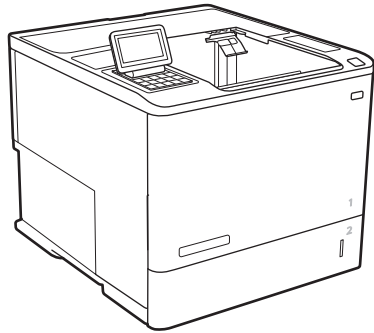


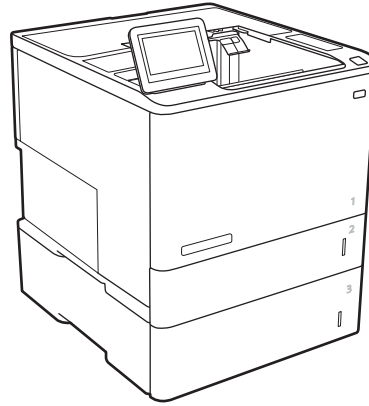


# LaserJet Enterprise M607, M608, M609 LaserJet Enterprise MFP M631, M632, M633

## Troubleshooting Manual



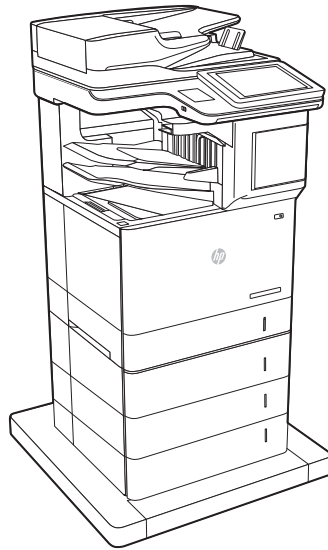
M607n, M607dn,  
M608n, M608dn, M608dh, M609dn



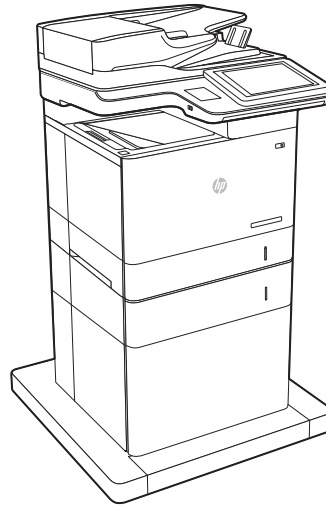
M608x, M609x



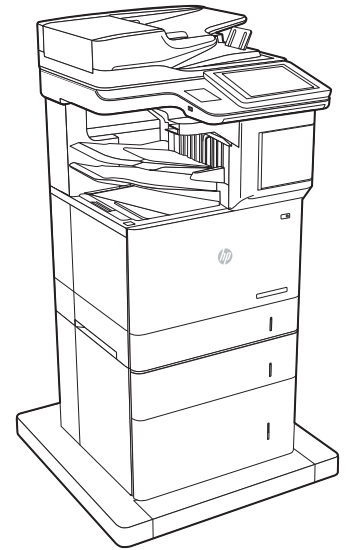
M631dn  
Flow M631h  
M632h  
M633fh



M631z



M632fht



Flow M632z  
Flow M633z



[www.hp.com/support/ljM607](http://www.hp.com/support/ljM607)  
[www.hp.com/support/ljM608](http://www.hp.com/support/ljM608)  
[www.hp.com/support/ljM609](http://www.hp.com/support/ljM609)  
[www.hp.com/support/ljM631MFP](http://www.hp.com/support/ljM631MFP)  
[www.hp.com/support/ljM632MFP](http://www.hp.com/support/ljM632MFP)  
[www.hp.com/support/ljM633MFP](http://www.hp.com/support/ljM633MFP)  
For printer part removal procedures and parts diagrams information, see the Repair Manual.





**HP LaserJet Enterprise M607, M608, M609.  
MFP M631, MFP M632, MFP M633**

**Troubleshooting Manual**

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## Conventions used in this guide

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 **TIP:** Helpful hints or shortcuts.

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

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

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

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

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

---



## For additional service and support information

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

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

At these locations, find information on the following topics:

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

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

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







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# 1 Theory of operation

- [Related documentation and software](#)
- [Basic operation](#)
- [Engine-control system](#)
- [Laser scanner system](#)
- [Image formation system](#)
- [Toner cartridge](#)
- [Pickup, feed, and delivery system](#)
- [Input accessories](#)
- [Output accessories](#)
- [Scanning and image capture system \(M631, M632, M633\)](#)
- [Document feeder system \(M631, M632, M633\)](#)

## Related documentation and software

HP service personnel, go to the Service Access Work Bench (SAW) at <http://h41302.www4.hp.com/km/saw/home.do>.

Channel partners, go to HP Channel Services Network (CSN) at <https://h30125.www3.hp.com/hpcsn>.

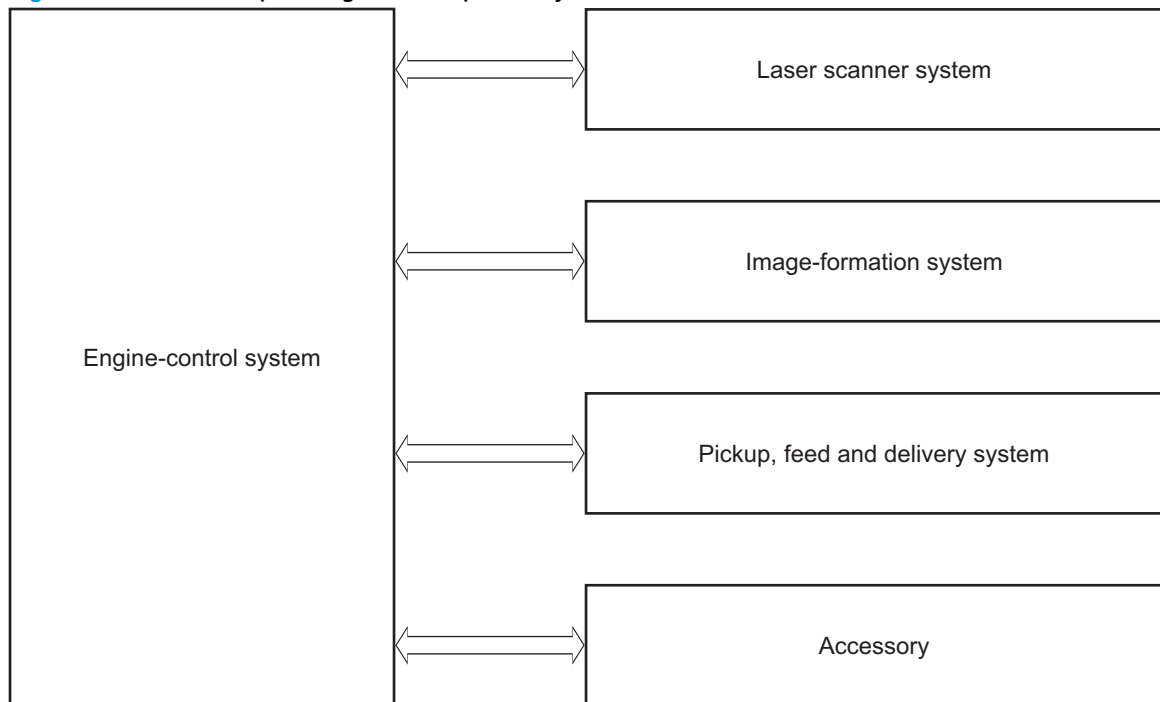
## Basic operation

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:

- The engine-control system, which includes the high-voltage and low-voltage power supplies (HVPS and LVPS), fuser control circuits, and the DC controller printed circuit assembly (PCA)
- The laser/scanner system, which forms the latent image on the photosensitive drum
- The image-formation system, which transfers a toner image onto the paper
- The pickup, feed and delivery system, which uses a system of rollers and belts to transport the paper through the printer
- Optional accessories (paper feeder, paper decks, staple stacker multi-bin mailbox)

**Figure 1-1** Relationship among 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**

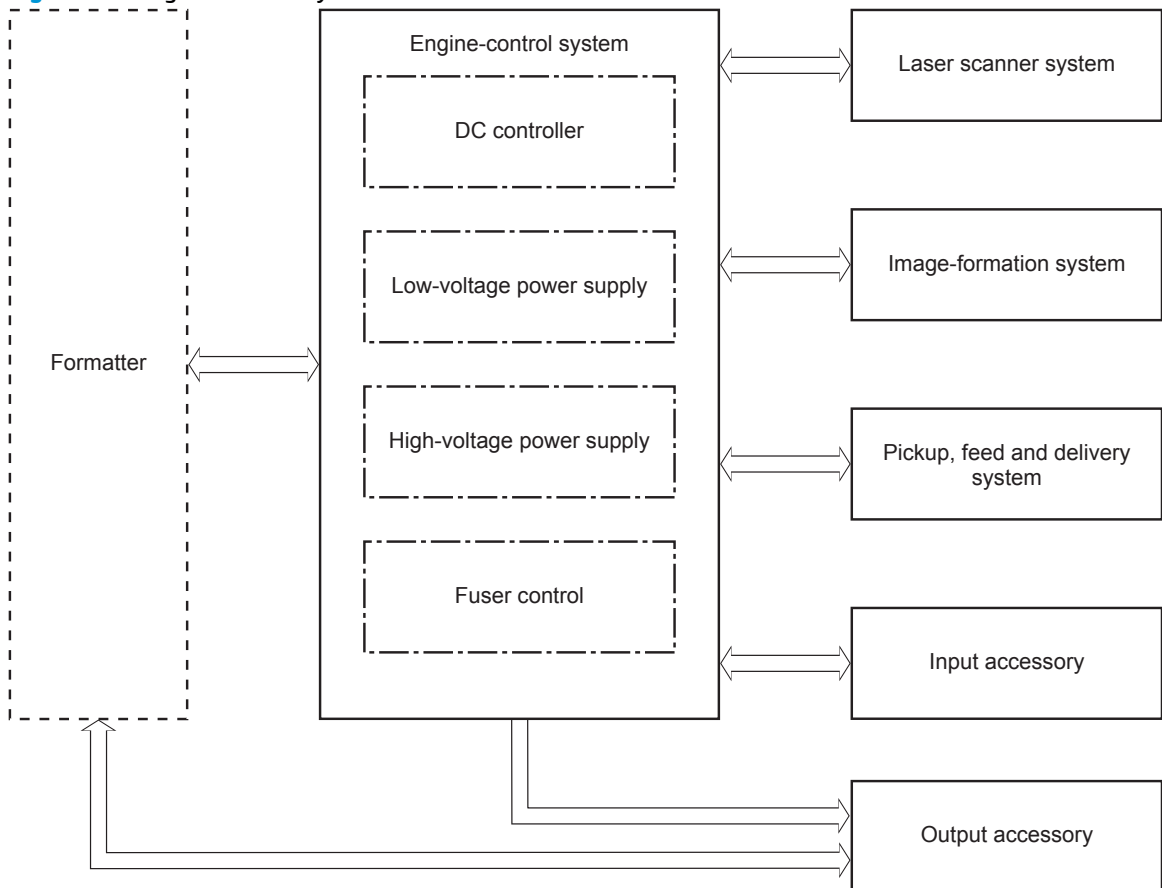
Period	Duration	Description
Waiting	From the time the power is turned on, the door is closed, or when the printer exits Sleep mode until the printer is ready for printing.	<ul style="list-style-type: none"> <li>• Heats the fuser film in the fuser</li> <li>• Detects the toner cartridge</li> <li>• Rotates and stops each motor</li> <li>• Rotates and stops each fan</li> <li>• Cleans the transfer roller</li> </ul>
Standby	From the end of the waiting sequence, the last rotation until the formatter receives a print command, or until the printer is turned off.	<ul style="list-style-type: none"> <li>• Is in the Ready state</li> <li>• Enters Sleep mode if the formatter sends the sleep command</li> <li>• Rotates and stops each fan</li> </ul>
Initial rotation	From the time the formatter receives a print command until the paper enters the paper path.	<ul style="list-style-type: none"> <li>• Rotates each motor</li> <li>• Rotates each fan</li> <li>• Activates the high-voltage power supply (high-voltage bias)</li> <li>• Prepares the laser/scanner unit</li> <li>• Warms the fuser to the correct temperature</li> </ul>
Printing	From the time the first sheet of paper enters the paper path until the last sheet has passed through the fuser.	<ul style="list-style-type: none"> <li>• Forms the image on the photosensitive drums</li> <li>• Transfers the toner to the paper</li> <li>• Fuses the toner image onto the paper</li> </ul>
Last rotation	From the time the last sheet of paper exits the fuser until the motors stop rotating.	<ul style="list-style-type: none"> <li>• Stops each motor</li> <li>• Stops each fan</li> <li>• Stops the high-voltage power supply (high-voltage bias)</li> <li>• Stops the laser/scanner unit</li> <li>• Turns the fuser heater off</li> <li>• If another print command is received, the printer enters the initial rotation period when the last rotation is complete.</li> </ul>

# Engine-control system

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

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

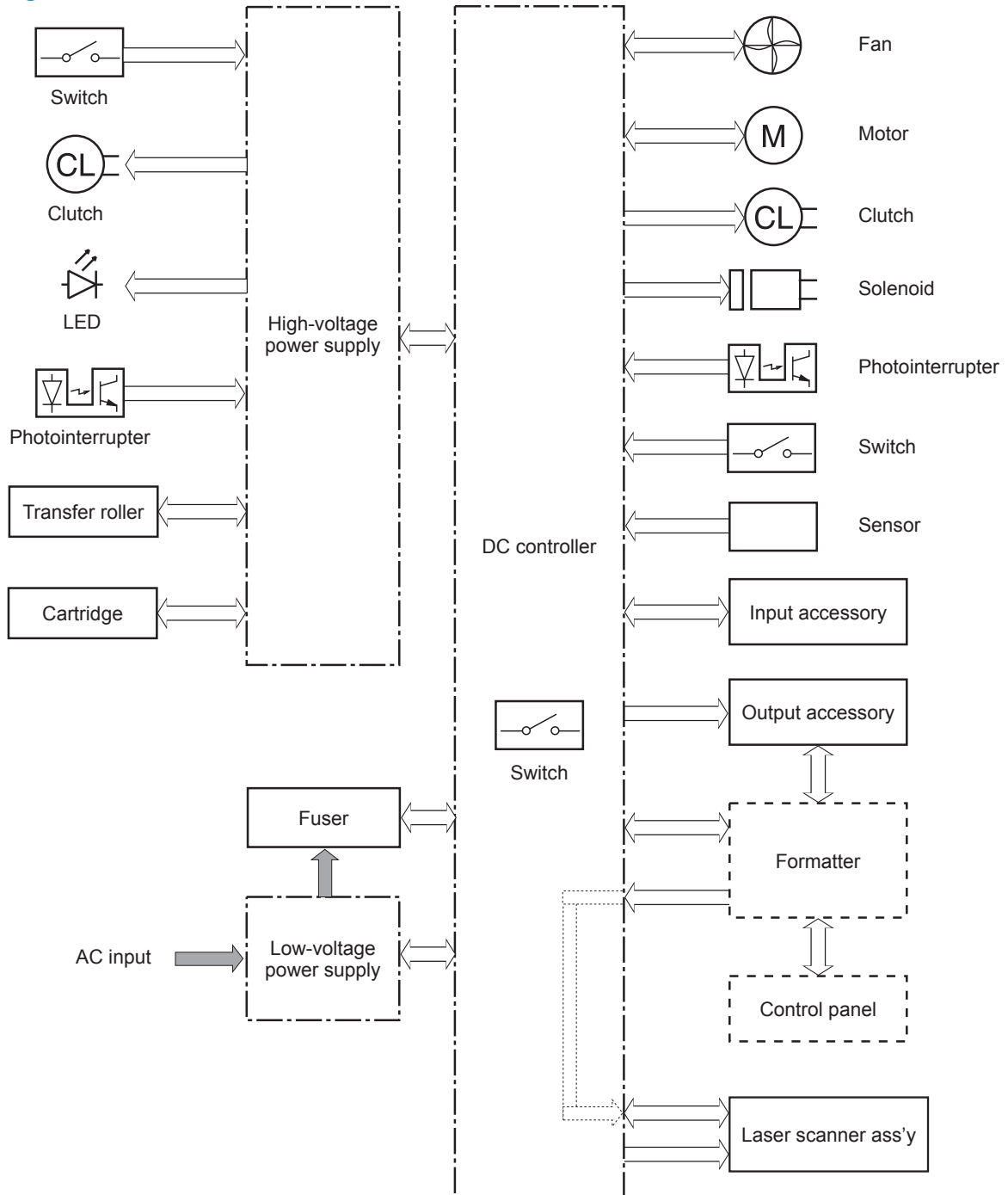
**Figure 1-2** Engine-control system



## DC controller

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

**Figure 1-3** DC controller





## Motors

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

The DC controller monitors the fuser motor and the drum motor to determine whether 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, fuser output roller, output roller, duplex switchback roller (duplex models)	Yes
M2	Drum motor	Drives the photosensitive drum, primary charging roller, transfer roller, tray 1 pickup roller, tray 1 feed roller (M607, M608, M609 models), tray 2 pickup roller, tray 2 feed roller, registration roller, feed roller, duplex feed roller (M607dn, M608n/dh/x, M631, M632, M633 models), each roller for input accessory	Yes
M3	Lifter motor	Drives the Tray 2 lifter	No
M4	Scanner motor	Drives the scanner mirror	No

## Fans

The printer has four fans for preventing the temperature from rising in the printer and for cooling the printed pages.

