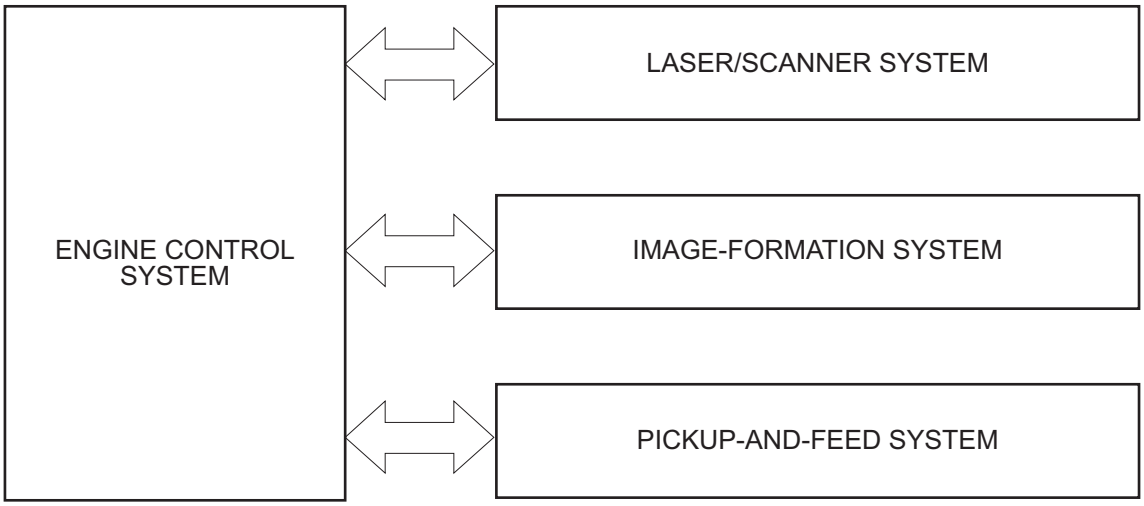
Major product systems

The product contains the following major systems:

- Engine-control system
- Laser/scanner system
- Image-formation system
- Pickup-and-feed system
- Document feeder system (not shown)

Product block diagram

Figure 1-1 Product block diagram



Sequence of operation

The DC controller in the engine-control system controls the operational sequences of the product. The table below describes durations and operations for each period of a print operation from when the product is turned on until the motor stops rotating.

NOTE: This sequence of operations is for the product base and does not include the document feeder.

Normal sequence of operation

Table 1-1 Sequence of operation

Name	Timing	Purpose
WAIT	From the time the power switch is turned on, the door is closed or the product exits Sleep mode until the product gets ready for a print operation.	Brings the product to ready state. The product performs the following during the operations: • Detects the toner cartridge • Heats the fuser film in the fuser • Rotates, and the stops, the main motor
STBY (standby)	From the end of the WAIT or LSTR period until either a print command is sent or the power switch is turned off.	Maintains the product in printable condition. The product performs the following during the operation:
INTR (initial rotation)	From the time a print command is received until the paper is picked up.	The product performs the following during the operations: • Drives the main motor • Activates the high-voltage power supply • Activates the laser/scanner • Warms the fuser heater
PRINT	From the end of the INTR period until the last sheet completes the fuser operation.	Forms the image on the photosensitive drum based on the VIDEO signals from the formatter. Transfers and fuses the toner image to the paper.
LSTR (last rotation)	From the end of the PRINT period until the main motor stops rotating.	Moves the last printed sheet out of the product. The product performs the following during the operations: • Stops the main motor • Deactivates the high-voltage power supply • Deactivates the laser/scanner • Deactivates the fuser heater The product enters the INTR period as the LSTR period is completed, if the formatter sends another print command.

Formatter-control system

The formatter is responsible for the following procedures:

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

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

Sleep mode

After a user-specified time, the Sleep mode feature automatically conserves electricity by substantially reducing power consumption when the product is not printing. After a user-specified time, the product automatically reduces its power consumption (Sleep mode). The product returns to the ready state when a button is pressed, a print job is received, or a door is opened. When the product is in Sleep mode, all of the control-panel LEDs and the power button backlight LED is blinking or on.

NOTE: Although the product lights are off in Sleep mode, the product functions normally when it receives a print job.

Input/output

The product receives print data primarily from the following:

- Hi-Speed USB 2.0 port
- 10/100 Base-T network port.
- Fax
- Wireless

CPU

The formatter incorporates a 600 MHz processor.

Memory

The random access memory (RAM) on the formatter PCA contains the page and the I/O buffers. RAM stores printing information received from the host system, and can also serve to temporarily store a full page of print-image data before the data is sent to the print engine.

Firmware

- The product has 128 MB of Synchronous DRAM, which is used for run-time firmware imaging and print, fax, scan and copy job information during printing.

PJL overview

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

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

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.

ACL overview

The advanced control language (ACL) is a language that supports product 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 product resets.

Control panel

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

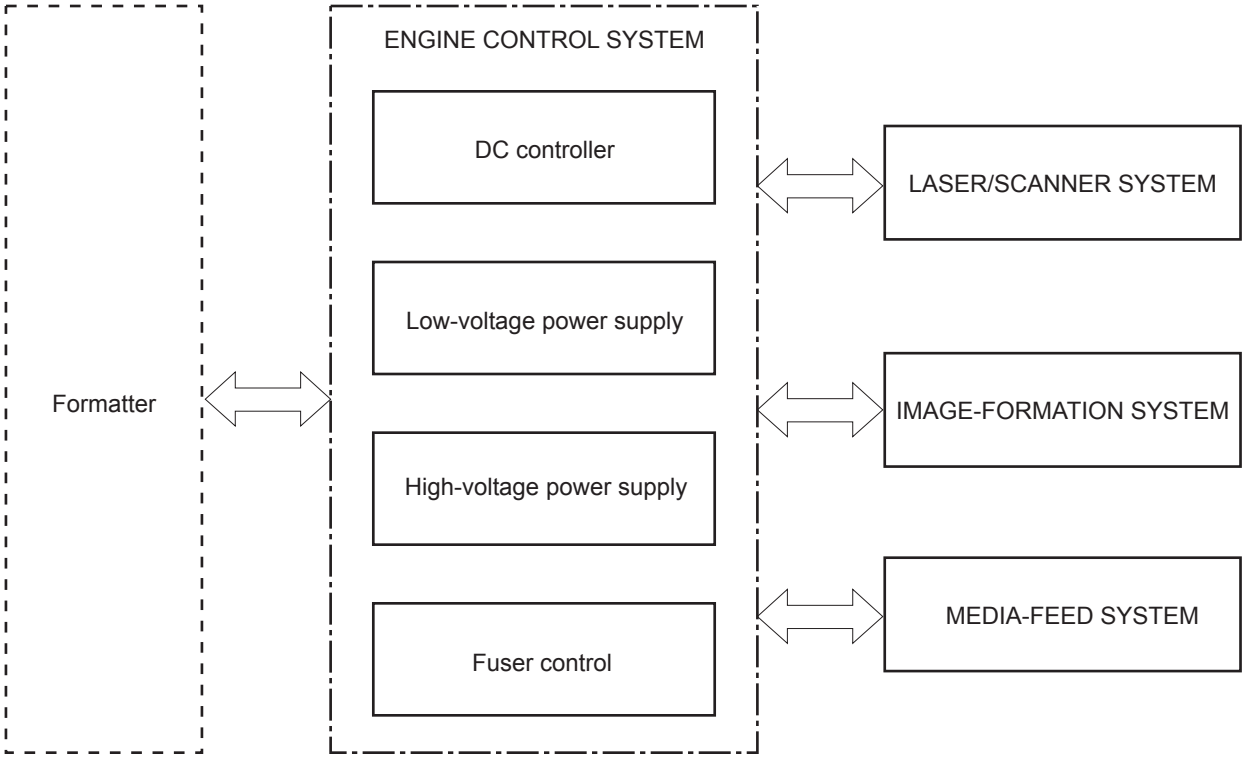
Engine-control system

The engine-control system coordinates all product functions, according to commands that the formatter sends. The engine-control system drives the laser/scanner system, the image-formation system, and the pickup/feed/delivery system.

The engine control system contains the following major components:

- Engine-control unit (ECU)
  - DC controller
  - Low-voltage power supply
- High-voltage power supply
- Fuser control

Figure 1-2 Engine-control system



Motors, solenoids, switches, and sensors

Figure 1-3 Motors

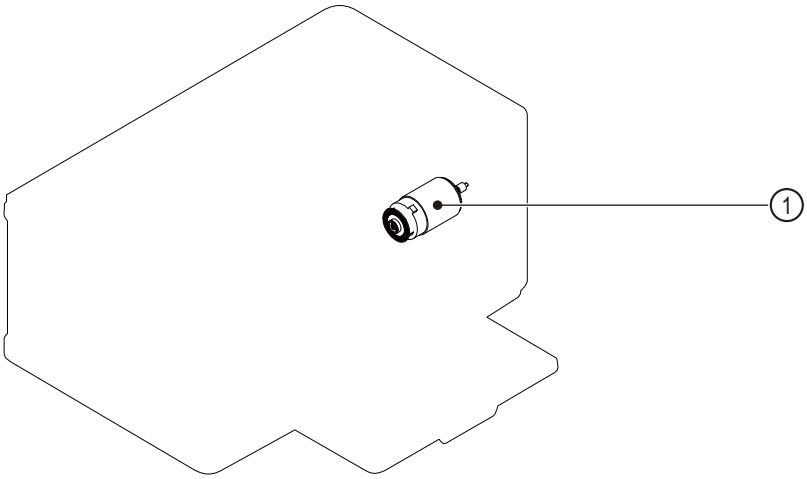


Table 1-2 Motors

Item	Description	Components driven
M1	Main motor	• Pickup roller • Feed roller • Photosensitive drum • Developing roller • Pressure roller • Delivery roller

Figure 1-4 Solenoids

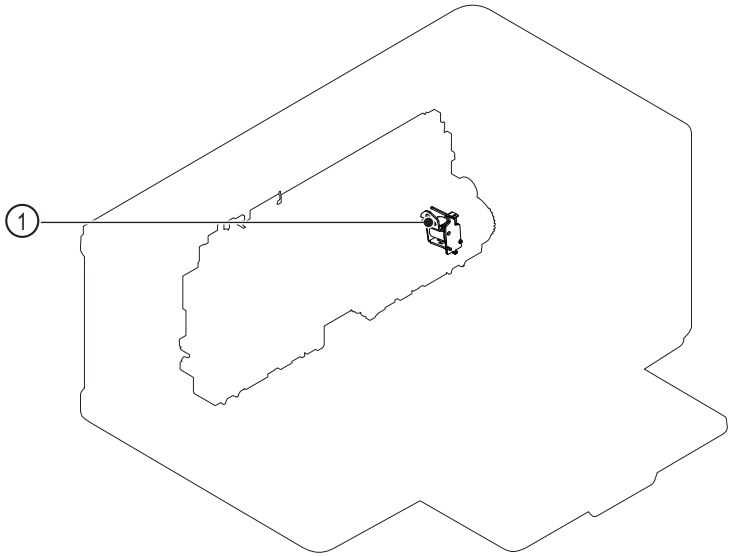


Table 1-3 Solenoids

Item	Description
SL1	Pickup solenoid

Figure 1-5 Switches

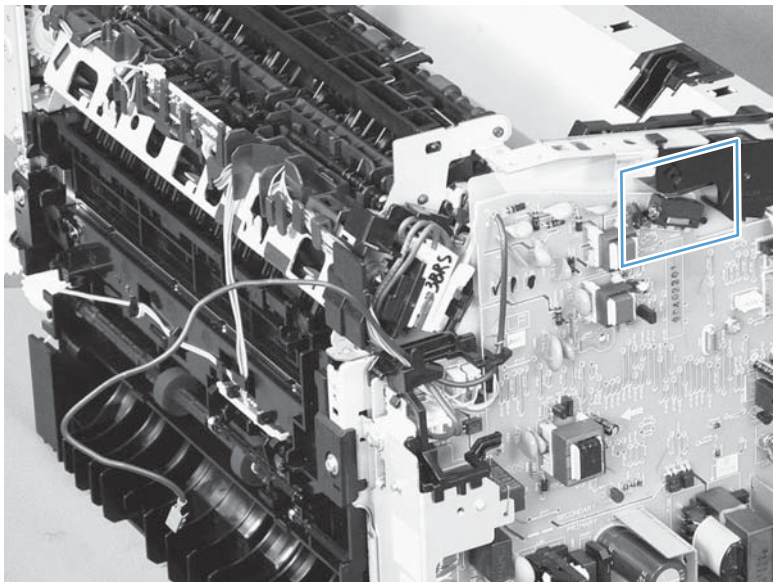


Table 1-4 Switches

Item	Description
SW501	Cartridge-door switch
SW1100	Power switch; not shown (the power switch is part of the control-panel assembly)

Figure 1-6 Sensors

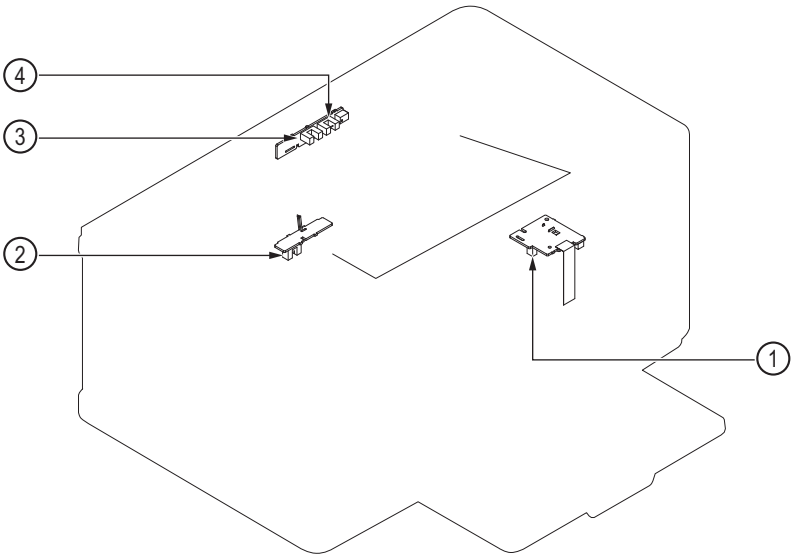


Table 1-5 Sensors

Item	Sensor	Description
1	PS901	Main-motor rotation-number sensor; not shown
2	PS751	Top-of-Page (TOP) sensor
3	PS701	Fuser delivery sensor
4	PS702	Paper-width sensor

DC controller operations

The DC controller controls the operational sequences of the product systems.

Figure 1-7 DC controller block diagram

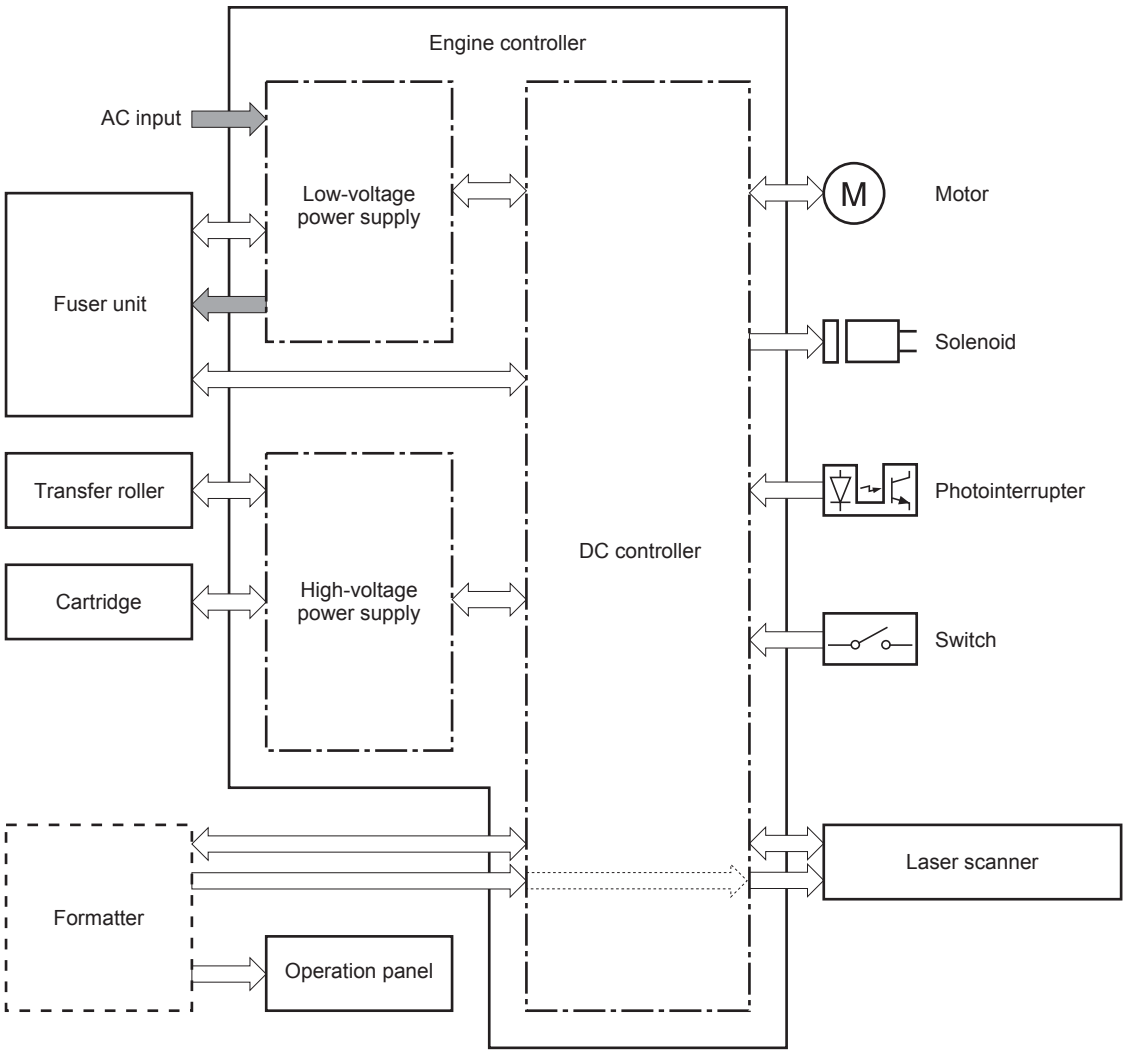


Table 1-6 DC controller controlled components

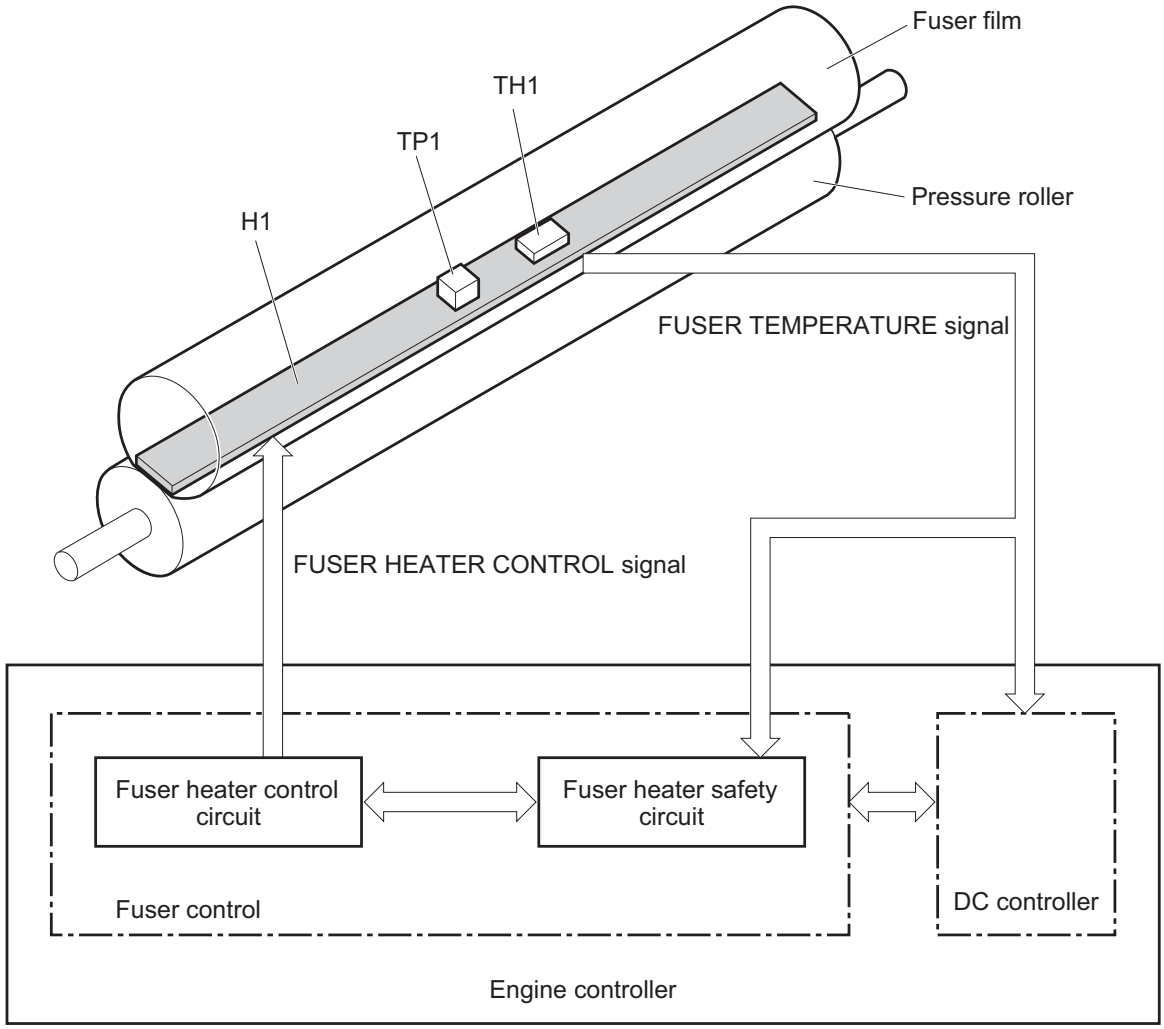
Component	Designator	Description
Motor	M1	Main motor
Solenoid	SL1	Pickup solenoid
Photointerrupter	PS701	Fuser delivery sensor
	PS702	Media-width sensor
	PS751	Top-of-Page (TOP) sensor
	PS901	Main-motor rotation-number sensor
Switch	SW501	Cartridge-door switch
	SW1100	Power switch

Fuser-control circuit

The fuser-control circuit monitors and controls the temperature in the fuser. The product uses on-demand fusing. The fuser-control circuit consists of the following major components:

- Fuser heater (H1); heats the fusing film
- Thermistor (TH1); detects the fuser temperature (contact type)
- Thermoswitch (TP1); prevents abnormal temperature rise in the fuser (contact type)

Figure 1-8 Fuser control circuit



Fuser failure detection

The DC controller determines a fuser unit failure, releases the relay to interrupt power supply to the fuser heater, and notifies the formatter of a failure state when it encounters the following conditions:

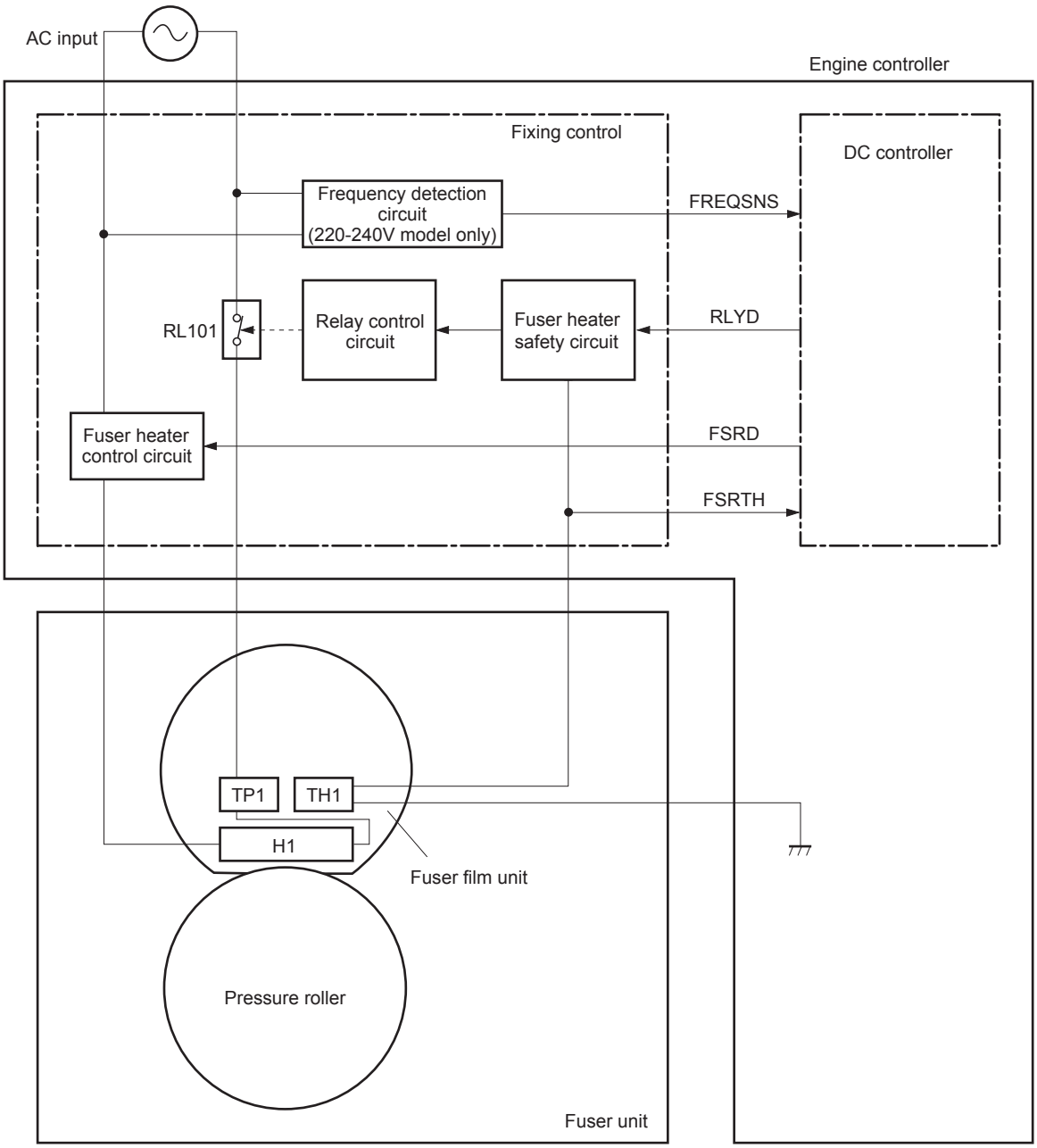
- Start up failure
  - If the main thermistor does not detect a specified temperature during the start up process of the heater in the wait period.
  - If the main thermistor does not detect a specified temperature during the heater temperature control in the initial rotation period.
- Abnormal low temperature
  - If the main thermistor detects an abnormal low temperature of the fuser unit during the printing operation.
- Abnormal high temperature
  - If the main thermistor detects an abnormal high temperature of the fuser unit.
- Frequency detection circuit failure
  - If a specified frequency of the FREQUENCY signal is not detected within a specified period after the product is turned on.

Fuser temperature control

The fuser temperature control maintains the temperature of the fuser heater at its targeted temperature.

The DC controller monitors the FIXING TEMPERATURE (FSRTH) signals and sends the FIXING HEATER CONTROL (FSRD) signal according to the detected temperature. The fuser heater control circuit controls the fuser heater depending on the signal so that the heater remains at the targeted temperature.

Figure 1-9 Fuser-heater control circuit



Fuser protective function

The protective function detects an abnormal temperature rise of the fuser unit and interrupts power supply to the fuser heater.

The following three protective components prevent an abnormal temperature rise of the fuser heater:

- DC controller
  - The DC controller interrupts power supply to the fuser heater when it detects an abnormal temperature of the fuser heater.
- Fuser heater safety circuit
  - The fuser heater safety circuit interrupts power supply to the fuser heater when the detected temperature of the main thermistor is abnormal.
- Thermal fuse
  - The contact of the thermal fuse is broken to interrupt power supply to the fuser heater when the thermal fuse detects an abnormal temperature of the fuser heater.

Pressure roller cleaning

The pressure roller cleaning process is initiated by the formatter. The process removes toner that has accumulated on the pressure roller by transferring it to a sheet of blank paper.

NOTE: Use plain paper, with a weight of 75 g/m^2 (20 lb), for the pressure roller cleaning.

- The product feeds a sheet of paper after receiving the cleaning command from the formatter.
- Main motor rotation is stopped when the trailing edge of the paper passes through the transfer roller.
- The main motor rotation is repeatedly started and then stopped. The fuser heater is turned on and then off at the same interval as main motor rotation.
- Toner adhered to the pressure roller is fused to the paper.
- The paper is ejected from the product.

Low-voltage power supply

The low-voltage power supply (LVPS) converts AC input voltage to DC voltage.

WARNING! The product power switch only interrupts DC voltage from the LVPS. The AC voltage is present in the product when the power cord is plugged into a power receptacle and the power switch is in the off position. Unplug the product power cord before servicing the product.

