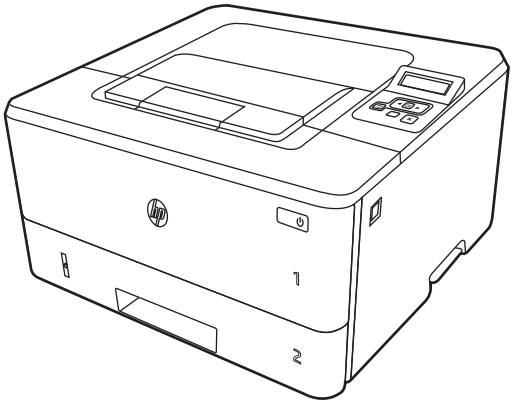
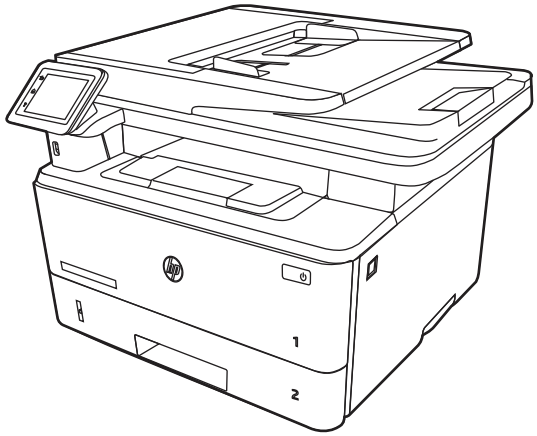
HP LaserJet Pro M304, M305, M404, M405
HP LaserJet Pro MFP M329, M428, M429

Service Manual: Troubleshooting





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Troubleshooting Manual

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Edition 1, 8/2019

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Conventions used in this guide

TIP: Helpful hints or shortcuts.

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

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

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

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

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

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Table -1 Revision history

Revision number	Revision date	Revision notes
1	8/2019	HP LaserJet Pro M304, M305, M404, M405 HP LaserJet Pro MFP M329, M428, M429 Troubleshooting manual initial release

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1 Theory of operation

- HP service and support
- Basic operation
- Formatter-control system
- Engine-control system
- Engine laser scanner system
- Input trays/accessories
- Scanning and image capture system
- Document feeder system

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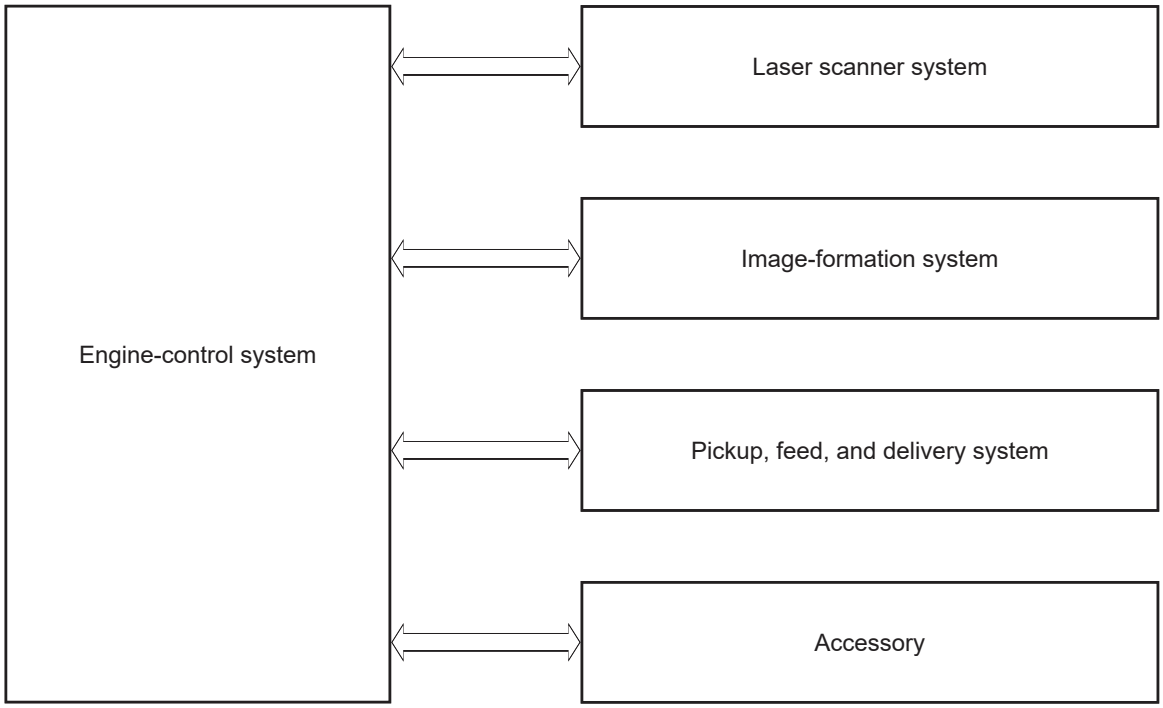
Basic operation

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

The basic printer operation comprises the following systems:

- Engine-control system
- Laser/scanner system
- Image-formation system
- Pickup, feed, and delivery system
- Accessory (optional paper feeder)

Figure 1-1 Relationship between the main printer systems



Sequence of operation

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

Table 1-1 Sequence of operation

Period	Duration	Description
Waiting	From the time the power is turned on, the door is closed, or when the printer exits Sleep mode until the printer is ready for printing.	• Heats the fuser film in the fuser • Detects the toner cartridge • Rotates and stops each motor • Rotates and stops each fan • Cleans the transfer roller
Standby	From the end of the waiting sequence or the last rotation until the formatter receives a print command, or until the printer is turned off.	• Is in the Ready state • Enters Sleep mode if the formatter sends the sleep command • Rotates and stops each fan
Initial rotation	From the time the formatter receives a print command until the paper enters the paper path.	• Rotates each motor • Rotates each fan • Activates the high-voltage power supply (high-voltage bias) • Prepares the laser/scanner unit • Warms the fuser to the correct temperature
Printing	From the time the first sheet of paper enters the paper path until the last sheet passes through the fuser.	• Forms the image on the photosensitive drums • Transfers the toner to the paper • Fuses the toner image onto the paper
Last rotation	From the time the last sheet of paper exits the fuser until the motors stop rotating.	• Stops each motor • Stops each fan • Stops the high-voltage power supply (high-voltage bias) • Stops the laser/scanner unit • Turns the fuser heater off • If another print command is received, the printer enters the initial rotation period when the last rotation is complete.

Formatter-control system

The formatter performs the following functions:

- Controlling the sleep delay function
- Receiving and processing print data from the various printer inputs
- Monitoring control-panel functions and relaying printer status information (through the control panel and the bidirectional input/output)
- Developing and coordinating data placement and timing with the DC controller PCA
- Stores font information
- Communicates with the host computer through the network or the bidirectional interface

The formatter receives a print job from the network or bidirectional interface, wireless connection, or fax telephone line, 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.

Power management

Use the power management settings to select power saving options.

SFP:

- Sleep delay
- Shutdown mode
- Disable shutdown

MFP:

- Sleep mode
- Shutdown after sleep
- Disable shutdown

This feature conserves power after the printer has been idle for an adjustable length of time. When the printer is in sleep mode, the control-panel backlight is turned off, but the printer retains all printer settings, downloaded fonts, and macros. The default setting is a 1 minute idle time. The setting can be changed or turned off from the control-panel menus.

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

- A print job, valid data, or a PML or PJL command is received at the serial port.
- A print job is recieved via wireless or fax.
- The control panel is touched (button press or touchscreen touch depending on model).
- The power button is pressed for 3 seconds or less.
- A document is loaded in the document feeder.
- A live network ethernet cable or fax line is attached.

- Inserting a USB drive in either the front USB port or the USB port on the back of the device.
- Connecting a USB cable to a PC that is powered on.
- Opening the cartridge (front) door or the rear door.

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

2-line control panels

1. At the control panel, press the OK button to access the Setup menu.
2. Open the following menus:
   - Power Management
   - Sleep Delay
3. Use the arrow keys to select the time for the Sleep Delay , and then press the OK button.

Touchscreen control panels

1. From the printer control panel, swipe down and then select the Setup icon.
2. Open the following menus:
   - Power Management
   - Sleep Mode
3. Select the time for the Sleep Mode.

Printer job language (PJL)

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

- **Dynamic I/O switching:** The printer can be configured with a host on each I/O by using dynamic I/O switching. Even when the printer is offline, it can receive data from more than one I/O simultaneously, until the I/O buffer is full.
- **Context-sensitive switching:** The printer can automatically recognize the personality (PS or PCL) of each job and configure itself to serve that personality.
- **Isolation of print environment settings from one print job to the next:** For example, if a print job is sent to the printer in landscape mode, the subsequent print jobs print in landscape only if they are formatted for landscape printing.

Printer management language (PML)

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

Control panel

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

Walk-up USB (MFP only)

NOTE: Touchscreen models only.

This printer features printing from a USB flash drive. This printer supports printing the following types of files from the USB flash drive.

- .pdf
- .jpg
- .prn and .PRN
- .pcl and .PCL
- ps and .PS
- doc and .docx
- .ppt and .pptx

When a USB flash drive is inserted into the front of the printer, the control panel will display the USB Flash Drive menu. The files present on the USB flash drive can be accessed from the control panel.

Any files in a supported format on the USB flash drive can be printed directly from the printer control panel. Pages also can be scanned and saved to the USB flash drive from the control panel.

Wireless

NOTE: Wireless models only.

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

Low end data model (LEDM) overview

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

CPU

The formatter incorporates a 1200 MHz processor.

Input/output (I/O)

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

USB

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

USB hosts

The printer includes USB hosts for USB flash drive.

10/100/1000 networking

The printer includes a 10/100/1000 network (ethernet) connection.

Fax

NOTE: M428fdn, M428fdw, M428m, M429fdn, and M429fdw models only.

The printer includes a fax phone line connection.

Memory

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

Firmware

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

Nonvolatile random access memory (NVRAM)

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

Flash memory

NAND: Stores fax memory (fax models only).

Random access memory (RAM)

The printer uses the following RAM:

- SFP: 256MB
- MFP: 512MB

HP Memory Enhancement technology (MEt)

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

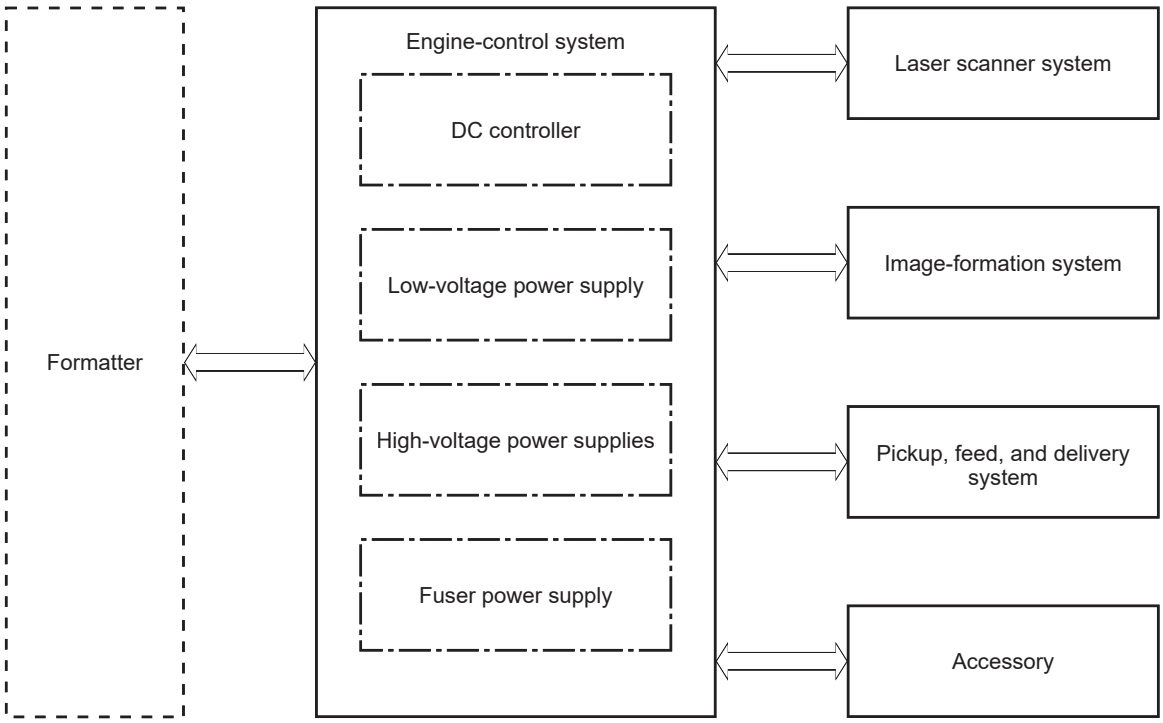
NOTE: The MEt is available only in PCL mode; it is not functional when printing in PS mode.

Engine-control system

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

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

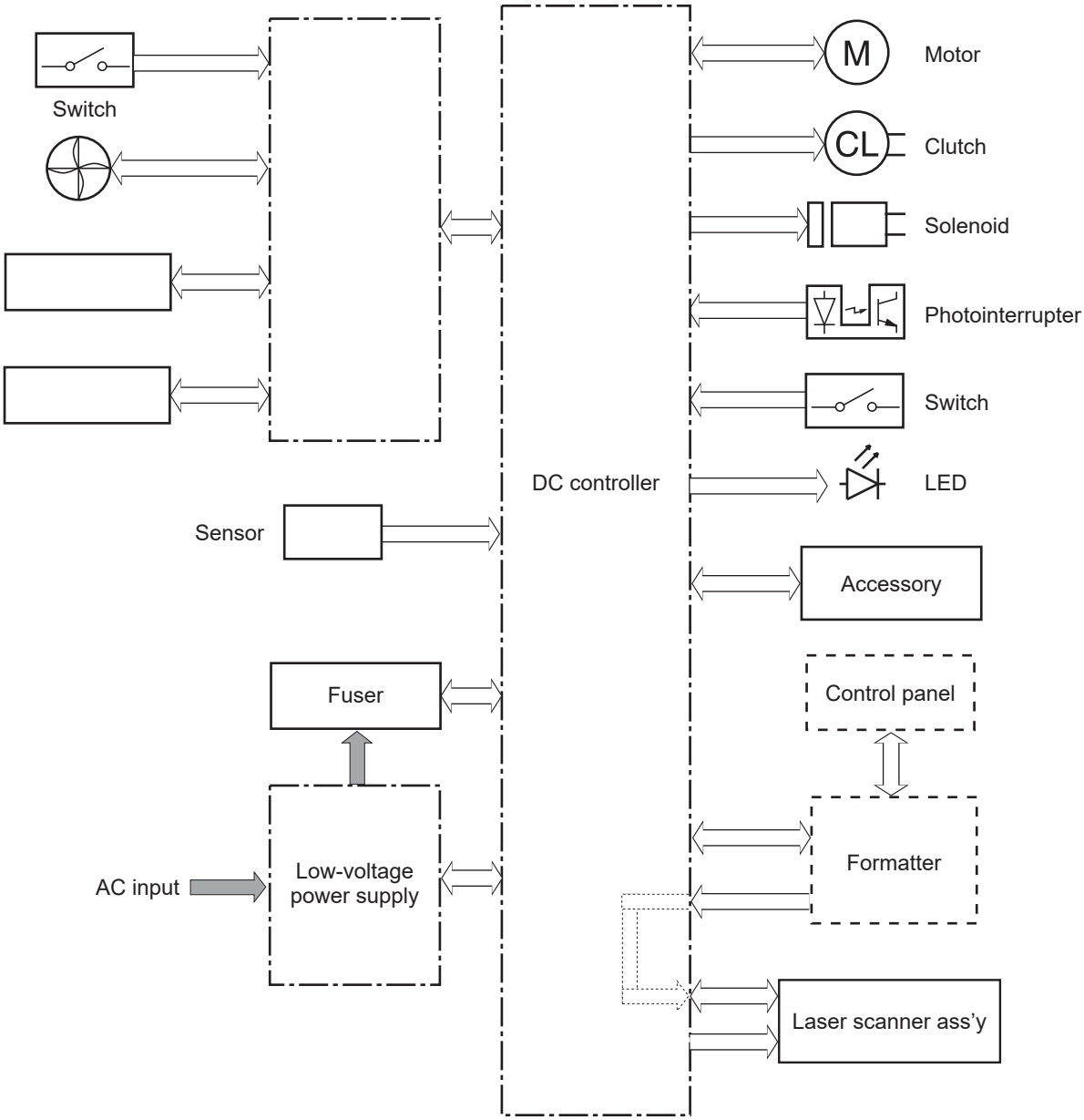
Figure 1-2 Engine-control system



DC controller

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

Figure 1-3 DC controller block diagram



Component type	Abbreviation	Description
Motor	M1	Fuse motor
	M3	Scanner motor
Fan	Fm1	Main fan
Solenoid	SL1	Cassette pickup solenoid

Component type	Abbreviation	Description
	SL2	MP tray pickup solenoid
	SL3	Duplex switchback solenoid
Clutch	CL1	Duplex re-pickup clutch
Switch	SW1	Power switch
	SW101	Cartridge door switch
Photointerrupter	PS1a	Media width sensor
	PS2b	Duplex feed sensor
	PS1	Cassette media out sensor
	PS2	Top sensor
	PS3	MP tray media out sensor
	PS4	Output bin media-full sensor
	PS13	Fuser output sensor
Sensor	TH1	Environment sensor
LED	LED1	Power supply LED

[1] Duplex models only.

Motors

The printer has two motors. The motors drive the components in the paper-feed and image-formation systems.

The DC controller monitors the fuser motor and the scanner motor to determine if a motor has failed. It notifies the formatter when it encounters the following conditions:

- Startup failure: the motor does not reach a specified speed within a specified time from when the motor starts.
- Rotational failure: the rotational speed of the motor is not in the specified range for a specified time after the motor reaches a specified speed.

Table 1-2 Motors

Abbreviation	Name	Purpose	Failure detection
M1	Fuser motor	Drives the pressure roller and delivery roller; the pressurization and release of the pressure roller; and the engagement and disengagement of the primary and secondary transfer rollers	Yes
M3	Scanner motor	Drives the scanner mirror	Yes

Fans

The printer has one fan for preventing the temperature from rising in the printer and for cooling the printed pages.

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

Table 1-3 Fans

Abbreviation	Name	Cooling area	Type	Speed
FM1	Main fan	Inside of printer	Intake	Full

Solenoids

Table 1-4 Solenoids

Abbreviation	Component name
SL1	Cassette pickup solenoid
SL2	MP tray pickup solenoid
SL3	Duplex switchback solenoid

Clutches

Table 1-5 Clutches

Abbreviation	Component name
CL1	Duplex re-pickup clutch
CL2	Feed clutch

Switches

Table 1-6 Switches

Abbreviation	Component name
SW1	Power switch
SW101	Cartridge door switch

Sensors

Table 1-7 Sensors

Abbreviation	Component name
TH1	Environment sensor

Low-voltage power supply

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

Figure 1-4 Low-voltage power-supply circuit

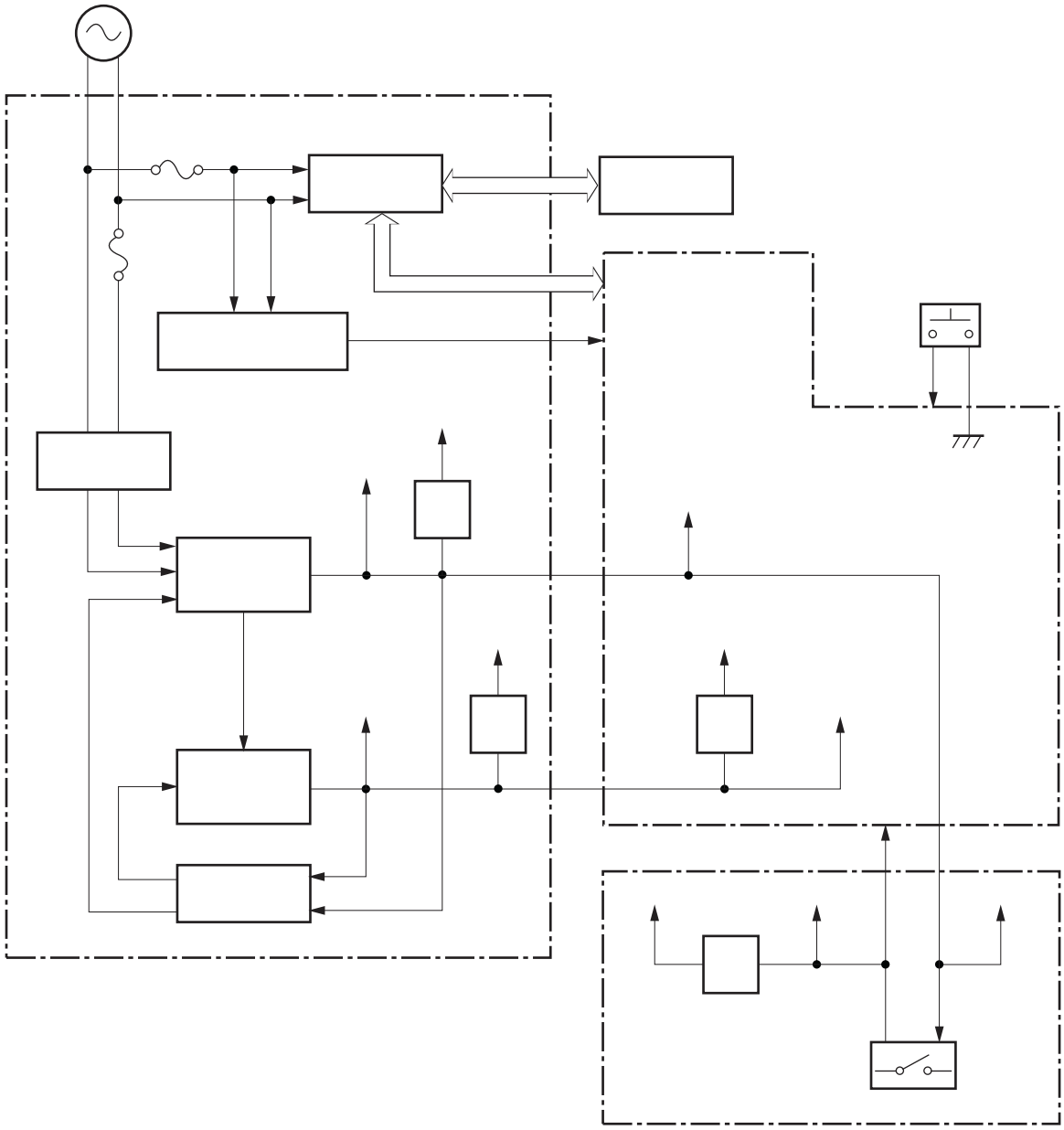


Table 1-8 List of DC voltages

DC power supply		Description
+24V	+24VA	Constantly supplied
		Becomes 4.5V during active OFF or inactive OFF

Table 1-8 List of DC voltages (continued)

DC power supply		Description
	+24VB	Stopped when cartridge door is opened. (SW101)
		Stopped during active OFF or inactive OFF
	+24VC	Stopped when cartridge door is opened. (SW101)
		Stopped during active OFF or inactive OFF
	+24VD	Constantly supplied
		Stopped during active OFF or inactive OFF
+3.3V	+3.3VA	Constantly supplied
	+3.3VB	Constantly supplied
		Stopped during active OFF or inactive OFF
	+3.3VC	Constantly supplied
		Stopped during inactive OFF

Over-current/over-voltage protection

The low-voltage power supply has a protective function against overcurrent and overvoltage conditions to prevent failures in the power supply circuit. If an overcurrent or overvoltage event occurs, the system automatically cuts off the output voltage.

If the DC power is not being supplied from the low-voltage power supply, the protective function might have activated. In this case, turn off the power switch, and then unplug the power cord. Do not plug in the power cord or turn the power switch on again until the root cause is found.

In addition, two fuses in the low-voltage power supply protect against an overcurrent event. If an overcurrent event occurs in the AC line, the fuse blows and cuts off the power distribution.

Safety

For personal safety, the printer interrupts +24VB and +24VC power when the cartridge door detection switch is turned off. This stops DC power supply to the high-voltage power supply (HVPS).

The remote switch control circuit turns on or off the printer power so that the AC power flows even the power switch is turned off. Unplug the printer power cord before disassembling the printer.

Low-voltage power supply functions

The printer has the following low-voltage power supply functions.

Table 1-9 Low-voltage power supply functions

Failure detective function	Applied
Sleep mode	NA
Power supply voltage detection	NA
Automatic power OFF	NA
Automatic power ON/OFF	NA

Table 1-9 Low-voltage power supply functions (continued)

Failure detective function	Applied
Active OFF	Yes
Inactive OFF	Yes
Network mode	NA
Power switch illumination	Yes
Low-voltage power supply failure detection	Yes
Power save mode	NA

High-voltage power supply

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

- Primary charging roller (in the toner cartridge)
- Developing roller (in the toner cartridge)
- Transfer roller
- Pressure roller

High-voltage power supply circuits

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

Figure 1-5 High-voltage power supply circuits

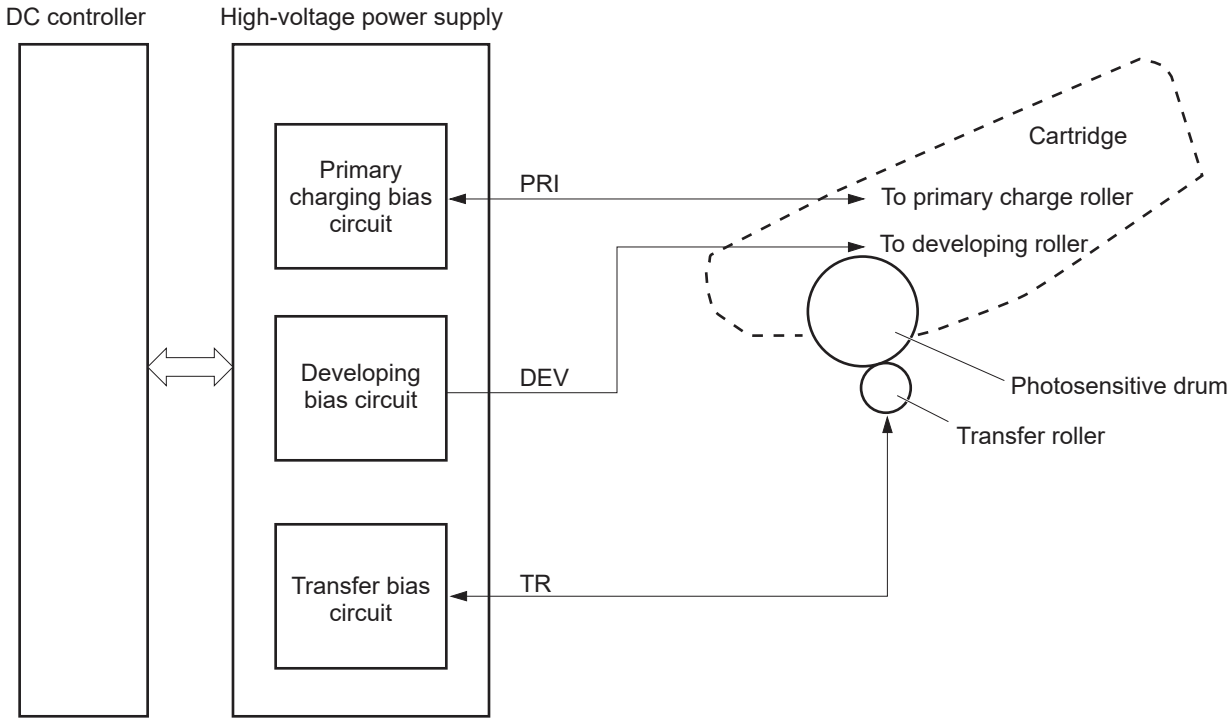


Table 1-10 High-voltage power supply circuits

Circuit	Description
Primary-charging-bias generation	The primary charging bias negatively charges the surface of the photosensitive drum to prepare for image formation.
Developing-bias generation	The developing bias adheres toner to an electrostatic latent image formed on the photosensitive drums.
Transfer-bias generation	The primary transfer bias transfers the toner from each photosensitive drum onto the page.

Fuser bias

The printer uses on-demand fusing. The fuser bias is DC positive for improved print quality. The fuser bias circuit is located in the high-voltage power supply, HVPS (T).

Fuser control

The DC controller and components in the fuser perform the following functions related to fuser operation:

- Control fuser temperature
- Detect fuser failures
- Prevent excessive temperature rise

- Detect remaining life in the fuser
- Determine if the correct fuser is installed

Fuser circuits

The fuser heater control circuit and the fuser heater safety circuit control the fuser temperature according to commands from the DC controller. The fuser consists of the following major components:

Figure 1-6 Fuser components

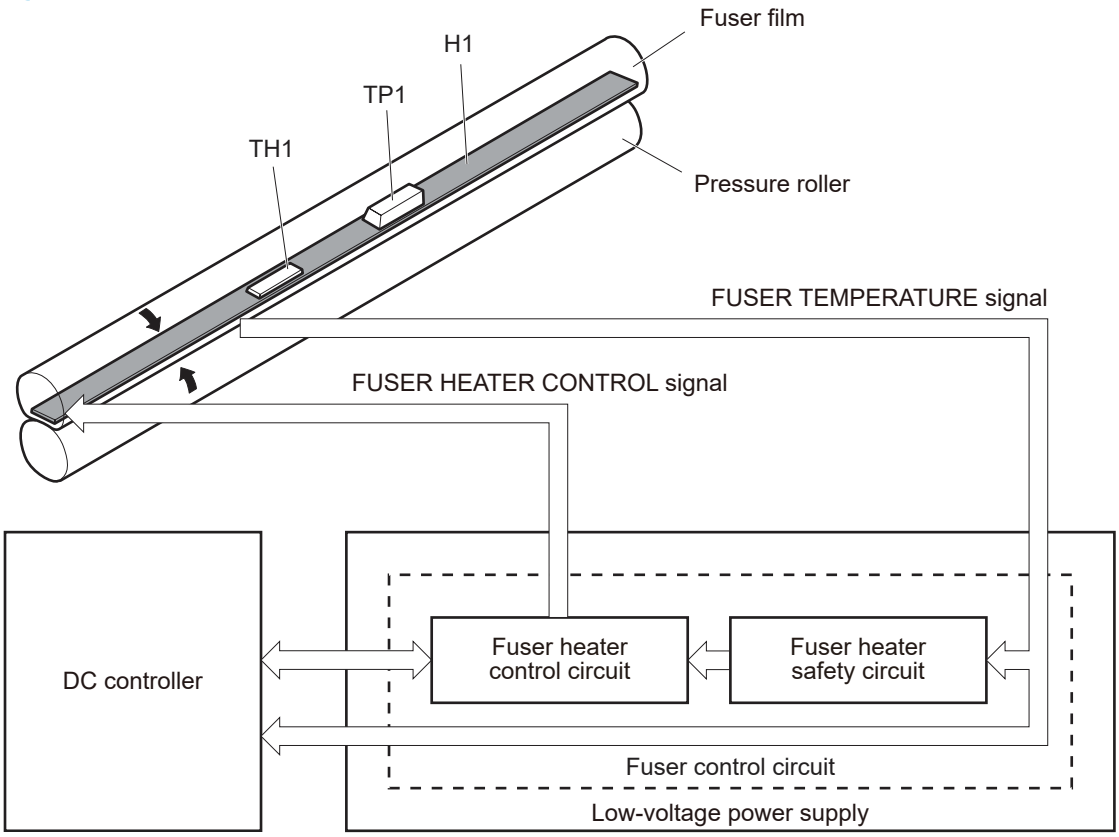
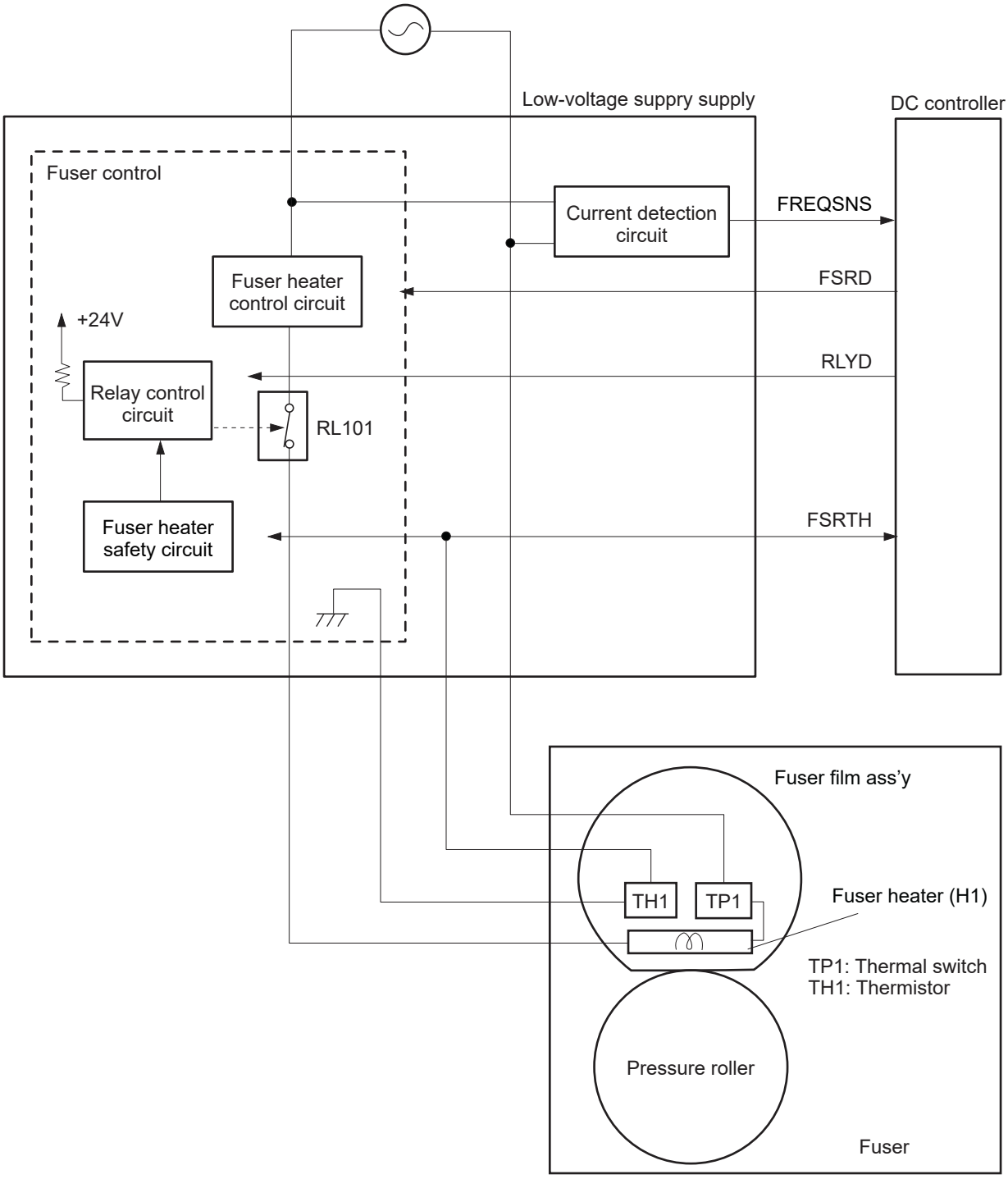


Table 1-11 Fuser components

Type of component	Abbreviation	Name	Function
Heaters	H1	Fuser main heater	Heats the center of the fuser film assembly
Thermistors (Contact type)	TH1	Main thermistor	Detects the center temperature of the fuser heater
Thermoswitch (Contact type)	TP1	Thermoswitch	Prevents an abnormal temperature rise in the fuser heater

Fuser control functions

Figure 1-7 Fuser control



The printer has the following fuser control functions.

Table 1-12 Fuser control functions

Failure detection function	Supported feature
Fuser temperature control	Yes

Table 1-12 Fuser control functions (continued)

Failure detection function	Supported feature
Fuser failure detection	Yes
Frequency detection circuit failure detection	Yes
Fuser pressure release mechanism failure detection	No
Fuser type discrepancy detection	No
Fuser type identification detection	Yes
Fuser presence detection	No
Fuser life detection	No
Relay failure detection	No
Pressure roller cleaning	Yes

Fuser heater protection

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

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

- DC controller: When a thermistor or sub-thermistor detects a temperature above a certain threshold, the DC controller interrupts power to the specific heater.
- Fuser-heater safety circuit: The fuser heater safety circuit monitors the detected temperature of the sub thermistors.
- Thermoswitch: If the temperature in the heaters is abnormally high, and the temperature in the thermoswitch exceeds a specified value, the contact to the thermoswitch breaks.

Engine laser scanner system

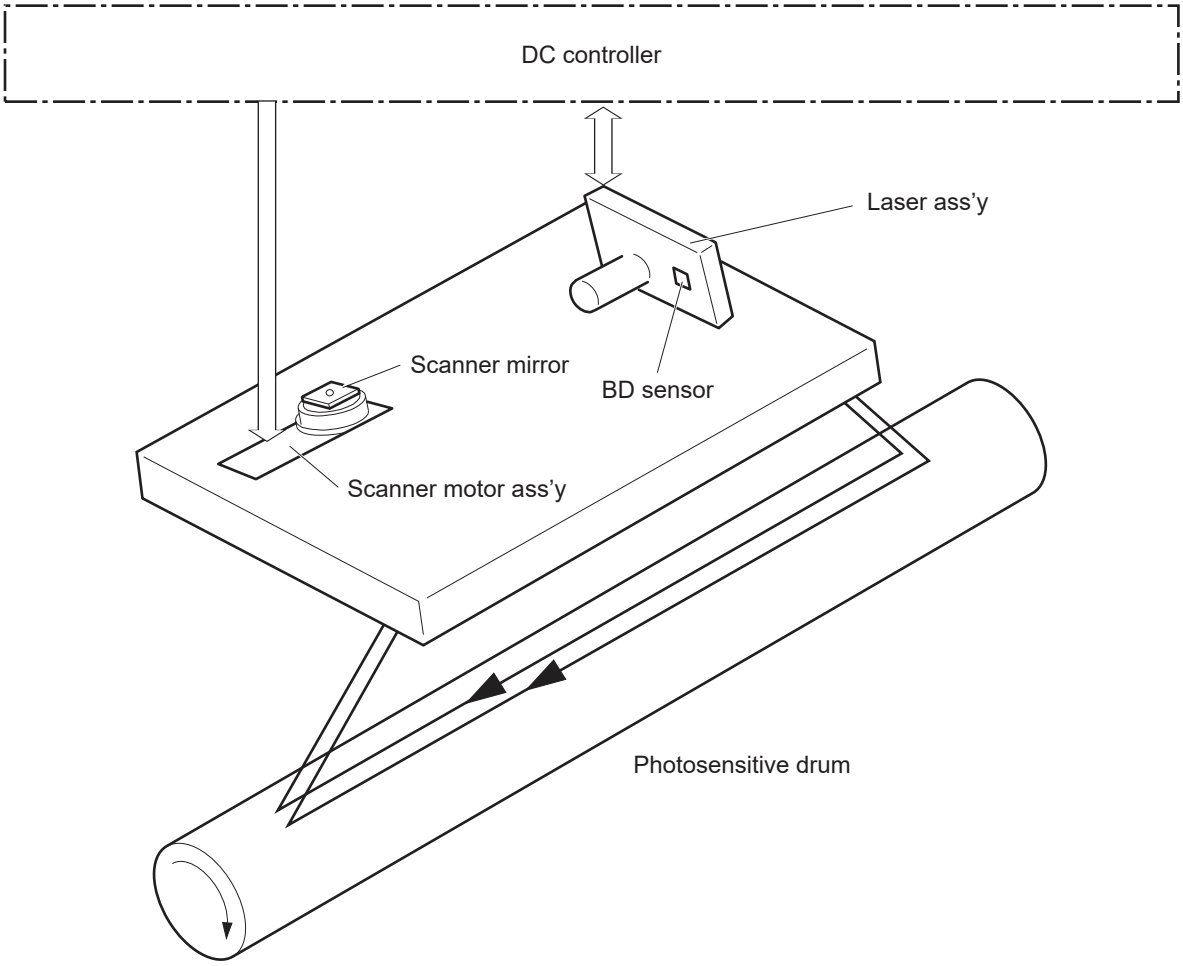
The laser/scanner system forms the latent electrostatic image on the photosensitive drums inside each of the toner cartridges.

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

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

- Laser assembly
- Scanner motor assembly
- Beam detect (BD) sensor
- Scanner mirror

Figure 1-8 Laser/scanner system



Laser/scanner failure detection

The DC controller determines an optical unit failure and notifies the formatter of the error status for the following supported conditions:

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

Safety

The laser/scanner assembly has a mechanical laser shutter. For the safety of users and service technicians, the laser shutter interrupts the optical path of the laser/scanner assembly when the top door is opened (SW101).

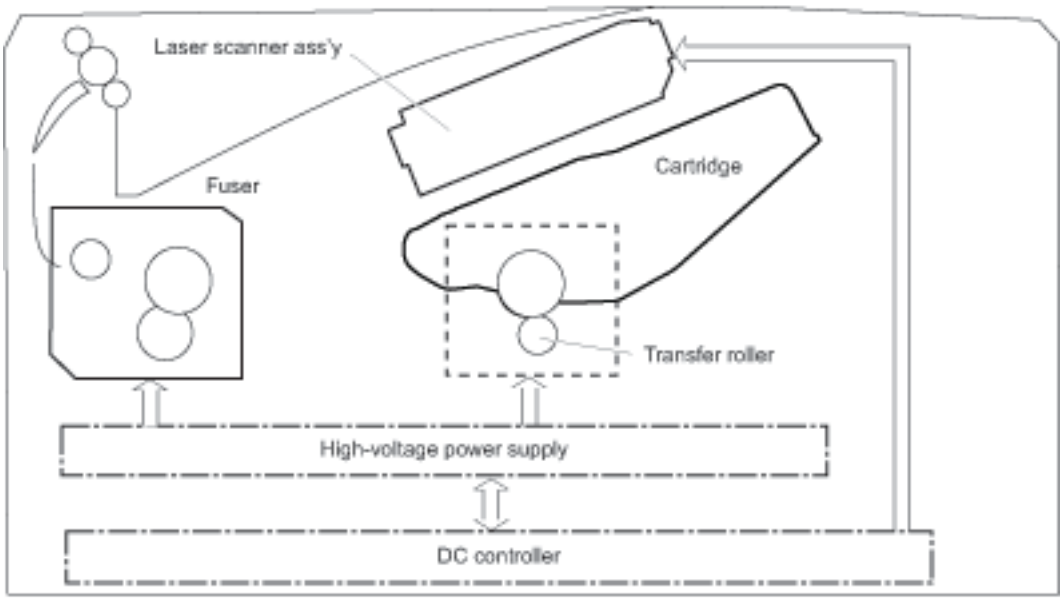
Image-formation process

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

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

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

Figure 1-9 Image-formation system

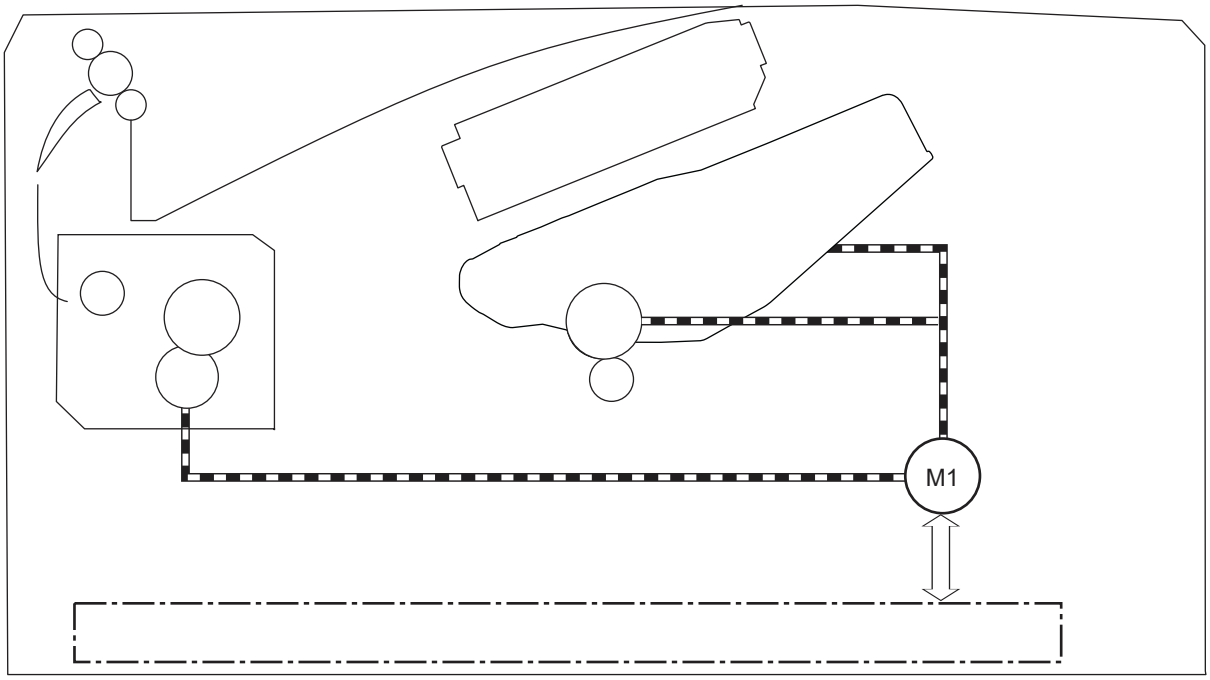


The fuser motor (M1) drives the following image formation components:

- Photosensitive drum
- Developing roller
- Primary charging roller (follows the photosensitive drum)
- Transfer roller (follows the photosensitive drum)
- Pressure roller
- Fuser film (follows the pressure roller)

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

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



Abbreviation	Component
M1	Fuser motor

The following figure shows the toner-level sensor for the image-formation system.