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

**Table 1-3 Fans**

Abbreviation	Name	Cooling area	Type	Speed
FM1	Scanner fan	Toner cartridge and laser scanner assembly	Intake	Full
FM2	Duplex fan	Duplex feed area	Intake	Full
FM3	Cartridge upper fan	Toner cartridge, laser scanner assembly, and around the low-voltage power supply	Intake	Full/Low
FM4	Cartridge lower fan	Toner cartridge, laser scanner assembly, and around the low-voltage power supply	Intake	Full/Low

## Solenoids

**Table 1-4 Solenoids**

Component abbreviation	Component name
SL1	Tray 1 pickup solenoid
SL2	Developer alienation solenoid

## Clutches

**Table 1-5 Clutches**

Component abbreviation	Component name
CL1	Tray 1 feed clutch (M607, M608, M609 models)
CL2	Duplex feed clutch
CL3	Tray 2 pickup clutch
CL4	Duplex switchback clutch (M607dn, M608dn/x, M609dn/dh/x, M631, M632, M633 models)

## Switches

**Table 1-6 Switches**

Component abbreviation	Component name
SW1	24V interlock switch
SW2	Front door switch (M607, M608, M609 models)

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

<b>Component abbreviation</b>	<b>Component name</b>
SW2	Left door switch (M631, M632, M633 models)
SW4	Tray 2 media size switch 1
SW5	Tray 2 media size switch 2
SW6	Rear door switch R (M607, M608, M609 models)
SW7	Rear door switch L (M607, M608, M609 models)
SW6	Right door switch R (M631, M632, M633 models)
SW7	Right door switch L (M631, M632, M633 models)
SW301	Test print switch
SW4100	Power switch

## Photointerrupter sensors

**Table 1-7 Photointerrupter sensors**

Component abbreviation	Component name
PS4300	Tray 2 media out sensor
PS4350	Tray 1 media out sensor
PS4400	Tray 2 media surface sensor
PS4450	FD1 media full sensor
PS4500	Fuser loop sensor
PS4550	Registration sensor
PS4600	separation roller rotation sensor
PS4650	Fuser output sensor
PS4700	Duplex feed sensor (M607dn, M608dn/x, M609dn/dh/x, M631, M632, M633 models)
PS4750	Tray 1 feed sensor (M607, M608, M609 models)
PS4800	Fuser pressure release sensor
PS4850	Developer alienation sensor

## Sensors

**Table 1-8 Sensors**

Component abbreviation	Component name
TH4200	Environment sensor

## LEDs

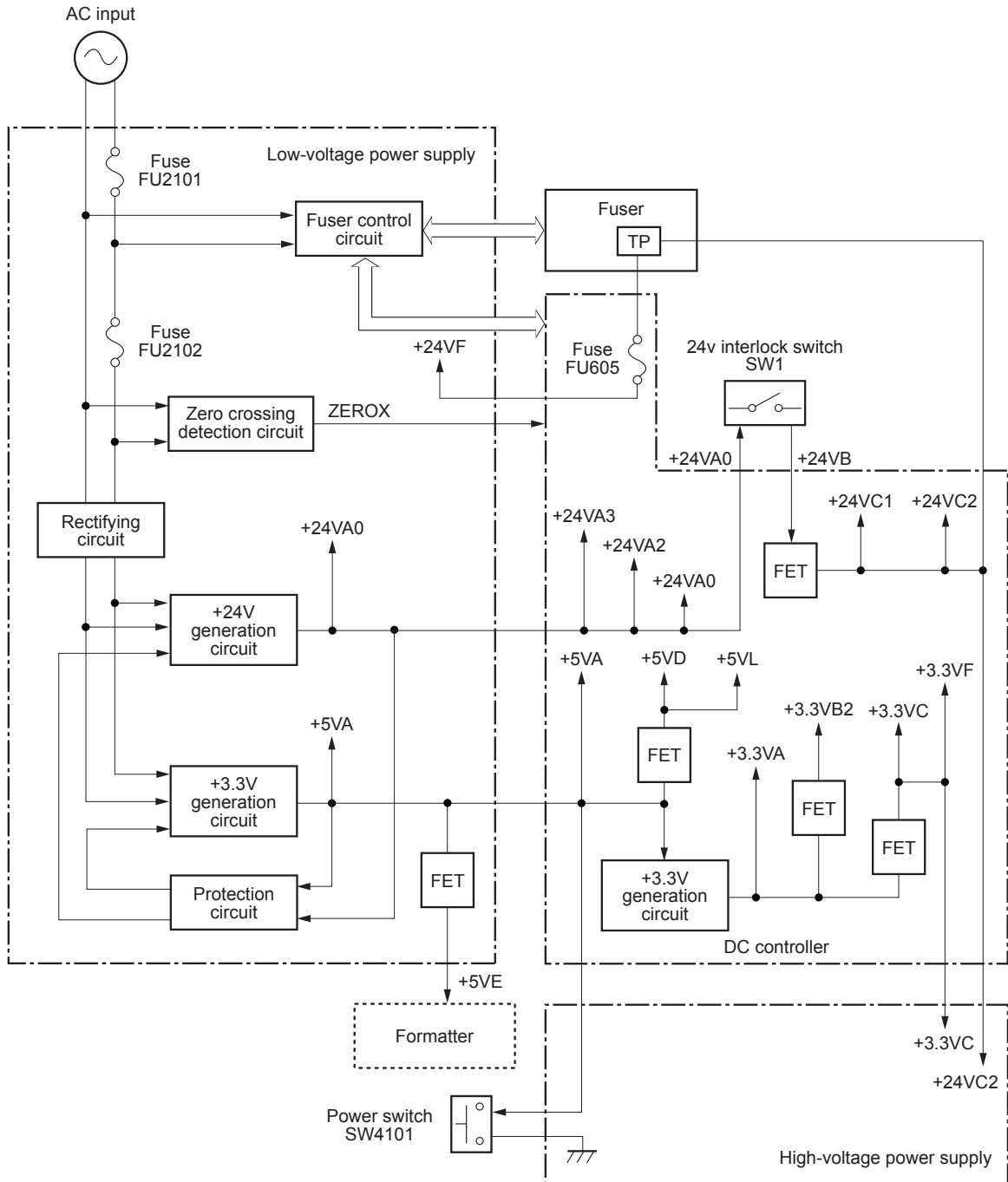
**Table 1-9 LEDs**

Component abbreviation	Component name
LED4100	Power supply LED
LED4950	Pre-exposure LED

## 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 circuits



## Low-voltage power supply voltages description

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

**Table 1-10** Converted DC voltages

Main DC voltage	Sub-voltage	Behavior
+24V	+24VA0	Stopped during active OFF or inactive OFF
	+24VA2	Stopped during active OFF or inactive OFF
	+24VB	Stopped during active OFF or inactive OFF
	+24VC1	Stopped during active OFF or inactive OFF
	+24VC2	Stopped during active OFF or inactive OFF
	+24VF	Stopped during active OFF or inactive OFF
+5V	+5VA	Stopped during inactive OFF
	+5VB	Stopped during active OFF or inactive OFF
	+5VE	Stopped during inactive OFF
	+5LL	Stopped during active OFF or inactive OFF
+3.3V	+3.3VA	Stopped during inactive OFF
	+3.3VB2	Stopped during inactive OFF
		Supplied intermittently during active OFF
	+3.3VC	Stopped during active OFF or inactive OFF
	+3.3VF	Stopped during active OFF or inactive OFF

## Over-current/over-voltage protection

The low-voltage power supply automatically stops supplying the DC voltage to the printer components whenever it detects excessive current or abnormal voltage. The low-voltage power supply has a protective circuit against over-current and over-voltage to prevent failures in the power supply circuit.

**⚠ CAUTION:** If DC voltage is not being supplied from the low-voltage power supply, the protective function might be running. In this case, turn the power switch off and unplug the power cord.

Do not turn the power switch on until the root cause is found and corrected.

If the protective function is active, the DC controller notifies the formatter of a low-voltage power supply failure. In addition, the low-voltage power supply has two fuses to protect against over-current. If over-current flows into the AC line, the fuse stops the AC power.

## 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 printer also stops the +24VB power when the +24V interlock switch is turned off. This stops DC power supply to the following load:

- High-voltage power supply
- Drum motor
- Fuser motor
- Duplex switchback clutch (M607dn, M608dn/x, M609dn/dh/x, M631, M632, M633 models)

The remote switch control circuit turns on or off the printer power so that the AC power flows even when 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 1-11 Low-voltage power supply functions**

Function	Behavior
Inactive OFF	The power supply is off.
Active OFF (state of sleep)	The low-voltage power supply is output only to the formatter and DC controller.

## High-voltage power supply

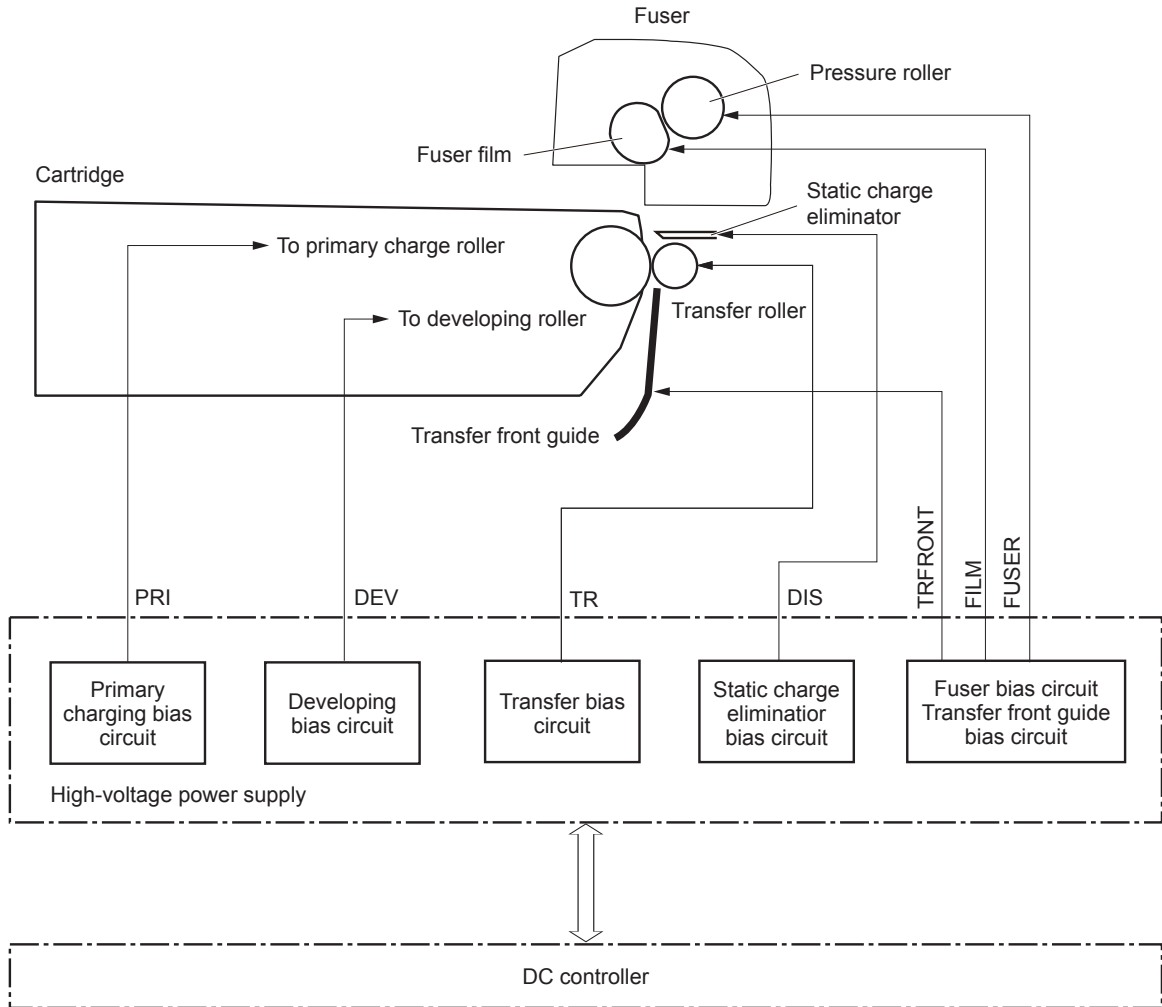
The DC controller controls the high-voltage power supply (HVPS) to generate biases. The high-voltage power supply delivers the high-voltage biases to the following components used to transfer toner during the image-formation process:

- Primary charging roller (in the toner cartridge)
- Developing roller (in the toner cartridge)
- Transfer front guide
- Transfer roller
- Static charge eliminator
- Fuser film
- 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 1-12** 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 drum.
Transfer-bias generation	The primary transfer bias transfers the toner from the photosensitive drum onto the paper.
Static charge eliminator bias generation	The static charge eliminator bias eliminates the electric charge on the back side of the paper for stable paper feed and print quality.
Fuser bias generation	The printer uses instant-on fusing. The fuser bias is DC positive for improved print quality. The fuser bias circuit is located in the high-voltage power supply.

## Fuser control

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

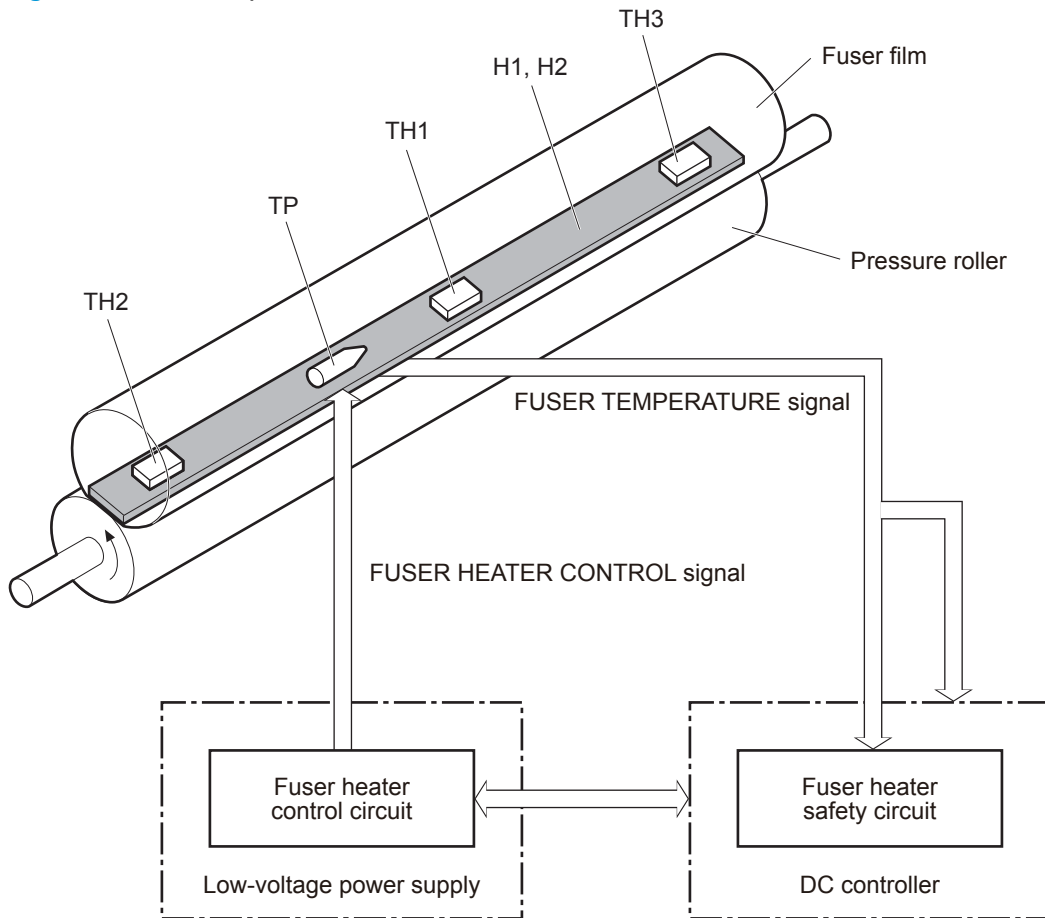


- Control fuser temperature
- Detect fuser failures
- Prevent excessive temperature rise
- Detect remaining life in the fuser
- Determine if the correct fuser is installed