Figure 1-10 Low-voltage power supply (LVPS)

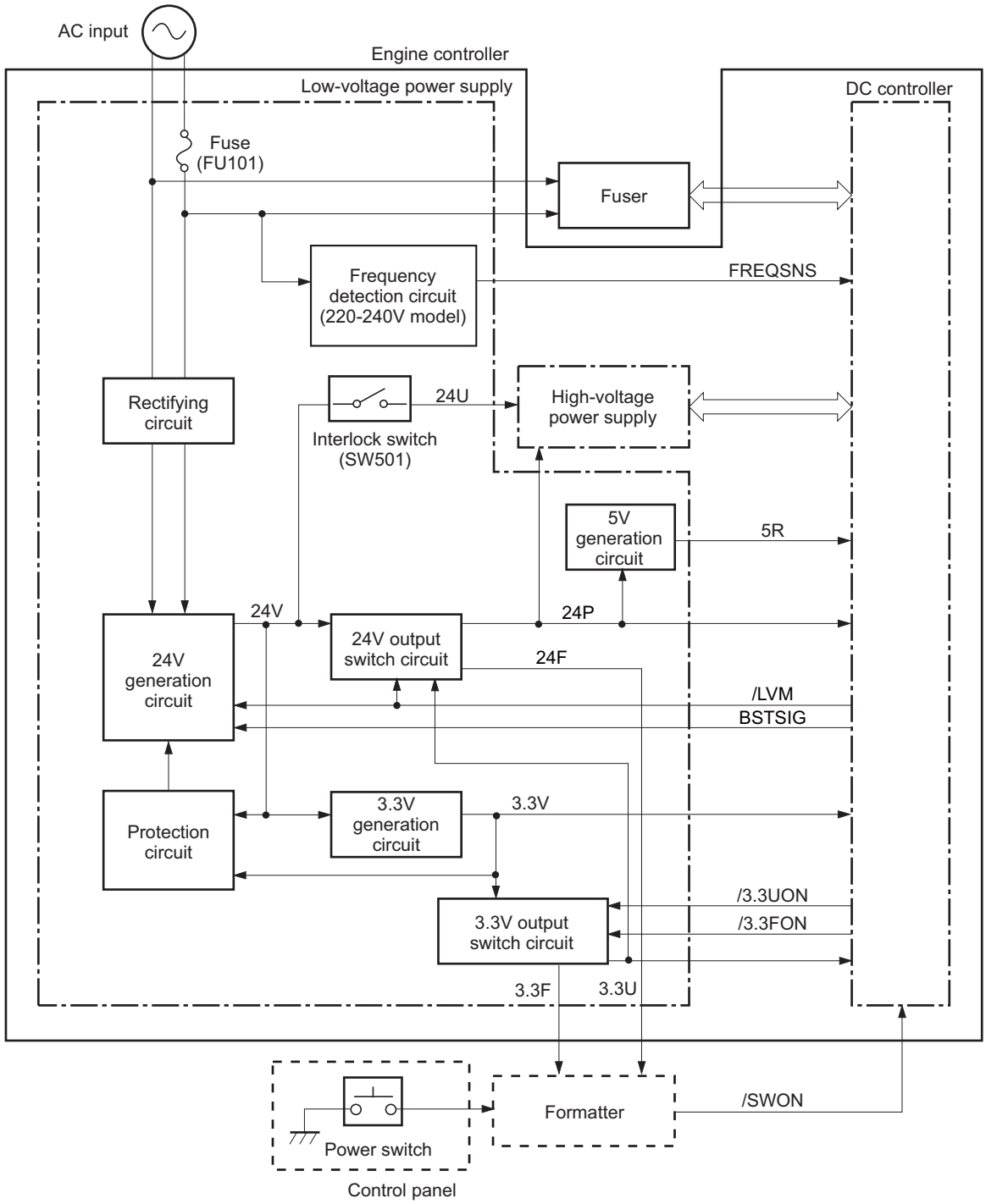


Table 1-7 DC power supply specifications

Main DC voltage	Sub-voltage	Behavior
+24V	24V	Constantly supplied
	24P	Supplied when the power switch is turned ON
		Stopped during standby period or Sleep mode
	24F	Supplied when the power switch is turned ON
		Stopped during Sleep mode
	24U	Interrupted when the cartridge door is open
+5V	5R	Supplied when the power switch is turned ON
		Stopped during standby period or Sleep mode
+3.3V	3.3V	Constantly supplied
	3.3U	Supplied when the power switch is turned ON
		Stopped during standby period or Sleep mode
	3.3F	Supplied when the power switch is turned ON

Over-current/over-voltage protection

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

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

If DC voltage is not being supplied from the low-voltage power supply, the protective function might be running. In this case, turn the power switch off and unplug the power cord. Do not turn the power switch on until the root cause is found and corrected.

⚠ **WARNING!** If you believe the over-current or over-voltage protection circuits have been activated, do not plug in the product power cord or turn on the product power until the cause of the failure is found and corrected.

The DC controller notifies the formatter of a low-voltage power supply failure when the protective function is activated.

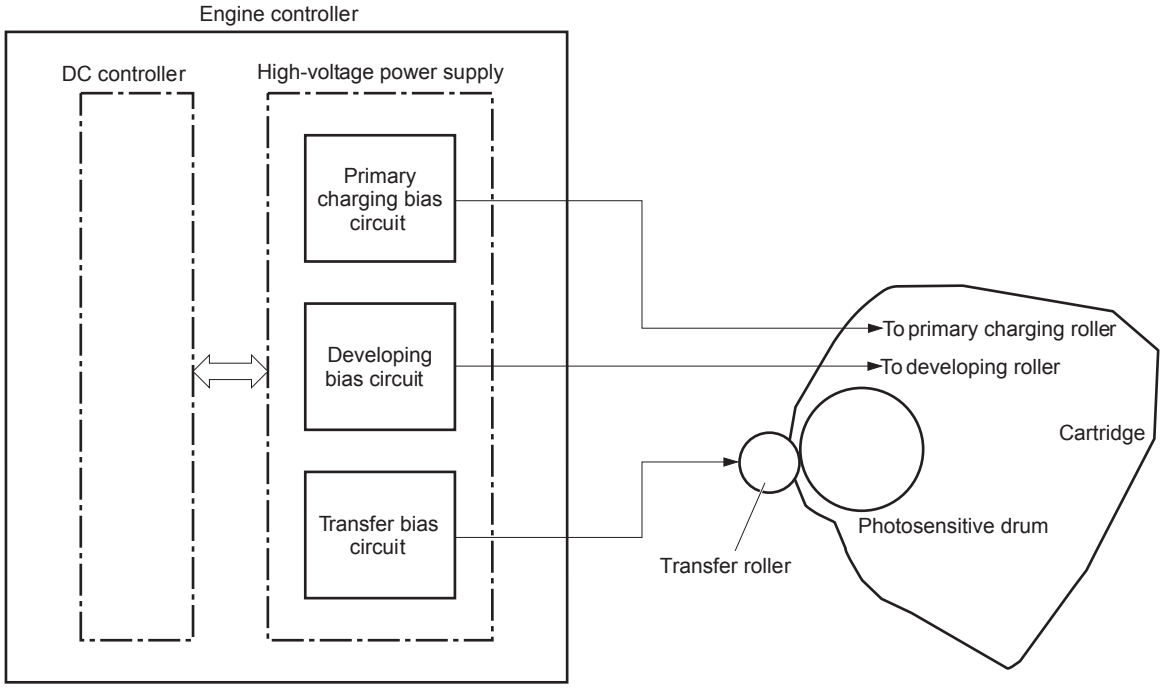
In addition, the low-voltage power supply has one fuse (FU101) to protect against over-current. If excessive current flows into the AC line, the fuse blows to stop AC power.

High-voltage power supply

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

- Primary charging roller
- Developing roller
- Transfer roller

Figure 1-11 High-voltage power supply

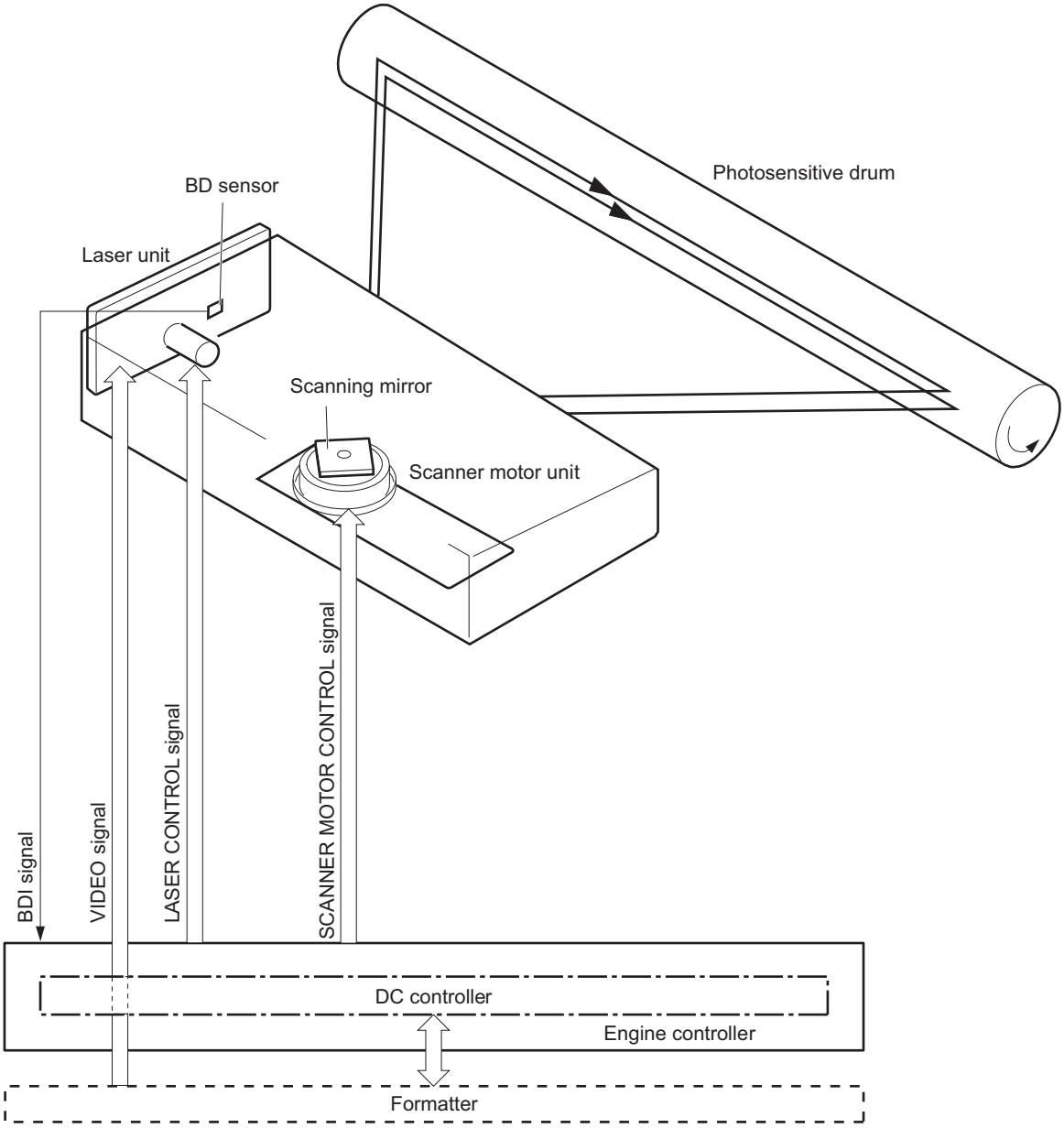


Laser/scanner system

The laser/scanner system receives VIDEO signals from the ECU and formatter and converts the signals into latent images on the photosensitive drum.

The main components of the laser/scanner are the laser unit and the scanner motor unit. The DC controller sends signals to the laser/scanner to control the functions of these components.

Figure 1-12 Laser/scanner system



Laser failure detection

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

- The scanner motor does not reach a specified rotation within a specified period of the scanner motor start up.
- The rotation of the scanner motor is out of specified range for a specified period during the scanner motor drive.
- The BD interval is out of a specified value during a print operation.

Image-formation system

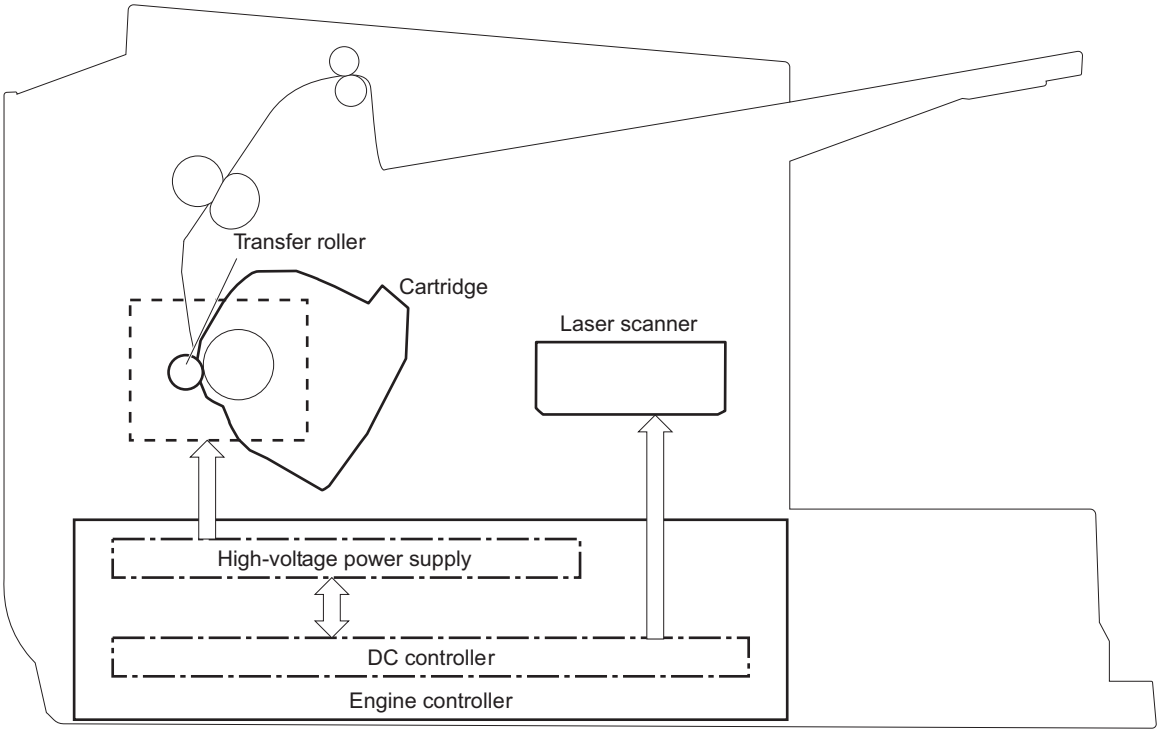
Electrophotographic process

The electrophotographic process forms an image on the paper. Following are the major components used in the process:

- Toner cartridge
- Transfer roller
- Fuser
- Laser/scanner
- High-voltage power supply

The DC controller uses the laser/scanner and HVPS to form the toner image on the photosensitive drum. The image is transferred to the paper and then fused onto the paper.

Figure 1-13 Electrophotographic process block diagram (1 of 2)



The DC controller rotates the main motor to drive the following components:

- Photosensitive drum
- Developing drum
- Primary charging roller (follows the rotation of the photosensitive drum)
- Transfer roller (follows the rotation of the photosensitive drum)

Figure 1-14 Electrophotographic process block diagram (2 of 2)

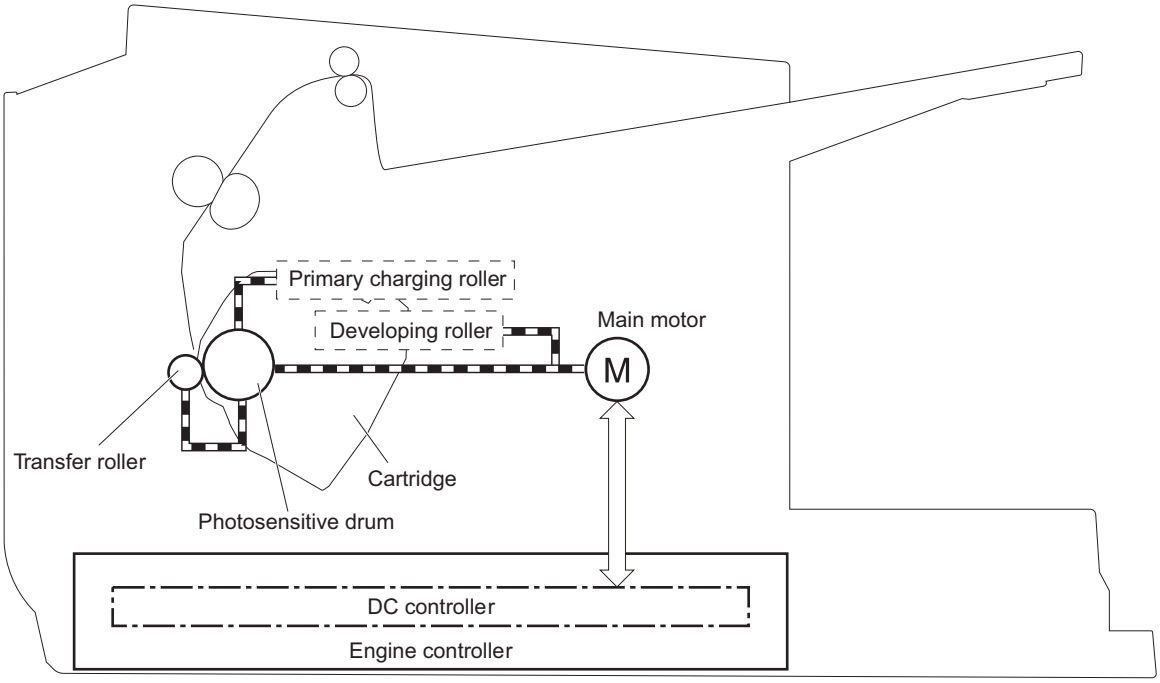
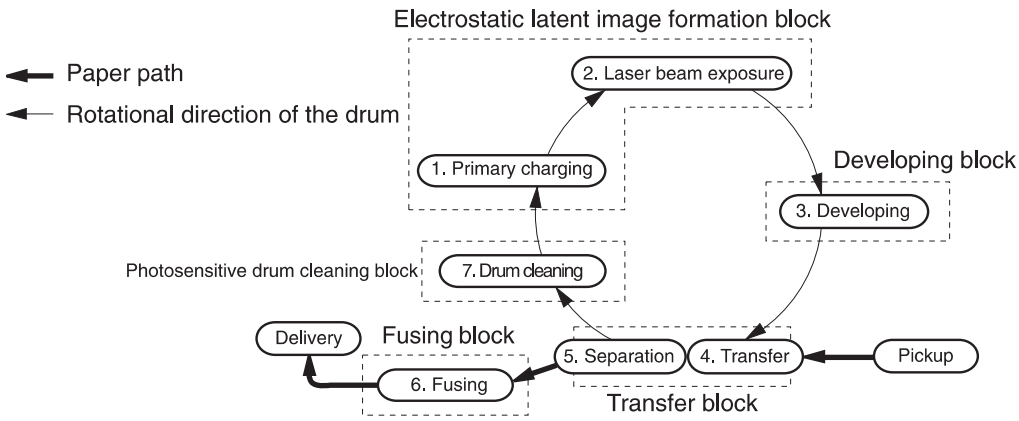


Image formation process

Each of the following process function independently and must be coordinated with the other product processes. Image formation consists of the following processes:

- Latent-image formation block
  - Step 1: Primary charging
  - Step 2: Laser-beam exposure
- Developing block
  - Step 3: Developing
- Transfer block
  - Step 4: Transfer
  - Step 5: Separation
- Fusing block
  - Step 6: Fusing
- Drum cleaning block
  - Step 7: Drum cleaning

Figure 1-15 Image formation process



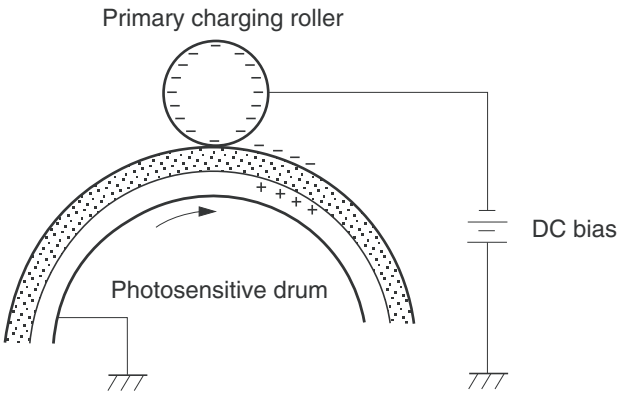
Latent-image formation stage

During the latent-image formation stage, the laser/scanner forms an invisible image on the photosensitive drum in the toner cartridge.

Primary charging

Step 1: DC and AC biases are applied to the primary charging roller, which transfers a uniform negative potential to the photosensitive drum.

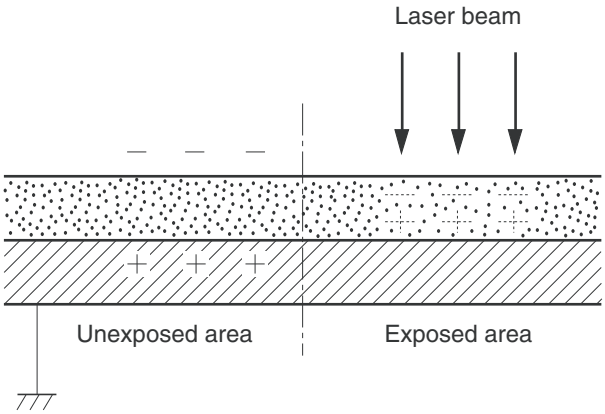
Figure 1-16 Primary charging



Laser beam exposure

Step 2: The laser beam scans the photosensitive drum to neutralize negative charges on parts of the drum surface. An electrostatic latent image is formed on the drum where negative charges were neutralized.

Figure 1-17 Laser beam exposure

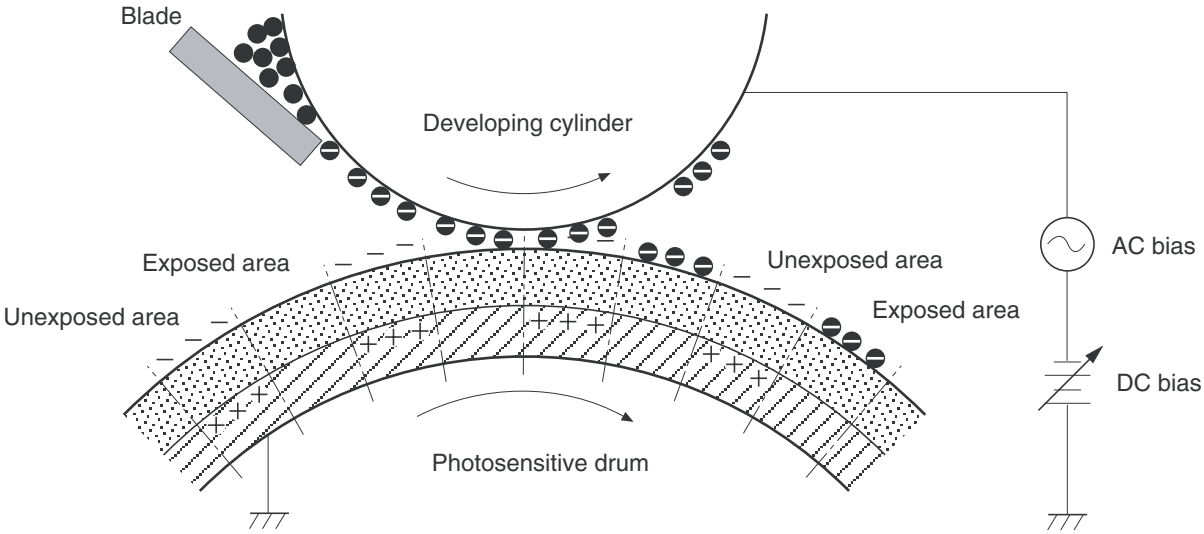


Developing stage

Toner cartridge

Step 3: In the toner cartridge, the developing cylinder transfers toner onto the electrostatic latent image on the photosensitive drum.

Figure 1-18 Toner cartridge

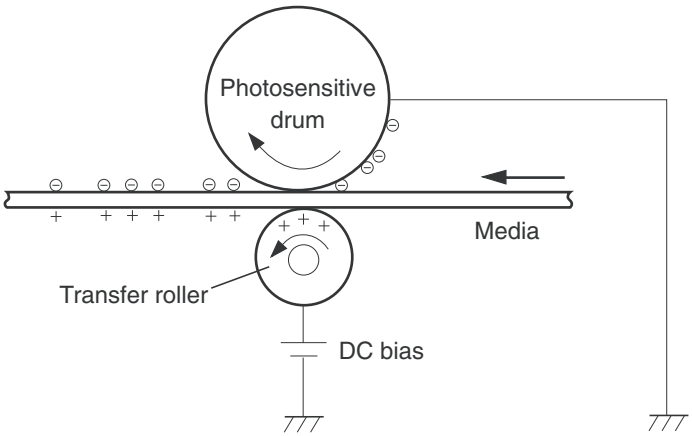


Toner acquires a negative charge from the friction that occurs when the developing roller rotates against the developing blade. The developing bias is applied to the developing roller to make a potential difference between the developing roller and the photosensitive drum. The negatively charged toner is attracted to the latent image on the photosensitive drum because the drum surface has a higher potential.

Transfer stage

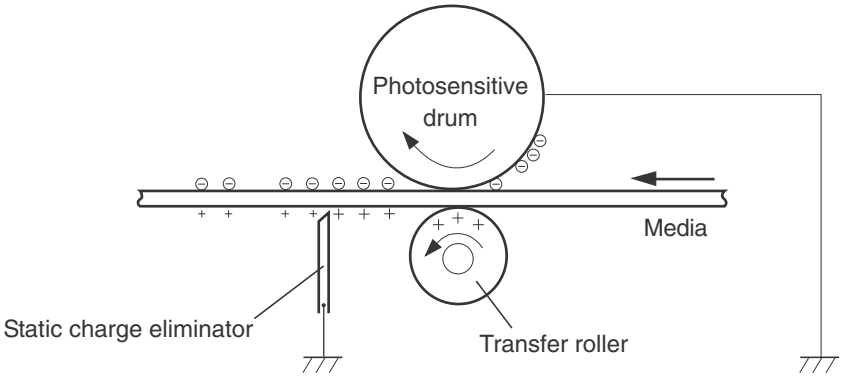
Step 4: The transfer charging roller, to which a DC positive bias is applied, imparts a positive charge on the paper. When the page comes in contact with the photosensitive drum, the toner is transferred to the paper.

Figure 1-19 Transfer



Step 5: The elasticity of the paper causes its separation from the photosensitive drum. A static charge eliminator aids separation by weakening any electrostatic adhesion.

Figure 1-20 Separation

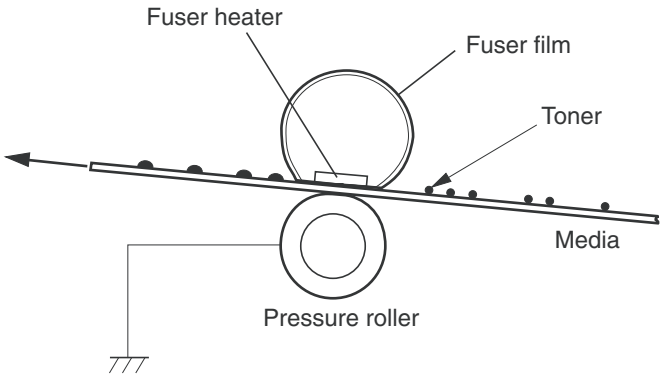


Fusing stage

Step 6: The DC negative bias applied to the fusing film strengthens the holding force of the toner on the paper and prevents the toner from scattering.

The product uses an on-demand fuser method. The toner image is permanently affixed to the paper by heat and pressure.

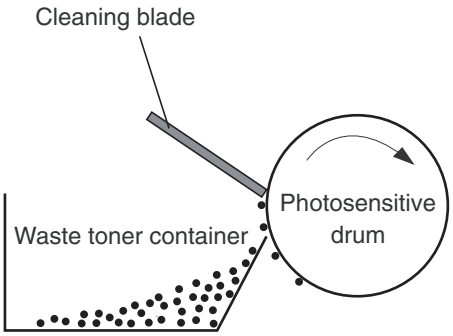
Figure 1-21 Fusing



Cleaning stage

Step 7: The cleaning blade scrapes the residual toner off of the photosensitive drum and deposits it into the waste toner case.

Figure 1-22 Drum cleaning



Pickup, feed, and delivery system

The media feed system picks up, feeds, and delivers the page.

Figure 1-23 Pickup, feed, and delivery system block diagram

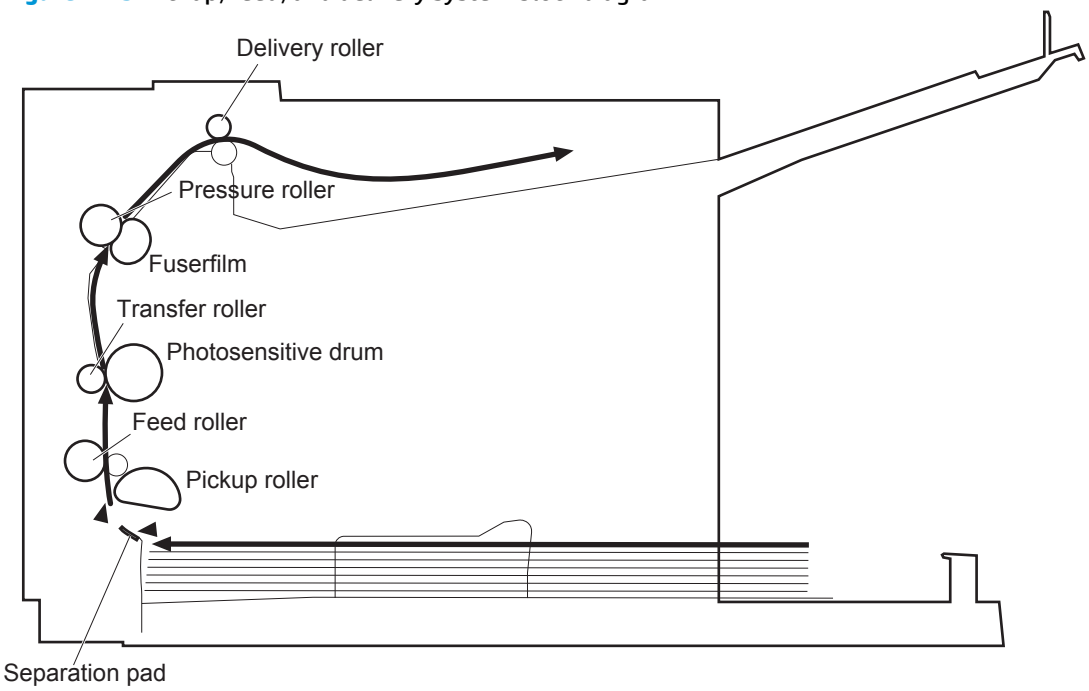


Photo sensors, motor, and solenoid

NOTE: The illustration in this section also shows the product motor, photo sensors, and solenoid. The power switch is not shown.