Figure 1-11 Toner-level sensor

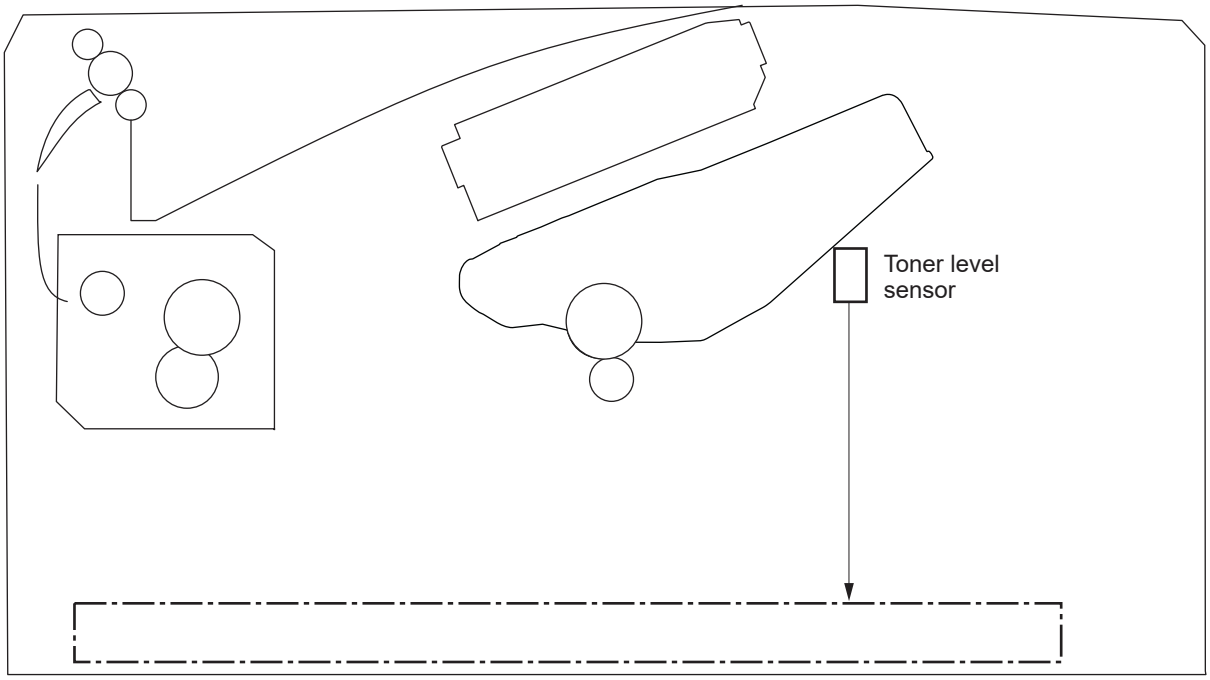


Table 1-13 Sensors

Abbreviation	Component	Replacement part number
	Toner-level sensor	

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

Figure 1-12 Image-formation process

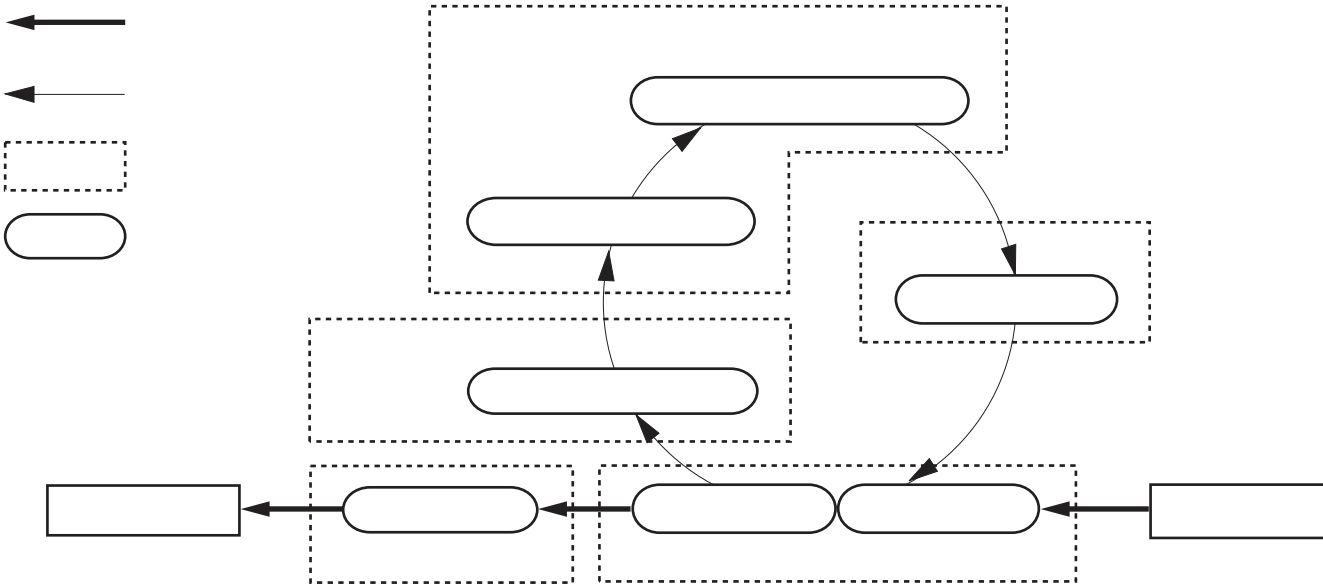


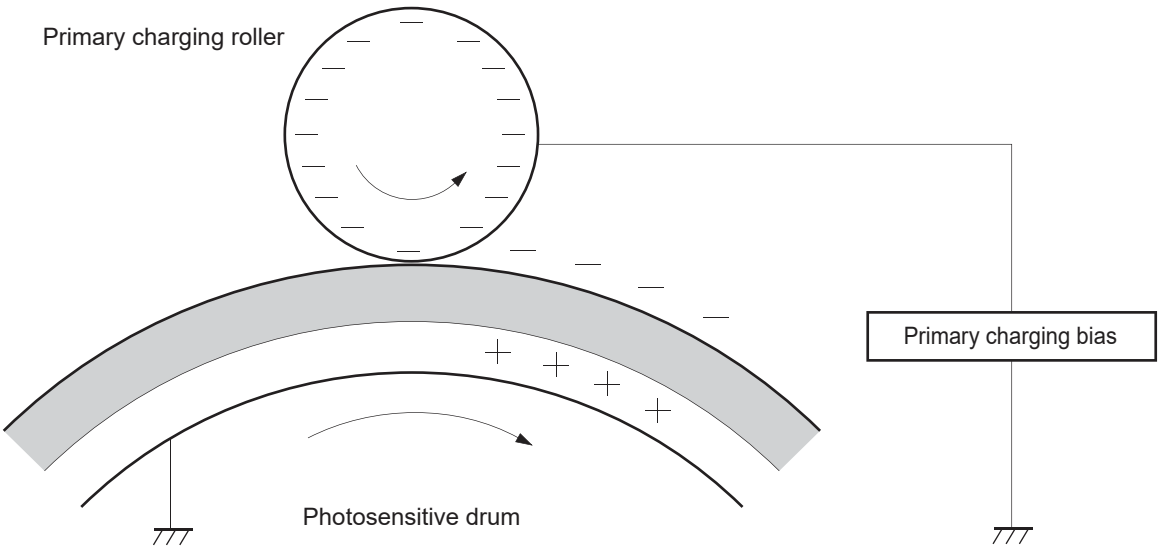
Table 1-14 Image formation process

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

Step 1: Primary charging

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

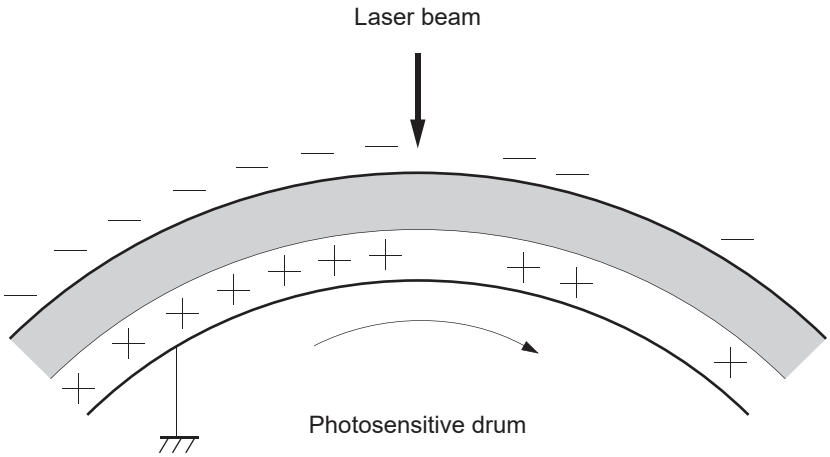
Figure 1-13 Primary charging



Step 2: Laser-beam exposure

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

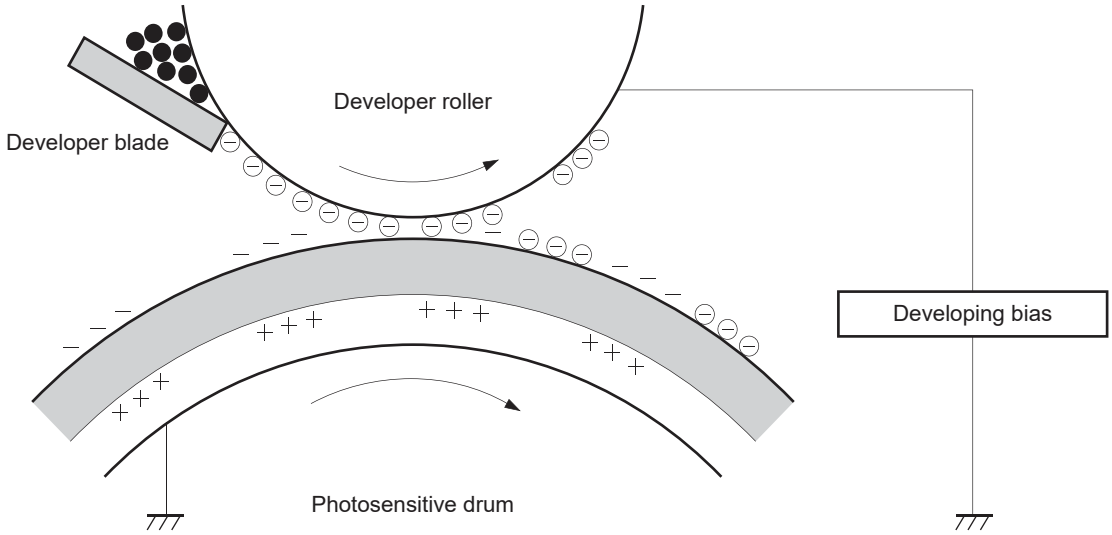
Figure 1-14 Laser-beam exposure



Step 3: Development

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

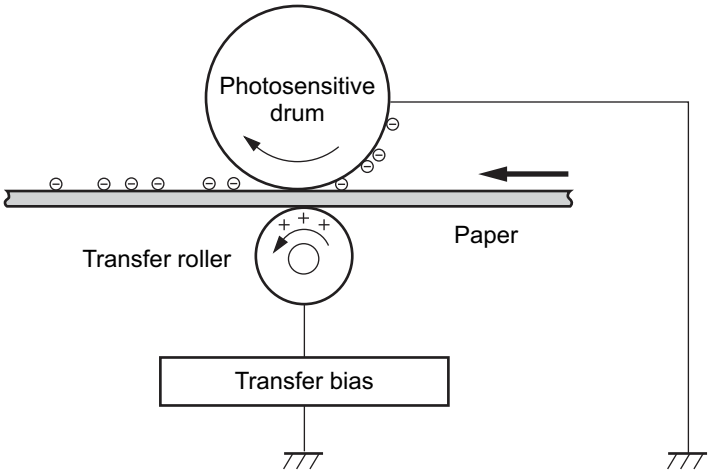
Figure 1-15 Development



Step 4: Transfer

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

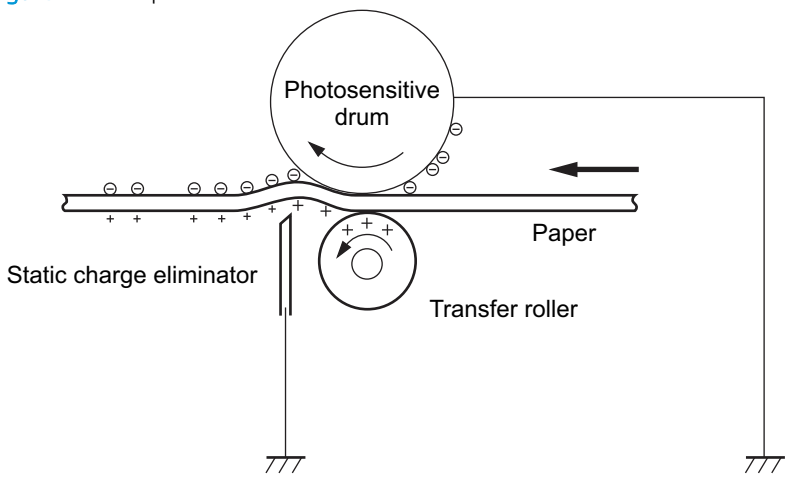
Figure 1-16 Primary transfer



Step 5: Separation

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

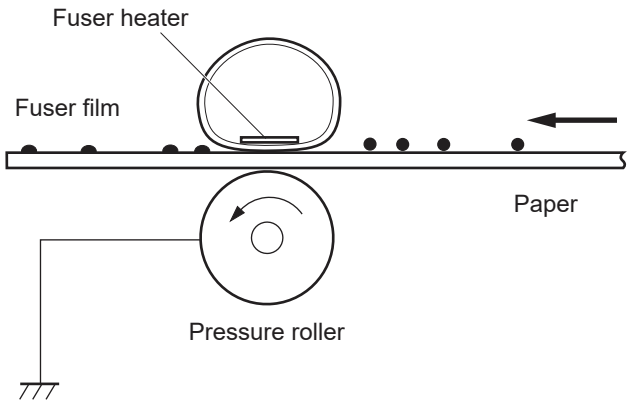
Figure 1-17 Separation



Step 6: Fusing

The product uses an on-demand fusing method to fuse the toner image onto the media. The toner image is permanently affixed to the print media by the heat and pressure. The fusing bias is applied to the pressure roller to improve image quality.

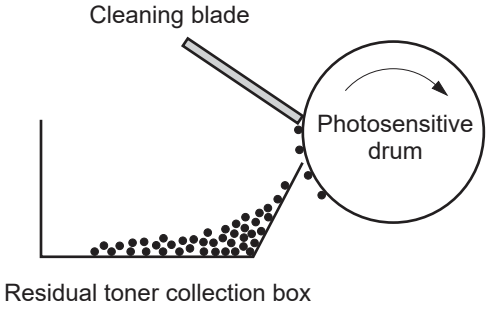
Figure 1-18 Fusing



Step 7: Drum cleaning

The cleaning blade scrapes the residual toner off the surface of the photosensitive drum and deposits it in the toner collection box. The drum is now clear and ready for the next image-formation process.

Figure 1-19 Drum cleaning



Toner cartridges

The printer has one toner cartridge.

Design

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

- Photosensitive drum
- Developer
- Primary-charging roller
- Memory chip

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

Figure 1-20 Toner cartridge system

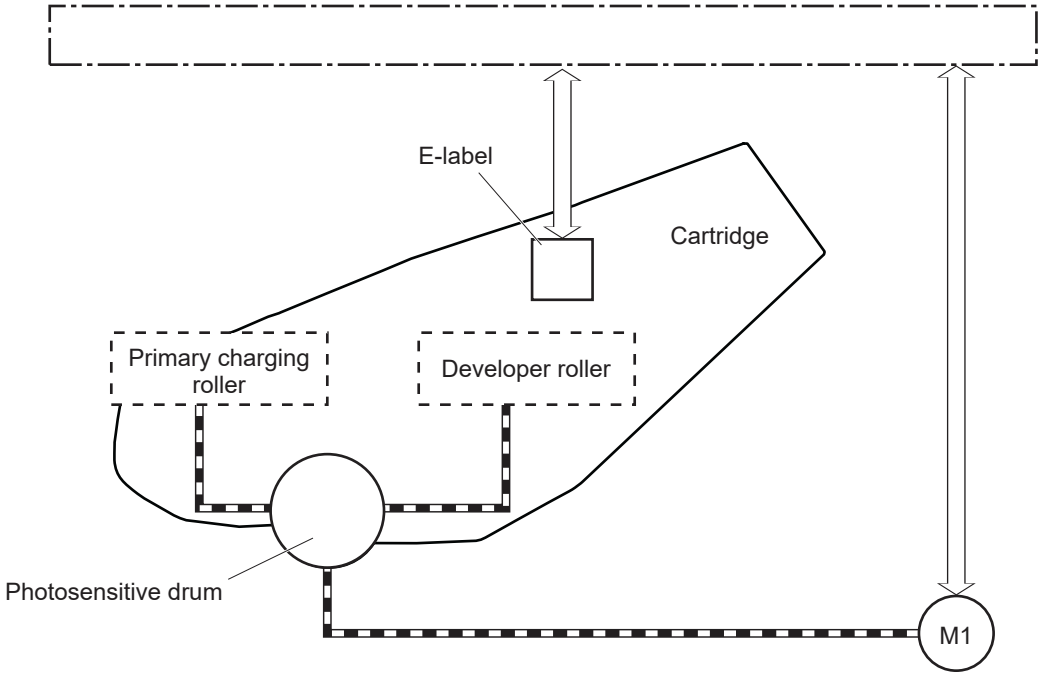


Table 1-15 Toner cartridge functions

Function	Supported feature
Toner cartridge presence detection	Yes
Toner level detection	Yes
Toner cartridge life detection	Yes
Toner cartridge mis-installation detection	No
Drum discharge	No
Transfer cleaning	Yes

Memory chip

The memory chip is non-volatile memory that stores information about the usage of the toner cartridge and helps protect the customer from counterfeit cartridges. The chip is also used to detect the presence of a cartridge within the printer or when a cartridge is installed in the wrong slot. The printer reads and writes the data in the memory chip.

Toner level and cartridge life detection

Toner level detection: The DC controller detects the remaining toner in a cartridge by the optical detection method and then notifies the formatter of the remaining toner level.

Cartridge life detection: The DC controller detects the cartridge life by monitoring the total operating time or remaining toner level of the toner cartridge. The DC controller determines a cartridge end of life and notifies the formatter when total operating time of the cartridge reaches a specified time or the cartridge runs out of toner.

Dynamic security

Learn about dynamic-security-enabled printers.

Certain HP printers use cartridges that have security chips or electronic circuitry. Cartridges using a non-HP chip or modified or non-HP circuitry* might not work. And, those that work today might not work in the future.

As is standard in the printing business, HP has a process for authenticating cartridges. HP continues to use security measures to protect the quality of our customer experiences, maintain the integrity of our printing systems, and protect our intellectual property. These measures include authentication methods that change periodically and might prevent some third-party supplies from working now or in the future. HP printers and original HP cartridges deliver the best quality, security and reliability. When cartridges are cloned or counterfeited, the customer is exposed to quality and potential security risks, compromising the printing experience.

*Non-HP Chips and modified or non-HP electronic circuitry are not produced or validated by HP. HP cannot guarantee that these chips or circuitry will work in your printer now or in the future. If you are using non-original HP cartridges, please check with your supplier to ensure your cartridge has an original HP security chip or unmodified HP electronic circuitry.

Input trays/accessories

This section describes the paper feeder (optional Tray 3).

- Tray 3

Tray 3

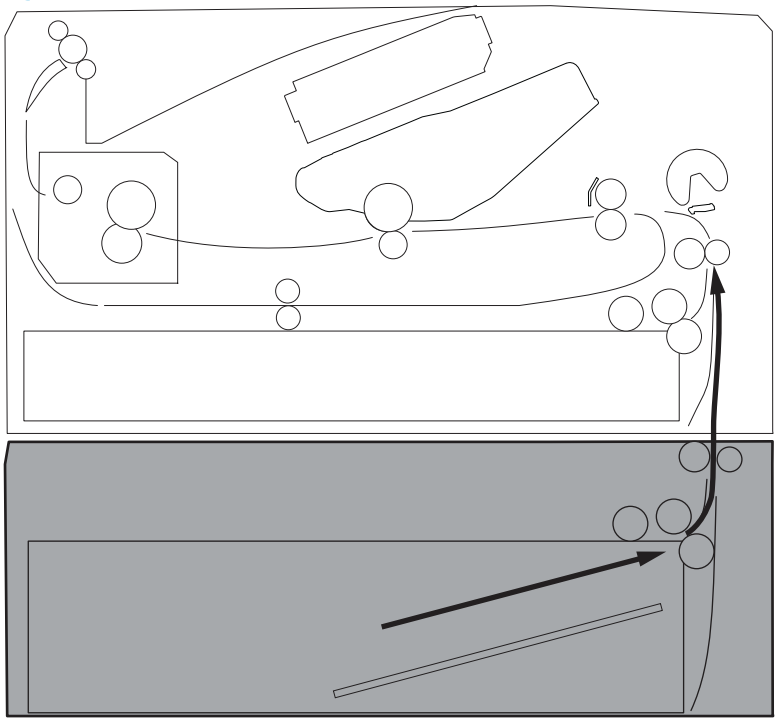
Basic operation

The paper feeder is optionally installed at bottom of the printer. It picks up the print media and feeds it to the printer. The paper DC controller controls the operational sequence of the paper feeder.

Paper path

The figure below shows the optional Tray 3 paper path.

Figure 1-21 Optional Tray 3 paper path



Paper feeder controller

The figure below shows the paper feeder controller block diagram. The table in this section describes the paper feeder electrical components.

Figure 1-22 Paper feeder controller

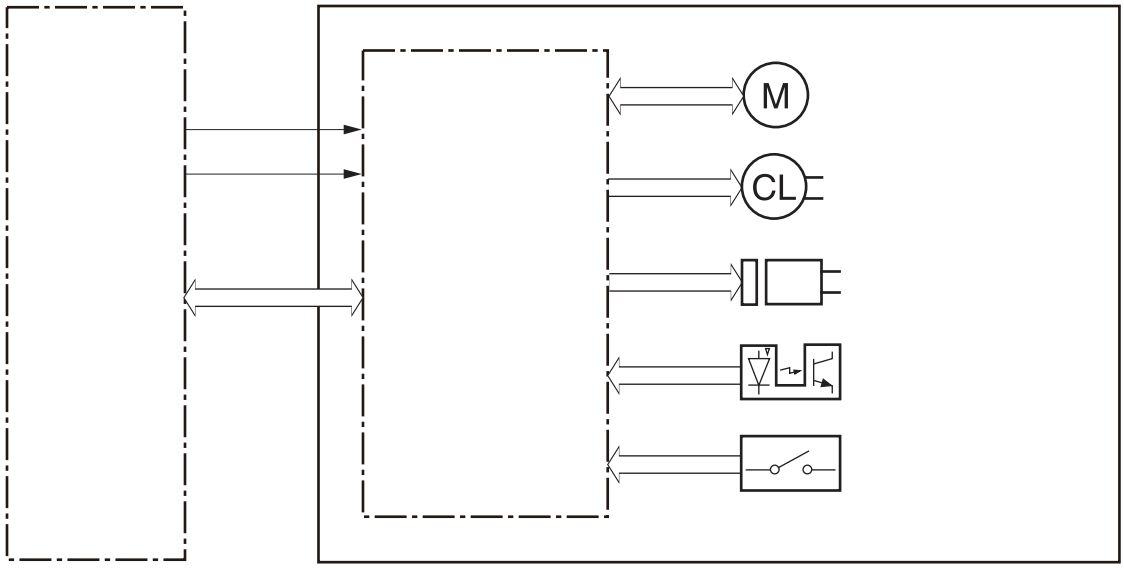


Table 1-16 Electrical component list, paper feeder

Component type	Abbreviation	Component name
Motor	M5	Lifter motor
Solenoid	SL4	Cassette pickup solenoid
Clutch	CL2	Feed clutch (Note)
Switch	SW3	Cassette detection switch
Photointerrupter	PS460	Media surface sensor
	PS461	Cassette media out sensor

Motor control

The paper feeder uses one motor for the cassette lift-up operation.

Table 1-17 Motors, paper feeder

Component name		Components driven
M5	Lifter motor[1]	Lifts up the cassette

[1] The paper feeder does not detect lifter motor failures.

Pickup and feed operation

The paper feeder picks up the sheet of paper one by one in the paper feeder cassette and feeds it to the printer.

Electrical components, pickup and feed

The figure below shows the paper feeder electrical components. The table in this section describes the electrical components.

Figure 1-23 Electrical components, pickup and feed

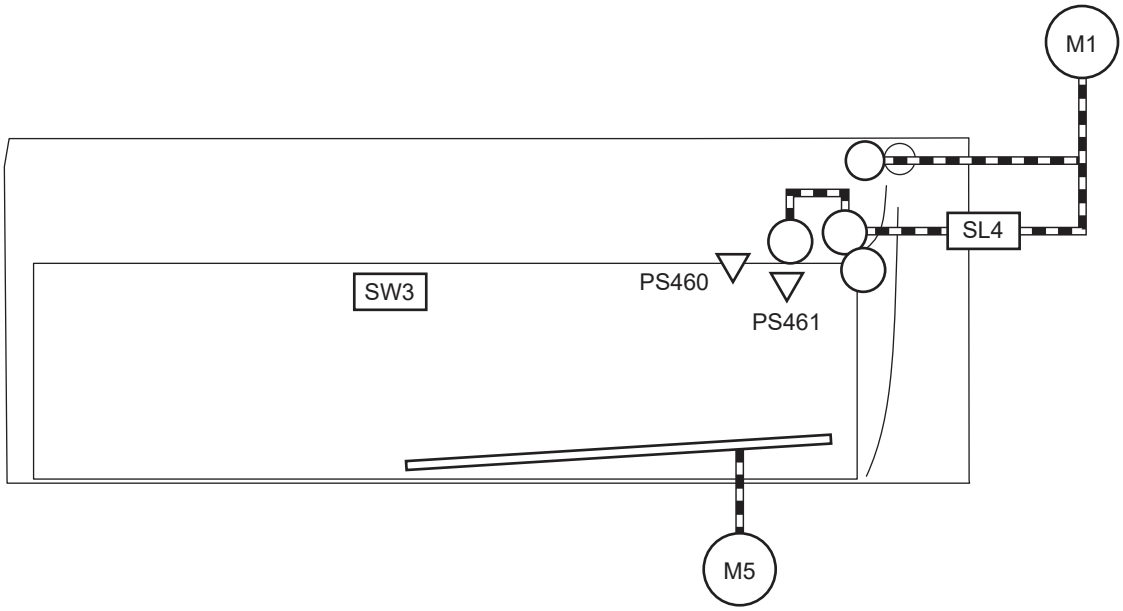


Table 1-18 Electrical components, pickup and feed

Abbreviation	Component name
M1	Fuser motor[1]
M5	Lifter motor
SL4	Cassette pickup solenoid
SW3	Cassette detection switch
PS460	Media surface sensor
PS461	Cassette media out sensor

[1] This motor is located in the printer.

Other functions

The paper feeder has the following pickup and feed functions.

Table 1-19 Other functions, paper feeder

Function	Supported feature
Cassette lift-up control	Yes
Cassette presence detection	Yes
Cassette media size detection	No
Cassette media stack surface detection	Yes
Cassette media out detection	Yes
Cassette media level detection	No
Multiple-feed prevention	Yes
Automatic delivery	Yes

Jam detection

The DC controller in the printer detects jams during the paper feeder pickup and feed operation.

Scanning and image capture system

NOTE: MFP printers only.

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.

- Mechanical drive system

  The drive system moves the CIS scanner along the document length to create the image. In this printer, the drive system consists of a small DC motor with an optical encoder, and a gear chain. The speed of the drive system is proportional to the scan resolution (300 ppi is much faster than 1200 ppi) and also proportional to the type of scan.

- 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 printer 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 printer. Image data is captured at 300 ppi for copies and is user selectable for scans to the computer.

Document feeder system

NOTE: MFP printers only.

Document feeder simplex operation

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

When the printer duplexer scans from the document feeder, the paper moves through one time, because the document feeder has a contact image sensor (CIS) scanner for side two which is scanned simultaneously with side one.

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

- Standby (paper-loading) mode

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

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

- Pick

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

- Feed

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

- Home

  When the top-of-form sensor detects the trailing edge of the last page, the last sheet is ejected and the motor turns back down in standby mode, which allows it to detect when more media is loaded.

2 Solve problems

- HP service and support
- Solve problems checklist
- Troubleshooting process
- Tools for troubleshooting
- Solve paper-handling problems
- Prevent paper jams
- Clear paper jams
- Solve image quality problems
- Print quality troubleshooting guide SCOTT
- Clean the printer
- Solve performance problems
- Solve connectivity problems
- Service/Support menus and Repair Mode functions
- Solve fax problems (MFP models only)
- Solve email problems (MFP models only)
- Update the firmware

HP service and support

Learn about HP access to additional service and support information.

Additional service and support for channel partners

Channel partners, go to partner.hp.com, and then use the steps below to access the HP Web-based Interactive Search Engine (WISE).

Access WISE for Channel partners

1. Select **Services & Support**, and then select **Services Delivery**.
2. Select **Technical Support**, and then select **Technical Documentation**.

Find information about the following topics

- Service manuals
- Service advisories
- Up-to-date control panel message (CPMD) troubleshooting
- Install and configure
- Printer specifications
- Solutions for printer issues and emerging issues
- Remove and replace part instructions and videos
- Warranty and regulatory information

Additional service and support for HP internal personnel

HP internal personnel, go to one of the following Web-based Interactive Search Engine (WISE) sites:

Americas (AMS)

- https://support.hp.com/wise/home/ams-enWISE - English
- https://support.hp.com/wise/home/ams-esWISE - Spanish
- https://support.hp.com/wise/home/ams-ptWISE - Portuguese
- https://support.hp.com/wise/home/ams-frWISE - French

Asia Pacific / Japan (APJ)

- https://support.hp.com/wise/home/apj-enWISE - English
- https://support.hp.com/wise/home/apj-jaWISE - Japanese
- https://support.hp.com/wise/home/apj-koWISE - Korean
- https://support.hp.com/wise/home/apj-zh-HansWISE - Chinese (simplified)

- https://support.hp.com/wise/home/apj-zh-HantWISE - Chinese (traditional)
- https://support.hp.com/wise/home/apj-thWISE - Thai

Europe / Middle East / Africa (EMEA)

- https://support.hp.com/wise/home/emea-enWISE - English

Solve problems checklist

- Solve problems checklist

Solve problems checklist

If the printer is not correctly functioning, complete the steps (in the order given) in the following checklist. If the printer fails a checklist step, follow the corresponding troubleshooting suggestions for that step. If a checklist step resolves the problem, skip the remaining checklist items.

1. Make sure that the printer is set up correctly.
   a. Press the power button to turn on the printer or to deactivate the Auto-Off mode.
   b. Check the power-cable connections.
   c. Make sure that the line voltage is correct for the printer power configuration. See the label that is on the printer for voltage requirements. If you are using a power strip and its voltage is not within specifications, plug the printer directly into the wall. If it is already plugged into the wall, try a different outlet.
2. Check the cable connections.
   a. Check the cable connection between the printer and the computer. Make sure that the connection is secure.
   b. Make sure that the cable itself is not faulty, by using a different cable if possible.
   c. Check the network connection: Make sure that the network light is lit. The network light is next to the network port on the back of the printer.

      If the printer remains unable to connect to the network, uninstall and then reinstall the printer. If the error persists, contact a network administrator.
3. Check to see if any messages appear on the control panel.
4. Make sure that the paper you are using meets specifications.
5. Make sure that the paper is loaded correctly in the input tray.
6. Make sure that the printer software is installed correctly.
7. Verify that you have installed the printer driver for this printer, and that you are selecting this printer from the list of available printers.
8. Print a configuration page.
   a. **2-line control panels**: On the printer control panel, press the OK button.

      Touchscreen control panels: From the Home screen on the printer control panel, touch the Setup button.
   b. Open the Reports menu.
   c. Select Configuration Report.

After printing the configuration page, check the following:

a. If the page does not print, verify that the input tray contains paper and that the paper is properly loaded.

b. Make sure that the toner cartridge is installed correctly.

c. If the page jams in the printer, clear the jam.

d. If the print quality is unacceptable, complete the following steps:

- Verify that the print settings are correct for the paper you are using.
- Solve print-quality problems.

9. Print a small document from a different program that has printed in the past. If this solution works, then the problem is with the program you are using. If this solution does not work (the document does not print), complete these steps:

a. Try printing the job from another computer that has the printer software installed.

b. Check the cable connection. Direct the printer to the correct port, or reinstall the software, selecting the connection type you are using.

Print the menu map

To more easily navigate individual settings, print a report of the complete Menu Structure.

Print the menu map from a touchscreen control panel

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

> **TIP:** You may also open Setup by swiping down from the top of the screen.

2. Touch the Setup button again.
3. Scroll down and touch Reports.
4. Swipe the screen to scroll to **Menu Structure**.
5. Touch Print.

Print the menu map from a LCD control panel

1. From the Home screen on the printer control panel press the OK button. When you see the setup menu displayed, press theOKbutton again.
2. Using the right ▶ or left ◀ arrow button, scroll to Reports.
3. Press the OK button.
4. Using the right ▶ or left ◀ arrow button, scroll to Menu Structure.
5. Press the OK button to print.

Print the configuration page

Print a configuration page to test the printer.

Print the configuration page from a touchscreen control panel.

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

   TIP: You may also open Setup by swiping down from the top of the screen.

2. Touch the Setup button again.
3. Scroll down and touch Reports.
4. Swipe the screen to scroll to **Printer Configuration Page**.
5. Touch Print.

Print the configuration report from a LCD control panel

1. From the Home screen on the printer control panel press the OK button. When you see the setup menu displayed, press theOKbutton again.
2. Using the right ▶ or left ◀ arrow button, scroll to Reports.
3. Press the OK button.
4. Using the right ▶ or left ◀ arrow button, scroll to Printer Configuration Page..
5. Press the OK button to print.

Print the Printer Status Report (includes a partial event log)

The event log provides the last 10 events it must be printed from the Printer Maintenance menu, then select Troubleshooting , and then select Event Logs.

1. **2-line control panels**: On the printer control panel, press the OK button to access the Main Menu, and then use the ◀ or ▶ to navigate to the Reports menu, then select OK button. Use ◀ or ▶ to navigate to Printer Status Report.

   NOTE: The event log can also be printed from the Printer Maintenance menu, select Troubleshooting, and then select Event Log

   Touchscreen control panels: From the Home screen on the printer control panel, swipe down on the dash board, touch Setup icon, and then scroll through to open the Reports menu.

2. Select Printer Status Report.

   NOTE: The event log can also be printed from the Printer Maintenance menu, touch Troubleshooting, and then touch Event Log

The event log is located in the lower right-hand corner of the page.

Print the demo log

Print a product demo page.

Print the demo page from a touchscreen control panel.

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

   TIP: You may also open Setup by swiping down from the top of the screen.

2. Touch the Setup button again.
3. Scroll toPrinter Maintenanceand touch to select.
4. Scroll to Print Quality Tools and touch to select.
5. Scroll to Print a Demo Page and touch to print the report.

Print the demo page from a LCD control panel

1. From the Home screen on the printer control panel press the OK button. When you see the setup menu displayed, press the OK button again.
2. Using the right ▶ or left ◀ arrow button, scroll to Printer Maintenance.
3. Press the OK button.
4. Using the right ▶ or left ◀ arrow button, scroll to Print Quality Tools..
5. Press the OK button then use the right ▶ or left ◀ arrow button to scroll to Print a Demo Page.
6. Press the OK button to print.

Troubleshooting process

- Solve problems checklist
- Determine the problem source
- Power subsystem
- Control panel checks

Solve problems checklist

If the printer is not correctly functioning, complete the steps (in the order given) in the following checklist. If the printer fails a checklist step, follow the corresponding troubleshooting suggestions for that step. If a checklist step resolves the problem, skip the remaining checklist items.

1. Make sure that the printer is set up correctly.
    a. Press the power button to turn on the printer or to deactivate the Auto-Off mode.
    b. Check the power-cable connections.
    c. Make sure that the line voltage is correct for the printer power configuration. See the label that is on the printer for voltage requirements. If you are using a power strip and its voltage is not within specifications, plug the printer directly into the wall. If it is already plugged into the wall, try a different outlet.
2. Check the cable connections.
    a. Check the cable connection between the printer and the computer. Make sure that the connection is secure.
    b. Make sure that the cable itself is not faulty, by using a different cable if possible.
    c. Check the network connection: Make sure that the network light is lit. The network light is next to the network port on the back of the printer.

       If the printer remains unable to connect to the network, uninstall and then reinstall the printer. If the error persists, contact a network administrator.
3. Check to see if any messages appear on the control panel.
4. Make sure that the paper you are using meets specifications.
5. Make sure that the paper is loaded correctly in the input tray.
6. Make sure that the printer software is installed correctly.
7. Verify that you have installed the printer driver for this printer, and that you are selecting this printer from the list of available printers.
8. Print a configuration page.

a. **2-line control panels**: On the printer control panel, press the OK button to access the Main Menu, and then use the ◀ or ▶ to navigate to the Reports menu, then select OK button. Use ◀ or ▶ to navigate to Configuration report.

   Touchscreen control panels: From the Home screen on the printer control panel, swipe down on the dash board, touch Setup icon, and then scroll through to open the Reports menu.

b. Select Configuration Report.

After printing the configuration page, check the following:

a. If the page does not print, verify that the input tray contains paper and that the paper is properly loaded.

b. Make sure that each toner cartridge is installed correctly.

c. If the page jams in the printer, clear the jam.

d. If the print quality is unacceptable, complete the following steps:

   - Verify that the print settings are correct for the paper you are using.
   - Solve print-quality problems.

9. Print a small document from a different program that has printed in the past. If this solution works, then the problem is with the program you are using. If this solution does not work (the document does not print), complete these steps:

   a. Try printing the job from another computer that has the printer software installed.

   b. Check the cable connection. Direct the printer to the correct port, or reinstall the software, selecting the connection type you are using.

Print the menu map

To more easily navigate individual settings, print a report of the complete printer menus.

1. **2-line control panels**: On the printer control panel, press the OK button to access the Main Menu, and then use the ◀ or ▶ to navigate to the Reports menu, then select OK button. Use ◀ or ▶ to navigate to Menu structure.

   Touchscreen control panels: From the Home screen on the printer control panel, swipe down on the dash board, touch Setup icon, and then scroll through to open the Reports menu.

2. Select Menu Structure.

Print a configuration page

Print a configuration page to test the printer.

1. **2-line control panels**: On the printer control panel, press the OK button to access the Main Menu, and then use the ◀ or ▶ to navigate to the Reports menu, then select OK button. Use ◀ or ▶ to navigate to Configuration report.

   Touchscreen control panels: From the Home screen on the printer control panel, swipe down on the dash board, touch Setup icon, and then scroll through to open the Reports menu.

2. Select Configuration Report.

Print the Printer Status Report (includes a partial event log)

The event log.provides the last 10 events it must be printed from the Printer Maintenance menu, then select Troubleshooting , and then select Event Logs.

1. **2-line control panels**: On the printer control panel, press the OK button to access the Main Menu, and then use the ◀ or ▶ to navigate to the Reports menu, then select OK button. Use ◀ or ▶ to navigate to Printer Status Report.

   NOTE: The event log can also be printed from the Printer Maintenance menu, select Troubleshooting, and then select Event Log

   Touchscreen control panels: From the Home screen on the printer control panel, swipe down on the dash board, touch Setup icon, and then scroll through to open the Reports menu.

2. Select Printer Status Report.

   NOTE: The event log can also be printed from the Printer Maintenance menu, touch Troubleshooting, and then touch Event Log

The event log is located in the lower right-hand corner of the page.

Determine the problem source

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

- Use the troubleshooting flowchart to pinpoint the root cause of hardware malfunctions. The flowchart provides guides to the sections of this chapter that contain steps to correct the malfunction.

Before beginning any troubleshooting procedure, check the following issues:

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

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

Pre-troubleshooting checklist

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

General topic	Questions
Environment	• Is the printer installed on a solid, level surface (+/- 1°)? • Is the power-supply voltage within ± 10 volts of the specified power source? • Is the power-supply plug inserted in the printer and the outlet? • Is the operating environment within the specified parameters? • Is the printer exposed to ammonia gas, such as that produced by diazo copiers or office cleaning materials? NOTE: Diazo copiers produce ammonia gas as part of the copying processes. Ammonia gas (from cleaning supplies or a diazo copier) can have an adverse effect on some printer components (for example, the toner cartridge OPC). • Is the printer exposed to direct sunlight?
Media	• Does the customer use only supported media? • Is the media in good condition (no curls, folds, or distortion)? • Is the media stored correctly and within environmental limits?
Input trays	• Is the amount of media in the tray within specifications? • Is the media correctly placed in the tray? • Are the paper guides aligned with the stack? • Is the tray correctly installed in the printer?
HP Genuine Toner cartridge	• Is the correct regionalized toner cartridge (or cartridges) installed correctly?
Transfer unit and fuser	• Are the transfer unit and fuser installed correctly? NOTE: For printers with an intermediate transfer belt (ITB), is the ITB installed correctly and fully seated. If a replacement ITB was installed, was all of the packing materials removed?
Covers	• Is the toner cartridge door closed?
Condensation	• Does condensation occur following a temperature change (particularly in winter following cold storage)? If so, wipe affected parts dry or leave the printer on for 10 to 20 minutes. • 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 (toner cartridges, memory modules, and EIO cards) from the printer. • If the hardware or software configuration has not changed or the problem is not associated with any specific software, see the complete service manual for this printer. • Remove the printer from the network and ensure that the failure is associated with the printer before beginning troubleshooting. • For any print-quality issues, calibrate the printer.

Troubleshooting flowchart

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

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

Table 2-1 Troubleshooting flowchart

1 **Power on**	Is the printer on and does a readable message display?		Follow the power-on troubleshooting checks detailed following this table. After the control panel display is functional, see step 2.
	Yes ↓	No →	
2 **Control panel messages**	Does the message **Ready** display on the control panel?		After the errors have been corrected, go to step 3.
	Yes ↓	No →	
3 **Event log**	Open the Troubleshooting menu and print an event log to see the history of errors with this printer. Does the event log print?		If the event log does not print, check for error messages. If paper jams inside the printer, see the jams section of the printer service manual. If error messages display on the control panel when trying to print an event log, see the control panel message section of the printer troubleshooting service manual. After successfully printing and evaluating the event log, see step 4.
	Yes ↓	No →	
4 **Information pages**	Open the Reports menu and print the configuration pages to verify that all the accessories are installed. Are all the accessories installed?		If accessories that are installed are not listed on the configuration page, remove the accessory and reinstall it. After evaluating the configuration pages, see step 5.
	Yes ↓	No →	
5 **Print quality**	Does the print quality meet the customer's requirements?		Compare the images with the sample defects in the image defect tables. See the images defects table in the printer repair service manual. After the print quality is acceptable, see step 6.
	Yes ↓	No →	
6 **Interface**	Can the customer print successfully from the host computer?		Verify that all I/O cables are connected correctly and that a valid IP address is listed on the HP Jetdirect configuration page. If error messages display on the control panel when trying to print an event log, see the control-panel message section of the printer troubleshooting service manual. When the customer can print from the host computer, this is the end of the troubleshooting process.
	Yes. This is the end of the troubleshooting process.	No →	

Power subsystem

Power-on checks

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

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

Power-on troubleshooting overview

During normal operation, a cooling fan begins to spin briefly after the printer power is turned on. Place a hand over the fan intake vents located on the right-side cover. When the fan is correctly operating, air passing into the printer is felt. Lean close to the printer to hear the fan operating. If the fan is operating, the dc side of the power supply is functioning.

After the fan is operating, the main motor turns on (unless the top cover is open, a jam condition is sensed, or the paper-path sensors are damaged). Visually and audibly determine that the main motor is turned on.

If the fan and main motor are operating correctly, the next troubleshooting step is to isolate print engine, formatter, and control panel problems. Perform an engine test. If the formatter is damaged, it might interfere with the engine test. If the engine-test page does not print, try removing the formatter, and then performing the engine test again. If the engine test is then successful, the problem is almost certainly with the formatter, the control panel, or the cable that connects them.

Perform an engine test

▲ With the printer on and in the Ready state.

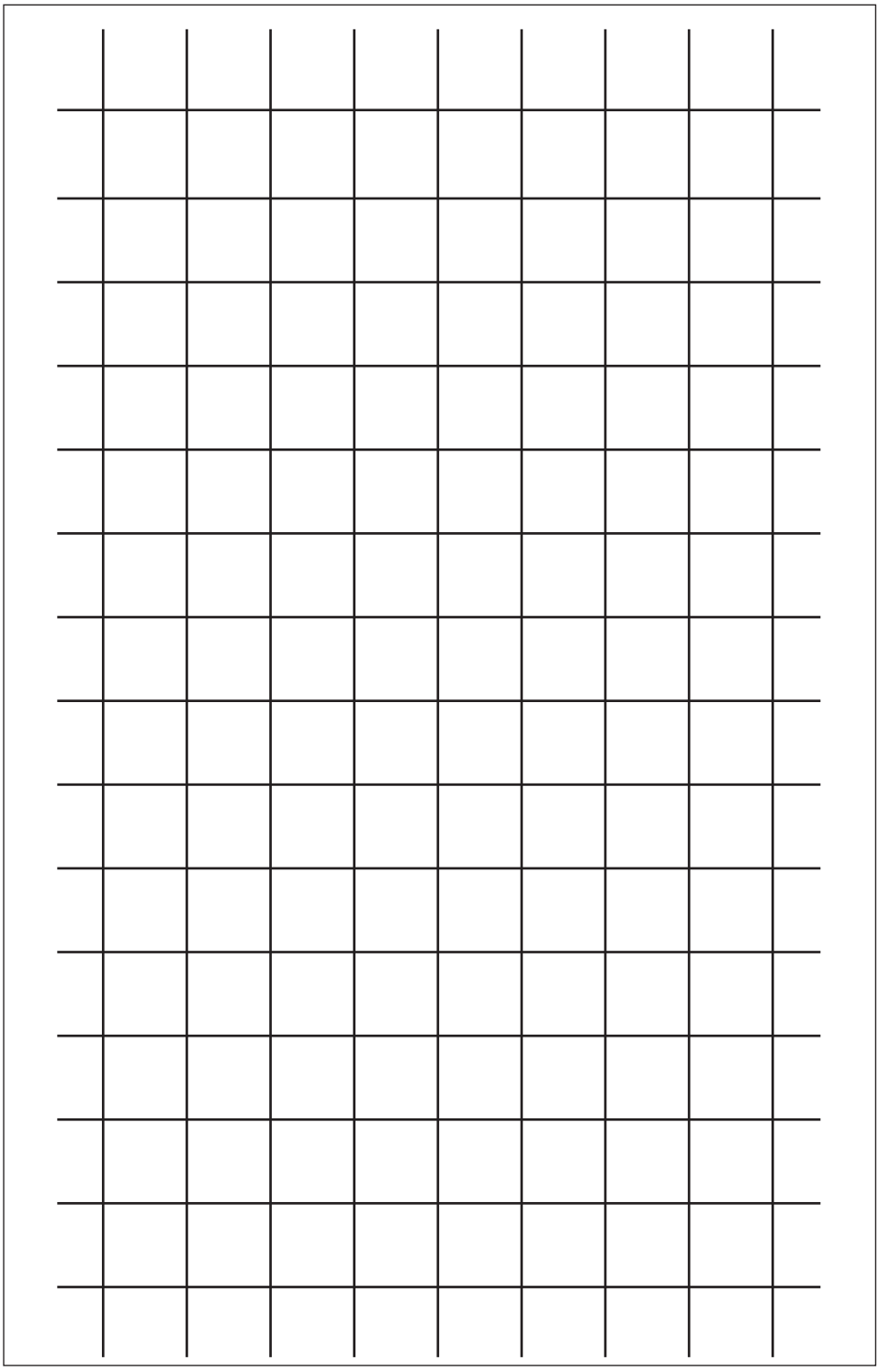
Simplex models

- 1. Open and close front door.
- 2. Open and close front door again within 1.5 seconds.
- 3. Repeat step 1 and step 2 four times and one sheet of the test pattern prints on the front of the page.

Duplex models

- 1. Open and close front door.
- 2. Open and close front door again within 1.5 seconds.
- 3. Repeat step 1 and step 2 five times and one sheet of the test pattern prints on both front and back of the page.

Figure 2-1 Engine test page



Troubleshooting power on problems

1. Verify that power is available to the printer. If the printer is plugged into a surge protector or uninterruptible power supply (UPS), remove it, and then plug the printer directly into a known operating wall receptacle (make sure that the wall receptacle provides the correct voltage and current for the printer).

   Unplug any other devices on the same circuit that the printer is using.

2. Try another known operating wall receptacle and a different power cord.

3. Listen for startup noises (fans and motors) and illuminated lights on the control panel.

NOTE: Operational fans, motors, and control-panel lights indicate the following:

- AC power is present at the printer.
- The low-voltage power supply (LVPS) is providing either or both 24 Vdc and 5 Vdc voltages.
- The DC controller microprocessor is functioning.

4. If startup noises are not heard, check the following:

   a. Turn the printer off, and then remove the power from the formatter.

   b. Turn the printer on, and then listen for startup noises. If normal startup noises are heard, go to step 5.

      NOTE: The control panel will be blank with the formatter removed.

   c. If normal startup noises and lights are still not present, replace the LVPS.

   d. If after replacing the LVPS normal startup noises are still not heard, replace the DC controller.

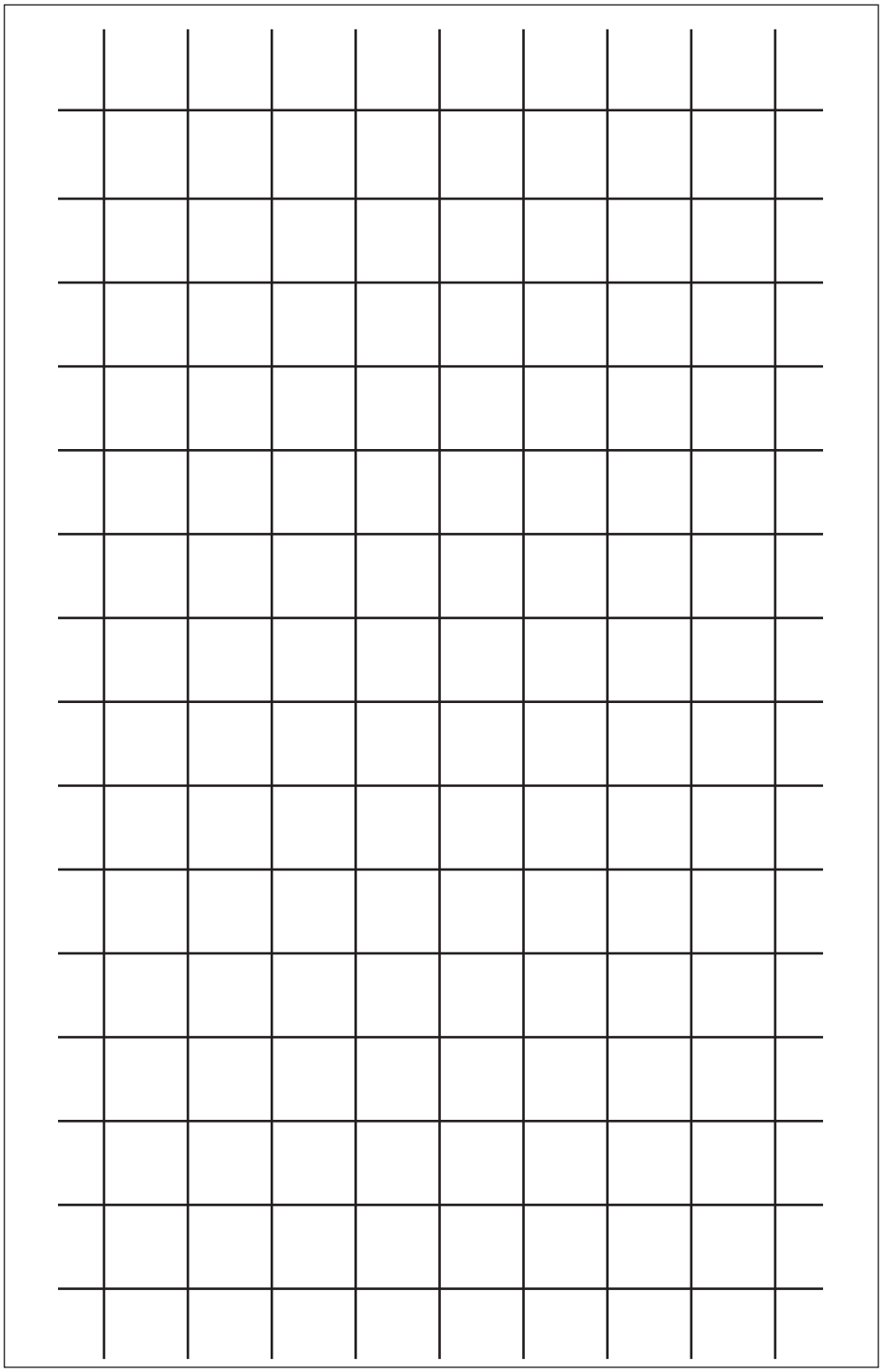
NOTE: If the error persists after replacing these assemblies, escalate the problem to the Global Business Unit (GBU).

5. Try printing an engine test page.

NOTE: The test page can only use Tray 2 as the paper source, so make sure that paper is loaded in Tray 2.

▲ With the printer on and in the Ready state, open and then close the front door four times (for a simplex print out on both simplex and duplex models) or five times (for a duplex print on duplex models). The printer prints the engine test page.

Figure 2-2 Engine test page



If the engine test page prints, the print engine is operating normally (a failed engine test print page does not necessarily indicate that the print engine or DC controller is defective).

NOTE: If the engine test page does not print, turn the printer off, remove the power from the formatter, and then try the engine test again. If the page prints, the problem might be the formatter.

A blank control panel display can be caused by one or more of the following:

- No power to the printer.
- Power supply has tripped (over-current/over-voltage/temperature issue).
- Formatter not fully seated.

> TIP: The two LEDs on the formatter indicate that the printer is functioning correctly.
>
> HP recommends fully troubleshooting the formatter and control panel before replacing either assembly. Use the link LED (green) to troubleshoot formatter and control panel errors to avoid unnecessarily replacing these assemblies. See the LED diagnostics section in this manual.

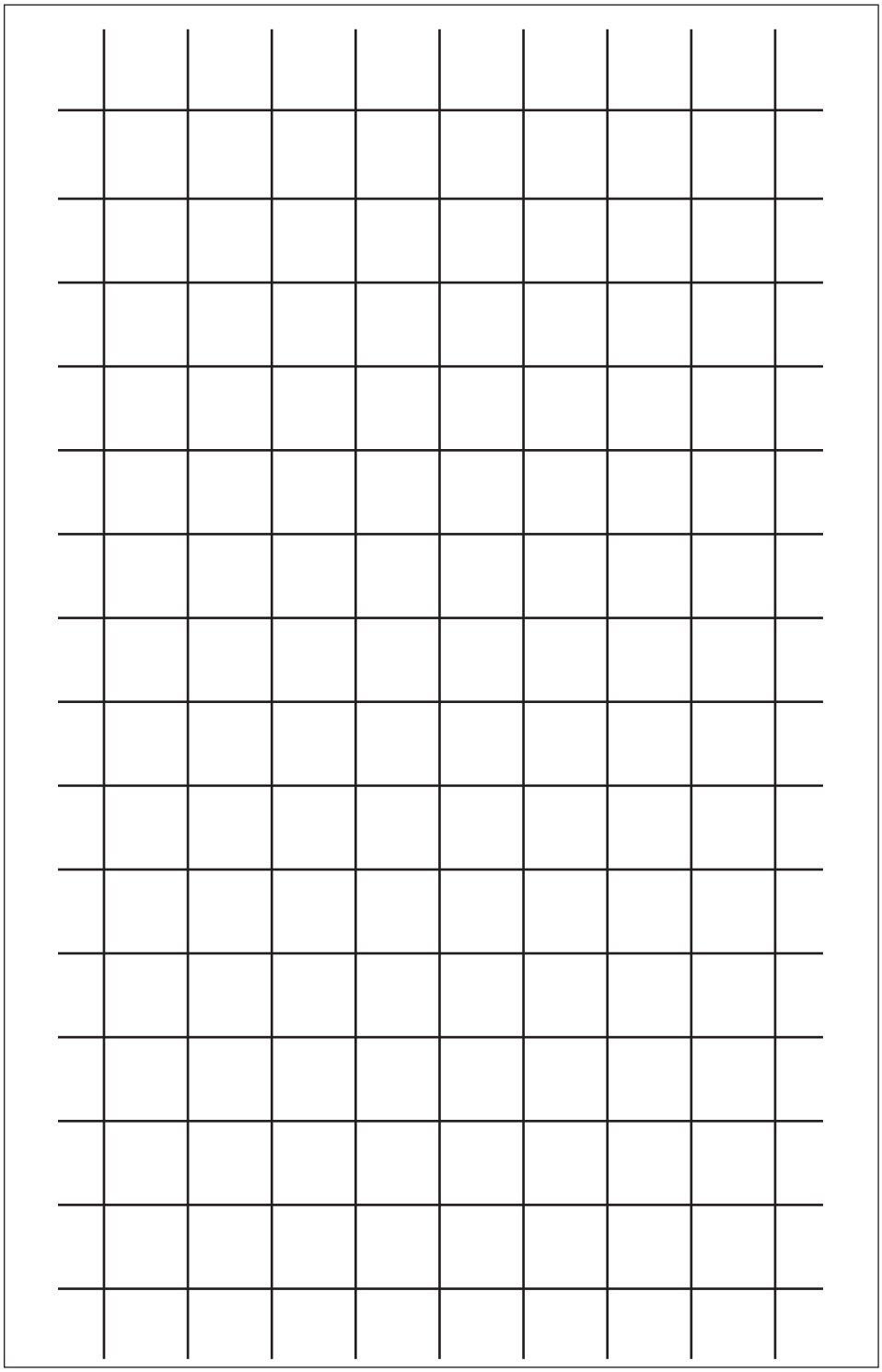
- Faulty component installed on the formatter (for example, memory DIMM or disk drive).
- Control panel connector not fully seated.
- Faulty formatter.
- Faulty DC controller.
- Faulty control panel.