## 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 1-13** Fuser components

Type of component	Abbreviation	Name	Function
Heaters	H1, H2	Fuser heaters	Heats the center of the fuser film assembly
Thermistors (Contact type)	TH1	Main thermistor	Detects the center temperature of the fuser heater

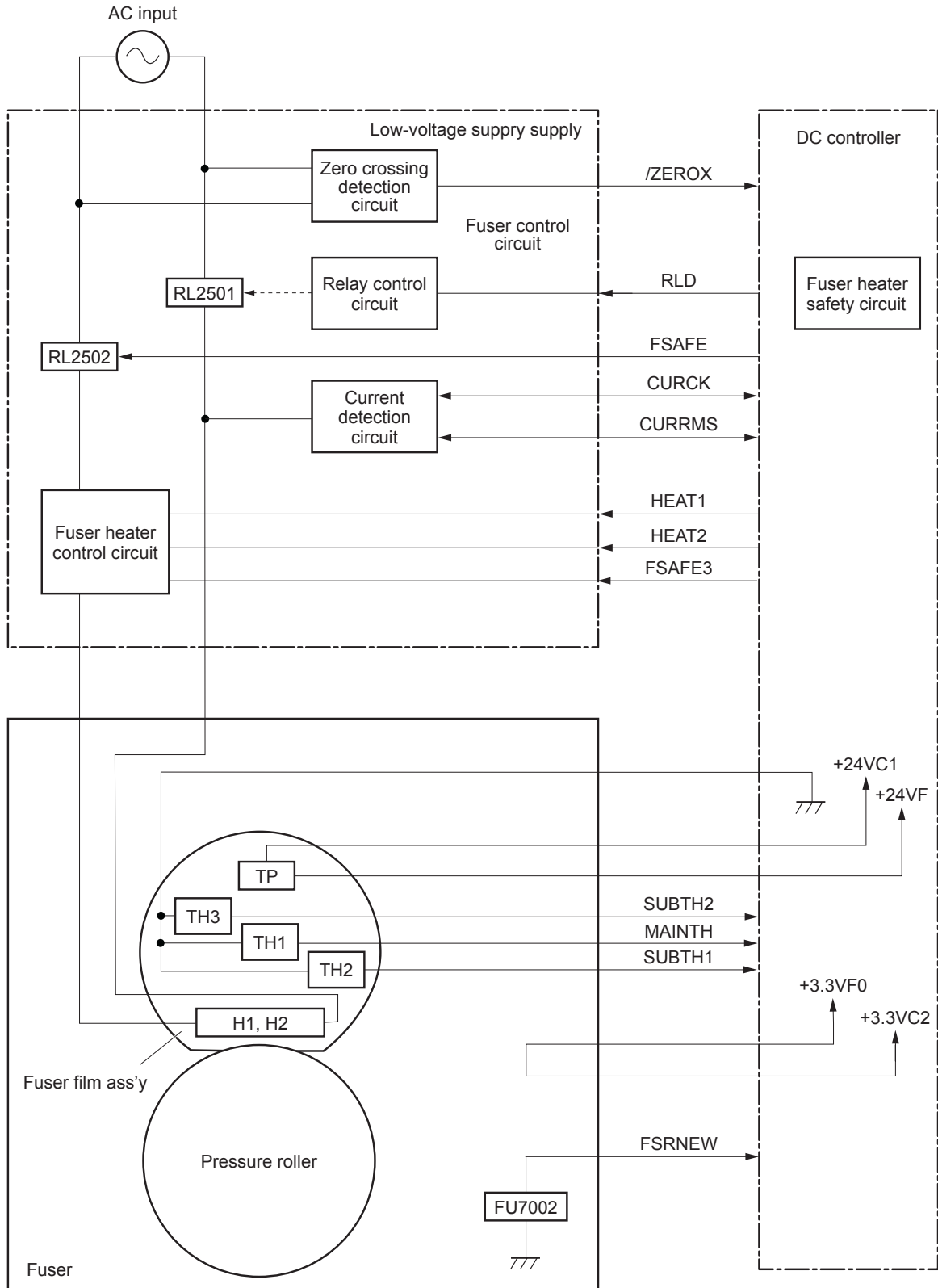
**Table 1-13 Fuser components (continued)**

<b>Type of component</b>	<b>Abbreviation</b>	<b>Name</b>	<b>Function</b>
Thermistors (Contact type)	TH2, TH3	Sum thermistors	Detects the edge temperature of the fuser heater.
Thermal switch (Contact type)	TP	Thermal fuse	Prevents an abnormal temperature rise in the fuser heater

## Fuser control functions

The following figure shows the fuser control functions

**Figure 1-7 Fuser control**



The printer has the following fuser-control functions:

**Table 1-14 Fuser-control functions**

<b>Failure detection function</b>	<b>Supported feature</b>
Fuser temperature control	Yes
Heat up error detection	Yes
Low temperature error detection	Yes
High temperature error detection	Yes
Breaking of a heater wire detection	No
Frequency detection circuit failure detection	Yes
Low-voltage power supply failure detection	Yes
Fuser pressure release mechanism failure detection	Yes
Brand new fuser detection	Yes
Fuser type discrepancy detection	Yes
Fuser type identification detection	Yes
Fuser presence detection	Yes
Fuser life detection	Yes
Fuser roller cleaning	Yes

## Fuser heater protection

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

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

- **DC controller:** When a thermistor or sub-thermistor detects a temperature above a certain threshold, the DC controller interrupts power to the fuser heater.
- **Fuser-heater safety circuit:** The fuser heater safety circuit monitors the detected temperature of the thermistors and interrupts power to the fuser heater when it detects excessive temperature.
- **Temperature fuse:** When the fuser heater reaches a temperature above a certain threshold, the temperature fuse interrupts power to the fuser heater.

## Laser scanner system

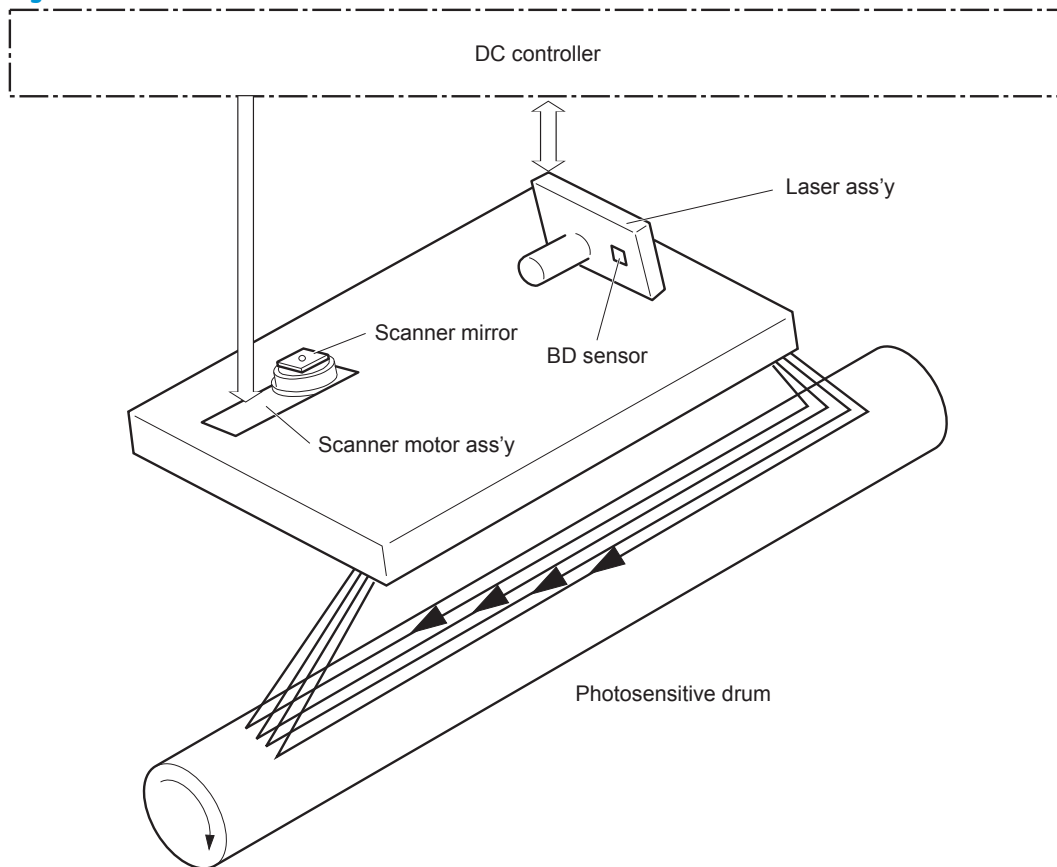
The laser/scanner system forms the latent electrostatic image on the photosensitive drum inside the toner cartridge.

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 laser/scanner system consists of the following main components:

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

**Figure 1-8** Laser scanner



## Laser/scanner failure detection

The DC controller determines an optical unit failure and notifies the formatter of the error status when any of the following occur:

- Laser scanner failure detection
- **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.
- **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.

## 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 following door is opened:

- Rear door (SW6, SW7) for M607, M608, M609 models)
- Right door (SW6, SW7) for M631, M632, M633 models)

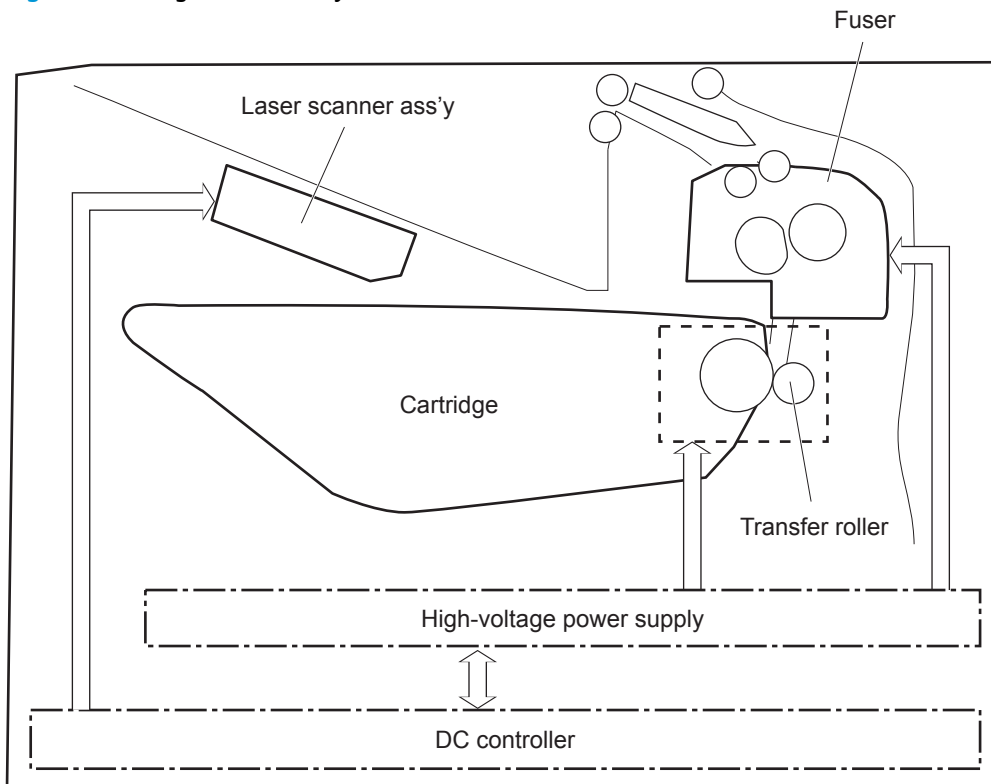
# Image formation system

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 DC controller rotates the following motors to drive each component.

### Drum Motor

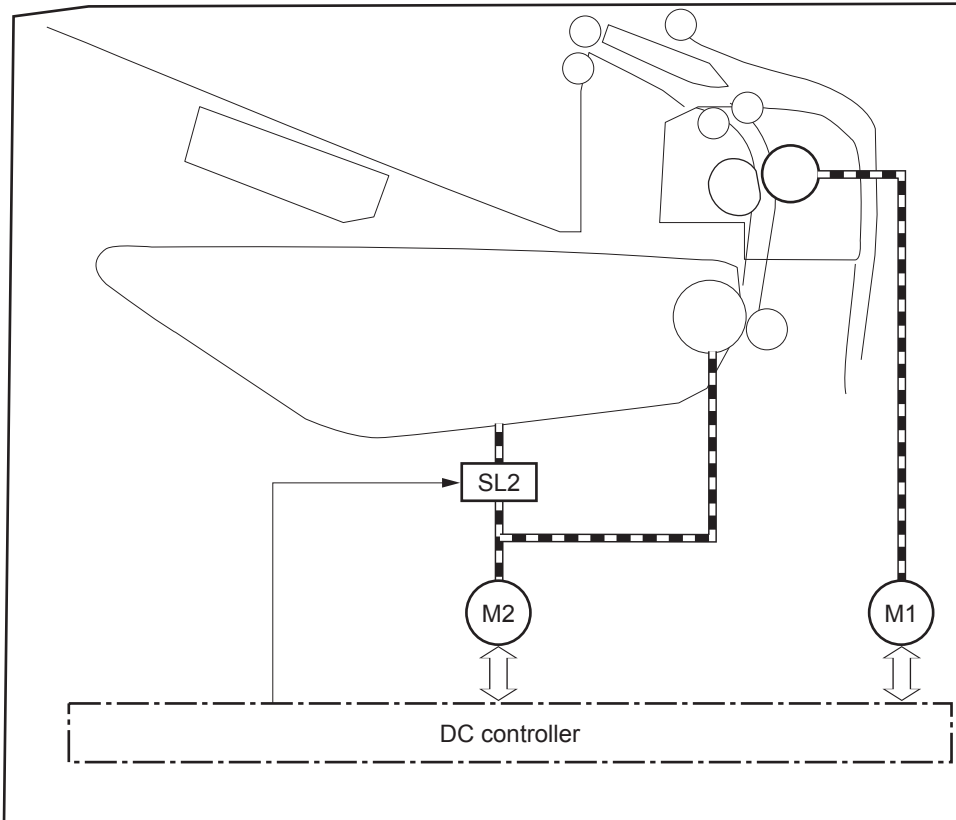
- Photosensitive drum
- Developing roller
- Primary charging roller (follows the photosensitive drum)
- Transfer roller (follows the photosensitive drum)

### Fuser motor

- 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** Motors



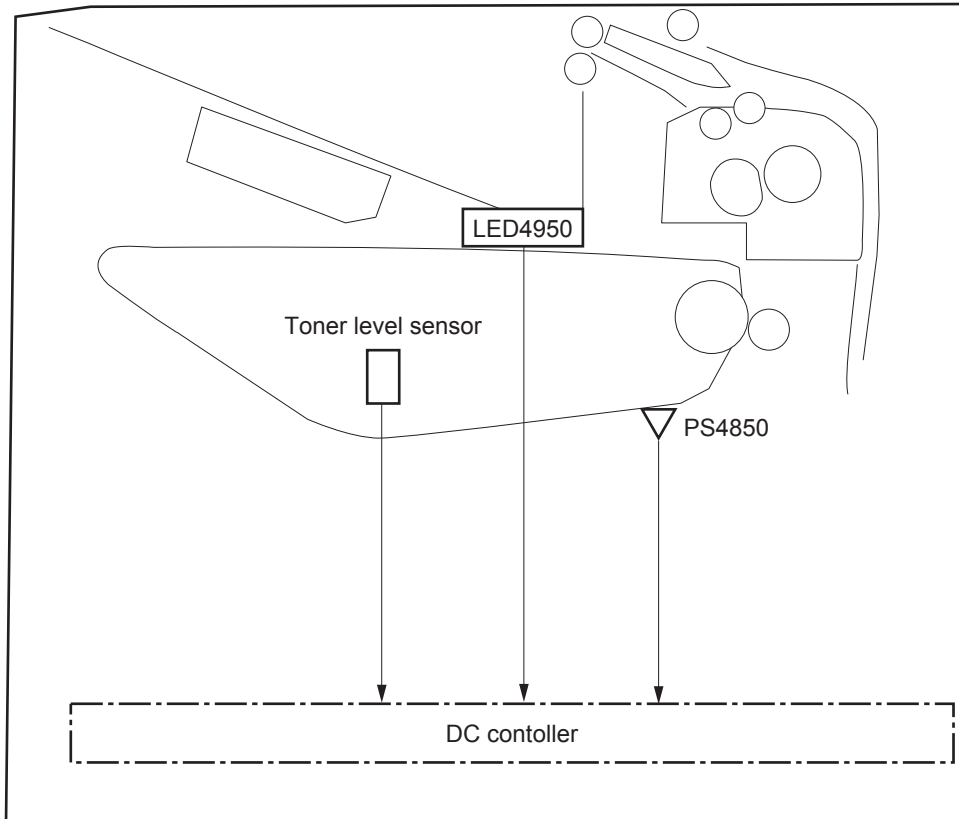
**Table 1-15** Motors

Abbreviation	Component
M1	Fuser motor
M2	Drum motor
SL2	Developer alienation solenoid