Figure 1-24 Photo sensors, motor, and solenoid

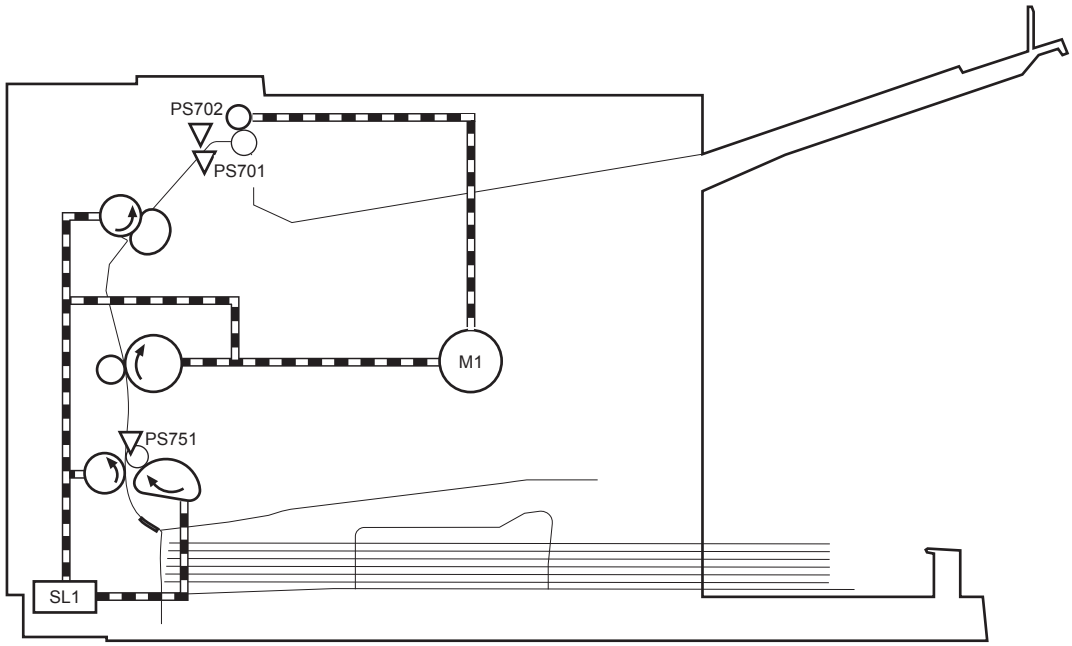


Table 1-8 Photo sensors, motor, and solenoid

Item	Description
M1	Main motor
SL1	Pickup solenoid
PS701	Fuser delivery sensor
PS702	Media-width sensor
PS751	TOP sensor

Jam detection

The product uses the following sensors to detect the presence of paper and to check for jams. The page must pass each sensor within a specified time.

NOTE: To find the following components, see Photo sensors, motor, and solenoid on page 29.

- PS701; fuser delivery sensor
- PS702; TOP sensor

NOTE: The product automatically ejects paper if the TOP sensor detects residual paper within the product when the power is turned on or the door is closed.

The product detects the following jams:

- Pickup stationary jam
- Delivery delay jam
- Delivery stationary jam
- Fuser wrapping jam
- Door open jam
- Residual media jam

Scanner system

The flatbed image scanner captures an electronic image of the document on the glass. The scanner does this by illuminating the document with LEDs (red, green, and blue) and capturing the image in the image sensor to create an electronic format of the document. The flatbed scanner consists of three main elements

- **CIS scanner**. The CIS (contact image sensor) scanner captures an image using the product's optical path. Red, green, and blue LEDs sequentially illuminate a small strip of the document (often called a raster line), and the optical system captures each color in a single row of CCD sensors that cover the entire page width. Because only one color is captured for each line per exposure, the three colors are recombined electronically to create the full color image. For monochromatic scans or copies, all three LEDs are illuminated to create a white light for the scan so the raster line can be captured in one exposure.
- **Mechanical carriage drive**. The carriage drive moves the CIS scan head along the document length to create the image. In this product, a small DC motor with an optical encoder creates this motion. The speed of the carriage drive is proportional to the scan resolution (300 ppi is much faster than 1200 ppi) and also proportional to the type of scan (color scans are three-times slower than monochromatic scans). A 1200 ppi color scan moves so slowly that the product may appear to not be working, whereas a monochromatic copy scan moves at 50 times that speed and will be a little noisy.
- **Image processing system (formatter)**. The formatter processes the scanner data into either a copy or a scan to the computer. For copies, the image data is sent directly to the product without being transmitted to the computer. Depending on user selections for the copy settings, the formatter enhances the scanner data significantly before sending it to the product. Image data is captured at 300 ppi for copies and is user selectable for scans to the computer. Each pixel is represented by 8 bits for each of the three colors (256 levels for each color), for a total of 24 bits per pixel (24-bit color).

Electrical system

Scanner power-on sequence of events

When the product is turned on, it performs the following tests:

- **Wall find**. The scan carriage moves slowly to the left while watching an encoder on the carriage motor to determine when the carriage has found the left side wall or stop. This enables the product to identify the document origin (position of the original). If the document origin cannot be located, a default position is used instead.
- **Home find**. The scan carriage uses the optical scanner to find physical reference features that relate to the document origin at the left side of the image glass. This process ensures accurate location of the first document pixels so that the user documents will have an accurate placement of the image on scans and copies. If the reference feature is not found, it uses a default value.
- **Calibration**. This test, also known as scanner color calibration, enables the product to identify the black and white on every pixel in the CIS. Calibration occurs in two major processes: a broad (analog) adjustment of all pixels to bring them into the target output range, and a pixel-by-pixel adjustment (digital) to fine tune the actual black and white response. The calibration process occurs under the left side of flatbed image scanner where there is a special white calibration label.

  Calibration is the most important step in creating a high quality image. Calibration problems can include color inaccuracies, brightness inaccuracies, and vertical streaks through the image. The calibration process identifies any bad pixels and enables the image formatter to recreate the lost information from adjacent pixels. Extreme cases of this problem can appear as large vertical streaks or image smears.

You can force a scanner calibration by turning the product on or by performing a color calibration. Scanner calibration occurs with each of these events.

Copy or scan-to-computer sequence of events

To create an accurate rendition of a document, the scanner must be calibrated for the requested operation. If the user selects a scan at 600 ppi color, the flatbed image scanner calibrates for that specific operational mode. Subsequently, the flatbed image scanner automatically re-calibrates for the next requested operation. Calibration does not occur for every new copy request.

Normal sequence of operation for a flatbed copy or scan includes:

1. LEDs illuminate.
2. Carriage motion begins moving the CIS scanner toward the right.
3. Image capture continues for the entire page or length requested in a scan-to-computer operation.
4. Carriage returns to the home position on the left.

Document feeder functions and operation

The following sections describe how the document feeder functions.

Document feeder operation

Standby (paper-loading) mode: In standby mode, the stopper will be lowered to prevent the user from inserting the original document too far. When a document is inserted correctly, the CIS will detect its presence by the Flag_document status.

The standard operation of the document feeder consists of the pick and feed steps.

Pick: When it receives a copy or scan command, the SSA motor engages the gear train. The first roller, called the pre-pick roller, moves the top few sheets forward into the document feeder. The next roller is the pickup roller. This roller contacts the document feeder separation pad, which separates multiple pages into single sheets.

Feed: The single sheet continues through the path. Along the way, the TOF sensor, which is a set distance from the document feeder glass, detects the sheet. This alerts the scanner to start when the page reaches the glass. The scanner acquires the image, one raster line at a time, until it detects the end of the page. The page is then ejected. The pick and feed steps are repeated as long as paper is detected by the TOF sensor.

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.

Document feeder paper path and document feeder sensors

Figure 1-25 Document feeder paper path and document feeder sensors

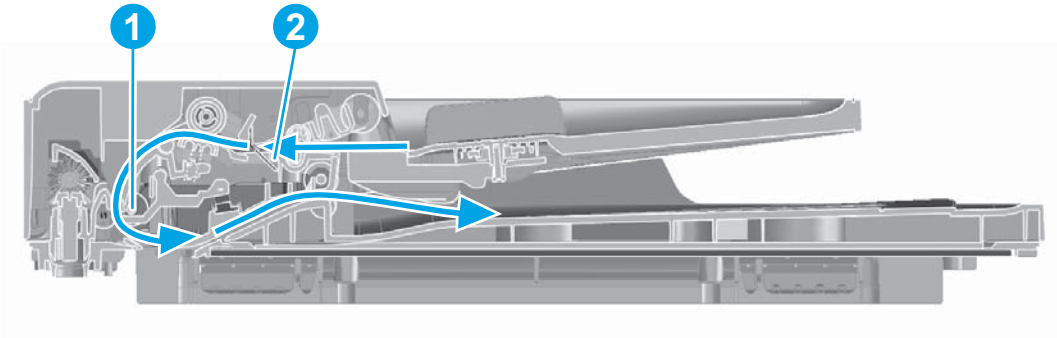


Table 1-9 Document feeder sensors

Item	Description
1	TOF/BOF sensor
2	Flag_document part

The CIS will detect the presence of the paper from the flag_document (callout 2) status. The document feeder has one sensor that detects paper. If paper is in the document feeder, the TOF sensor (callout 1) detects the top and bottom edges of the document. The TOF sensor detects media moving through the document feeder. If a jam is detected, the document feeder immediately stops the paper from feeding and a jam message is displayed on the control-panel display.

Document feeder jam detection

The document feeder has one sensor that detects paper. The TOF sensor detects media moving through the document feeder. If a jam is detected, the document feeder immediately stops the paper feeding and a jam message appears on the control-panel display.

A jam can be detected under any of the following conditions:

- **Document-feeder jam**. When documents are detected in the document feeder input tray, and a command to copy, scan or fax is received, the scan module travels to the left side of the scan assembly and stops beneath the document feeder scanner glass. The document feeder then attempts three times, or for about ten seconds, to advance the paper to the TOF sensor. If the paper does not advance, the scan module travels back to the home position on the right side of the scanner assembly. The message **Document feeder mispick. Reload.** appears on the control-panel display.
- **Long-document jam**. If the paper has advanced to trigger the TOF sensor, but the trailing edge is not detected within the time allowed for a 381 mm (15 in) document (the maximum allowable page length for the document feeder), the scanner returns to the home position on the right side of the scanner assembly. The message **Doc feeder jam. Clear, Reload.** appears on the control-panel display.
- **Stall jam**. When a page that is less than 381 mm (15 in) long has advanced to the TOF sensor but has not left it within the expected time, the paper has probably stalled or jammed. The scanner returns to the home position on the right side of the scanner assembly. The message **Doc feeder jam. Clear, Reload.** appears on the control-panel display.
- **Other**. If the paper stops in the document feeder and the scan module remains under the document feeder scanner glass, an internal firmware error has probably occurred. This is usually remedied by cycling the power.

Fax functions and operation

The following sections describe the product fax capabilities.

Computer and network security features

The product 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 product 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 product generates more signaling tones, such as dialing digits, to tell the CO how to connect the call. The product 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 wires appear on pins 3 and 4 of the RJ-11 modular jack (the one on the fax card). These two wires do not have to be polarized because all the equipment works with either TIP or RING on pin 3 and the other wire on pin 4. This means that cables of either polarity can interconnect and will still work.

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

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 product.

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

Fax card in the fax subsystem

Three versions of the fax card are used in the product. One for Asia Pacific countries/regions and the United States, one for Europe, and one for Brazil. Each version is compliant with the 2/4-wire phone jack system from the respective country/region.

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.

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 product 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 over-current 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 SIDACTOR) provides differential protection. This product 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 either through 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 product takes control of calls that it recognizes as fax calls. If the product 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 product 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 product 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 product 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 product (the right side of the RJ-11 jack). The DSP uses the signal to ensure that the product does not go off-hook (and disconnect 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 works 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 product goes on-hook.

Billing- (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 product 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 product, 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 product 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 product 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 product will resend the fax in case of errors. The product 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 product experiences other errors while printing faxes.

The product 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 is 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

- Solve problems checklist
- Troubleshooting process
- Tools for troubleshooting
- Clear jams
- Solve paper-handling problems
- Solve image-quality problems
- Clean the product
- Solve performance problems
- Solve connectivity problems
- Service mode functions
- Solve fax problems
- Product updates

Solve problems checklist

Table 2-1 Basic problem solving

Problem	Cause	Solution
When the product is connected to a correctly grounded power source, the control panel does not illuminate and the main motor does not rotate.	No power to the product.	1. Verify that the power switch is turned on. 2. Verify that the power cable is correctly connected to the outlet and the product. 3. Verify that the power outlet has the correct voltage.
	The product has an internal power failure.	Check the fuses and internal cable connections. Replace any defective cables or open fuses.
	The formatter is defective.	Replace the formatter.
	The engine controller PCA is defective.	Replace the engine controller PCA.
When turned on, the control panel illuminates, but the main motor does not rotate.	The toner-cartridge door is open.	Close the toner-cartridge door.
	A page is jammed in the paper path.	Clear all paper from the paper path, and make sure that all sensors are working correctly.
	The cable is not connected correctly.	Reconnect the motor cable.
	The motor is not mounted correctly in the product chassis.	Verify that the motor is connected correctly and that it rotates freely.
	The engine controller PCA is defective.	Replace the engine controller PCA.
	The main motor is defective.	Replace the motor.
The product turns on and the motor rotates, but the control-panel lights do not illuminate.	The control panel is defective.	Replace the control panel.
	The formatter is defective.	Replace the formatter.
	For fax models, the fax PCA is defective.	Replace the fax PCA.
The product is on, but the control-panel indicates that the product is not in the "ready" state.	The product has an internal error that was detected during the Power-On Self-Test sequence.	Consult the list of control-panel messages to identify and correct the error.

Table 2-1 Basic problem solving (continued)

Problem	Cause	Solution
The product turns on, the motor rotates, and the control panel indicates the "ready" state, but the product does not print.	A component is defective.	**Perform an engine test to verify print-engine components.** 1. Print an engine test page. 2. If the engine test page does not print, check all the connectors on the engine controller PCA, and reconnect any cables that are connected incorrectly. 3. If, after checking the connectors, the error persists, replace the engine controller PCA.
	The formatter is defective.	Print a demo page. Press or touch the Setup button (LCD models) or Setup button (touchscreen models) to open the Setup menu, open the Reports menu, and then select Demo Page. If the Demo page does not print, replace the formatter.
The product prints the engine test and the Demo page, but does not print jobs from a computer.	The network or USB cable is not connected correctly.	Reconnect the cable. **NOTE:** Try using a new USB cable that is 3 m (10 ft) or less in length.
	An incorrect driver is selected.	Select the correct print driver.
	The print driver is not installed correctly.	Remove and then reinstall the product software. Make sure that you use the correct procedure and port setting.
	Other devices are connected to the product (for example, through a switch or hub) that are interfering with the computer-product communications.	Disconnect the other devices, switches, or hubs.
	There is a computer-port communications problem.	Reset the computer port settings (see the computer user guide for more information).
	The formatter is defective.	Replace the formatter.

Troubleshooting process

Determine the problem source

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

General topic	Questions
Environment	• Is the product 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 product and the outlet? • Is the operating environment within the specified parameters? • Is the product 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 affect on some product components (for example, the toner-cartridge imaging drum). • Is the product exposed to direct sunlight?
Paper	• Does the customer use only supported paper? • Is the paper in good condition (no curls, folds, or distortion)? • Is the paper stored correctly and within environmental limits?
Input trays	• Is the amount of paper in the tray within specifications? • Is the paper correctly placed in the tray? • Are the paper guides aligned with the stack?
Toner cartridge	• Is the toner cartridge installed correctly? **NOTE:** Check for an empty, refilled, or cloned toner cartridge.
Transfer roller and fuser	• Are the transfer roller and fuser installed correctly? **NOTE:** Check for fuser film damage or a contaminated or dirty transfer roller.
Toner-cartridge door	• Is the toner-cartridge door closed? **NOTE:** Check for a damaged door interlock switch or cabling.
Condensation	• Does condensation occur following a temperature change (particularly in winter following cold storage)? If so, wipe affected parts dry or leave the product on for 10 to 20 minutes. • Was a toner cartridge opened soon after being moved from a cold to a warm room? If so, allow the toner cartridge to sit at room temperature for 1 to 2 hours.
Miscellaneous	• Check for and remove any non-HP components (for example, a toner cartridge) from the product. • Remove the product from the network and make sure that the failure is with the product before beginning troubleshooting.

Power subsystem

Power-on checks

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

1. Verify that the product 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 product makes the expected start up sounds.

NOTE: The over-current/over-voltage protection circuit in the low-voltage power supply unit might be functioning. Turn the product off, unplug the power cord, and turn the product on. If the product does not function, the fuse melts, or the power supply is malfunctioning, replace the engine controller unit.

Tools for troubleshooting

Component diagnostics

Engine diagnostics

Printing test pages helps determine whether the product 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 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 page

NOTE: The product 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 product on. Wait for the product to reach the Ready state.
3. Open, and then close the toner-cartridge door five 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 engine-test page has test patterns including horizontal lines, solid black areas, and images.

Drum rotation functional check

The photosensitive drum, located in the toner cartridge, must rotate for the print process to work. The photosensitive drum receives its drive from the main drive assembly.

NOTE: This test is especially important if refilled toner cartridges have been used.

1. Open the toner-cartridge door.
2. Remove the toner cartridge.
3. Mark the drive gear on the cartridge with a felt-tipped marker. Note the position of the mark.
4. Replace the toner cartridge and close the toner-cartridge door. The startup sequence should rotate the drum enough to move the mark.
5. Open the toner-cartridge door and inspect the gear that was marked in step 3. Verify that the mark moved.

If the mark did not move, inspect the main drive assembly to make sure that it is meshing with the toner-cartridge gears. If the drive gears appear functional and the drum does not move, replace the toner cartridge.

Half self-test functional check

The half self-test check determines which printing process is malfunctioning. This process requires you to stop the product while it is in the process of printing a page.

1. Print a Configuration page.

LCD control panels

a. Press the Setup on the product control panel.

b. Open the **Reports** menu.

c. Select **Config Report** to begin printing the report.

Touchscreen control panels

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

b. Touch Reports.

c. Touch Configuration Report to begin printing the report.

2. Open the toner-cartridge-door after the paper advances halfway through the product (about five seconds after the motor begins rotating). The leading edge of the paper should have advanced past the toner cartridge.

3. Remove the toner cartridge.

4. Open the toner-cartridge drum shield to view the drum surface. If a dark and distinct toner image is present on the drum surface, assume that the first two functions of the electrophotographic process are functioning (image formation and development). Troubleshoot the failure as a transfer or fusing problem.

If there is no image on the photosensitive drum, perform these checks:

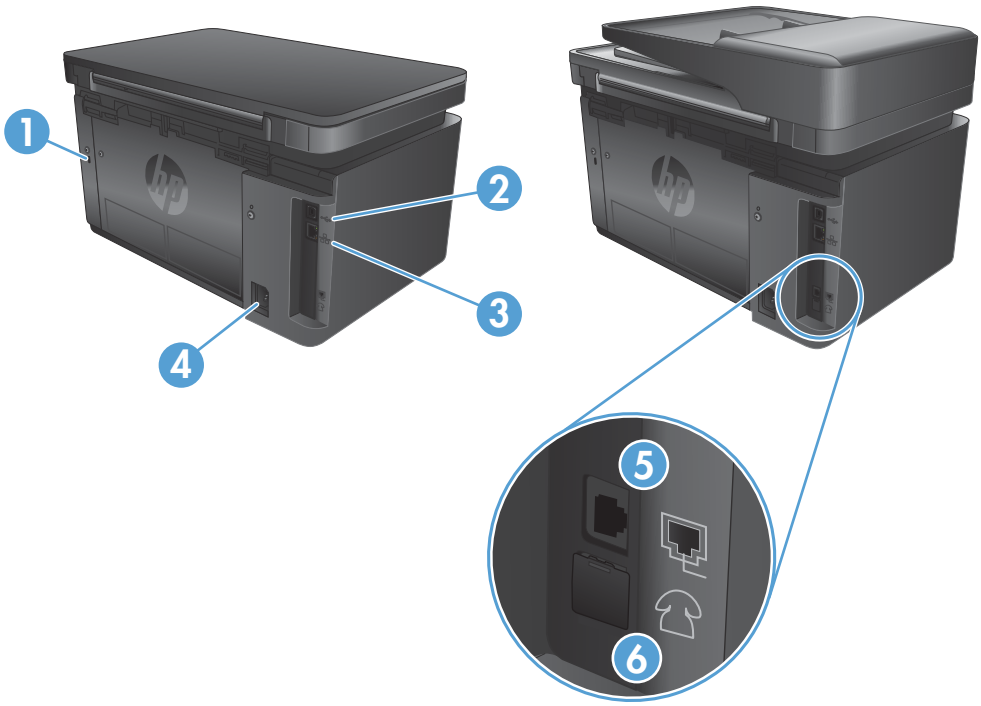
1. Make sure you removed the entire length of the sealing tape from the toner cartridge before you installed the cartridge.

2. Perform a drum rotation functional check to make sure that the drum is rotating.

3. Make sure that the high-voltage contacts are clean and not damaged.

Diagrams

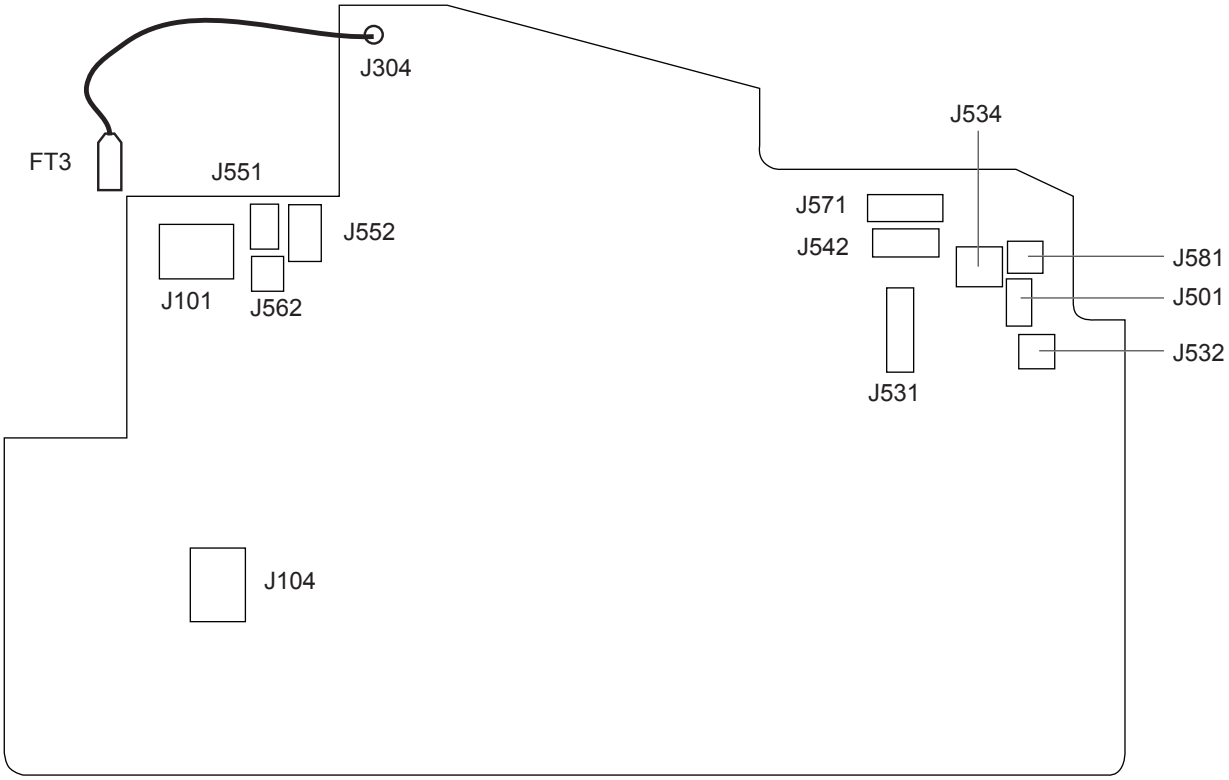
Plug/jack locations



1	Slot for cable-type security lock
2	Hi-Speed USB 2.0
3	Ethernet port
4	Power connection
5	Fax "line in" port for attaching the fax phone line to the product
6	Telephone "line out" port for attaching an extension phone, answering machine, or other device

Location of connectors

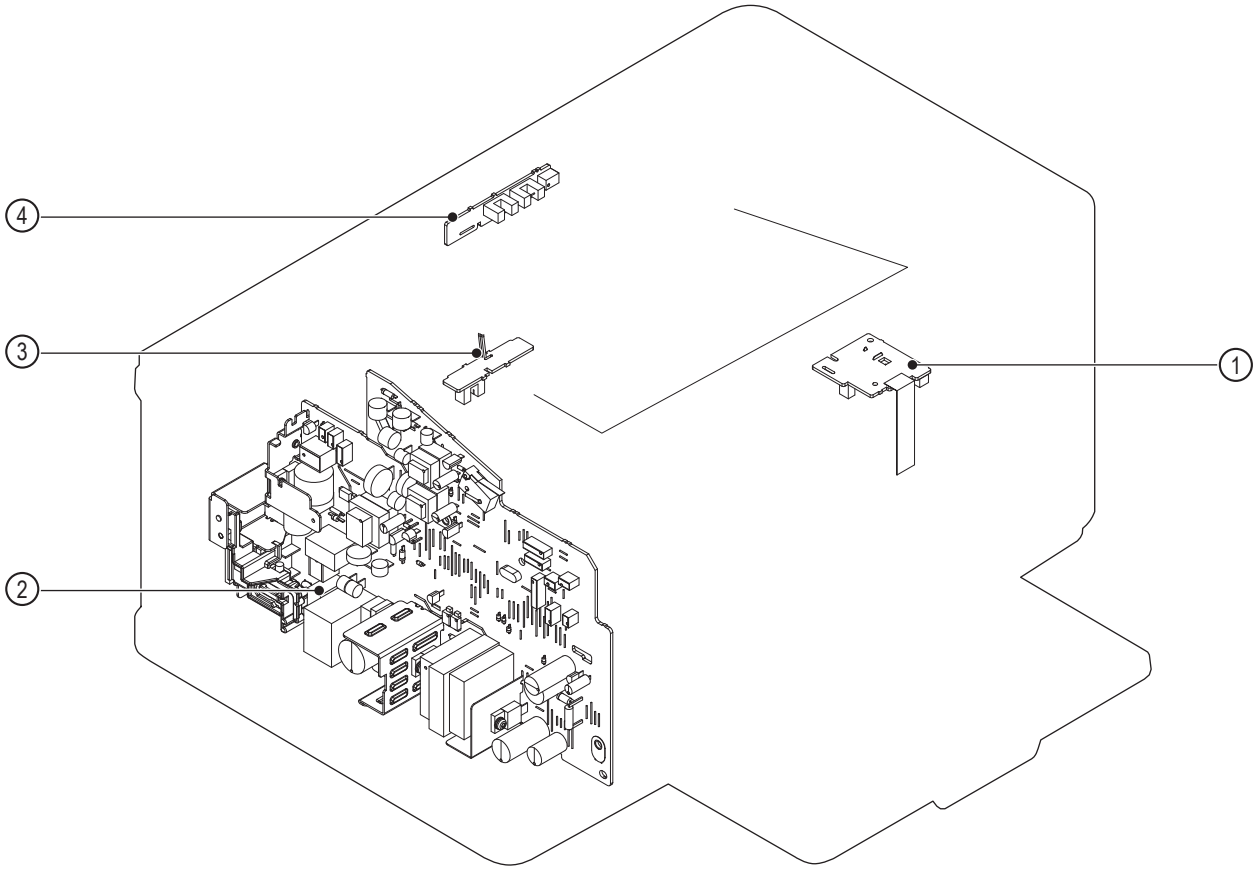
Figure 2-1 Engine controller PCA connectors



Item	Description	Item	Description
J101	Fuser	J551	Top sensor PCA
J104	Power receptacle	J552	Paper-width sensor
J304	High voltage		Fuser-delivery sensor
J501	Not used		Thermistor
J531	Formatter	J562	Pickup solenoid
J532	Formatter	J571	Motor drive PCA
J534	Formatter	J581	Cartridge memory tag (E-label)
J542	Laser/scanner		