Troubleshooting a blank control panel

1. Verify that power is available to the printer. If the printer is plugged into a surge protector or uniterruptible power supply (UPS), remove it, and then plug the printer directly into a known operating wall receptacle (make sure that the wall receptacle provides the correct voltage and current for the printer).
2. Make sure that the power switch is in the *on* position.
3. Make sure that the fan runs briefly, which indicates that the power supply is operational.
4. Make sure that the control-panel display wire harness is connected.
5. Make sure that the formatter is seated and operating correctly. Turn off the printer and remove the formatter. Reinstall the formatter, make sure the power switch is in the on position, and then verify that the network LED (amber) is blinking and that the link LED (green) is illuminated.
6. Remove any external solutions, and then try to turn the printer on again.
7. If the control panel display is blank, but the main cooling fan runs briefly after the printer power is turned on, try printing an engine-test page to determine whether the problem is with the control-panel display, formatter, or other printer assemblies.

   ▲ With the printer on and in the Ready state, open and then close the front door four times (for a simplex print out on both simplex and duplex models) or five times (for a duplex print on duplex models). The printer will print the engine test page.

Figure 2-3 Engine test page



If the engine test page prints, the print engine is operating normally (a failed engine test print page does not necessarily indicate that the print engine or DC controller is defective).

▲ Use the control-panel diagnostics to test the control panel. See the Control panel checks section below. If the error persists, proceed to the next step.

8. If the print engine appears to be correctly operating (the engine test page successfully printed) and the control panel is still blank, replace the low-voltage power supply (LVPS).

9. If after replacing the LVPS normal startup noises and lights are still not present, replace the DC controller.

NOTE: If the error persists after replacing these assemblies, escalate the problem to the Global Business Unit (GBU).

Control panel checks

The printer includes diagnostic tests for the control panel. This mode allows for troubleshooting issues with the LEDs (2-line control panels), display, and the buttons.

1. Open the Service menu.

2-line control panels (M454 nw/dn models)

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

b. Press the ↩ once, then press ✕ followed by pressing twice on the ↩ button.

c. Press the OK button, then press the ◀ or the ▶ button to scroll through menu items until you reach the **Service** menu, and then press the OK button.

d. Using the ◀ or ▶ to the navigate to **Service Test** menu, and then press the OK button.

e. Then use the ◀ or ▶ to navigate to **Test LEDs**, and then select OK.

Touchscreen control panels (M454dw and M479 models)

a. From the Home screen on the printer, press the ⌂ button, then press on the ↩ button, and then twice on the ⌂ button.

b. Scroll down to the Service menu and touch it to access the service menu.

c. Scroll down to **Service Test** menu and touch it to gain access to service test menu.

d. Touch the **Test Display**.

2. Select one of the following tests:

- Test LED: Test the LED lights on 2-line control panels. The touchscreen control panels do not have any LEDs.
- Test Display: Test the control panel display.
- Test Keys: Test the control panel buttons.

Tools for troubleshooting

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

Individual component diagnostics

LED diagnostics

Network LEDs (network models only)

The onboard network solution has two network port LEDs. When the printer is connected to a properly working network through a network cable, the yellow LED indicates network activity, and the green LED indicates the link status. A blinking yellow LED indicates network traffic. If the green LED is off, a link has failed.

For link failures, check all of the network cable connections. In addition, you can try to manually configure the network card link speed setting by using the printer control-panel.

Change the Link Speed setting on an LCD control panel

1. At the printer control panel, press the OK button to open the menus.
2. Select the Setup menu, and then press the OK button.
3. Select the Ethernet menu, then press the OK button.
4. Select the Link Speed menu , and then press the OK button.

Change the Link Speed setting on a touchscreen control panel

1. From the Home screen on the printer control panel, touch the Setup button.
2. Scroll to, and then touch the Network Setup menu.
3. Scroll to, and then touch Link Speed item.
4. Touch the appropriate link speed.

Control panel LEDs

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

Printer state	Ready light state	Attention light state
Initializing	Blinking	Blinking
Ready	On	Off
Receiving data/processing job or cancelling job	Blinking	Off
Error message	Off	Blinking

Engine diagnostics

Engine test

When the engine test is performed, a test page with horizontal lines prints if the engine is functioning correctly.

To perform the test do one of the following (with the printer in the Ready state):

- **Simplex printers**: Depress and hold the cartridge door release button, and then open and shut the cartridge door three times within a three second time period. A single-sided test page prints.
- **Duplex printers**: Depress and hold the cartridge door release button, and then open and shut the cartridge door four times within a three second time period. A double-sided test page prints.

NOTE: A single-sided test page prints if the duplex function is disabled.

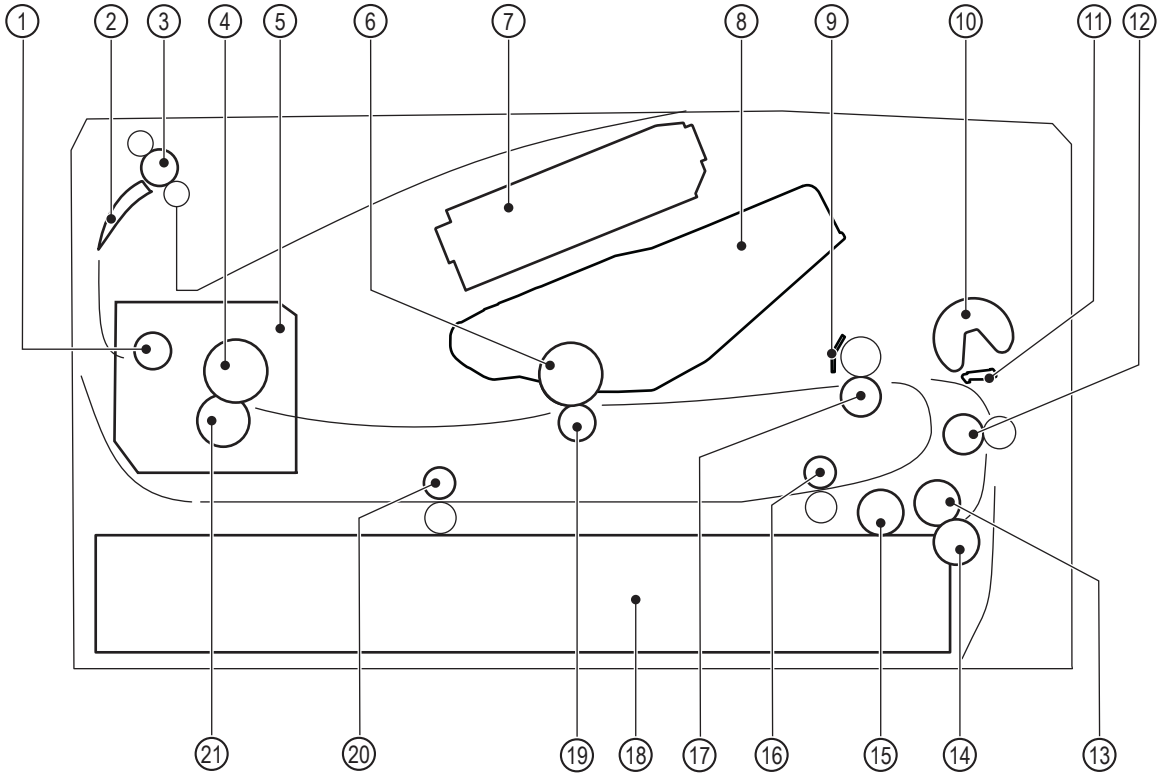
Diagrams

Use the diagrams in this section to identify printer components.

Diagrams: Block diagrams

Cross-sectional view of printer

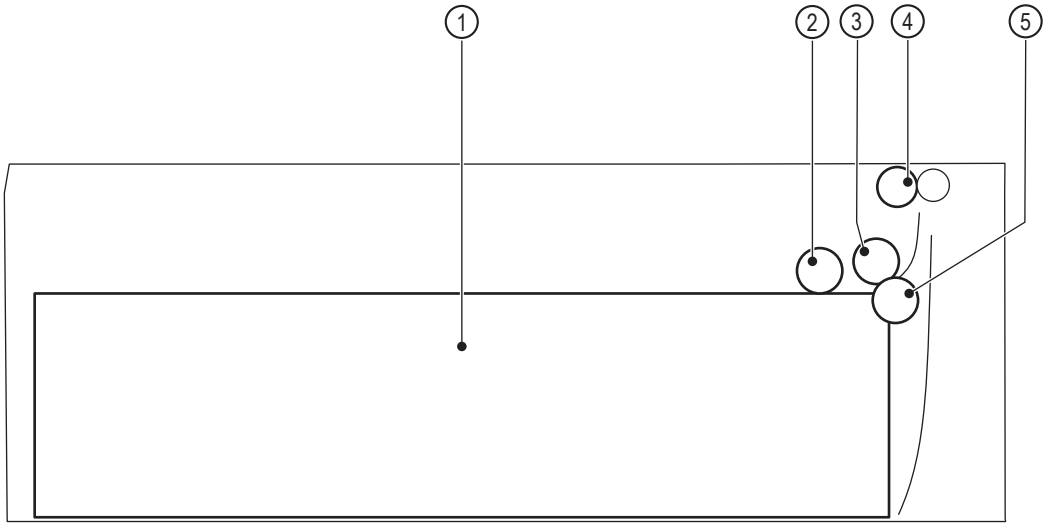
Figure 2-4 Cross-sectional view of printer



Item	Description	Item	Description
1	Fuser output roller	12	Feed roller
2	Duplex flapper (duplex models only)	13	Cassette feed roller
3	Output roller	14	Cassette separation roller
4	Fuser film	15	Cassette pickup roller
5	Fuser	16	Duplex re-pickup roller (duplex models only)
6	Photosensitive drum	17	Registration roller
7	Laser scanner assembly	18	Cassette
8	Toner cartridge	19	Transfer roller
9	Registration shutter	20	Duplex feed roller (duplex models only)
10	Multipurpose tray pickup roller	21	Pressure roller
11	Multipurpose tray separation pad		

Cross-sectional view of 550–sheet paper feeder

Figure 2-5 Cross-sectional view of 500–sheet paper feeder



Item	Description	Item	Description
1	Cassette	4	Feed roller
2	Cassette pickup roller	5	Cassette separation roller
3	Cassette feed roller		

Diagrams: Printed circuit assembly (PCA) connector locations

- Diagrams: DC controller connections
- Paper feeder controller PCA

Diagrams: DC controller connections

Each of the connections on the DC controller PCA is indicated in the following figure.

Figure 2-6 DC controller PCA connectors

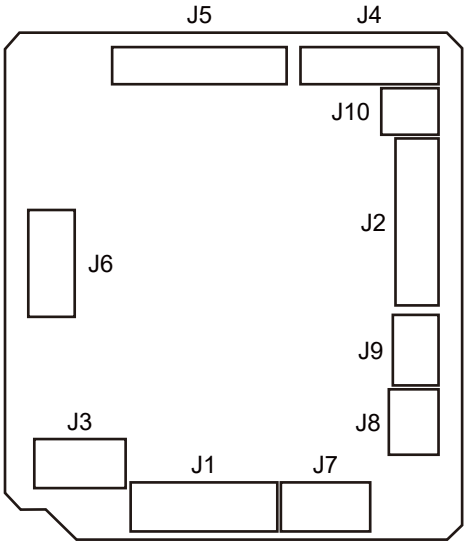


Table 2-2 DC controller connectors

Item	Description	Item	Description
J1	Low-voltage power supply assembly	J7	Media-width sensor
J2	High-voltage power supply PCA		Duplex feed sensor (duplex models only)
J3	Formatter		TOP sensor
J4	Laser assembly	J8	Cassette media out sensor
J5	Connector PCA	J9	Multipurpose tray media out sensor
J6	Output bin media-full sensor	J10	Memory tag (E-label)
	Fuser output sensor		
	Loop sensor		
	Thermistor		

Paper feeder controller PCA

Figure 2-7 Paper feeder controller PCA connectors

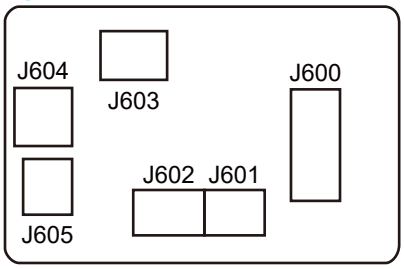


Table 2-3 Paper feeder controller PCA connectors

Item	Description	Item	Description
J600	Printer	J603	Media surface sensor
J601	Cassette detection switch	J604	Cassette pickup solenoid
J602	Cassette media out sensor	J605	Lifter motor

Diagrams: External plug and port locations

Figure 2-8 M304, M305, M404, M405 external plugs and ports locations

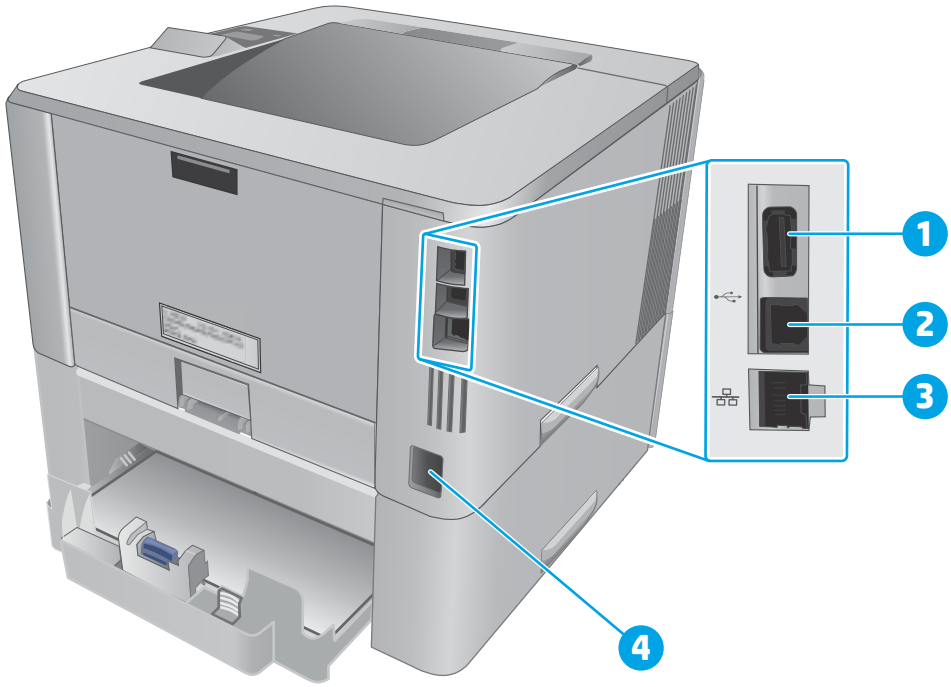


Table 2-4 M304, M305, M404, M405 external plugs and ports

Item	Description
1	USB port (for job storage and private printing) NOTE: This port might be covered

Table 2-4 M304, M305, M404, M405 external plugs and ports (continued)

Item	Description
2	USB interface port
3	Ethernet port
4	Power connection

Figure 2-9 M329, M428, M429 external plug and port locations

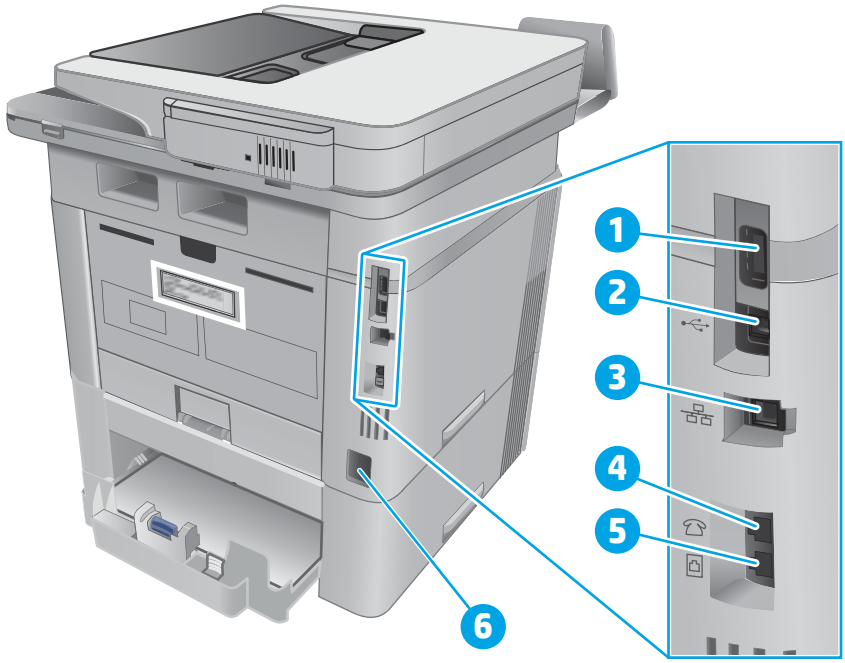


Table 2-5 M329, M428, M429 external plugs and ports

Item	Description
1	USB port (for job storage and private printing) NOTE: This port might be covered
2	USB interface port
3	Ethernet port
4	Telephone “line out” port (for attaching an extension phone, answering machine, or other device)
5	Fax “line in” port (for attaching the fax phone line to the printer)
6	Power connection

Diagrams: Locations of major components

Major components (printer base)

Figure 2-10 Major components (printer base)

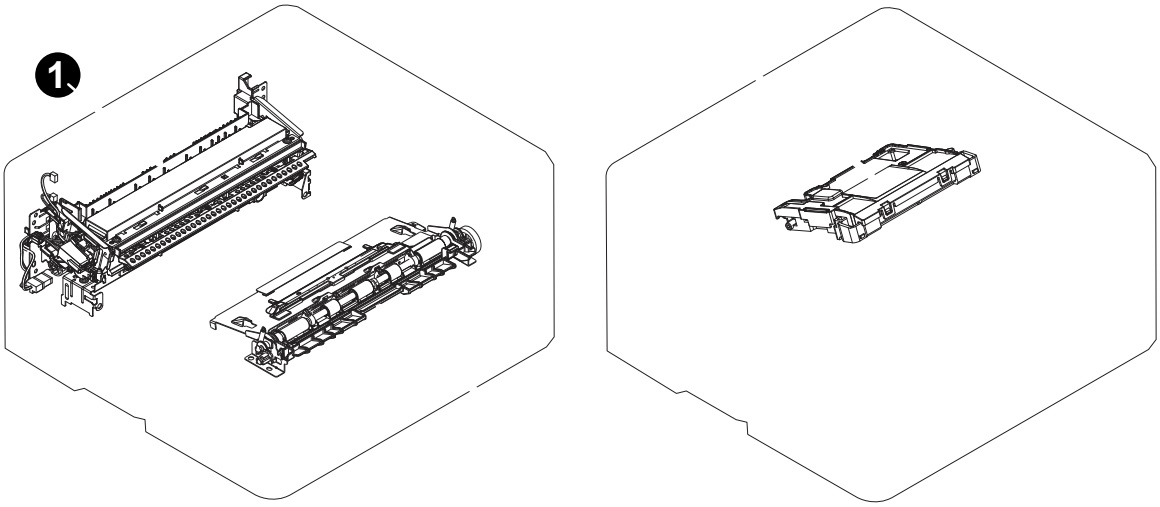


Table 2-6 Major components (printer base)

Item	Description
1	Fuser
2	Registration assembly
3	Laser/scanner assembly

Motor and fan

Figure 2-11 Motor and fan

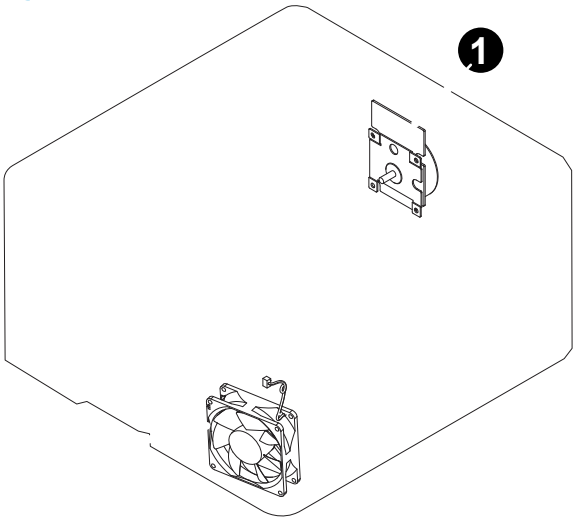


Table 2-7 Motor and fan (printer base)

Item	Description
1	Fuser motor (M1)
2	Main fan (FM1)

Rollers and pads (printer base)

Figure 2-12 Rollers and pads (printer base)

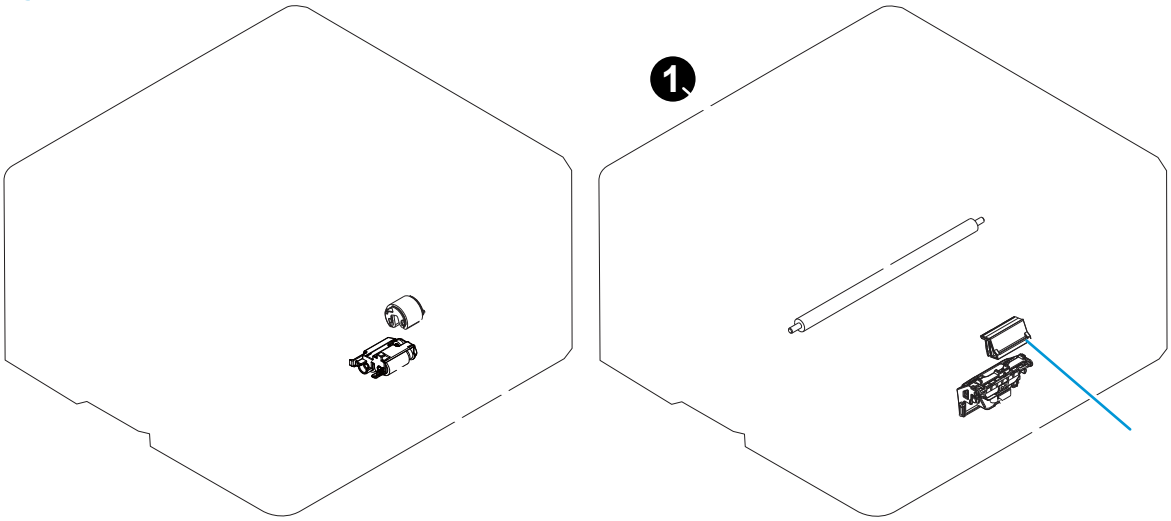


Table 2-8 Rollers and pads (printer base)

Item	Description	Item	Description
1	Transfer roller	4	MP tray pickup roller
2	MP tray separation pad	5	Pickup roller assembly
3	Separation roller assembly		

PCAs (printer base)

Figure 2-13 Main PCAs (printer base)

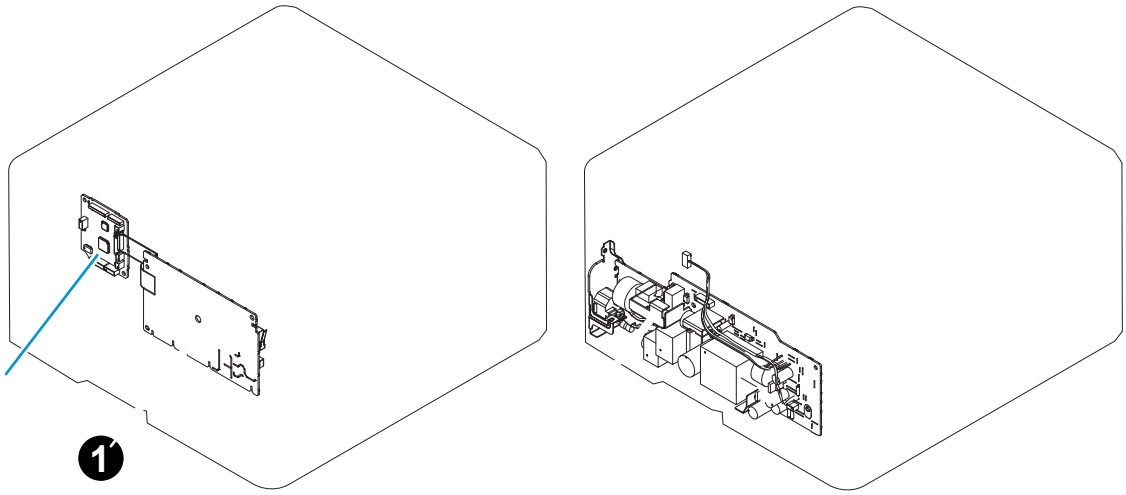
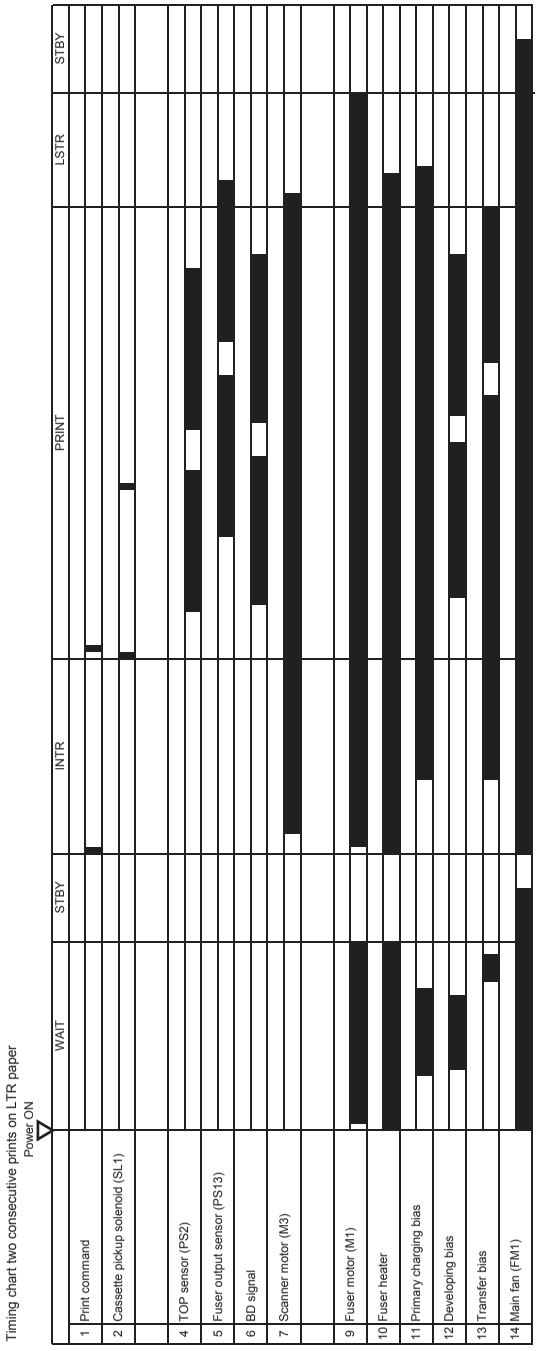


Table 2-9 Main PCAs (printer base)

Item	Description	Item	Description
1	High-voltage power supply assembly	Not shown	Formatter PCA
2	DC controller PCA	Not shown	Wireless PCA (wireless models only)
3	Low-voltage power supply assembly	Not shown	Fax PCA (fax models only)

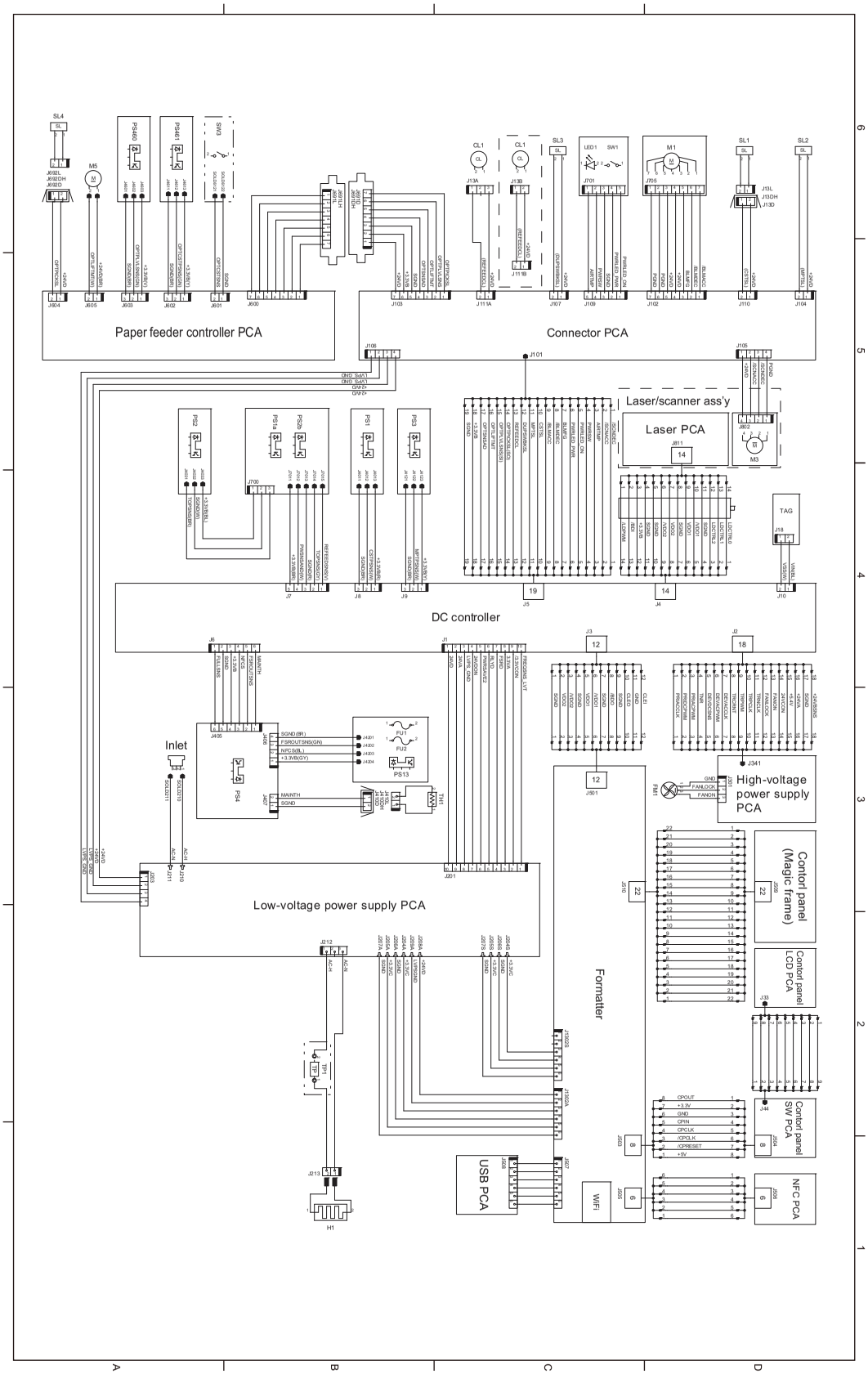
Diagrams: Timing chart

Figure 2-14 General timing chart



Diagrams: Circuit diagrams

Figure 2-15 General circuit diagram (printer base)



Advanced configuration with HP Embedded Web Server (EWS) and HP Device Toolbox (Windows)

In order to get the Device Toolbox, the Printer Assistant needs to be opened first. Use the HP Embedded Web Server to manage printing functions from your computer instead of the printer control panel.

- View printer status information
- Determine the remaining life for all supplies and order new ones
- View and change tray configurations (paper types and sizes)
- View and print internal pages
- View and change network configuration

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

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

NOTE: HP Device Toolbox is available only if you performed a full installation when you installed the printer. Depending on how the printer is connected, some features might not be available.

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

Open the HP Embedded Web Server (EWS) from the Start menu

1. Click the **Start** button, and then click the **Programs** item.
2. Choose HP from the **Start** menu apps lists.
3. Choose **HP** folder, and then choose **Printer** icon with the printer name such as HP Color LaserJet Pro M428-M429
4. From the HP Printer Assistant, select **Print, Scan and Fax** tab and then select **Print**. Now select **Printer Home Page (EWS)**.

Open the HP Embedded Web Server (EWS) from a Web browser

1. **2-line control panels**: On the printer control panel, press the OK button. Press **OK** to enter the Setup menu, use the ◀ or the ▶ buttons to navigate to Network Setup menu, and then select **OK** button. From the Network Setup menu use the ◀ or the ▶ buttons to navigate to General Settings, and then press OK. From the General Settings menu select Show IP Address, and then press the OK button to save setting.

   Touchscreen control panels: From the Home screen on the printer control panel, swipe down on the dash board, and touch the Connection Information button. or the Network Wi-Fi ON button to display the IP address or host name.

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

   NOTE: If the Web browser displays a **There is a problem with this website's security certificate** message when attempting to open the EWS, click **Continue to this website (not recommended)**.

   Choosing **Continue to this website (not recommended)** will not harm the computer while navigating within the EWS for the HP printer.

Tab or section	Description
Home tab Provides printer, information, and configuration.	• **Scan to Email**: Configure target email profiles fir the scan-to-email feature. • **HP Digital Fax** : Configure the printer to save faxes to a network folder or to forward faxes to an email address. • **Sleep Mode**: Sleep inactivity 1 minute (default). • **Web Services**: Setup web services and turn on HP ePrint. • **Printer Update**: Check for printer updates. • **Estimated Cartridges Levels**: Shows the current levels of toner remaining. • **Network Summary**: Shows IP address and Host Name. • **Print Quality Toolbox**: Run maintenance tools to improve the print quality of your printouts.
Scan tab Provides the ability to configure the printer from your computer.	• **Scan to Computer** • **Scan to Email** Outgoing Email Settings: The printer allows you to scan documents and send them to one more email addresses as attachments-without additional scanning software. Default Settings: Configure your scan settings and email messages for email sent from the printer. Quick Sets: Allow the user to create a quick set for specific settings for scan to email. • **Scan to Network Folder** Default Settings: Configure your scan to network folder default settings. Quick Sets: Allow the user to create a quick set for specific settings for scan to network folder. • **Scan to Sharepoint** Default Settings: Configure your scan to Sharepoint default settings. Quick Sets: Allow the user to create a quick set for specific settings for scan to Sharepoint. • **Scan to USB** : Allows the user to scan directly to a USB drive using the walk-up USB port. Default Settings: Allows the user to set default settings for scan to USB drive. Quick Sets: Allows the user to create a quick set for specific settings for scan to USB drive. • **Address Book** : Allows the user to create an address book of contacts for future use. Contacts: Select an address book to create, view, and manage it's contacts. Address Book Settings: Allows the user to store frequently used contacts in address books saved in the printer memory. In addition to the "Local" address book, other custom address books, can be created for storing local contacts.
Copy/Print tab Provides the ability to change default print settings from your computer.	• **Copy**: Change the default copy settings, such as number of copies and paper orientation. These are the same options that are available on the control panel. Quick Sets: Allows the user to create a quick set for specific settings for copy jobs. Default Settings: Allows the user to set default settings copy settings. • **Print** Change the default print settings, such as number of copies and paper orientation. These are the same options that are available on the control panel. Default Settings: Allows the user to set default settings print settings. • **Restrict Color**

Tab or section	Description
	Settings: The user can use these settings to restrict the printer's usage of color when printing, both for copy jobs (if available) and print jobs. The user can turn off all color printing or a set of custom color printing settings for certain users or software applications.
Fax tab (Fax models only)	• **Settings**: Configure how the printer handles incoming faxes. – Fax Setup Wizard: Allows the user install the fax using the fax wizard, which walks the user through all the settings to setup the fax. – Basic Fax Settings: Before you can begin using the fax features of the device, you must configure the fax header. When a fax is transmitted, the current date and time are printed along with the fax header. In some countries/regions, setting the fax header information is a legal requirement.. – Advanced Fax Settings: This setting is modified when you select or change the country/region setting for the device. – Fax Forwarding: You can set the device to automatically redirect incoming faxes to another fax number. – Junk Fax Blocker: If you don not want to receive faxes from specific people or businesses, you can block their fax number. To block a fax number click "New" enter the number, and then click "Apply". To unblock a fax number, select the number, and then click "Delete". – **Information**: Provides information about faxes sent from and received by the device. Fax Log: The printed log includes information for both incoming and outgoing faxes. – **HP Digital Fax**: The printer can either save incoming black and white faxes to a designated folder on the network or forward them as a email attachment to a designated email address.
Web Services tab (MFP models only)	• **Setup**: With Web Services, you can print on the go using ePrint and add print apps to your printer using HP Connected. To enable Web Services, make sure the printer is connected to the network and the Internet. • **Print Info Page**: The information page for Web Services contains useful information and simple instructions on how to use HP ePrint and print apps. • **Proxy Settings**: Allows the user set proxy settings either manually or with no proxy.
Network tab (Network-connected printers only) Provides the ability to change network settings from your computer.	Network administrators can use this tab to control network-related settings for the printer when it is connected to an IP-based network. It also allows the network administrator to set up Wireless Direct functionality. This tab does not appear if the printer is directly connected to a computer. • **General** Network Summary: Displays the wired, wireless and Wi-Fi direct settings. Network Identification: Displays the host name, domain name for both IPv4/IPv6. Network Protocols: To operate properly on a TC/IP network, the device must be configured with valid TC/IP network configuration parameters, such as an Internet Protocol (IP) address that is valid for your network. Proxy Settings: Allows the user set proxy settings either manually or with no proxy. • **Wireless (802.11)** Status: Provides the user the status of the wired network, such as host name, connection status, etc. IPv4 Configuration: Allows the user to set the settings for IPv4 network settings. such as DHCP, BOOTP, Auto IP, Manual IP. IPv6 Configuration: Allows the user to manually input IP address, Preferred DNS server and Alternate DNS server information for their network.

Tab or section	Description
	Advanced: Allows the user set the Network Interface and Link Settings. • **Wired (802.3)** Status: Provides the user the status of the wired network, such as host name, connection status, etc. Wireless Setup Wizard: This wizard will help you to configure your device to connect to a wireless network. IPv4 Configuration: Allows the user to set the settings for IPv4 network settings. such as DHCP, BOOTP, Auto IP, Manual IP. IPv6 Configuration: Allows the user to manually input IP address, Preferred DNS server and Alternate DNS server information for their network. Wireless Band Frequency: Select the wireless band frequency that the printer will use when connecting to wireless devices. Advanced: Allow the user to set Network Interface, Network name and Network Settings. • **Wi-Fi Direct** Status: With Wi-Fi Direct, you can print from a mobile device (such as a smartphone or notebook computer) directly to the printer without connecting to a wireless network. • **Bluetooth Smart** Status: Bluetooth Smart is an ultra-low power wireless technology that provides connection between the printer and other devices (such as a smartphone, tablets, and computers). this feature is turned on by default. • **AirPrint** Status: AirPrint enables easy network printing from Apple-supported products - no driver installation or software downloads required. • **Google Cloud Print** Setup: With Google Cloud Print, you can use a computer or mobile device to print documents and photos directly to your web-connected printer. • **Internet Printing Protocol** Status: Internet Printing Protocol (IPP) is an internet-standard protocol that allows you to print documents and manage IPP related jobs over the internet. User Access List: The User Access List allows you to add and set printing permissions for users printing from mobile devices. • **Security** Certificates: By default a pre-installed self-signed printer certificate is created to identify this printer. You can change this certificate to more accurately identify the printer and to update the length of time the certificate is valid. Management Protocol: The EWS can use two communication methods to transfer information between the device and your web browser: HTTP and HTTPS. SNMP: Allows the user to manually set his SNMP network. 802.1X Authentication: Allows you authenticate users, printer certificates, and enable protocols. Access Control List: Allows you to specify which IPv4 addresses on your network are allowed access to the device. If the list is empty, then any system is allowed access. • **Advance Settings**

Tab or section	Description
	Device Announcement Agent: : Allows a configuration server (such as HP Imaging & Printing Security Center) to automatically configure network printers, with no administrator intervention required. Bonjour: Bonjour services (which use mDNS, or Multicast Domain Name System) are typically used on small networks for HP address and name resolution (through UPD port 5353), where a conventional DNS server is not used. SMB: Allows the user to manually set SMB settings. WINS: The Windows Internet Naming Service (WINS) server provides Internet Protocol (IP) address and name resolution services for network computers and devices. SLP: Service Location Protocol (SLP) is an Internet standard network protocol that provides a framework to allow networking application to discover the existence, location, and configuration of networked services in enterprise networks. LPD: Line Printer Daemon (LPD) refers to the protocol and programs associated with line-printer spooling services that may be installed on various TC/IP systems. LLMNR: Link-Local Multicast Name Resolution (LLMNR) is a protocol based on the Domain Name System (DNS) packet format that allows both IPv4 and IPv6 host to perform name resolution for hosts on the same local link. Port 9100 Printing: The device supports raw IP printing through TCP Port 9100. This HP proprietary TC/IP port on the printers is the default port for printing. It is accessed by HP software (for example, the HP Standard Port). Microsoft Web Services: Enabled or disable the Microsoft Web Services Dynamic Discovery (WS-Discovery) protocols or Microsoft Web Services for Devices (WSD) print and WSD scan services supported on the printer. Syslog: Allows the user to manually set syslog settings. Advanced DHCP Settings: Allows the user to manually set DHCP advanced settings.
Tools tab	Use this tab to set up and use various settings on the printer. • **Product Information** Provides the user a quick view of the product information, such as, model number, serial number, service ID, page count, etc. Supply Status: Provides the user a quick view of the supply status, such as, remaining pages, product number for supplies, etc. • **Reports** Usage Reports: Provides the user a quick view of the usage information, such as, total page count, color pages, mono pages, duplex pages, jams, etc. Printer Reports: Allows the user to print PCL fonts, PS font list, menu map and configuration pages. Event Log: Provides a list of printer's last 250 error messages. This log can be used to help diagnose and troubleshoot printer problems and intermittent failures. Job Log: Provides a list of the most recent jobs performed by the printer. To see more information about specific jobs click "View Details". Color Usage Job Log: Provides a quick view of color and mono pages printed. • **Utilities** Pint Quality Toolbox: Run maintenance tools to improve the print quality of your printouts. Color Calibration: Allows the user to schedule color calibrations. Asset Tracking: Helps track your office assets, you can assign and asset number/location to this device.

Tab or section	Description
	Online Help: Provides links to solution pages for printer issues. To connect to the correct page, the printer will send the HP information including event details, model number, and printer serial number. HP will treat this information in the manner set out in the HP Privacy Statement. If you do not wish to send this information to HP, but would like to receive generic support for your printer, visit Product support. • **Backup and Restore** Backup: Feature allows you to create a password-encrypted file that stores the printer's settings. Restore: If needed, you can restore the printer's settings using a backup file created by the EWS. To restore the printer's settings, enter the password for the backup file, enter the pathname or browse for the backup file, and then click "Load". **Printer Restart** Power Cycle: Some printer problems (such as repeated printing supplies errors) can be resolved by turning off the printer, and then turning it back on again. • **Printer Updates** Firmware Updates: The printer can download and install printer updates from the Internet. By downloading and installing updates you agree to the HP Connected Terms of Use.
Settings	• **Power Management** Shutdown Mode: Allows the user to set up the shutdown time when device is inactive. Shutdown Mode: Allows the user to set up the shutdown time when device is inactive. Sleep Mode: Allows the user to set up sleep after inactivity settings. • **Preferences** General Printer Settings: If data for the print job is delayed (due to network problems, for example), determine how many seconds the printer waits for the data before it cancels the print job. Date and Time: Allows the user to manually set the date and time for the printer. International: Allows the user to manually set the country/region. Changing this setting resets some settings to the default for the selected country/region. Such settings include the default paper size and many fax settings. Tray and Paper Management: Allows the user to set the paper settings to be used when printing tray-specific print jobs. Image Registration: Adjust the alignment for individual trays when text or images are not centered or aligned correctly on the printed page. Display Settings: Adjust screen brightness, inactivity timer and continuable events. • **Supplies** Supply Settings: Allows the user to set the threshold at which the printer provides notification that cartridges are running low. Anonymous Usage Information Storage: The HP cartridges used with this printer contain a memory chip that assists in the operation of the printer. In addition, this memory chip stores a limited set of anonymous information about the usage of the printer, which might include the following: the date when the cartridge was first installed, the date when the cartridge was last used, the number of pages printed using the cartridge, the page coverage, frequency of printing, the printing modes used, any printing errors that might have occurred, and printer model. • **Control Panel Customization**

Tab or section	Description
	Home Screen Customization: Allows the user to use EWS to remotely add and remove control panel icons on the printer's home screen. You can also change the order in which they appear on the home screen by dragging and dropping icons. Quick Sets: Are pre-configured sets of options that allow users to easily start a job without having to manually configure frequently used job settings. • **Security** Password Settings: Allows the user to set a password to prevent unauthorized users from remotely configuring the printer or viewing printer settings from the EWS. Account Policy: Allows the user to set password complexity and maximum password length. Administration Settings: Allows the user to customize the printer by enabling or disabling the features available for users. Access Control: Sign in method can be used when signing in from the printer control panel. If relating printer permissions to network group of users or groups, be sure to use a sign in method that matches what is used when signing in at a computer. Protect Stored Data: Stored jobs are documents that are stored on the printer and available for printing. To use this feature, insert a flash storage device into the printer. All stored jobs are saved on this flash storage device. • **Email Alerts** Email Server: Enter the settings for the email (SMTP) server and for the email address that the device uses when it sends email messages (which will appear in the FROM part of the email address). Alert Destinations: You can "Edit" or "Delete" a list by selecting the checkbox to the left of list name. Alert Settings: You can configure the printer to send email messages when printer problems occur, as well the length of time the EWS will wait before sending these email messages (the "threshold"). • **Restore Defaults** Restore Factory Defaults: To restore the printer settings. Settings that have been configured in the printer will be deleted and original factory settings for these features will be restored. Restore Network Settings: If you need to reset wireless or wired (Ethernet) settings (such as proxy settings) or need to reconfigure a network. • **Firewall** Firewall Rules: Allows the user to set firewall rules. Firewall Rule Priority: Allows the user to set firewall priority rules. Firewall Address Template: Allows the user to set firewall template. Firewall Services Template: Allows the user to set firewall services template. Firewall Service Lists: Allows the user to set firewall service lists. Firewall Options: This option ensures HTTPS remains accessible even if it is blocked by the firewall policy. Allows the administrator to test the policy without inadvertently locking themselves out of the device.

Internal print-quality test pages

Clean the paper path

During the printing process, paper, toner, and dust particles can accumulate inside the printer. Over time, this buildup can cause print-quality problems such as toner specks or smearing. This printer has a cleaning mode that can correct and prevent these types of problems.

Clean the paper path (LCD control panel)

1. To clean the paper path press OK > Setup > Printer Maintenance > Print Quality Tools > Cleaning Page, then press OK.
2. Load plain paper in Tray 1, and then press the OK button to start the cleaning process.

   Wait until the process is complete. Discard the page that prints.

Clean the paper path (touchscreen control panel)

1. Pull down the dashboard and the press the Setup button.
2. Touch the Printer Maintenance menu item.
3. Touch the Print Quality Tools menu.
4. Touch the Cleaning Page menu item.
5. Load plain letter or A4 paper when you are prompted.
6. Touch the OK button to begin the cleaning process.

   Wait until the process is complete. Discard the page that prints.

Print the configuration page

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

Print the configuration page from an LCD control panel

1. On the printer control panel, press the OK button to open the menus then press OK again to enter the Setup menu.
2. Use the arrow buttons to select the Reports menu, and then press the OK button.
3. Use the arrow buttons to select the Configuration Report item, and then press the OK button to print the report.

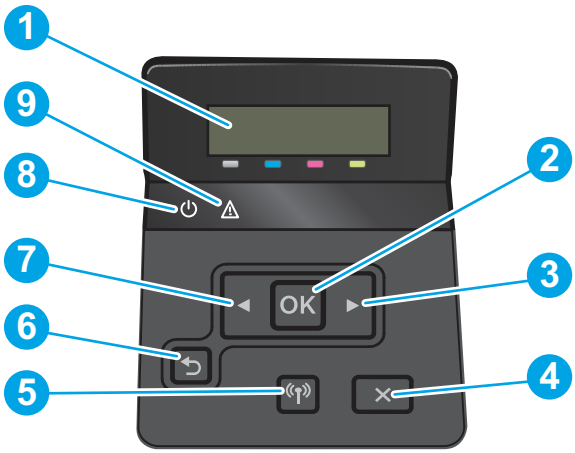
Print the configuration page from a touchscreen control panel

1. From the control panel pull down the dashbord and select the button.
2. Touch the Reports menu.
3. Touch the Configuration Report button to print the report.

Control panel menus

2-line control-panel view (SFP models)

Figure 2-16 2-line control-panel view (SFP models)



1	2-line control panel display	This screen displays menus and printer information.
2	OK button	Press the OK button for the following actions: • Open the control-panel menus. • Open a submenu displayed on the control-panel display. • Select a menu item. • Clear some errors. • Begin a print job in response to a control-panel prompt (for example, when the message **Press [OK] to continue** appears on the control-panel display).
3	Right arrow ▶ button	Use this button to navigate through the menus or to increase a value that appears on the display.
4	Cancel ✕ button	Press this button to cancel a print job or to exit the control panel menus.
5	Wireless button (wireless models only)	Use this button to navigate the open the **Wireless** menu and wireless status information.

6	Back arrow button	Use this button for the following actions: • Exit the control-panel menus. • Scroll back to a previous menu in a submenu list. • Scroll back to a previous menu item in a submenu list (without saving changes to the menu item).
7	Left arrow button	Use this button to navigate through the menus or to decrease a value that appears on the display.
8	Ready LED	The Ready light is on when the printer is ready to print. It blinks when the printer is receiving print data, or when the printer is in sleep mode.
9	Attention LED	The Attention light blinks when the printer requires user attention.

Touchscreen control-panel view (MFP models)

Figure 2-17 Touchscreen control-panel view (MFP models)

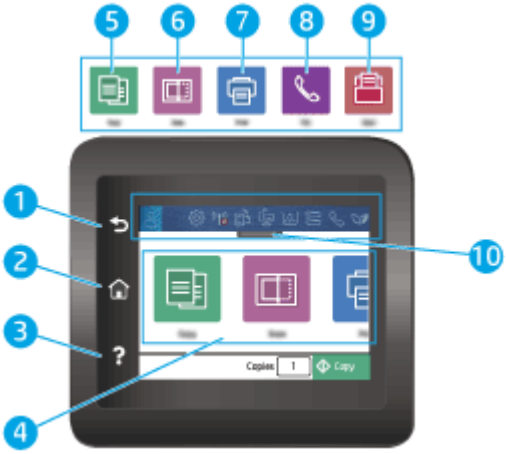


Table 2-11 Touchscreen control-panel (MFP models)

1	Back button	Returns to the previous screen
2	Home button	Provides access to the Home screen
3	Help button	Provides access to the control-panel help system
4	Color touchscreen	Provides access to menus, help animations, and printer information.
5		Copy icon. Touch this icon to open the Copy menu.
6		Scan icon. Touch this icon to open the Scan menus. • Scan to USB Drive • Scan to Network Folder • Scan to E-mail • Scan to Computer • Scan to SharePoint
7		Print icon. Touch this icon to open the Print menu.
8		Fax icon. Touch this icon to open the Fax menus.
9		Apps icon. Touch this icon to open the Apps menus. Provides a list of applications that are available by country/region.
10	Home screen dash board display icons	Pull down this tab to open the Jobs menu.

NOTE: While the control panel does not have a standard Cancel button, during many printer processes a Cancel button appears on the touchscreen. This permits users to cancel a process before the printer completes it.

Setup menu

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

- Preferences
- Quiet Mode
- Network Setup
- Wi-Fi Direct (M404dw, M405dw, M428dw, M428fdw, M429dw, M429fdw, M429fdw, M329dn, M329dn)
- Bluetooth Low Energy
- Web Services Setup
- Tray Management
- Paper Setup
- Supply Settings
- Printer Maintenance
- Print Settings
- Power Management
- Reports
- Security
- Fax Setup (Fax models only)
- Quick Forms

Preferences menu

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

Table 2-12 Preferences menu

Menu item	Description
Date and Time	Use Date and Time to set the date and time on the printer. NOTE: Date and time is only available on MFPs with Fax.
Language	Use Language to set the language on the printer.
Country/Region	The Country/Region sets the country/region on the printer.
Keyboard	Select the Keyboard setting from the list of available options. This option is selecting how the keyboard is shown. The default is QWERTY. Other choices are AZERTY, QWERTZ and ABC. NOTE: Only available on touchscreen models.