The following figure shows the location of the sensors:



**Figure 1-11** Sensors



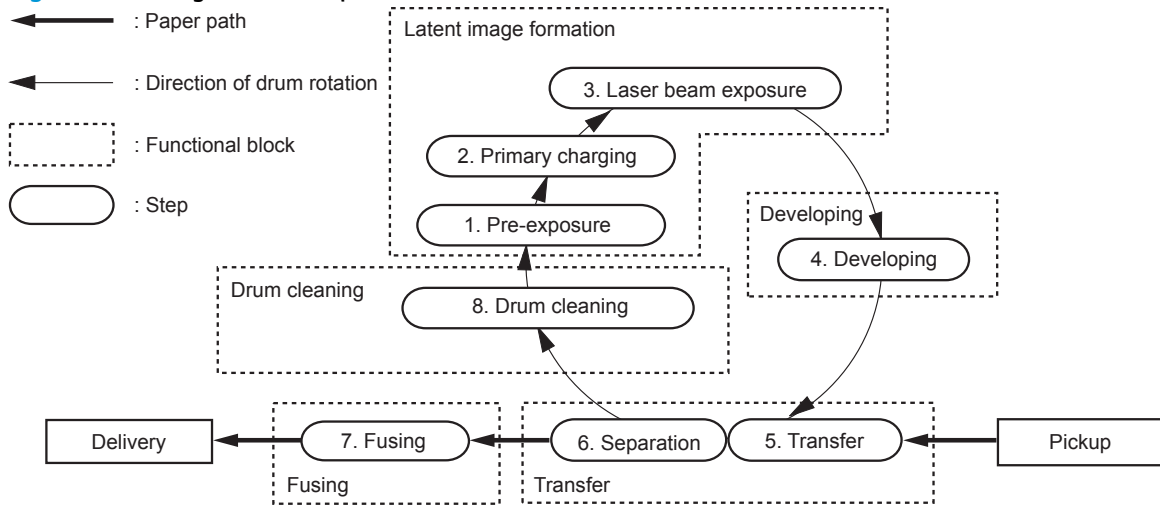
**Table 1-16** Sensors

Abbreviation	Component name
LED4950	Pre-exposure LED
PS4850	Developer alienation sensor
	Toner level sensor

## Image-formation process

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

**Figure 1-12** Image formation process



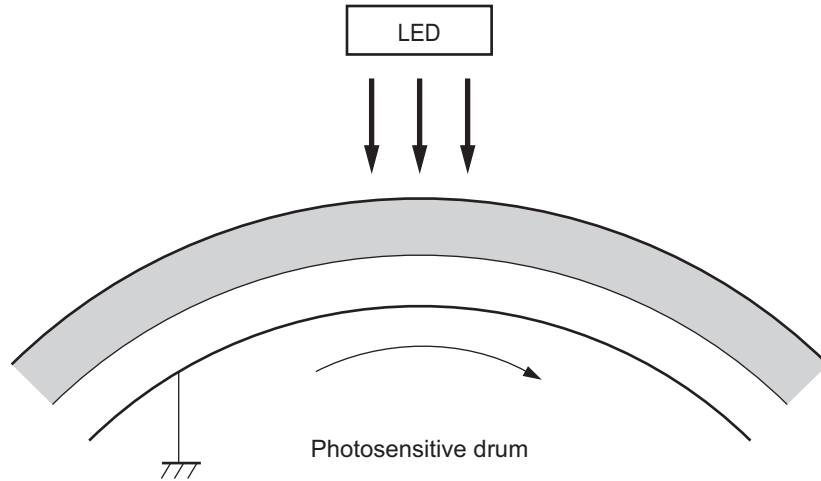
**Table 1-17** Image formation process

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

### Step 1: Pre-exposure

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

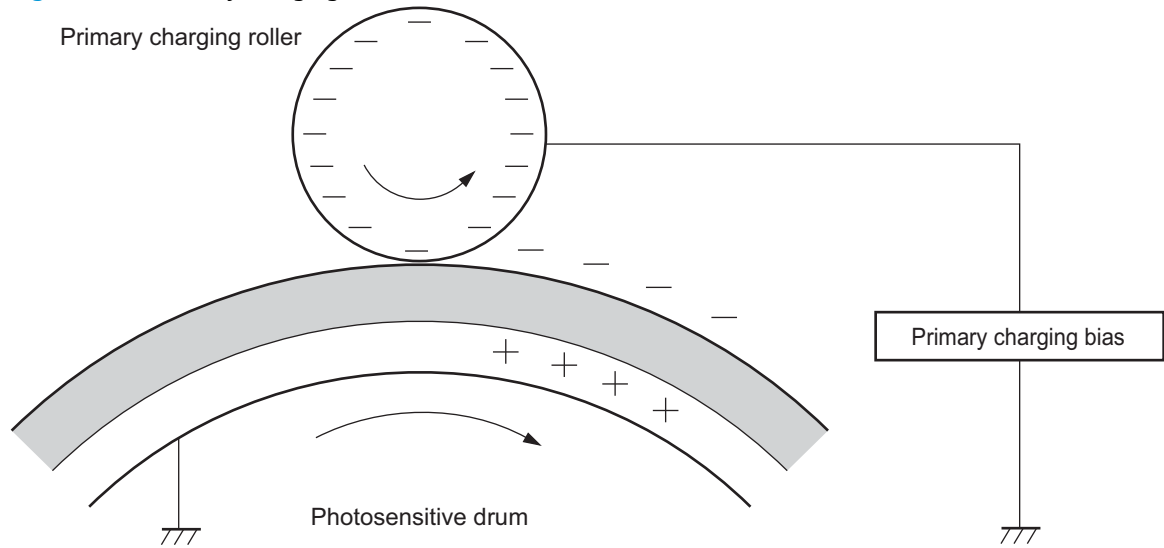
**Figure 1-13** Pre-exposure



**Step 2: Primary charging**

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

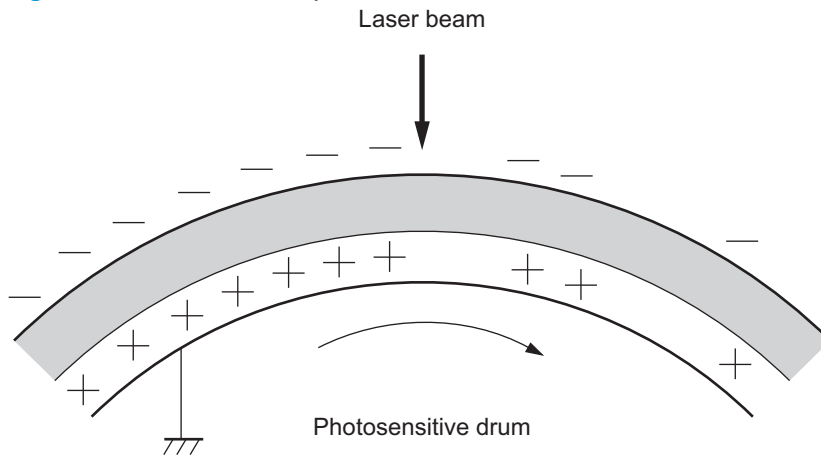
**Figure 1-14** Primary charging



### Step 3: Laser-beam exposure

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

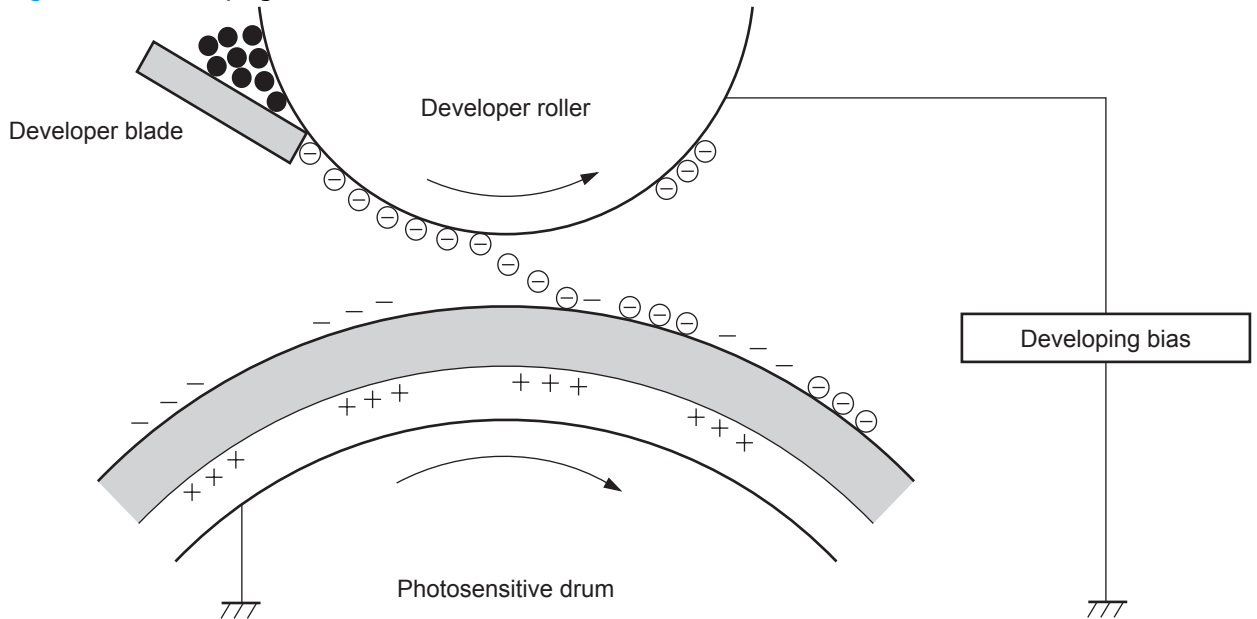
Figure 1-15 Laser-beam exposure



### Step 4: Development

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

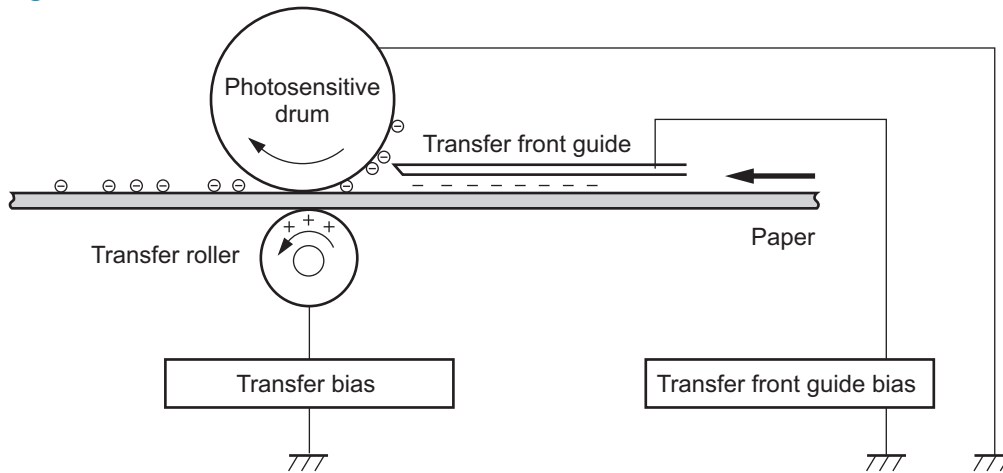
Figure 1-16 Developing



## Step 5: Transfer

The toner image on the photosensitive drum transfers to the paper. Transfer bias applied to the transfer roller attracts the negatively-charged toner to the paper.

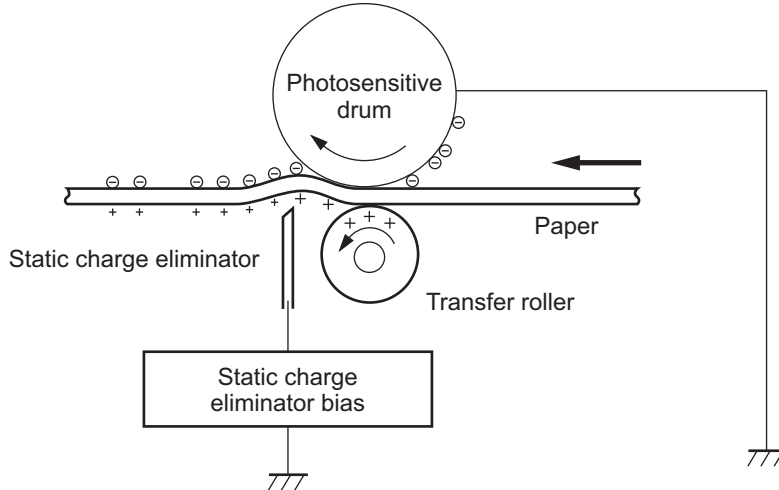
Figure 1-17 Transfer



## Step 6: Separation

The elasticity of the paper and the curvature of the photosensitive drum cause the paper to separate from the photosensitive drum. The static-charge eliminator removes excess charge from the paper to make sure that the toner fuses correctly.

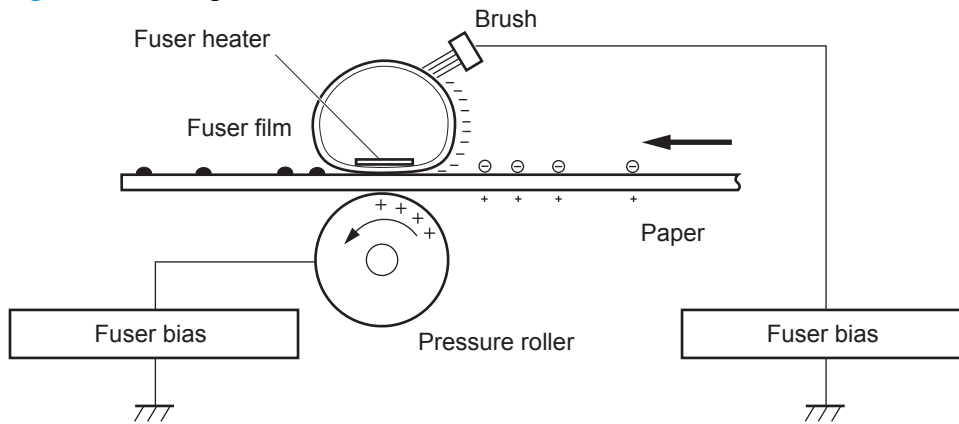
Figure 1-18 Separation



## Step 7: Fusing

To create the permanent image, the paper passes through heated, pressurized rollers to melt the toner onto the page. Fusing bias is added to the pressure roller to improve the print quality.

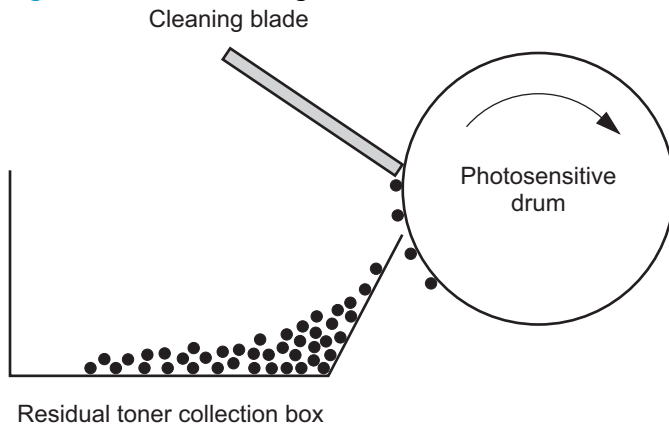
**Figure 1-19** Fusing



## Step 8: Drum cleaning

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

**Figure 1-20** Drum cleaning



# Toner cartridge

The printer has one toner cartridge.