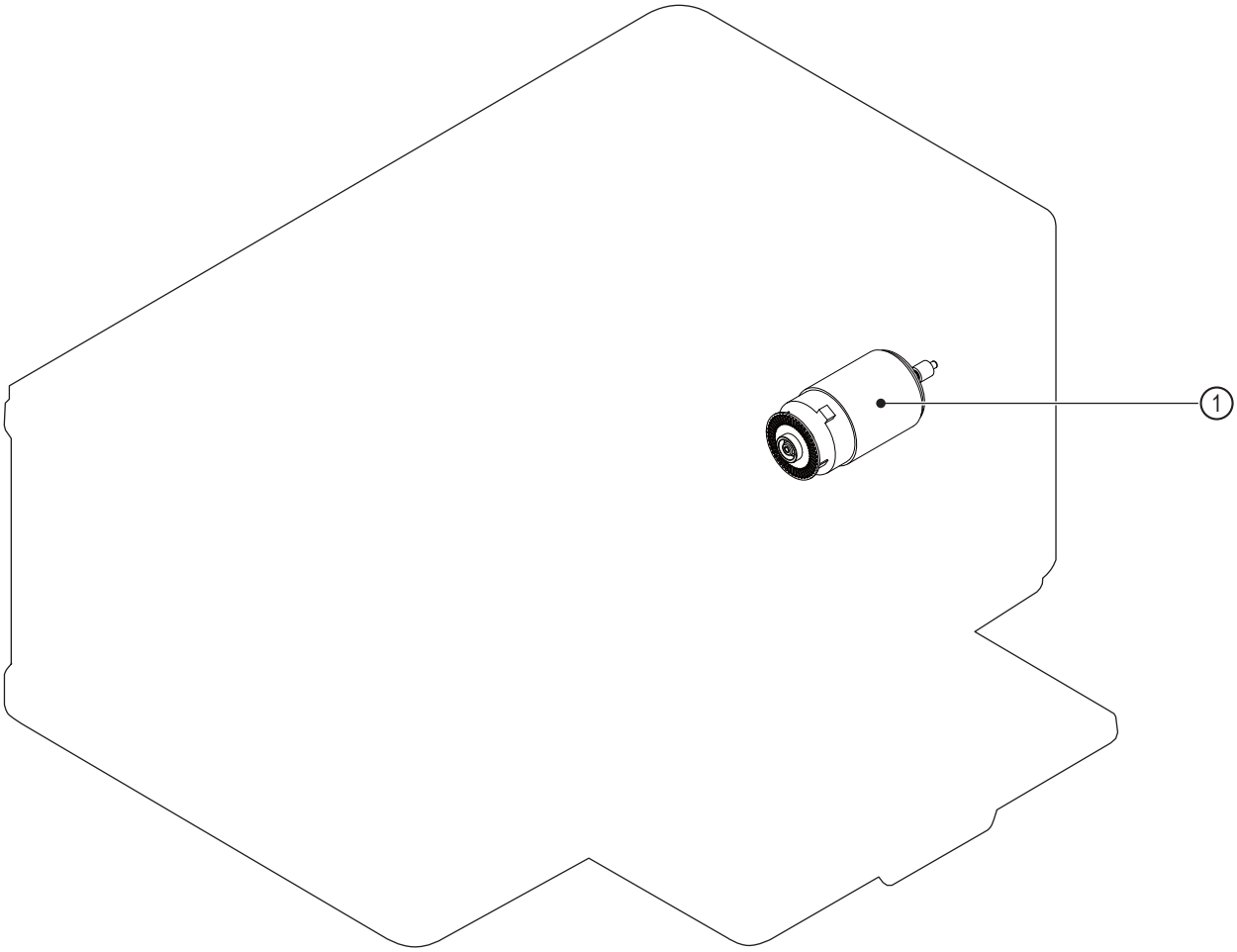
Locations of major components

Figure 2-2 Main PCAs



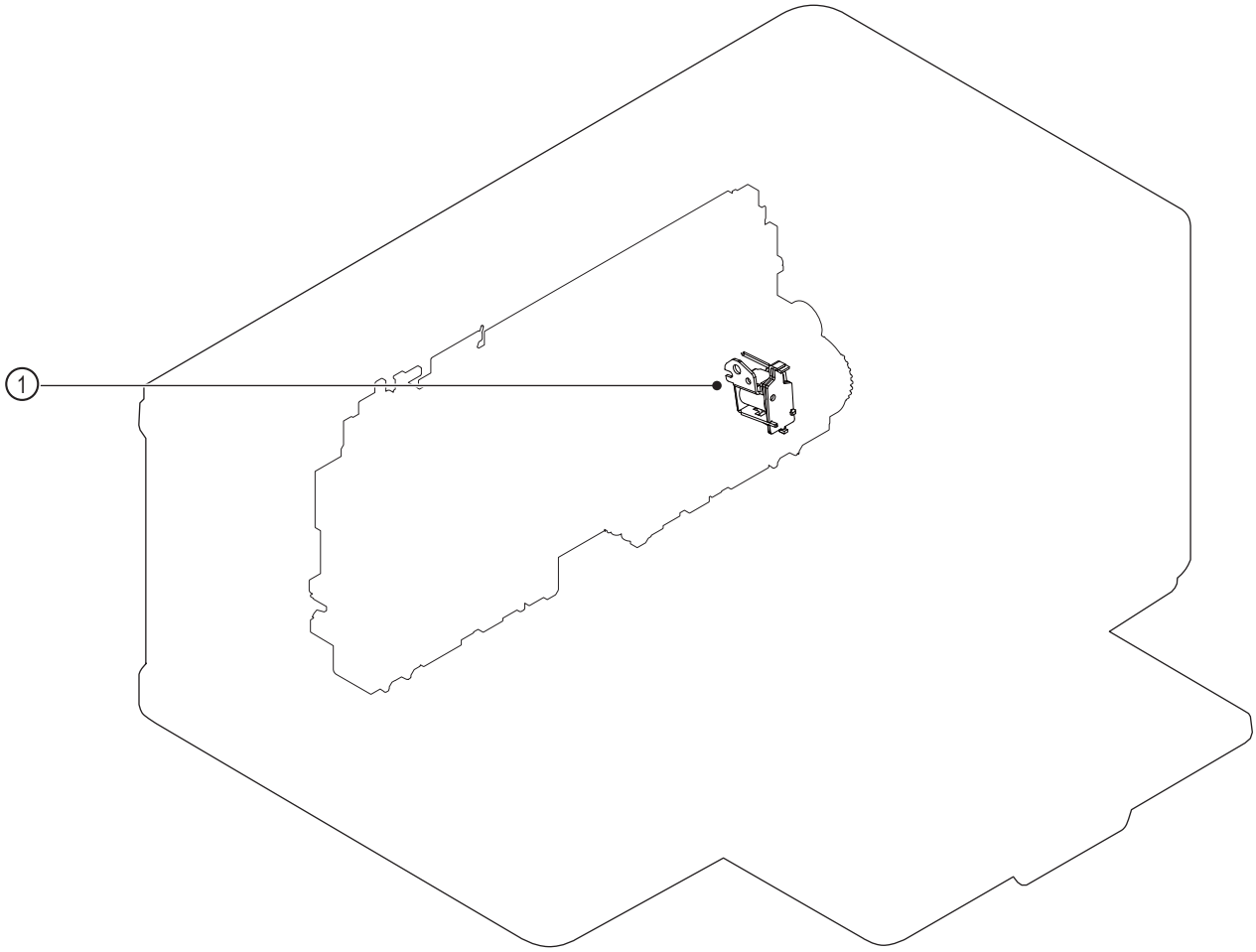
1	Motor drive PCA	3	TOP sensor PCA (Pickup sensor PCA)
2	Engine controller PCA	4	Paper sensor PCA (Fuser PCA)

Figure 2-3 Motor



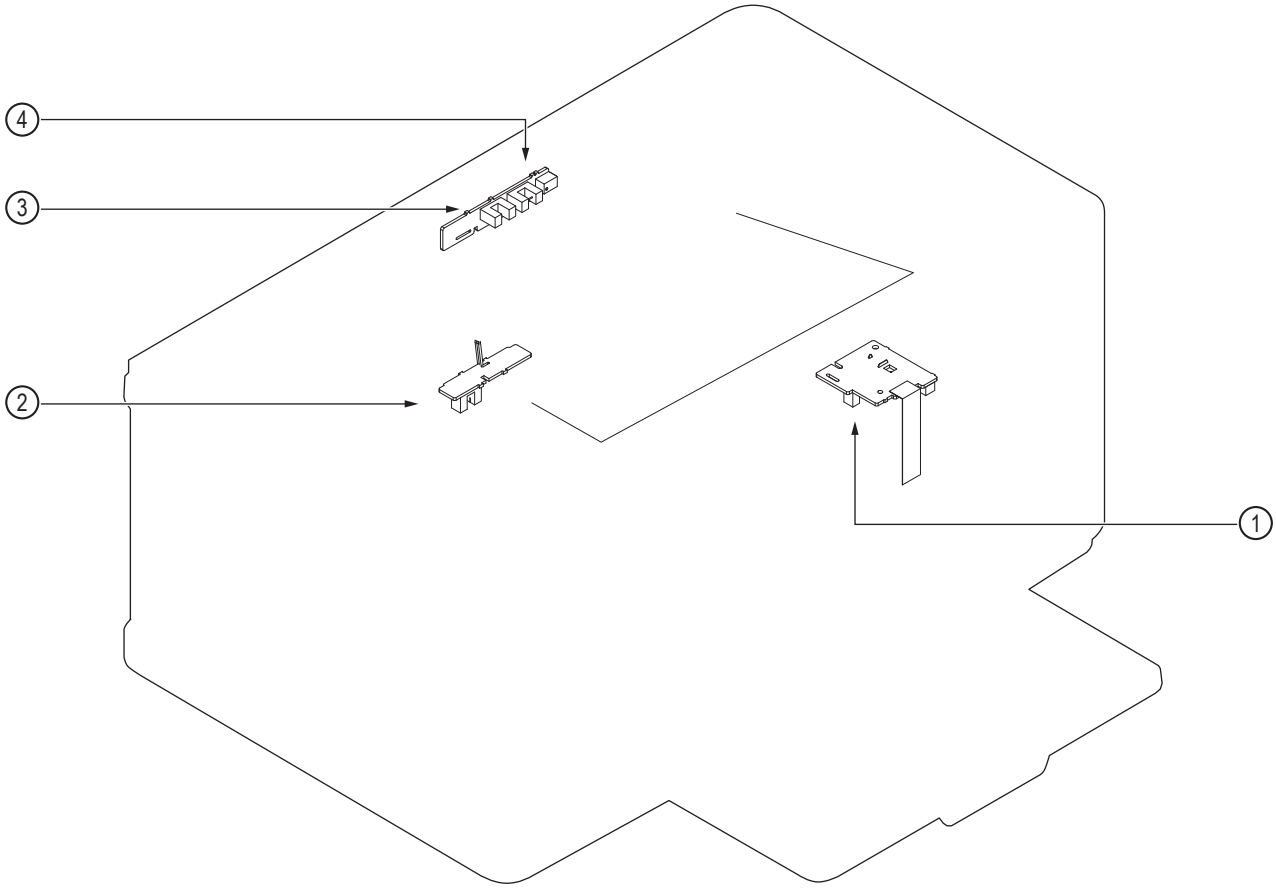
1	Main motor

Figure 2-4 Solenoid



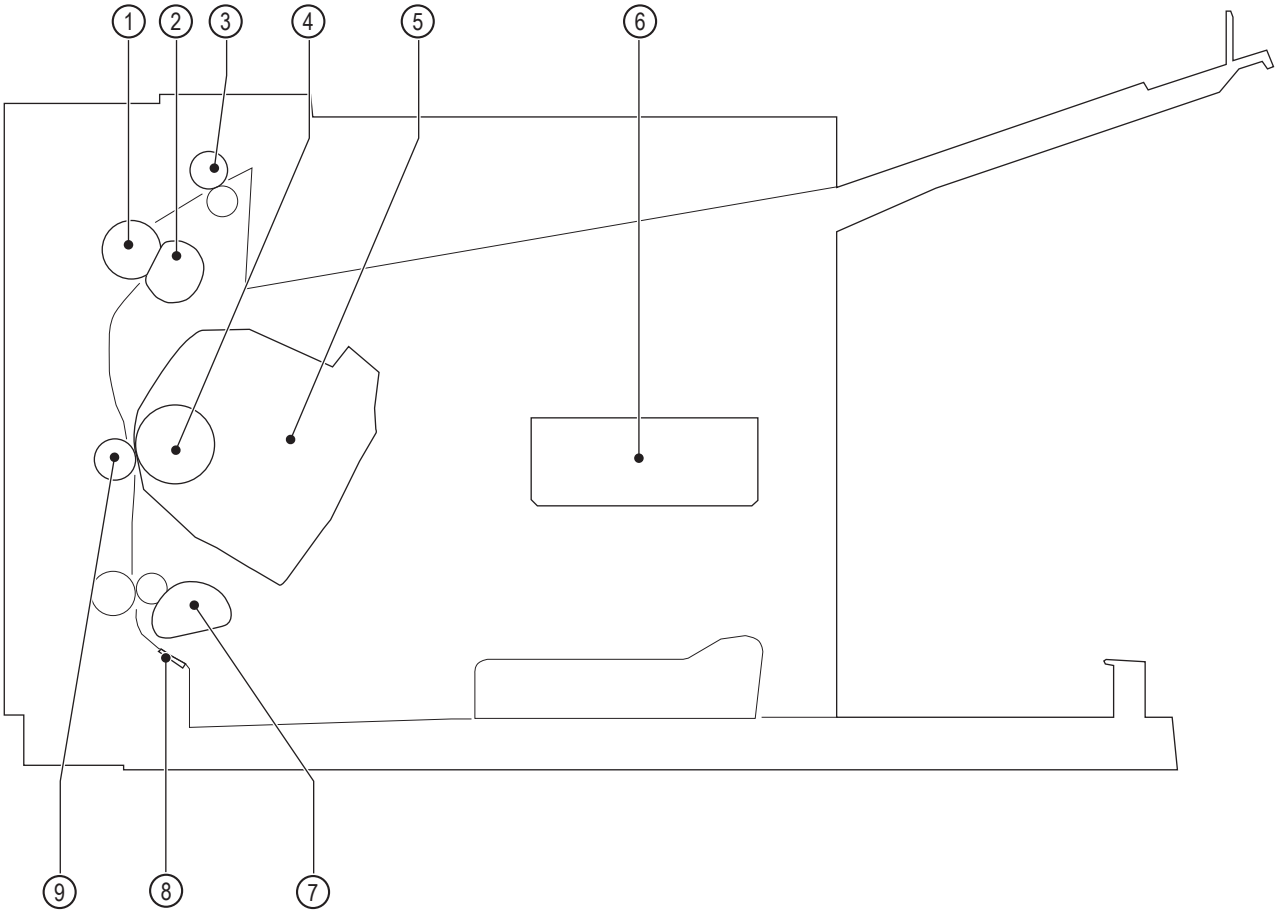
1	Pickup solenoid

Figure 2-5 Sensors



1	Main motor rotation count sensor	3	Fuser delivery sensor
2	TOP sensor	4	Paper-width sensor

Figure 2-6 Cross section view

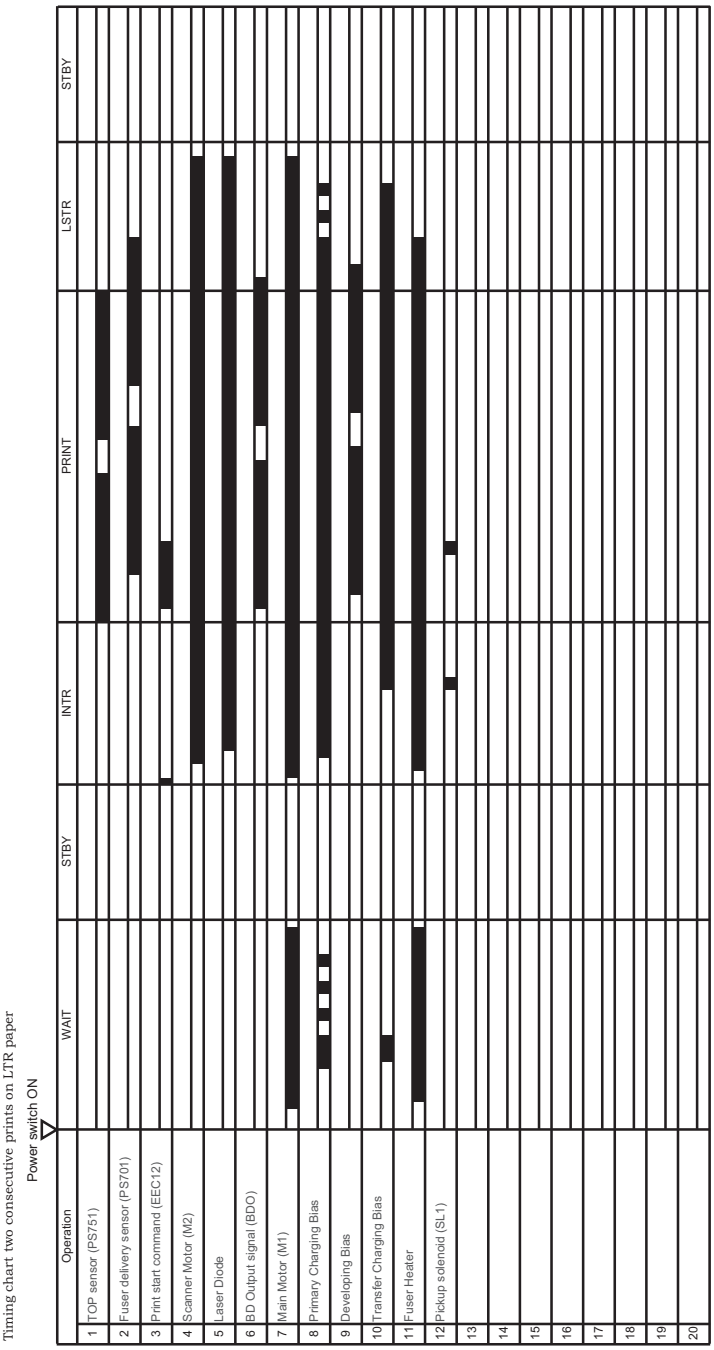


Item	Description	Item	Description
1	Pressure roller	6	Laser/scanner
2	Fuser film assembly	7	Pickup roller
3	Delivery roller	8	Separation pad
4	Photosensitive drum	9	Transfer roller
5	Toner cartridge		

General timing chart

NOTE: The general timing chart is for the product base only.

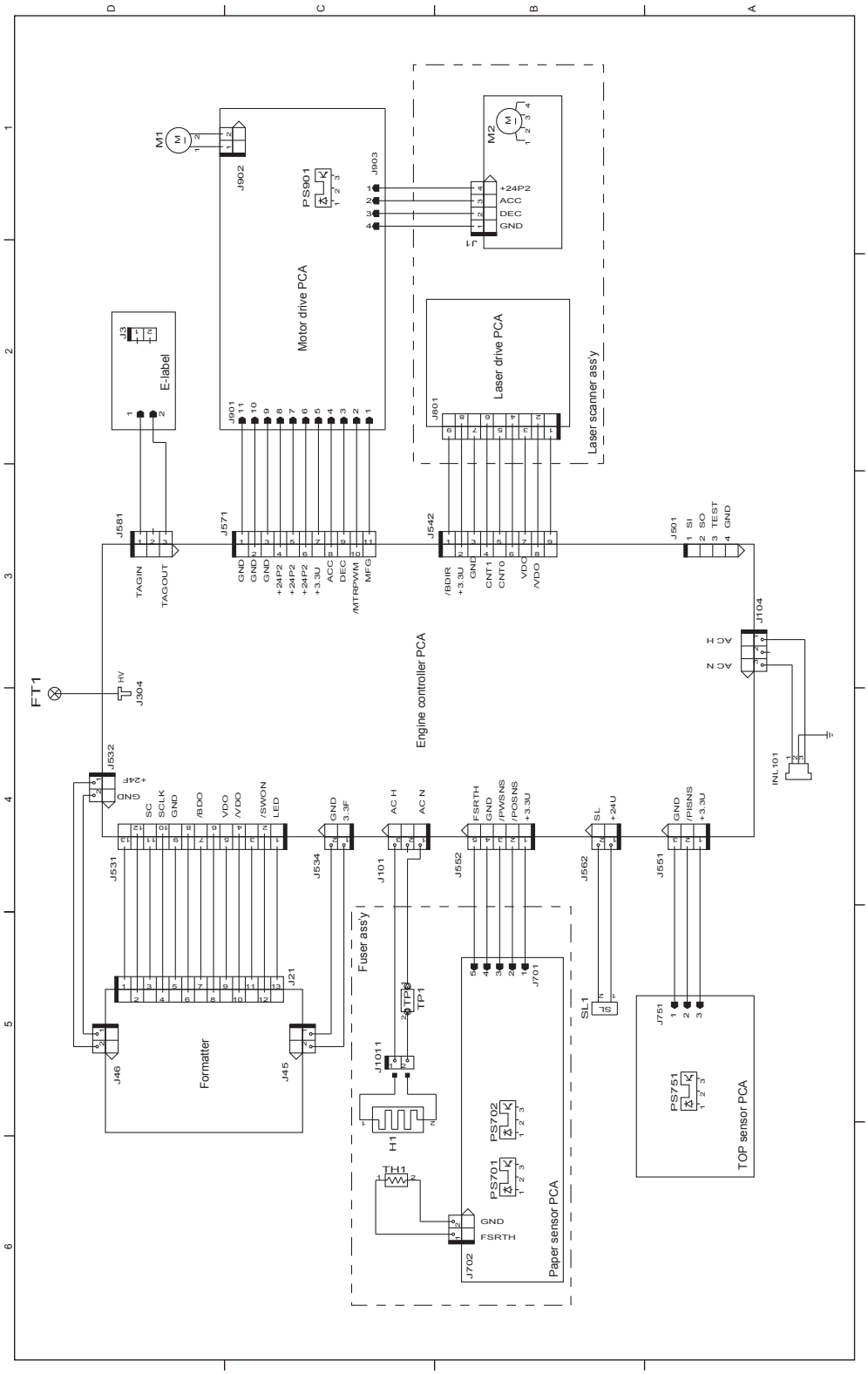
Figure 2-7 General timing diagram



General circuit diagram

NOTE: The general circuit diagram is for the product base only.

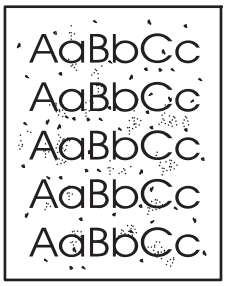
Figure 2-8 Circuit diagram



Internal print-quality test pages

Clean the paper path

If you are experiencing toner specks or dots on the printouts, clean the paper path.



LCD control panel

1. From the product control panel, press the Setup button.
2. Open the **Service** menu.
3. Use the arrow keys to select the **Cleaning mode** option, and then press the OK button.

   The product prints the first side and then prompts you to remove the page from the output bin and reload it in Tray 1, keeping the same orientation. Wait until the process is complete. Discard the page that prints.

Touchscreen control panel

1. From the Home screen on the product control panel, touch the Setup button.
2. Touch the Service menu.
3. Touch the Cleaning Page button.
4. Load plain letter or A4 paper when you are prompted.
5. Touch the OK button to begin the cleaning process.

   The product prints the first side and then prompts you to remove the page from the output bin and reload it in Tray 1, keeping the same orientation. Wait until the process is complete. Discard the page that prints.

Print the configuration page

The configuration page lists current product settings and properties. It also contains a status log report. To print a configuration page, do the following:

LCD control panels

1. From the product control panel, press the Setup button.
2. Open the **Reports** menu.
3. Use the arrow keys to select **Config Report** and then press the OK button to begin printing the report.

Touchscreen control panels

1. From the Home screen on the product control panel, touch the Setup button.
2. Touch Reports.
3. Touch Configuration Report to begin printing the report.

Print-quality troubleshooting tools

Repetitive defect ruler

If the product output has a consistent, repetitive defect, and then use the table in this section to determine which part needs to be replaced based on the measured distance between the repetitions of the defect.

Component	Distance between defects (mm)	Type of defects
Primary charging roller	About 27	Dirt on page Dropouts
Photosensitive drum	About 75	Dirt on page Dropouts
Developing roller	About 34	Dirt on page Dropouts
Transfer roller	About 39	Dropouts Dirt on the back of page
Fuser film	About 57	Dirt on page Dropouts Loose toner
Pressure roller	About 56	Dirt on the back of page Loose toner

Control panel menus

Touchscreen control panel

Setup menu

To open this menu, touch the Setup button. The following sub-menus are available:

- HP Web Services
- Reports
- Self Diagnostics
- Fax Setup
- System Setup
- Service
- Network Setup

HP Web Services menu

NOTE: This menu is also available by touching the Web Services button on the Home screen.

Table 2-2 HP Web Services menu (touchscreen control panel)

Menu item	Description
Enable Web Services	If no wired or wireless network connection is available or if Web Services is disabled, use Enable Web Services to set up Web Services on the product. **NOTE:** You must be connected to a network to enable HP Web Services.
Display E-mail Address	If Web Services is enabled, this option displays the product ePrint email address.
Print Information Sheet	If Web Services is enabled, this option prints the HP ePrint mobile printing report. Use this report to setup ePrint in ePrint Center.
Turn ePrint On/Off	If Web Services is enabled, use this option to turn the ePrint function on or off.
Turn Apps On/Off	If Web Services is enabled, use this option to turn apps on or off.
Remove Web Services	If Web Services is enabled, use this option to disable Web Services and remove the ePrint address.
Proxy Settings	The Proxy Settings sub-menu includes the following: • Proxy Server • Proxy Port • User Name • Password

Reports menu

Table 2-3 Reports menu (touchscreen control panel)

Menu item	Description
Demo Page	Prints a page that demonstrates print quality.
Menu Structure	Prints a control panel menu layout map.
Config Report	Prints a list of the product settings.
Supplies Status	Prints the toner cartridge status and includes the following information: • Approximate pages remaining • Supply level • Serial number • Pages printed with this supply • First install date • Last used date
Usage Page	Displays the number of pages printed by the product.

Self Diagnostics menu

Table 2-4 Self Diagnostics menu (touchscreen control panel)

Menu item	Description
Run Network Test	Performs a wireless network test and prints the results.
Run Fax test	Performs a fax connectivity test and prints the results.

Fax Setup menu

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

Table 2-5 Fax Setup menu (touchscreen control panel)

Menu item	Sub-menu item	Sub-menu item	Description
Fax Set-Up 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	12 Hour 24 Hour	Sets the time and date setting for the product.
	Fax Header		Sets the identifying information that is sent to the receiving product.

Table 2-5 Fax Setup menu (touchscreen control panel) (continued)

Menu item	Sub-menu item	Sub-menu item	Description
	Answer Mode	Automatic* Manual TAM Fax/Tel	Sets the type of answer mode. The following options are available: • Automatic: The product automatically answers an incoming call on the configured number of rings. • Manual: The user must touch the Start Fax button or use an extension phone number to make the product answer the incoming call. • TAM: A telephone answering machine (TAM) is attached to the Auxiliary phone port of the product. The product will not pick up any incoming call, but will listen for fax tones after the answering machine has picked up the call. • Fax/Tel: The product 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 product 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		Sets the number of rings that must occur before the fax modem answers. The default setting is 5.
	Distinctive Ring	All Rings* Single Double Triple Double and Triple	If you have distinctive ring phone service, use this item to configure how the product responds to incoming calls. • All Rings: The product answers any calls that come through the telephone line. • Single: The product answers any calls that produce a single-ring pattern. • Double: The product answers any calls that produce a double-ring pattern. • Triple: The product answers any calls that produce a triple-ring pattern. • Double and Triple: The product answers any calls that produce a double-ring or triple-ring pattern.
	Dial prefix	On Off*	Specifies a prefix number that must be dialed when sending faxes from the product.
Advanced setup	Fax Resolution	Standard Fine* Superfine 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* Off	Shrinks incoming faxes that are larger than the paper size set for the tray.

Table 2-5 Fax Setup menu (touchscreen control panel) (continued)

Menu item	Sub-menu item	Sub-menu item	Description
	Glass Size	Letter* A4	Sets the default paper size for documents being scanned from the flatbed scanner. **NOTE:** The default setting is determined by the choice of location during the initial product setup.
	Dialing Mode	Tone* Pulse	Sets whether the product should use tone or pulse dialing.
	Redial if Busy	On* Off	Sets whether the product should attempt to redial if the line is busy.
	Redial if No Answer	On Off*	Sets whether the product should attempt to redial if the recipient fax number does not answer.
	Redial if Comm. Error	On* Off	Sets whether the product should attempt to redial the recipient fax number if a communication error occurs.
	Detect Dial Tone	On* Off	Sets whether the product should check for a dial tone before sending a fax.
	Extension Phone	On* Off	When this feature is enabled, the **1-2-3** buttons on the extension phone may be pressed to cause the product to answer an incoming fax call.
	Stamp Faxes	On Off*	Sets the product to print the date, time, sender's phone number, and page number on each page of incoming faxes.
	Private Receive	On Print faxes Off*	Setting Private Receive to On requires you to set a product password. After setting the password, the following options are set: • Private Receive is turned on. • All old faxes are deleted from memory. • Fax forwarding is set to Off and is not allowed to be changed. • All incoming faxes are stored in memory.
	Allow Fax Reprint	On* Off	Sets whether incoming faxes are stored in memory for reprinting later.
	Fax/Tel Ring Time		Sets the time, in seconds, after which the product should stop sounding the Fax/Tel audible ring to notify the user of an incoming voice call. The default setting is 20 seconds.
	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 2-6 System Setup menu (touchscreen control panel)

Menu item	Sub-menu item	Sub-menu item	Description
Language	(Lists available control-panel display languages.)		Sets the language in which the control panel displays messages and product reports.
Paper Setup	Paper Size	Letter A4 Legal	Sets the size for printing internal reports, faxes, or any print job that does not specify a size. **NOTE:** The default setting is determined by the choice of location during the initial product setup.
	Paper Type	(Lists available paper types.)	Sets the type for printing internal reports, faxes, or any print job that does not specify a type.
Print Density			Determines how much toner to apply to thicken lines and edges.
Energy Settings	Sleep/Auto Off After	5 Minutes 15 Minutes 30 Minutes 60 Minutes	Specifies the amount of idle time before the product enters sleep mode.
	Wake/Auto On Events	Control Panel Touch USB Job LAN Job Wireless Job Fax	Select the events that bring the product out of sleep mode.
	Auto Off/Manual On After	Never 2 Hours 4 Hours 8 Hours	Set the amount of elapsed time before the product turns itself off.
Supply Settings	Black Cartridge	Very Low Setting	• Stop: The product stops printing until you replace the toner cartridge. • Prompt: The product stops printing and prompts you to replace the toner cartridge. You can acknowledge the prompt and continue printing. • Continue* The product alerts you that the toner cartridge is very low, but it continues printing.
		Low Threshold	Enter a percentage for the low threshold setting.
	Store Usage Data	Not on Supplies* On Supplies	Select where to store the product's usage data, either on the supplies or not on the supplies.

Table 2-6 System Setup menu (touchscreen control panel) (continued)

Menu item	Sub-menu item	Sub-menu item	Description
Volume Settings	Alarm Volume Ring Volume Key-Press Volume Phone Line Volume		Set the volume levels for the product. The following options are available for each volume setting: • Off • Soft* • Medium • Loud
Time/Date	12 Hour 24 Hour		Sets the time and date setting for the product.

Service menu

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

Table 2-7 Service menu (touchscreen control panel)

Menu item	Sub-menu item	Description
Fax Service	Clear Saved Faxes	Clears all faxes in memory.
	Run Fax Test	Performs a fax test to verify that the phone cord is plugged in 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	Prints or schedules a report that is used to troubleshoot fax transmission issues. Schedule options include the following: • Now • Never* • If Error • At End of Call
	Error Correction	The error correction mode allows the sending device to re-transmit data if it detects an error signal.
	Fax Service Log	The fax service log prints out the last 40 entries in the fax log.
Cleaning Page		Cleans the product when specks or other marks appear on printed output. The cleaning process removes dust and excess toner from the paper path. When selected, the product 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.
USB Speed	High* Full	Sets the USB speed for the USB connection to the computer. For the product 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 product.
Less Paper Curl		When printed pages are consistently curled, this option sets the product to a mode that reduces curl.
Archive Print		When printing pages that will be stored for a long time, this option sets the product to a mode that reduces toner smearing and dusting.
HP Smart Install		Enables or disables the HP Smart Install feature on the product.
Restore Defaults		Sets all settings to the factory default values.
Signature Check	Cancel if Invalid Prompt if Invalid	Validates HP firmware downloads.

Network Setup menu

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

Table 2-8 Network Setup menu (touchscreen control panel)

Menu item	Sub-menu item	Description
Wireless Menu	Wireless Direct Settings	Manage the product's wireless direct settings.
	Wireless Setup Wizard	Guides you through the steps to set up the product on a wireless network.
	Wi-Fi Protected Setup	If your wireless router supports this feature, use this method to set up the product on a wireless network. This is the simplest method.
	Run Network Test	Tests the wireless network and prints a report with the results.
	Turn Wireless On/Off	Enables or disables the wireless network feature.
TCP/IP Config	Automatic* Manual	Automatic: The product automatically configures all the TCP/IP settings via DHCP, BootP or AutoIP. 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 product prompts for address confirmation before moving to the next one. After all three addresses are set, the network reinitializes.
Network Services	IPv4 IPv6	Enable or disable the IPv4 and IPv6 protocols. By default, each protocol is enabled.
Link Speed	Automatic* 10T Full 10T Half 100TX Full 100TX Half	Sets the link speed manually if needed. After setting the link speed, the product automatically restarts.
Restore Defaults		Resets all network configurations to their factory defaults.