Table 2-12 Preferences menu (continued)

Menu item	Description
Sound Effects Volume	Sound Effects Volume sets the sound effects volume. Use and set the sound effects volume by touching the slider to the loudness you desire. **NOTE:** Not available on the 2-line displays.
Screen Brightness	The Screen Brightness sets the screen brightness on the printer. Use and set the brightness by touching the slider to brightness you desire. **NOTE:** Not available on the 2-line display models.
Continuable Events	The Continuable Events setting allows the printer to continue printing when an event appears on the control panel. • Manual* • Auto Continue **NOTE:** Not available on 2-line display models.
Store Anonymous Usage Information Store Usage Infomation (available on 2 line control panel models only)	Use the radio button to enable or disable the Store Anonymous Usage Information setting. The HP cartridges used with the printer contain a memory chip that assists in the operation of the printer. In addition, this memory chip stores a limite set of anonymous information about the usage of the printer, which might include the following: • Data when the cartridge was first installed • Data when the cartridge was last used • Number of pages printed using the cartridge • Page coverage • Frequency of printing • Printing models used • Any printing errors that might have occurred • Printer model This information helps HP design future printers to meet our customer's printing needs. The data collected from the cartridge memory chip does not contain information that can be used to identify a customer or use of the cartridge or their printer. For more information, see the documentation provided with the printer. If you are concerned about providing this anonymous information, click Off to turn off the memory chip's ability to collect the printer's usage information. **NOTE:** Not available on the 2.7 inch control panel models. For 2-line control panel display models Store Usage, only allows the user to decide whether or not to send the Anonymous Usage Information from the previous menu.

Network Setup menu

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

Table 2-13 Network Setup menu

Menu item	Sub-menu item	Description
Wireless Menu Settings (wireless models only)	Wireless	Select to enable or disable Wireless NOTE: Only available on touchscreen models.
	Print Start Guide	Prints the start guide.
	Wireless Setup Wizard	Guides you through the steps to set up the printer on a wireless network.
	Wi-Fi Protected Setup	If your wireless router supports this feature, use this method to set up the printer on a wireless network. This is the simplest method.
	View Wireless Details	Displays IP address, Signal, Network Name, Channel, MAC address, Host Name, Bonjour Name, Subnet Mask Gateway. NOTE: Not available on 2-line display models.
	Print Wireless Test Report	Prints the wireless test report.
	IP Settings	For touchscreen models only: Automatic Manual For 2-line display models only: • DHCP • BOOTP • Auto-IP • Manual (static)
	5 GHz Band Frequency	Allow the user to enable the ability to find and connect to 5GHz wireless networks.
	Ethernet Settings	View Ethernet Details

Table 2-13 Network Setup menu (continued)

Menu item	Sub-menu item	Description		
		IP Settings	For touchscreen models only: Automatic Manual For 2-line display models only: • DHCP • BOOTP • Auto-IP • Manual (static)	The printer 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 printer prompts for address confirmation before moving to the next one. After all three addresses are set, the network reinitializes.
Link Speed	Automatic*	Sets the link speed manually if needed. After setting the link speed, the printer automatically restarts.		
	10T Full			
	10T Half			
	100TX Full			
	100TX Half			
	1000T Full			
General Settings	Show IP Address	Show IP address. NOTE: Available on 2-line display models only. To view IP address on touchscreen control panels, open the Dashboard from the Homescreen.		
	Proxy Settings NOTE: Not available on 2-line display models.	Enter proxy information. On Off		
	Host Name NOTE: Not available on 2-line display models.	Enter host name.		
	Bonjour Name NOTE: Not available on 2-line display models.	Enter bonjour name. Change OK		

Table 2-13 Network Setup menu (continued)

Menu item	Sub-menu item	Description
	IPv6	Turn IPv6 on or off by using the radio button.
	Legacy Default IP NOTE: Not available on 2-line display models.	Enables the printer to use to connect the printer to the network using legacy default IP. Yes No
Security	Disable Access Control List	Access Control List (ACL) allows the user to specify which IPv4 addresses on their network are allowed access to the device. If the list is empty, then any system is allowed access.
	Reset 802.1X Settings	Reset the security settings to the factory-set default values.
	802.1x (wireless models only)	Enable or disable the 802.1x wireless authentication protocol.
Print network configuration		Prints the current network configuration and settings.
Restore Network Settings		Resets all network configurations to their factory defaults.

Wi-Fi Direct menu (wireless models only)

Table 2-14 Wi-Fi Direct menu

Menu item	Sub-menu item	Description	
Wi-Fi direct	Wi-Fi Direct Status	Allows user to turn WiFi Direct ON or OFF. NOTE: Not available on the 2.7 inch and 4 inch control panel models.	
	Connection Method	Specify the Wi-Fi Direct connection method. • Automatic • Manual	
		Print Wi-Fi Direct Guide	Prints the wi-fi direct guide. NOTE: Not available on the 2.7 inch and 4 inch control panels models.

Table 2-14 Wi-Fi Direct menu (continued)

Menu item	Sub-menu item	Description
	Wi-Fi Direct Name	Manage the printers Wi-Fi Direct settings. Use the radio button to enable or disable this feature. NOTE: Not available on the 2.7 inch and 4 inch control panels models.
	Wi-Fi Direct Password	Ask user to input wi-fi password. NOTE: Not available on the 2.7 inch and 4 inch control panels models.

Bluetooth low energy menu

Table 2-15 Bluetooth menu

Menu item	Sub-menu item	Description
Bluetooth Low Energy		Use the radio button or select On/Off to enable or disable this feature.

Web Services Setup menu

Table 2-16 HP Web Services menu

Menu item	Description
Display email address	Enabling Web services will allow HP to collect serial number and locations as part of the printer setup process. The printer will display the email address.
Print Info Page	The printer will print an Information page.
HP ePrint	Allows for the enabling of HP ePrint.
Remove Web Services	Allows the user to disable web services.

Tray Management menu

Table 2-17 Tray management menu

Menu item	Sub-menu item	Description
Tray Assignment NOTE: Not available on 2-line display models.	Copy NOTE: Only available on the AiO models.	Allows the user to configure copy tray settings.
	Fax Printing NOTE: Only available on the AiO models.	Allows the user to configure fax printing tray settings.
	USB Printing	Enabling Web services will allow HP to collect serial number and locations as part of the printer setup process. The printer will display the email address.

Table 2-17 Tray management menu (continued)

Menu item	Sub-menu item	Description
	Default Paper Size	Sets the size for printing internal reports, faxes, or any print job that does not specify a size. Letter A4 Legal NOTE: The default setting is determined by the choice of location during the initial printer setup.
	Default Paper Type	Sets the type for printing internal reports, faxes, or any print job that does not specify a type List available paper types.
Paper Out Action	Auto Continue Timeout	Determines how the printer reacts when a print job requires paper size or type that is unavailable or when the tray is empty. • Immediate • Wait Forever • 5 minutes • 10 minutes • 20 minutes • 30 minutes • 45 minutes • 1 hour
	Auto Continue Action	Determines how the printer reacts when a print job requires paper size or type that is unavailable or when the tray is empty. • Cancel: Automatically cancel the print job after a specified delay. • Override: Print on a different size paper after a specified delay.
Image Adjust	Tray 1	X1 shift: Registration of the image on the paper from side to side, as the paper lies in the tray. For duplex models, this side is the second side (Back) of the paper. X2 shift: Registration of the image on the paper from side to side, as the paper lies in the tray for the first side (front) of a duplexed page. This item appears only on duplex models. NOTE: Set X1 shift first. Y1 shift: Registration of the image on the paper from top to bottom as the paper lies in the tray. Y2 shift: Registration of the image on the paper from top to bottom as the paper lies in the tray.

Table 2-17 Tray management menu (continued)

Menu item	Sub-menu item	Description
	Tray 2	X1 shift: Registration of the image on the paper from side to side, as the paper lies in the tray. For duplex models, this side is the second side (Back) of the paper. X2 shift: Registration of the image on the paper from side to side, as the paper lies in the tray for the first side (front) of a duplexed page. This item appears only on duplex models. NOTE: Set X1 shift first. Y1 shift: Registration of the image on the paper from top to bottom as the paper lies in the tray. Y2 shift: Registration of the image on the paper from top to bottom as the paper lies in the tray.
	Tray 3 (Only available if tray 3 is installed)	X1 shift: Registration of the image on the paper from side to side, as the paper lies in the tray. For duplex models, this side is the second side (Back) of the paper. X2 shift: Registration of the image on the paper from side to side, as the paper lies in the tray for the first side (front) of a duplexed page. This item appears only on duplex models. NOTE: Set X1 shift first. Y shift: Registration of the image on the paper from top to bottom as the paper lies in the tray.
Paper Size/Type Prompt	Display	Prompts the user to select paper type and size for the tray.
	Do not display	Does not prompt the user to select paper type and size.
Alternate Letterhead Mode		Use radio button to enable or disable this feature.
	Default Paper Size	Prompts the user to select the default paper size for alternate letterhead mode. NOTE: Not available on the 2.7 inch and 4 inch control panels models.
	Default Paper Type	Prompts the user to select the default paper type for alternate letterhead mode. NOTE: Not available on the 2.7 inch and 4 inch control panels models.

Paper Setup menu

Table 2-18 Paper setup menu

Menu item	Sub-menu item	Description
Tray 1	Paper size	List of available paper sizes.
	Paper type	List of available paper types
Tray 2	Paper size	List of available paper sizes.
	Paper type	List of available paper types

Table 2-18 Paper setup menu (continued)

Menu item	Sub-menu item	Description
Tray 3	Paper size	List of available paper sizes.
	Paper type	List of available paper types

Supply Settings menu

Table 2-19 Supply settings menu

Menu item	Sub-menu item	Description
Black cartridge	Very low setting	Stop: The printer stops printing until the print cartridge is replaced. Prompt: The printer stops printing and prompts user to replace print cartridge. You can acknowledge the prompt and continue printing. Continue: The printer alerts the user the print cartridge is very low, but it continues printing.
	Low threshold	Enter a percentage for the low threshold setting.
Store Usage Data	On supplies Not on supplies	Select where to store the printer's usage data, either on the supplies or not on the supplies.
Cartridge Policy	Off Authorize HP	Use the Cartridge policy feature to allow only genuine HP cartridges to be used with this printer. When someone attempts to install a cartridge that is not a genuine HP cartridge, the printer control panel displays a message informing that the cartridge is unauthorized, and it displays information explaining how to proceed.
Cartridge Protection	Off Protect cartridges	Use the Cartridge protection feature to permanently associate toner cartridge with a specified printer so they cannot be used in other printers. When someone attempts to transfer a protected cartridge from the original printer into another printer, that printer will not print. The printer control panel displays a message informing that the cartridge is protected, and it displays information explaining how to proceed. After selecting Protect cartridge, when the printer prompts to confirm, select Continue to enable the feature. NOTE: After enabling cartridge protection for the printer, all subsequent toner cartridges installed in the printer are automatically and permanently protected. To avoid protecting a new cartridge, disable the feature before installing the new cartridge. To disable the feature, select Cancel rather than Continue in this step.

Printer maintenance menu

Table 2-20 Printer maintenance menu

Menu item	Sub-menu item	Description
Print Quality Tools	Print a demo page	Prints a page that demonstrates print quality.

Table 2-20 Printer maintenance menu (continued)

Menu item	Sub-menu item	Description	
	Print Quality	Prints a page that helps solve problems with print quality.	
	Cleaning Page	Cleans the printer when specs or other marks appear on printed output. The cleaning process removes dust and excess toner from the paper path. When selected, the printer prompts the user 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.	
	Jam Recovery	Automatic On Off	AUTO: The printer automatically turns jam recovery on when sufficient memory is available. ON: The printer reprints any page involved in a jam. Additional memory is allocated to store the last few pages printed. This might cause overall printer performance to suffer. OFF: The printer does not reprint any page that was involved in a paper jam. Because no memory is used to store the most recent pages, performance is optimal.
	Less Paper Curl	On Off	When printed pages are consistently curled, this option sets the printer to a mode that reduces curl. Use the slider icon to enable or disable this feature.
Troubleshooting	Event Logs	Prints a list of the last 50 events and errors that happened on the printer.	
Troubleshooting (continued)	Fax	Print Fax Trace Prints a fax trace. NOTE: Only available on fax models.	
	Event Logs	This will show a list on the display of the event logs. On a touch screen display there is also an option to print the list of events. On a 2-line display there are 2 menu items: • Print All • Event Log List NOTE: Only available on fax models.	

Table 2-20 Printer maintenance menu (continued)

Menu item	Sub-menu item	Description
Update the Printer		If selecting Update the Printer allows the user to do the following: • Check for Printer Update Now • Printer Update Options allows the user to turn Auto Update Off or On. • Manage Updates allows updates Yes or No and or Allow Downgrades Yes or No
Restore	Restore Network Settings	Resets all network configurations to their factory defaults.
	Restore Factory Defaults	Resets all settings to factory defaults values.
	Cold Reset	Resets all settings to factory defaults values.
	Printer Supply Region Reset	There are three regional sets of cartridges, US/ROW, EMEA, and AP. Each time a cartridge is inserted into the printer it reads the region of the cartridge and sets the device to that region. If the customer buys a cartridge from another region that does not match the printers region then the printer region will need to be reset from this menu. Only available on 4 inch control panels models.

Print Settings menu

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

Table 2-21 Print Settings menu

Menu item		Description
Personality	Automatic* • PCL 5 only • PCL6 only • PS only	Use the radio button to select the printer's personality
Copies		Use your finger to swipe and set the default number of copies when a print job is initiated (default is 1). When finished, touch Done to save settings.
Duplex	• Disable • Long edge portrait* • Short edge portrait	Use the radio button to select default duplex orientation for print jobs. NOTE: Only available on duplex models.
PCL Settings	Form length Append CR to LF	Use your finger to swipe and select the default form length for a print job. When finished touch Done to save the settings.
	Orientation • Portrait * • Landscape	Use the radio button to select default orientation for print jobs.
	Font Number	Use your finger to swipe and set the default Font Number for a print job. When finished, touch Done to save the settings.
	Font Pitch	Use your finger to swipe and set the default Font Pitch for a print job. When finished, touch Done to save the settings.
	Font Point Size	Use your finger to swipe and set the default Font Point Size for a print job. When finished, touch Done to save the settings.
	Symbol Set	Use the radio button to select from a list of available symbol sets..
	Append CR to LF • Off* • On	Use the radio button to enable or disable this item (default is off)
Print PS Error		If a PS error occurs, the printer will print the PS error.

Power Management menu

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

Table 2-22 Power management menu

Menu item		Description
Sleep Mode	• After 1 minute* • After 5 minutes • After 15 minutes • After 30 minutes • After 1 hour	Use the radio buttons to set the amount of printer inactive time before the printer enters Sleep Mode.
Shutdown after Sleep	• 1 hour • 2 hours • 3 hours • 4 hours • 5 hours • 6 hours • 7 hours • 8 hours	Set the amount of time of elapsed time before the printer turns itself off. NOTE: Available on 2-line display models.
Shutdown Mode	• 1 hour • 2 hours • 3 hours • 4 hours • 5 hours • 6 hours • 7 hours • 8 hours	Select the amount of elapsed time before the printer turns itself off. NOTE: Available on 2.7 inch and 4 inch control panel models.
Disable Shutdown	Do not disable: touchscreen control panel Never: 2-line LCD control panel When ports are active	Select whether or not the printer delays shutting down after the user presses the power button. Do not disable or Never: The printer shuts down immediately. When ports are active: the printer waits until there is no I/O port activity before shutting down.

Reports menu

Table 2-23 Reports menu

Menu item	Description
Fax Reports (M478fdn, M428fdw, M429fdn, M429fdw models only)	• Last transaction log • Last 30 transaction fax logs • Caller ID report • Junk fax report
Menu Structure	Prints a control-panel menu layout map.
Printer Configuration Report	Prints a list of the printer settings.
Printer Status Report	Prints the printer status report. Includes the following information: • Product Information • Print usage information • Hardware events • System events • Additional Assistance • Wireless network test • Connectivity settings
Supplies Status Page	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
Web Access Test Report	Verifies web access is available. Includes the following information: • Solution • Diagnostics results • Current configuration
Usage Page	Prints the number of pages printed, faxed, copied, and scanned by the printer. (Specific items reported are model dependent.)

Table 2-23 Reports menu (continued)

Menu item	Description
Network Configuration Page	Prints the network configuration pages. Includes information: • Network hardware configuration • General information • 802.3 Wired • 802.1 1 Wireless (wireless models only) • Wi-Fi Direct (wireless models only) – IPv4 – IPv6 • Port 9100 • LPD • Bonjour • SLP • Microsoft Web Services • SNMP • IPP • IPPS • Proxy Settings
Wireless Test Report	Prints the wireless test report. Includes information: (wireless models only) • Solution • Diagnostics results • Current configuration
Job Log	Displays a list of the most recent print jobs.
Web Services Summary	NOTE: Prints web services summary page. (available on 2-line display models)
PCL Font List	Prints a list of all installed PCL 5 fonts.
PCL6 Font List	Prints a list of all installed PCL 6 fonts.

Fax Setup menu (M428fdn, M428m, M429fdn, M429fdw)

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

Table 2-24 Fax Setup menu

Menu item	Sub-menu item	Sub-menu item	Description
Setup Wizard			This is a tool for configuring the fax settings. Follow the on screen prompts and select the appropriate response for each question.

Table 2-24 Fax Setup menu (continued)

Menu item	Sub-menu item	Sub-menu item	Description
	Preferences		
		Scan and Fax Method Allows the printer to scan the entire document before dialing, and prints an image of the first page faxed on the confirmation page.	
		Auto Answer	Sets the type of answer mode. Use toggle to enable or disable this feature.
		Auto Redial	Sets whether the printer should attempt to redial if the line is busy. • Busy Redial • No Answer Redial • Connection Problem Redial
		Automatic Reductions	Automatically reduces the size of the fax to fit the size of paper in tray.
		2-sided Fax Printing	Enables or disables the two-sided printing feature for multiple pace faxes. (duplex models only)
		Tray Selection	Select the tray where you want the faxes to print from for fax jobs.
		Stamping	Enables or disables the printer to print the date, time, sender's phone number, and page number on each page of an incoming fax.
		Dialing Prefix	Enables or disables whether a prefix number must be dialed when sending faxes from the printer, If the feature is turned on, the printer prompts the user for the number and then it automatically includes that number for every time a fax is sent.
Setup Wizard (continued)	Preferences (continued)	Fax Header	Enter your fax number Sets the identifying information that is sent to the receiving printer. Enter company name Identifies the fax sender (optional).
		Error Correction Mode	The error correction mode allows the sending device to re-transmit dtat if it detects an error signal.
		Backup Fax Reception	Set up Backup Fax Reception. Depending on preference and security requirements, the user can set up the device to: • Store all recieved faxes. • Store only faxes recieved while the printer is in an error condition. • Store none of the recieved faxes.

Table 2-24 Fax Setup menu (continued)

Menu item	Sub-menu item	Sub-menu item	Description
		HP Digital Fax	Directs the user on how to setup HP Digital Fax from the software and will print out instructions on how to setup HP Digital Fax.
		Fax Forwarding	Enables or disables fax forwarding.
		Junk Fax Blocking	Enables or disables fax junk blocking for incoming junk faxes.
		Distinctive Ring	If you have distinctive ring phone service, use this item to configure how the printer responds to incoming calls. • All rings: The printer answers any calls that come through the telephone line. • Single: The printer answers any calls that produce a single ring pattern. • Double: The printer answers any calls that produce a double ring pattern. • Triple: The printer answers any calls that produce a triple ring pattern. • Double and triple: The printer answers any calls that produce a double and triple ring pattern.
		Rings to answer	Sets the number of rings that must occur before the fax modem answers. The default setting is five.
		Fax Volume	Sets the volume for incoming faxes.
		Dial Type	Sets whether the printer should use tone or pulse dialing. • Tone* • Pulse
		Speed	Sets the allowed fax communication speed. • Fast (33600 bps) • Medium (14400 bps) • Slow (9600 bps)
		Confirm Fax Number	Confirm a fax number by entering it a second time. • On* • Off
Setup Wizard (continued)	Preferences (continued)	Billing Code	Enables the use of billing codes when set to On. A prompt appears for the billing code for an outgoing fax.
		Restore Settings	Restores settings to factory default settings.
	Tools	Run Fax Test	Preforms a fax test to verify that the phone cord is connected to the correct outlet and that there is a signal on the phone line. A fax test report is printed indicating the results.
		Clear Fax Logs/ Memory	Clears all faxes in logs and memory.

Table 2-24 Fax Setup menu (continued)

Menu item	Sub-menu item	Sub-menu item	Description
	Reports	Fax Confirmation	Sets whether the printer prints a confirmation report after a successful fax job.
		Fax Error Reports	Sets whether the printer prints a report after a failed fax.
		Print Fax Reports	Prints all fax related reports.

Security menu

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

Table 2-25 Security menu

Menu item	Description
Device Announcement Agent	Use the radio button to enable or disable this feature. Use the radio button to enable or disable this feature. When enabled at the device, a special device announcement agent locates the Security Manager server and request a secure communication. Allows for automatic device configuration.

Quick Forms menu

Table 2-26 Quick Forms menu

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

Function specific menus

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

USB menu

Open this menu by touching the USB button (touchscreen control panel models only). The following file types are supported:

- .pdf
- .ppt and .pptx
- .jpg
- .doc and .docx
- .prn and .PRN
- .xls and .xlsx

Table 2-27 USB menu

Menu item	Description
Print Documents	Prints documents stored on the USB flash drive. Use the arrow buttons to scroll through the documents. Touch the names of documents to print. Touch the summary screen to change settings such as the number of copies, the paper size, or the paper type. Touch the Print button to print the documents.
View and Print Photos	Previews photos on the USB flash drive. Use the arrow buttons to scroll through the photos. Touch the preview image for each photo to print. Adjust the settings and save the changes as the new default settings. To print the photos, touch the Print button.
Scan to USB Drive	Scans a document and stores it as a .PDF file or .JPEG image on the USB flash drive.

Fax Menu (M248/M429f models only)

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

Table 2-28 Fax Menu

Menu item	Sub-menu item	Sub-menu item	Description
Send Now			Sends fax immediately.
Send Later			Allows a fax to be sent at a later time and date.
Fax Setup			
	Setup Wizard		Assist the user in setting up the fax features.
	Preferences	Scan and Fax Method	Use radio button to enable or disable this feature.
		Auto Answer	Use radio button to enable or disable this feature.

Table 2-28 Fax Menu (continued)

Menu item	Sub-menu item	Sub-menu item	Description
Fax Setup (continued)	Preferences (continued)	Auto redial	Use radio button to enable or disable these features. • Busy redial • No answer redial • Connection problem redial
		Automatic Reduction	Use radio button to enable or disable this feature.
		Tray selection	Sets the default tray selection. • Automatically selects • Tray 1 • Tray 2 • Tray 3 (optional)
		Stamping	Sets the printer to print the date, time, sender's phone number, and page number on each page. Use the radio button to enable or disable this feature.
		Dialing Prefix	Specifies a prefix number that must be dialed when sending faxes from the printer. On Off
		Fax Header	Allows the user to customize fax header.
		Error Correction Mode	Use radio button to enable or disable this feature.
		Backup Fax Reception	On Off
		HP Digital Fax	Directs the user about how to setup HP Digital Fax from the software (printed instructions are provided about setting up the HP Digital Fax).
		Fax Forwarding	On Off
		Junk Fax Blocking	Allows the user to create a list of phone numbers they want to block.

Table 2-28 Fax Menu (continued)

Menu item	Sub-menu item	Sub-menu item	Description
Fax Setup (continued)	Preferences (continued)	Distinctive Ring	If you have distinctive ring phone service, use this item to configure how the printer responds to incoming calls. • Ring pattern detection • Single Ring: The printer answers any calls that produces a single ring pattern. • Double Ring: The printer answers any calls that produces a double ring pattern. • Triple Ring: The printer answers any calls that produces a triple ring pattern. • Double and Triple Ring: The printer answers any calls that produces a double ring or triple ring pattern. • All standard rings*: The printer answers any calls that come through the telephone line.
		Rings to Answer	Allows the user to select the number of rings before printer answers.
		Fax Volume	• Soft* • Loud • Off
		Dial Type	Sets whether the printer should use tone or pulse. • Tone • Pulse
		Speed	Sets the allowed fax communication speed. • Fast (33600 bps) • Medium *(144000 bps) • Slow (96000 bps)

Table 2-28 Fax Menu (continued)

Menu item	Sub-menu item	Sub-menu item	Description
Fax Setup (continued)	Perferences (continued)	Confirm Fax Number	Confirm the fax number by entering it a second time Use the radio button to enable or disable this feature.
Billing Code	Provides a list of billing codes that have been used for outgoing faxes. This report shows how many sent faxes were billed to each code.		
Reprint	Reprint faxes if a cartridge runs out of ink or the printer experiences other errors while printing faxes.		
Print Phone Book			Prints a list of the speed dials that have been set up for this printer.

Copy menu (M329/M428/M429 models only)

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

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

Table 2-29 Copy menu

Menu item	Sub-menu item	Sub-menu item	Description
ID Card NOTE: This item is available from the main Copy screen. You do not need to touch the Settings button to access it.			Copies both sides of identification cards, or other small-size documents, onto the same side of one sheet of paper.
Number of Copies	(1–99)		Specifies the number of copies.
	2-sided Copying NOTE: This menu option is also available under the main Copy menu.	1-1 sided 1-2 sided (duplex models only) 2-1 sided 2-2 sided (duplex models only)	Specifies whether originals are one-sided or two-sided and whether copies should be one-sided or two-sided
	2–sided format		NOTE: Will be grayed out if 2-sided is turned off.

Table 2-29 Copy menu (continued)

Menu item	Sub-menu item	Sub-menu item	Description
Resize	Legal to Letter=72% A4 to Letter=91% Letter to A4=94% Full Page=91% Fit to Page 2 Pages per Sheet None* Custom: 25 to 400%		
Original Size	Provides a list of available paper sizes.	Specifies the paper size. **NOTE:** The default paper size setting is determined by the choice of location during the initial printer setup.	
Tray Selection	Auto Select Tray 1 Tray 2	Specifies the tray to be used for the copy job.	
Quality	Best Normal * Draft	Sets in image quality settings for copies.	
Lighter/Darker		Adjust the Contrast setting to increase or decrease the difference between the lightest and darkest color on the page.	
Enhancements	None* Mixed Text Photo	Specifies the type of content in the original document, so the copy is the best match for the original.	
	Binding Margin	On Off	Creates a larger left margin to allow for binding the pages or inserting them in a binder. The document is scaled accordingly.
	Save Current Settings		Saves any changes you have made to this menu as new defaults.
	Restore Factory Defaults		Restores the factory defaults for this menu.
Preview	Touch to preview copy.		This allows the user to preview the current copy job.

Scan menu (M329/M428/M429 models only)

Table 2-30 Scan menu

Menu item	Description
Scan to USB Drive	Scans a document and stores it as a .PDF file or .JPEG image on the USB flash drive.
Scan to Network Folder	Scans a document to a network folder.
Scan to E-mail	Scans a document and sends as an email attachment.
Scan to SharePoint	Scans to a SharePoint. NOTE: SharePoint 365 is not supported.
Scan to Computer	Scans to a local computer or remote computer.

Apps

Use the Apps menu to install HP Web Services applications.

Print

Print from USB Allows the user to print directly from a USB device.

Quick sets

Quick Sets are pre-configured sets of options that allow users to easily start a job without having to manually configure frequently used job settings. A Quick Set can be accessed from the Home screen Quick Set. Quick Sets are saved as unique jobs that do not impact the default options of the apps. Quick Sets that are displayed on the control panel under the Quick Set tile.

NOTE: Quick Sets will not appear on the Home screen, unless a Quick Set has been configured.

Hidden menus

The printer features hidden menus for Service, Suppport, and Enable/Disable. To open these menus, touch the button for that function on the control panel.

Support menu

- **2-line control panels**: On the printer control panel, press the ✕ button, then press the ↩, then press the ✕ button twice.

  Figure 2-18 2-line control panel support screen

  Touchscreen control panels: From the Home screen on the printer control panel, press the ↩ four times.

  Figure 2-19 Touchscreen support screen

Table 2-31 Support Menu

Menu item	Secondary menu item	Description	Additional information (if necessary)

Table 2-31 Support Menu (continued)

Information Menu	Model number	Displays the products model number.	
	Serial number	Displays the products serial number.	
	Region/Language	Displays the products region/ language settings.	
	Counters	Displays the products total page counts and cycles.	
	Firmware version	Displays the product firmware version.	
	Event log	Displays the products last five events. The user can cycle through each event.	
	Assert history	Displays the products last five asserts. The user can cycle through each assert.	
	Wireless Region (wireless models only)	OK Cancel	Displays the region.
Resets Menu	Country and language reset	• Allows the country and language to be reset after the unit powers down. • All user menu settings to default.	

Table 2-31 Support Menu (continued)

	Partial reset	• All user menu settings to default • All telephony parameter values to default (fax models only). • Initiate select country and language UI. • Clear wireless settings to default (wireless models only). NOTE: The items below will not be cleared: • Fax memory (fax models only) • Device counters	
Resets Menu (continued)	Semi-full reset	All partial rests plus: • Clears fax journal information	

Table 2-31 Support Menu (continued)

		(fax models only). • Clears all speed dials/ broadcast list (fax models only). • Clears personal header information (fax models only) • Clears instant Share settings. • Clears wireless settings (IP, SSID, WEP) (wireless models only) NOTE: See the following: • Wireless settings are cleared on a Semi-full and Full resets (wireless models only) • Device counters are not cleared on Semi-full or Partial resets.	

Table 2-31 Support Menu (continued)

System Configuration Menu	Hardware failure status	Shows the status of the hardware failure. If user selects, the hardware failure status, it will be cleared. This function, Hardware/failure status, is needed so a support agent can instruction the customer to enter the Support Menu, then the Support System Configuration Menu, then select the Hardware Failure Status, and then clear the DSID_IDS_HW_FAILURE so the value can be set to zero.	
	Set boot mode to user mode	Sets the unit to user mode from manufacturing mode.	
Fax Diagnostics Menu (MPF models only)	Run Fax Test	Executes the fax test.	
	Reset Fax Parameter	Resets the fax parameters (not just a specific one).	
	Change Fax Parameter	Allows for controlled changes to individual fax parameters.	
	Fax Parameter Report	Prints a complete list of all parameters including the number, current value, and defaults.	
	Fax Trace Report	Prints two reports, most recent and last fax trace with an error.	
	Fax Status Report	Prints fax status report.	
	Speaker Mode	Enable the speaker through out fax transmission.	

Table 2-31 Support Menu (continued)

	Ring Monitor	• R = ring count and cadence. • XX Hz= 0 if attached phone is on-hook. 1 =if attached phone is off-hook.	
Fax Diagnostics Menu (MPF models only) (continued)	CNG Monitor	• f3 =counter increments if a frequency is detected in side tone while eavesdropping . • f2 =counter increments if a frequency is detected in actual CNG tone. • f1 =counter increments if a frequency is detected in CNG frequency range. • Z =total CNG tonesdetected during a session.	
	Signal Power	Signal power is displayed.	
Connectivity Diagnostics Menu	Connectivity report	Prints a report that contains all the various connectivity settings.	
	Wireless diagnostics test (wireless model only)	Preforms the same wireless diagnostics test as in the Customer UI, through the front control panel of the printer. This diagnostic tool tests the wireless setup of the product.	
	Capture NW trace	5 minutes 10 minutes 30 minutes Stop	Captures a network trace and saves the trace in an encrypted format to a USB flash drive inserted into the front USB port.

Table 2-31 Support Menu (continued)

	Print wireless metrics	OK Cancel	Prints the wireless metric data report.
Reports Menu	OK Cancel		
	Print mech button	Code = x	Allows the user to print any of the Tap reports that are supported by the platform. NOTE: Print Tap report number 4 to see a list of supported tap reports for these devices.
	Config page (MFP models only)	Prints a complete list of all fax parameters including the number, current value, and defaults.	
	Fax trace (MFP models only)	Prints a T30 protocol history of the last fax transaction.	
	Counter report	Prints a summary of the device usage.	
Scan Diagnostics Menu (MFP models only)	Test scan motor	Subsystem test of the flatbed scan motor and scan drive mechanism.	
Enable/Disable Menu	All network	OK Cancel	
Enable/Disable Menu (continued)	Ethernet	OK Cancel	
	All wireless (wireless models only)	OK Cancel	
	Wireless infrastructure (wireless models only)	OK Cancel	
	Wireless access point (wireless models only)	OK Cancel	
	Memory devices	OK Cancel	
	Fax (MFP models only)	OK Cancel	
	Fax reprint (MFP models only)	OK Cancel	

Table 2-31 Support Menu (continued)

	Copy (MFP models only)	OK Cancel	
	Digital send (MFP models only)	OK Cancel	
	HP web services (ePrint and Apps)	OK Cancel	
	HP ePrint	OK Cancel	
	Print Apps	OK Cancel	
	Webscan (MFP models only)	OK Cancel	
	Usage data collection	OK Cancel	
Enable/Disable Menu (continued)	Firmware update	OK Cancel	
	Reset to factory defaults	OK Cancel	

Service menu

- **2-line control panels**: On the printer control panel, press the button, then press the ✕, then press the button twice.

Figure 2-20 2-line control panel service screen

Touchscreen control panels: From the Home screen on the printer control panel, press the button once, then press the button once, and then press the button twice.

Figure 2-21 Touchscreen control panel

Table 2-32 Service menu

Menu item	First menu item	Description	Additional information (if necessary)
System Configuration Menu	Enter serial number	Allows a manual entry of the 10-digit product serial number. Service needs the ability to enter all ten characters.	

Table 2-32 Service menu (continued)

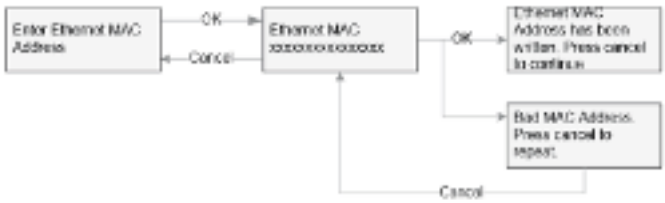
Menu item	First menu item	Description	Additional information (if necessary)
	Enter service ID	Allows a manual entry of the 5-digit service ID (YYDDD).	
	Enter ethernet MAC address	Allows namual entry of the ethernet MAC address.	
	Enter wireless MAC address	Allows a manual entry of the wireless MAC address.. NOTE: Not applicable for products without wireless function.	
	R/W parameter	Allows manual setting of any configurable parameters. Press OK will write the parameter, Cancel will not write the parameter.	
Resets Menu	Country and language reset	• Allows the country and language to be reset after unit powers down. • All user menu settings to default.	NOTE: When one of the Resets is selected by pressing OK button, the device will power off and it will not power on unless the power button is pressed again. After it powers up it will preform the corresponding reset.
	Partial reset	• All user menu	

Table 2-32 Service menu (continued)

Menu item	First menu item	Description	Additional information (if necessary)
		settings to default • All telephony parameter values to default (MFP models only). • Initiate select country and language UI. NOTE: The items below will not be cleared: Wireless settings (wireless models only) Fax memory (MFP models only) Device counters	
Resets Menu (continued)	Semi-Full reset	All partial resets plus: • Clears fax journal information	

Table 2-32 Service menu (continued)

Menu item	First menu item	Description	Additional information (if necessary)
		(MFP models only). • Clears all speed dials/ broadcast list (MFP models only). • Clears personal header information (MFP models only). • Clears wireless settings, (IP, SSID, WEP) (wireless models only). NOTE: See the following: • Wireless settings are cleared on a semi-full or full resets. • Device counters are not cleared on semi-full and partial resets.	
	OOBE reset	Sets the unit back to the factory default state.	
IMPORTANT: The NVM values that are **never** reset: • Device unique calibration values • Serial number • Deivative setting (includes soft features)			
Special Reports	Print mech button tap	Allows a user to print any of the Tap reports that are supported by the platform.	

Table 2-32 Service menu (continued)

Menu item	First menu item	Description	Additional information (if necessary)
	Network security page	Prints a summary of the network related information.	
	Config page	Prints a complete list of all parameters including the number, current value, and defaults.	
	Fax trace (MFP models only)	Prints a T30 protocol history of the last fax transactions.	
	Counter report	Prints a summary of device usage.	
Service Test Menu	Test scan motor	Subsystem test of the flatbed scan motor and scan drive mechanism.	
	Cont_adf_pick	Continuous picking from the ADF.	
	Test keys	Interactive test of all front panel buttons.	
	Test Display	Subsystem functional test of all the CGD segments and the back light (not supported on the 2–line control panel).	
	Infinite H's test	Subsystem test that prints continuous pages of the letter "H" in black.	
	Test front USB port	Test that verifies when a device is inserted in the front USB port that the device is recognized with a PASS or FAIL results.	

Boot Screen Menu

- **2-line control panels**: While the device is off, press and hold the OK button and the ✕ button, then power on the device. The device will boot to a black screen. Next, using the ◀ and ▶ arrow buttons. Press the◀, then press the ▶ button, and then press◀ button twice.

  Figure 2-22 2-line control panels boot screen

Touchscreen control panels: While the device is off, hold the ⮌ button then power the device on. The device will boot to a black screen. Input the following sequence press on the ⌂ button once, then press the ⮌ button once, and then press the ⌂ button twice.

Figure 2-23 Touchscreen control panels boot screen

Table 2-33 Boot screen menu

Menu item	Sub-menu item	Sub-menu item	Description
MFG	Set the device to manufacturing mode.		

Table 2-33 Boot screen menu (continued)

Menu item	Sub-menu item	Sub-menu item	Description
Reflash	Enters reflash mode.		
Menu	Provides further options for the device:	Partial Reset	• All user menu setting to default. • All telephony parameter values to default. • Initiate select country and language UI. **NOTE:** The items below will not be cleared: • Wireless settings • Fax memory • Device counters
Menu (continued)	Provides further options for the device:	Semi reset	All partial resets plus: • Clears fax journal information. • Clears all speed dials/ broadcast list. • Clears personal header information. • Clears Instant Share settings. • Clears wireless settings (IP, SSID, WEP). **NOTE:** See the following: • Wireless settings that **are cleared** on a Semi-full and Full resets. • Device counters **are not** cleared on Semi-full and Partial resets.

Table 2-33 Boot screen menu (continued)

Menu item	Sub-menu item	Sub-menu item	Description
		Full Reset	Resets all menu settings to default. • All telephony parameter values to default • Initiate select country and language UI • Clears fax memory • Clears fax journal information • Clears all speed dials/ broadcast lists • Clears personal header information • Clears junk fax numbers • Clears Instant Share settings • UVL Reset; clears the IP address, the SSID and any WEP settings. • Service ID set to all zero's • All counters set to zero • Clears stored error codes • Resets date and time offset
		OOB reset	Sets the unit back to the factory defaults.
		Forced user mode	
		No print mech	
		No scan mode	
		No scan no mech	
		Memory Init only	
		Safe load	
		No FW update	
		Normal off W IO once	

Error code and control panel message troubleshooting overview

Error codes

Error codes and control-panel messages display on the printer control panel to indicate the current printer status or situations that might require action. Error codes are numerical, or alphanumerical, and have a set structure with six characters (example: 13.WX.YZ).

- The first two characters are numeric and represent the system component that is causing the error. For example, in error code `10.22.15`, **10** = **Supplies** for HP LaserJets.
- The remaining four characters (WX, Y, and Z values) further define the error.

HP LaserJet and HP PageWide Enterprise error codes are documented in the control panel message document (CPMD) for each printer.

The CPMD is a comprehensive list of error codes, diagnostic and troubleshooting steps to clear or resolve the error, and other helpful information such as service mode pins and part numbers.

The CPMD is continually updated and republished with the latest information for the following error codes.

Table 2-34 **ERROR CODES: The first two characters**

Error code	System Component	System Error Description
01	IO	4 - WiFi
10.WX.YZ	Supplies (LaserJet)	Supply error or supply memory error.
13.WX.YZ	Jam (LaserJet)	Paper jam or open door jam error.
21.WX.YZ	Misprint	Page complexity causing a decompression error when trying to process job.
30.WX.YZ	Scanner	Flatbed scanner error occurring inside the unit.
31.WX.YZ	Document feeder	Document feeder, scanner, or jam error.
32.WX.YZ	Backup, restore, or reset	Backup, restore, or reset notification or error.
33.WX.YZ	Security	Backup, Disk, EFI BIOS, Firmware integrity (SureStart), or error.
44.WX.YZ	Digital Send	Firmware failure involving a digital sending component.
50.WX.YZ	Fuser (LaserJet)	Fuser error.
51.WX.YZ	Laser scanner (LaserJet)	Laser scanner beam error.
52.WX.YZ	Laser scanner motor (LaserJet)	Laser scanner motor startup error.
53.WX.YZ	Engine peripheral	Duplexer installed/removed, optional cassette installed/removed, Tray 1-3 lifter error
54.WX.YZ	Sensor	Sensor error (not jam related).
55.WX.YZ	Engine data error (LaserJet)	Engine data error.
56.WX.YZ	Paper handling (LaserJet)	Paper input/output or accessory error.
57.WX.YZ	Fan	Fan error.

Table 2-34 ERROR CODES: The first two characters (continued)

58.WX.YZ	Engine power	Engine power failure.
59.WX.YZ	Motor (LaserJet)	Motor error.
60.WX.YZ	Tray motor error (LaserJet)	Tray lifting or pick up error.

How to search for printer documentation

The CPMD, error codes, and other support documentation for each printer is found on the internal HP portals GCSN and WISE (formerly SAW). GCSN is available to HP channel partners and WISE is available to call agents, service technicians, and other HP internal users. The level of detail available will depend on your access credentials.

How to search WISE for printer documentation

These instructions are for HP internal use by call agents, service technicians, and other internal users. To learn how to find support content in WISE, watch the video here.

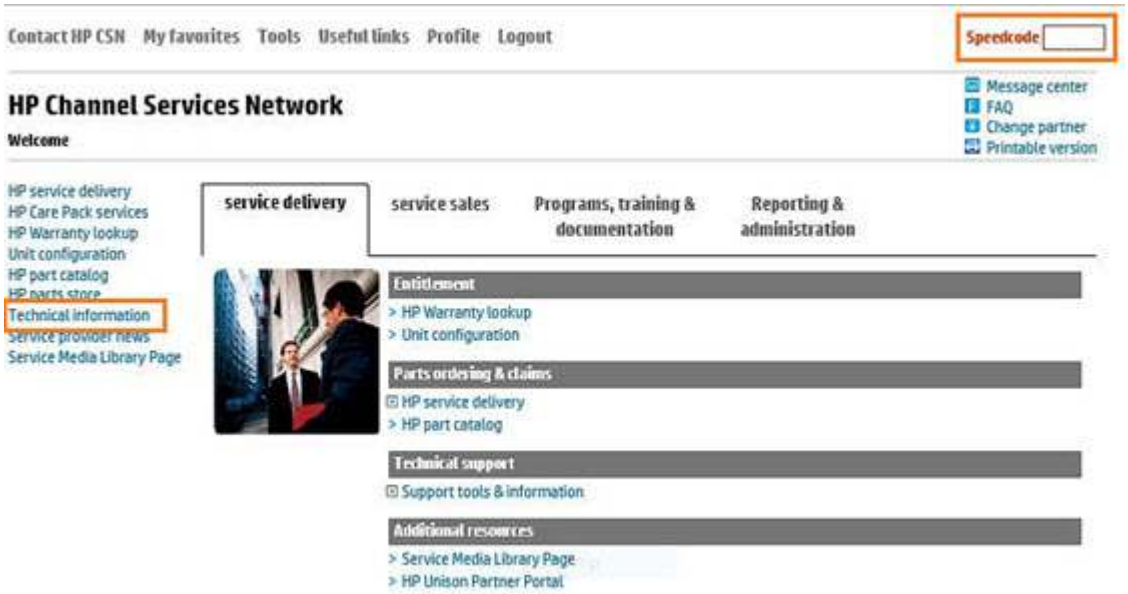
To view a list of control panel message documents per printer in **WISE**, enter document ID **c05048451**, to locate CPMD list.

Go to **WISE** and enter this document ID **c05791539** for written instructions.

How to search GCSN for printer documentation

These instructions are for internal use by HP Channel Partners. To learn how to find support content in GCSN, watch the video here or follow these steps:

1. On the Home screen in GCSN, open **Technical information** using one of the following two methods:
   - Type `TINF` in the **Speedcode** field found in the upper right corner and press `Enter`, or
   - On the Home page, click **Technical information** in the left pane.



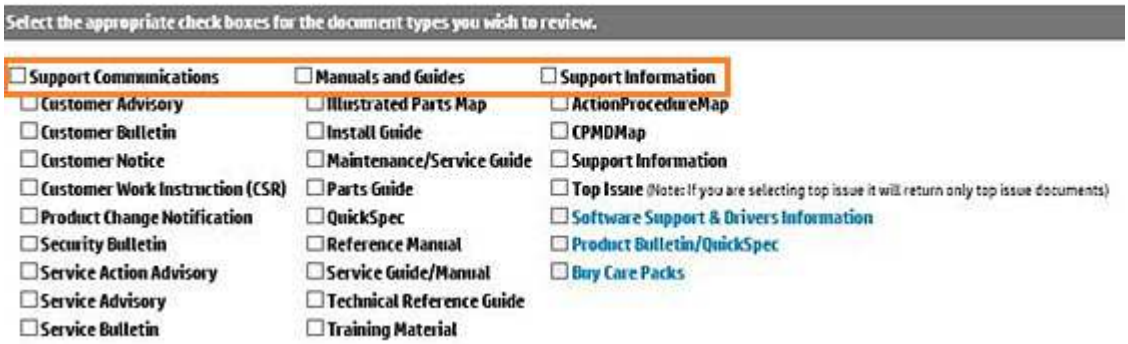
2. Under **Product Search**, select the **Type**, **Category**, **Family**, and **Series** that match your product model (leave the **Model** field as blank or the default).

NOTE: Make sure to login to GCSN using your service-qualified credentials to access the most comprehensive content list available. To find out how to become service-qualified, contact your HP representative.

Figure 2-24 Sample product search criteria

3. Click **Add Favorites** and then click **Add** to add the printer to your Favorites list and allow you to bypass the **Product Search** fields next time for that particular model (Optional).

4. Clear all of the high-level check boxes.



5. Select the check boxes for the document types for which you want to search.

NOTE: Select only the high-level **Manuals and Guides** search option if you are not sure in which type of manual or guide the content might be listed.

6. Select **Submit**.

7. If needed, click **Back To selection Criteria** and narrow your search (the maximum allowed search result is 100 documents).

NOTE: Do not select the **Top Issue** option unless you only want to view top issues for that model. All other available content will be filtered out.

Technical information type	Select this checkbox
CPMD	**CPMD-Map**
List of all CPMDs per product	**Support Information**
Installation Guide or Hardware Install Guide	**Maintenance/Service Guide** or **Install Guide**
Service cost document	**Install Guide** or **Service Guide/Manual**
Service guide or Service manual	**Service Guide/Manual**
Self-solve or troubleshooting document	**Support Information**
User manual or User guide	**User Guide**
Warranty and Legal Guide	**Warranty Statement**

Solve paper-handling problems

Printer feeds incorrect page size

Printer feeds incorrect page size

Cause	Solution
The correct size paper is not loaded in the tray.	Load the correct size paper in the tray.
The correct size paper is not selected in the software program or printer driver.	Confirm that the settings in the software program and printer driver are correct, because the software program settings override the printer driver and control panel settings, and the printer driver settings override the control panel settings.
The correct size paper for the tray is not selected in the printer control panel.	From the control panel, select the correct size paper for the tray.
The paper size is not configured correctly for the tray.	Print a configuration page or use the control panel to determine the paper size for which the tray is configured.
The guides in the tray are not against the paper.	Verify that the paper guides are touching the paper, but not so tightly that the paper is buckled.

Printer pulls from incorrect tray

Printer pulls from incorrect tray

Cause	Solution
You are using a driver for a different printer.	Use a driver for this printer.
The specified tray is empty.	Load paper in the specified tray.
The paper size is not configured correctly for the input tray.	Print a configuration page or use the control panel to determine the paper size for which the tray is configured.
The guides in the tray are not against the paper.	Verify that the guides are touching the paper.

Printer will not duplex or duplexes incorrectly

Printer will not duplex (print 2-sided jobs) or duplexes incorrectly

Cause	Solution
You are trying to duplex on unsupported paper.	Verify that the paper is supported for duplex printing.
The printer driver is not set up for duplex printing.	Set up the printer driver to enable duplex printing.
The first page is printing on the back of preprinted forms or letterhead.	Load preprinted forms and letterhead in Tray 1 with the letterhead or printed side down, with the top of the page leading into the printer. For Tray 2 and 3, load the paper printed side up with the top of the page toward the right of the printer.

Printer will not duplex (print 2-sided jobs) or duplexes incorrectly

Cause	Solution
The printer model does not support automatic 2-sided printing.	The printer model does not support automatic 2-sided printing.
The printer configuration is not set for duplexing.	In Windows, run the automatic configuration feature: 1. Click the **Start** button, point to **Settings**, and then click **Printers** (for Windows 2000) or **Printers and Faxes** (for Windows XP). 2. Right-click the HP printer icon, and then click **Properties** or **Printing Preferences**. 3. Click the **Device Settings** tab. 4. Under **Installable Options**, click **Update Now** in the **Automatic Configuration** list.

Paper does not feed from Tray 2

Paper does not feed from Tray 2 or 3

Cause	Solution
The correct size paper is not loaded.	Load the correct size paper.
The input tray is empty.	Load paper in the input tray.
The correct paper type for the input tray is not selected in the printer control panel.	From the printer control panel, select the correct paper type for the input tray. Trays configured for a paper type with a specific weight range will not match a print job that specifies an exact weight, even if the specified weight is within the weight range.
Paper from a previous jam has not been completely removed.	Open the printer and remove any paper in the paper path. Closely inspect the fuser area for jams.
None of the optional trays appear as input tray options.	The optional trays only display as available if they are installed. Verify that any optional trays are correctly installed. Verify that the printer driver has been configured to recognize the optional trays.
An optional tray is incorrectly installed.	Print a configuration page to confirm that the optional tray is installed. If not, verify that the tray is correctly attached to the printer.
The paper size is not configured correctly for the input tray.	Print a configuration page or use the control panel to determine the paper size for which the tray is configured.
The guides in the tray are not against the paper.	Verify that the guides are touching the paper.

Output is curled or wrinkled

Output is curled or wrinkled

Cause	Solution
Paper does not meet the specifications for this printer.	Use only paper that meets the HP paper specifications for this printer.
Paper is damaged or in poor condition.	Remove paper from the input tray and load paper that is in good condition.

Output is curled or wrinkled

Cause	Solution
Printer is operating in an excessively humid environment.	Verify that the printing environment is within humidity specifications.
You are printing large, solid-filled areas.	Large, solid-filled areas can cause excessive curl. Try using a different pattern.
Paper used was not stored correctly and might have absorbed moisture.	Remove paper and replace it with paper from a fresh, unopened package.
Paper has poorly cut edges.	Remove paper, flex it, rotate it 180 degrees or turn it over, and then reload it into the input tray. Do not fan paper. If the problem persists, replace the paper.
The specific paper type was not configured for the tray or selected in the software.	Configure the software for the paper (see the software documentation). Configure the tray for the paper.
The paper has previously been used for a print job.	Do not re-use paper.

Printer does not pick up paper or misfeeds

The printer does not pick up paper

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

1. Open the printer and remove any jammed sheets of paper.
2. Load the tray with the correct size of paper for the job.
3. Make sure the paper size and type are set correctly on the printer control panel.
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 printer control panel to see if the printer is waiting for an acknowledgment to the feed the paper manually prompt. Load paper, and continue.
6. The pickup, feed, or separation rollers might be contaminated. Clean the rollers with a lint-free cloth dampened with warm water.