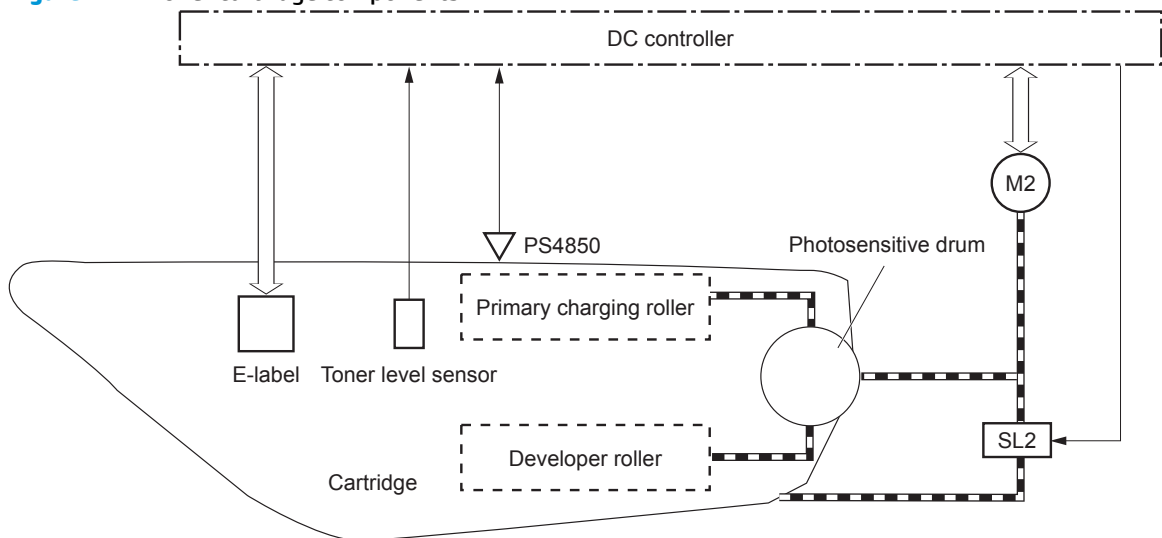
## Design

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

- Photosensitive drum
- Developer roller
- Primary-charging roller
- E-label

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

**Figure 1-21** Toner cartridge components



**Table 1-18** 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	Yes
Developer alienation control	Yes
Toner level sensor mechanism malfunction	No
Transfer roller cleaning	Yes
Primary charging roller cleaning	No

## Pickup, feed, and delivery system

The DC controller controls the pickup, feed, and delivery system according to commands from the formatter. The pickup, feed, and delivery system uses a series of rollers to move the paper through the printer.

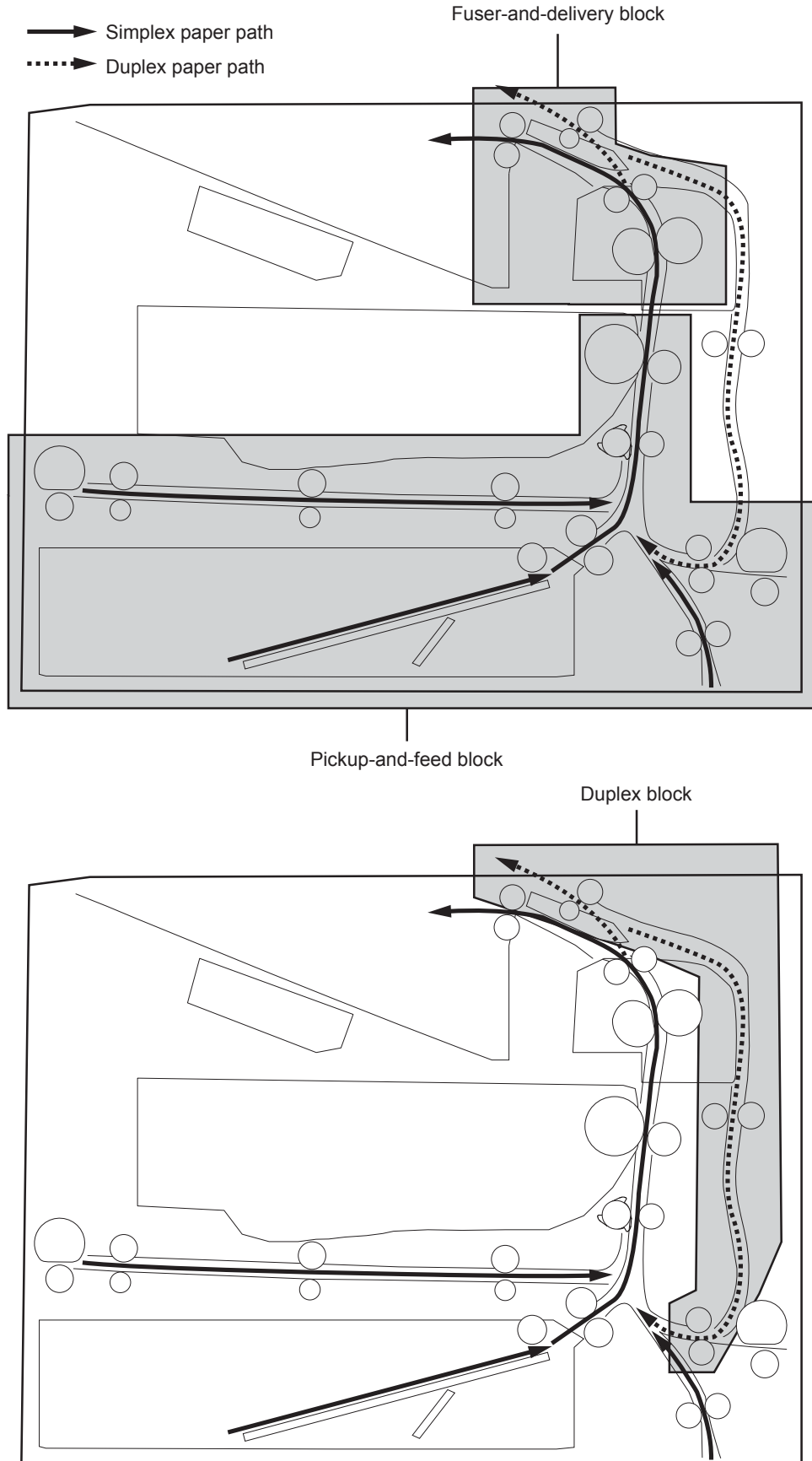
The pickup, feed, and delivery system consists of the following three functional blocks. The DC controller controls each block to pick up, feed, and deliver the paper.

- **Pickup-and-feed block:** Controls the movement of the paper from each pickup source to the fuser inlet
- **Fuser-and-delivery block:** Controls the movement of the paper from the fuser to the delivery destination
- **Duplex block:** Controls the movement of the paper from the duplex switchback unit to the duplex re-pickup unit (M607dn, M608dn/x, M609dn/dh/x, M631, M632, M633 models)

The following figure shows the simplex and duplex paper path for the pickup, feed, and delivery system:



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



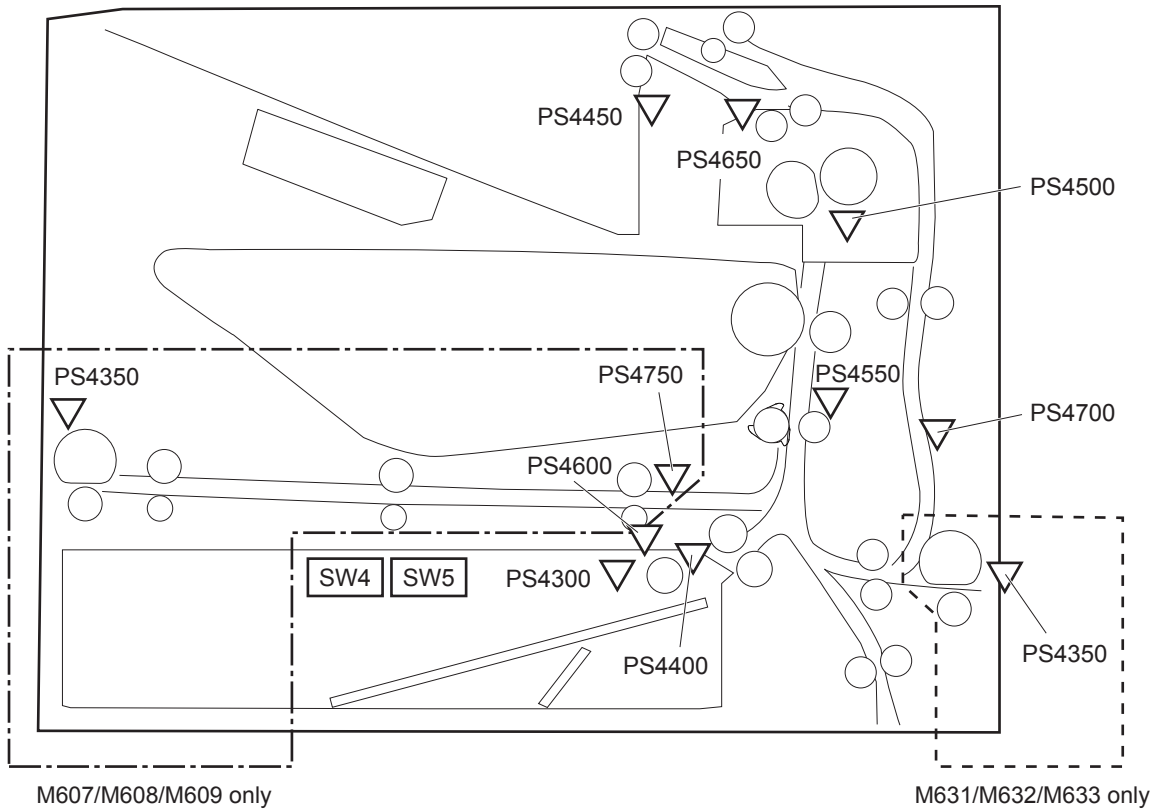
**Table 1-19 Pickup, feed, and delivery functions**

<b>Function</b>	<b>Supported feature</b>
Tray 2 media size detection	Yes
Tray 2 presence detection	Yes
Tray 2 media surface detection	Yes
Tray 2 media presence detection	Yes
Tray 2 media level detection	No
Tray 2 lift-up control	Yes
Tray 2 lift-down control	No
Tray 2 multiple-feed prevention mechanism	Yes
Tray 1 media presence detection	Yes
Tray 1 media width detection	No
Tray 1 last-media detection	No
Skew-feed prevention mechanism	Yes
Feed speed control (M607dn, M608dn/x, M609dn/dh/x, M631, M632, M633 models)	Yes
Loop control	Yes
Media detection	No
OHT detection	No
Image leading edge positioning	Yes
Media length detection	Yes
Media width detection	Yes
Pressure roller pressure release control	No
Output bin media-full detection	Yes
Automatic delivery	Yes
Duplex switchback control (M607dn, M608dn/x, M609dn/dh/x, M631, M632, M633 models)	Yes
Duplex feed control (M607dn, M608dn/x, M609dn/dh/x, M631, M632, M633 models)	Yes

## Photo sensors and switches

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

**Figure 1-23** Photo sensors and switches



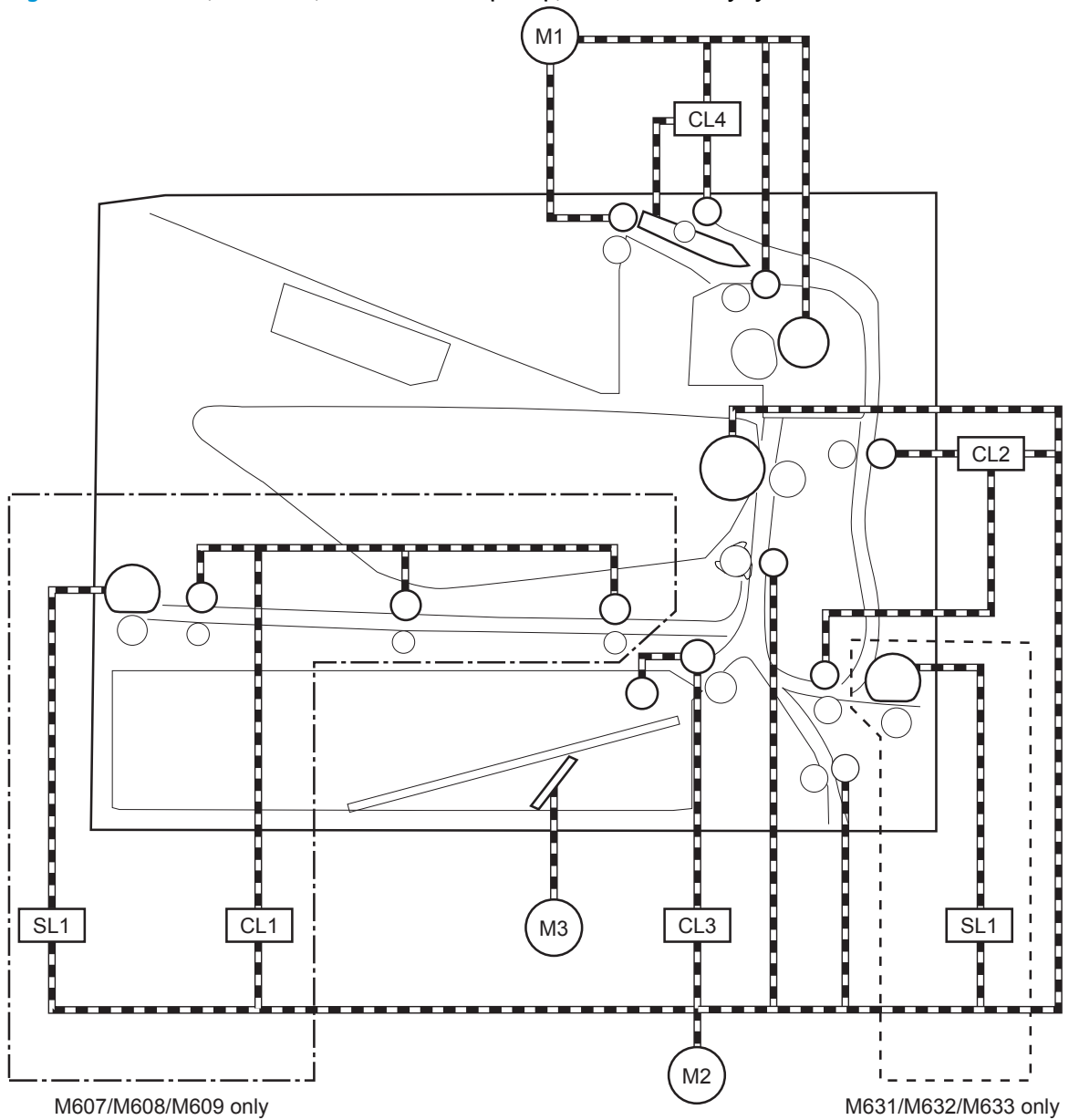
**Table 1-20** Photo sensors and switches

Abbreviation	Component
PS4300	Tray 2 media out sensor
PS4350	Tray 1 media out sensor
PS4400	Tray 2 media surface sensor
PS4450	FD1 media full sensor
PS4500	Fuser loop sensor
PS4550	Registration sensor
PS4600	separation roller rotation sensor
PS4650	Fuser output sensor
PS4700	Duplex feed sensor (M607dn, M608dn/x, M609dn/dh/x, M631, M632, M633 models)
PS4750	Tray 1 feed sensor (M607, M608, M609 models)
SW4	Tray 2 media size switch 1
SW5	Tray 2 media size switch 2

## Motors, clutches, and solenoids

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

**Figure 1-24** Motors, solenoids, and clutches for pickup, feed and delivery system



**Table 1-21** Motors, solenoids, and clutches

Abbreviation	Component
M1	Fuser motor
M2	Drum motor
M3	Lifter motor
SL1	Tray 1 pickup solenoid
CL1	Tray 1 feed clutch (M607, M608, M609 models)