Fax Menu

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

Table 2-9 Fax Menu (touchscreen control panel)

Menu item	Sub-menu item	Sub-menu item	Description
Fax Reports	Fax Confirmation	On Every Fax On Send Fax Only On Receive Fax Only Never*	Sets whether the product prints a confirmation report after a successful fax job.

Table 2-9 Fax Menu (touchscreen control panel) (continued)

Menu item	Sub-menu item	Sub-menu item	Description
	Include First Page	On* Off	Sets whether the product includes a thumbnail image of the first page of the fax on the report.
	Fax Error Report	On Every Error* On Send Error On Receive Error Never	Sets whether the product prints a report after a failed fax job.
	Print Last Call Report	On* Off	Prints a detailed report of the last fax operation, either sent or received.
	Fax Activity Log	Print Log Now Auto Log Print	Print Log Now: Prints a list of the faxes that have been sent from or received by this product. 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 product.
	Print Junk Fax List		Prints a list of phone numbers that are blocked from sending faxes to this product.
	Print All Fax Reports		Prints all fax-related reports.
Send Options	Send Fax Later	Send Fax time Send Fax date	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.
	Fax Resolution	Standard Fine* Superfine 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 Delete Number Delete All Numbers Print Junk Fax List	Modifies the junk fax list. The junk fax list can contain up to 30 numbers. When the product 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.
	Print Private Faxes		Prints stored faxes when the private-receive feature is turned on. The product prompts you for the system password.
	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.

Table 2-9 Fax Menu (touchscreen control panel) (continued)

Menu item	Sub-menu item	Sub-menu item	Description
	Forward Fax	On Off*	Sets product to send all received faxes to another fax machine.
	Polling Receive		Allows the product to call another fax machine that has polling send enabled.
Phone Book Setup	Individual Setup		Edits the fax phone book speed dial entries.
	Delete Entry		Deletes a specific phone book entry.
	Delete All Entries		Deletes all entries in the phone book.
	Print Report		Prints a list of all the individual dial entries in the phone book.
Change Defaults	Fax Setup Utility		Opens the Fax Setup menu.

Copy Menu

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

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

Table 2-10 Copy Menu (touchscreen control panel)

Menu item	Sub-menu item	Description
Number of Copies		Specifies the number of copies.
Reduce/Enlarge	Original=100%* A4 to Letter=94% Letter to A4=97% Full Page=91% Fit to Page 2 Pages per Sheet 4 Pages per Sheet Custom: 25 to 400%	Specifies the size of the copy.
Lighter/Darker		Specifies the contrast of the copy.
Optimize	Draft Mixed Text* Picture	Specifies the type of content in the original document, so the copy is the best match for the original.
Paper	Letter Legal A4	Specifies the paper size. **NOTE:** The default paper size setting is determined by the choice of location during the initial product setup.

Table 2-10 Copy Menu (touchscreen control panel) (continued)

Menu item	Sub-menu item	Description
Collation	On	Specifies whether to collate copy jobs.
	Off*	
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.

LCD control panel

Setup menu

To open this menu, press the Setup button. The following sub-menus are available:

- **HP Web Services**
- **Phone Book**
- **Fax Job Status**
- **Fax Functions**
- **Reports**
- **Fax Setup**
- **System Setup**
- **Service**
- **Network Setup**

HP Web Services menu

NOTE: This menu is also available by pressing the ePrint button on the product control panel.

Table 2-11 HP Web Services menu (LCD control panel)

Menu item	Description
Print Info Sheet	If Web Services is enabled, this option prints the HP ePrint mobile printing report. Use this report to setup ePrint in ePrint Center.
ePrint On/Off	If Web Services is enabled, use this option to turn the ePrint function on or off.
Remove Services	If Web Services is enabled, use this option to disable Web Services and remove the ePrint address.

Phone Book menu

Use the **Phone Book** menu to enter a pre-programmed number and then select the number.

Table 2-12 PhoneBook Number menu (LCD control panel)

Menu item	Sub-menu item	Description
Phone Book Number	**Phone Book fax #**	Save a fax number to the product phone book.
	Phone Book name	Enter a name to a fax number in the product phone book.

Fax Job Status menu

The **Fax Job Status** menu displays the list of all faxes that are waiting to be sent, received but waiting to be printed, received but waiting to be forwarded, or received but waiting to be uploaded to a computer.

Fax Functions menu

Table 2-13 Fax Functions menu (LCD control panel)

Menu item	Sub-menu item	Description
Send Fax Later	**Send Fax time** **Send Fax date**	Allows a fax to be sent at a later time and date.
Reprint Last		Prints the received faxes stored in the available memory.
Polling Receive		Allows the product to call another fax machine that has polling send enabled.
Clear Saved Faxes		Clears all faxes stored in the available memory.

Reports menu

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

Table 2-14 Reports menu (LCD control panel)

First level	Sub-menu item	Sub-menu item	Description
Demo Page			Prints a page that demonstrates print quality.
Fax Reports	**Fax Confirmation**	**On Every Fax*** **On Send Fax Only** **On Receive Fax Only** **Never**	Sets whether the product prints a confirmation report after a successful fax job.
	Fax Error Report	**On Every Error*** **On Send Error** **On Receive Error** **Never**	Sets whether the product prints a report after a failed fax job.
	Last Call Report	**On*** **Off**	Prints a detailed report of the last fax operation, either sent or received.
	Include 1st Page	**On*** **Off**	Sets whether the product includes a thumbnail image of the first page of the fax on the report.
	Fax Activity log	**Print Log Now** **Auto Log Print**	**Print Log Now**: Prints a list of the faxes that have been sent from or received by this product. **Auto Log Print**: Automatically prints a report after every fax job.
	PhoneBook Report		Prints a list of the speed dials that have been set up for this product.
	Block Fax list		Prints a list of phone numbers that are blocked from sending faxes to this product.
	All fax reports		Prints all fax-related reports.
Menu Structure			Prints a control-panel menu layout map.

Table 2-14 Reports menu (LCD control panel) (continued)

First level	Sub-menu item	Sub-menu item	Description
Config Report			Prints a list of the product settings.
Supplies Status			Prints the toner cartridge status. Includes the following information: • Approximate pages remaining • Supply level • Serial number • Number of pages printed • First install date • Last used date
Usage Report			Displays the number of pages printed, faxed, copied, and scanned by the product.

Fax Setup menu

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

Table 2-15 Fax Setup menu (LCD control panel)

Menu item	Sub-menu item	Sub-menu item	Description
Fax Header			Sets the identifying information that is sent to the receiving product.
Phone Book	**Add/Edit**		Adds or edits the fax phone book speed dial entries.
	Delete		Deletes a specific phone book entry.
	Delete All		Deletes all entries in the phone book.
Fax Send Setup	**Def. Resolution**	**Standard** **Fine*** **Superfine** **Photo**	Sets the default 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.
	Def. Light/Dark		Sets the default darkness for outgoing faxes.
	Def. Glass Size	**Letter*** **A4**	Sets the default paper size for documents being scanned from the flatbed scanner. **NOTE:** The default setting is determined by the choice of location during the initial product setup.
	Dialing Mode	**Tone*** **Pulse**	Sets whether the product should use tone or pulse dialing.
	Redial if Busy	**On*** **Off**	Sets whether the product should attempt to redial if the line is busy.

Table 2-15 Fax Setup menu (LCD control panel) (continued)

Menu item	Sub-menu item	Sub-menu item	Description
	Redial if No Answer	**On** **Off***	Sets whether the product should attempt to redial if the recipient fax number does not answer.
	Redial if Comm Error	**On*** **Off**	Sets whether the product should attempt to redial the recipient fax number if a communication error occurs.
	Dial Prefix	**On** **Off***	Specifies a prefix number that must be dialed when sending faxes from the product.
	Detect Dial Tone	**On*** **Off**	Sets whether the product should check for a dial tone before sending a fax.
Fax Recv. Setup	**Answer Mode**	**Automatic*** **Manual** **TAM** **Fax/Tel**	Sets the type of answer mode. The following options are available: • **Automatic**: The product automatically answers an incoming call on the configured number of rings. • **Manual**: The user must touch the **Start Fax** button or use an extension phone number to make the product answer the incoming call. • **TAM**: A telephone answering machine (TAM) is attached to the Auxiliary phone port of the product. The product will not pick up any incoming call, but will listen for fax tones after the answering machine has picked up the call. • **Fax/Tel**: The product 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 product 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		Sets the number of rings that must occur before the fax modem answers. The default setting is 5.
	Answer Ring Type	**All Rings*** **Single** **Double** **Triple** **Double&Triple**	If you have distinctive ring phone service, use this item to configure how the product responds to incoming calls. • **All Rings**: The product answers any calls that come through the telephone line. • **Single**: The product answers any calls that produce a single-ring pattern. • **Double**: The product answers any calls that produce a double-ring pattern. • **Triple**: The product answers any calls that produce a triple-ring pattern. • **Double and Triple**: The product answers any calls that produce a double-ring or triple-ring pattern.

Table 2-15 Fax Setup menu (LCD control panel) (continued)

Menu item	Sub-menu item	Sub-menu item	Description
	Extension Phone	**On*** **Off**	When this feature is enabled, the **1-2-3** buttons on the extension phone may be pressed to cause the product to answer an incoming fax call.
	Silence Detect	**On** **Off***	Controls whether or not the product can receive faxes from older model fax machines that do not emit the initial CNG tones during the fax transmission.
	Fit to Page	**On*** **Off**	Shrinks incoming faxes that are larger than the paper size set for the tray.
	Stamp Faxes	**On** **Off***	Sets the product to print the date, time, sender's phone number, and page number on each page of incoming faxes.
	Forward Fax	**On** **Off***	Sets product to send all received faxes to another fax machine.
	Block Junk Faxes	**Add entry** **Delete entry** **Clear all**	Modifies the junk fax list. The junk fax list can contain up to 30 numbers. When the product 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	**On*** **Off**	Sets whether incoming faxes are stored in memory for reprinting later.
	Private Receive	**On** **Print faxes** **Off***	Setting **Private receive** to **On** requires you to set a product password. After setting the password, the following options are set: • **Private receive** is turned on. • All old faxes are deleted from memory. • **Fax forwarding** is set to **Off** and is not allowed to be changed. • All incoming faxes are stored in memory.
	F/T Ring Time		Sets the time, in seconds, after which the product should stop sounding the **Fax/Tel** audible ring to notify the user of an incoming voice call. The default setting is 20 seconds.
All Faxes	**Error Correction**	**On*** **Off**	Allows the sending device to re-transmit data if it detects an error signal.
	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 2-16 System Setup menu (LCD control panel)

Menu item	Sub-menu item	Sub-menu item	Description
Language	(Lists available control-panel display languages.)		Sets the language in which the control panel displays messages and product reports.
Paper Setup	**Def. Paper Size**	**Letter** **A4** **Legal**	Sets the default paper size for printing internal reports, faxes, or any print job that does not specify a size.
	Def. Paper Type	(Lists available media types.)	Sets the default paper type for printing internal reports, faxes, or any print job that does not specify a type.
Print Density			Determines how much toner to apply to thicken lines and edges.
Energy Settings	**Sleep/Auto Off after**	**5 Minutes** **15 Minutes** **30 Minutes** **60 Minutes**	Specifies the amount of idle time before the product enters sleep mode.
	Wake/Auto On Events	**Button Press** **USB Job** **LAN Job** **Wireless Job** **Fax**	Select the events that bring the product out of sleep mode.
	Auto Off/Manual On after	**Never** **2 Hours** **4 Hours** **8 Hours**	Set the amount of elapsed time before the product turns itself off.
Volume Settings	**Alarm Volume** **Ring Volume** **Key-Press Volume** **Phoneline Volume**		Set the volume levels for the product. The following options are available for each volume setting: • **Off** • **Soft*** • **Medium** • **Loud**
Time/Date			Sets the time and date setting for the product.

Table 2-16 System Setup menu (LCD control panel) (continued)

Menu item	Sub-menu item	Sub-menu item	Description
Supply Settings	**Black Cartridge**	**Very Low Setting**	• **Stop**: The product stops printing until you replace the toner cartridge. • **Prompt**: The product stops printing and prompts you to replace the toner cartridge. You can acknowledge the prompt and continue printing. • **Continue***: The product alerts you that the toner cartridge is very low, but it continues printing.
		Low Threshold	Enter a percentage for the low threshold setting.
	Store Usage Data	**Not on Supplies*** **On Supplies**	Select where to store the product's usage data, either on the supplies or not on the supplies.

Service menu

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

Table 2-17 Service menu (LCD control panel)

Menu item	Sub-menu item	Description
T.30 Trace	**Never*** **If Error** **At End of Call** **Now**	Prints or schedules a report that is used to troubleshoot fax transmission issues.
Restore Defaults		Sets all settings to the factory default values.
Cleaning Mode		Cleans the product when specks or other marks appear on printed output. The cleaning process removes dust and excess toner from the paper path. When selected, the product prompts you to load plain Letter or A4 paper in the input tray. Press the **OK** button to begin the cleaning process. Wait until the process completes. Discard the page that prints.
Less Paper Curl	**On*** **Off**	When printed pages are consistently curled, this option sets the product to a mode that reduces curl.
USB Speed	**High*** **Full**	Sets the USB speed for the USB connection to the computer. For the product 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 product.
Archive Print	**Off*** **On**	When printing pages that will be stored for a long time, this option sets the product to a mode that reduces toner smearing and dusting.
Run Fax Test		Performs a fax test to verify that the phone cord is plugged in the correct outlet and that there is a signal on the phone line. A fax test report is printed indicating the results.
Signature check	**Cancel if bad** **Prompt if bad**	Validates HP firmware downloads.

Network Setup menu

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

Table 2-18 Network Setup menu (LCD control panel)

Menu item	Sub-menu item	Description
Wireless Menu	**Wireless Direct**	Manage the product's wireless direct settings.
	Wireless Radio	Enables or disables the wireless radio feature.
	Network Test	Tests the wireless network and prints a report with the results.
	WPS Setup	Choose the method of connecting to the router, either push button or PIN.

Table 2-18 Network Setup menu (LCD control panel) (continued)

Menu item	Sub-menu item	Description
TCP/IP Config	**Automatic*** **Manual**	**Automatic**: The product automatically configures all the TCP/IP settings via DHCP, BootP or AutoIP. **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 product prompts for address confirmation before moving to the next one. After all three addresses are set, the network reinitializes.
Network Services	**IPv4** **IPv6**	Enable or disable the IPv4 and IPv6 protocols. By default, each protocol is enabled.
Show IP address		Displays the product IP address.
Link Speed	**Automatic*** **10T Full** **10T Half** **100TX Full** **100TX Half**	Sets the link speed manually if needed. After setting the link speed, the product automatically restarts.
Restore Defaults		Resets all network configurations to their factory defaults.

Copy menu

To open this menu, press the Copy Menu button on the product control panel. To scroll between the menu items, press the Copy Menu button again.

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

Table 2-19 Copy menu (LCD control panel)

Menu item	Sub-menu item	Description
ID Copy		Use this menu to copy both sides of identification cards, or other small-size documents, onto the same side of one sheet of paper.
Reduce/Enlarge	**Original=100%*** **A4 to Letter=94%** **Letter to A4=97%** **Full Page=91%** **2 Pages per Sheet** **4 Pages per Sheet** **Custom: 25 to 400%**	Specifies the size of the copy.

Table 2-19 Copy menu (LCD control panel) (continued)

Menu item	Sub-menu item	Description
Optimize	**Mixed** **Text*** **Picture** **Draft**	Specifies the type of content in the original document, so the copy is the best match for the original.
Paper	**Paper Size** **Paper Type**	Specify the paper size and type in the input tray.
Collation	**On** **Off***	Specifies whether to collate copy jobs.
Set as Defaults		Saves any changes you have made to this menu as the new defaults.
Restore Defaults		Restores the factory defaults for this menu.

Interpret control-panel messages

Control-panel message types

Alert and warning messages appear temporarily and might require you to acknowledge the message by pressing the OK button to resume or by pressing the Cancel ⊗ button to cancel the job. With certain warnings, the job might not complete or the print quality might be affected. If the alert or warning message is related to printing and the auto-continue feature is on, the product will attempt to resume the printing job after the warning has appeared for 10 seconds without acknowledgement.

Critical error messages can indicate some kind of failure. Turning off and then turning on the power might fix the problem. If a critical error persists, the product might require service.

Control-panel messages

Table 2-20 Control-panel messages

Control panel message	Description	Recommended action
22 Scanner Error	The product has experienced an internal hardware error.	1. Check all of the FFC connections. 2. Verify that the scanner-carriage can move along the track in the scanner assembly, and that the scanner motor can rotate. 3. If the error persists, replace the FFC cable. 4. If the error persists, replace the scanner motor or the scanner carriage. 5. If the error persists, replace the formatter.
50.X Fuser Error **Turn off then on**	The product has experienced an internal hardware error.	1. Turn off the power by using the power switch, and then wait at least 30 seconds. 2. If a surge protector is being used, remove it. Plug the product directly into the wall socket. 3. Turn on the power and wait for the product to initialize. 4. If the error persists, replace the fuser.
52 Scanner Error **Turn off then on**	The product has experienced a scanner error.	Turn off the power by using the power switch, wait at least 30 seconds, and then turn on the power and wait for the product to initialize. If a surge protector is being used, remove it. Plug the product directly into the wall socket. Use the power switch to turn the product on. If the error persists, replace the scanner assembly.

Table 2-20 Control-panel messages (continued)

Control panel message	Description	Recommended action
Comm. error	A fax communication error occurred between the product and the sender or receiver.	Allow the product to retry sending the fax. Unplug the product telephone cord from the wall, plug in a telephone, and try making a call. Plug the product phone cord into a jack for another phone line. Try a different phone cord. If the error persists, replace the fax PCA.
Device error **Press [OK]**	The product experienced an internal communication error.	This is a warning message only. Job output might be affected.
Door open	The toner-cartridge door is open.	Close the door.
Fax delayed **Send memory full**	Fax memory is full.	Cancel the fax by pressing the Cancel ⊗ button. Resend the fax. You might need to send the fax in multiple sections if the error occurs again.
Fax is busy **Canceled send**	The fax line to which you were sending a fax was busy. The product has canceled sending the fax.	Call the recipient to ensure that the fax machine is on and ready. Check that you are dialing the correct fax number. Check that the **Redial if busy** option is enabled. Check for a dial tone on the phone line by pressing the Start Fax button on LCD control panels or by touching the Fax button on touchscreen control panels. Make sure that the phone line is working by disconnecting the product, connecting a telephone to the phone line, and making a voice call. Connect the product phone cord to a jack for another phone line, and then try sending the fax again. Try a different phone cord. If the error persists, replace the fax PCA.

Table 2-20 Control-panel messages (continued)

Control panel message	Description	Recommended action
Fax is busy **Redial pending**	The fax line to which you were sending a fax was busy. The product automatically redials the busy number.	Allow the product to retry sending the fax. 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 pressing the Start Fax button on LCD control panels or by touching the Fax button on touchscreen control panels. Make sure that the phone line is working by disconnecting the product, connecting a telephone to the phone line, and making a voice call. Connect the product phone cord to a jack for another phone line, and then try sending the fax again. Try a different phone cord. If the error persists, replace the fax PCA.
Fax memory full **Canceling recv.**	During the fax transmission, the product ran out of memory. Only the pages that fit into memory will be printed.	Print all of the faxes, and then have the sender resend the fax. Have the sender divide the fax job into multiple jobs before resending. Cancel all fax jobs or clear the faxes from memory.
Fax memory full **Canceling send**	During the fax job, the memory filled. All pages of the fax have to be in memory for a fax job to work correctly. Only the pages that fit into memory were sent.	Print all received faxes or wait until all pending faxes are sent. Ask the sender to send the fax again. Cancel all fax jobs or clear the faxes from memory.

Table 2-20 Control-panel messages (continued)

Control panel message	Description	Recommended action
Fax recv. error	An error occurred while trying to receive a fax.	Ask the sender to resend the fax. Try faxing back to the sender or another fax machine. Check for a dial tone on the phone line by pressing the Start Fax button on LCD control panels or by touching the Fax button on touchscreen control panels. Check that the telephone cord is securely connected by unplugging and replugging the cord. Make sure that you are using the telephone cord that came with the product. Make sure that the phone line is working by disconnecting the product, connecting a telephone to the phone line, and making a voice call. Decrease the fax speed. Ask the sender to resend the fax. Turn off error-correction mode. Ask the sender to resend the fax. Connect the product to a different phone line. If the error persists, replace the fax PCA.
Fax Send error	An error occurred while trying to send a fax.	Try resending the fax. Try faxing to another fax number. Check for a dial tone on the phone line by pressing the Start Fax button on LCD control panels or by touching the Fax button on touchscreen control panels. Check that the telephone cord is securely connected by unplugging and replugging the cord. Make sure that you are using the telephone cord that came with the product. Make sure that the phone line is working by disconnecting the product, connecting a telephone to the phone line, and making a voice call. Connect the product to a different phone line. Set the fax resolution to **Standard** instead of the default of **Fine**. If the error persists, replace the fax PCA.

Table 2-20 Control-panel messages (continued)

Control panel message	Description	Recommended action
Jam in <location>	The product has detected a jam in the location indicated in the message.	Clear the jam from the area indicated in the message, and then follow the control-panel instructions. Clearing some jams requires you to open the top cover and remove the toner cartridge.
Load paper <TYPE>, <SIZE>	The tray is empty.	Load the tray with the correct type and size of paper.
Memory is low **Press [OK]**	The product does not have enough memory to process the job.	If the product is processing other jobs, send the job again after those jobs have finished. If the problem continues, turn off the power by using the power switch, and then wait at least 30 seconds. Turn on the power and wait for the product to initialize.
Misprint **Press [OK]**	The product has experienced an internal hardware error.	Press the OK button to continue. Job output might be affected.
No dial tone	The product could not detect a dial tone.	Check for a dial tone on the phone line by pressing the Start Fax button on LCD control panels or by touching the Fax button on touchscreen control panels. Disconnect the telephone cord from both the product and the wall and reconnect the cord. Make sure that you are using the telephone cord that came with the product. Disconnect the product telephone cord from the wall, connect a telephone, and try making a voice call. Make sure that the phone cord from the wall telephone jack is connected to the fax port. Connect the product phone cord to a jack for another phone line. If the error persists, replace the fax PCA.
No document sent	The product did not scan any pages, or it did not receive any pages from the computer to transmit a fax.	Try sending the fax again.

Table 2-20 Control-panel messages (continued)

Control panel message	Description	Recommended action
No fax answer. **Canceled send**	Attempts to redial a fax number failed, or the **Redial if no answer** option was turned off.	Call the recipient to ensure that the fax machine is on and ready. Check that you are dialing the correct fax number. Check that the redial option is enabled. Disconnect the telephone cord from both the product and the wall and reconnect the cord. Disconnect the product telephone cord from the wall, connect a telephone, and try making a voice call. Make sure that the phone cord from the wall telephone jack is connected to the fax  port. Connect the product phone cord to a jack for another phone line. If the error persists, replace the fax PCA.
No fax answer. **Redial pending**	The receiving fax line did not answer. The product attempts to redial after a few minutes.	Allow the product to retry sending the fax. Call the recipient to ensure that the fax machine is on and ready. Check that you are dialing the correct fax number. If the product continues to redial, disconnect the product telephone cord from the wall, connect a telephone, and try making a voice call. Make sure that the phone cord from the wall telephone jack is connected to the fax  port. Connect the product phone cord to a jack for another phone line. Try a different phone cord. If the error persists, replace the fax PCA.
No fax detected	The product answered the incoming call but did not detect that a fax machine was calling.	Allow the product to retry receiving the fax. Try a different phone cord. Connect the product phone cord to a jack for another phone line. If the error persists, replace the fax PCA.

Table 2-20 Control-panel messages (continued)

Control panel message	Description	Recommended action
Page too complex **Press [OK]**	The product could not print the current page because of its complexity.	Press the OK button to clear the message. Allow the product to finish the job, or press the Cancel ⊗ button to cancel the job.
Settings cleared or **Job settings cleared**	The product has cleared job settings.	Re-enter any appropriate job settings.

Clear jams

When clearing jams, be careful not to tear jammed paper. If a small piece of paper remains in the product, it could cause additional jams.

Solve paper feed or jam problems

If the product has recurring problems with paper feeding or with jams, use the following information to reduce the number of occurrences.

The product does not pick up paper

If the product does not pick up paper from the tray, try these solutions.

1. Open the product and remove any jammed sheets of paper.
2. Load the tray with the correct size of paper for your job.
3. Make sure the paper size and type are set correctly on the product control panel.
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. Check the product control panel to see if the product is waiting for you to acknowledge a prompt to feed the paper manually. Load paper, and continue.
6. The pickup roller and separation pad might be contaminated.

The product picks up multiple sheets of paper

If the product picks up multiple sheets of paper from the tray, try these solutions.

1. Remove the stack of paper from the tray and flex it, rotate it 180 degrees, and flip it over. *Do not fan the paper.* Return the stack of paper to the tray.
2. Use only paper that meets HP specifications for this product.
3. Use paper that is not wrinkled, folded, or damaged. If necessary, use paper from a different package.
4. Make sure the tray is not overfilled. If it is, remove the entire stack of paper from the tray, straighten the stack, and then return some of the paper to the tray.
5. Make sure the paper guides in the tray are adjusted correctly for the size of paper. Adjust the guides to the appropriate indentation in the tray.
6. Make sure the printing environment is within recommended specifications.

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 product, clear the jam and then print a configuration page to test the product.
2. Check that the tray is configured for the correct paper size and type on the product control panel. Adjust paper settings if necessary.

3. Turn the product off, wait 30 seconds, and then turn it on again.
4. Print a cleaning page to remove excess toner from inside the product.
    a. From the Home screen on the product control panel, touch the Setup button.
    b. Touch the Service menu.
    c. Touch the Cleaning Page button.
    d. Load plain letter or A4 paper when you are prompted.
    e. Touch the OK button to begin the cleaning process.

        The product prints the first side and then prompts you to remove the page from the output bin and reload it in Tray 1, keeping the same orientation. Wait until the process is complete. Discard the page that prints.
5. Print a configuration page to test the product.
    a. From the Home screen on the product control panel, touch the Setup button.
    b. Touch the Reports menu.
    c. Touch the Configuration Report button.

If none of these steps resolves the problem, the product might need service. Contact HP customer support.

Prevent paper jams

To reduce the number of paper jams, try these solutions.

1. Use only paper that meets HP specifications for this product.
2. Use paper that is not wrinkled, folded, or damaged. If necessary, use paper from a different package.
3. Use paper that has not previously been printed or copied on.
4. Make sure the tray is not overfilled. If it is, remove the entire stack of paper from the tray, straighten the stack, and then return some of the paper to the tray.
5. Make sure the paper guides in the tray are adjusted correctly for the size of paper. Adjust the guides so they are touching the paper stack without bending it.
6. Make sure that the tray is fully inserted in the product.
7. If you are printing on heavy, embossed, or perforated paper, use the manual feed feature and feed sheets one at a time.
8. Verify that the tray is configured correctly for the paper type and size.
9. Make sure the printing environment is within recommended specifications.

Clear jams from the input tray

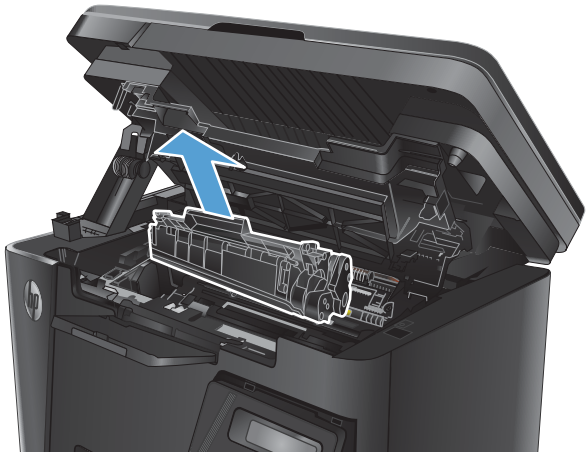
A **Jam in tray 1. Clear Jam and press [OK]** message displays on the product control panel.

1. Remove any loose paper from the input tray.

2. Lift the scanner assembly.

3. Open the top cover.

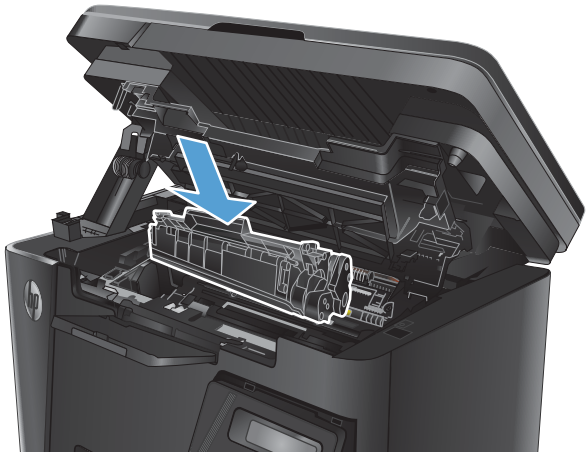
4. Remove the toner cartridge.



5. Remove any jammed paper visible in the input tray area. Use both hands to remove jammed paper to avoid tearing the paper.

6. Remove any jammed paper from the toner-cartridge area.

7. Reinsert the toner cartridge.



8. Close the top cover.

9. Lower the scanner assembly.

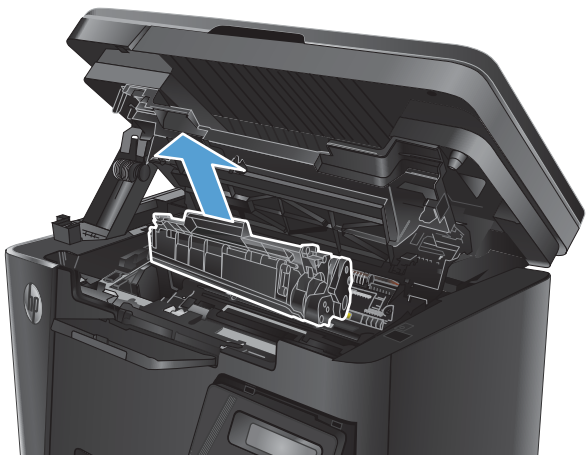
Clear jams in the toner-cartridge area

A **Jam in cartridge area** message displays on the product control panel.