The printer picks up multiple sheets of paper

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

1. Remove the stack of paper from the tray and flex it, rotate it 180 degrees, and flip it over. *Do not fan the paper.* Return the stack of paper to the tray.
2. Use only paper that meets HP specifications for this printer.
3. Use paper that is not wrinkled, folded, or damaged. If necessary, use paper from a different package.
4. Make sure the tray is not overfilled. If it is, remove the entire stack of paper from the tray, straighten the stack, and then return some of the paper to the tray.

5. Make sure the paper guides in the tray are adjusted correctly for the size of paper. Adjust the guides to the appropriate indentation in the tray.
6. Make sure the printing environment is within recommended specifications.

The document feeder jams, skews, or picks up multiple sheets of paper (MFP models)

- The original might have something on it, such as staples or self-adhesive notes, that must be removed.
- Check that all rollers are in place and that the roller-access cover inside the document feeder is closed.
- Make sure that the top document-feeder cover is closed.
- The pages might not be placed correctly. Straighten the pages and adjust the paper guides to center the stack.
- The paper guides must be touching the sides of the paper stack to work correctly. Make sure that the paper stack is straight and the guides are against the paper stack.
- The document feeder input tray or output bin might contain more than the maximum number of pages. Make sure the paper stack fits below the guides in the input tray, and remove pages from the output bin.
- Verify that there are no pieces of paper, staples, paper clips, or other debris in the paper path.
- Clean the document-feeder rollers and the separation pad. Use compressed air or a clean, lint-free cloth moistened with warm water. If misfeeds still occur, replace the rollers.

Paper does not feed automatically

Paper does not feed automatically

Cause	Solution
Manual feed is selected in the software program.	Load Tray 2 with paper, or, if the paper is loaded, press the OK button.
The correct size paper is not loaded.	Load the correct size paper.
The input tray is empty.	Load paper into the input tray.
Paper from a previous jam has not been completely removed.	Open the printer and remove any paper in the paper path.
The paper size is not configured correctly for the input tray.	Print a configuration page or use the control panel to determine the paper size for which the tray is configured.
The guides in the tray are not against the paper.	Verify that the rear and width paper guides are touching the paper.

Prevent paper jams

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

- Use only paper that meets HP specifications for this printer.
- Use paper that is not wrinkled, folded, or damaged. If necessary, use paper from a different package.
- Use paper that has not previously been printed or copied on.
- 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.
- 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.
- Make sure that the tray is fully inserted in the printer.
- When printing on heavy, embossed, or perforated paper, use the manual feed feature and feed sheets one at a time.
- Make sure the printing environment is within recommended specifications.
- Follow these steps to verify that the tray is configured for the correct paper size and type on the printer control panel. Adjust paper settings if necessary.

  a. **2-line control panels**: On the product control panel, press the OK button. Use the ◀ or the ▶ to scroll through the menus.

     Touchscreen control panels: On the printer control panel Home screen, swipe down to gain access to the home screen dash board, and then, touch the Setup icon.

  b. Open the Setup menu.

  c. Open the Paper setup menu.

  d. Select the tray from the list.

  e. Select Paper Type and then select the type of paper that is in the tray.

  f. Select Paper Size and then select the size of paper that is in the tray.

Clear paper jams

Clear paper jams (SFP)

Experiencing frequent or recurring paper jams?

Follow these steps to solve problems with frequent paper jams. If the first step does not resolve the problem continue with the next step until you have resolved the problem.

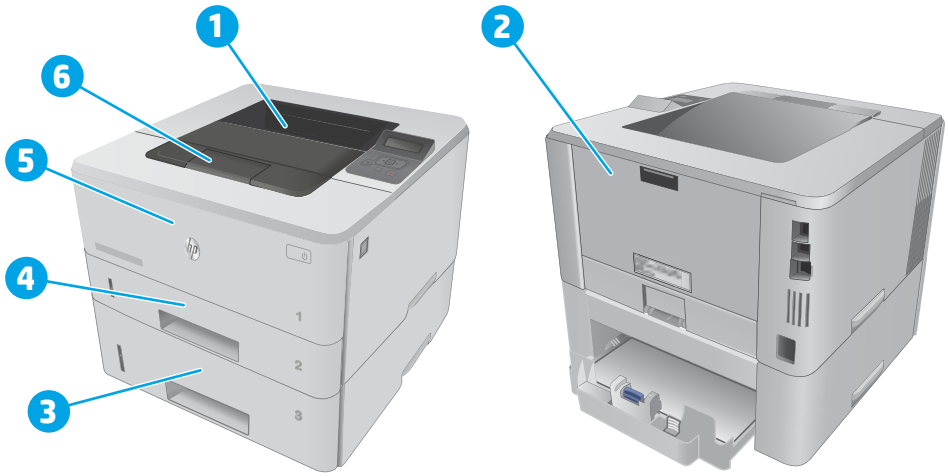
1. If paper has jammed in the printer, clear the jam and then print a configuration page to test the printer.
2. Check that the tray is configured for the correct paper size and type on the printer control panel. Adjust paper settings if necessary.
    a. On the printer control panel, press the OK button.
    b. Open the following menus:
        - **Setup**
        - **Paper Setup**
    c. Select the tray from the list.
    d. Select **Paper Type** and then select the type of paper that is in the tray.
    e. Select **Paper Size** and then select the size of paper that is in the tray.
3. Turn the printer off, wait 30 seconds, and then turn it on again.
4. Print a cleaning page to remove excess toner from inside the printer.
    a. On the printer control panel, press the OK button.
    b. Open the following menus:
        - **Setup**
        - **Printer Maintenance**
        - **Print Quality Tools**
        - **Cleaning Page**
    c. Load plain letter or A4 paper when you are prompted, and then press the OK button.

        A **Cleaning** message displays on the printer control panel. Wait until the process is complete. Discard the page that prints.
5. Print a configuration page to test the printer.
    a. On the printer control panel, press the OK button.
    b. Open the **Reports** menu.
    c. Select **Configuration Report**.

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

Jam locations

Jams can occur in these locations:



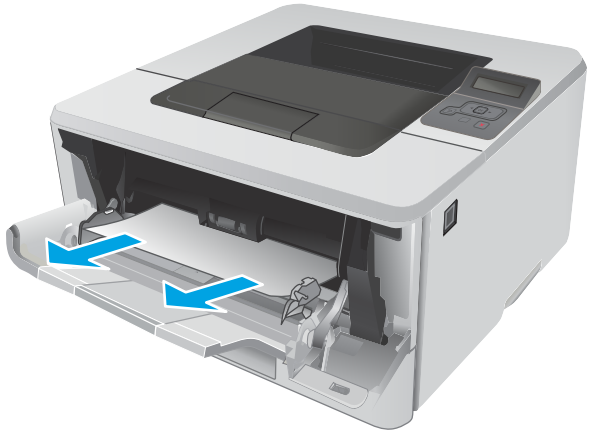
1	Output bin
2	Fuser area
3	Tray 3 (optional)
4	Tray 2 Duplexing area (remove Tray 2 for access)
5	Tray 1
6	Toner cartridge area (open the front door for access)

Loose toner might remain in the printer after a jam. This problem typically resolves itself after a few sheets have been printed.

Clear paper jams in Tray 1

Use the following procedure to clear paper jams in Tray 1.

1. Slowly pull the jammed paper out of the printer.

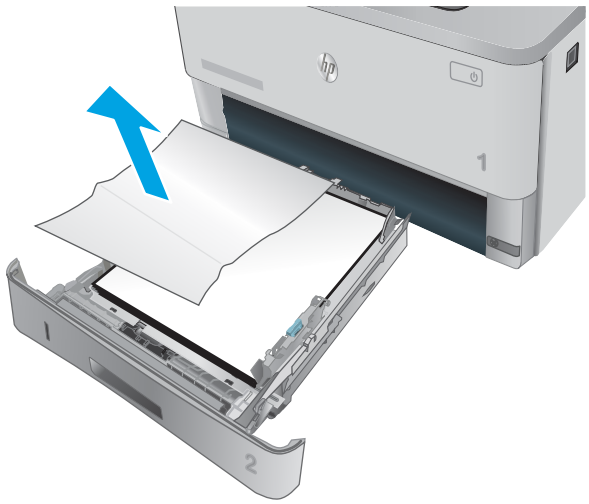


Clear paper jams in Tray 2

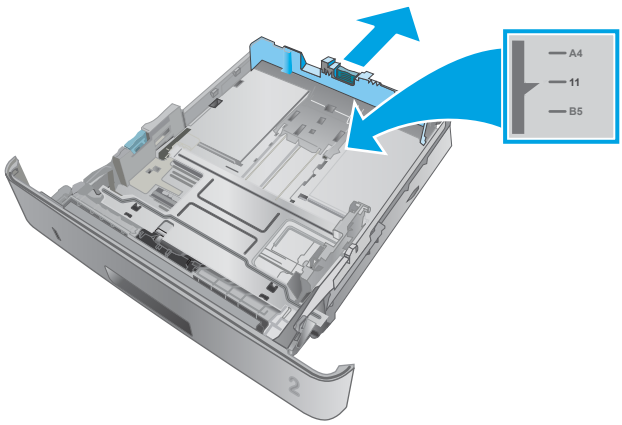
Use the following procedure to check for paper in all possible jam locations related to Tray 2. When a jam occurs, the control panel displays an animation that assists in clearing the jam.

1. Remove the tray from the printer.

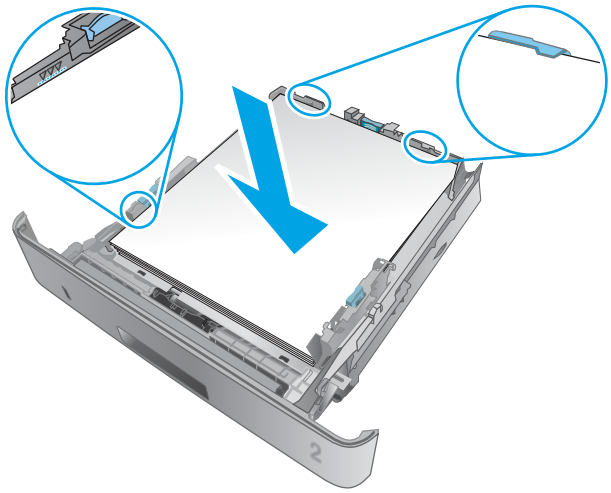
2. Remove the paper from the tray, and discard any damaged paper.



3. Verify that the rear paper guide is adjusted to the indentation for the correct paper size. If necessary, pinch the release and move the rear paper guide to the correct position. It should click into place.



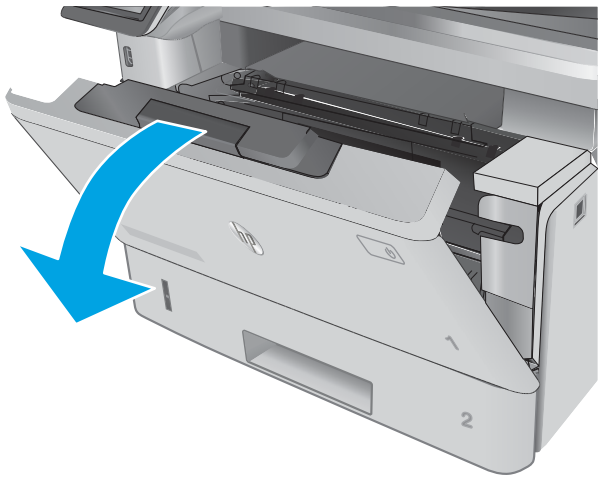
4. Load the paper into the tray. Make sure that the stack is flat at all four corners and that the top of the stack is below the maximum-height indicators.



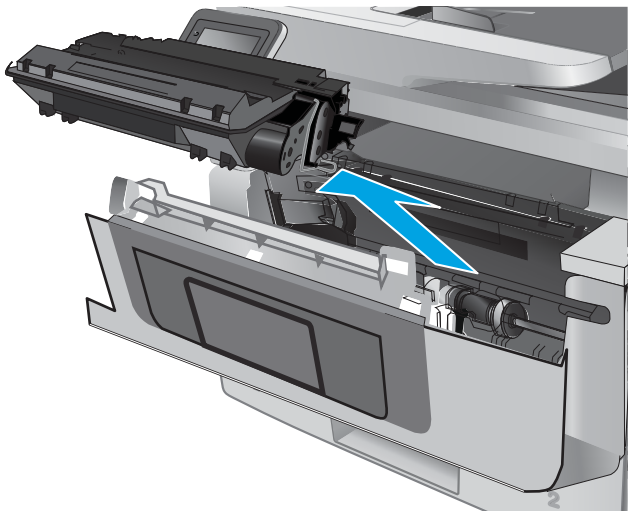
5. Reinsert and close the tray.

6. Press the front-door-release button.

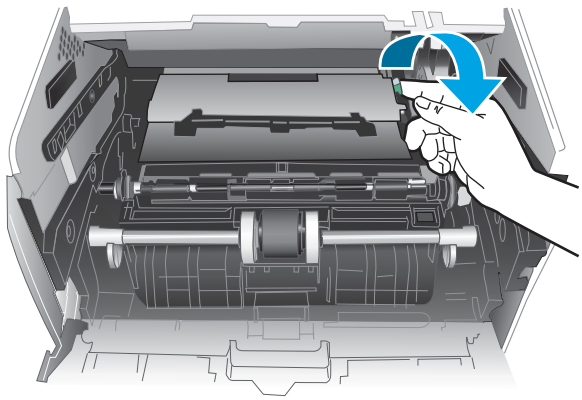
7. Open the front door.



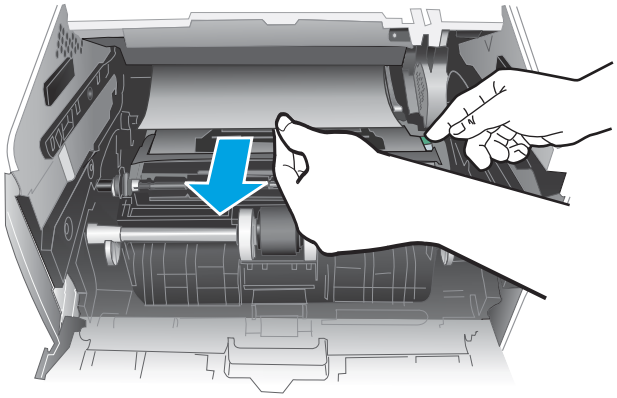
8. Remove the toner cartridge.



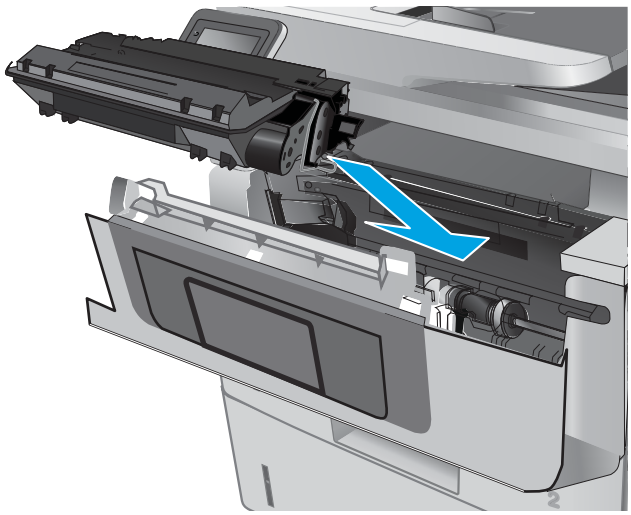
9. Lift the jam-access cover.



10. Remove any jammed paper.



11. Install the toner cartridge.

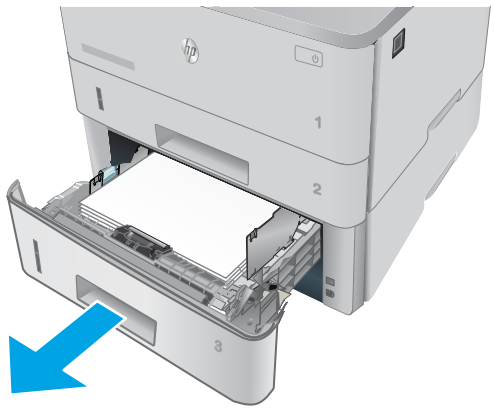


12. Close the front door.

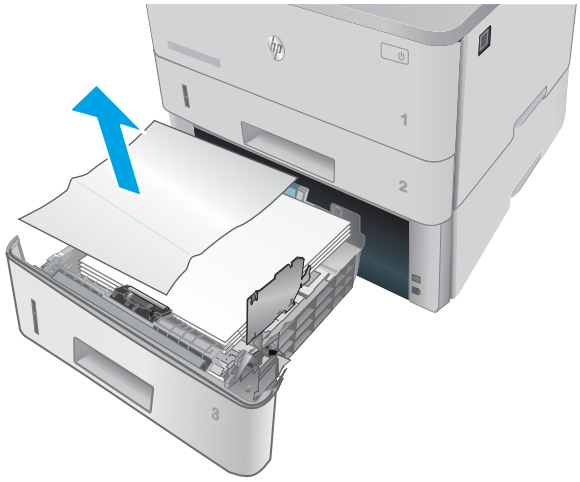
Clear paper jams in optional Tray 3

Use the following procedure to check for paper in all possible jam locations related to Tray 3. When a jam occurs, the control panel displays an animation that assists in clearing the jam.

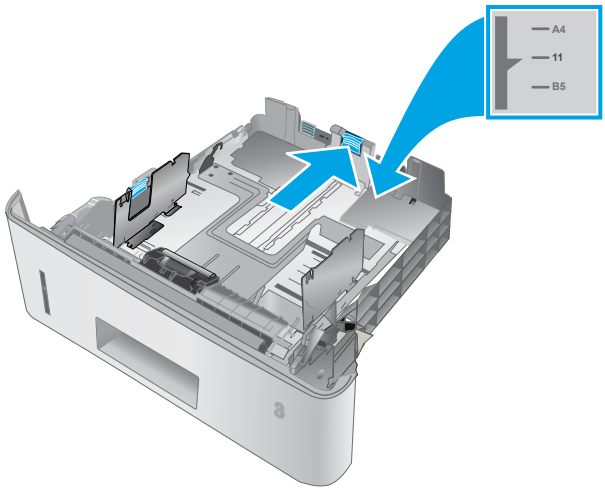
1. Remove the tray from the printer.



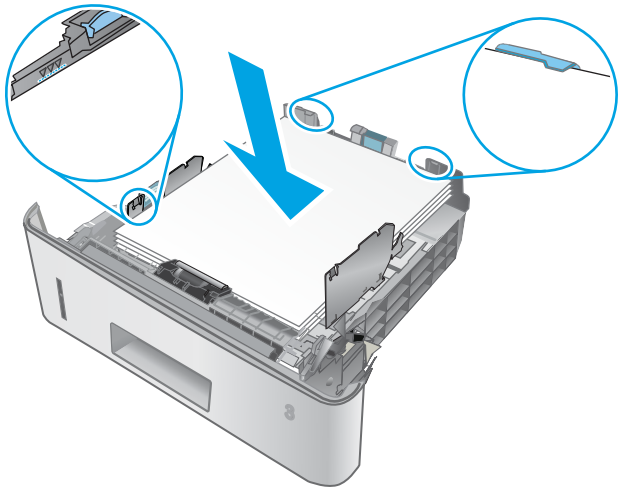
2. Remove the paper from the tray, and discard any damaged paper.



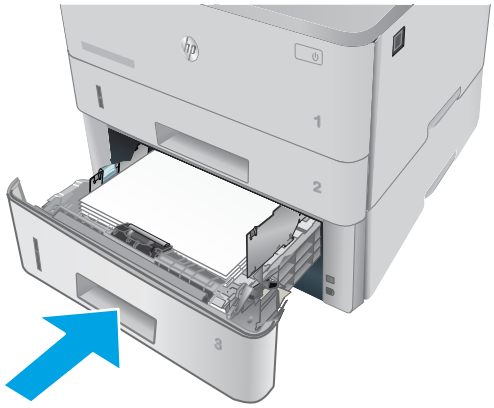
3. Verify that the rear paper guide is adjusted to the indentation for the correct paper size. If necessary, pinch the release and move the rear paper guide to the correct position. It should click into place.



4. Load the paper into the tray. Make sure that the stack is flat at all four corners and that the top of the stack is below the maximum-height indicators.

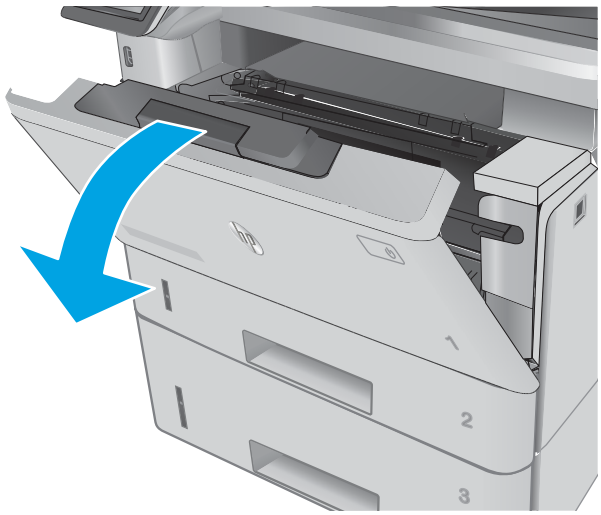


5. Reinsert and close the tray.

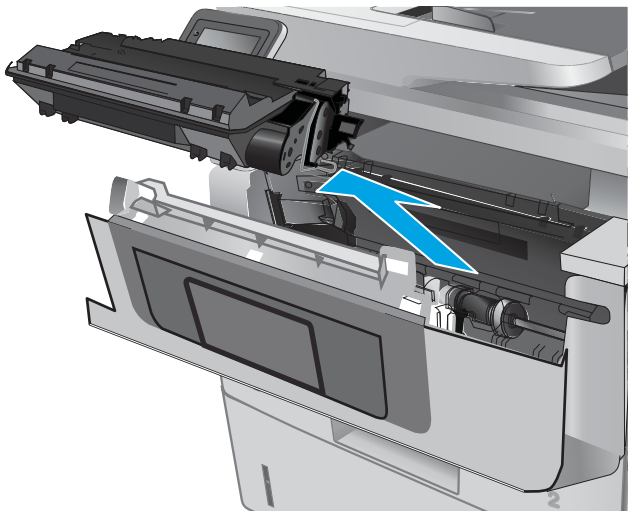


6. Press the front-door-release button.

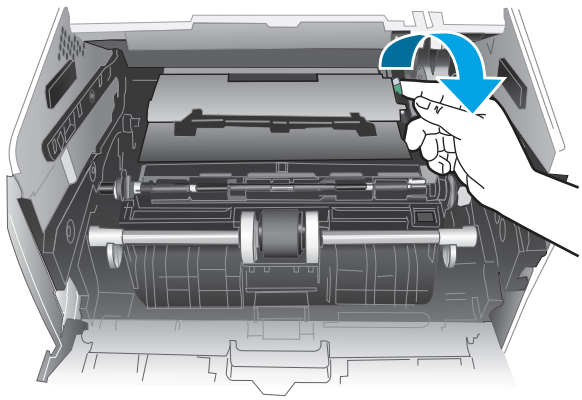
7. Open the front door.



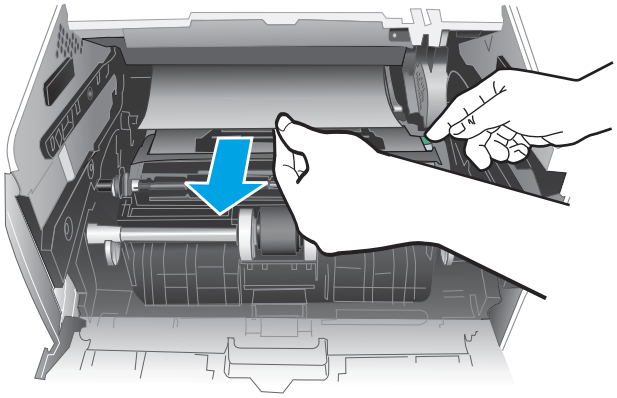
8. Remove the toner cartridge.



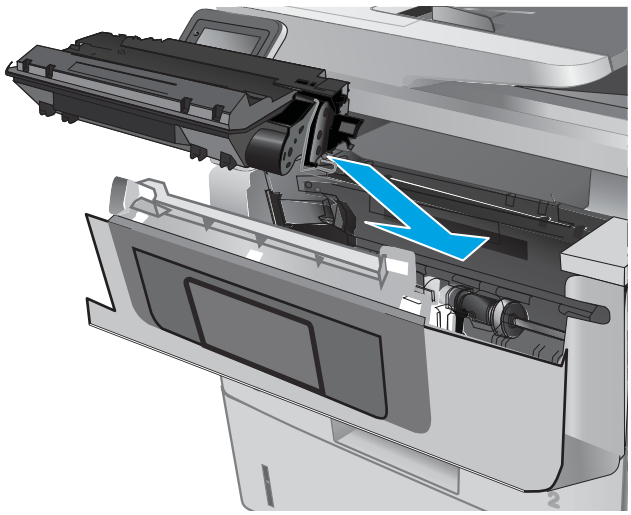
9. Lift the jam-access cover.



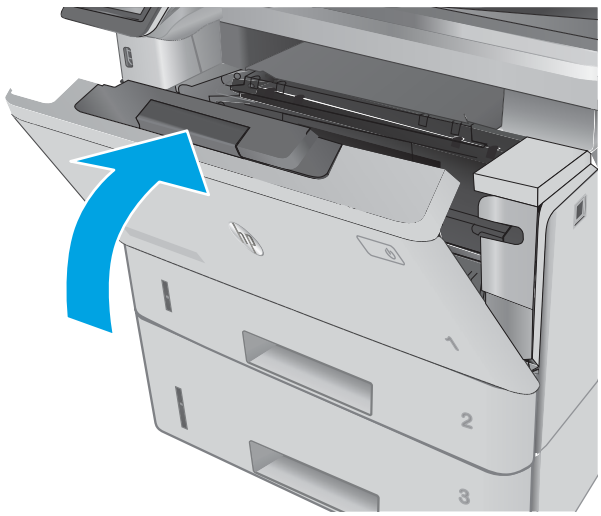
10. Remove any jammed paper.



11. Install the toner cartridge.



12. Close the front door.

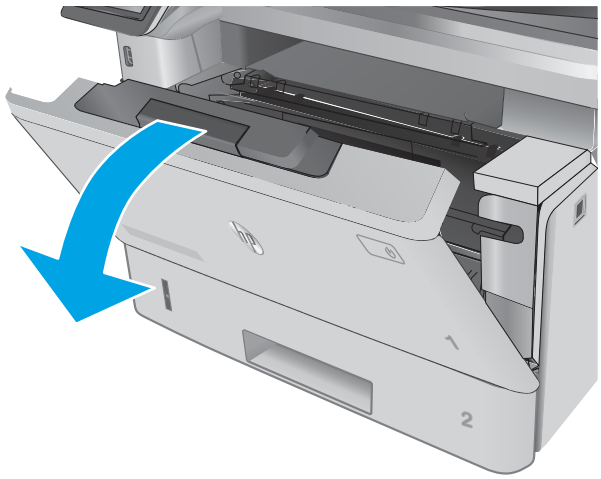


Clear paper jams in the fuser

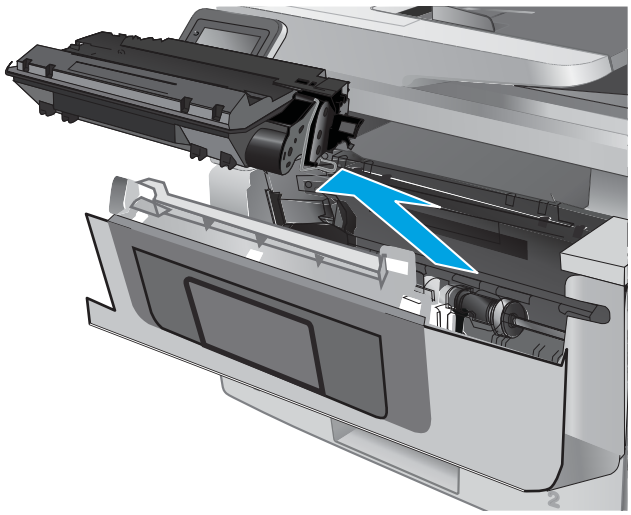
Use the following procedure to check for paper in all possible jam locations in the fuser area. When a jam occurs, the control panel displays an animation that assists in clearing the jam.

1. Press the front-door-release button.

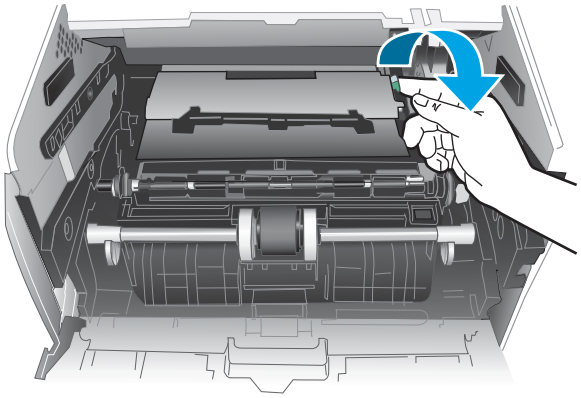
2. Open the front door.



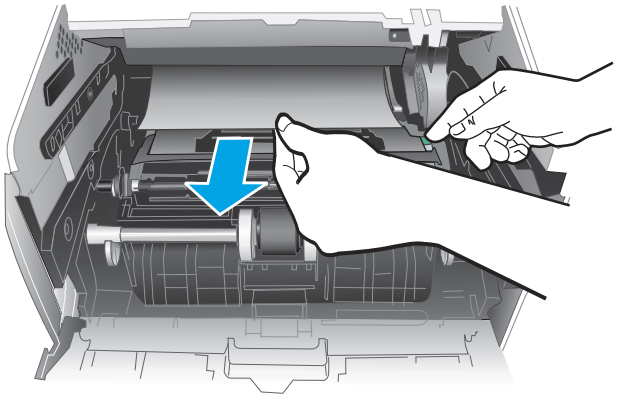
3. Remove the toner cartridge.



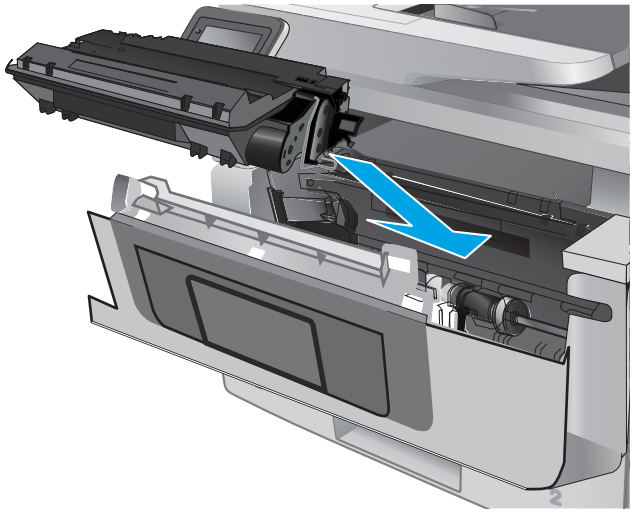
4. Lift the jam-access cover.



5. Remove any jammed paper.



6. Install the toner cartridge.

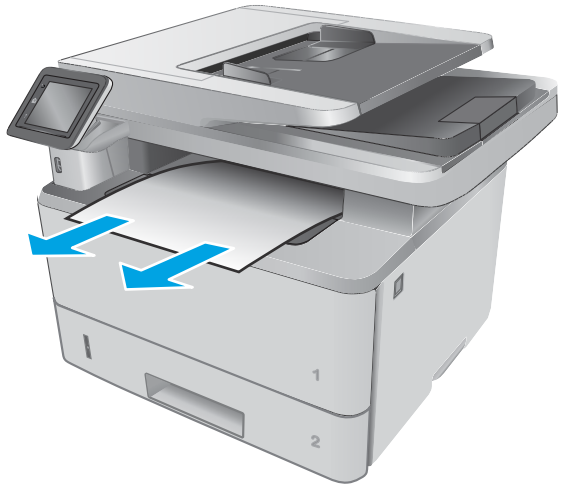


7. Close the front door.

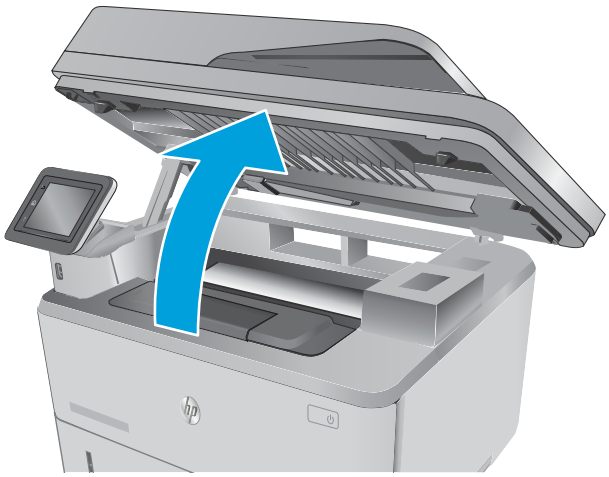
Clear paper jams in the output bin

Use the following procedure to check for paper in all possible jam locations in the output bin. When a jam occurs, the control panel displays an animation that assists in clearing the jam.

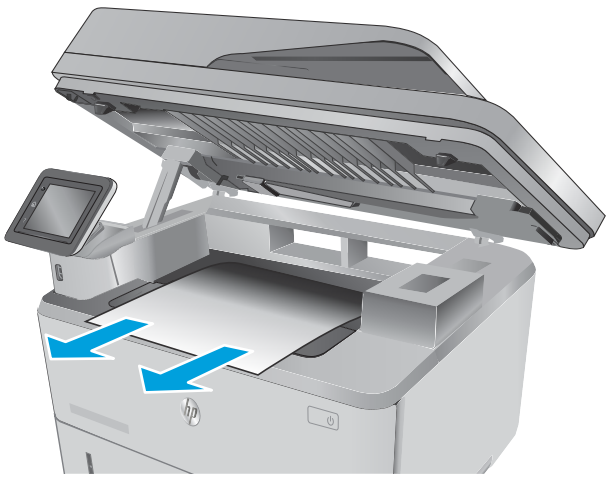
1. If paper is visible in the output bin, grasp the leading edge and remove it.



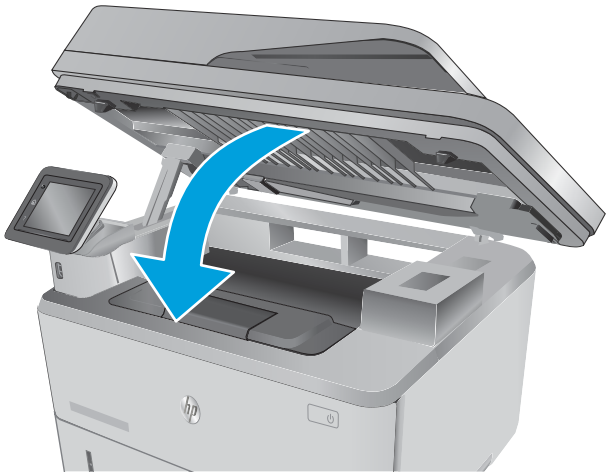
2. Lift the scanner assembly.



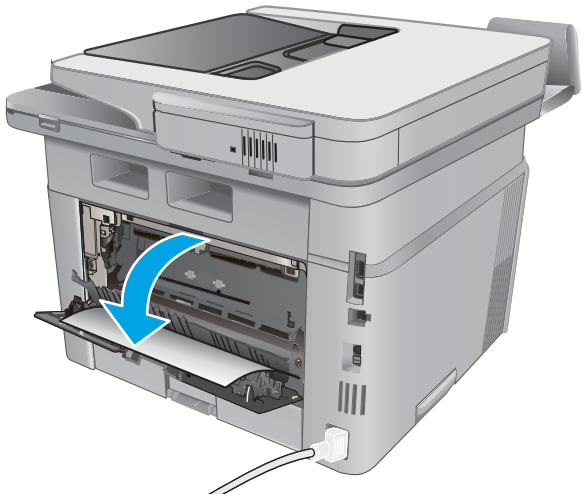
3. Remove any jammed paper.



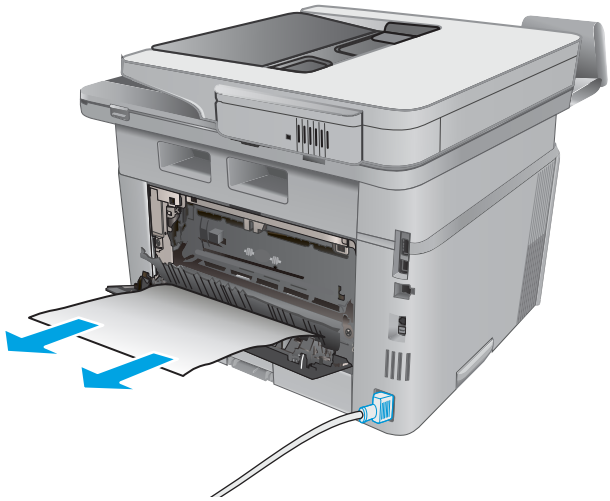
4. Close the scanner assembly.



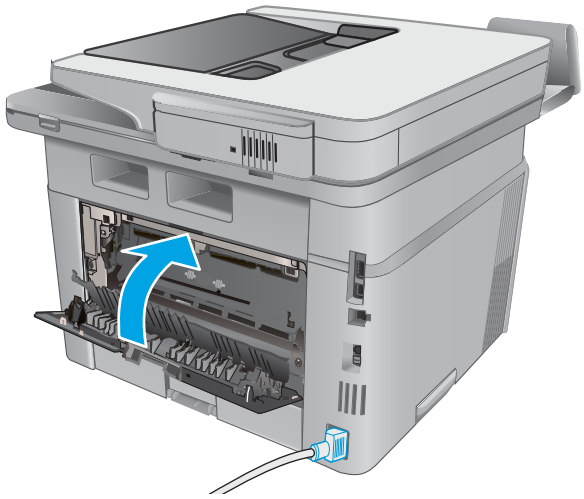
5. Open the rear door.



6. Remove any jammed paper from the rear door area.



7. Close the rear door.

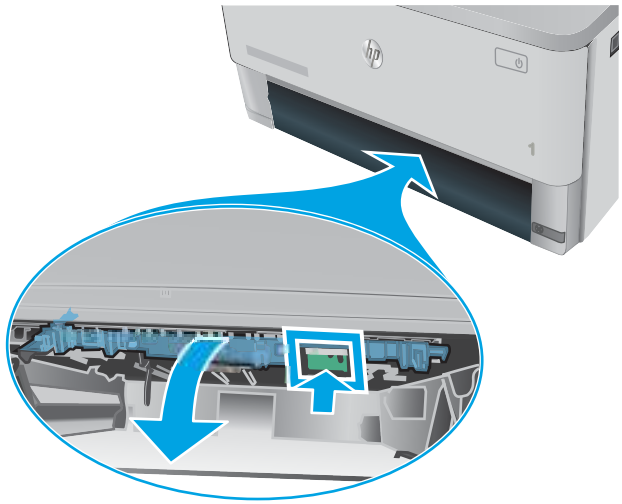


Clear paper jams in the duplexer

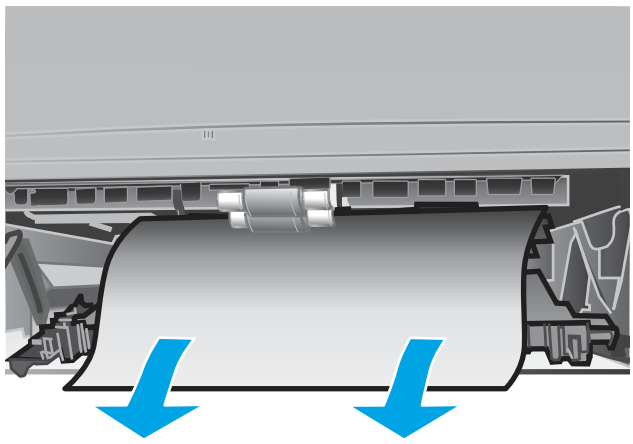
Use the following procedure to check for paper in all possible jam locations in the automatic duplexer.

1. Completely remove Tray 2 from the printer.

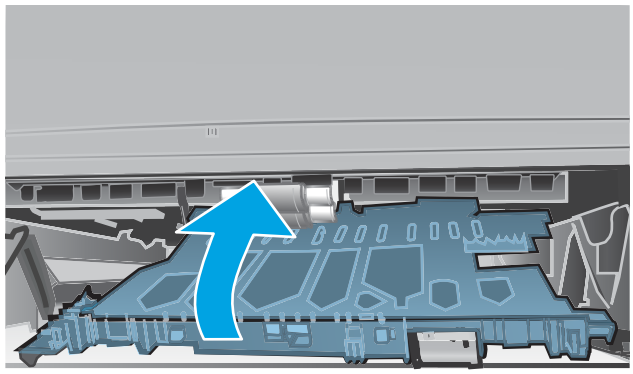
2. Push the green button to release the duplex pan.



3. Remove any jammed paper.



4. Close the duplex pan.



5. Reinsert Tray 2.

Clear paper jams (MFP)

Introduction

The following information includes instructions for clearing paper jams from the printer.

- Experiencing frequent or recurring paper jams?
- Jam locations
- Clear paper jams in the document feeder
- Clear paper jams in Tray 1
- Clear paper jams in Tray 2
- Clear paper jams in optional Tray 3
- Clear paper jams in the fuser
- Clear paper jams in the output bin
- Clear paper jams in the duplexer

Experiencing frequent or recurring paper jams?

Follow these steps to solve problems with frequent paper jams. If the first step does not resolve the problem continue with the next step until you have resolved the problem.

1. If paper has jammed in the 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.
    a. From the Home screen on the product control panel, swipe until the Setup menu displays. Touch the Setup icon to open the menu.
    b. Open the following menus:
        - System Setup
        - Paper setup
    c. Select the tray from the list.
    d. Select Paper Type and then select the type of paper that is in the tray.
    e. Select Paper Size and then select the size of paper that is in the tray.
3. Turn the 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, swipe until the Setup menu displays. Touch the Setup icon to open the menu.
    b. Touch the Service menu.

c. Touch the Cleaning Page button.

d. Load plain letter or A4 paper when you are prompted.

Wait until the process is complete. Discard the page that prints.

5. Print a configuration page to test the product.

a. From the Home screen on the product control panel, swipe until the Setup menu displays. Touch the Setup icon to open the menu.

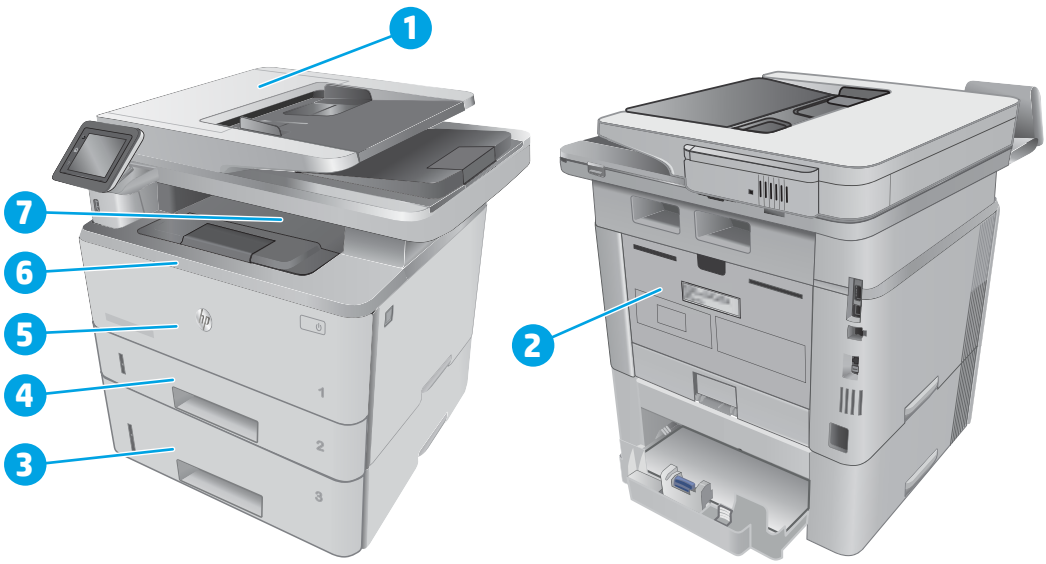
b. Open the Reports menu.

c. Select Configuration Report.

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

Jam locations

Jams can occur in these locations:



1	Document feeder
2	Fuser area
3	Tray 3 (optional)
4	Tray 2 Duplexing area (remove Tray 2 for access)
5	Tray 1

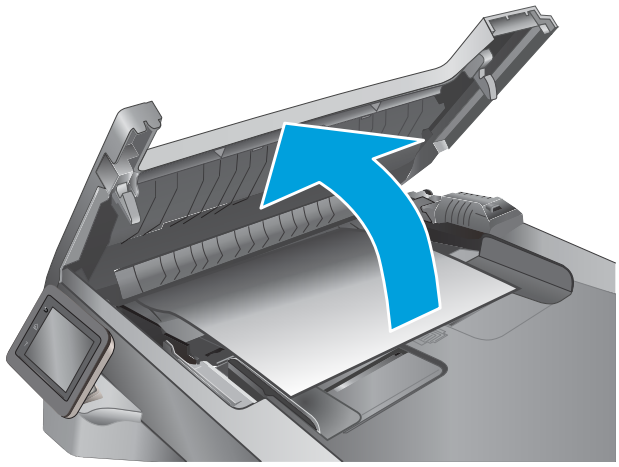
6	Toner cartridge area (open the front door for access)
7	Output bin

Loose toner might remain in the printer after a jam. This problem typically resolves itself after a few sheets have been printed.

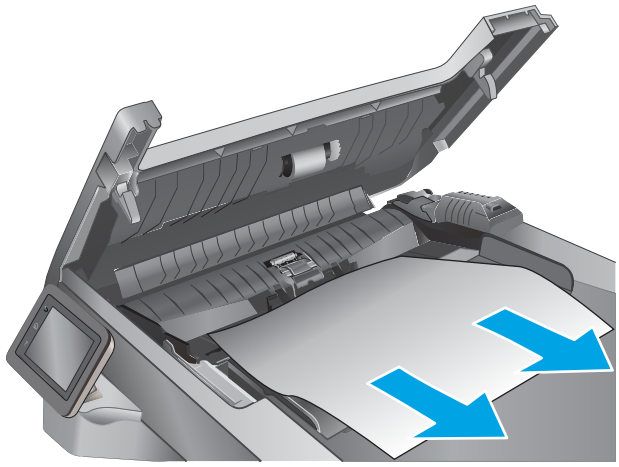
Clear paper jams in the document feeder

The following information describes how to clear paper jams in the document feeder. When a jam occurs, the control panel displays an animation that assists in clearing the jam.

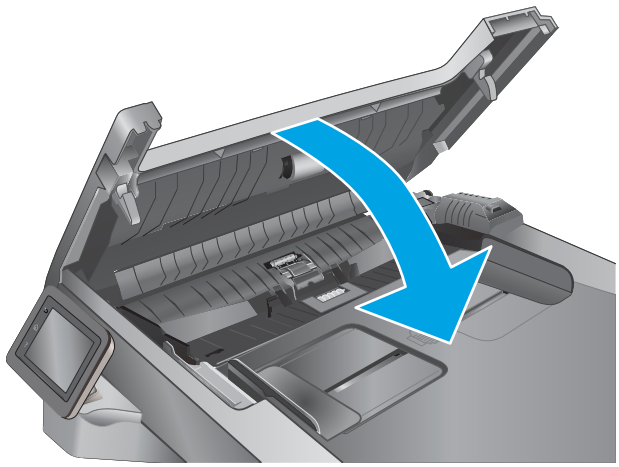
1. Open the document-feeder cover.



2. Gently pull the jammed paper out.



3. Close the document-feeder cover. Make sure it is completely closed.

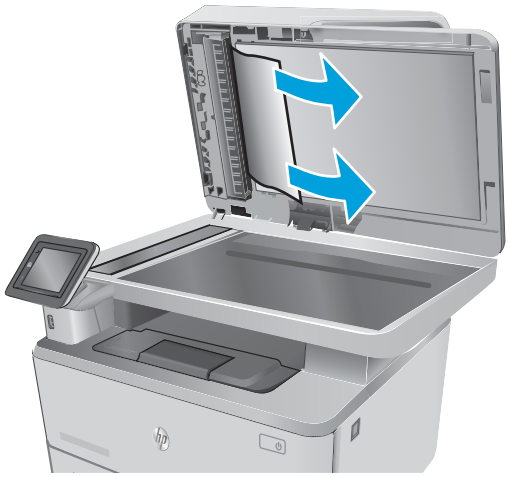


4. Open the document feeder tray cover.

5. Gently pull the jammed paper out.

6. Close the document feeder tray cover.

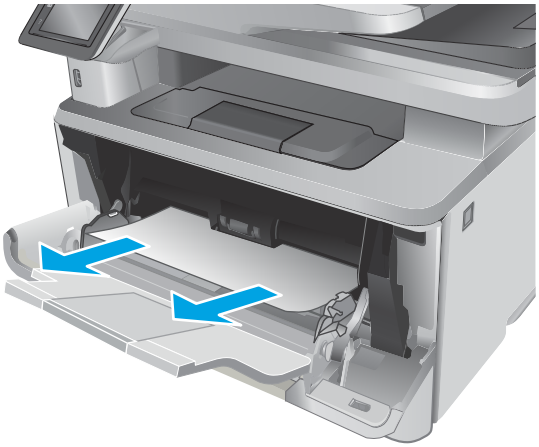
7. Open the scanner lid. If paper is jammed in the scanner lid, gently pull it out, and then close the scanner lid.



Clear paper jams in Tray 1

Use the following procedure to clear paper jams in Tray 1. When a jam occurs, the control panel displays an animation that assists in clearing the jam.

1. Slowly pull the jammed paper out of the printer.

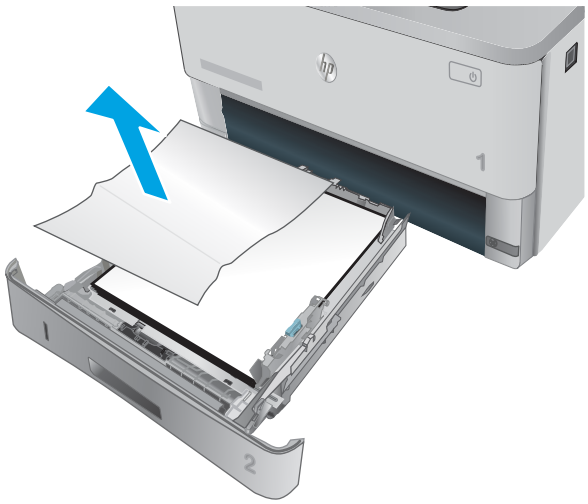


Clear paper jams in Tray 2

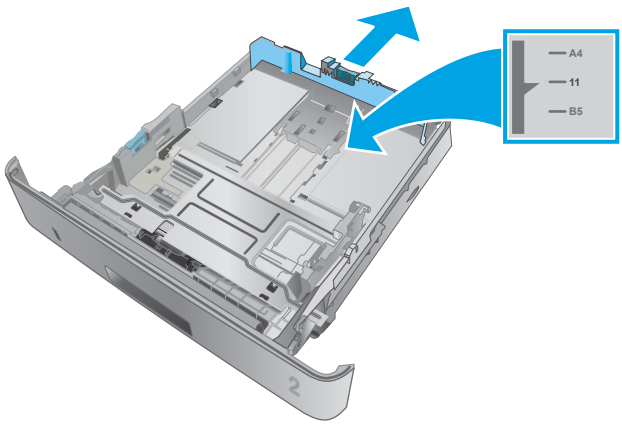
Use the following procedure to check for paper in all possible jam locations related to Tray 2. When a jam occurs, the control panel displays an animation that assists in clearing the jam.