**Table 1-21 Motors, solenoids, and clutches (continued)**

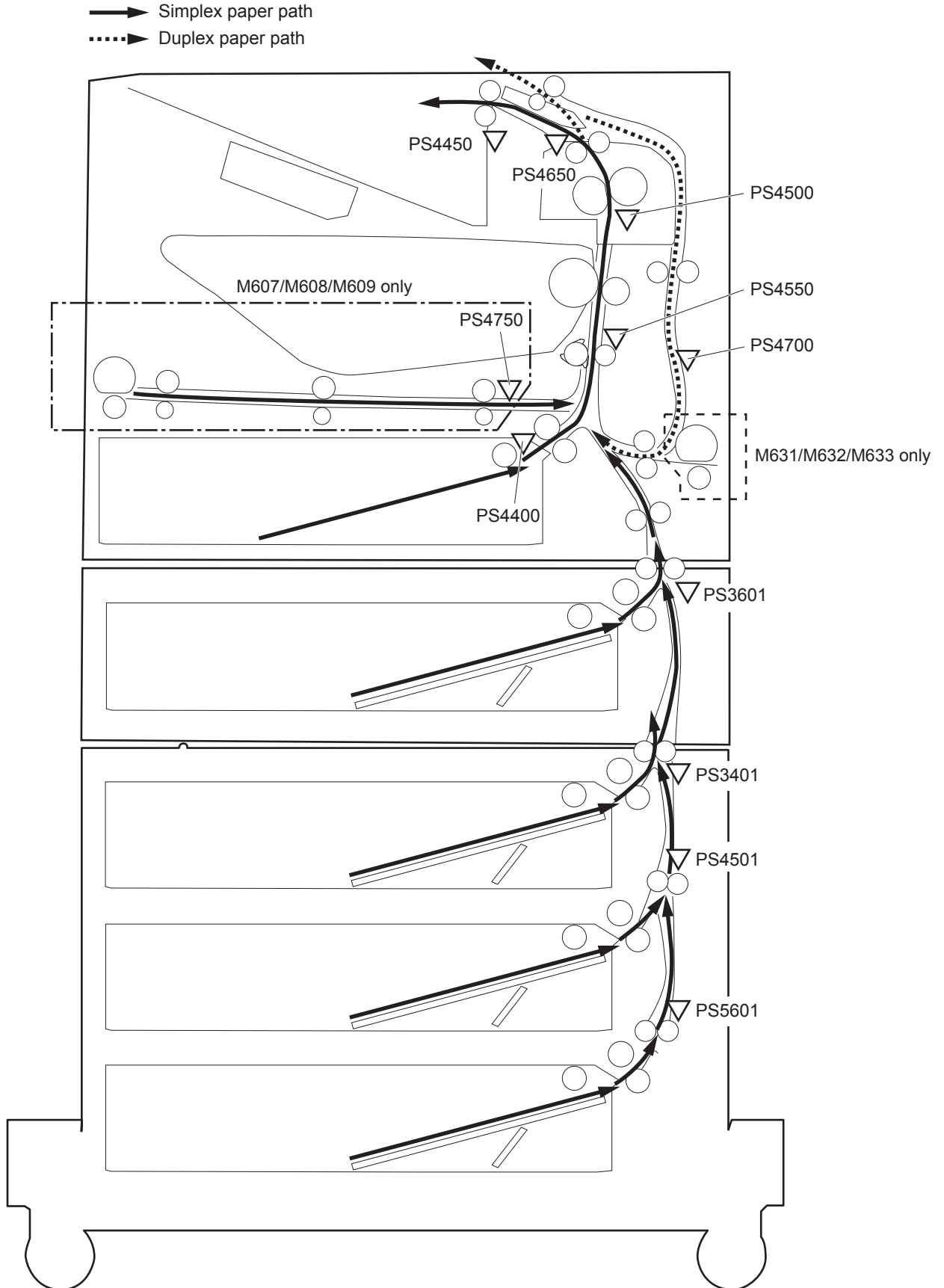
<b>Abbreviation</b>	<b>Component</b>
CL2	Duplex feed clutch (M607dn, M608dn/x, M609dn/dh/x, M631, M632, M633 models)
CL3	Tray 2 pickup clutch
CL4	Duplex switchback clutch (M607dn, M608dn/x, M609dn/dh/x, M631, M632, M633 models)

## Jam detection/prevention

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

The following figure shows the location of the sensors in the paper path:

**Figure 1-25** Paper path and location of sensors



**Table 1-22 Paper path sensors**

Abbreviation	Component
PS3401	Paper deck tray 1 feed sensor/HCI feed sensor (1x550-sheet paper deck, 3x550-sheet paper deck, 2,550-sheet paper deck, and 2,100-sheet paper deck)
PS3601	PF feed sensor (550-sheet paper feeder and envelope feeder)
PS4400	Tray 2 media surface sensor
PS4450	FD1 media full sensor
PS4500	Fuser loop sensor
PS4501	Paper deck Tray 2 feed sensor (3x550-sheet paper deck and 2,550-sheet paper deck)
PS4550	Registration sensor
PS4650	Fuser output sensor
PS4700	Duplex feed sensor (M607dn, M608dn/x, M609dn/dh/x, M631, M632, M633 models)
PS4750	Tray 1 feed sensor (M607, M608, M609 models)
PS5601	Paper deck Tray 3 feed sensor (3x550-sheet paper deck)

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

**Table 1-23 Jams that the printer detects**

Jam
No pick jam 1
No pick jam 2
No pick jam 3
Pickup stay jam1
Fuser delivery delay jam 1
Fuser deliver stay jam 1
Residual paper jam 1
Residual paper jam 2
Door open jam 1
Fuser wrap jam 1
Duplex re-pickup jam 1
Delivery delay jam 1
Duplex feed delay jam 1
Inappropriate to the delivery path jam 2

# Input accessories

Optional input accessories are available for the printer:

Models	Accessories
M607, M608, M609	550-sheet paper feeder
	Envelope feeder
	2,100-sheet paper deck (HCI)
M631, M632, M633	550-sheet paper feeder
	Envelope feeder
	1x550-sheet paper deck
	3x550-sheet paper deck
	2,550-sheet paper deck

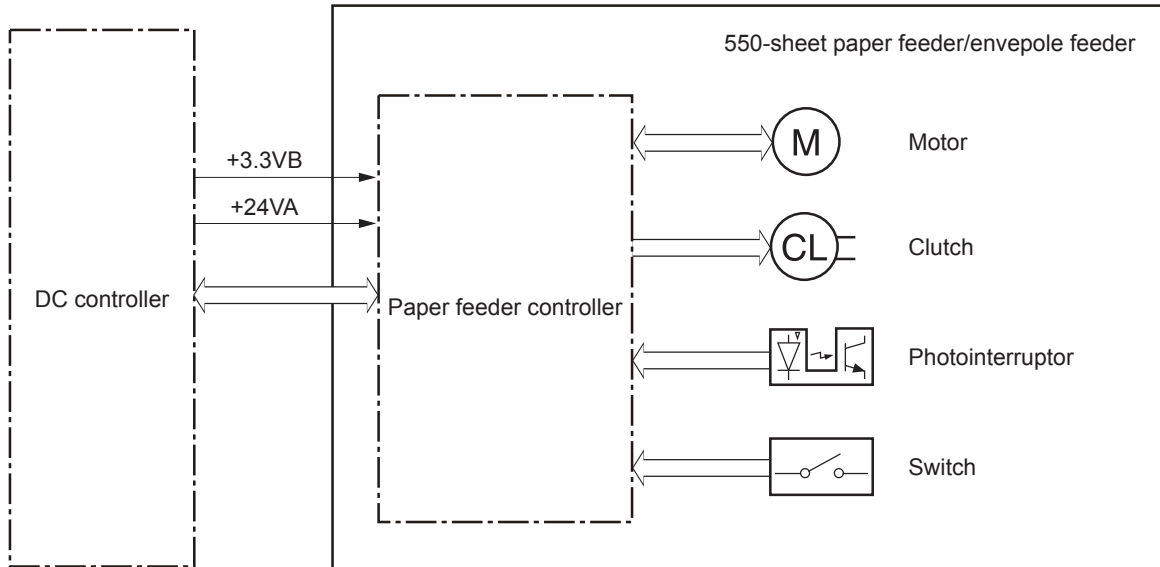
## 550-sheet paper feeder (PF)

The 550-sheet paper feeder (PF) is installed under the printer. It picks up paper and feeds it into the printer.

### Controller

The paper feeder controller controls the operational sequence of the paper feeder.

**Figure 1-26** Controller for the 550-sheet PF

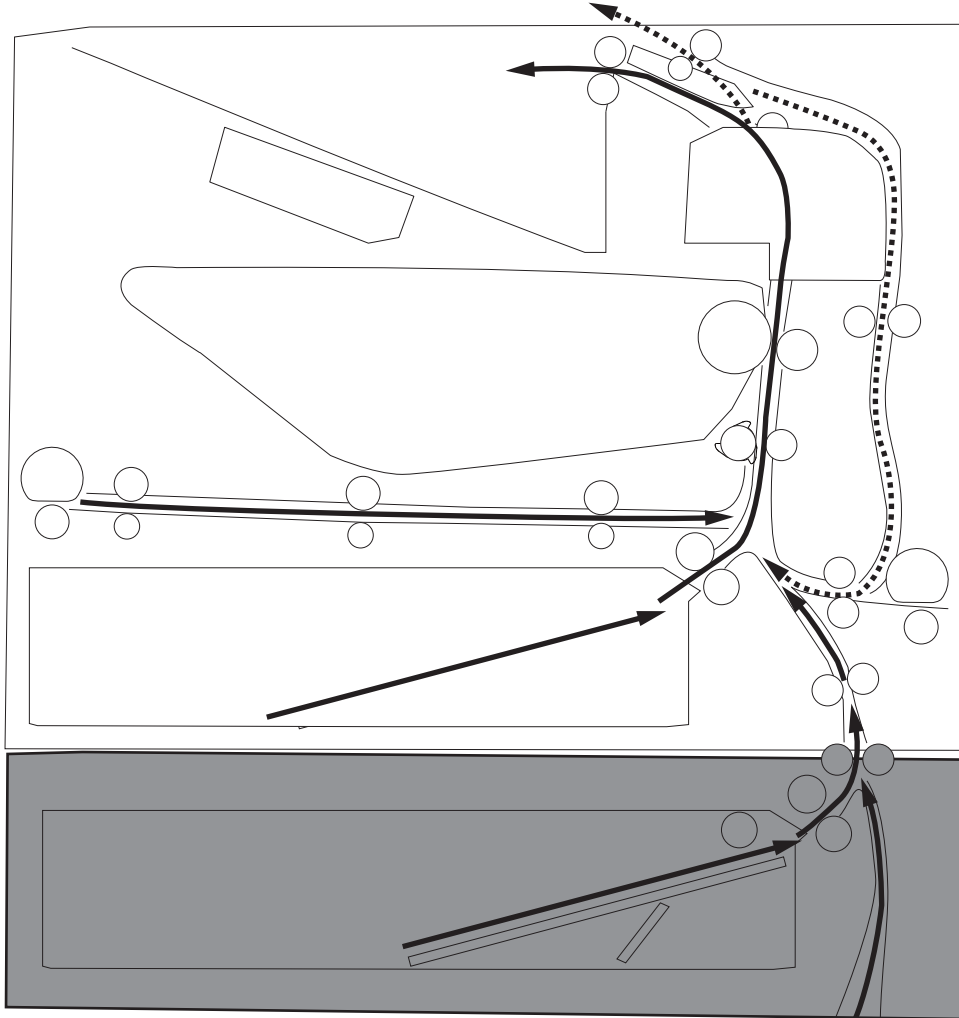


### Paper path

The following figure shows the paper path when the 550-sheet paper feeder is installed:



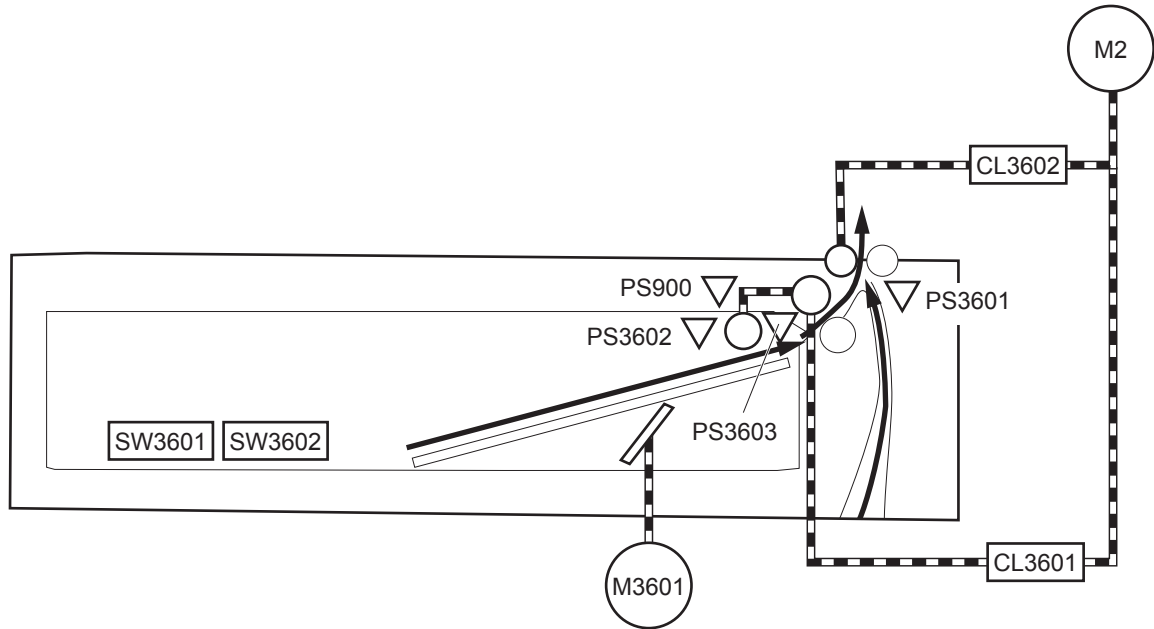
**Figure 1-27** Paper path for the 550-sheet PF



### Pickup and feed components

The 550-sheet paper feeder has one motor for lifting the tray and feeding paper.

**Figure 1-28** Pickup and feed components for the 550-sheet PF



**Table 1-24** Pickup and feed components for the 550-sheet PF

Component type	Abbreviation	Component name
Motors	M2	Drum motor (included in the printer)
	M3601 <sup>1</sup>	PF lifter motor (lifts the tray)
Clutches	CL3601	PF pickup clutch
	CL3602	PF feed clutch
Switches	SW3601	PF media size switch 1
	SW3602	PF media size switch 2
	SW3603	PF door switch
Sensors	PS3601	PF feed sensor
	PS3602	PF media out sensor
	PS3603	PF media surface sensor
	PS900	PF separation roller rotation sensor

<sup>1</sup> The paper feeder does not detect motor failure

**Table 1-25** Pickup and feed functions for the 550-sheet PF

Function	Supported feature
Tray lift-up control	Yes
Tray presence detection	Yes
Tray media size detection	Yes
Tray media stack surface detection	Yes

**Table 1-25 Pickup and feed functions for the 550-sheet PF (continued)**

<b>Function</b>	<b>Supported feature</b>
Tray media out detection	Yes
Tray media level detection	No
Multiple-feed prevention	Yes
Automatic delivery	Yes

## Jam detection

The printer DC controller detects jams during pickup or feed from the 550-sheet paper feeder.

## 2,100-sheet paper deck (HCI)

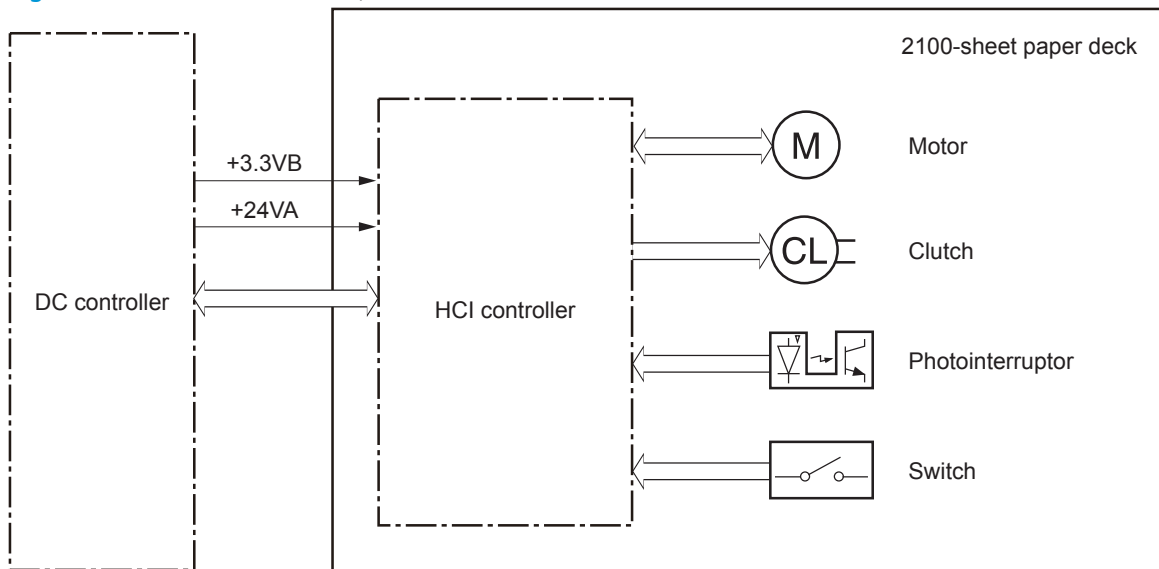
The 2,100-sheet HCI (high capacity input) paper deck is an optional accessory for the following models: M607, M608, and M609.

The HCI paper deck is installed under the printer. It picks up paper and feeds it into the printer.

## Controller

The HCI controller controls the operational sequence of the HCI.