1. Lift the scanner assembly.

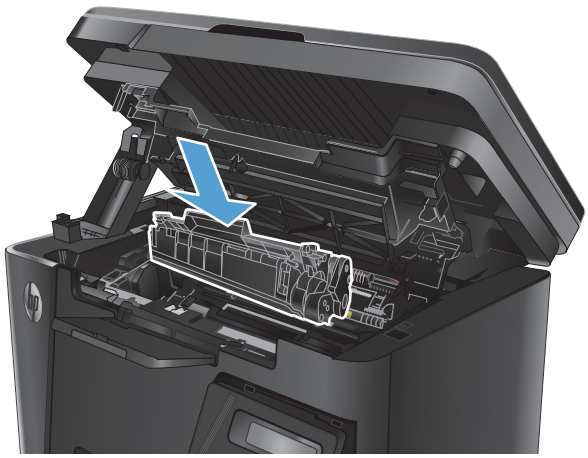
2. Open the top cover.

3. Remove the toner cartridge.



4. Remove any jammed paper from the toner-cartridge area. Use both hands to remove jammed paper to avoid tearing the paper.

5. Reinsert the toner cartridge.



6. Close the top cover.

7. Lower the scanner assembly.

Clear jams in the output bin

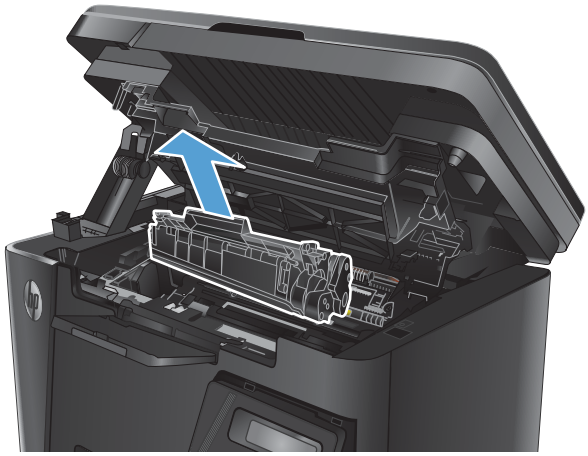
A **Jam in output bin** message displays on the product control panel.

1. Lift the scanner assembly.

2. Open the top cover.

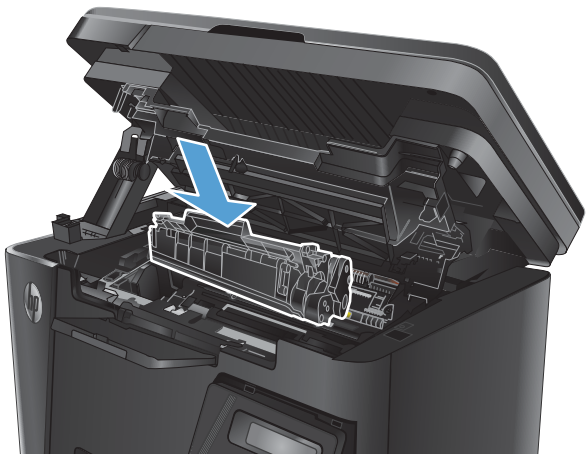
3. Remove any jammed paper from the output bin area. Use both hands to remove jammed paper to avoid tearing the paper.

4. Remove the toner cartridge.



5. Remove any jammed paper from the toner-cartridge area.

6. Reinsert the toner cartridge.



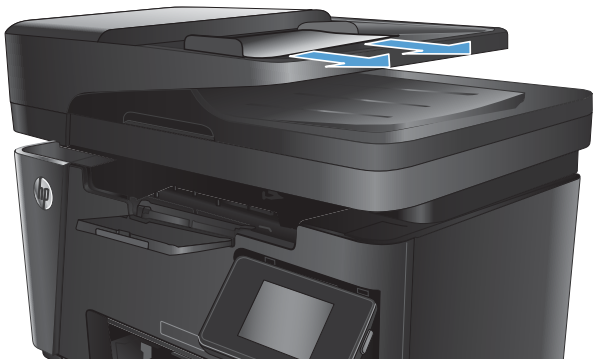
7. Close the top cover.

8. Lower the scanner assembly.

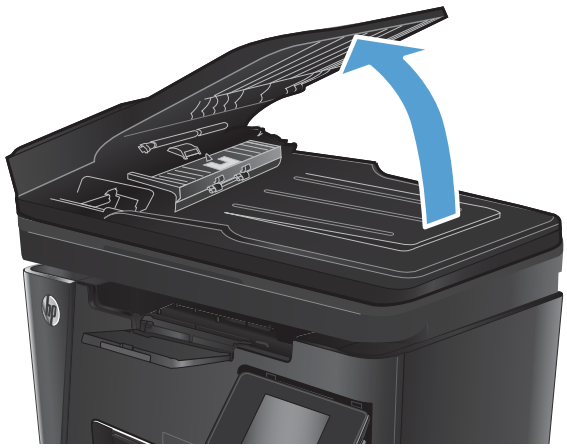
Clear jams in the document feeder

A **Jam in the document feeder** message displays on the product control panel.

1. Remove any loose paper from the input tray of the document feeder.
2. Remove any jammed paper visible in the input tray area. Use both hands to remove jammed paper to avoid tearing the paper.



3. Lift the document-feeder input tray.

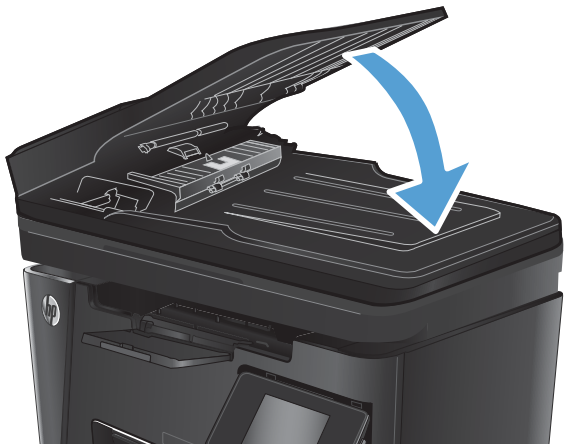


4. Lift the jam-access cover in the document feeder.

5. Remove any jammed paper.

6. Close the jam-access cover.

7. Close the document-feeder input tray.



Solve paper-handling problems

The following problems with paper cause print-quality deviations, jamming, or damage to the product.

Problem	Cause	Solution
Poor print quality or toner adhesion	The paper is too moist, too rough, too heavy or too smooth, is embossed, or from a faulty paper lot.	Try another kind of paper, between 100 and 250 Sheffield, with 4% to 6% moisture content.
Dropouts, jamming, or curl	The paper has been stored incorrectly.	Store paper flat in its moisture-proof wrapping.
	The paper has variability from one side to the other.	Turn the paper over.
Excessive curl	The paper is too moist, has the wrong grain direction, or is of short-grain construction.	Use long-grain paper.
	The paper varies from side-to-side.	Turn the paper over.
Jamming, damage to product	The paper has cutouts or perforations.	Use paper that is free of cutouts or perforations.
Problems with feeding	The paper has ragged edges.	Use high-quality paper that is made for laser printers.
	The paper varies from side-to-side.	Turn the paper over.
	The paper is too moist, too rough, too heavy or too smooth, has the wrong grain direction, is of short-grain construction, or it is embossed, or from a faulty paper lot.	Try another kind of paper, between 100 and 250 Sheffield, 4% to 6% moisture content.
		Use long-grain paper.
Print is skewed (crooked).	The paper guides might be incorrectly adjusted.	Remove all paper from the input tray, straighten the stack, and then load the paper in the input tray again. Adjust the paper guides to the width and length of the paper that you are using and try printing again.
More than one sheet feeds at one time.	The paper tray might be overloaded.	Remove some of the paper from the tray.
	The paper might be wrinkled, folded, or damaged.	Verify that the paper is not wrinkled, folded, or damaged. Try printing on paper from a new or different package.
The product does not pull paper from the input tray.	The product might be in manual-feed mode.	At the computer, follow the on-screen instructions to deactivate manual-feed mode. Or, at the product, open and close the toner-cartridge door.
	The pickup roller might be dirty or damaged.	Replace the roller.
	The paper-length adjustment control in the input tray is set at a length that is greater than the paper size.	Set the paper-length adjustment control to the correct length.

Solve image-quality problems

You can prevent most print-quality problems by following these guidelines.

- Use paper that meets HP specifications.
- Clean the product as necessary.

General print-quality issues

The following examples depict letter-size paper that has passed through the product short-edge-first. These examples illustrate problems that would affect all of the pages that you print. The topics that follow list the typical cause and solution for each of these examples.

Table 2-21 General print-quality issues

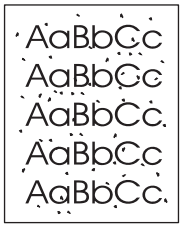
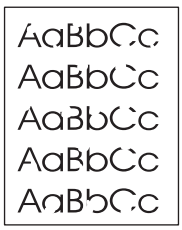
Problem	Cause	Solution
Print is light or faded. 	The paper might not meet HP specifications.	Use paper that meets HP specifications.
	The toner cartridge might be defective or low. If you use a non-HP toner cartridge, no messages appear on the product control panel.	Replace the toner cartridge. If the toner cartridge is not low or empty, inspect the toner roller to see if the roller is damaged. If it is, replace the toner cartridge.
	If the whole page is light, the print density adjustment is too light or EconoMode might be turned on.	Adjust the print density, and disable EconoMode in the print driver.
Toner specks appear. 	The paper might not meet HP specifications.	Use paper that meets HP specifications.
	The paper path might need cleaning.	Clean the paper path.
Dropouts appear. 	A single sheet of paper might be defective.	Try reprinting the job.
	The moisture content of the paper is uneven or the paper has moist spots on its surface.	Try different paper, such as high-quality paper that is intended for laser printers.
	The paper lot is flawed. The manufacturing processes can cause some areas to reject toner.	
	The toner cartridge might be defective or low.	Replace the toner cartridge.

Table 2-21 General print-quality issues (continued)

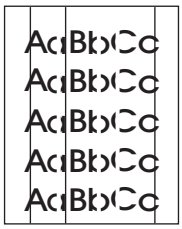
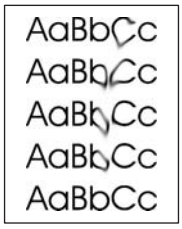
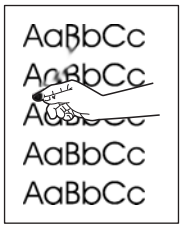
Problem	Cause	Solution
Vertical streaks or bands appear on the page. 	The toner cartridge might be defective.	Replace the toner cartridge.
The amount of background toner shading becomes unacceptable. 	The paper might not meet HP specifications.	Use a different paper with a lighter basis weight.
	The print-density setting is too high.	Decrease the print-density setting. This decreases the amount of background shading.
	Very dry (low humidity) conditions can increase the amount of background shading.	Check the product environment.
	The toner cartridge might be defective or low.	Replace the toner cartridge.
Toner smears appear on the paper. 	The paper might not meet HP specifications.	Use paper that meets HP specifications.
	If toner smears appear on the leading edge of the paper, the paper guides are dirty, or debris has accumulated in the print path.	Clean the paper guides and the paper path.
	The toner cartridge might be defective.	Replace the toner cartridge.
	The fuser temperature might be too low.	In the print driver, make sure the appropriate paper type is selected.
The toner smears easily when touched. 	The product is not set to print on the type of paper on which you want to print.	In the print driver, select the **Paper/Quality** tab and set **Paper Type** to match the type of paper on which you are printing. Print speed might be slower if you are using heavy paper.
	The paper might not meet HP specifications.	Use paper that meets HP specifications.
	The paper path might need cleaning.	Clean the paper path.
	The power source might be defective.	Plug the product directly into an AC outlet instead of into a power strip.
	The fuser temperature might be too low.	In the print driver, make sure the appropriate paper type is selected.

Table 2-21 General print-quality issues (continued)

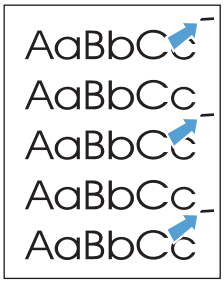
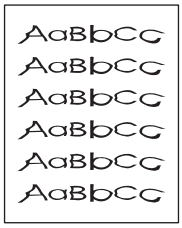
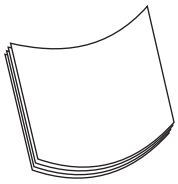
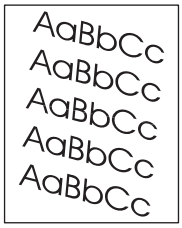
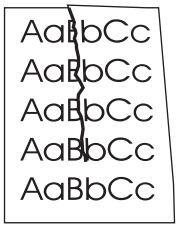
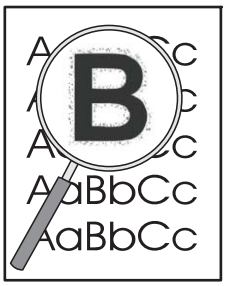
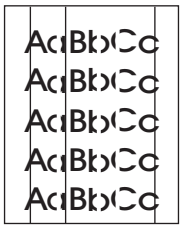
Problem	Cause	Solution
Marks repeatedly appear at even intervals on the page. 	The product is not set to print on the type of paper on which you want to print.	In the print driver, select the **Paper/Quality** tab and set **Paper Type** to match the type of paper on which you are printing. Print speed might be slower if you are using heavy paper.
	Internal parts might have toner on them.	The problem typically corrects itself after a few more pages.
	The paper path might need cleaning.	Clean the paper path.
	A component might be damaged.	Use the repetitive defect ruler table to determine the problem.
The printed page contains misformed characters. 	The paper might not meet HP specifications.	Use a different paper, such as high-quality paper that is intended for laser printers.
	If characters are incorrectly formed so that they produce a wavy effect, the laser/scanner might need service.	Replace the laser/scanner.
The printed page is curled or wavy. 	The product is not set to print on the type of paper on which you want to print.	In the print driver, select the **Paper/Quality** tab and set **Paper Type** to match the type of paper on which you are printing. Print speed might be slower if you are using heavy paper. If the problem persists, select a paper type that uses a lower fuser temperature, such as transparencies or light paper.
	The paper might have been in the input tray too long.	Turn over the stack of paper in the tray. Also, try rotating the paper 180° in the input tray.
	The paper might not meet HP specifications.	Use a different paper, such as high-quality paper that is intended for laser printers.
	Both high temperature and humidity can cause paper curl.	Check the product environment.
	The fuser temperature might be curling the paper.	Select a paper type that uses a lower fuser temperature, such as transparencies or light paper. At the product control panel, turn on the **Less paper curl** setting in the **Service** menu.

Table 2-21 General print-quality issues (continued)

Problem	Cause	Solution
Text or graphics are skewed on the printed page. 	The paper might be loaded incorrectly or the input tray might be too full.	Verify that the paper is loaded correctly and that the paper guides are not too tight or too loose against the stack.
	The paper might not meet HP specifications.	Use a different paper, such as high-quality paper that is intended for laser printers.
The printed page contains wrinkles or creases. 	The paper might be loaded incorrectly or the input tray might be too full.	Turn over the stack of paper in the input tray, or try rotating the paper 180° in the input tray. Verify that the paper is loaded correctly and that the paper guides are not too tight or too loose against the stack.
	There might be a jam in the paper path.	Clear any jams in the product.
	The paper might not meet HP specifications.	Use a different paper, such as high-quality paper that is intended for laser printers.
	Air pockets inside envelopes can cause them to wrinkle.	Remove the envelope, flatten it, and try printing again.
Toner appears around the printed characters. 	The paper might be loaded incorrectly.	Turn over the stack of paper in the tray.
	If large amounts of toner have scattered around the characters, the paper might have high resistivity.	Use a different paper, such as high-quality paper that is intended for laser printers.
An image that appears at the top of the page (in solid black) repeats farther down the page (in a gray field). 	Software settings might affect image printing.	In your software program, change the tone (darkness) of the field in which the repeated image appears. In your software program, rotate the whole page 180° to print the lighter image first.
	The order of images printed might affect printing.	Change the order in which the images are printed. For example, have the lighter image at the top of the page, and the darker image farther down the page.
	A power surge might have affected the product.	If the defect occurs later in a print job, turn the product off for 10 minutes, and then turn on the product to restart the print job.

Copy print-quality problems

Table 2-22 Copy print-quality problems

Problem	Cause	Solution
Images are missing or faded.	The toner cartridge might be defective or low.	Replace the toner cartridge.
	The original might be of poor quality.	If your original is too light or damaged, the copy might not be able to compensate, even if you adjust the contrast. If possible, find an original document in better condition.
	The contrast settings might be set incorrectly.	Use the control-panel to change the contrast setting.
	The original might have a colored background.	Colored backgrounds might cause images in the foreground to blend into the background, or the background might appear in a different shade. If possible, use an original document without a colored background.
Vertical white or faded stripes appear on the copy. 	The paper might not meet HP specifications.	Use paper that meets HP specifications.
	The toner cartridge might be defective or low.	Replace the toner cartridge.
Unwanted lines appear on the copy. 	The document feeder scanning strip might be dirty.	Clean the document feeder scanning strip.
	The photosensitive drum inside the toner cartridge might have been scratched.	Replace the toner cartridge.
Black dots or streaks appear on the copy.	Ink, glue, correction fluid, or an unwanted substance might be on the document feeder.	Clean the document feeder scanning strip.
	The power to the product might have fluctuated.	Reprint the job.
Copies are too light or dark.	The print driver or product software settings might be incorrect.	Verify that the quality settings are correct. See the product software Help for more information about changing the settings.
Text is unclear.	The print driver or product software settings might be incorrect.	Verify that the quality settings are correct. Verify that the EconoMode setting is off. See the product software Help for more information about changing the settings.

Scan-quality problems

Prevent scan-quality problems

The following are a few simple steps you can take to improve copy and scan quality.

- Use high-quality originals.
- Load the paper correctly. If the paper is loaded incorrectly, it might skew, which causes unclear images.
- Adjust the software settings according to how you plan to use the scanned page.
- If your product frequently feeds more than one page at a time, the separation pad might need to be cleaned or replaced.
- Use or make a carrier sheet to protect your originals.

Solve scan-quality problems

Table 2-23 Scan-quality problems

Problem	Cause	Solution
Blank pages	The original might have been loaded upside down.	In the document feeder, put the top end of the stack of originals into the document feeder, with the paper stack face-down and the first page to be scanned on the bottom of the stack.
Too light or dark	The resolution and color levels might be set incorrectly.	Verify that you have the correct resolution and color settings.
Unwanted lines	The document-feeder glass might be dirty.	Clean the scanner strip.
Black dots or streaks	The power to the product might have fluctuated.	Reprint the job.
Unclear text	The resolution levels might be set incorrectly.	Verify that the resolution settings are correct.

Clean the product

Clean the pickup roller and separation pad

If the product is picking up paper incorrectly, cleaning the pickup roller and separation pad might help.

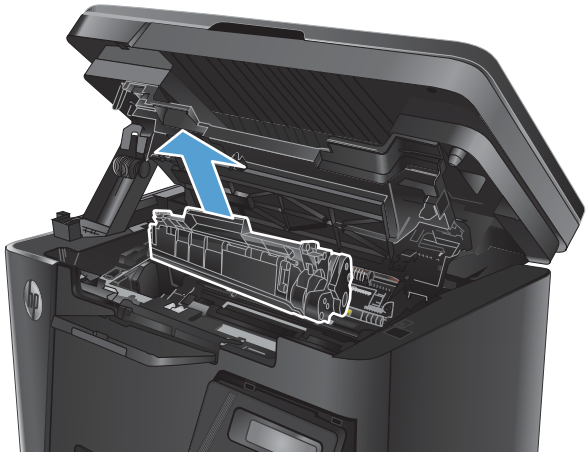
1. Turn the product off, and disconnect the power cable.

2. Remove the paper from the input tray.

3. Lift the scanner assembly.

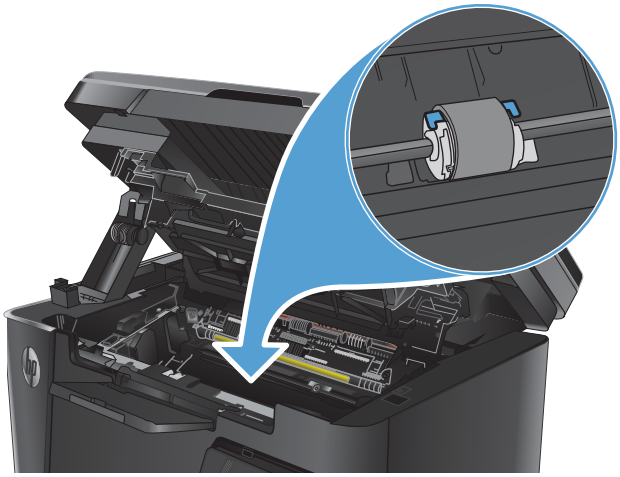
4. Open the top cover.

5. Remove the toner cartridge.

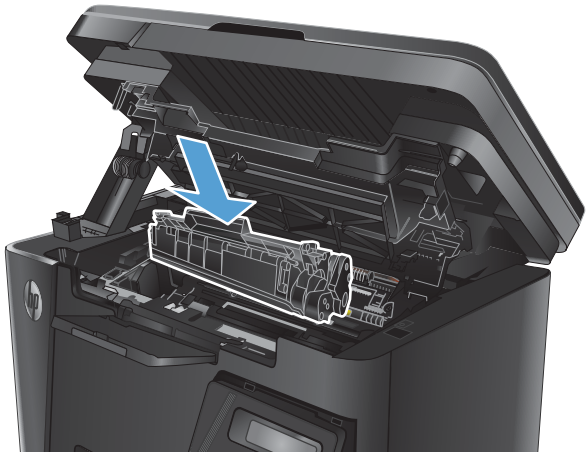


6. Use a moist, lint-free cloth to wipe the pickup roller.

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



7. Align the toner cartridge with the tracks inside the product, and then insert the toner cartridge until it is firmly seated.

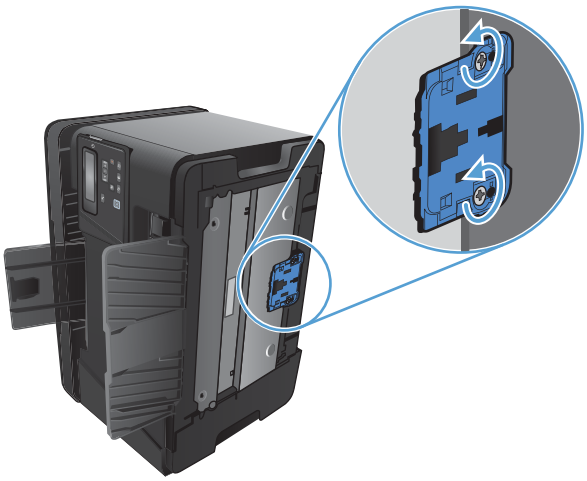


8. Close the top cover.

9. Lower the scanner assembly.

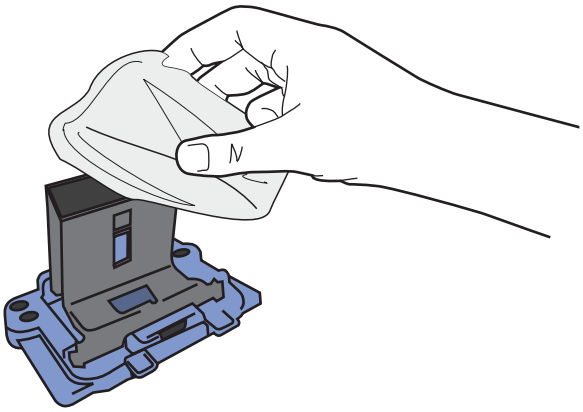
10. Rotate the product onto the left side, so the bottom of the product is visible.

11. Locate the blue, plastic separation pad assembly on the bottom of the product. Remove the two screws, and remove the separation pad assembly.

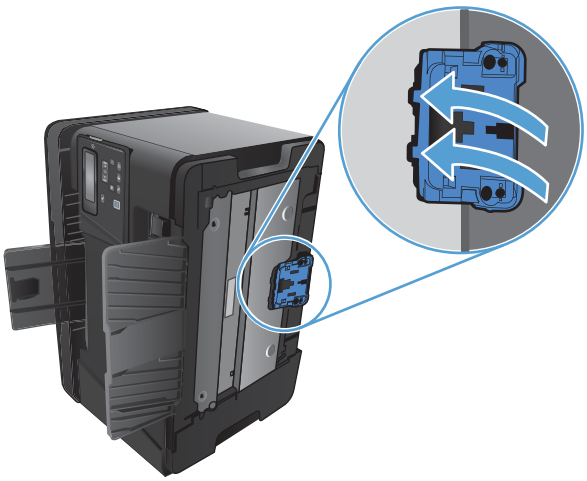


12. Use a moist, lint-free cloth to wipe the top surface of the separation pad.

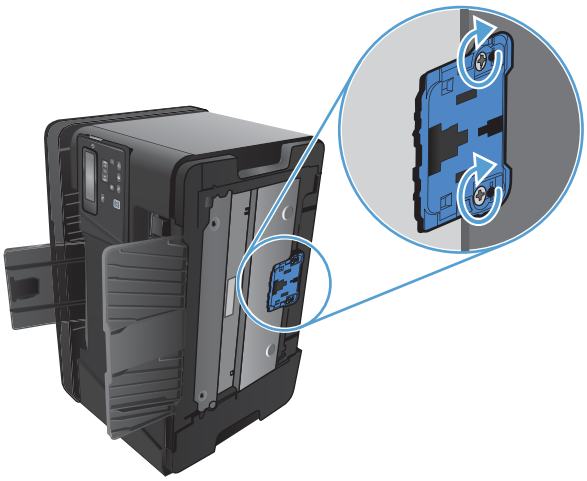
    CAUTION: Do not use abrasives, acetone, benzene, ammonia, ethyl alcohol, or carbon tetrachloride on any part of the product; these can damage the product. Do not place liquids directly on the product. They might seep and damage the product.



13. Insert the notches on the separation pad assembly into the slots on the bottom of the product.



14. Reinstall the two screws.



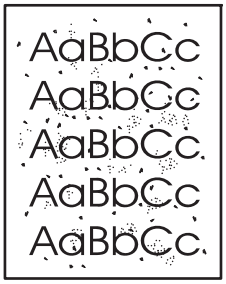
15. Rotate the product to the upright position.

16. Load paper into the input tray.

17. Connect the power cable, and turn the product on.

Clean the paper path

If you are experiencing toner specks or dots on the printouts, clean the paper path.



LCD control panel

1. From the product control panel, press the Setup button.
2. Open the **Service** menu.
3. Use the arrow keys to select the **Cleaning mode** option, and then press the OK button.

   The product prints the first side and then prompts you to remove the page from the output bin and reload it in Tray 1, keeping the same orientation. Wait until the process is complete. Discard the page that prints.

Touchscreen control panel

1. From the Home screen on the product control panel, touch the Setup button.
2. Touch the Service menu.
3. Touch the Cleaning Page button.
4. Load plain letter or A4 paper when you are prompted.
5. Touch the OK button to begin the cleaning process.

   The product prints the first side and then prompts you to remove the page from the output bin and reload it in Tray 1, keeping the same orientation. Wait until the process is complete. Discard the page that prints.

Clean the toner-cartridge area

You do not need to clean the toner-cartridge area often. However, cleaning this area can improve the quality of the printed sheets.

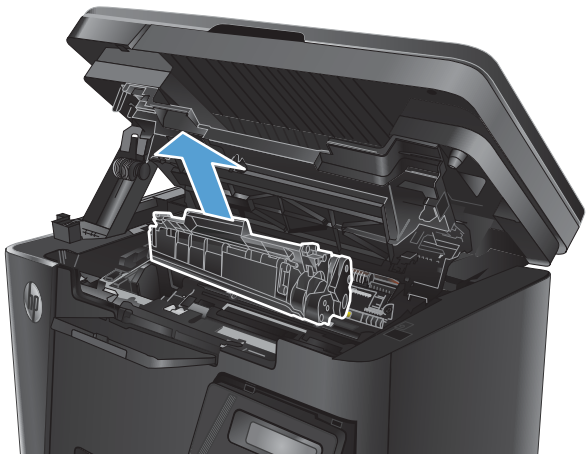
1. Turn the product off, and disconnect the power cable.

2. Remove the paper from the input tray.

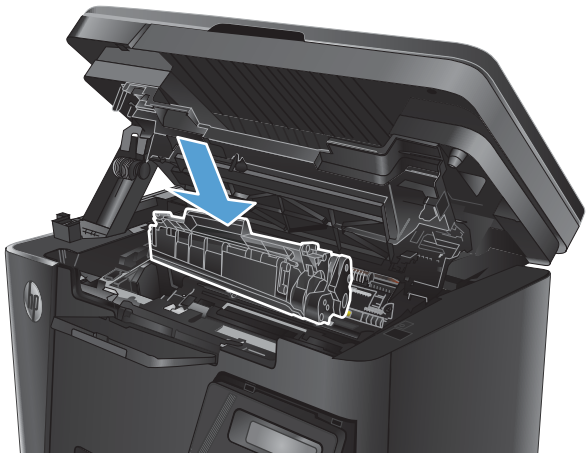
3. Lift the scanner assembly.

4. Open the top cover.

5. Remove the toner cartridge.



6. Use a dry, lint-free cloth to clean the toner-cartridge cavity.
7. Align the toner cartridge with the tracks inside the product, and then insert the toner cartridge until it is firmly seated.



8. Close the top cover.

9. Lower the scanner assembly.

10. Load paper into the input tray.

11. Connect the power cable, and turn the product on.

Clean the exterior

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

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 product 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.

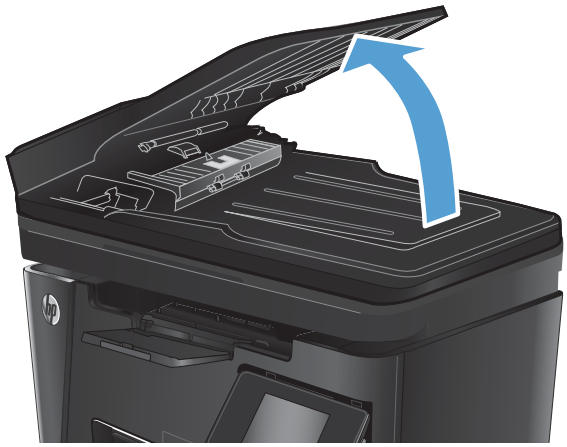
   CAUTION: Do not use abrasives, acetone, benzene, ammonia, ethyl alcohol, or carbon tetrachloride on any part of the product; these can damage the product. Do not place liquids directly on the glass or platen. They might seep and damage the product.

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 product on.