1. Remove the tray from the printer.

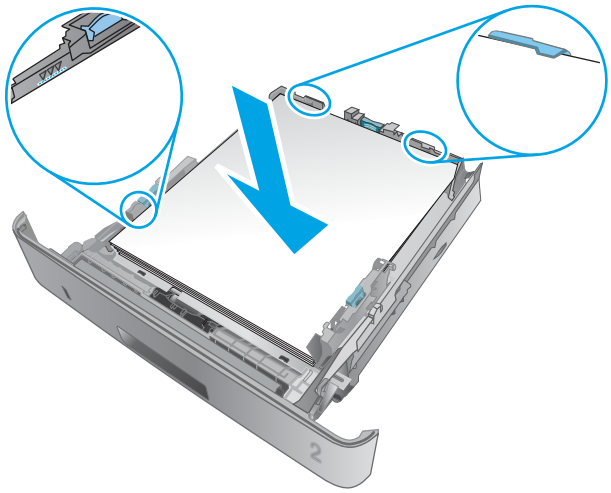
2. Remove the paper from the tray, and discard any damaged paper.



3. Verify that the rear paper guide is adjusted to the indentation for the correct paper size. If necessary, pinch the release and move the rear paper guide to the correct position. It should click into place.



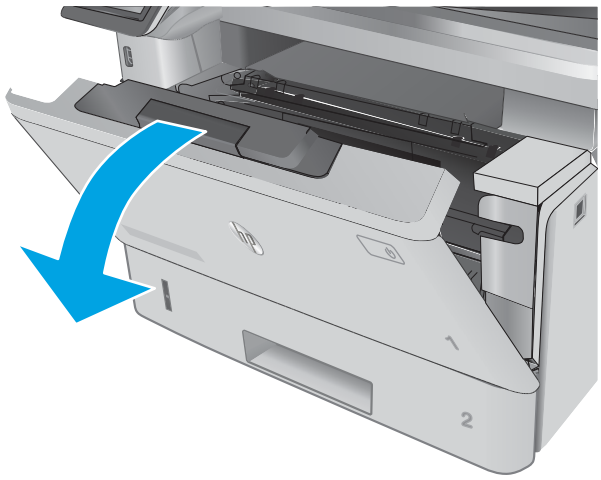
4. Load the paper into the tray. Make sure that the stack is flat at all four corners and that the top of the stack is below the maximum-height indicators.



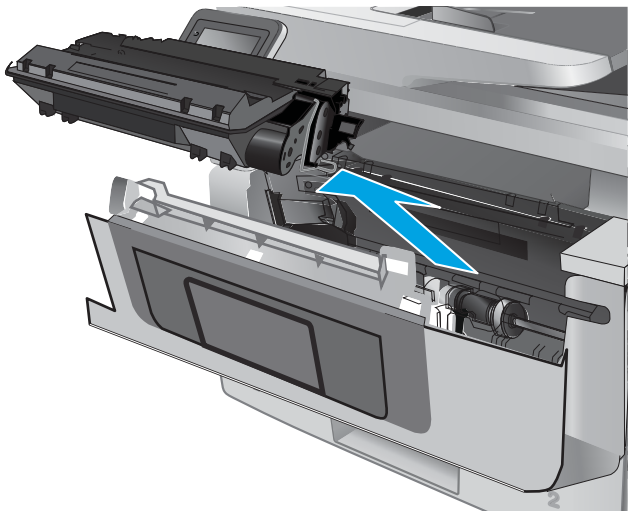
5. Reinsert and close the tray.

6. Press the front-door-release button.

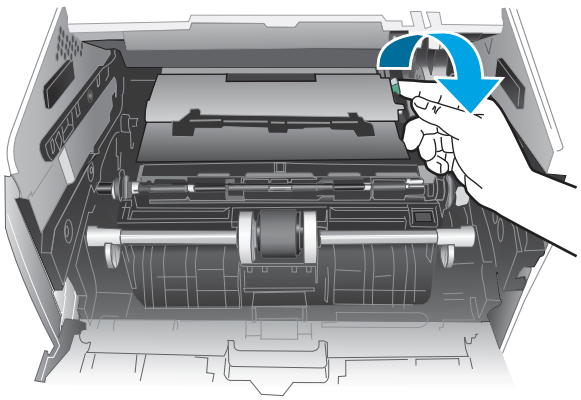
7. Open the front door.



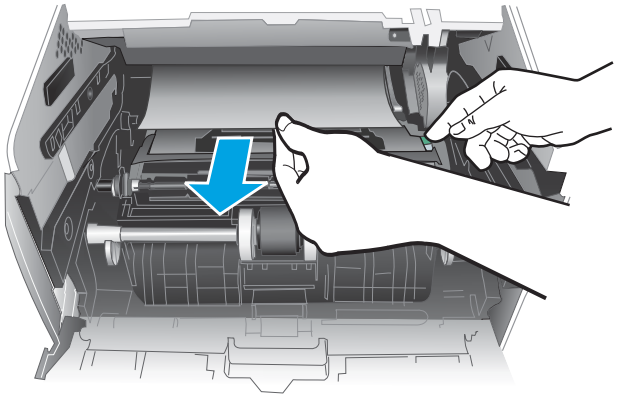
8. Remove the toner cartridge.



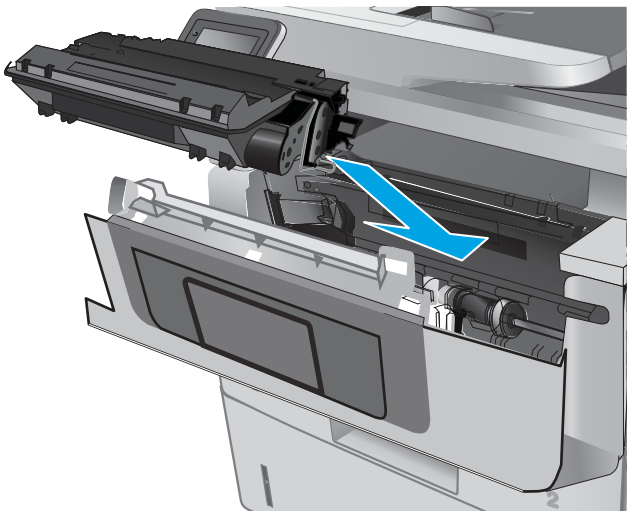
9. Lift the jam-access cover.



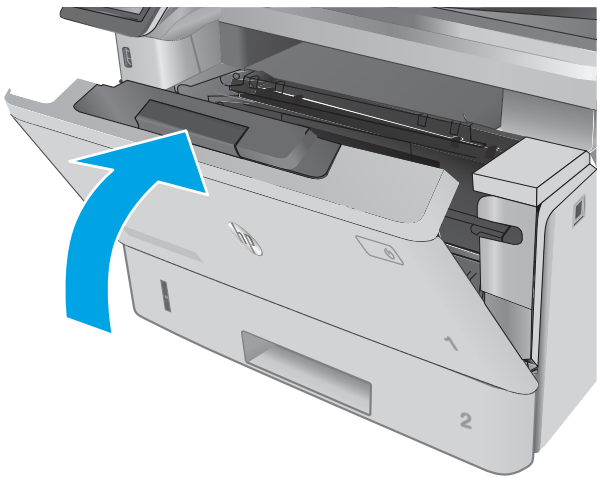
10. Remove any jammed paper.



11. Install the toner cartridge.



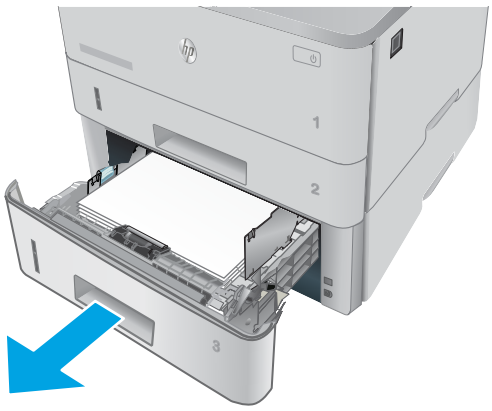
12. Close the front door.



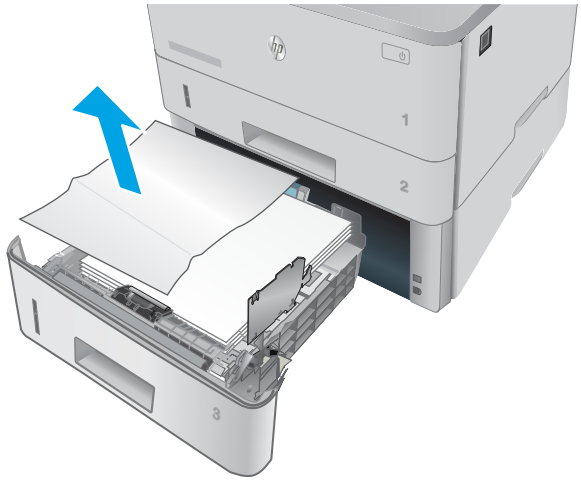
Clear paper jams in optional Tray 3

Use the following procedure to check for paper in all possible jam locations related to Tray 3. When a jam occurs, the control panel displays an animation that assists in clearing the jam.

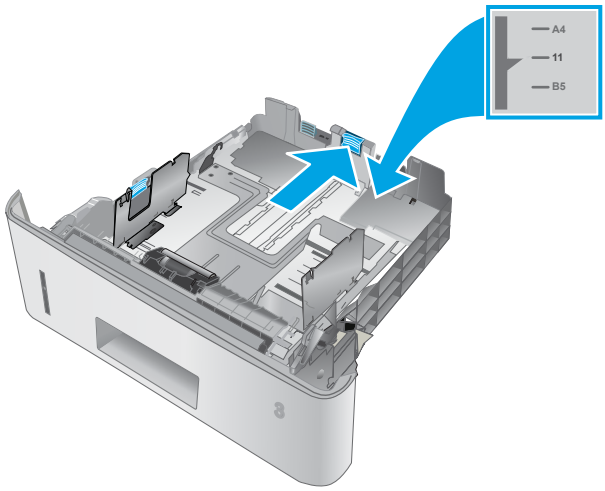
1. Remove the tray from the printer.



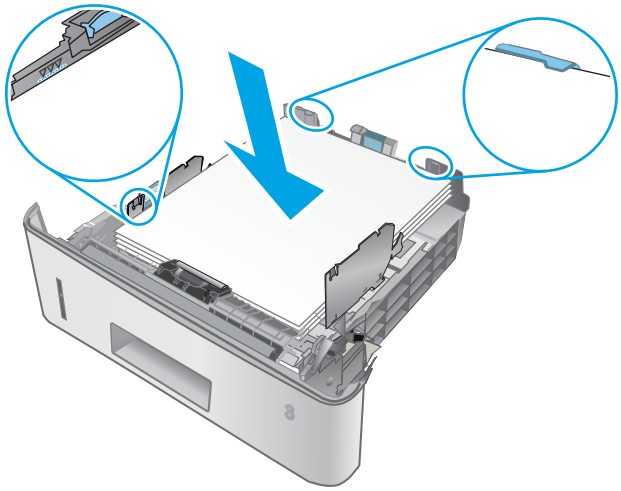
2. Remove the paper from the tray, and discard any damaged paper.



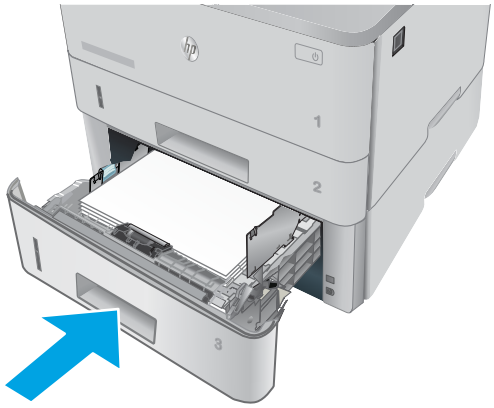
3. Verify that the rear paper guide is adjusted to the indentation for the correct paper size. If necessary, pinch the release and move the rear paper guide to the correct position. It should click into place.



4. Load the paper into the tray. Make sure that the stack is flat at all four corners and that the top of the stack is below the maximum-height indicators.

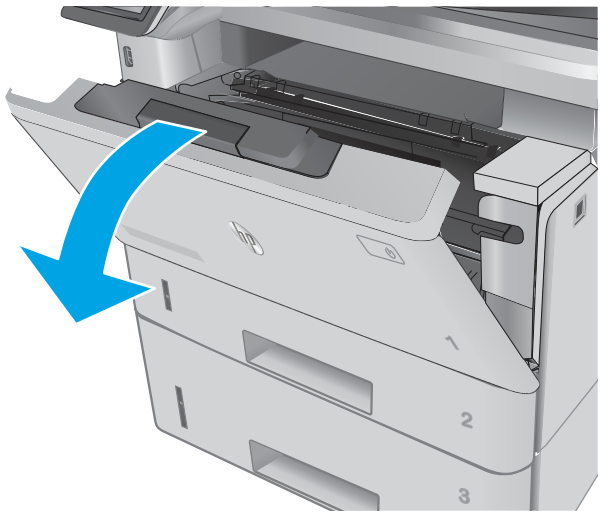


5. Reinsert and close the tray.

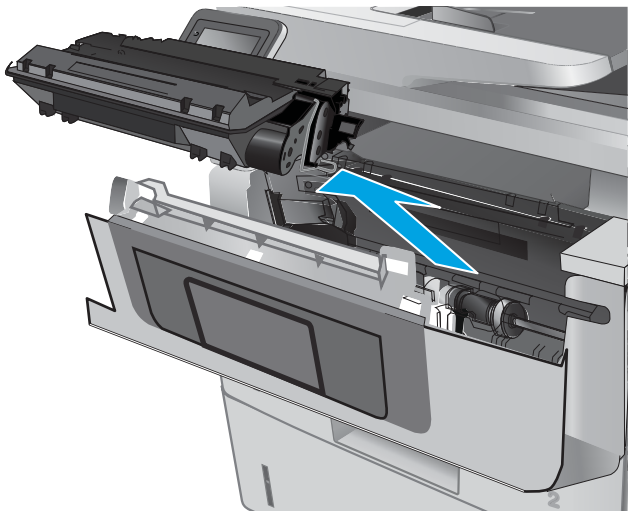


6. Press the front-door-release button.

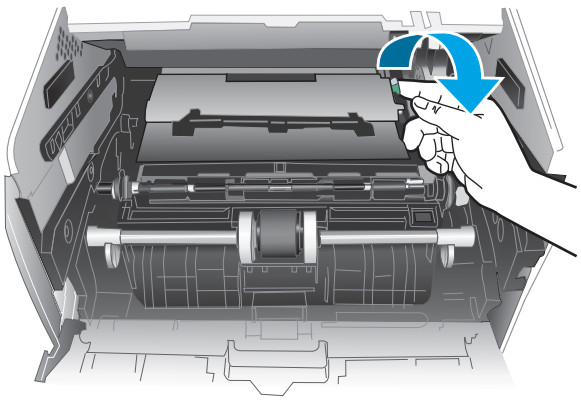
7. Open the front door.



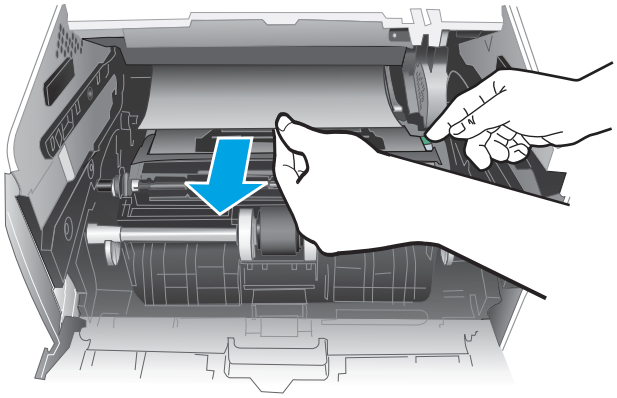
8. Remove the toner cartridge.



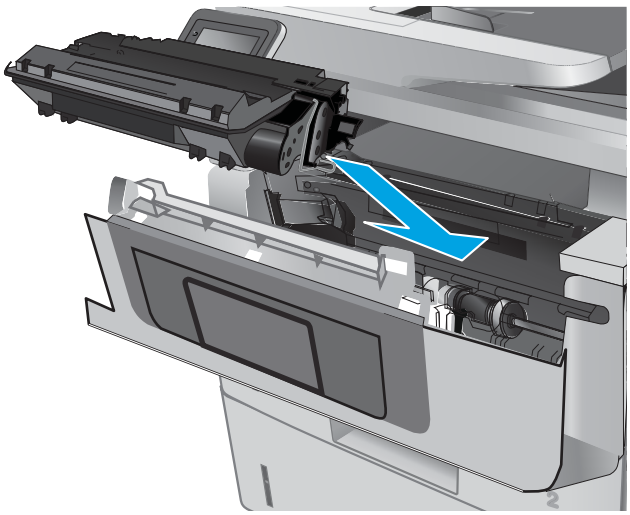
9. Lift the jam-access cover.



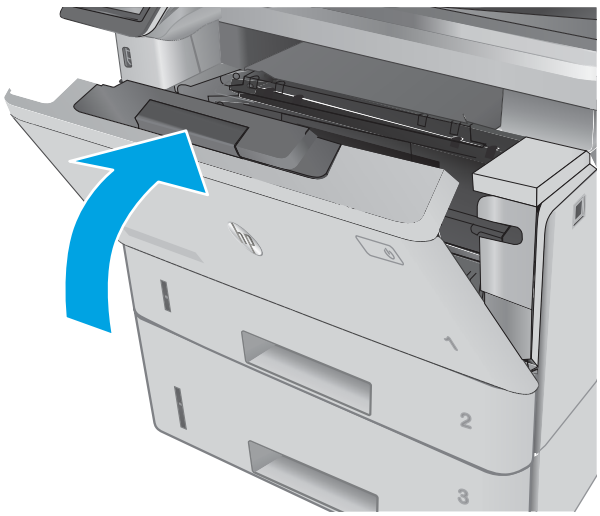
10. Remove any jammed paper.



11. Install the toner cartridge.



12. Close the front door.

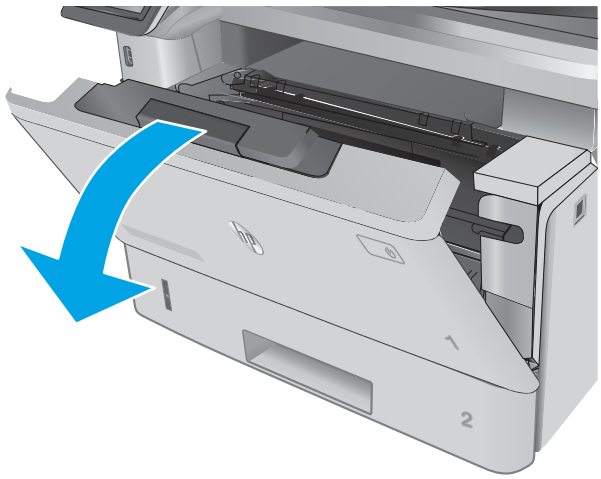


Clear paper jams in the fuser

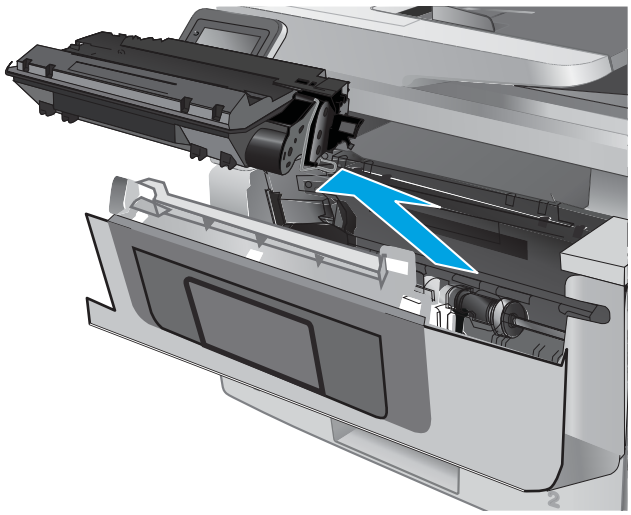
Use the following procedure to check for paper in all possible jam locations in the fuser area. When a jam occurs, the control panel displays an animation that assists in clearing the jam.

1. Press the front-door-release button.

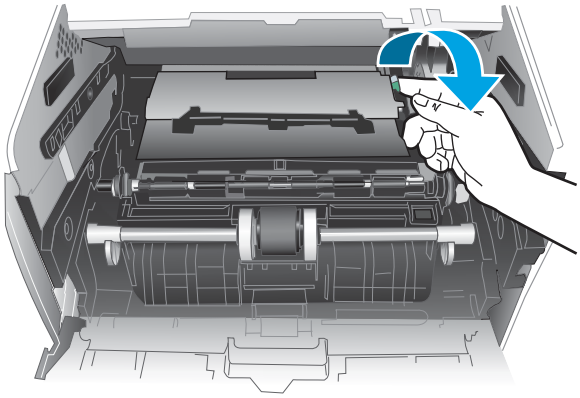
2. Open the front door.



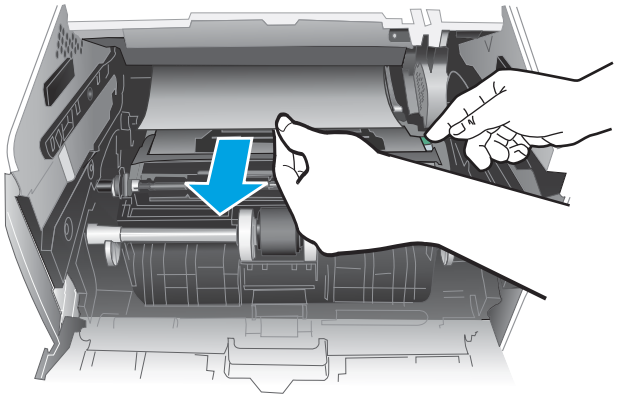
3. Remove the toner cartridge.



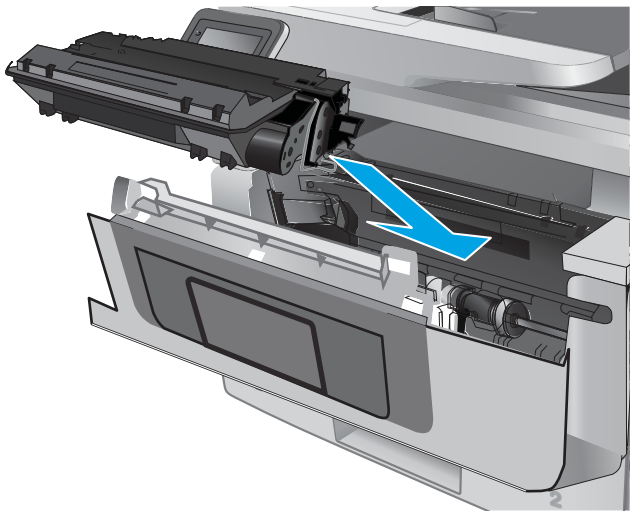
4. Lift the jam-access cover.



5. Remove any jammed paper.



6. Install the toner cartridge.

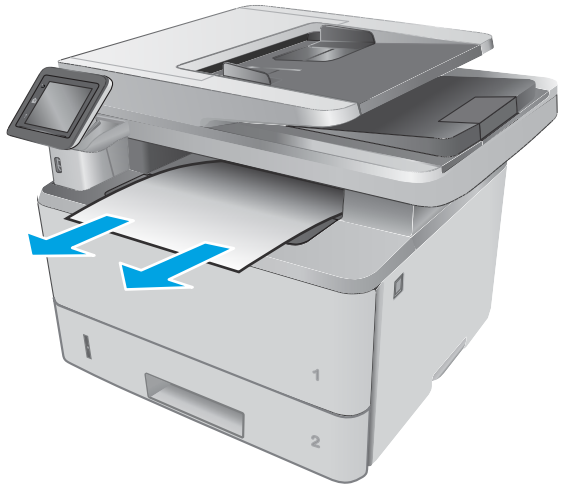


7. Close the front door.

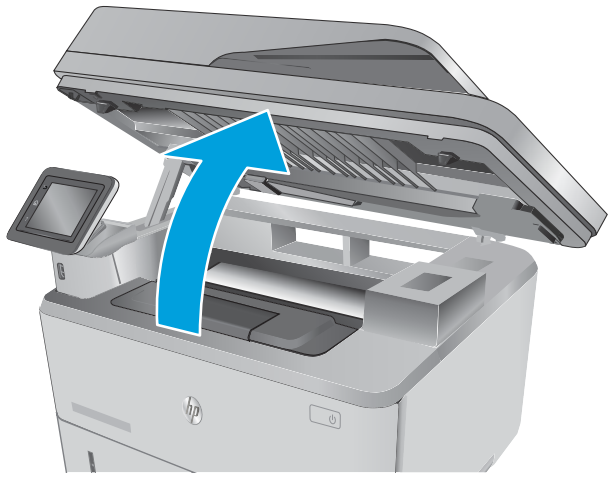
Clear paper jams in the output bin

Use the following procedure to check for paper in all possible jam locations in the output bin. When a jam occurs, the control panel displays an animation that assists in clearing the jam.

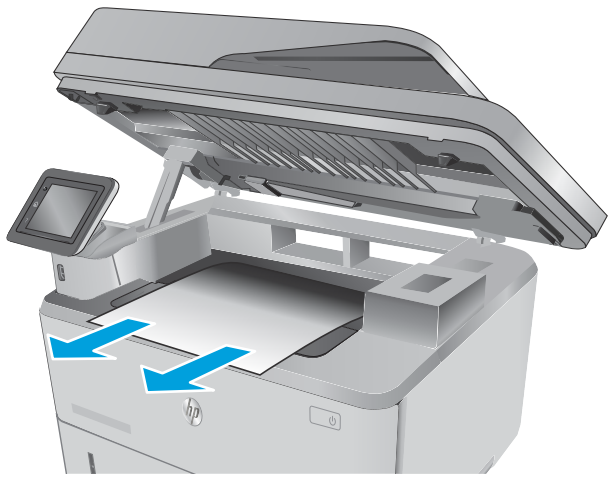
1. If paper is visible in the output bin, grasp the leading edge and remove it.



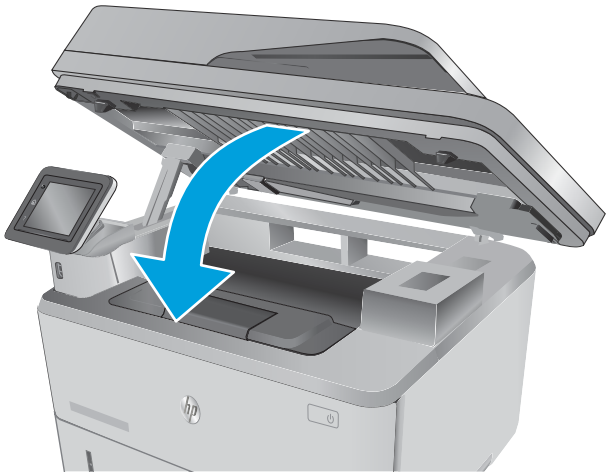
2. Lift the scanner assembly.



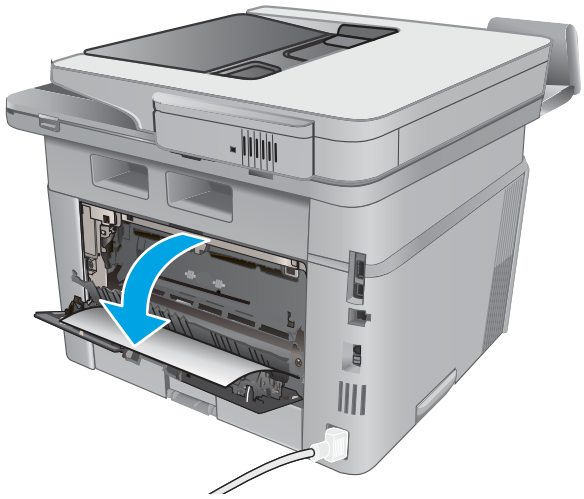
3. Remove any jammed paper.



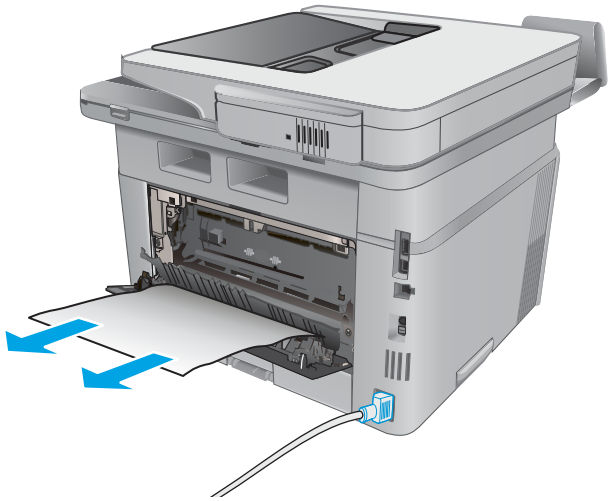
4. Close the scanner assembly.



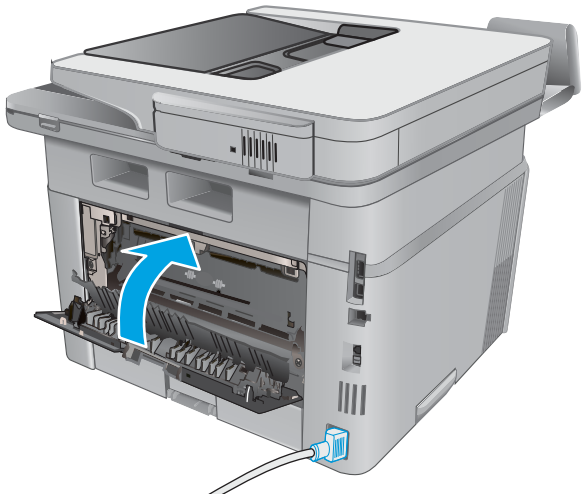
5. Open the rear door.



6. Remove any jammed paper from the rear door area.



7. Close the rear door.

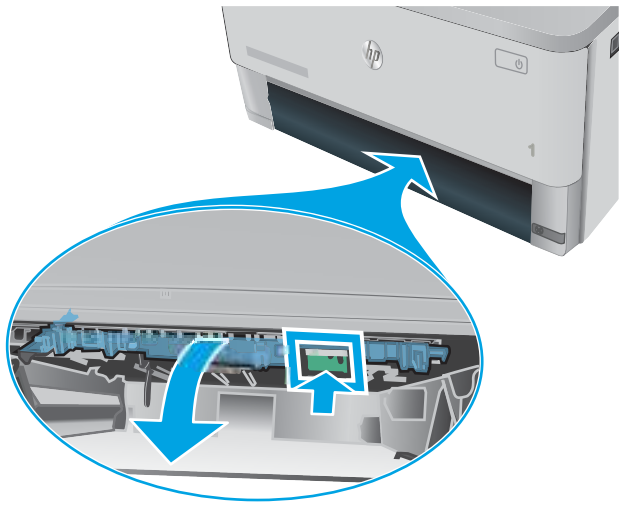


Clear paper jams in the duplexer

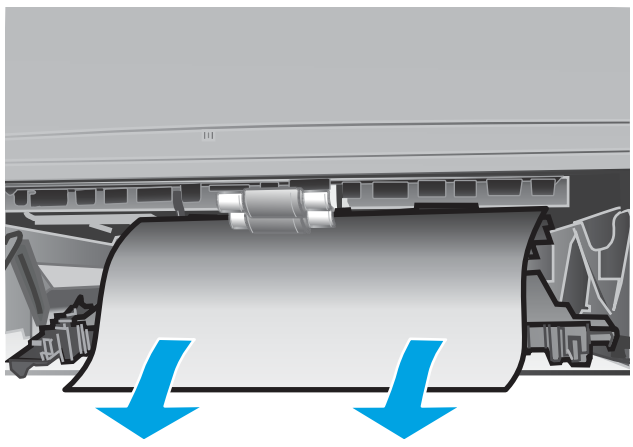
Use the following procedure to check for paper in all possible jam locations in the automatic duplexer. When a jam occurs, the control panel displays an animation that assists in clearing the jam.

1. Completely remove Tray 2 from the printer.

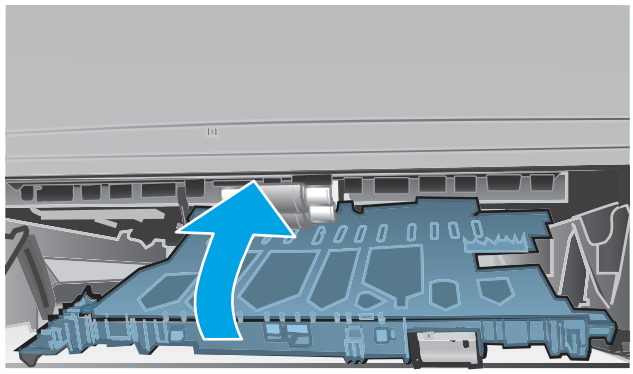
2. Push the green button to release the duplex pan.



3. Remove any jammed paper.



4. Close the duplex pan.



5. Reinsert Tray 2.

Solve image quality problems

Often print-quality problems can be resolved easily by making sure that the printer is well-maintained, using paper that meets HP specifications, or running a cleaning page.

Improve print quality

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

If the printer is having scan, fax, or copy quality problems, try the following solutions and also see “Improve scan quality,” “Improve fax quality,” or “Improve copy quality” for further solutions.

- Print from a different software program
- Check the paper-type setting for the print job
- Check toner-cartridge status
- Clean the printer
- Visually inspect the toner cartridge
- Check paper and the printing environment
- Calibrate the printer to align the colors
- Check other print job settings
- Try a different print driver

Print from a different software program

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

Check the paper-type setting for the print job

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

Check the paper type setting (Windows)

1. From the software program, select the **Print** option.
2. Select the printer, and then click the **Properties** or **Preferences** button.
3. Click the **Paper/Quality** tab.
4. From the **Paper Type** drop-down list, click the **More...** option.
5. Expand the list of **Type is:** options.
6. Expand the category of paper types that best describes your paper.
7. Select the option for the type of paper you are using, and click the **OK** button.
8. Click the **OK** button to close the **Document Properties** dialog box. In the **Print** dialog box, click the **OK** button to print the job.

Check the paper type setting (Mac OS X)

1. Click the **File** menu, and then click the **Print** option.
2. In the **Printer** menu, select the printer.
3. By default, the print driver displays the **Copies & Pages** menu. Open the menus drop-down list, and then click the **Finishing** menu.
4. Select a type from the **Media Type** drop-down list.
5. Click the **Print** button.

Check toner-cartridge status

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

Step one: Print the quality pages (2-line control panels)

1. On the printer control panel, press the OK button to enter the Main menu, use the ▶ or ◀ buttons to scroll through the menus, select Setup menu.
2. Use the ▶ or ◀ buttons to scroll through the menus, select **Reports** and press the OK button.
3. Scroll to the using the ▶ or ◀ to scroll to **Supplies Status** menu, and then press the OK button.
4. Scroll to the **Print Supplies status page** item, and then press the OK button.

Step one: Print the supplies status page (touchscreen control panels)

1. From the Home swipe down to get to the home screen dash board, and then touch the Setup icon.
2. Scroll to and touch Reports .
3. Scroll to and touch the Supplies Status item to print the supplies status page.

Step two: Check supplies status

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

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

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

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

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

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

Clean the printer

Print a cleaning page

2-line control panels

1. From the printer control panel, press the OK button. Use the ▶ or the ◀ buttons to scroll through the menus.
2. Open the **Setup** menu.
3. Use the arrow keys to scroll through and select Printer Maintenance, and then press OK button.
4. Use the arrow keys to select Print Quality Tools option, and then press the OK button.
5. Use the arrow keys to select the **Cleaning Page** option, and then press the OK button.

   The printer will prompt you to load paper in Tray 1 and then press OK to start. The printer 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 panels

1. From the Home screen swipe down to gain access to the home screen dash board, and then touch the Setup icon.
2. Touch the Printer Maintenance menu.
3. Touch the Print Quality Tools menu.
4. Touch the Cleaning Page button.
5. Load plain letter or A4 paper when you are prompted.
6. Touch the OK button to begin the cleaning process.

   The printer 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 scanner glass strip and platen

See Clean the scanner glass strip and platen on page 199 for instructions on how to clean the scanner glass and white plastic backing.

Visually inspect the toner cartridge

Follow these steps to inspect each toner cartridge.

1. Remove the toner cartridge from the printer.
2. Check the memory chip for damage.
3. Examine the surface of the green imaging drum.

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

4. If you see any scratches, fingerprints, or other damage on the imaging drum, replace the toner cartridge.
5. Reinstall the toner cartridge, and print a few pages to see if the problem has resolved.

Check paper and the printing environment

Step one: Use paper that meets HP specifications

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

- Always use a paper type and weight that this printer supports.
- Use paper that is of good quality and free of cuts, nicks, tears, spots, loose particles, dust, wrinkles, voids, staples, and curled or bent edges.
- Use paper that has not been previously printed on.
- Use paper that does not contain metallic material, such as glitter.
- Use paper that is designed for use in laser printers. Do not use paper that is designed only for use in Inkjet printers.
- Use paper that is not too rough. Using smoother paper generally results in better print quality.

Step two: Check the environment

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

- Move the printer away from drafty locations, such as open windows or doors, or air-conditioning vents.
- Make sure the printer is not exposed to temperatures or humidity outside of printer specifications.
- Do not place the printer in a confined space, such as a cabinet.
- Place the printer on a sturdy, level surface.
- Remove anything that is blocking the vents on the printer. The printer requires good air flow on all sides, including the top.
- Protect the printer from airborne debris, dust, steam, grease, or other elements that can leave residue inside the printer.

Calibrate the printer to align the colors

Calibration is a function that optimizes print quality.

Follow these steps to resolve print-quality problems such as misaligned color, colored shadows, blurry graphics, or other print-quality issues.

2-line control panels

1. On the printer control panel, press the OK button, use the ◀ or ▶ buttons to scroll through the menus.
2. Open the following menus:
   - Setup Menu
   - Printer Maintenance

- Color Calibration
- Calibration Now

3. Press the OK button to start the calibration process.

   A **Calibrating** message will display on the printer control panel. The calibration process takes a few minutes to complete. Do not turn the printer off until the calibration process has finished.

4. Wait while the printer calibrates, and then try printing again.

Touchscreen control panels

1. On the printer control panel, swipe down to gain access to the home screen dash board, and then select Setup icon.

2. Open the following menus:

   - Setup
   - Printer Maintenance
   - Color Calibration
   - Calibrate Now

3. A **Calibrating** message will display on the printer control panel. The calibration process takes a few minutes to complete. Do not turn the printer off until the calibration process has finished.

4. Wait while the printer calibrates, and then try printing again.

Check other print job settings

When printing from a software program, follow these steps to try to resolve the issue by adjusting other print-driver settings.

Check the EconoMode settings

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

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

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

1. From the software program, select the **Print** option.
2. Select the printer, and then click the **Properties** or **Preferences** button.
3. Click the **Paper/Quality** tab, and locate the **Print Quality** area.
4. If the entire page is too dark, use these settings:
   - Select the **600 dpi** option.
   - Select the **EconoMode** check box to enable it.

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

- Select the **FastRes 1200** option.
- Clear the **EconoMode** check box to disable it.

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

Adjust color settings (Windows)

Follow these steps if colors on the printed page do not match colors on the computer screen, or if the colors on the printed page are not satisfactory.

Change the color theme

1. From the software program, select the **Print** option.
2. Select the printer, and then click the **Properties** or **Preferences** button.
3. Click the **Color** tab.
4. Select a color theme from the **Color Themes** drop-down list.
   - **Default (sRGB)**: This theme sets the printer to print RGB data in raw device mode. When using this theme, manage color in the software program or in the operating system for correct rendering.
   - **Vivid (sRGB)**: The printer increases the color saturation in the midtones. Use this theme when printing business graphics.
   - **Photo (sRGB)**: The printer interprets RGB color as if it were printed as a photograph using a digital mini lab. The printer renders deeper, more saturated colors differently than with the Default (sRBG) theme. Use this theme when printing photos.
   - **Photo (Adobe RGB 1998)**: Use this theme with printing digital photos that use the AdobeRGB color space rather than sRGB. Turn off color management in the software program when using this theme.
   - **None**: No color theme is used.
5. Click the **OK** button to close the **Document Properties** dialog box. In the **Print** dialog box, click the **OK** button to print the job.

Change the color options

1. From the software program, select the **Print** option.
2. Select the printer, and then click the **Properties** or **Preferences** button.
3. Click the **Color** tab.
4. Click the **Automatic** or **Manual** setting.
   - **Automatic** setting: Select this setting for most color print jobs.
   - **Manual** setting: Select this setting to adjust the color settings independently from other settings. Click the **Settings** button to open the manual color-adjustment window.

   NOTE: Changing color settings manually can impact output. HP recommends that only color graphics experts change these settings.

5. Click the **Print in Grayscale** selection box to print a color document in black and shades of gray. Use this option to print color documents for photocopying or faxing. Also use this option to print draft copies or to save color toner.

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

Try a different print driver

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

Download any of the following drivers from the HP Web site: www.hp.com/support/ljM304, www.hp.com/support/ljM404, www.hp.com/support/ljM329MFP, www.hp.com/support/ljM428MFP,www.hp.com/support/ljM429MFP.

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

Print quality troubleshooting guide

NOTE: Use the procedures in this section to resolve most print-quality issues (for example, streaks or fading, gray background or dark print, blurred or fuzzy text, and banding). Try the following solutions in the order presented. When one of the solutions resolves the issue, there is no need to continue with the other procedures.

- Resolving print quality problems
- Repetitive image defect ruler

Resolving print quality problems

- Introduction
- Troubleshoot print quality problems

Introduction

The following information provides troubleshooting steps for solving image defect issues, including the following defects:

- Light print
- Gray background or dark print
- Blank pages
- Black pages
- Dark or light bands
- Dark or light streaks
- Missing toner
- Skewed images
- Curled paper

Troubleshoot print quality problems

Table 2-35 Image defects table quick reference

Table 2-36 Light print on page 189

Table 2-37 Gray background or dark print on page 189

Table 2-38 Blank page — No print on page 190

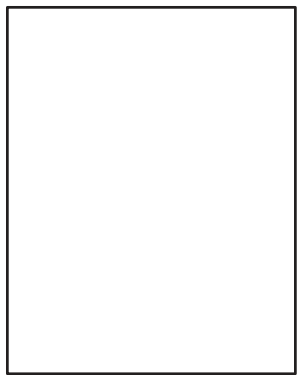


Table 2-35 Image defects table quick reference (continued)

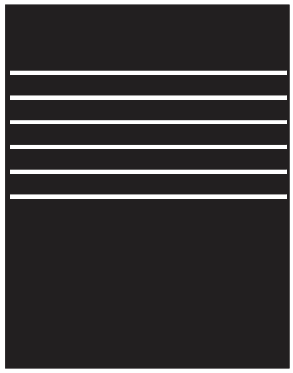
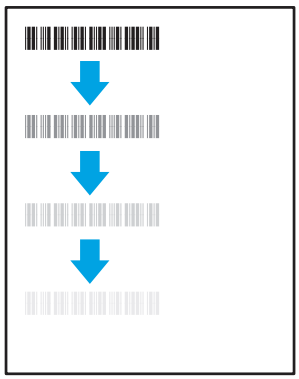
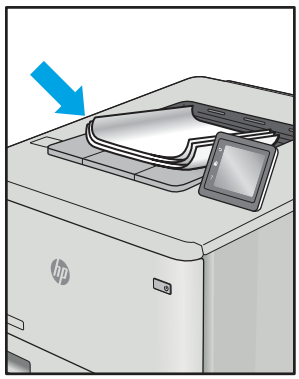
Table 2-39 Black page on page 190	Table 2-40 Banding defects on page 190 	Table 2-41 Streak defects on page 191
Table 2-42 Fixing/fuser defects on page 192 	Table 2-43 Image placement defects on page 192	Table 2-44 Output defects on page 193 

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

1. Reprint the document. Print quality defects can be intermittent in nature or can go away completely with continued printing.
2. Check the condition of the cartridge. If a cartridge is in a **Very Low** state (it has passed the rated life), replace the cartridge.
3. Make sure that the driver and tray print mode settings match the media that is loaded in the tray. Try using a different ream of media or a different tray. Try using a different print mode.
4. Make sure that the printer is within the supported operating temperature/humidity range.
5. Make sure that the paper type, size, and weight are supported by the printer. See the printer support page at support.hp.com for a list of the supported paper sizes and types for the printer.

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

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

Table 2-36 Light print

Description	Sample	Possible solutions
Light print: The printed content on the entire page is light or faded.		1. Reprint the document. 2. Remove the cartridge, and then shake it to redistribute the toner. 3. Make sure that the cartridge is installed correctly. 4. Print a configuration report and check for life and usage of the cartridge. 5. Replace the cartridge. 6. If the problem persists, go to support.hp.com.

Table 2-37 Gray background or dark print

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

Table 2-38 Blank page — No print

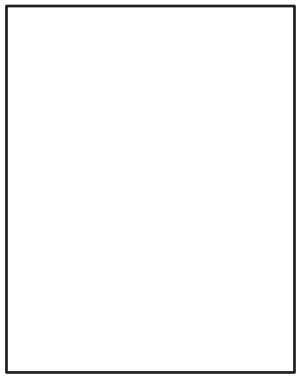
Description	Sample	Possible solutions
Blank page — No print: The page is completely blank and contains no printed content.		1. Make sure that the cartridge is genuine HP cartridges. 2. Make sure that the cartridge is installed correctly. 3. Print with a different cartridge. 4. Check the paper type in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

Table 2-39 Black page

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

Table 2-40 Banding defects

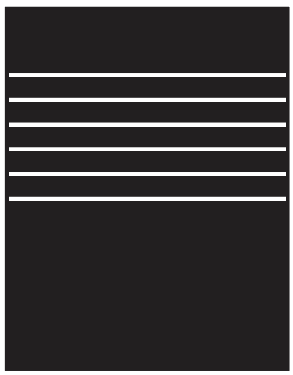
Description	Sample	Possible solutions
Repetitive wide-pitch banding and Impulse bands: Dark or light lines which repeat down the length of the page. They might be sharp or soft in nature. The defect displays only in areas of fill, not in text or sections with no printed content.		1. Reprint the document. 2. Replace the cartridge. 3. Use a different paper type. 4. If the problem persists, go to support.hp.com.

Table 2-41 Streak defects

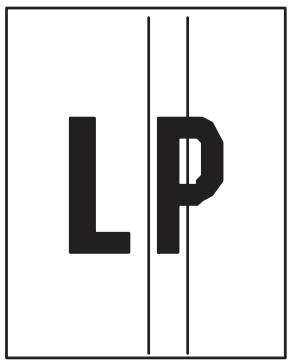
Description	Sample	Possible solutions
Light vertical streaks: Light streaks that usually span the length of the page. The defect displays only in areas of fill, not in text or sections with no printed content.		1. Reprint the document. 2. Remove the cartridge, and then shake it to redistribute the toner.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

Table 2-42 Fixing/fuser defects

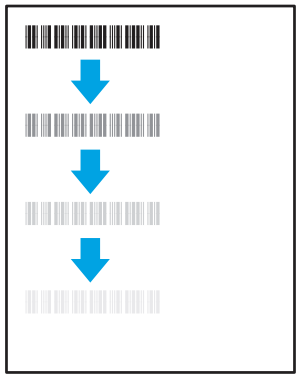
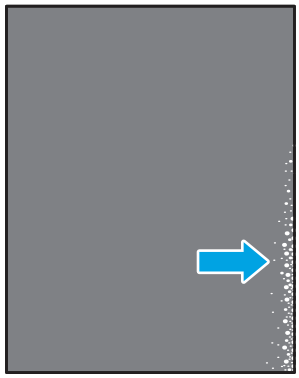
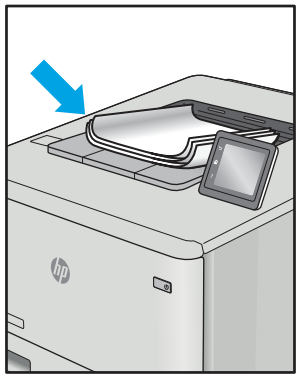
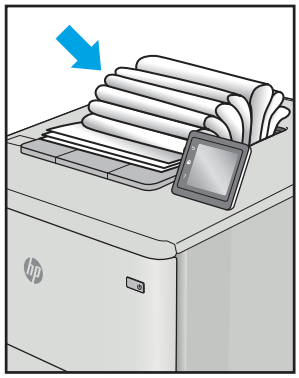
Description	Fixing/fuser	Possible solutions
Hot fuser offset (shadow): Slight shadows, or offsets, of the image repeated down the page. The repeated image might fade with each recurrence.		1. Reprint the document. 2. Check the paper type in the paper tray and adjust the printer settings to match. If necessary, select a lighter paper type. 3. If the problem persists, go to support.hp.com.
Poor fusing: Toner rubs off along either edge of page. This defect is more common at the edges of high-coverage jobs and on light media types but can occur anywhere on the page.		1. Reprint the document. 2. Check the paper type in the paper tray and adjust the printer settings to match. If necessary, select a heavier paper type. 3. If the problem persists, go to support.hp.com.

Table 2-43 Image placement defects

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

Table 2-44 Output defects

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

Repetitive image defect ruler

Defects on printer rollers can cause image defects to appear at regular intervals on the page, corresponding to the circumference of the roller that is causing the defect. Measure the distance between defects that recur on a page (See Use a ruler to measure between repetitive defects on page 194). Use the following table or the repetitive-defect ruler to determine which roller is causing the defect. To resolve the problem, try cleaning the roller first. If the roller remains dirty after cleaning or if it is damaged, replace the part that is indicated in the following table.

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

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

Table 2-45 Repetitive defects

Component	Distance between defects
Primary charging roller[1]	28 mm (1.10 in)

Table 2-45 Repetitive defects (continued)

Component	Distance between defects
Developer roller[1]	31 mm (1.22 in)
Transfer roller	39 mm (1.54 in)
Registration roller	43 mm (1.69 in)
Cassette separation roller	44 mm (1.73 in)
Cassette pickup roller	50 mm (1.97 in)
Cassette feed roller	
Fuser film	57 mm (2.24 in)
Pressure roller[2]	63 mm (2.48 in)
Photosensitive drum[1]	75 mm (2.95 in)

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

2 The primary fuser sleeve unit or pressure roller cannot be cleaned because they are internal assemblies in the fuser. If one of these assemblies is causing the defect, replace the fuser.

Use a ruler to measure between repetitive defects

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

1. Identify a repetitive defect on the page.

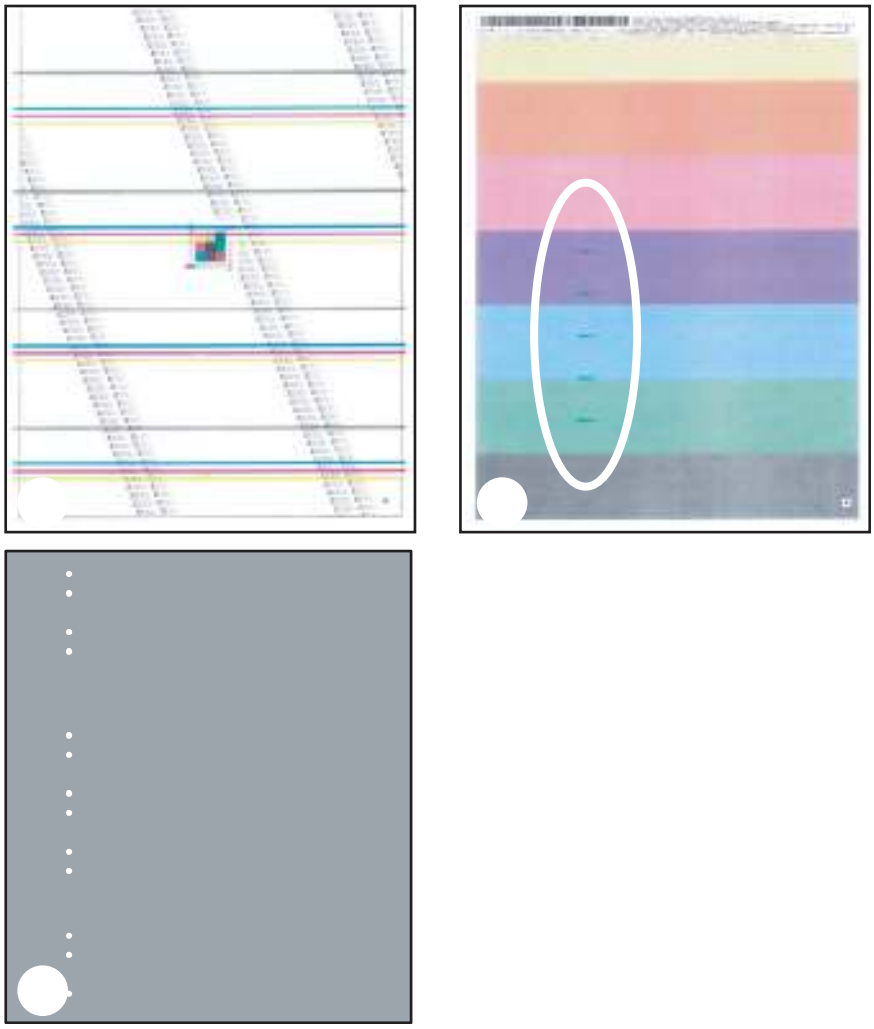
TIP: Print a cleaning page to see if that resolves the defect.