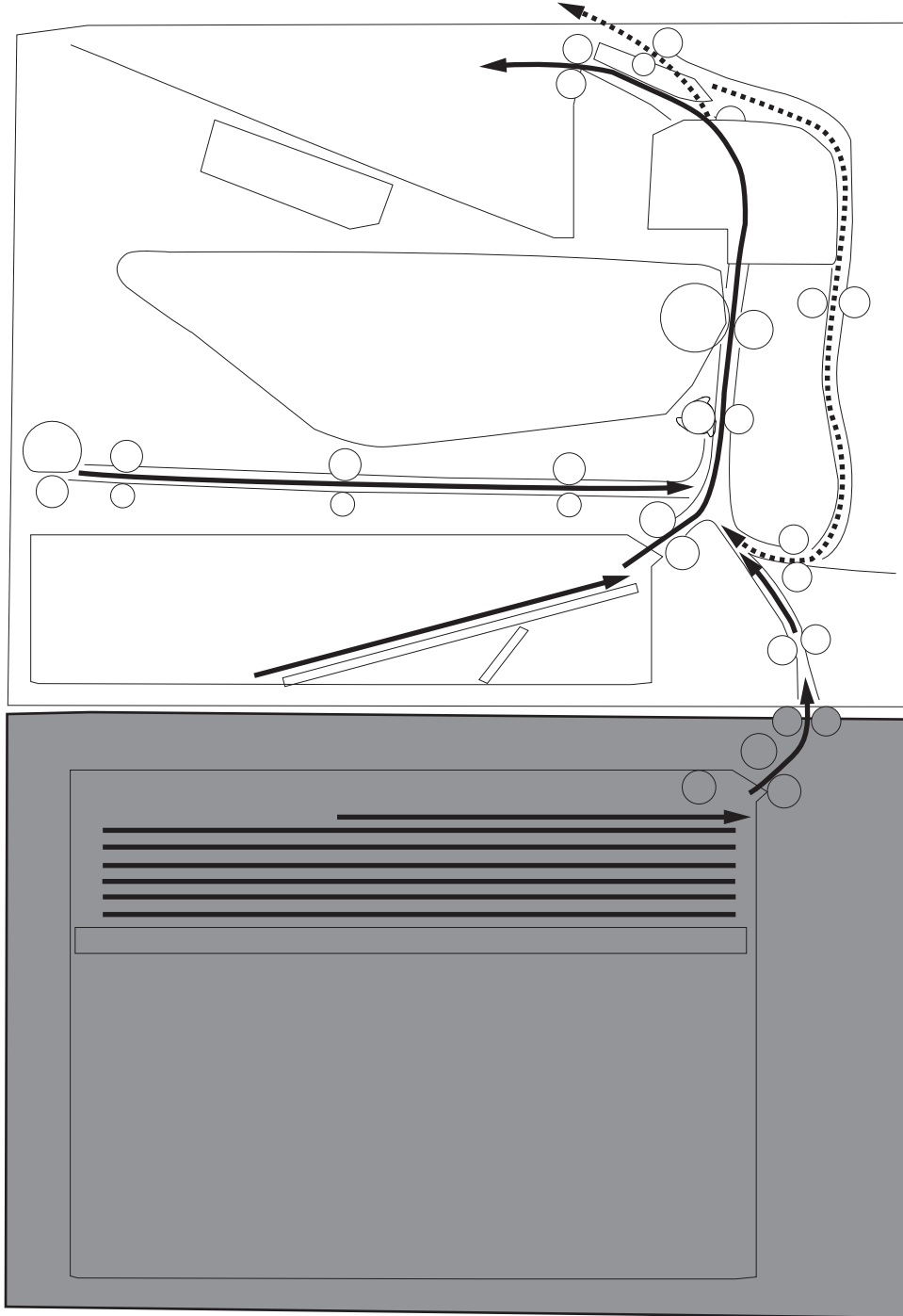
**Figure 1-29** Controller for the 2,100-sheet HCI



## Paper path

The following figure shows the paper path when the 2,100-sheet HCI is installed:

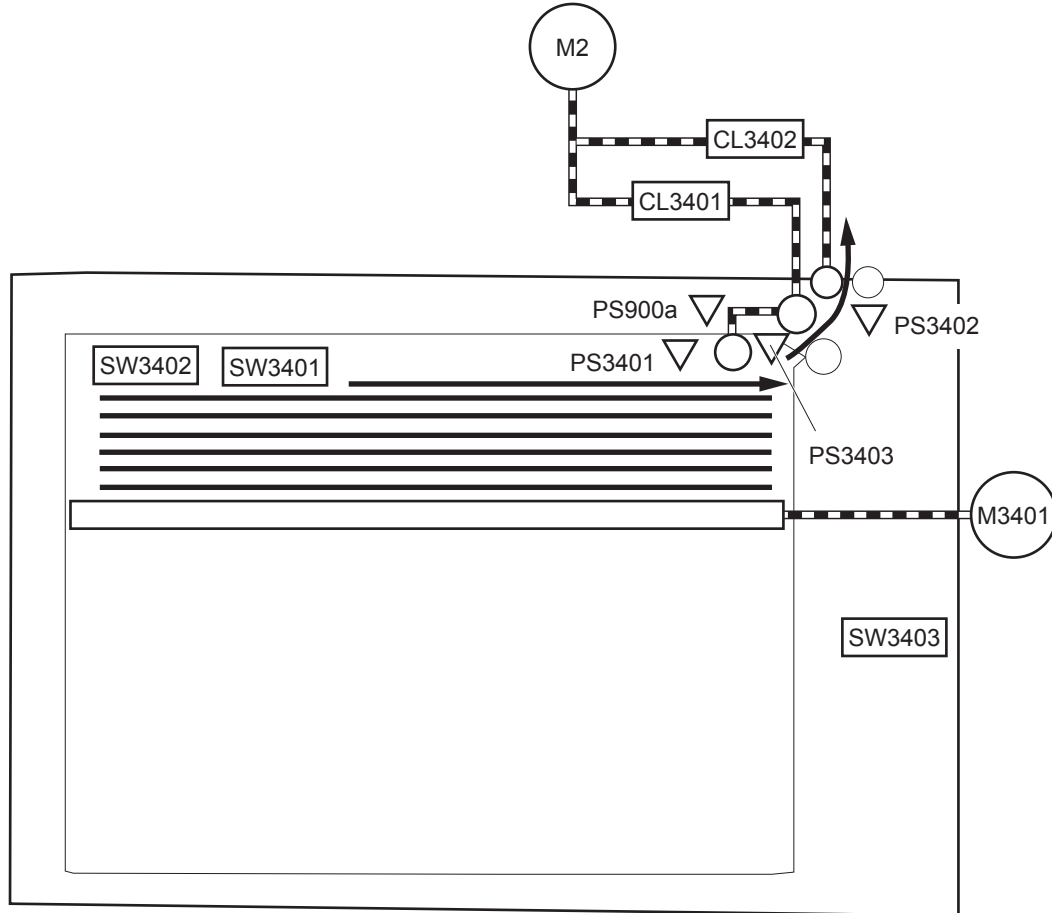
**Figure 1-30** Paper path for the 2,100-sheet HCI



### Pickup and feed components

The HCI paper deck has one motor for lifting the tray and feeding paper.

**Figure 1-31** Pickup and feed components for the 2,100-sheet HCI



**Table 1-26** Pickup and feed components for the 2,100-sheet HCI

Component type	Abbreviation	Component
Motors	M2	Drum motor (included in the printer)
	M3401 <sup>1</sup>	HCI lifter motor (lifts up the tray)
Clutches	CL3401	HCI pickup clutch
	CL3602	HCI feed clutch
Switch	SW3401	HCI media size switch
	SW3402	HCI front door switch
	SW3403	HCI rear door switch
Photointerrupter	PS3401	HCI feed sensor
	PS3402	HCI media out sensor
	PS3403	HCI media surface sensor
	PS900a	HCI separation roller rotation sensor

<sup>1</sup>

**Table 1-27 Paper pickup and feed functions for the 2,100-sheet HCI**

<b>Function</b>	<b>Supported feature</b>
HCI Lift-up control	Yes
HCI presence detections	Yes
HCI media size detection	Yes
HCI media stack surface detection	Yes
HCI media out detection	Yes
HCI media level detection	No
Multiple-feed prevention	Yes
Automatic delivery	Yes

## Jam detection

The printer DC controller detects jams during pickup or feed from the HCI paper deck.

## 1x550, 3x550, 2,550-sheet paper decks (PD)

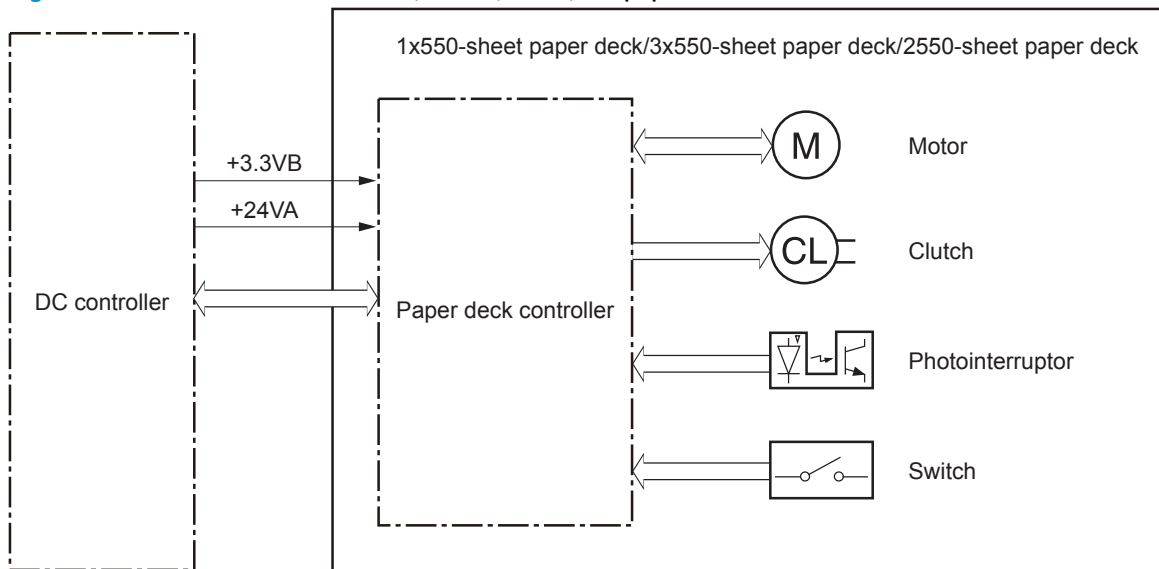
The 1x.550, 3x550, and 2,100-sheet paper decks are optional accessories for the following models: M631, M632, and M633.

The paper deck is installed under the printer. It picks up paper and feeds it into the printer.

## Controller

The paper deck controller controls the operational sequence of the paper deck.

**Figure 1-32** Controller for the 1x550, 3x550, and 2,550 paper decks



## Paper path

The following figures show the paper path for the 1x550, 3x550, and 2,550 paper decks:



Figure 1-33 Paper path for the 1x550 PD

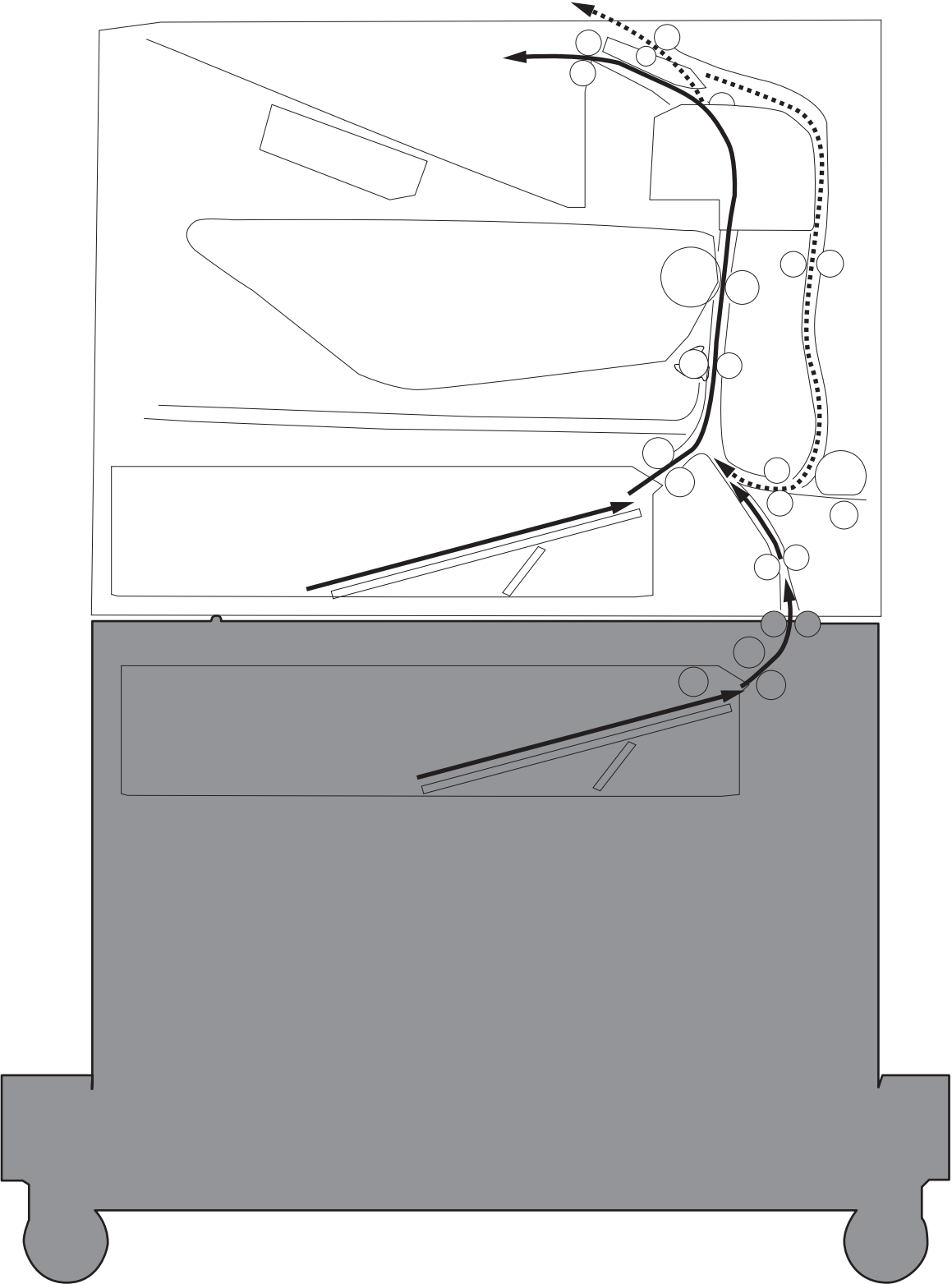
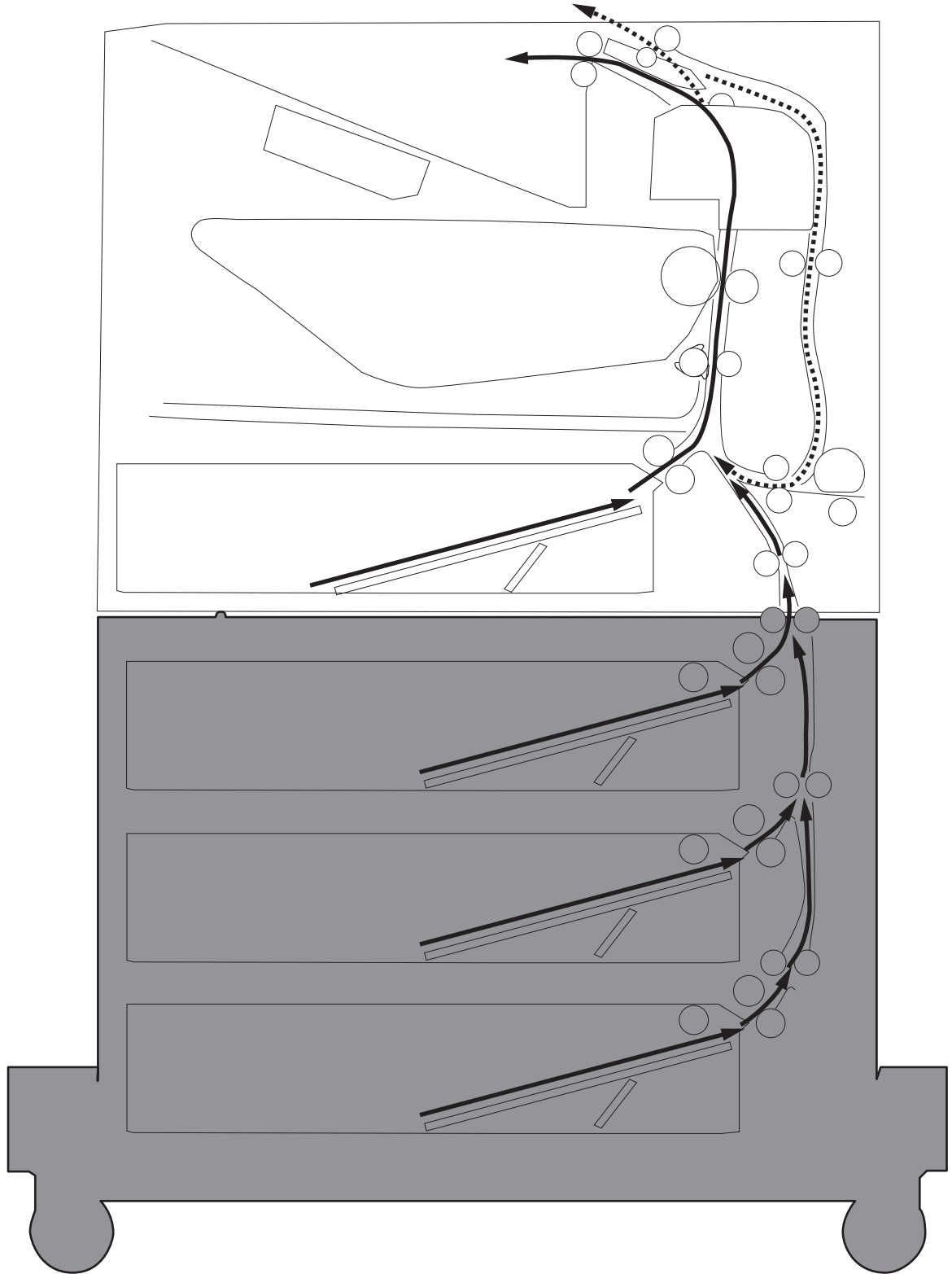
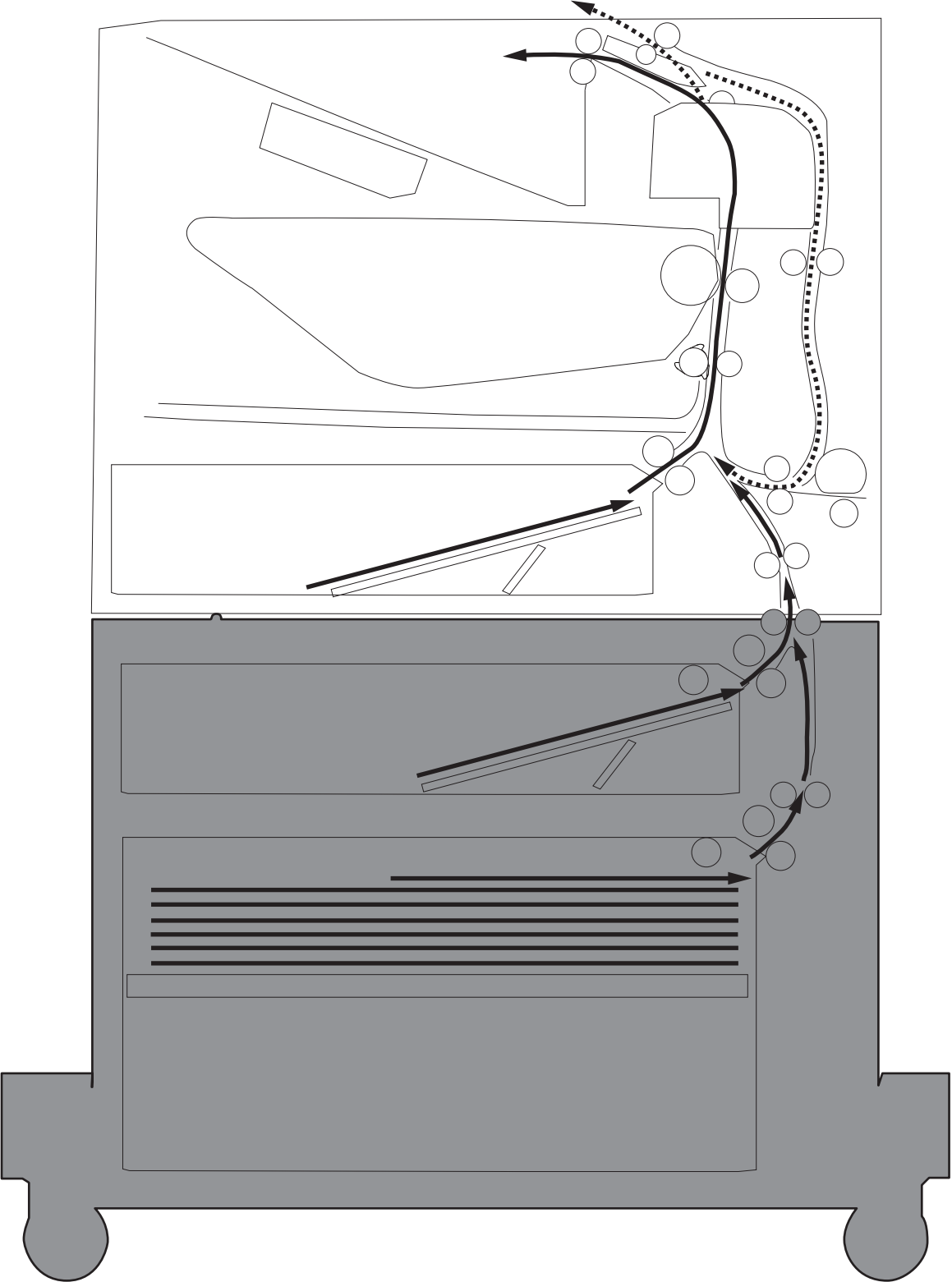