Clean the pickup rollers and separation pad in the document feeder

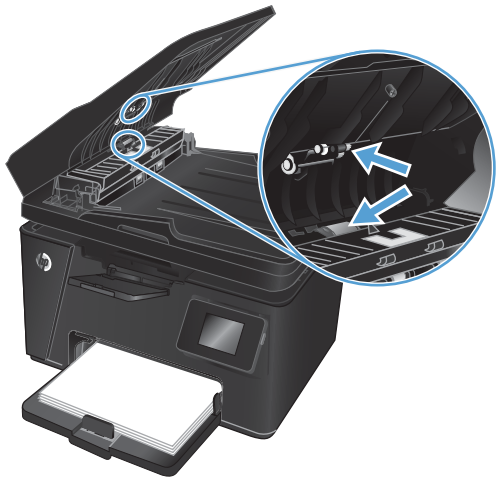
If the document feeder experiences paper-handling problems, such as jams or multiple-page feeds, clean the document-feeder rollers and separation pad.

1. Lift the document-feeder input tray.

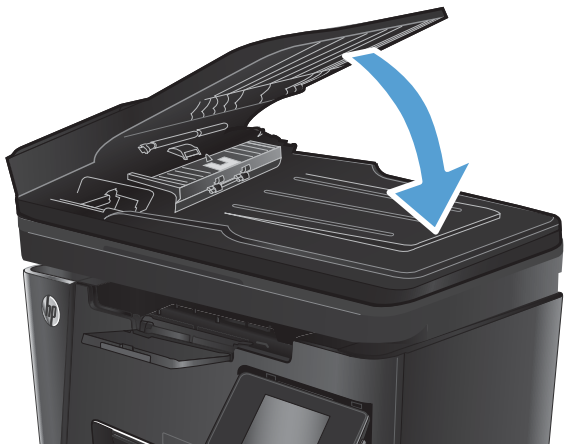


2. Use a moist, lint-free cloth to wipe both pickup rollers and the separation pad to remove dirt.

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



3. Close the document-feeder input tray.



Solve performance problems

Problem	Cause	Solution
Pages print, but are totally blank.	The sealing tape might still be in the toner cartridge.	Verify that the sealing tape has been completely removed from the toner cartridge.
	The document might contain blank pages.	Check the document that you are printing to see if content appears on all of the pages.
	The product might be malfunctioning.	To check the product, print a Configuration page.
Pages print very slowly.	Heavier paper types can slow the print job.	Print on a different type of paper.
	Complex pages can print slowly.	Proper fusing might require a slower print speed to make sure that the best print quality is achieved.
Pages did not print.	The product might not be pulling paper correctly.	Make sure paper is loaded in the tray correctly.
	The paper is jamming in the product.	Clear the jam.
	The USB cable might be defective or incorrectly connected.	• Disconnect the USB cable at both ends and reconnect it. • Try printing a job that has printed in the past. • Try using a different USB cable.
	Other devices are running on your computer.	The product might not share a USB port. If you have an external hard drive or network switchbox that is connected to the same port as the product, the other device might be interfering. To connect and use the product, you must disconnect the other device or you must use two USB ports on the computer.

Solve connectivity problems

Solve direct-connect problems

If you have connected the product directly to a computer, check the USB cable.

- Verify that the USB cable is connected to the computer and to the product.
- Verify that the USB cable is not longer than 2 m (6.5 ft). Replace the cable if necessary.
- Verify that the USB cable is working correctly by connecting it to another product. Connect the cable to another port on the computer. Replace the cable if necessary.

Solve wired network problems

Check the following items to verify that the product is communicating with the network. Before beginning, print a configuration page from the product control panel and locate the product IP address that is listed on this page.

- Poor physical connection
- The computer is using the incorrect IP address for the product
- The computer is unable to communicate with the product
- The product is using incorrect link and duplex settings for the network
- New software programs might be causing compatibility problems
- The computer or workstation might be set up incorrectly
- The product 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 product 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 product, 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 product

1. Open the printer properties and click the **Ports** tab. Verify that the current IP address for the product is selected. The product IP address is listed on the product configuration page.
2. If you installed the product 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 product using a Microsoft standard TCP/IP port, use the hostname instead of the IP address.
4. If the IP address is correct, delete the product and then add it again.

The computer is unable to communicate with the product

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.
   b. Type `ping` followed by the IP address for your product.

      For Mac OS X, open the Network Utility, and then supply the IP address in the correct field in the **Ping** pane.
   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 product, and the computer are all configured for the same network.

The product is using incorrect link and duplex settings for the network

Hewlett-Packard 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 product 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

- Wireless connectivity checklist
- The product does not print after the wireless configuration completes
- The product does not print, and the computer has a third-party firewall installed
- The wireless connection does not work after moving the wireless router or product
- Cannot connect more computers to the wireless product
- The wireless product 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

Wireless connectivity checklist

- Verify that the network cable is not connected.
- Verify that the product and the wireless router are turned on and have power. Also make sure that the wireless radio in the product 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 product as it is for the wireless access point (on networks using WPA security).
- Verify that the product is within the range of the wireless network. For most networks, the product 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 product. Make sure poles, walls, or support columns containing metal or concrete do not separate the product and wireless access point.
- Verify that the product 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 product connect to the same wireless network.
- For Mac OS X, verify that the wireless router supports Bonjour.

The product does not print after the wireless configuration completes

1. Make sure that the product 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 product HP Embedded Web Server from a computer on the network.

The product 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 product or try to print, make sure you allow the programs to run.
3. Temporarily turn off the firewall, and then install the wireless product 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 product

1. Make sure that the router or product 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 product.

Cannot connect more computers to the wireless product

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 product is turned on and in the ready state.
3. Turn off any third-party firewalls on your computer.
4. Make sure that the wireless network is working correctly.
5. Make sure that your computer is working correctly. If necessary, restart the computer.

The wireless product 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.
   b. Type `ping` followed by the router IP address.

      For Mac OS X, open the Network Utility, and then supply the IP address in the correct field in the **Ping** pane.
   c. If the window displays round-trip times, the network is working.
4. Make sure that the router or product 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 product.

Perform a wireless network diagnostic test

From the product control panel, you can run a diagnostic test that provides information about the wireless network settings.

LCD control panel

1. On the product control panel, press the Setup button.
2. Select **Network Setup**, and then select **Wireless Menu**.
3. Select **Network Test**, and then press the OK button. The product prints a test page that shows test results.

Touchscreen control panel

1. From the Home screen on the product control panel, touch the Setup button.
2. Select Network Setup, and then select Wireless Menu.
3. Select Run Network Test. The product 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 products on the network.

Service mode functions

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

LCD control panels

1. Press the Setup button.
2. Simultaneously press the OK button and the left arrow button. The 2ndary Service menu item should be at the top of the list.
3. Use the left and right arrow buttons to navigate through the menu. When finished, press the Cancel button to close the menu.

Touchscreen control panels

1. From the Home screen on the product control panel, touch the Setup button.
2. Simultaneously touch the left arrow button and the Cancel button. The 2ndary Service menu item should be at the top of the list.
3. When finished, press the Cancel button to close the menu.

Secondary service menu structure

NOTE: The order in which the menu items appear in the secondary service menu varies between LCD control panel and touchscreen control panels. The following table might present the menu items in a different order than your product displays them.

Table 2-24 Secondary service menu

Menu item	Sub-menu item	Description
Service Reports	**Cont. Self-Test**	This item prints a continuous configuration page.
Location (touchscreen control panels only)	A list of available locations appears	This item sets certain product 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 product automatically restarts after you change the location.
LED Test (touchscreen control panels only)		This item tests the LEDs on the product control panel. Each LED turns on in sequence. Touch the OK button to continue to the next LED.

Table 2-24 Secondary service menu (continued)

Menu item	Sub-menu item	Description
Display test (LCD control panels)		This test verifies that the LEDs and characters on the control-panel display function correctly. At the beginning of the test, each of the LEDs is turned on one-at-time. Press the OK button to continue to the next LED. After the LED test is complete, the product tests the display by turning off all the pixels on the screen and then turning them on.
Display test (touchscreen control panels)		This item tests the pixels on the control-panel display. The screen shows solid colors in the following sequence: white, black, red, green, blue. Touch the OK button to continue to the next screen color.
Button test		This test verifies that the control-panel buttons function correctly. The display prompts you to press each button.
Show FW version		Use this item to display the version of the firmware installed on the product.
Cal Graphs	**Mono** **Red** **Green** **Blue**	Use this item to print scan calibration graphs for different scan colors. For each color, select from a list of scan resolutions and scan stages. **Resolutions** • 300 • 600 • 1200 **Scan stages** • Before Offset • After Offset • Before PRNU • After PRNU • Before DSNU • After DSNU • Before Exposure • After Exposure • Corrected
File System Format (fax models only)		This items completely reformats the fax file system. All fax pages, fax phonebook entries, blocked fax list entries, and fax log entries are overwritten.

Product resets

Restore factory settings

Restoring the factory-set defaults returns most of the settings to the factory defaults. It will not reset the page count or tray size, but it might reset the language. To restore the product to the factory-default settings, follow these steps.

1. **LCD control panels:** Press the Setup button to open the Setup menu.

   Touchscreen control panels: Touch the Setup button to open the Setup menu.

2. Open the **Service** menu.
3. Select the **Restore defaults** item, and then press the OK button.

   The product 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 product. Uninstall and then reinstall the product software on the computers.

LCD control panels

1. Turn the product off.
2. Press the right arrow button. Hold this button as you turn the product on.
3. When **Permanent storage init.** appears on the display, release the right arrow button.

Touchscreen control panels

1. Turn the product off.
2. Touch and hold the lower-right quadrant of the touchscreen as you turn the product on.
3. When **Permanent storage init.** appears on the display, release the touchscreen.

When the product has finished the NVRAM initialization, it returns to the Ready state.

Solve fax problems

- Check the hardware setup
- Faxes are sending slowly
- Fax quality is poor
- Fax cuts off or prints on two pages

Check the hardware setup

- 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 product is connected directly to the wall phone port. Disconnect all other devices that are connected to the product.

1. Verify that the telephone cord is connected to the correct port on the back of the product.
2. Check the phone line by using the fax test:

LCD control panel	Touchscreen control panel
1. On the product control panel, press the Setup button. 2. Select **Service**, and then select **Run Fax Test**. The product prints a fax test report.	1. From the Home screen on the product control panel, touch the Setup button. 2. Select Service, and then select Fax Service. 3. Select Run Fax Test. The product 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 product firmware is current:
   a. Go to www.hp.com/support.
   b. Click **Drivers & Software**, type your product number in the window, and then click **Search**. If necessary, click your model in a list of similar products.

      The **Software & Driver Downloads** page opens.
   c. Select your operating system from the drop-down menu, and then click **Next**.
   d. Click the plus sign next to **Firmware**, and then click **HP LaserJet Firmware Update Utility**.
   e. Click **Download**.

f. When the download is complete, follow the on-screen instructions to install and run the utility.

   The utility checks for firmware updates for your HP product. If updates are found, the utility installs the available update.

g. When firmware updates are complete, try to resend the fax.

4. Verify that the fax was set up when the product 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.

NOTE: HP products are designed specifically for use with analog phone services.

- 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 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 product. 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.

6. If the error persists, find more detailed problem-solving solutions in the sections that follow this one.

Faxes are sending slowly

The product 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.
- Use white paper for the original. Do not use colors such as gray, yellow, or pink.
- Divide large fax jobs into smaller sections, and then fax them individually.
- Turn off the Error Correction setting.

LCD control panel	Touchscreen control panel
1. On the product control panel, press the Setup button. 2. Select **Fax Setup**, and then select **All Faxes**. 3. Select **Error Correction**, and then select **Off**.	1. From the Home screen on the product control panel, touch the Setup button. 2. Select Service, and then select Fax Service. 3. Select Error Correction, and then select Off.

NOTE: Turning off Error Correction can reduce image quality.

- Increase the Fax Speed setting.

LCD control panel	Touchscreen control panel
1. On the product control panel, press the Setup button. 2. Select **Fax Setup**, and then select **All Faxes**. 3. Select **Fax Speed**, and then select the correct setting.	1. From the Home screen on the product control panel, touch the Setup button. 2. Select Fax Setup, and then select Advanced Setup. 3. Select Fax Speed, and then select the correct setting.

- Change the fax settings on the control panel to a lower resolution.

NOTE: Higher resolution faxes can take longer to send than lower resolution faxes.

LCD control panel	Touchscreen control panel
1. On the product control panel, press the Setup button. 2. Select **Fax Setup**, and then select **Fax Send Setup**. 3. Select **Def. Resolution**, and then select the correct setting.	1. From the Home screen on the product control panel, touch the Setup button. 2. Select Fax Setup, and then select Advanced Setup. 3. Select Fax Resolution, and then select the correct setting.

Fax quality is poor

Fax is blurry or too light.

- Increase fax resolution when sending faxes. Resolution does not affect received faxes.

LCD control panel	Touchscreen control panel
1. On the product control panel, press the Setup button. 2. Select **Fax Setup**, and then select **Fax Send Setup**. 3. Select **Def. Resolution**, and then select the correct setting.	1. From the Home screen on the product control panel, touch the Setup button. 2. Select Fax Setup, and then select Advanced Setup. 3. Select Fax Resolution, and then select the correct setting.

NOTE: Increasing resolution slows transmission speed.

- Turn on the Error Correction setting from the control panel.

LCD control panel	Touchscreen control panel
1. On the product control panel, press the Setup button. 2. Select **Fax Setup**, and then select **All Faxes**. 3. Select **Error Correction**, and then select **On**.	1. From the Home screen on the product control panel, touch the Setup button. 2. Select Service, and then select Fax Service. 3. Select Error Correction, and then select On.

- Check the toner cartridges and replace the cartridge 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.

LCD control panel	Touchscreen control panel
1. On the product control panel, press the Setup button. 2. Select **System Setup**, and then select **Paper Setup**. 3. Select **Def. Paper Size**, and then select the correct setting.	1. From the Home screen on the product control panel, touch the Setup button. 2. Select System Setup, and then select Paper Setup. 3. Select Paper Size, and then 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.

LCD control panel	Touchscreen control panel
1. On the product control panel, press the Setup button. 2. Select **Fax Setup**, and then select **Recv. Fax Setup**. 3. Select **Fit to Page**, and then select **On**.	1. From the Home screen on the product control panel, touch the Setup button. 2. Select Fax Setup, and then select Advanced Setup. 3. Select Fit to Page, and then select On.

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.

Product updates

Go to www.hp.com/support/ljMFPM125series, www.hp.com/support/ljMFPM126series, www.hp.com/support/ljMFPM127series, or www.hp.com/support/ljMFPM128series for HP's all-inclusive help for your product:

- Solve problems.
- Download software updates.
- Join support forums.
- Find warranty and regulatory information.

A Service and support

- Hewlett-Packard limited warranty statement
- HP's Premium Protection Warranty: LaserJet toner cartridge limited warranty statement
- HP policy on non-HP supplies
- HP anticounterfeit Web site
- Data stored on the toner cartridge
- End User License Agreement
- OpenSSL
- Customer self-repair warranty service
- Customer support

Hewlett-Packard limited warranty statement

HP PRODUCT	DURATION OF LIMITED WARRANTY
HP LaserJet Pro MFP M125, M126, M127, M128	One-year limited warranty

HP warrants to you, the end-user customer, that HP hardware and accessories will be free from defects in materials and workmanship after the date of purchase, for the period specified above. If HP receives notice of such defects during the warranty period, HP will, at its option, either repair or replace products which prove to be defective. Replacement products may be either new or equivalent in performance to new.

HP warrants to you that HP software will not fail to execute its programming instructions after the date of purchase, for the period specified above, due to defects in material and workmanship when properly installed and used. If HP receives notice of such defects during the warranty period, HP will replace software which does not execute its programming instructions due to such defects.

HP does not warrant that the operation of HP products will be uninterrupted or error free. If HP is unable, within a reasonable time, to repair or replace any product to a condition as warranted, you will be entitled to a refund of the purchase price upon prompt return of the product.

HP products may contain remanufactured parts equivalent to new in performance or may have been subject to incidental use.

Warranty does not apply to defects resulting from (a) improper or inadequate maintenance or calibration, (b) software, interfacing, parts or supplies not supplied by HP, (c) unauthorized modification or misuse, (d) operation outside of the published environmental specifications for the product, or (e) improper site preparation or maintenance.

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HP's limited warranty is valid in any country/region or locality where HP has a support presence for this product and where HP has marketed this product. The level of warranty service you receive may vary according to local standards. HP will not alter form, fit or function of the product to make it operate in a country/region for which it was never intended to function for legal or regulatory reasons.

TO THE EXTENT ALLOWED BY LOCAL LAW, THE REMEDIES IN THIS WARRANTY STATEMENT ARE YOUR SOLE AND EXCLUSIVE REMEDIES. EXCEPT AS INDICATED ABOVE, IN NO EVENT WILL HP OR ITS SUPPLIERS BE LIABLE FOR LOSS OF DATA OR FOR DIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFIT OR DATA), OR OTHER DAMAGE, WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE. Some countries/regions, states or provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

THE WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT OR MODIFY AND ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.

HP's Premium Protection Warranty: LaserJet toner cartridge limited warranty statement

This HP product is warranted to be free from defects in materials and workmanship.

This warranty does not apply to products that (a) have been refilled, refurbished, remanufactured or tampered with in any way, (b) experience problems resulting from misuse, improper storage, or operation outside of the published environmental specifications for the printer product or (c) exhibit wear from ordinary use.

To obtain warranty service, please return the product to place of purchase (with a written description of the problem and print samples) or contact HP customer support. At HP's option, HP will either replace products that prove to be defective or refund your purchase price.

TO THE EXTENT ALLOWED BY LOCAL LAW, THE ABOVE WARRANTY IS EXCLUSIVE AND NO OTHER WARRANTY OR CONDITION, WHETHER WRITTEN OR ORAL, IS EXPRESSED OR IMPLIED AND HP SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY, AND FITNESS FOR A PARTICULAR PURPOSE.

TO THE EXTENT ALLOWED BY LOCAL LAW, IN NO EVENT WILL HP OR ITS SUPPLIERS BE LIABLE FOR DIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFIT OR DATA), OR OTHER DAMAGE, WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE.

THE WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT OR MODIFY AND ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.

HP policy on non-HP supplies

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

NOTE: For HP printer products, the use of a non-HP toner cartridge or a refilled toner cartridge does not affect either the warranty to the customer or any HP support contract with the customer. However, if product failure or damage is attributable to the use of a non-HP toner cartridge or refilled toner cartridge, HP will charge its standard time and materials charges to service the product for the particular failure or damage.

HP anticounterfeit Web site

Go to www.hp.com/go/anticounterfeit when you install an HP toner cartridge and the control-panel message says the cartridge is non-HP. HP will help determine if the cartridge is genuine and take steps to resolve the problem.

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

- The supplies status page indicates that a non-HP supply is installed.
- You are experiencing a high number of problems with the cartridge.
- The cartridge does not look like it usually does (for example, the packaging differs from HP packaging).

Data stored on the toner cartridge

The HP toner cartridges used with this product contain a memory chip that assists in the operation of the product.

In addition, this memory chip collects a limited set of information about the usage of the product, which might include the following: the date when the toner cartridge was first installed, the date when the toner cartridge was last used, the number of pages printed using the toner cartridge, the page coverage, the printing modes used, any printing errors that might have occurred, and the product model. This information helps HP design future products to meet our customers' printing needs.

The data collected from the toner cartridge memory chip does not contain information that can be used to identify a customer or user of the toner cartridge or their product.

HP collects a sampling of the memory chips from toner cartridges returned to HP's free return and recycling program (HP Planet Partners: www.hp.com/recycle). The memory chips from this sampling are read and studied in order to improve future HP products. HP partners who assist in recycling this toner cartridge might have access to this data, as well.

Any third party possessing the toner cartridge might have access to the anonymous information on the memory chip.

End User License Agreement

PLEASE READ CAREFULLY BEFORE USING THIS SOFTWARE PRODUCT: This End-User License Agreement ("EULA") is a contract between (a) you (either an individual or the entity you represent) and (b) Hewlett-Packard Company ("HP") that governs your use of the software product ("Software"). This EULA does not apply if there is a separate license agreement between you and HP or its suppliers for the Software, including a license agreement in online documentation. The term "Software" may include (i) associated media, (ii) a user guide and other printed materials, and (iii) "online" or electronic documentation (collectively "User Documentation").

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11. RESERVATION OF RIGHTS. HP and its suppliers reserve all rights not expressly granted to you in this EULA.

Rev. 04/09

OpenSSL

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/)

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This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

Customer self-repair warranty service

HP products are designed with many Customer Self Repair (CSR) parts to minimize repair time and allow for greater flexibility in performing defective parts replacement. If during the diagnosis period, HP identifies that the repair can be accomplished by the use of a CSR part, HP will ship that part directly to you for replacement. There are two categories of CSR parts: 1) Parts for which customer self repair is mandatory. If you request HP to replace these parts, you will be charged for the travel and labor costs of this service. 2) Parts for which customer self repair is optional. These parts are also designed for Customer Self Repair. If, however, you require that HP replace them for you, this may be done at no additional charge under the type of warranty service designated for your product.

Based on availability and where geography permits, CSR parts will be shipped for next business day delivery. Same-day or four-hour delivery may be offered at an additional charge where geography permits. If assistance is required, you can call the HP Technical Support Center and a technician will help you over the phone. HP specifies in the materials shipped with a replacement CSR part whether a defective part must be returned to HP. In cases where it is required to return the defective part to HP, you must ship the defective part back to HP within a defined period of time, normally five (5) business days. The defective part must be returned with the associated documentation in the provided shipping material. Failure to return the defective part may result in HP billing you for the replacement. With a customer self repair, HP will pay all shipping and part return costs and determine the courier/carrier to be used.

Customer support

Get telephone support for your country/region Have the product name, serial number, date of purchase, and problem description ready.	Country/region phone numbers are on the flyer that was in the box with your product or at www.hp.com/support/.
Get 24-hour Internet support	www.hp.com/support/ljMFPM125series, www.hp.com/support/ljMFPM126series, www.hp.com/support/ljMFPM127series, or www.hp.com/support/ljMFPM128series
Download software utilities, drivers, and electronic information	www.hp.com/go/ljMFPM125series_software, www.hp.com/go/ljMFPM126series_software, www.hp.com/go/ljMFPM127series_software, or www.hp.com/go/ljMFPM128series_software
Order additional HP service or maintenance agreements	www.hp.com/go/carepack
Register your product	www.register.hp.com

B Product specifications

- Physical specifications
- Power consumption, electrical specifications, and acoustic emissions
- Environmental specifications

Physical specifications

Table B-1 Physical specifications

Product	Height	Depth	Width	Weight
M125a, M125r, M125ra	254 mm (10 in)	379 mm (14.9 in)	420 mm (16.5 in)	8.2 kg (18.1 lb)
M125nw, M125rnw, M126nw	254 mm (10 in)	379 mm (14.9 in)	420 mm (16.5 in)	8.3 kg (18.3 lb)
M127fn, M128fn	309 mm (12.2 in)	379 mm (14.9 in)	420 mm (16.5 in)	9.1 kg (20.1 lb)
M127fp, M128fp	309 mm (12.2 in)	379 mm (14.9 in)	508 mm (20 in)	9.5 kg (20.9 lb)
M127fw, M128fw	309 mm (12.2 in)	379 mm (14.9 in)	420 mm (16.5 in)	9.2 kg (20.3 lb)

Table B-2 Product dimensions with input tray opened

Product	Height	Depth	Width
M125a, M125r, M125ra, M125rnw, M125nw, M126nw	254 mm (10 in)	438 mm (17.2 in)	420 mm (16.5 in)
M127fn, M127fw, M128fn, M128fw	309 mm (12.2 in)	438 mm (17.2 in)	420 mm (16.5 in)
M127fp, M128fp	309 mm (12.2 in)	438 mm (17.2 in)	508 mm (20 in)

Power consumption, electrical specifications, and acoustic emissions

See www.hp.com/support/ljMFPM125series, www.hp.com/support/ljMFPM126series, www.hp.com/support/ljMFPM127series, or www.hp.com/support/ljMFPM128series for current information.

⚠ **CAUTION:** Power requirements are based on the country/region where the product is sold. Do not convert operating voltages. This will damage the product and void the product warranty.

Environmental specifications

Table B-3 Operating-environment specifications

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)

C Regulatory information

- FCC regulations
- Environmental product stewardship program
- Declaration of conformity (M125a-M125ra)
- Declaration of conformity (M125nw-M126nw)
- Declaration of conformity (M127fn-M128fn)
- Declaration of conformity (M127fp-M128fp)
- Declaration of conformity (M127fw-M128fw)
- Safety statements
- Additional statements for telecom (fax) products
- Additional statements for wireless products

FCC regulations

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If this equipment is not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase separation between equipment and receiver.
- Connect equipment to an outlet on a circuit different from that to which the receiver is located.
- Consult your dealer or an experienced radio/TV technician.

NOTE: Any changes or modifications to the printer that are not expressly approved by HP could void the user's authority to operate this equipment.

Use of a shielded interface cable is required to comply with the Class B limits of Part 15 of FCC rules.

Environmental product stewardship program

Protecting the environment

Hewlett-Packard Company is committed to providing quality products in an environmentally sound manner. This product has been designed with several attributes to minimize impacts on our environment.

Ozone production

The airborne emissions of ozone for this product has been measured according to a generally recognized method* and when these emissions data are applied to a “generic office model exposure scenario”**, HP is able to determine there is no appreciable amount of ozone generated during printing that exceeds any current indoor air quality standards or guidelines.

* Test method for the determination of emissions from hardcopy devices with respect to awarding the environmental label for office devices with printing function; RAL-UZ 171 – BAM July, 2012

** Based on ozone concentration when printing 2 hours per day in a 32 cubic meter room with a ventilation rate of 0.72 air changes per hour with HP printing supplies

Power consumption

Power usage drops significantly while in Sleep or Auto-Off mode, which saves natural resources and saves money without affecting the high performance of this product. Hewlett-Packard printing and imaging equipment marked with the ENERGY STAR® logo is qualified to the U.S. Environmental Protection Agency's ENERGY STAR specifications for imaging equipment. The following mark will appear on ENERGY STAR qualified imaging products:

Additional ENERGY STAR qualified imaging product model information is listed at:

www.hp.com/go/energystar

Toner consumption

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

Paper use

This product’s manual duplex feature and N-up printing (multiple pages printed on one page) capability can reduce paper usage and the resulting demands on natural resources.

Plastics

Plastic parts over 25 grams are marked according to international standards that enhance the ability to identify plastics for recycling purposes at the end of the product’s life.

HP LaserJet print supplies

It's easy to return and recycle your HP LaserJet toner cartridges after use—free of charge—with HP Planet Partners. Multilingual program information and instructions are included in every new HP LaserJet toner cartridge and supplies package. You help reduce the toll on the environment further when you return multiple cartridges together rather than separately.

HP is committed to providing inventive, high-quality products and services that are environmentally sound, from product design and manufacturing to distribution, customer use and recycling. When you participate in the HP Planet Partners program, we ensure your HP LaserJet toner cartridges are recycled properly, processing them to recover plastics and metals for new products and diverting millions of tons of waste from landfills. Since this cartridge is being recycled and used in new materials, it will not be returned to you. Thank you for being environmentally responsible!

NOTE: Use the return label to return original HP LaserJet toner cartridges only. Please do not use this label for HP inkjet cartridges, non-HP cartridges, refilled or remanufactured cartridges or warranty returns. For information about recycling your HP inkjet cartridges please go to http://www.hp.com/recycle.

Return and recycling instructions

United States and Puerto Rico

The enclosed label in the HP LaserJet toner cartridge box is for the return and recycling of one or more HP LaserJet toner cartridges after use. Please follow the applicable instructions below.

Multiple returns (more than one cartridge)

1. Package each HP LaserJet toner cartridge in its original box and bag.
2. Tape the boxes together using strapping or packaging tape. The package can weigh up to 31 kg (70 lb).
3. Use a single pre-paid shipping label.

OR

1. Use your own suitable box, or request a free bulk collection box from www.hp.com/recycle or 1-800-340-2445 (holds up to 31 kg (70 lb) of HP LaserJet toner cartridges).
2. Use a single pre-paid shipping label.

Single returns

1. Package the HP LaserJet toner cartridge in its original bag and box.
2. Place the shipping label on the front of the box.

Shipping

For US and Puerto Rico HP LaserJet toner cartridge recycling returns, use the pre-paid, pre-addressed shipping label contained in the box. To use the UPS label, give the package to the UPS driver during your next delivery or pick-up, or take it to an authorized UPS drop-off center. (Requested UPS Ground pickup will be charged normal pick-up rates) For the location of your local UPS drop-off center, call 1-800-PICKUPS or visit www.ups.com.

If you are returning the package with the FedEx label, give the package to either the U.S. Postal Service carrier or FedEx driver during your next pick-up or delivery. (Requested FedEx Ground pickup will be charged normal pick-up rates). Or, you can drop off your packaged toner cartridge(s) at any U.S. Post Office or any

FedEx shipping center or store. For the location of your nearest U.S. Post Office, please call 1-800-ASK-USPS or visit www.usps.com. For the location of your nearest FedEx shipping center/store, please call 1-800-GOFEDEX or visit www.fedex.com.

For more information, or to order additional labels or boxes for bulk returns, visit www.hp.com/recycle or call 1-800-340-2445. Information subject to change without notice.

Residents of Alaska and Hawaii

Do not use the UPS label. Call 1-800-340-2445 for information and instructions. The U.S. Postal Service provides no-cost cartridge return transportation services under an arrangement with HP for Alaska and Hawaii.

Non-U.S. returns

To participate in HP Planet Partners return and recycling program, just follow the simple directions in the recycling guide (found inside the packaging of your new product supply item) or visit www.hp.com/recycle. Select your country/region for information on how to return your HP LaserJet printing supplies.

Paper

This product is capable of using recycled papers when the paper meets the guidelines outlined in the *HP LaserJet Printer Family Print Media Guide*. This product is suitable for the use of recycled paper according to EN12281:2002.

Material restrictions (LaserJet Pro MFP M125-M126 series)

This HP product does not contain added mercury.

This HP product does not contain batteries.

Material restrictions (LaserJet Pro MFP M127-M128 series)

This HP product does not contain added mercury.

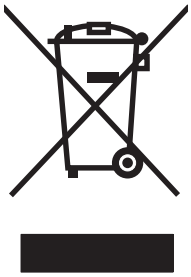
This HP product contains a battery that may require special handling at end-of-life. The battery contained in or supplied by Hewlett-Packard for this product includes:

Type	Lithium carbon-monofluoride
Weight	0.8 g
Location	On formatter board
User-removable	No

廢電池請回收

For recycling information, you can go to www.hp.com/recycle, or contact your local authorities or the Electronics Industries Alliance: www.eiae.org.

Disposal of waste equipment by users



This symbol means do not dispose of your product with your other household waste. Instead, you should protect human health and the environment by handing over your waste equipment to a designated collection point for the recycling of waste electrical and electronic equipment. For more information, please contact your household waste disposal service, or go to: www.hp.com/recycle.