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

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

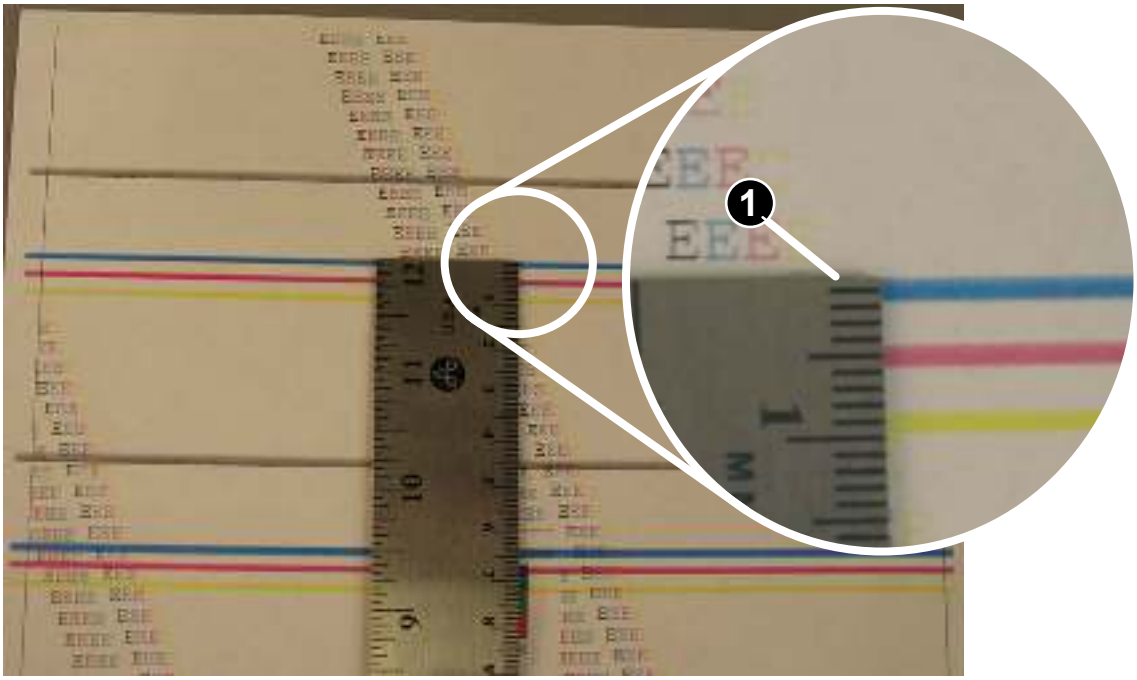
- Lines (callout 1)
- Smudges (callout 2)
- Dots or spots (callout 3)

Figure 2-25 Examples of repetitive defects



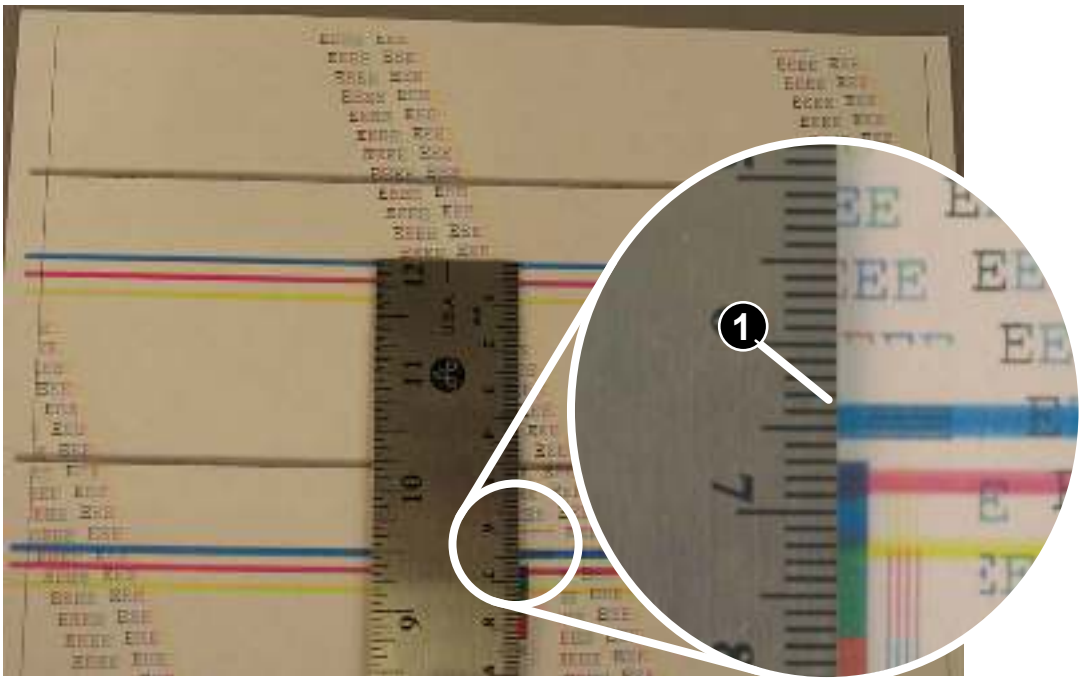
2. Position a metric ruler on the page with the “zero” ruler mark at one occurrence of the defect (callout 1).

Figure 2-26 Place the ruler on the page



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

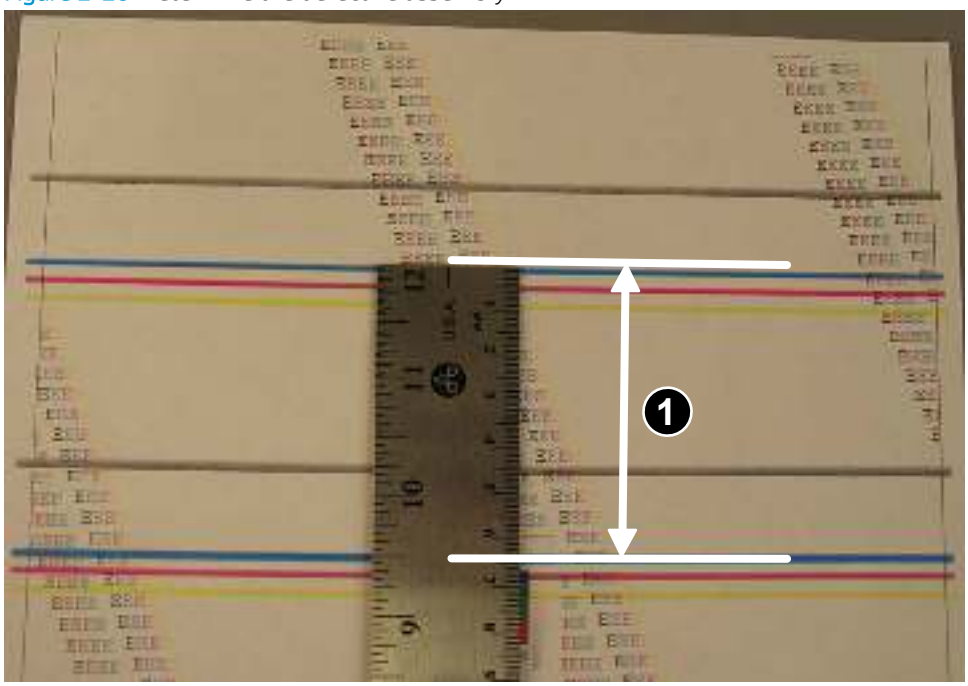
Figure 2-27 Locate the next repetitive defect



4. Measure the distance (in millimeters) between the two occurrences (callout 1), and then use Table 2-45 Repetitive defects on page 193 to determine the defective assembly.

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

Figure 2-28 Determine the defective assembly



Clean the printer

Clean the pickup and separation rollers

1. Turn off the printer, unplug the power cable from the printer, and then remove the rollers.
2. Dab a lint-free cloth in isopropyl alcohol, and then scrub the roller.

WARNING! Alcohol is flammable. Keep the alcohol and cloth away from an open flame. Before you close the printer and connect the power cable, allow the alcohol to dry completely.

NOTE: In certain areas of California (USA), air pollution control regulations restrict the use of liquid isopropyl alcohol (IPA) as a cleaning agent. In those areas of California, please disregard the previous recommendations and use a dry, lint free cloth, moistened with water, to clean the pickup roller.

3. Use a dry, lint free cloth, to wipe the rollers and remove loose dirt.

Clean the paper path

During the printing process, paper, toner, and dust particles can accumulate inside the printer. Over time, this buildup can cause print-quality problems such as toner specks or smearing. This printer has a cleaning mode that can correct and prevent these types of problems.

Clean the paper path (LCD control panel)

1. From the printer control panel, press the OK button. Use the ▶ or the ◀ buttons to scroll through the menus.
2. Open the **Setup** menu.
3. Use the arrow keys to scroll through and select Printer Maintenance, and then press OK button.
4. Use the arrow keys to select Print Quality Tools option, and then press the OK button.
5. Use the arrow keys to select the **Cleaning Page** option, and then press the OK button.

Clean the paper path (touchscreen control panel)

1. From the Home screen on the printer control panel, touch the Setup button, then touch it again.
2. Touch the Printer Maintenance menu.
3. Touch the Print Quality Tools menu., then select the Cleaning Page option
4. Load plain letter or A4 paper when you are prompted.
5. Touch the OK button to begin the cleaning process.

   Wait until the process is complete. Discard the page that prints.

Clean the touchscreen

Clean the touch screen whenever it is necessary to remove fingerprints or dust. Wipe the touch screen gently with a clean, water-dampened, lint-free cloth.

CAUTION: Use water only. Solvents or cleaners can damage the touch screen. Do not pour or spray water directly onto the touch screen.

Clean the scanner glass strip and platen

Over time, specks of debris might collect on the scanner glass and white plastic backing, which can affect performance. Use the following procedure to clean the scanner glass and white plastic backing.

1. Use the power switch to turn off the printer, and then unplug the power cable from the electrical socket.
2. Open the scanner lid.
3. Clean the scanner glass (callout 1) and the white plastic backing (callout 2) with a soft cloth or sponge that has been moistened with nonabrasive glass cleaner.

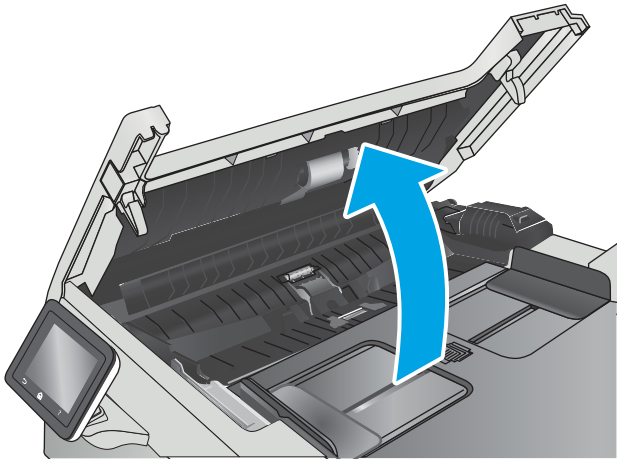
CAUTION: Do not use abrasives, acetone, benzene, ammonia, ethyl alcohol, or carbon tetrachloride on any part of the printer; these can damage the printer. Do not place liquids directly on the glass or platen. They might seep and damage the printer.

TIP: See this English-language video for a demonstration of how to identify and clean debris that causes streaks on copies: www.youtube.com/watch?v=CGn7FJvH8sE.

4. Dry the glass and white plastic backing with a chamois or a cellulose sponge to prevent spotting.
5. Connect the printer, and then use the power switch to turn on the printer.

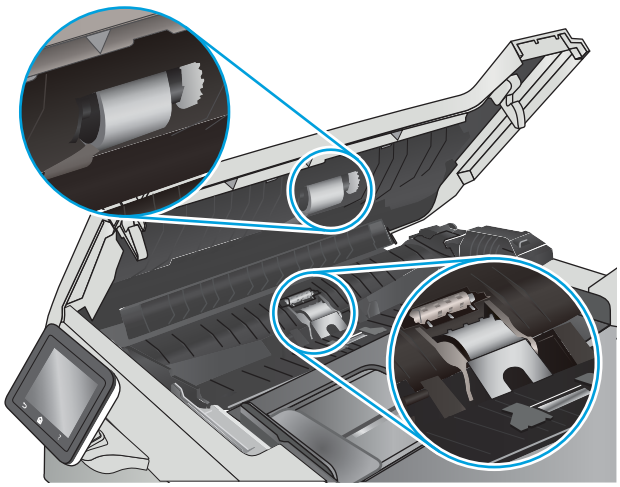
Clean the pickup rollers and separation pad in the document feeder

1. Open the document-feeder access cover.

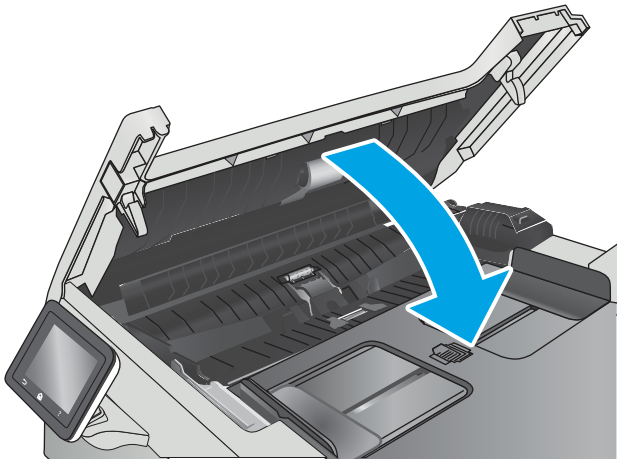


2. Use a moist, lint-free cloth to wipe both pickup rollers and the separation pad to remove dirt.

   CAUTION: Do not use abrasives, acetone, benzene, ammonia, ethyl alcohol, or carbon tetrachloride on any part of the printer; these can damage the printer.



3. Close the document feeder access cover.



Solve performance problems

Factors affecting print performance

Problem	Cause	Solution
Pages print but, are totally blank.	The sealing tape might still be in the toner cartridges.	Verify that the sealing tape has been completely removed from the toner cartridges.
	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. NOTE: The product print speed is effected by various factors (for example, media size or page complexity).	Heavier media types can slow the print job.	Print on a different type of media.
	Complex pages can print slowly.	Proper fusing might require a slower print speed to ensure the best print quality.
	Large batches, narrow paper, and special paper such as gloss, transparency, cardstock, and HP Tough Paper can slow the print job.	Print in smaller batches, on a different type of paper, or on a different size of paper.
Pages did not print.	The product might not be pulling media correctly.	Ensure paper is loaded in the tray correctly. If the problem persists, you might need to replace the pickup rollers and the separation pad.
	The media 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.

Print speeds

Print speed is the number of pages that print in one minute. Print speed depends on different engine-process speeds or operational pauses between printed pages during normal product operation. Factors that determine the print speed of the product include the following:

- Page formatting time

The product must pause for each page to be formatted before it prints. Complex pages take more time to format, resulting in reduced print speed. However, most jobs print at full engine speed (35 ppm on Letter-size media or 33 ppm on A4-size media).

- Media size

  Legal-size media reduces print speed because it is longer than the standard Letter- or A4–size media. A reduce print speed is used when printing on narrow media to prevent the edges of the fuser from overheating.

- Media mode

  Some media types require a reduced print speed to achieve maximum print quality on that media. For example, glossy, heavy, and specialty media (for example, envelopes or photos) require a reduced print speed. To maximize the print speed for special media types, ensure that you select the correct media type in the print driver.

- Product temperature

  To prevent product damage, print speed is reduced if the product reaches a specific internal temperature (thermal slow down). The starting temperature of the product, ambient environment temperature, and the print job size effect the number of pages that can be printed before the product reduces the print speed. Thermal slow down reduces print speed by printing four pages and then pausing for an amount of time before printing continues.

- Other print speed reduction factors

  Other factors (especially during large print jobs) that can cause reduced print speeds include:

  – Density control sequence; occurs every 150 pages and takes about 120 seconds.

The product does not print or it prints slowly

The product does not print

If the product does not print at all, try the following solutions.

1. Make sure the product is turned on and that the control panel indicates it is ready.

   – If the control panel does not indicate the product is ready, turn the product off and then on again.

   – If the control panel indicates the product is ready, try sending the job again.

2. If the control panel indicates the product has an error, resolve the error and then try sending the job again.

3. Make sure the cables are all connected correctly. If the product is connected to a network, check the following items:

   – Check the light next to the network connection on the product. If the network is active, the light is green.

   – Make sure that you are using a network cable and not a phone cord to connect to the network.

   – Make sure the network router, hub, or switch is turned on and that it is working correctly.

4. Install the HP software from the CD that came with the product. Using generic printer drivers can cause delays clearing jobs from the print queue.

5. From the list of printers on your computer, right-click the name of this product, click **Properties**, and open the **Ports** tab.

   - If you are using a network cable to connect to the network, make sure the printer name listed on the **Ports** tab matches the product name on the product configuration page.
   - If you are using a USB cable and are connecting to a wireless network, make sure the box is checked next to **Virtual printer port for USB**.

6. If you are using a personal firewall system on the computer, it might be blocking communication with the product. Try temporarily disabling the firewall to see if it is the source of the problem.
7. If your computer or the product is connected to a wireless network, low signal quality or interference might be delaying print jobs.

The product prints slowly

If the product prints, but it seems slow, try the following solutions.

1. Make sure the computer meets the minimum specifications for this product. For a list of specifications, go to this Web site: www.hp.com/support/ljM304, www.hp.com/support/ljM404, www.hp.com/support/ljM329MFP, www.hp.com/support/ljM428MFP,www.hp.com/support/ljM429MFP.
2. When you configure the product to print on some paper types, such as heavy paper, the product prints more slowly so it can correctly fuse the toner to the paper. If the paper type setting is not correct for the type of paper you are using, change the setting to the correct paper type.
3. If your computer or the product is connected to a wireless network, low signal quality or interference might be delaying print jobs.

Solve connectivity problems

Solve USB connection problems

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

- Verify that the cable is connected to the computer and to the product.
- Verify that the cable is not longer than 5 m (16.4 ft). Try using a shorter cable.
- Verify that the cable is working correctly by connecting it to another product. Replace the cable if necessary.

Solve wired network problems

Introduction

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

- Poor physical connection
- The computer is using the incorrect IP address for the 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 port, and then create a new one.

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.
      - For OS X, go to **Applications**, then **Utilities**, and open **Terminal**.
   b. Type `ping` followed by the IP address for your printer.
   c. If the window displays round-trip times, the network is working.
2. If the ping command failed, verify that the network hubs are on, and then verify that the network settings, the 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 this setting 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 printer driver.

The computer or workstation might be set up incorrectly

1. Check the network drivers, printer drivers, and the network redirection.
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 control panel displays the message: The wireless feature on this product has been turned off
- The printer does not print after the wireless configuration completes
- The wireless connection does not work after moving the wireless router or product
- Cannot connect more computers to the wireless product
- The printer does not print, and the computer has a third-party firewall installed
- 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 printer and the wireless router are turned on and have power. Also make sure that the wireless radio in the printer is turned on.
- Verify that the service set identifier (SSID) is correct. Print a configuration page to determine the SSID. If you are not sure the SSID is correct, run the wireless setup again.
- With secured networks, verify that the security information is correct. If the security information is incorrect, run the wireless setup again.
- If the wireless network is working correctly, try accessing other computers on the wireless network. If the network has Internet access, try connecting to the Internet over a wireless connection.
- Verify that the encryption method (AES or TKIP) is the same for the printer as it is for the wireless access point (on networks using WPA security).
- Verify that the printer is within the range of the wireless network. For most networks, the printer must be within 30 m (100 ft) of the wireless access point (wireless router).
- Verify that obstacles do not block the wireless signal. Remove any large metal objects between the access point and the printer. Make sure poles, walls, or support columns containing metal or concrete do not separate the printer and wireless access point.
- Verify that the printer is located away from electronic devices that might interfere with the wireless signal. Many devices can interfere with the wireless signal including motors, cordless phones, security system cameras, other wireless networks, and some Bluetooth devices.
- Verify that the print driver is installed on the computer.
- Verify that you have selected the correct printer port.
- Verify that the computer and printer connect to the same wireless network.
- For OS X, verify that the wireless router supports Bonjour.

The control panel displays the message: The wireless feature on this product has been turned off

- ▲ Press the wireless button on the product to open the Wireless menu, and then turn the wireless radio on.

The printer does not print after the wireless configuration completes

1. Make sure that the printer is turned on and in the ready state.
2. Turn off any third-party firewalls on your computer.
3. Make sure that the wireless network is working correctly.
   a. On touchscreen control panels open the following menus: Setup, Network Setup, Wireless Settings, thern select Print Wiireless Test report.
   b. On 2-line LCD control panels select the OKbutton to display the Setup Menu then use the arrow buttons to navigate to Network Setup, Wireless Settings, and select Print Wireless Test Report.
4. Make sure that your computer is working correctly. If necessary, restart the computer.
5. Verify that you can open the HP Embedded Web Server from a computer on the network.

The wireless connection does not work after moving the wireless router or product

Make sure that the router or product connects to the same network that your computer connects to.

1. Print a configuration page.
2. Compare the service set identifier (SSID) on the configuration report to the SSID in the printer configuration for your computer.
3. If the SSIDs are not the same, the devices are not connecting to the same network. Reconfigure the wireless setup for your 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 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 your computer.
6. If the product is in Wireless Direct mode, make sure that the computer connection is pointing to the correct IP address. In Wireless Direct mode, the product has two IP addresses: one assigned by the router, and the other set by the Wireless Direct function. Use the printer IP address to connect other computers.

The printer does not print, and the computer has a third-party firewall installed

1. Update the firewall with the most recent update available from the manufacturer.
2. If programs request firewall access when you install the printer or try to print, make sure you allow the programs to run.
3. Temporarily turn off the firewall, and then install the wireless printer on the computer. Enable the firewall when you have completed the wireless installation.

The 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. You need to know the network name and the network security settings.

The wireless network is not functioning

1. Make sure that the network cable is not connected.
2. To verify if the network has lost communication, try connecting other devices to the network.
3. Test network communication by pinging the network.
   a. Open a command-line prompt on your computer.
      - For Windows, click **Start**, click **Run**, type `cmd`, and then press Enter.
      - For OS X, go to **Applications**, then **Utilities**, and open **Terminal**.
   b. Type `ping` followed by the router IP address.
   c. If the window displays round-trip times, the network is working.
4. Make sure that the router or printer connects to the same network that the computer connects to.
   a. Print a configuration page.
   b. Compare the service set identifier (SSID) on the configuration report to the SSID in the printer configuration for the computer.
   c. If the numbers are not the same, the devices are not connecting to the same network. Reconfigure the wireless setup for the printer.

Perform a wireless network diagnostic test

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

1. **Touch screen:** From the Home screen on the control panel touch the Setup icon, then touch Network Setup menu. **2-line displays:** Use the ◀ or the ▶ to navigate through the menus, select Network Setup then press OK.
2. Open the Wireless Settings menu.
3. Touch the Print Wireless Test Report to start the test. The printer prints a test page that shows test results.

Reduce interference on a wireless network

The following tips can reduce interference in a wireless network:

- Keep the wireless devices away from large metal objects, such as filing cabinets, and other electromagnetic devices, such as microwaves and cordless telephones. These objects can disrupt radio signals.
- Keep the wireless devices away from large masonry structures and other building structures. These objects can absorb radio waves and lower signal strength.
- Position the wireless router in a central location in line of sight with the wireless printers on the network.

Service/Support menus and Repair Mode functions

Service menu

The Service menu is used to adjust print settings, restore factory default settings, and clean the print paper path.

2-line control panels

1. From the printer control panel, press the ↩ button once, then press the ✕, and then press the ↩ button twice to gain access to the Service menu.
2. Open the **Service** menu.

Touchscreen control panels

1. From the Home screen on the printer control panel, press 🏠 button once, then press the ↩ once, and then press the 🏠 twice to gain access to the Service menu.
2. Touch the Service menu.

The following menu items appear in the Service menu:

Table 2-46 Service menu

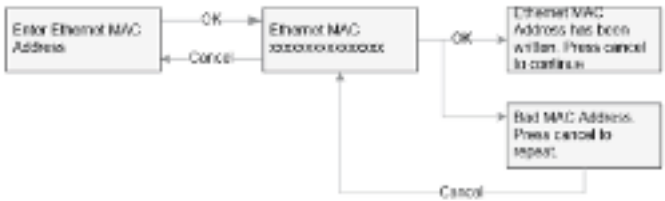
Menu item	First menu item	Description	Additional information (if necessary)
System Configuration Menu	Enter serial number	Allows a manual entry of the 10-digit product serial number. Service needs the ability to enter all ten characters.	
	Enter service ID	Allows a manual entry of the 5-digit service ID (YYDDD).	
	Enter ethernet MAC address	Allows manal entry of the ethernet MAC address.	
	Enter wireless MAC address	Allows a manual entry of the wireless MAC address.. NOTE: Not applicable for products without wireless function.	

Table 2-46 Service menu (continued)

Menu item	First menu item	Description	Additional information (if necessary)
	R/W parameter	Allows manual setting of any configurable parameters. Press OK will write the parameter, Cancel will not write the parameter.	
System Configuration Menu (continued)	LED color calibration	Allows scanning calibration of the color LEDs to be enabled or disabled. IMPORTANT: Special note for LED Color Calibration. 1. There are two important NVM values for LED color calibration. They are as follows: – LED cal-valid (1: valid, 0: invalid) – LED cal matrix (3x3 matrix - – > 9 coefficients) 2. If the LED calibration is successfully done at the factory, CIMation will: – Set the LED cal-valid to 1, and – Generate an optimal LED cal-matrix and send it to NVM of the unit. 3. If the LED calibration fails (e.g. can't read a barcode, etc.), CIMation will: – Set the LED cal-valid to 0, and – NOT send any matrix to NVM. 4. At the time of the scan/copy:	

Table 2-46 Service menu (continued)

Menu item	First menu item	Description	Additional information (if necessary)
		– If LED cal-valid is set to 1, the LED cal-matrix in NVM is used for color conversion. – If LED cal-valid is set to 1, the default matrix in FW is used for color conversion. 5. Even though there is a valid LED cal-matrix in the NVM, the NVM values can be reset during FW reflashing process depending on the initial state of the unit. This NVM reset can cause the LED cal-valid and LED cal-matrix set to be all zeros, resulting in black only output scan/copy. 6. Depending on the LED spectral characteristics, the LED cal-matrix can be very similar to the default matrix. Little difference from the default matrix means little difference in copy output between LED cal On or Off.	

Table 2-46 Service menu (continued)

Menu item	First menu item	Description	Additional information (if necessary)
Resets Menu	Country and language reset	• Allows the country and language to be reset after unit powers down. • All user menu settings to default.	NOTE: When one of the Resets is selected by pressing OK button, the device will power off and it will not power on unless the power button is pressed again. After it powers up it will preform the corresponding reset.
	Partial reset	• All user menu settings to default • All telephony parameter values to default (MFP models only). • Initiate select country and language UI. NOTE: The items below will not be cleared: Wireless settings (wireless models only) Fax memory (MFP models only) Device counters	
Resets Menu (continued)	Semi-Full reset	All partial resets plus: • Clears fax journal information (MFP models only). • Clears all speed dials/broadcast list (MFP models only). • Clears personal header information (MFP models only). • Clears wireless settings, (IP, SSID, WEP) (wireless models only). NOTE: See the following: • Wireless settings are cleared on a semi-full or full resets. • Device counters are not cleared on semi-full and partial resets.	
	OOBE reset	Sets the unit back to the factory default state.	

Table 2-46 Service menu (continued)

Menu item	First menu item	Description	Additional information (if necessary)
IMPORTANT: The NVM values that are **never** reset: • Device unique calibration values • Serial number • Deivative setting (includes soft features)			
Special Reports	Print mech button tap	Allows a user to print any of the Tap reports that are supported by the platform.	
	Network security page	Prints a summary of the network related information.	
	Config page	Prints a complete list of all parameters including the number, current value, and defaults.	
	Fax trace (MFP models only)	Prints a T30 protocol history of the last fax transactions.	
	Counter report	Prints a summary of device usage.	
Service Test Menu	Test scan motor	Subsystem test of the flatbed scan motor and scan drive mechanism.	
	Cont_adf_pick	Continuous picking from the ADF.	
	Test keys	Interactive test of all front panel buttons.	
Service Test Menu (continued)	Test LEDs	Continuous test of LED functionality (blinking or on steady). NOTE: The following items are not part of the Test LEDs: • The network LEDs	

Table 2-46 Service menu (continued)

Menu item	First menu item	Description	Additional information (if necessary)
	Test Display	Subsystem functional test of all the CGD segments and the back light (not supported on the 2–line control panel).	
	Infinite H's test	Subsystem test that prints continuous pages of the letter "H" in black.	
	Infinite color H's test	Subsystem test that prints continuous pages of the letter "H" in color.	
	Test front USB port	Test that verifies when a device is inserted in the front USB port that the device is recognized with a PASS or FAIL results.	

Support menu

Use the support menu to print service-related reports and to run special tests. Customers do not have access to this menu.

2-line control panels (SFP models)

▲ From the printer control panel, press the ✕ button, then press the ↩ once, and then press the ✕ twice to gain access to the Support menu.

Touchscreen control panel (MFP models)

▲ From the Home screen on the printer control panel, press the ↩ button four times to gain access to the Support menu.

The following menu items appear in the support menu:

Table 2-47 Support Menu

Menu item	Secondary menu item	Description	Additional information (if necessary)
Information Menu	Model number	Displays the products model number.	
	Serial number	Displays the products serial number.	
	Region/Language	Displays the products region/language settings.	
	Counters	Displays the products total page counts and cycles.	

Table 2-47 Support Menu (continued)

	Firmware version	Displays the product firmware version.	
	Event log	Displays the products last five events. The user can cycle through each event.	
	Assert history	Displays the products last five asserts. The user can cycle through each assert.	
	Wireless Region (wireless models only)	OK Cancel	Displays the region.
Resets Menu	Country and language reset	• Allows the country and language to be reset after the unit powers down. • All user menu settings to default.	
	Partial reset	• All user menu settings to default • All telephony parameter values to default (fax models only). • Initiate select country and language UI. • Clear wireless settings to default (wireless models only). NOTE: The items below will not be cleared: • Fax memory (fax models only) • Device counters	
Resets Menu (continued)	Semi-full reset	All partial rests plus: • Clears fax journal information (fax models only). • Clears all speed dials/broadcast list (fax models only). • Clears personal header information (fax models only) • Clears instant Share settings. • Clears wireless settings (IP, SSID, WEP) (wireless models only) NOTE: See the following: • Wireless settings are cleared on a Semi-full and Full resets (wireless models only) • Device counters are not cleared on Semi-full or Partial resets.	

Table 2-47 Support Menu (continued)

System Configuration Menu	Hardware failure status	Shows the status of the hardware failure. If user selects, the hardware failure status, it will be cleared. This function, Hardware/failure status, is needed so a support agent can instruction the customer to enter the Support Menu, then the Support System Configuration Menu, then select the Hardware Failure Status, and then clear the DSID_IDS_HW_FAILURE so the value can be set to zero.	
	Set boot mode to user mode	Sets the unit to user mode from manufacturing mode.	
Fax Diagnostics Menu (MPF models only)	Run Fax Test	Executes the fax test.	
	Reset Fax Parameter	Resets the fax parameters (not just a specific one).	
	Change Fax Parameter	Allows for controlled changes to individual fax parameters.	
	Fax Parameter Report	Prints a complete list of all parameters including the number, current value, and defaults.	
	Fax Trace Report	Prints two reports, most recent and last fax trace with an error.	
	Fax Status Report	Prints fax status report.	
	Speaker Mode	Enable the speaker through out fax transmission.	
	Ring Monitor	• R = ring count and cadence. • XX Hz= 0 if attached phone is on-hook. 1 =if attached phone is off-hook.	
Fax Diagnostics Menu (MPF models only) (continued)	CNG Monitor	• f3 =counter increments if a frequency is detected in side tone while eavesdropping. • f2 =counter increments if a frequency is detected in actual CNG tone. • f1 =counter increments if a frequency is detected in CNG frequency range. • Z =total CNG tonesdetected during a session.	
	Signal Power	Signal power is displayed.	
Connectivity Diagnostics Menu	Connectivity report	Prints a report that contains all the various connectivity settings.	

Table 2-47 Support Menu (continued)

	Wireless diagnostics test (wireless model only)	Preforms the same wireless diagnostics test as in the Customer UI, through the front control panel of the printer. This diagnostic tool tests the wireless setup of the product.	
	Capture NW trace	5 minutes 10 minutes 30 minutes Stop	Captures a network trace and saves the trace in an encrypted format to a USB flash drive inserted into the front USB port.
	Print wireless metrics	OK Cancel	Prints the wireless metric data report.
Connectivity Diagnostics Menu	OK Cancel		
	Print mech button	Code = x	Allows the user to print any of the Tap reports that are supported by the platform. **NOTE:** Print Tap report number 4 to see a list of supported tap reports for these devices.
	Config page (MFP models only)	Prints a complete list of all fax parameters including the number, current value, and defaults.	
	Fax trace (MFP models only)	Prints a T30 protocol history of the last fax transaction.	
	Counter report	Prints a summary of the device usage.	
Scan Diagnostics Menu (MFP models only)	Test scan motor	Subsystem test of the flatbed scan motor and scan drive mechanism.	
Enable/Disable Menu	All network	OK Cancel	
Enable/Disable Menu (continued)	Ethernet	OK Cancel	
	All wireless (wireless models only)	OK Cancel	
	Wireless infrastructure (wireless models only)	OK Cancel	
	Wireless access point (wireless models only)	OK Cancel	
	Memory devices	OK Cancel	

Table 2-47 Support Menu (continued)

	Fax (MFP models only)	OK Cancel	
	Fax reprint (MFP models only)	OK Cancel	
	Copy (MFP models only)	OK Cancel	
	Color Copy (MFP models only)	OK Cancel	
	Color print from memory device	OK Cancel	
	Digital send (MFP models only)	OK Cancel	
	HP web services (ePrint and Apps)	OK Cancel	
	HP ePrint	OK Cancel	
	Print Apps	OK Cancel	
	Webscan (MFP models only)	OK Cancel	
	Usage data collection	OK Cancel	
Enable/Disable Menu (continued)	Firmware update	OK Cancel	
	Reset to factory defaults	OK Cancel	

Printer resets

Restore the factory-set defaults

Restoring the factory-set defaults returns all of the printer and network settings to the factory defaults. It will not reset the page count, tray size, or language. To restore the printer to the factory-default settings, follow these steps.

⚠ CAUTION: Restoring the factory-set defaults returns all of the settings to the factory defaults, and it also deletes any pages that are stored in the memory.

1. **2-line control panels**: On the printer control panel, press the OK button to enter the Setup menu, use the left ◀ and the right ▶ to navigate to Printer Maintenance menu, then use arrow buttons to navigate to Restore menu, press the OK button, and then use arrow buttons to navigate to Restore Factory Defaults, and then press the OK button.

   Touchscreen control panels: From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch icon.

2. Open the Printer Maintenance menu.
3. Open the Restore menu.
4. Select the Restore Factory Defaults option.

   The printer automatically restarts.

Semi-full reset

⚠ CAUTION: Be sure to print a configuration page before performing an semi-full reset.

An semi-full reset erases all data stored in the unprotected NVRAM sections. Performing an semi-full 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.

After performing an semi-full reset, reconfigure any computers that print to this printer so that the computers can recognize the printer.

1. Turn the printer off.
2. **2-line control panels**: Press the ✕ and the Cancel ✕ button once, and then press the ↩. button once, and then press the ✕ button twice. to enter the Support menu. Use the ◀ or the ▶ to navigate to Resets menu and then press the OK button. Use arrow keys to navigate to Semi-fill reset , and then press the OK button.

   Touchscreen control panels: Press the ↩ four times to enter the Support menu. Touch Resets menu, and then touch Semi-full resets menu.

3. When the **Semi-full reset** message appears on the display.

   The semi-full reset starts.

4. When the printer has finished the semi-full reset, it returns to the Ready state.

OOBE or Cold reset

⚠ WARNING! A OOBE or cold resets the printer page count and removes the formatter association to the printer serial number. The lack of formatter association to the printer serial number might affect the printer's warranty entitlement. Also, the printer will not be allowed to connect to the HP cloud.

A OOBE or cold resets restores the printer to the “generic printer mode” in which it arrived from the factory. This means that you will have to reset the language and country/region settings when the printer starts after the initialization. A OOBE or cold resets erases all data stored in the protected and unprotected NVRAM sections.

1. Turn the printer off.
2. **2-line control panels**: Press the OK button to enter the Setup Menu. Use the ◀ or the ▶ to navigate to Printer Maintenance menu, press OK button, and then use the arrow buttons to navigate to Restore menu press the OK button, and then use arrow buttons to navigate to Cold Reset, and then press the OK button.

   Touchscreen control panels: From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch icon, then touch Printer Maintenance menu, then touch Restore menu, and then touch Cold Reset.
3. The **Cold Resets** message appears on the display.

   The cold resets starts.
4. When the cold reset has been completed, the printer enters the generic printer mode.

Repair Mode

When using toner cartridges multiple times

IMPORTANT: This topic describes how to use toner cartridges in multiple devices for testing or verifying repairs.

This applies to the following HP printers:

- HP LaserJet Pro M404-M405 series
- HP LaserJet Pro MFP M428-M429 series

There are a limited number of times a toner cartridge (or a set of cartridges) can be installed in different printers. For example, if a set of cartridges is repeatedly used to test printers that have been repaired, it is recommended that the printer is first put into **Repair Mode** before installing the test cartridges into the printer. Failing to use **Repair Mode** will cause the test cartridges to be disabled after use in several printers. If the toner cartridge is disabled a supplies error message **10.0X.11** appears on the control-panel display, and the toner cartridge will not be functional.

NOTE: **Repair Mode** remains enabled for up to 75 printed pages or until the printer powered is turned off.

Supplies error messages

- **10.00.11**: Black cartridge problem > Bad data from supply
- **10.01.11**: Cyan cartridge problem > Bad data from supply
- **10.02.11**: Magenta cartridge problem > Bad data from supply
- **10.03.11**: Yellow cartridge problem > Bad data from supply

To enter **Repair Mode**, perform the following steps for the type of control panel being used:

For 2-line control panels

1. While in a Ready state, press the OK button to enter the Main Menu.
2. Press the OK button to enter the Setup Menu.
3. Use the left ◀ or the right ▶ buttons to navigate to Printer Maintenance menu, and then press OK button.

4. From the Printer Maintenance menu, use the left ◀ or the right ▶ to navigate to the Restore menu, and then press the OK ;button.
5. From the Restore menu, use the left ◀ or the right ▶ to navigate to the Repair Mode, and then press the OK button.
6. Follow the on-screen instructions by pressing the OK button, and then immediately install one or more test cartridges.

For touch screen control panels

1. From the touch screen pull down the dashboard and select the Setup icon to enter the Setup menu.
2. From the Setup menu, scroll to and then select Printer Maintenance menu.
3. From the Printer Maintenance menu, select Restore .
4. From the Restore menu, select Repair Mode.
5. A dialog will appear, follow the instructions in the dialog to Start the Repair Mode touch OK, and then immediately install one or more test cartridges into the printer.

NOTE: If the Repair Mode is not present in the Restore menu, then the firmware must be updated to acquire this functionality. The Repair Mode setting was not present in the original first release of firmware with these products. The print cartridges do not need to be installed to perform a firmware update.

Solve fax problems (MFP models only)

Checklist for solving fax problems

- Several possible fixes are available. After each recommended action, retry faxing to see if the problem is resolved.
- For best results during fax problem solving, make sure the line from the printer is connected directly to the wall phone port. Disconnect all other devices that are connected to the printer.

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

   a. From the Home screen on the printer control panel, swipe down to gain access to the home screen dash board, and then touch the Setup icon.

   b. Select the Fax Setup menu.

   c. Select the Tools menu.

   d. Select the Run Fax Test option. The printer prints a fax test report.

      The report contains the following possible results:

      - **Pass**: The report contains all of the current fax settings for review.
      - **Fail**: The report indicates the nature of the error and contains suggestions for how to resolve the issue.

3. Verify that the printer firmware is current:

   a. Print a configuration page from the control panel Reports menu to obtain the current firmware date code.

   b. Go to www.hp.com.

      1. Click the **Support & Drivers** link.
      2. Click the **Download drivers and software (and firmware)** link option.
      3. In the **For product** box, enter the printer model number, and then click the **Go** button.
      4. Click the link for your operating system.
      5. Scroll to the Firmware section of the table.

         - If the listed version matches the version on the configuration page, you have the most current version.
         - If the versions are different, download the firmware upgrade file and upgrade the firmware on the printer following the on-screen instructions.

           NOTE: The printer must be connected to a computer with internet access to upgrade firmware.

         - Resend the fax.

4. Verify that the fax was set up when the printer software was installed.

   From the computer, in the HP program folder, run the Fax Setup Utility.

5. Verify that the telephone service supports analog fax.

   - If using ISDN or digital PBX, contact your service provider for information about configuring to an analog fax line.
   - If using a VoIP service, change the Fax Speed setting to Slow V.29 from the control panel. Ask if your service provider supports fax and for the recommended fax modem speed. Some companies might require an adapter.
   - If you are using a DSL service, make sure that a filter is included on the phone-line connection to the printer. Contact the DSL service provider, or purchase a DSL filter if you do not have one. If a DSL filter is installed, try another filter because filters can be defective.

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

Perform a fax diagnostic test

From the printer control panel, you can run a diagnostic test that provides information about the printer fax settings.

1. From the Home screen on the printer control panel, swipe down to gain access to the home screen dash board, and then touch the Setup icon.
2. Open the following menus:
   - Fax Setup menu
   - Tools menu
3. Touch the Run Fax Test to start the test. The printer prints a test page that shows test results.

Solve general fax problems

- Faxes are sending slowly
- Fax quality is poor
- You touched the Cancel button to cancel a fax, but the fax was still sent
- Not able to locate the fax settings in HP Web Jetadmin
- The header is appended to the top of the page when the overlay option is enabled
- A mix of names and numbers is in the recipients box
- A one-page fax prints as two pages
- A document stops in the document feeder in the middle of faxing
- The volume for sounds coming from the fax accessory is too high or too low
- Use fax over VoIP networks

Faxes are sending slowly

The printer is experiencing poor phone line quality.

- Retry sending the fax when the line conditions have improved.
- Check with the phone service provider that the line supports fax.
- Turn off the Error Correction setting.
  a. From the Home screen on the printer control panel, swipe down to gain access to the home screen dash board, and then touch the Setup icon.
  b. Open the Fax Setup menu.
  c. Open the Preferences menu.
  d. Open the Error Correction menu.
  e. Select the Off setting.

NOTE: This can reduce image quality.

- Use white paper for the original. Do not use colors such as gray, yellow, or pink.
- Increase the Fax Speed setting.
  a. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon.
  b. Open the Fax Setup menu.
  c. Open the Preferences menu.
  d. Open the Speed menu.
  e. Select the correct setting.
- Divide large fax jobs into smaller sections, and then fax them individually.
- Change the fax settings on the control panel to a lower resolution.
  a. From the Home screen on the printer control panel touch the Fax icon, touch Send Now at the bottom left of screen, select the icon, then touch Fax Settings, then touch Resolution, and then touch the desired resolution. If you want to retain this setting for all future faxes, touch Save Current Settings at the bottom of the Fax Settings screen.
  b. Open the Fax Setup menu.
  c. Open the Advanced Setup menu.
  d. Open the Fax Resolution menu.
  e. Select the correct setting.

Fax quality is poor

Fax is blurry or light.

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

a. From the Home screen on the printer control panel, touch the Fax icon, then touch Send Now at the bottom left of screen, select the icon, then touch Fax Settings, then touch Resolution, and then touch the desired resolution. If you want to retain this setting for all future faxes, touch Save Current Settings at the bottom of the Fax Settings screen.

b. Open the Fax Setup menu.

c. Open the Advanced Setup menu.

d. Open the Fax Resolution menu.

e. Select the correct setting.

NOTE: Increasing resolution slows transmission speed.

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

  a. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon.

  b. Open the Fax Setup menu.

  c. Open the Preferences menu.

  d. Open the Error Correction menu.

  e. Select the On setting.

- Check the toner cartridges and replace if necessary.
- Ask the sender to darken the contrast setting on the sending fax machine, and then resend the fax.

You touched the Cancel button to cancel a fax, but the fax was still sent

If the job is too far along in the sending process, you cannot cancel the job.

This is normal operation.

Not able to locate the fax settings in HP Web Jetadmin

Fax settings in HP Web Jetadmin are located under the status page drop-down menu.

Select **Digital Sending and Fax** from the drop-down menu.

The header is appended to the top of the page when the overlay option is enabled

For all forwarded faxes, the printer appends the overlay header to the top of a page.

This is normal operation.

A mix of names and numbers is in the recipients box

Names and numbers can both display, depending on where they are from. The fax address book lists names, and all other databases list numbers.

This is normal operation.

A one-page fax prints as two pages

The fax header is being appended to the top of the fax, pushing text to a second page.

A document stops in the document feeder in the middle of faxing

A jam is in the document feeder.

Clear the jam, and send the fax again.

The volume for sounds coming from the fax accessory is too high or too low

The volume setting needs to be adjusted.

Adjust the volume in the Fax Setup menu and the Preferences menu.

Use fax over VoIP networks

VoIP technology converts the analog phone signal into digital bits. These are then assembled into packets which travel on the Internet. The packets are converted and transmitted back to analog signals at or near the destination.

Transmission of information on the Internet is digital instead of analog. Therefore, there are different constraints on the fax transmission that might require different fax settings than the analog Public Switched Telephone Network (PSTN). Fax is very dependent upon timing and signal quality, so a fax transmission is more sensitive to a VoIP environment.

The following are suggested changes in settings for the printer when it is connected to a VoIP service:

- Begin with the fax speed set to Medium (V.17). This might be helpful in environments where a new VoIP network is in use.
- If numerous errors or retries occur with the fax speed set to Fast, set it to Medium (V.17).
- If errors and retries persist, set the fax speed to Slow (V.29) because some VoIP systems cannot handle the higher signal rates associated with fax.
- In rare cases, if errors persist, turn off ECM on the printer. The image quality might decrease. Ensure that the image quality is acceptable with ECM off before using this setting.
- If the preceding setting changes have not improved the VoIP fax reliability, contact your VoIP provider for help.

Solve problems receiving faxes

Table 2-48 Solve problems receiving faxes

Problem	Cause	Solution
The fax does not respond.	The fax has a dedicated phone line.	• Set the Answer Mode option to the Automatic setting from the control panel. a. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon. b. Open the Fax Setup menu.

Table 2-48 Solve problems receiving faxes (continued)

Problem	Cause	Solution
		c. Open the Preferences menu. d. Open the Auto Answer menu. e. Select the Automatic setting.
	An answering machine is connected to the printer.	• Set the Answer Mode option to the TAM setting and connect the answering machine to the “telephone” port. a. From the Home screen on the printer control panel swipe down to gain access the home screen dash board, and then touch the Setup icon. b. Open the Fax Setup menu. c. Open the Preferences menu. d. Open the Auto Answer menu. e. Select the TAM setting. If the TAM setting is unavailable, set the Auto Answer option to the Automatic setting. • Set the Rings to Answer setting to at least one ring more than the number of rings for which the answering machine is set. a. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon. b. Open the Fax Setup menu. c. Open the Preferences menu. d. Open the Rings to Answer menu. e. Select the correct setting. • Connect the answering machine to the “telephone” port. • If the printer has a telephone handset connected, set the Auto Answer option to the Fax/Tel setting to route calls to the correct device. When detecting a voice call, the printer generates a ring tone that alerts you to pick up the telephone handset. a. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon. b. Open the Fax Setup menu. c. Open the Preferences menu.

Table 2-48 Solve problems receiving faxes (continued)

Problem	Cause	Solution
		d. Open the Auto Answer menu. e. Select the Fax/Tel setting.
	A handset is connected to the printer.	• Make sure the phone is hung up. • Change the Answer Mode option to match the printer setup. a. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon. b. Open the Fax Setup menu. c. Open the Preferences menu. d. Open the Auto Answer menu. e. Select the setting that matches the printer setup. Set the Answer Mode option to the Fax/Tel setting to automatically receive faxes. The Fax/Tel setting automatically detects whether the incoming transmission is a fax or a voice call and routes the call to the appropriate device.
	The Auto Answer setting is set to the Manual setting.	• Touch the Fax icon on the printer control panel.
	Voice mail is available on the fax line.	• Add a distinctive ring service to your telephone line and change the Distinctive Ring setting on the printer to match the ring pattern supplied by the telephone company. Contact your telephone company for information. a. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon. b. Open the Fax Setup menu. c. Open the Preferences menu. d. Open the Distinctive Ring menu. e. Select the correct setting. • Buy a dedicated line for faxing. • Set the Answer Mode option to the Manual setting. a. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon. b. Open the Fax Setup menu.

Table 2-48 Solve problems receiving faxes (continued)

Problem	Cause	Solution
		c. Open the Preferences menu. d. Open the Auto Answer menu. e. Select the Manual setting. NOTE: You must be present to receive faxes.
	The printer is connected to a DSL phone service.	• Check the installation and features. A DSL modem requires a high-pass filter on the phone line connection to the printer. Contact your DSL service provider for a filter or buy a filter. • Verify that the filter is connected. • Replace the existing filter to make sure that it is not defective.
	The printer uses a fax over IP or VoIP phone service.	• Set the Fax Speed option to the Slow(V.29) or Medium(V.17) setting. a. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon. b. Open the Fax Setup menu. c. Open the Preferences menu. d. Open the Speed menu. e. Select the correct setting. • Contact your service provider to make sure that fax is supported and for a recommended fax speed setting. Some companies might require an adapter.
Sender receives a busy signal	A handset is connected to the printer.	• Make sure the phone is hung up. • Change the Answer Mode option to match the printer setup. a. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon. b. Open the Fax Setup menu. c. Open the Preferences menu. d. Open the Auto Answer menu. e. Select the setting that matches the printer setup. Set the Auto Answer option to the Fax/Tel setting to automatically receive faxes. The Fax/Tel setting automatically detects whether the incoming transmission is a fax or a voice call and routes the call to the appropriate device.

Table 2-48 Solve problems receiving faxes (continued)

Problem	Cause	Solution
	A phone line splitter is being used.	• If you are using a phone line splitter, remove the splitter and set up the phone as a downstream phone. • Make sure the phone is hung up. • Make sure the phone is not being used for a voice call when faxing.
No dial tone	A phone line splitter is being used.	• If using a phone line splitter, remove the phone line splitter and set up the phone as a downstream phone.
	The phone cable is not connected correctly to the printer.	Verify that the telephone cord is plugged into the correct port on the back of the printer.
Printer rings once, but does not answer	An answering machine or voice messaging service is sharing the phone line with the printer.	• **Answering machine**: Set the Auto Answer option to the TAM setting and connect the answering machine to the "telephone" port. • **Voice mail**: Add a distinctive ring service to your telephone line and change the Distinctive Ring setting on the printer to match the ring pattern supplied by the telephone company. Contact your telephone company for information.
	The Distinctive Ring setting is incorrectly set.	1. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon. 2. Open the Fax Setup menu. 3. Open the Preferences menu. 4. Open the Distinctive Ring menu. 5. Select the correct setting.
	The sender number is blocked, and the printer is ringing once before blocking the fax job.	This is normal printer behavior.
Printer continues to ring, but does not answer	The Auto Answer setting is set to the Manual setting.	Touch the Fax icon on the printer control panel.
	The Rings to Answer setting is incorrectly set.	1. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon. 2. Open the Fax Setup menu. 3. Open the Preferences menu. 4. Open the Rings to Answer menu. 5. Select the correct setting.

Table 2-48 Solve problems receiving faxes (continued)

Problem	Cause	Solution
	The Distinctive Ring setting is incorrectly set.	1. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon. 2. Open the Fax Setup menu. 3. Open the Preferences menu. 4. Open the Distinctive Ring menu. 5. Select the correct setting.
Printer does not ring, no fax received	The phone cable is not connected correctly to the printer.	Verify that the telephone cord is plugged into the correct port on the back of the printer.
Printer answers, but fax does not print	The printer is out of paper.	Verify that paper is loaded.
Header information prints on top of the fax information	For all forwarded faxes, the printer appends the overlay header to the top of a page.	This is normal printer behavior.

Solve problems sending faxes

Table 2-49 Solve problems sending faxes

Problem	Cause	Solution
Fax does not send	The Send Fax Later option is enabled and scheduled to send the fax at a later time.	This is normal printer behavior.
	The redial settings are all inactive, causing the printer to try dialing once and then stop if it encounters a busy signal, no answer, or an error.	Change the redial settings to prompt the printer to try to resend the fax automatically. 1. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon. 2. Open the Fax Setup menu. 3. Open the Preferences menu. 4. Open the following items: – Auto Redial 5. Select the correct setting for each option.
	Outgoing fax calls keep dialing. The printer automatically redials a fax number if the redial options are on.	This is normal printer behavior. To prevent the fax from resending, set the Redial if Busy option to 0, set the Redial if No Answer option to 0, and set the Redial if Comm. Error option to 0.
	The fax number is too long.	Enter a phone number that is the proper length.
Fax stops while sending	The receiving fax machine might be malfunctioning.	Try sending to another fax machine.

Table 2-49 Solve problems sending faxes (continued)

Problem	Cause	Solution
	The phone line might not be working.	Disconnect the printer from the phone jack, and connect a phone. Try to make a phone call to verify that the phone line is working.
	The phone line might be noisy or poor quality.	Try using a slower fax speed to improve the reliability of transmission.
	A call-waiting feature might be active.	Verify that the fax telephone line does not have an activated call-waiting feature. A call-waiting notice can interrupt a fax call in progress, which causes a communication error.
Sent faxes are not arriving at the receiving fax machine	The receiving fax machine is turned off or has an error condition, such as being out of paper.	Ask the recipient to make sure that the fax machine is turned on and ready to receive faxes.
	The receiving machine is blocking the sending machine number.	Ask the recipient to make sure that the receiving fax machine is not blocking the sending machine fax number.

Fax error messages on the control panel

The No Fax Detected message displays

NOTE: This error does not always refer to a missed fax. If a voice call is made to a fax number by mistake and the caller hangs up, the **No Fax Detected** message displays on the control panel.

- Ask the sender to resend the fax.
- Make sure that the telephone cord from the printer is connected to the wall telephone jack.
- Try a different phone cord.
- Connect the printer phone cord to a jack for another phone line.
- Make sure the telephone line and phone wall jack are active by connecting a telephone and checking for a dial tone.
- Make sure that the telephone cord is connected to the “line” port on the printer.
- Check the phone line by running a fax test from the control panel.
- If the error persists, contact HP. See www.hp.com/support/ljM304, www.hp.com/support/ljM404, www.hp.com/support/ljM329MFP, www.hp.com/support/ljM428MFP,www.hp.com/support/ljM429MFP or the support flyer that came in the printer box.

The Communication error message appears

- Ask the sender to send the fax again or send at a later time when line conditions have improved.
- Disconnect the printer telephone cord from the wall, connect a telephone to the phone jack on the wall, and try making a call. Plug the printer phone cord into a jack for another phone line.
- Try a different phone cord.
- Set the Speed option to the Slow(V.29) or Medium(V.17) setting.

a. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon.

b. Open the Fax Setup menu.

c. Open the Preferences menu.

d. Open the Speed menu.

e. Select the correct setting.

- Turn off the Error Correction feature to prevent automatic error correction.

NOTE: Turning off the Error Correction feature can reduce image quality.

a. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon.

b. Open the Fax Setup menu.

c. Open the Preferences menu.

d. Open the Error Correction Mode menu.

e. Select the Off setting.

- Print the Fax Activity Log report from the control panel to determine if the error occurs with a specific fax number.

a. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon.

b. Open the Fax Setup menu.

c. Open the Reports menu.

d. Select the Print Fax Report option.

- If the error persists, contact HP. See www.hp.com/support/ljM304, www.hp.com/support/ljM404, www.hp.com/support/ljM329MFP, www.hp.com/support/ljM428MFP,www.hp.com/support/ljM429MFP or the support flyer that came in the printer box.

No Dial Tone

- Make sure that the telephone cord is connected to the correct port on the printer.
- Make sure that the telephone cord from the printer is connected directly to the wall telephone jack.
- Check for a dial tone on the phone line by using the Start Fax button.
- Disconnect the printer telephone cord from the wall, connect a telephone to the phone jack on the wall, and try making a voice call.
- Disconnect the telephone cord from both the printer and the wall and reconnect the cord.
- Make sure that you are using the telephone cord that came with the printer.
- Connect the printer phone cord to a jack for another phone line.
- Check the phone line by using the Run Fax Test option from the Tools menu on the control panel.

a. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon.

b. Open the Fax Setup menu.

c. Open the Tools menu.

d. Select the Run Fax Test item.

The Fax is busy message appears

- Try sending the fax again.
- Call the recipient to ensure that the fax machine is on and ready.
- Check that you are dialing the correct fax number.
- Check for a dial tone on the phone line by using the Start Fax button.
- Make sure that the phone line is working by disconnecting the printer, connecting a telephone to the phone line, and making a voice call.
- Connect the printer phone cord to a jack for another phone line, and try sending the fax again.
- Try a different phone cord.
- Send the fax at a later time.
- If the error persists, contact HP. See www.hp.com/support/ljM304, www.hp.com/support/ljM404, www.hp.com/support/ljM329MFP, www.hp.com/support/ljM428MFP,www.hp.com/support/ljM429MFP or the support flyer that came in the printer box.

The No fax answer message appears

- Try to resend the fax.
- Call the recipient to ensure that the fax machine is on and ready.
- Check that you are dialing the correct fax number.
- Disconnect the printer telephone cord from the wall, connect a telephone to the phone jack on the wall, and try making a voice call.
- Connect the printer phone cord to a jack for another phone line.
- Try a different phone cord.
- Make sure that the phone cord from the wall telephone jack is connected to the line port.
- Check the phone line by using the Run Fax Test option from the Tools menu on the control panel.

  a. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon.

  b. Open the Fax Setup menu.

c. Open the Tools menu.

d. Select the Run Fax Test item.

- If the error persists, contact HP. See www.hp.com/support/ljM304, www.hp.com/support/ljM404, www.hp.com/support/ljM329MFP, www.hp.com/support/ljM428MFP,www.hp.com/support/ljM429MFP or the support flyer that came in the printer box.

Document feeder paper jam

- Verify that the paper meets printer size requirements. The printer does not support pages longer than 381 mm (15 in) for faxing.
- Copy or print the original to letter, A4, or legal size paper, and then resend the fax.

The Fax storage is full message appears

- Turn the printer off then on.
- Delete stored faxes from memory.

  a. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon.

  b. Open the Fax Setup menu.

  c. Open the Tools menu.

  d. Select the Clear Fax/Logs/Memory item.

- Divide the large fax job into smaller sections, and then fax them individually.

Scanner error

- Verify that the paper meets printer size requirements. The printer does not support pages longer than 381 mm (15 in) for faxing.
- Copy or print the original onto letter, A4, or legal size paper and then resend the fax.

The control panel displays a Ready message with no attempt to send the fax

- Check the fax activity log for errors.

  a. From the Home screen on the control panel swipe down to gain access to the home screen dash board, then touch the Set up icon, and then touch Fax Setup.

  b. Open the Reports menu.

  c. Open the Print Fax Reports menu.

  d. Select the Print option.

- If a phone is connected to the printer, make sure that the phone is hung up.
- Disconnect all other lines between the fax and the printer.
- Connect the printer directly into the wall telephone jack and resend the fax.

The control panel displays the message "Storing page 1" and does not progress beyond that message

- Delete stored faxes from memory.
    a. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon.
    b. Open the Fax Setup menu.
    c. Open the Toos menu.
    d. Select the Clear Fax Logs/Memory item.

Faxes can be received, but not sent

Send fax and nothing happens.

1. Check for a dial tone on the phone line by using the Start Fax button.
2. Turn the printer off then on.
3. Use the control panel or the Fax Setup Wizard to configure the fax time, date, and fax header information.
    a. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon.
    b. Open the Fax Setup menu.
    c. Open the Preferences menu.
    d. Open the Fax Header menu.
    e. Enter the correct settings.
4. Verify that any extension phones on the line are hung up.
5. If using a DSL service, make sure that the phone line connection to the printer includes a high-pass filter.

Printer is password protected

If a network administrator has set a printer password, then you must obtain the password in order to use the printer fax features.

Unable to use fax functions from the control panel

- The printer might be password protected. Use the HP Embedded Web Server, HP Toolbox software, or the control panel to set a password.
- If you do not know the password for the printer, contact your system administrator.
- Verify with the system administrator that the fax functionality has not been disabled.

Unable to use speed dials

- Make sure that the fax number is valid.
- If an outside line requires a prefix, turn on the Dial Prefix option or include the prefix in the speed dial number.

a. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon.

b. Open the Fax Setup menu.

c. Open the Preferences menu.

d. Open the Dialing Prefix menu.

e. Select the On setting.

Unable to use group dials

- Make sure that the fax number is valid.
- If an outside line requires a prefix, turn on the Dial Prefix option or include the prefix in the speed dial number.

  a. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board , and then touch the Setup icon.

  b. Open the Fax Setup menu.

  c. Open the Preferences menu.

  d. Open the Dialing Prefix menu.

  e. Select the On setting.
- Set up all entries in the group with speed dial entries.

  a. Open an unused speed dial entry.

  b. Enter the fax number for the speed dial.

  c. Touch the OK to save the speed dial.

Receive a recorded error message from the phone company when trying to send a fax

- Make sure you dial the fax number correctly, and make sure that the phone service is not blocked. For example, some phone services might prevent long distance calling.
- If an outside line requires a prefix, turn on the Dialing Prefix option or include the prefix in the speed dial number.

  a. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon.

  b. Open the Fax Setup menu.

  c. Open the Preferences menu.

  d. Open the Dialing Prefix menu.

  e. Select the On setting.

  NOTE: To send a fax without a prefix, when the Dialing Prefix option is turned on, send the fax manually.
- Send a fax to an international number

a. If a prefix is required, manually dial the telephone number with the prefix.

b. Enter the country/region code before dialing the phone number.

c. Wait for pauses as you hear the tones on the phone.

d. Send the fax manually from the control panel.

Unable to send a fax when a phone is connected to the printer

- Make sure that the telephone is hung up.
- Make sure that the telephone is not being used for a voice call when faxing.
- Disconnect the phone from the line, and then try sending the fax.

Troubleshoot fax codes and trace reports

View and interpret fax error codes

Use fax error codes from the fax activity log to solve problems with the printer fax features.

Error code	Description	Solution
232	Possible causes include the following: • A communication failure has occurred between the two machines. • The user at the remote machine might have pressed the Stop or Cancel button. • The power at the remote machine has been interrupted, or deliberately turned off causing the fax session to be interrupted.	1. Resend the fax at a different time when telephone line conditions have improved. 2. If the error persists, and error correction is in use for the fax session, disable the Error Correction setting.
282	Possible causes include the following: • The printer has not received any data at the start of a page during reception in error correction mode, but the modem has not detected a remote disconnect. • The remote machine is probably transmitting sync frames instead of data and has either jammed or broken.	Have the sender verify that the sending machine is working correctly, and then request that the sender resend the fax.
321	There was a communication error with the receiving fax machine due to poor telephone line conditions.	Resend the fax at a different time when telephone line conditions have improved.

Error code	Description	Solution
344-348	Possible causes include the following: • The remote machine has failed to respond to a fax command from the local machine due to the connection being interrupted. • The user at the remote machine might have pressed the Stop or Cancel button. • In rare instances, incompatibility between the two machines can cause the remote machine to simply terminate the call.	1. Resend the fax at a different time when telephone line conditions have improved. 2. If the error persists, and error correction is in use for the fax session, disable the Error Correction setting.
381	Possible causes include the following: • The remote machine has failed to respond to a fax command from the local machine due to the connection being interrupted. • The user at the remote machine might have pressed the Stop button.	1. Resend the fax at a different time when telephone line conditions have improved. 2. If the error persists, and error correction is in use for the fax session, disable the Error Correction setting.

Fax trace report

A fax T.30 trace report has information that can help resolve fax transmission problems. If you call HP for help in resolving these problems, print a T.30 trace report before you call.

1. From the Home screen on the printer control panel swipe up to gain access to home screen dash board, and then touch the Home button, once, and then press the Home button twice to gain access to the Service menu.
2. Touch the Special Reports menu.
3. Touch the Fax Trace menu.
4. Touch the Print T.30 Trace button, and then touch the Print button.

NOTE: This procedure prints a report for the last fax job, successful or not. To generate a report for each unsuccessful fax job, select the If Error setting. To generate a report for each fax job, select the At End of Call setting.

Fax logs and reports

Use the following instructions to print fax logs and reports:

Print all fax reports

Use this procedure to print all of the following reports at one time:

- Last Transaction Log
- Print Fax Log
- Phone Book Report
- Junk Fax Report

- Billing Report (when Billing Codes are turned on)
- Configuration Report
- Usage Page

1. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon.
2. Touch the Reports button.
3. Touch the Fax Reports button.
4. Touch the name of the report that you want to print.

Print individual fax reports

1. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon.
2. Touch the Reports button.
3. Touch the Fax Reports button.
4. Touch the name of the report that you want to print.

Set the fax error report

A fax error report is a brief report that indicates the printer experienced a fax job error. You can set it to print after the following events:

- Every fax error (the factory-set default)
- Send fax error
- Receive fax error
- Never

NOTE: With this option, you will have no indication that a fax failed to be transmitted unless you print a Fax Error Report. This option can be turned on and will automatically print when an error occurs. There is a Last Transaction Log or Last 500 Transaction Fax Logs available.

1. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, touch the Setup icon.
2. Touch the Fax Setup button.
3. Touch the Reports button.
4. Touch the Fax Error Report button, and then touch the printing option that you want to use.

Set the fax-error-correction mode

Usually, the printer monitors the signals on the telephone line while it is sending or receiving a fax. If the printer detects an error during the transmission and the error-correction setting is On, the printer can request that the portion of the fax be resent. The factory-set default for error correction is On.

You should turn off error correction only if you are having trouble sending or receiving a fax, and you are willing to accept the errors in the transmission. Turning off the setting might be useful when you are trying to send a fax overseas or receive one from overseas, or if you are using a satellite telephone connection.

1. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon.
2. Touch the Fax Setup menu.
3. Touch the Preferences menu.
4. Touch the Error Correction button, and then touch the toggle button to turn it On.

Change the fax speed

The fax-speed setting is the modem protocol that the printer uses to send faxes. It is the worldwide standard for full-duplex modems that send and receive data across telephone lines at up to 33,600 bits per second (bps). The factory-set default for the fax-speed setting is Fast 33,600 bps (V.34).

You should change the setting only if you are having trouble sending a fax to or receiving a fax from a particular device. Decreasing the fax speed might be useful when you are trying to send a fax overseas, or receive one from overseas, or if you are using a satellite telephone connection.

1. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch the Setup icon.
2. Touch the Fax Setup menu.
3. Touch the Preferences menu.
4. Scroll to and touch the Speed button, and then touch the speed setting that you want to use.

Use fax on a DSL, PBX, or ISDN system

HP printers are designed specifically for use with traditional analog phone services. They are not designed to work on DSL, PBX, ISDN lines, or VoIP services, but they work with the proper setup and equipment.

NOTE: HP recommends discussing DSL, PBX, ISDN, and VoIP setup options with the service provider.

The HP LaserJet printer is an analog device that is not compatible with all digital phone environments (unless a digital-to-analog converter is used). HP does not guarantee that the printer will be compatible with digital environments or digital-to-analog converters.

DSL

A digital subscriber line (DSL) uses digital technology over standard copper telephone wires. This printer is not directly compatible with those digital signals. However, if the configuration is specified during DSL setup, the signal can be separated so that some of the bandwidth is used to transmit an analog signal (for voice and fax) while the remaining bandwidth is used to transmit digital data.

NOTE: Not all faxes are compatible with DSL services. HP does not guarantee that the printer will be compatible with all DSL service lines or providers.

A typical DSL modem employs a filter to separate the higher frequency DSL modem communication from lower frequency analog phone and fax modem communication. It is often necessary to use a filter with analog phones and analog fax products that are connected to a telephone line used by a DSL modem. The DSL service provider usually provides this filter. Contact the DSL provider for more information or for assistance.

PBX

The printer is an analog device that is not compatible in all digital phone environments. Digital-to-analog filters or converters might be needed for faxing functionality. If faxing issues occur in a PBX environment, it might be necessary to contact the PBX provider for assistance. HP does not guarantee that the printer will be compatible with digital environments or digital-to-analog converters.

Contact the PBX provider for more information and for assistance.

ISDN

The printer is an analog device that is not compatible in all digital phone environments. Digital-to-analog filters or converters might be needed for faxing functionality. If faxing issues occur in an ISDN environment, it might be necessary to contact the ISDN provider for assistance. HP does not guarantee that the printer will be compatible with ISDN digital environments or digital-to-analog converters.

Solve email problems (MFP models only)

If Scan to E-mail problems occur, try these solutions:

- Make sure this feature has been set up. If this feature has not been set up, use the setup wizard in the HP Device Toolbox (Windows) or HP Utility for Mac OS X software to set it up.
- Make sure the Scan to Email feature is enabled. If it has been disabled, enable the feature through the HP Device Toolbox (Windows) or HP Utility for Mac OS X software.
- Make sure that the printer is connected to a computer or to a network.

Cannot connect to the email server

- Make sure the SMTP or LDAP server name is correct. Check this setting with your system administrator or Internet Service Provider.
- If the printer cannot establish a secure connection to the SMTP or LDAP server, try without the secure connection or try a different server or port. Check this setting with your system administrator or Internet Service Provider.
- If the SMTP or LDAP server requires authentication, make sure a valid user name and password are used.
- If the SMTP or LDAP server uses an authentication method that is not supported, try a different server. Check this setting with your system administrator or Internet Service Provider.

Validate the SMTP gateway (Windows)

1. Open an MS-DOS command prompt: click **Start**, click **Run**, type `cmd`, and then press the Enter key.
2. In the command prompt window, type `telnet` followed by the SMTP gateway address and then the number 25, which is the port over which the printer is communicating. For example, type `telnet 123.123.123.123 25` where "123.123.123.123" represents the SMTP gateway address.
3. Press the Enter key. If the SMTP gateway address is not valid, the response contains the message **Could not open connection to the host on port 25: Connect Failed**.
4. If the SMTP gateway address is not valid, contact the network administrator.

Validate the LDAP gateway (Windows)

1. Open Windows Explorer. In the address bar, type `LDAP://` immediately followed by the LDAP gateway address. For example, type `LDAP://12.12.12.12` where "12.12.12.12" represents the LDAP gateway address.
2. Press the Enter key. If the LDAP gateway address is valid, the **Find People** dialog box opens.
3. If the LDAP gateway address is not valid, contact the network administrator.

Update the firmware

HP offers periodic printer updates, new Web Services apps, and new features to existing Web Services apps. Follow these steps to update the firmware for a single printer. When you update the firmware, Web Service apps will update automatically.

There are two supported methods to perform a firmware update on this printer. Use only one of the following methods to update the printer firmware.

Method one: Update the firmware using the control panel

Use these steps to load the firmware from the control panel (for network-connected printers only), and/or set the printer to automatically load future firmware updates. For USB-connected printers, use method two.

1. Make sure the printer is connected to a wired (Ethernet) or wireless network with an active Internet connection.

   NOTE: The printer must be connected to the internet to update the firmware via a network connection.

2. From the Home screen on the printer control panel swipe down to gain access to the home screen dash board, and then touch Setup menu.

   - For touchscreen control panels, touch the Setup icon.
   - For 2 line control panels, press OK, and then use the left ◀ or the right ▶ buttons to scroll through the menus.

3. Scroll to and open the Printer Maintenance menu, and then open the Update the printer menu.

   NOTE: If the Update the printer option is not listed, use method two.

4. Check for updates.

   - For touchscreen control panels, touch **Check for Updates Now**.
   - For 2-line display control panels, select **Check Now**.

   NOTE: The printer automatically checks for an update, and if a newer version is detected, the update process automatically starts.

5. Set the printer to automatically update the firmware when updates become available.

   - For touchscreen control panels swipe down to gain access to the home screen dash board, and then touch the Setup Menu, button.
   - For 2-line control panels, use the left ◀ or the right ▶ buttons to scroll through the menus.

   Scroll to and open the Setup menu, open the Printer Maintenance menu, and then scroll to Update the Printer menu, then select Printer Update Options, and then choose from the following options:

   - Install Automatically
   - Alert me when available
   - Do not check

   Set the printer to automatically update the firmware.

- For touchscreen control panels, set the Mange Updates option to **Allow Updates** and select OK, and then set the **Check automatically** option to ON.
- For 2-line control panels, set the Manage Updates then select **Allow Updates** option to **YES**, and then set the **Automatic Check** option to **ON**.

Method two: Update the firmware using the Firmware Update Utility

Use these steps to manually download and install the Firmware Update Utility from HP.com.

NOTE: This method is the only firmware update option available for printers connected to the computer via a USB cable. It also works for printers connected to a network.

1. Go to www.hp.com/go/support, click the **Drivers & Software** link, type the printer name in the search field, press the ENTER button, and then select the printer from the list of search results.
2. Select the operating system.
3. Under the **Firmware** section, locate the **Firmware Update Utility**.
4. Click **Download**, click **Run**, and then click **Run** again.
5. When the utility launches, select the printer from the drop-down list, and then click **Send Firmware**.

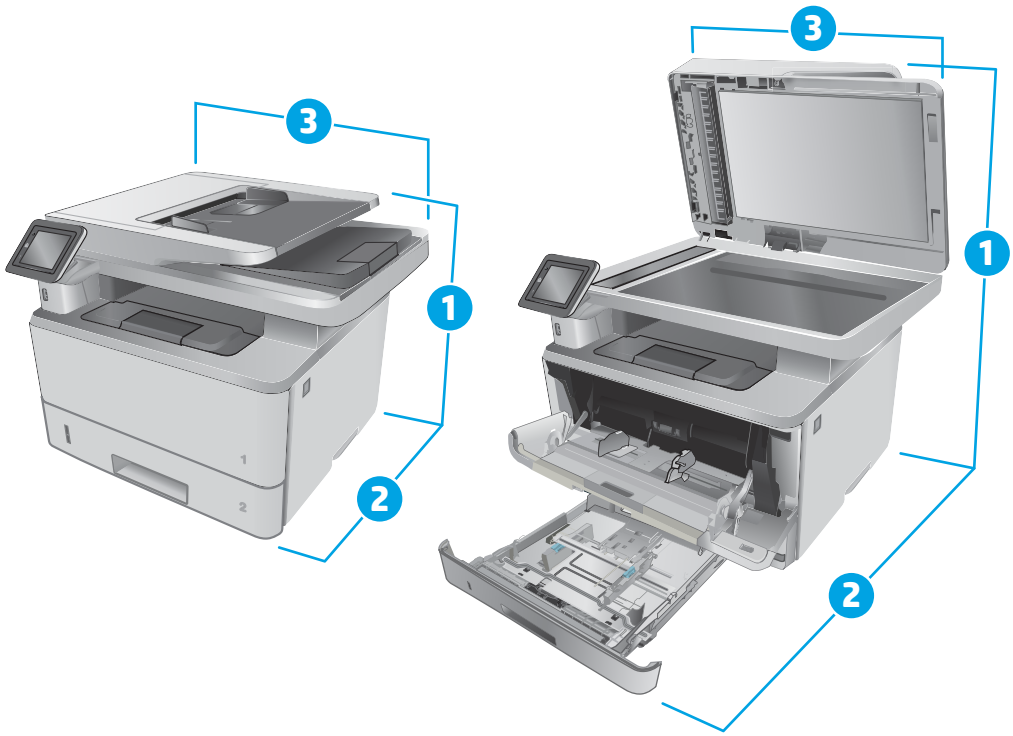
   NOTE: To print a configuration page to verify the installed firmware version before or after the update process, click **Print Config**.
6. Follow the on-screen instructions to complete the installation, and then click the **Exit** button to close the utility.

A Printer specifications

- Printer dimensions M329, M428, and M429
- Printer dimensions M304, M305, M404, and M405
- Printer space requirements
- Power consumption, electrical specifications, and acoustic emissions
- Operating-environment range
- Certificate of Volatility

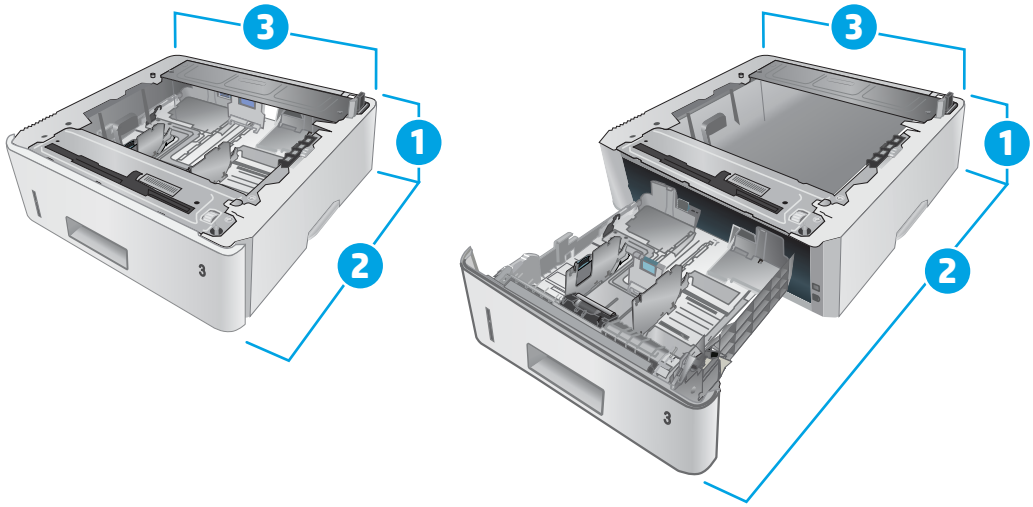
Printer dimensions M329, M428, and M429

Figure A-1 Dimensions for the M329, M428, and M429 models



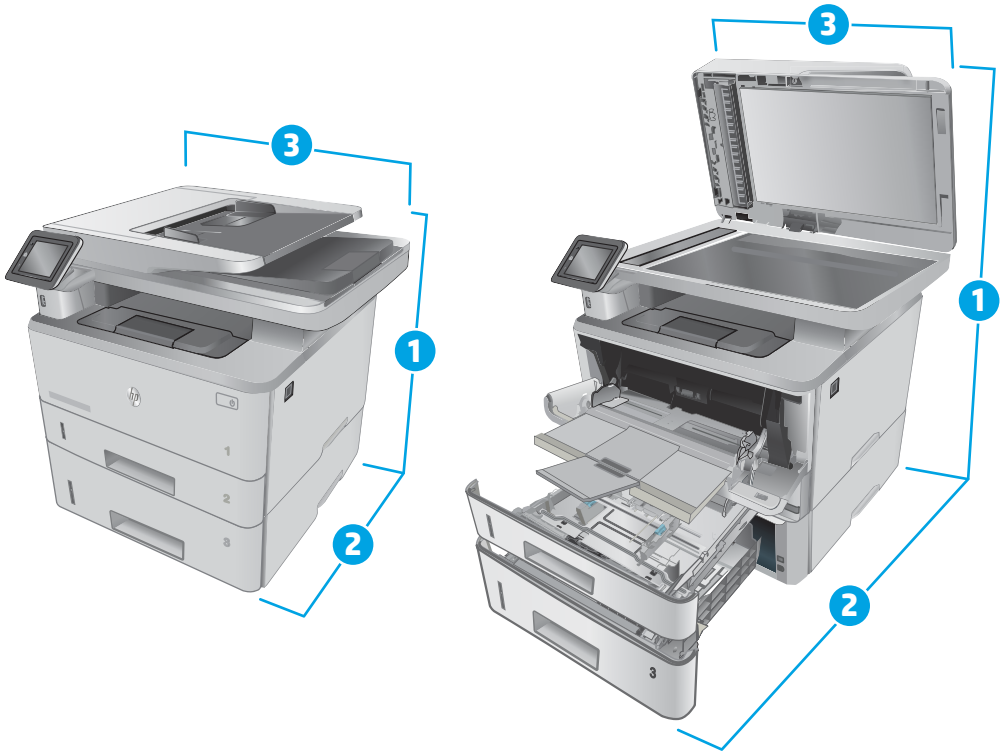
	Printer fully closed	Printer fully open
1. Height	323 mm (12.7 in)	577 mm (22.7 in)
2. Depth	390 mm (15.3 in)	839 mm (33 in)
3. Width	420 mm (16.5 in)	453 mm (17.8 in)
Weight (with cartridges)	12.9 kg (28.4 lb)	

Figure A-2 Dimensions for the optional 550-sheet tray



	Tray fully closed	Tray fully open
1. Height	131 mm (5.1 in)	131 mm (5.1 in)
2. Depth	357 mm (14 in)	781 mm (30.8 in)
3. Width	381 mm (15 in)	381 mm (15 in)
Weight (with cartridges)	3.5 kg (7.7 lb)	

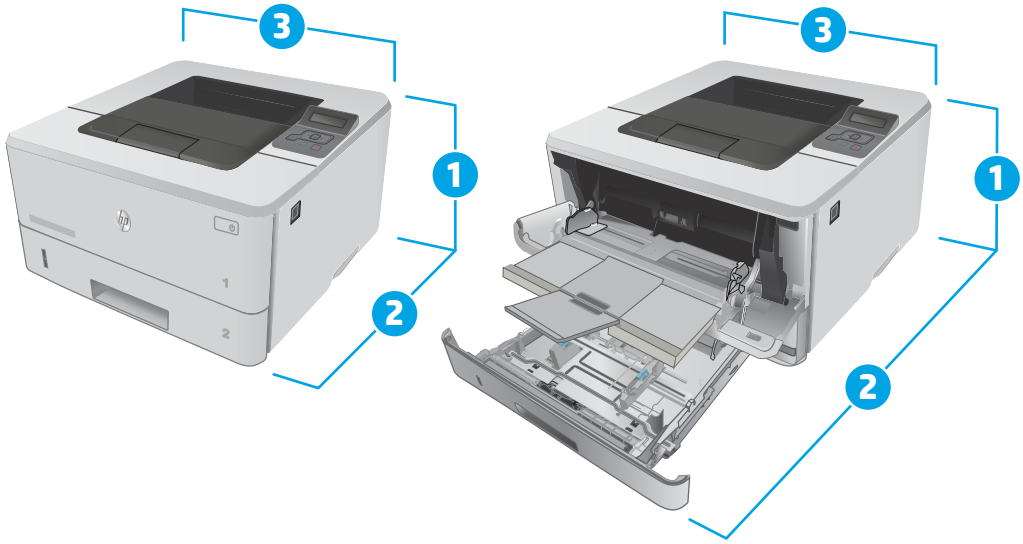
Figure A-3 Dimensions for the printer with the optional 550-sheet tray



	Printer and tray fully closed	Printer and tray fully open
1. Height	452 mm (17.8 in)	706 mm (27.8 in)
2. Depth	390 mm (15.3 in)	839 mm (33 in)
3. Width	420 mm (16.5 in)	453 mm (17.8 in)
Weight (with cartridges)	16.6 kg (36.6 lb)	

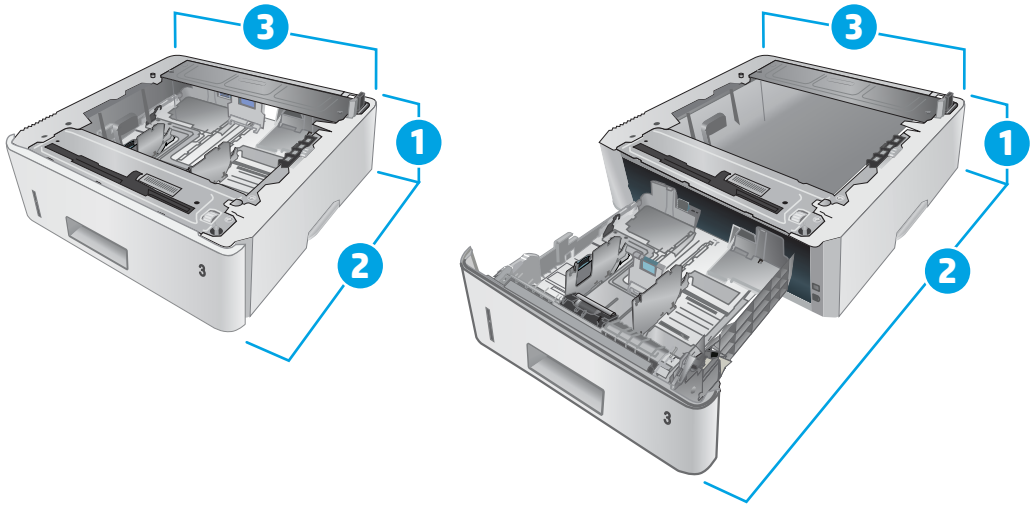
Printer dimensions M304, M305, M404, and M405

Figure A-4 Dimensions for the M304, M305, M404, and M405 models



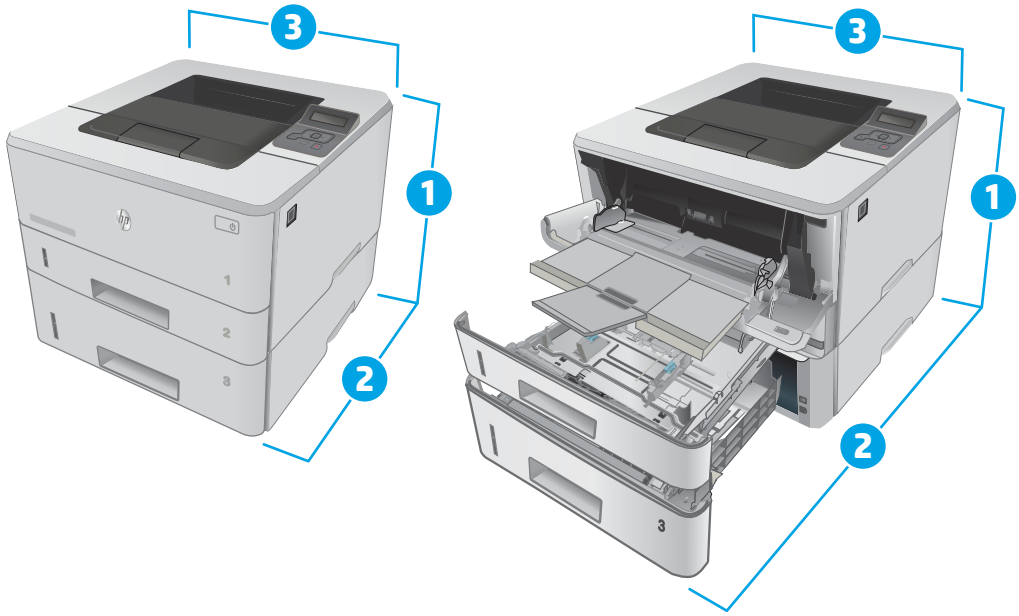
	Printer fully closed	Printer fully open
1. Height	216 mm (8.5 in)	241 mm (9.5 in)
2. Depth	357 mm (14 in)	781 mm (30.8 in)
3. Width	381 mm (15 in)	381 mm (15 in)
Weight (with cartridges)	8.9 kg (19.6 lb)	

Figure A-5 Dimensions for the optional 550-sheet tray



	Tray fully closed	Tray fully open
1. Height	131 mm (5.1 in)	131 mm (5.1 in)
2. Depth	357 mm (14 in)	781 mm (30.8 in)
3. Width	381 mm (15 in)	381 mm (15 in)
Weight	3.7 kg (8.2 lb)	

Figure A-6 Dimensions for the printer with the optional 550-sheet tray



	Printer and tray fully closed	Printer and tray fully open
1. Height	345 mm (13.6 in)	372 mm (14.6 in)
2. Depth	357 mm (14 in)	781 mm (30.8 in)
3. Width	381 mm (15 in)	381 mm (15 in)
Weight (with cartridges)	12.6 kg (27.8 lb)	

Printer space requirements

HP recommends that 30 mm (1.81 in) be added to the printer dimensions provided in this chapter to make sure there is sufficient space to open doors and covers, and to provide proper ventilation. See Printer dimensions M329, M428, and M429 on page 248 and/or Printer dimensions M304, M305, M404, and M405 on page 250.

Power consumption, electrical specifications, and acoustic emissions

See www.hp.com/support/ljM304, www.hp.com/support/ljM404, www.hp.com/support/ljM329MFP, www.hp.com/support/ljM428MFP,www.hp.com/support/ljM429MFP for current information.

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

Operating-environment range

Table A-1 Operating-environment specifications

Environment	Recommended	Allowed
Temperature	17.5° to 25°C (63.5° to 77°F)	15° to 32°C (59° to 90.5°F)
Relative humidity	30% to 70% relative humidity (RH)	10% to 80% RH

Certificate of Volatility

Figure A-7 Certificate of Volatility M304/M305/M404/M405 non-wireless bundle (1 of 2)

Hewlett-Packard Certificate of Volatility

Model:	Part Number:	Address:
HP LaserJet Pro M404 HP LaserJet Pro M405 HP LaserJet Pro M304 HP LaserJet Pro M305	M404d=W1A51A; M404n=W1A52A; M404dn=W1A53A; M405n=W1A57A; M405d=W1A58A; M405dn=W1A59A; M305d= W1A46A; M305dn= W1A47A; M304a= W1A66A	Hewlett Packard Company 11311 Chinden Blvd Boise, ID 83714

Volatile Memory

Does the device contain volatile memory (Memory whose contents are lost when power is removed)?
☒ Yes ☐ No If Yes please describe the type, size, function, and steps to clear the memory below

Type (SRAM, DRAM, etc):	Size:	User Modifiable:	Function:	Steps to clear memory:
DRAM	256M	☐ Yes ☒ No	Used for temporary storage during the processing of jobs and for applications running on the OS.	When the printer is powered off, the memory is erased
Type (SRAM, DRAM, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Steps to clear memory:
Type (SRAM, DRAM, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Steps to clear memory:

Non-Volatile Memory

Does the device contain non-volatile memory (Memory whose contents are retained when power is removed)?
☒ Yes ☐ No If Yes please describe the type, size, function, and steps to clear the memory below

Type (Flash, EEPROM, etc):	Size:	User Modifiable:	Function:	Steps to clear memory:
Flash	256MB	☐ Yes ☒ No	Device FW	NA
Type (Flash, EEPROM, etc): EEPROM	Size: 32KB	User Modifiable: ☒ Yes ☐No	Function: User setting parameters for printer	Steps to clear memory: Restore factory defaults from control panel or EWS
Type (Flash, EEPROM, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Steps to clear memory:

Mass Storage

Does the device contain mass storage memory (Hard Disk Drive, Tape Backup)?
☐ Yes ☒ No If Yes please describe the type, size, function, and steps to clear the memory below

Type (HDD, Tape, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Steps to clear memory:

Figure A-8 Certificate of Volatility M304/M305/M404/M405 non-wireless bundle (2 of 2)

USB
Does the item accept USB input and if so, for what purpose (i.e. Print Jobs, device firmware updates, scan upload)? ☒ Yes ☐ No If Yes please describe below
Rear USB host when configured will accept stored jobs, encrypted files stored and deleted by user.
Can any data other than scan upload be sent to the USB device)? ☒ Yes ☐ No If Yes please describe below
Rear USB host when configured will accept stored jobs, encrypted files stored and deleted by user.

RF/RFID	
Does the item use RF or RFID for receive or transmit of any data including remote diagnostics. (e.g. Cellular phone, Bluetooth) ☐ Yes ☒ No If Yes please describe below	
Purpose:	
Frequency:	Bandwidth:
Modulation:	Effective Radiate Power (ERP):
Specifications:	

Other Transmission Capabilities	
Does the device employ any other methods of non-wired access to transmit or receive any data whatsoever (e.g. anything other than standard hard wired TCP/IP, direct USB, or parallel connections)? ☐ Yes ☒ No If Yes please describe below:	
Purpose:	
Frequency:	Bandwidth:
Modulation:	Effective Radiate Power (ERP):
Specifications:	

Other Capabilities
Does the device employ any other method of communications such as a Modem to transmit or receive any data whatsoever? ☐ Yes ☒ No If Yes please describe below:
Purpose:
Specifications:

Author Information			
Name	Title	Email	Business Unit
	Technical Marketing Engineer		LES SH CA
	Electrical engineer		LES SH R&D
Date Prepared: 12,2018			

Figure A-9 Certificate of Volatility M404/M405 wireless bundle (1 of 2)

Hewlett-Packard Certificate of Volatility		
Model: HP LaserJet Pro M404 HP LaserJet Pro M405	Part Number: M404dw= W1A56A; M405dw= W1A60A	Address: Hewlett Packard Company 11311 Chinden Blvd Boise, ID 83714

Volatile Memory

Does the device contain volatile memory (Memory whose contents are lost when power is removed)?
☒ Yes ☐ No If Yes please describe the type, size, function, and steps to clear the memory below

Type (SRAM, DRAM, etc):	Size:	User Modifiable:	Function:	Steps to clear memory:
	256M	☐ Yes ☒ No	Used for temporary storage during the processing of jobs and for applications running on the OS.	When the printer is powered off, the memory is erased
Type (SRAM, DRAM, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Steps to clear memory: .
Type (SRAM, DRAM, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Steps to clear memory:

Non-Volatile Memory

Does the device contain non-volatile memory (Memory whose contents are retained when power is removed)?
☒ Yes ☐ No If Yes please describe the type, size, function, and steps to clear the memory below

Type (Flash, EEPROM, etc):	Size:	User Modifiable:	Function:	Steps to clear memory:
Flash	256MB	☐ Yes ☒ No	Device FW	NA
Type (Flash, EEPROM, etc): EEPROM	Size: 32KB	User Modifiable: ☒Yes ☐No	Function: User setting parameters for printer	Steps to clear memory: Restore factory defaults from control panel or EWS
Type (Flash, EEPROM, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Steps to clear memory:

Mass Storage

Does the device contain mass storage memory (Hard Disk Drive, Tape Backup)?
☐ Yes ☒ No If Yes please describe the type, size, function, and steps to clear the memory below

Type (HDD, Tape, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Steps to clear memory:

Figure A-10 Certificate of Volatility M404/M405 wireless bundle (2 of 2)

USB
Does the item accept USB input and if so, for what purpose (i.e. Print Jobs, device firmware updates, scan upload)? ☒ Yes ☐ No If Yes please describe below
Rear USB host when configured will accept stored jobs, encrypted files stored and deleted by user.
Can any data other than scan upload be sent to the USB device)? ☒ Yes ☐ No If Yes please describe below
Rear USB host when configured will accept stored jobs, encrypted files stored and deleted by user.

RF/RFID	
Does the item use RF or RFID for receive or transmit of any data including remote diagnostics. (e.g. Cellular phone, Bluetooth) ☒ Yes ☐ No If Yes please describe below	
Purpose: BLE (Bluetooth Low Energy)	
Frequency: BLE 2.4 to 2.485 GHz band	Bandwidth: 0.27 Mbit/s
Modulation: Gaussian frequency shift modulation	Effective Radiate Power (ERP): 10mW max
Specifications:	

Other Transmission Capabilities	
Does the device employ any other methods of non-wired access to transmit or receive any data whatsoever (e.g. anything other than standard hard wired TCP/IP, direct USB, or parallel connections)? ☒ Yes ☐ No If Yes please describe below:	
Purpose: Wireless Network Connectivity	
Frequency: 2.4GHz and 5GHz Bands	Bandwidth: 20/40 MHz
Modulation: Multiple	Effective Radiate Power (ERP): 802.11n/g: 15+/- 1.5dbm 802.11b: 17+/- 1.5dbm
Specifications: 802.11a/b/g/n	

Other Capabilities
Does the device employ any other method of communications such as a Modem to transmit or receive any data whatsoever? ☐ Yes ☒ No If Yes please describe below:
Purpose:
Specifications:

Author Information			
Name	Title	Email	Business Unit
	Technical Marketing Engineer		LES SH CA
			LES SH R&D
Date Prepared: 12,2018			

Figure A-11 Certificate of Volatility M329/M428/M429 non-wireless bundle (1 of 2)

Hewlett-Packard Certificate of Volatility		
Model: HP LaserJet Pro M428 HP LaserJet Pro M429 HP LaserJet Pro M329	Part Number: M428fdn=W1A29A; M428fdn=W1A32A M429fdn=W1A34A; M329dn=W1A23A	Address: Hewlett Packard Company 11311 Chinden Blvd Boise, ID 83714

Volatile Memory				
Does the device contain volatile memory (Memory whose contents are lost when power is removed)? ☒ Yes ☐ No If Yes please describe the type, size, function, and steps to clear the memory below				
Type (SRAM, DRAM, etc): DRAM	Size: 512M	User Modifiable: ☐ Yes ☒ No	Function: Used for temporary storage during the processing of jobs and for applications running on the OS.	Steps to clear memory: When the printer is powered off, the memory is erased
Type (SRAM, DRAM, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Steps to clear memory:
Type (SRAM, DRAM, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Steps to clear memory:

Non-Volatile Memory				
Does the device contain non-volatile memory (Memory whose contents are retained when power is removed)? ☒ Yes ☐ No If Yes please describe the type, size, function, and steps to clear the memory below				
Type (Flash, EEPROM, etc): Flash	Size: 512M	User Modifiable: ☐ Yes ☒ No	Function: Device FW	Steps to clear memory: NA
Type (Flash, EEPROM, etc):	Size:	User Modifiable: ☐ Yes ☐No	Function:	Steps to clear memory:
Type (Flash, EEPROM, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Steps to clear memory:

Mass Storage				
Does the device contain mass storage memory (Hard Disk Drive, Tape Backup)? ☐ Yes ☒ No If Yes please describe the type, size, function, and steps to clear the memory below				
Type (HDD, Tape, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Steps to clear memory:

USB
Does the item accept USB input and if so, for what purpose (i.e. Print Jobs, device firmware updates, scan upload)? ☒ Yes ☐ No If Yes please describe below
Rear USB host when configured will accept stored jobs, encrypted files stored and deleted by user.
Can any data other than scan upload be sent to the USB device)? ☒ Yes ☐ No If Yes please describe below
Rear USB host when configured will accept stored jobs, encrypted files stored and deleted by user.

Figure A-12 Certificate of Volatility M329/M428/M429 non-wireless bundle (2 of 2)

RF/RFID	
Does the item use RF or RFID for receive or transmit of any data including remote diagnostics. (e.g. Cellular phone, Bluetooth) ☐ Yes ☒ No If Yes please describe below	
Purpose:	
Frequency:	Bandwidth:
Modulation:	Effective Radiate Power (ERP):
Specifications:	

Other Transmission Capabilities	
Does the device employ any other methods of non-wired access to transmit or receive any data whatsoever (e.g. anything other than standard hard wired TCP/IP, direct USB, or parallel connections)? ☐ Yes ☒ No If Yes please describe below:	
Purpose:	
Frequency:	Bandwidth:
Modulation:	Effective Radiate Power (ERP):
Specifications:	

Other Capabilities
Does the device employ any other method of communications such as a Modem to transmit or receive any data whatsoever? ☒ Yes ☐ No If Yes please describe below:
Purpose: Fax
Specifications: V34, V32, V23, V21

Author Information			
Name	Title	Email	Business Unit
	Technical Marketing Engineer		LES SH CA
			LES SH R&D
Date Prepared: 12,2018			

Figure A-13 Certificate of Volatility M329/M428/M429 wireless bundle (1 of 2)

Hewlett-Packard Certificate of Volatility		
Model: HP LaserJet Pro M428 HP LaserJet Pro M429 HP LaserJet Pro M329	Part Number: M428dw= W1A28A; M428fdw= W1A30A M429dw= W1A33A; M429fdw= W1A35A; M428dw= W1A31A; M329dw = W1A24A	Address: Hewlett Packard Company 11311 Chinden Blvd Boise, ID 83714

Volatile Memory

Does the device contain volatile memory (Memory whose contents are lost when power is removed)?
☒ Yes ☐ No If Yes please describe the type, size, function, and steps to clear the memory below

Type (SRAM, DRAM, etc):	Size:	User Modifiable:	Function:	Steps to clear memory:
	512M	☐ Yes ☒ No	Used for temporary storage during the processing of jobs and for applications running on the OS.	When the printer is powered off, the memory is erased
Type (SRAM, DRAM, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Steps to clear memory: .
Type (SRAM, DRAM, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Steps to clear memory:

Non-Volatile Memory

Does the device contain non-volatile memory (Memory whose contents are retained when power is removed)?
☒ Yes ☐ No If Yes please describe the type, size, function, and steps to clear the memory below

Type (Flash, EEPROM, etc):	Size:	User Modifiable:	Function:	Steps to clear memory:
Flash	512MB	☐ Yes ☒ No	Device FW	NA
Type (Flash, EEPROM, etc): EEPROM	Size: 32KB	User Modifiable: ☒ Yes ☐No	Function: User setting parameters for printer	Steps to clear memory: Restore factory defaults from control panel or EWS
Type (Flash, EEPROM, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Steps to clear memory:

Mass Storage

Does the device contain mass storage memory (Hard Disk Drive, Tape Backup)?
☐ Yes ☒ No If Yes please describe the type, size, function, and steps to clear the memory below

Type (HDD, Tape, etc):	Size:	User Modifiable: ☐ Yes ☐ No	Function:	Steps to clear memory:

USB

Does the item accept USB input and if so, for what purpose (i.e. Print Jobs, device firmware updates, scan upload)?
☒ Yes ☐ No If Yes please describe below

Rear USB host when configured will accept stored jobs, encrypted files stored and deleted by user.

Can any data other than scan upload be sent to the USB device)?
☒ Yes ☐ No If Yes please describe below

Rear USB host when configured will accept stored jobs, encrypted files stored and deleted by user.

Figure A-14 Certificate of Volatility M329/M428/M429 wireless bundle (2 of 2)

RF/RFID	
Does the item use RF or RFID for receive or transmit of any data including remote diagnostics. (e.g. Cellular phone, Bluetooth) ☒ Yes ☐ No If Yes please describe below	
Purpose: BLE (Bluetooth Low Energy)	
Frequency: BLE 2.4 to 2.485 GHz band	Bandwidth: 0.27 Mbit/s
Modulation: Gaussian frequency shift modulation	Effective Radiate Power (ERP): 10mW max
Specifications:	

Other Transmission Capabilities	
Does the device employ any other methods of non-wired access to transmit or receive any data whatsoever (e.g. anything other than standard hard wired TCP/IP, direct USB, or parallel connections)? ☒ Yes ☐ No If Yes please describe below:	
Purpose: Wireless Network Connectivity	
Frequency: 2.4GHz and 5GHz Bands	Bandwidth: 20/40 MHz
Modulation: Multiple	Effective Radiate Power (ERP): 802.11n/g: 15+/- 1.5dbm 802.11b: 17+/- 1.5dbm
Specifications: 802.11a/b/g/n	

Other Capabilities
Does the device employ any other method of communications such as a Modem to transmit or receive any data whatsoever? ☒ Yes ☐ No If Yes please describe below:
Purpose: Fax
Specifications: V34, V32, V23, V21

Author Information			
Name	Title	Email	Business Unit
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			LES SH R&D
Date Prepared: 12,2018			

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