Electronic hardware recycling

HP encourages customers to recycle used electronic hardware. For more information about recycling programs go to: www.hp.com/recycle.

Chemical substances

HP is committed to providing our customers with information about the chemical substances in our products as needed to comply with legal requirements such as REACH (Regulation EC No 1907/2006 of the European Parliament and the Council). A chemical information report for this product can be found at: www.hp.com/go/reach.

Material Safety Data Sheet (MSDS)

Material Safety Data Sheets (MSDS) for supplies containing chemical substances (for example, toner) can be obtained by accessing the HP Web site at www.hp.com/go/msds or www.hp.com/hpinfo/community/environment/productinfo/safety.

EPEAT

Many HP products are designed to meet EPEAT. EPEAT is a comprehensive environmental rating that helps identify greener electronics equipment. For more information on EPEAT go to www.epeat.net. For information on HP's EPEAT registered products go to www.hp.com/hpinfo/globalcitizenship/environment/pdf/epeat_printers.pdf.

For more information

To obtain information about these environmental topics:

- Product environmental profile sheet for this and many related HP products
- HP's commitment to the environment
- HP's environmental management system
- HP's end-of-life product return and recycling program
- Material Safety Data Sheets

Visit www.hp.com/go/environment or www.hp.com/hpinfo/globalcitizenship/environment.

Declaration of conformity (M125a-M125ra)

Declaration of Conformity

according to ISO/IEC 17050-1 and EN 17050-1

Manufacturer's Name:	Hewlett-Packard Information Technology	DoC#: SHNGC-1202-00-rel.1.0
	R&D (Shanghai) Co., LTD	
Manufacturer's Address:	Building 6, No. 690 BiBo Road, ZhangJiang, Shanghai, China	

declares, that the product

Product Name:	HP LaserJet Pro MFP M125a / HP LaserJet Pro MFP M125r
	HP LaserJet Pro MFP M125ra
Regulatory Model:[2)]	SHNGC-1202-00
Product Options:	All
Toner Cartridges:	CF283A, CC388A

conforms to the following Product Specifications:

SAFETY:	IEC 60950-1:2005 +A1/ EN60950-1: 2006 +A11:2009 +A1:2010 +A12:2011
	IEC 60825-1:2007 / EN 60825-1:2007 (Class 1 Laser/LED Product)
	IEC 62479:2010/EN 62479:2010
	GB4943-2011
EMC:	CISPR 22:2008 / EN 55022:2010 - Class B[1)]
	EN 61000-3-2:2006 +A1 +A2
	EN 61000-3-3:2008
	EN 55024:1998 +A1 +A2
	FCC Title 47 CFR, Part 15 Class B / ICES-003, Issue 4
	GB9254-2008, GB17625.1-2003
Energy Use	Regulation (EC) No. 1275/2008:
	ENERGY STAR® Qualified Imaging Equipment Typical Electricity Consumption (TEC) Test Procedure
RoHS	EN50581:2012

Supplementary Information:

The product herewith complies with the requirements of the EMC Directive 2004/108/EC and the Low Voltage Directive 2006/95/EC, the Ecodesign Directive 2009/125/EC, the RoHS Directive 2011/65/EU, and carries the CE-Marking CE accordingly.

This Device complies with Part 15 of the FCC Rules. Operation is subject to the following two Conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

1. The product was tested in a typical configuration with Hewlett-Packard Personal Computer Systems.
2. For regulatory purposes, this product is assigned a Regulatory model number. This number should not be confused with the marketing names or the product number(s).

Shanghai, China

September 2012

For Regulatory Topics only, contact:

European Contact:	Your Local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, HQ-TRE, Herrenberger Straße 140, 71034 Böblingen, Germany www.hp.eu/certificates
USA Contact:	Product Regulations Manager, Hewlett-Packard, 3000 Hanover St., Palo Alto 94304, U.S.A. 1-650-857-1501

Declaration of conformity (M125nw-M126nw)

Declaration of Conformity

according to ISO/IEC 17050-1 and EN 17050-1

Manufacturer's Name:	Hewlett-Packard Information Technology	DoC#: SHNGC-1202-01-rel.1.0
	R&D (Shanghai) Co., LTD	
Manufacturer's Address:	Building 6, No. 690 BiBo Road, ZhangJiang, Shanghai, China	
declares, that the product		
Product Name:	HP LaserJet Pro MFP M125nw / HP LaserJet Pro MFP M125rnw	
	HP LaserJet Pro MFP M126nw	
Regulatory Model:[2)]	SHNGC-1202-01	
	Including:	
	SDGOB-1191 – (Radio Module)	
Product Options:	All	
Toner Cartridges:	CF283A, CC388A	
conforms to the following Product Specifications:		
SAFETY:	IEC 60950-1:2005 +A1/ EN60950-1: 2006 +A11:2009 +A1:2010 +A12:2011	
	IEC 60825-1:2007 / EN 60825-1:2007 (Class 1 Laser/LED Product)	
	IEC 62479:2010/EN 62479:2010	
	GB4943-2011	
EMC:	CISPR 22:2008 / EN 55022:2010 - Class B[1)]	
	EN 61000-3-2:2006 +A1 +A2	
	EN 61000-3-3:2008	
	EN 55024:1998 +A1 +A2	
	FCC Title 47 CFR, Part 15 Class B / ICES-003, Issue 4	
	GB9254-2008, GB17625.1-2003	
Radio[3)]**:**	EN 301 489-1:V1.8.1 / EN 301 489-17:V2.1.1	
	EN 300 328: V1.7.1	
	FCC Title 47 CFR, Part 15 Subpart C (Section 15.247) / IC: RSS-210	
	IEC 62311:2007 / EN62311:2008	
Energy Use	Regulation (EC) No. 1275/2008:	
	ENERGY STAR® Qualified Imaging Equipment Typical Electricity Consumption (TEC) Test Procedure	
RoHS	EN50581:2012	

Supplementary Information:

The product herewith complies with the requirements of the R&TTE Directive 1999/5/EC, EMC Directive 2004/108/EC and the Low Voltage Directive 2006/95/EC, the Ecodesign Directive 2009/125/EC, the RoHS Directive 2011/65/EU, and carries the CE-Marking CE accordingly.

This Device complies with Part 15 of the FCC Rules. Operation is subject to the following two Conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

1. The product was tested in a typical configuration with Hewlett-Packard Personal Computer Systems.
2. For regulatory purposes, this product is assigned a Regulatory model number. This number should not be confused with the marketing names or the product number(s).
3. This product uses a radio module device which Regulatory Model number is SDGOB-1191 as needed to meet technical regulatory requirements for the countries/regions this product will be sold.

Shanghai, China

September 2012

For Regulatory Topics only, contact:

European Contact:	Your Local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, HQ-TRE, Herrenberger Straße 140, 71034 Böblingen, Germany www.hp.eu/certificates
USA Contact:	Product Regulations Manager, Hewlett-Packard, 3000 Hanover St., Palo Alto 94304, U.S.A. 1-650-857-1501

Declaration of conformity (M127fn-M128fn)

Declaration of Conformity

according to ISO/IEC 17050-1 and EN 17050-1

Manufacturer's Name:	Hewlett-Packard Information Technology	DoC#: SHNGC-1202-02-rel.1.0
	R&D (Shanghai) Co., LTD	
Manufacturer's Address:	Building 6, No. 690 BiBo Road, ZhangJiang, Shanghai, China	
declares, that the product		
Product Name:	HP LaserJet Pro MFP M127fn	
	HP LaserJet Pro MFP M128fn	
Regulatory Model:[2)]	SHNGC-1202-02	
	Including:	
	BOISB-1102-00 – (US-Fax Module LIU)	
	BOISB-1102-01 – (EURO-Fax Module LIU)	
Product Options:	All	
Toner Cartridges:	CF283A, CC388A	
conforms to the following Product Specifications:		
SAFETY:	IEC 60950-1:2005 +A1/ EN60950-1: 2006 +A11:2009 +A1:2010 +A12:2011	
	IEC 60825-1:2007 / EN 60825-1:2007 (Class 1 Laser/LED Product)	
	IEC 62479:2010/EN 62479:2010	
	GB4943-2011	
EMC:	CISPR 22:2008 / EN 55022:2010 - Class B[1)]	
	EN 61000-3-2:2006 +A1 +A2	
	EN 61000-3-3:2008	
	EN 55024:1998 +A1 +A2	
	FCC Title 47 CFR, Part 15 Class B / ICES-003, Issue 4	
	GB9254-2008, GB17625.1-2003	
Telecom[4)]**:**	ES 203 021; FCC Title 47 CFR, Part68[3)]	
Energy Use	Regulation (EC) No. 1275/2008:	
	ENERGY STAR® Qualified Imaging Equipment Typical Electricity Consumption (TEC) Test Procedure	
RoHS	EN50581:2012	

Supplementary Information:

The product herewith complies with the requirements of the R&TTE Directive 1999/5/EC, EMC Directive 2004/108/EC and the Low Voltage Directive 2006/95/EC, the Ecodesign Directive 2009/125/EC, the RoHS Directive 2011/65/EU and carries the CEMarking CE accordingly.

This Device complies with Part 15 of the FCC Rules. Operation is subject to the following two Conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

1. The product was tested in a typical configuration with Hewlett-Packard Personal Computer Systems.
2. For regulatory purposes, this product is assigned a Regulatory model number. This number should not be confused with the marketing names or the product number(s).
3. Telecom approvals and standards appropriate for the target countries/regions have been applied to this product, in addition to those listed above.
4. This product uses an analog fax accessory module which Regulatory Model number is: BOISB-1102-00 (US-LIU) or BOISB-1102-01 (EURO LIU), as needed to meet technical regulatory requirements for the countries/regions this product will be sold.

Shanghai, China

September 2012

For Regulatory Topics only, contact:

European Contact:	Your Local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, HQ-TRE, Herrenberger Straße 140, 71034 Böblingen, Germany www.hp.eu/certificates
USA Contact:	Product Regulations Manager, Hewlett-Packard, 3000 Hanover St., Palo Alto 94304, U.S.A. 1-650-857-1501

Declaration of conformity (M127fp-M128fp)

Declaration of Conformity

according to ISO/IEC 17050-1 and EN 17050-1

Manufacturer's Name:	Hewlett-Packard Information Technology	DoC#: SHNGC-1202-03-rel.1.0
	R&D (Shanghai) Co., LTD	
Manufacturer's Address:	Building 6, No. 690 BiBo Road, ZhangJiang, Shanghai, China	
declares, that the product		
Product Name:	HP LaserJet Pro MFP M127fp	
	HP LaserJet Pro MFP M128fp	
Regulatory Model:[2)]	SHNGC-1202-03	
	Including:	
	BOISB-1102-00 – (US-Fax Module LIU)	
	BOISB-1102-01 – (EURO-Fax Module LIU)	
Product Options:	All	
Toner Cartridges:	CF283A, CC388A	
conforms to the following Product Specifications:		
SAFETY:	IEC 60950-1:2005 +A1/ EN60950-1: 2006 +A11:2009 +A1:2010 +A12:2011	
	IEC 60825-1:2007 / EN 60825-1:2007 (Class 1 Laser/LED Product)	
	IEC 62479:2010/EN 62479:2010	
	GB4943-2011	
EMC:	CISPR 22:2008 / EN 55022:2010 - Class B[1)]	
	EN 61000-3-2:2006 +A1 +A2	
	EN 61000-3-3:2008	
	EN 55024:1998 +A1 +A2	
	FCC Title 47 CFR, Part 15 Class B / ICES-003, Issue 4	
	GB9254-2008, GB17625.1-2003	
Telecom[4)]**:**	ES 203 021; ES 203 038[3)]	
Energy Use	Regulation (EC) No. 1275/2008:	
	ENERGY STAR® Qualified Imaging Equipment Typical Electricity Consumption (TEC) Test Procedure	
RoHS	EN50581:2012	

Supplementary Information:

The product herewith complies with the requirements of the R&TTE Directive 1999/5/EC, EMC Directive 2004/108/EC and the Low Voltage Directive 2006/95/EC, the Ecodesign Directive 2009/125/EC, the RoHS Directive 2011/65/EU and carries the CE-Marking CE accordingly.

This Device complies with Part 15 of the FCC Rules. Operation is subject to the following two Conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

1. The product was tested in a typical configuration with Hewlett-Packard Personal Computer Systems.
2. For regulatory purposes, this product is assigned a Regulatory model number. This number should not be confused with the marketing names or the product number(s).
3. Telecom approvals and standards appropriate for the target countries/regions have been applied to this product, in addition to those listed above.
4. This product uses an analog fax accessory module which Regulatory Model number is: BOISB-1102-00 (US-LIU) or BOISB-1102-01 (EURO LIU), as needed to meet technical regulatory requirements for the countries/regions this product will be sold.

Shanghai, China

September 2012

For Regulatory Topics only, contact:

European Contact:	Your Local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, HQ-TRE, Herrenberger Straße 140, 71034 Böblingen, Germany www.hp.eu/certificates
USA Contact:	Product Regulations Manager, Hewlett-Packard, 3000 Hanover St., Palo Alto 94304, U.S.A. 1-650-857-1501

Declaration of conformity (M127fw-M128fw)

Declaration of Conformity

according to ISO/IEC 17050-1 and EN 17050-1

Manufacturer's Name:	Hewlett-Packard Information Technology	DoC#: SHNGC-1202-04-rel.1.0
	R&D (Shanghai) Co., LTD	
Manufacturer's Address:	Building 6, No. 690 BiBo Road, ZhangJiang, Shanghai, China	
declares, that the product		
Product Name:	HP LaserJet Pro MFP M127fw	
	HP LaserJet Pro MFP M128fw	
Regulatory Model:[2)]	SHNGC-1202-04	
	Including:	
	BOISB-1102-00 – (US-Fax Module LIU)	
	BOISB-1102-01 – (EURO-Fax Module LIU)	
	SDGOB-1191 – (Radio Module)	
Product Options:	All	
Toner Cartridges:	CF283A, CC388A	
conforms to the following Product Specifications:		
SAFETY:	IEC 60950-1:2005 +A1/ EN60950-1: 2006 +A11:2009 +A1:2010 +A12:2011	
	IEC 60825-1:2007 / EN 60825-1:2007 (Class 1 Laser/LED Product)	
	IEC 62479:2010/EN 62479:2010	
	GB4943-2011	
EMC:	CISPR 22:2008 / EN 55022:2010 - Class B[1)]	
	EN 61000-3-2:2006 +A1 +A2	
	EN 61000-3-3:2008	
	EN 55024:1998 +A1 +A2	
	FCC Title 47 CFR, Part 15 Class B / ICES-003, Issue 4	
	GB9254-2008, GB17625.1-2003	
Telecom[4)]**:**	ES 203 021; FCC Title 47 CFR, Part68[3)]	
Radio[5)]**:**	EN 301 489-1:V1.8.1 / EN 301 489-17:V2.1.1	
	EN 300 328: V1.7.1	
	FCC Title 47 CFR, Part 15 Subpart C (Section 15.247) / IC: RSS-210	
	IEC 62311:2007 / EN62311:2008	
Energy Use	Regulation (EC) No. 1275/2008:	
	ENERGY STAR® Qualified Imaging Equipment Typical Electricity Consumption (TEC) Test Procedure	

RoHS EN50581:2012

Supplementary Information:

The product herewith complies with the requirements of the R&TTE Directive 1999/5/EC, EMC Directive 2004/108/EC, the Low Voltage Directive 2006/95/EC and the Ecodesign Directive 2009/125/EC, the RoHS Directive 2011/65/EU and carries the CE-Marking CE accordingly.

This Device complies with Part 15 of the FCC Rules. Operation is subject to the following two Conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

1. The product was tested in a typical configuration with Hewlett-Packard Personal Computer Systems.
2. For regulatory purposes, this product is assigned a Regulatory model number. This number should not be confused with the marketing names or the product number(s).
3. Telecom approvals and standards appropriate for the target countries/regions have been applied to this product, in addition to those listed above.
4. This product uses an analog fax accessory module which Regulatory Model number is: BOISB-1102-00 (US-LIU) or BOISB-1102-01 (EURO LIU), as needed to meet technical regulatory requirements for the countries/regions this product will be sold.
5. This product uses a radio module device which Regulatory Model number is SDGOB-1191 as needed to meet technical regulatory requirements for the countries/regions this product will be sold.

Shanghai, China

September 2012

For Regulatory Topics only, contact:

European Contact:	Your Local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, HQ-TRE, Herrenberger Straße 140, 71034 Böblingen, Germany www.hp.eu/certificates
USA Contact:	Product Regulations Manager, Hewlett-Packard, 3000 Hanover St., Palo Alto 94304, U.S.A. 1-650-857-1501

Safety statements

Laser safety

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration has implemented regulations for laser products manufactured since August 1, 1976. Compliance is mandatory for products marketed in the United States. The device is certified as a “Class 1” laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968. Since radiation emitted inside the device is completely confined within protective housings and external covers, the laser beam cannot escape during any phase of normal user operation.

⚠ **WARNING!** Using controls, making adjustments, or performing procedures other than those specified in this user guide may result in exposure to hazardous radiation.

Canadian DOC regulations

Complies with Canadian EMC Class B requirements.

« Conforme à la classe B des normes canadiennes de compatibilité électromagnétiques. « CEM ». »

VCCI statement (Japan)

この装置は、クラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。取扱説明書に従って正しい取り扱いをして下さい。

VCCI-B

Power cord instructions

Make sure your power source is adequate for the product voltage rating. The voltage rating is on the product label. The product uses either 100-127 Vac or 220-240 Vac and 50/60 Hz.

Connect the power cord between the product and a grounded AC outlet.

⚠ **CAUTION:** To prevent damage to the product, use only the power cord that is provided with the product.

Power cord statement (Japan)

製品には、同梱された電源コードをお使い下さい。
同梱された電源コードは、他の製品では使用出来ません。

EMC statement (Korea)

B급 기기 (가정용 방송통신기기)	이 기기는 가정용(B급)으로 전자파적합등록을 한 기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다.

Laser statement for Finland

Luokan 1 laserlaite

Klass 1 Laser Apparat

HP LaserJet Pro MFP M125, M126, M127, M128, laserkirjoitin on käyttäjän kannalta turvallinen luokan 1 laserlaite. Normaalissa käytössä kirjoittimen suojakotelointi estää lasersäteen pääsyn laitteen ulkopuolelle. Laitteen turvallisuusluokka on määritetty standardin EN 60825-1 (2007) mukaisesti.

VAROITUS !

Laitteen käyttäminen muulla kuin käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING !

Om apparaten används på annat sätt än i bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

HUOLTO

HP LaserJet Pro MFP M125, M126, M127, M128 - kirjoittimen sisällä ei ole käyttäjän huollettavissa olevia kohteita. Laitteen saa avata ja huoltaa ainoastaan sen huoltamiseen koulutettu henkilö. Tällaiseksi huoltotoimenpiteeksi ei katsota väriainekasetin vaihtamista, paperiradan puhdistusta tai muita käyttäjän käsikirjassa lueteltuja, käyttäjän tehtäväksi tarkoitettuja ylläpitotoimia, jotka voidaan suorittaa ilman erikoistyökaluja.

VARO !

Mikäli kirjoittimen suojakotelo avataan, olet alttiina näkymättömällelasersäteilylle laitteen ollessa toiminnassa. Älä katso säteeseen.

VARNING !

Om laserprinterns skyddshölje öppnas då apparaten är i funktion, utsättas användaren för osynlig laserstrålning. Betrakta ej strålen.

Tiedot laitteessa käytettävän laserdiodin säteilyominaisuuksista: Aallonpituus 775-795 nm Teho 5 m W Luokan 3B laser.

GS statement (Germany)

Das Gerät ist nicht für die Benutzung im unmittelbaren Gesichtsfeld am Bildschirmarbeitsplatz vorgesehen. Um störende Reflexionen am Bildschirmarbeitsplatz zu vermeiden, darf dieses Produkt nicht im unmittelbaren Gesichtsfeld platziert warden.

Das Gerät ist kein Bildschirmarbeitsplatz gemäß BildscharbV. Bei ungünstigen Lichtverhältnissen (z. B. direkte Sonneneinstrahlung) kann es zu Reflexionen auf dem Display und damit zu Einschränkungen der Lesbarkeit der dargestellten Zeichen kommen.

Substances Table (China)

产品中有毒有害物质或元素的名称及含量

根据中国《电子信息产品污染控制管理办法》

部件名称	有毒有害物质和元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
打印引擎	X	0	0	0	0	0
复印机组件	X	0	0	0	0	0
控制面板	X	0	0	0	0	0
塑料外壳	0	0	0	0	0	0
格式化板组件	X	0	0	0	0	0
碳粉盒	X	0	0	0	0	0

0614-13

0：表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。
X：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 规定的限量要求。

此表中所有名称中含“X”的部件均符合欧盟RoHS立法。

注：环保使用期限的参考标识取决于产品正常工作的温度和湿度等条件

SEPA Ecolabel User Information (China)

中国**环境标识认证产**品用**户说**明

噪声大于 **63.0 dB(A)**的**办**公**设备**不宜放置于**办**公室内，**请**在独立的隔离区域使用。

如需**长时间**使用本**产**品或打印大量文件，**请**确保在通**风**良好的房**间**内使用。

如您需要确**认**本**产**品**处**于零能耗状**态**，**请**按下**电**源关**闭**按**钮**，并将插**头**从**电**源插座断开。

您可以使用再生**纸**，以减少**资**源耗**费**。

Restriction on Hazardous Substances statement (Turkey)

Türkiye Cumhuriyeti: EEE Yönetmeliğine Uygundur

Restriction on Hazardous Substances statement (Ukraine)

Обладнання відповідає вимогам Технічного регламенту щодо обмеження використання деяких небезпечних речовин в електричному та електронному обладнанні, затвердженого постановою Кабінету Міністрів України від 3 грудня 2008 № 1057

Eurasian Conformity (Belarus, Kazakhstan, Russia)

EAC

Производитель: Hewlett-Packard Company, 3000 Hanover Street, Palo Alto, California 94304, США.

HP Россия: ЗАО "Хьюлетт-Паккард А.О.", 125171, Россия, г. Москва, Ленинградское шоссе, 16А, стр.3, тел/факс: +7 (495) 797 35 00, +7 (495) 287 89 05

HP Беларусь: ИООО «Хьюлетт-Паккард Бел», 220030, Беларусь, г. Минск, ул. Интернациональная, 36-1, офис 722-723, тел.: +375 (17) 392 28 18, факс: +375 (17) 392 28 21

HP Казахстан: ТОО «Хьюлетт-Паккард (К)», 050040, Казахстан, г. Алматы, Бостандыкский район, ул. Тимирязева, 28В, 1 этаж, тел./факс: +7 (727) 355 35 50, +7 (727) 355 35 51

Өндіруші: Hewlett-Packard Company, 3000 Hanover Street, Palo Alto, Калифорния 94304, АҚШ

HP Қазақстан: ЖШС «Хьюлетт-Паккард (К)», 050040, Қазақстан, Алматы қ., Бостандық ауданы, Тимирязев к-сі, 28В, тел./факс: +7 (727) 355 35 50, +7 (727) 355 35 51

Additional statements for telecom (fax) products

EU Statement for Telecom Operation

This product is intended to be connected to the analog Public Switched Telecommunication Networks (PSTN) of European Economic Area (EEA) countries/regions.

It meets requirements of EU R&TTE Directive 1999/5/EC (Annex II) and carries appropriate CE conformity marking.

For more details see Declaration of Conformity issued by the manufacturer in another section of this manual.

However due to differences between individual national PSTNs the product may not guarantee unconditional assurance of successful operation on every PSTN termination point. Network compatibility depends on the correct setting being selected by the customer in preparation of its connection to the PSTN. Please follow the instructions provided in the user manual.

If you experience network compatibility issues, please contact your equipment supplier or Hewlett-Packard help desk in the country/region of operation.

Connecting to a PSTN termination point may be the subject of additional requirements set out by the local PSTN operator.

New Zealand Telecom Statements

The grant of a Telepermit for any item of terminal equipment indicates only that Telecom has accepted that the item complies with minimum conditions for connection to its network. It indicates no endorsement of the product by Telecom, nor does it provide any sort of warranty. Above all, it provides no assurance that any item will work correctly in all respects with another item of Telepermitted equipment of a different make or model, nor does it imply that any product is compatible with all of Telecom's network services.

This equipment may not provide for the effective hand-over of a call to another device connected to the same line.

This equipment shall not be set up to make automatic calls to the Telecom "111" Emergency Service.

This product has not been tested to ensure compatibility with the FaxAbility distinctive ring service for New Zealand.

Additional FCC statement for telecom products (US)

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the back of this equipment is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.

The REN is used to determine the quantity of devices, which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all, areas, the sum of the RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

This equipment uses the following USOC jacks: RJ11C.

An FCC-compliant telephone cord and modular plug is provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using a compatible modular jack, which is Part 68 compliant. This equipment cannot be used on telephone company-provided coin service. Connection to Party Line Service is subject to state tariffs.

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

If trouble is experienced with this equipment, please see the numbers in this manual for repair and (or) warranty information. If the trouble is causing harm to the telephone network, the telephone company may request you remove the equipment from the network until the problem is resolved.

The customer can do the following repairs: Replace any original equipment that came with the device. This includes the toner cartridge, the supports for trays and bins, the power cord, and the telephone cord. It is recommended that the customer install an AC surge arrestor in the AC outlet to which this device is connected. This is to avoid damage to the equipment caused by local lightning strikes and other electrical surges.

Telephone Consumer Protection Act (US)

The Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device, including fax machines, to send any message unless such message clearly contains, in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business, other entity, or individual sending the message and the telephone number of the sending machine or such business, or other entity, or individual. (The telephone number provided cannot be a 900 number or any other number for which charges exceed local or long distance transmission charges).

Industry Canada CS-03 requirements

Notice: The Industry Canada label identifies certified equipment. This certification means the equipment meets certain telecommunications network protective, operational, and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirement document(s). The Department does not guarantee the equipment will operate to the user's satisfaction. Before installing this equipment, users should ensure that it is permissible for the equipment to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations. Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment. Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution can be particularly important in rural areas.

⚠ **CAUTION:** Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate. The Ringer Equivalence Number (REN) of this device is 0.0B.

This product meets the applicable Industry Canada technical specifications. / Le présent matériel est conforme aux specifications techniques applicables d'Industrie Canada.

Notice: The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Number of all the devices does not exceed five (5.0). / L'indice d'équivalence de la

sonnerie (IES) sert à indiquer le nombre maximal de terminaux qui peuvent être raccordés à une interface téléphonique. La terminaison d'une interface peut consister en une combinaison quelconque de dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas cinq.

The standard connecting arrangement code (telephone jack type) for equipment with direct connections to the telephone network is CA11A.

Vietnam Telecom wired/wireless marking for ICTQC Type approved products

Additional statements for wireless products

FCC compliance statement—United States

Exposure to radio frequency radiation

⚠ **CAUTION:** The radiated output power of this device is far below the FCC radio frequency exposure limits. Nevertheless, the device shall be used in such a manner that the potential for human contact during normal operation is minimized.

In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20 cm (8 in) during normal operation.

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

⚠ **CAUTION:** Based on Section 15.21 of the FCC rules, changes of modifications to the operation of this product without the express approval by Hewlett-Packard Company may invalidate its authorized use.

Australia statement

This device incorporates a radio-transmitting (wireless) device. For protection against radio transmission exposure, it is recommended that this device be operated no less than 20 cm from the head, neck, or body.

Brazil ANATEL statement

Este equipamento opera em caráter secundário, isto é, não tem direito à proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não pode causar interferência a sistemas operando em caráter primário.

Canadian statements

For Indoor Use. This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications. The internal wireless radio complies with RSS 210 of Industry Canada.

Pour l´usage d´intérieur. Le présent appareil numérique n´émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe B prescribes dans le règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada. Le composant RF interne est conforme à la norme CNR-210 d´Industrie Canada.

Products with 5 GHz Operation Industry of Canada

⚠ **CAUTION:** When using IEEE 802.11a wireless LAN, this product is restricted to indoor use, due to its operation in the 5.15- to 5.25-GHz frequency range. Industry Canada requires this product to be used indoors for the frequency range of 5.15 GHz to 5.25 GHz to reduce the potential for harmful interference to co-channel mobile satellite systems. High-power radar is allocated as the primary user of the 5.25- to 5.35-GHz and 5.65- to 5.85-GHz bands. These radar stations can cause interference with and/or damage to this device.

Exposure to Radio Frequency Radiation (Canada)

⚠ **WARNING!** Exposure to Radio Frequency Radiation. The radiated output power of this device is below the Industry Canada radio frequency exposure limits. Nevertheless, the device should be used in such a manner that the potential for human contact is minimized during normal operation.

To avoid the possibility of exceeding the Industry Canada radio frequency exposure limits, human proximity to the antennas should not be less than 20 cm (8 inches).

European Union regulatory notice

The telecommunications functionality of this product may be used in the following EU and EFTA countries/ regions:

Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, and United Kingdom.

Notice for use in France

For 2.4 GHz Wireless LAN operation of this product certain restrictions apply: This equipment may be used indoor for the entire 2400-2483.5 MHz frequency band (channels 1-13). For outdoor use, only 2400-2454 MHz frequency band (channels 1-9) may be used. For the latest requirements, see www.arcep.fr.

L'utilisation de cet equipement (2.4 GHz Wireless LAN) est soumise à certaines restrictions : Cet équipement peut être utilisé à l'intérieur d'un bâtiment en utilisant toutes les fréquences de 2400-2483.5 MHz (Chaine 1-13). Pour une utilisation en environnement extérieur, vous devez utiliser les fréquences comprises entre 2400-2454 MHz (Chaine 1-9). Pour les dernières restrictions, voir, www.arcep.fr.

Notice for use in Russia

Существуют определенные ограничения по использованию беспроводных сетей (стандарта 802.11 b/ g) с рабочей частотой 2,4 ГГц: Данное оборудование может использоваться внутри помещений с использованием диапазона частот 2400-2483,5 МГц (каналы 1-13). При использовании внутри помещений максимальная эффективная изотропно–излучаемая мощность (ЭИИМ) должна составлять не более 100мВт.

Mexico statement

Aviso para los usuarios de México

“La operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada."

Para saber el modelo de la tarjeta inalámbrica utilizada, revise la etiqueta regulatoria de la impresora.

Taiwan statement

低功率電波輻射性電機管理辦法

第十二條　經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條　低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。
前項合法通信，指依電信法規定作業之無線電通信。
低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

Korean statement

당해 무선설비는 운용 중 전파혼선 가능성이 있음

Vietnam Telecom wired/wireless marking for ICTQC Type approved products

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