Figure 1-34 Paper path for the 3x550 PD



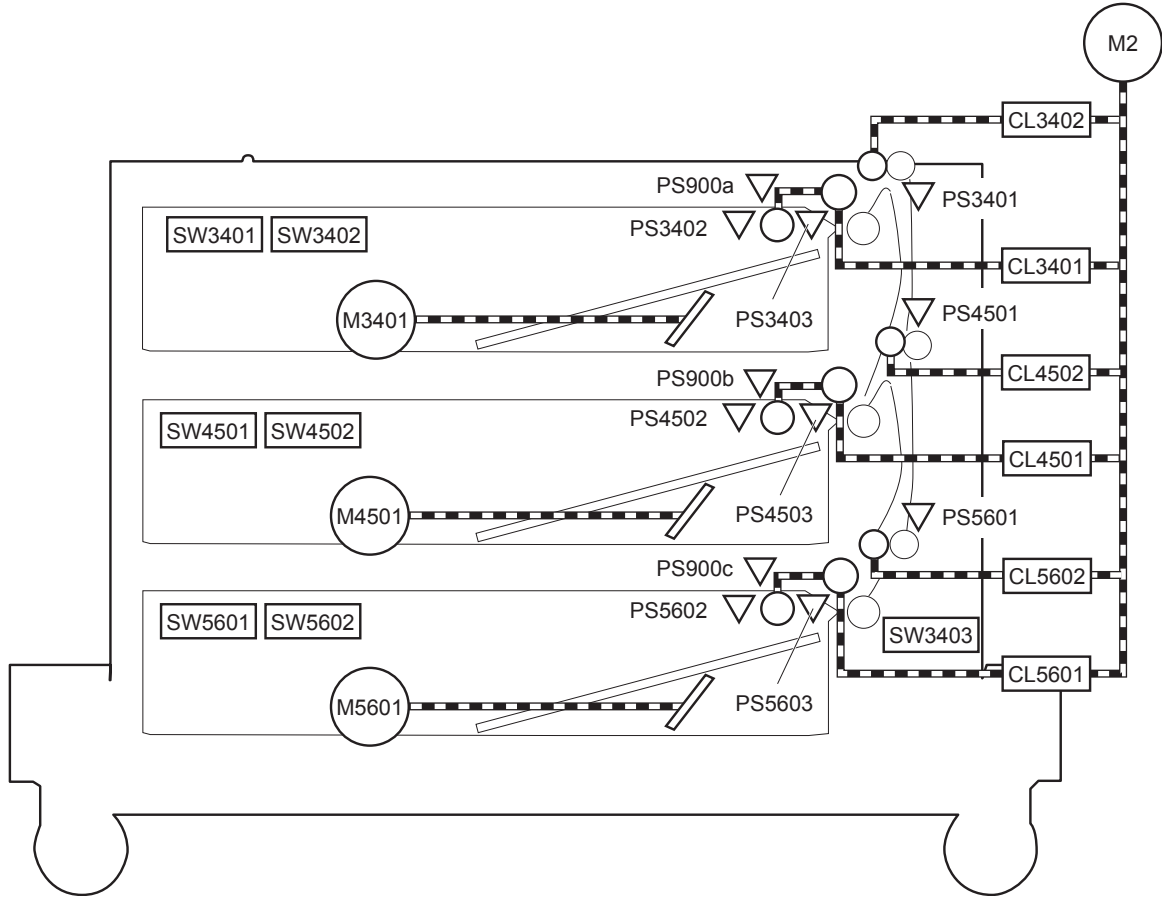
**Figure 1-35** Paper path for the 2,550 PD



**Pickup and feed components**

The paper deck picks up the sheet of paper in the HCI tray and feeds it to the printer. Each paper deck has one motor for lifting up the cassette.

**Figure 1-36** Pickup and feed components for 1x550 paper deck and 3x550 paper deck



**Table 1-28** Pickup and feed components for 1x550 paper deck and 3x550 paper deck

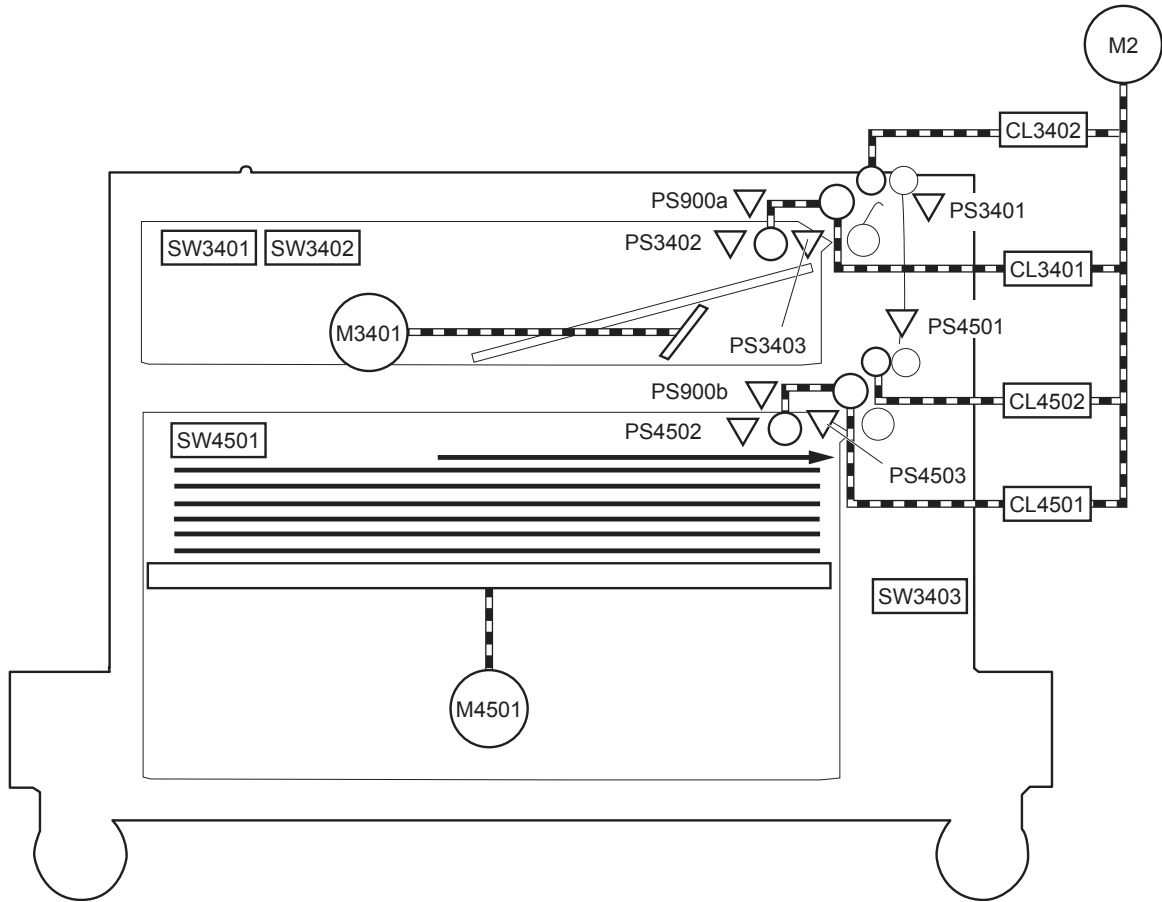
Component type	Abbreviation	Component	1x550	3x550
Motor	M2	Drum motor (included in printer)	No	No
	M3401 <sup>1</sup>	PD tray 1 lifter motor	Yes	Yes
	M4501 <sup>1</sup>	PD tray 2 lifter motor	No	Yes
	M5601 <sup>1</sup>	PD tray 3 lifter motor	No	Yes
Clutch	CL3401	PD tray 1 pickup clutch	Yes	Yes
	CL3402	PD tray 1 feed clutch	Yes	Yes
	CL4501	PD tray 2 pickup clutch	No	Yes
	CL4502	PD tray 2 feed clutch	No	Yes
	CL5601	PD tray 3 pickup clutch	No	Yes
	CL5602	PD tray 3 feed clutch	No	Yes
Switch	SW3401	PD tray 1 media size switch 1	Yes	Yes
	SW3402	PD tray 1 media size switch 2	Yes	Yes
	SW4501	PD tray 2 media size switch 1	No	Yes
	SW4502	PD tray 2 media size switch 2	No	Yes

**Table 1-28 Pickup and feed components for 1x550 paper deck and 3x550 paper deck (continued)**

<b>Component type</b>	<b>Abbreviation</b>	<b>Component</b>	<b>1x550</b>	<b>3x550</b>
	SW5601	PD tray 3 media size switch 1	No	Yes
	SW5602	PD tray 3 media size switch 2	No	Yes
	SW3403	PD door switch	Yes	Yes
Sensor	PS3401	PD tray 1 feed sensor	Yes	Yes
	PS3402	PD tray 1 media out sensor	Yes	Yes
	PS3403	PD tray 1 media surface sensor	Yes	Yes
	PS4501	PD tray 2 feed sensor	No	Yes
	PS4502	PD tray 2 media out sensor	No	Yes
	PS4503	PD tray 2 media surface sensor	No	Yes
	PS5601	PD tray 3 feed sensor	No	Yes
	PS5602	PD tray 3 media out sensor	No	Yes
	PS5603	PD tray 3 media surface sensor	No	Yes
	PS900a	PD separation roller rotation sensor 1	Yes	Yes
	PS900b	PD separation roller rotation sensor 21	No	Yes
	PS900c	PD separation roller rotation sensor 31	No	Yes

1

**Figure 1-37** Pickup and feed components for the 2,550-sheet paper deck



**Table 1-29** Pickup and feed components for the 2,550-sheet paper deck

Component type	Abbreviation	Component
Motor	M2	Drum motor (included in the printer)
	M3401	PD tray 1 lifter motor
	M4501	PD tray 2 lifter motor
Clutch	CL3401	PD tray 1 pickup clutch
	CL3402	PD tray 1 feed clutch
	CL4501	PD tray 2 pickup clutch
	CL4502	PD tray 2 feed clutch
Switch	SW3401	PD tray 1 media size switch 1
	SW3402	PD tray 1 media size switch 2
	SW4501	PD tray 2 media size switch 1
	SW3403	PD door switch
Sensor	PS3401	PD tray 1 feed sensor
	PS3402	PD tray 1 media out sensor
	PS3403	PD tray 1 media surface sensor

**Table 1-29 Pickup and feed components for the 2,550-sheet paper deck (continued)**

Component type	Abbreviation	Component
	PS4501	PD tray 2 feed sensor
	PS4502	PD tray 2 media out sensor
	PS4503	PD tray 2 media surface sensor
	PS900a	PD separation roller rotation sensor 1
	PS900b	PD separation roller rotation sensor 2

**Table 1-30 Pickup and feed functions for the 1x550, 3x550, and 2,550 paper decks**

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

## Paper deck jam detection

The printer DC controller detects jams during pickup or feed from the paper deck.

## Output accessories

An optional 2-bin or 5-bin staple stacker multi bin mailbox (SSMBM) is available for the printer.

Models	Supported SSMBM
M631, M632, M633	2-bin SSMBM
M607, M608, M609	5-bin SSMBM

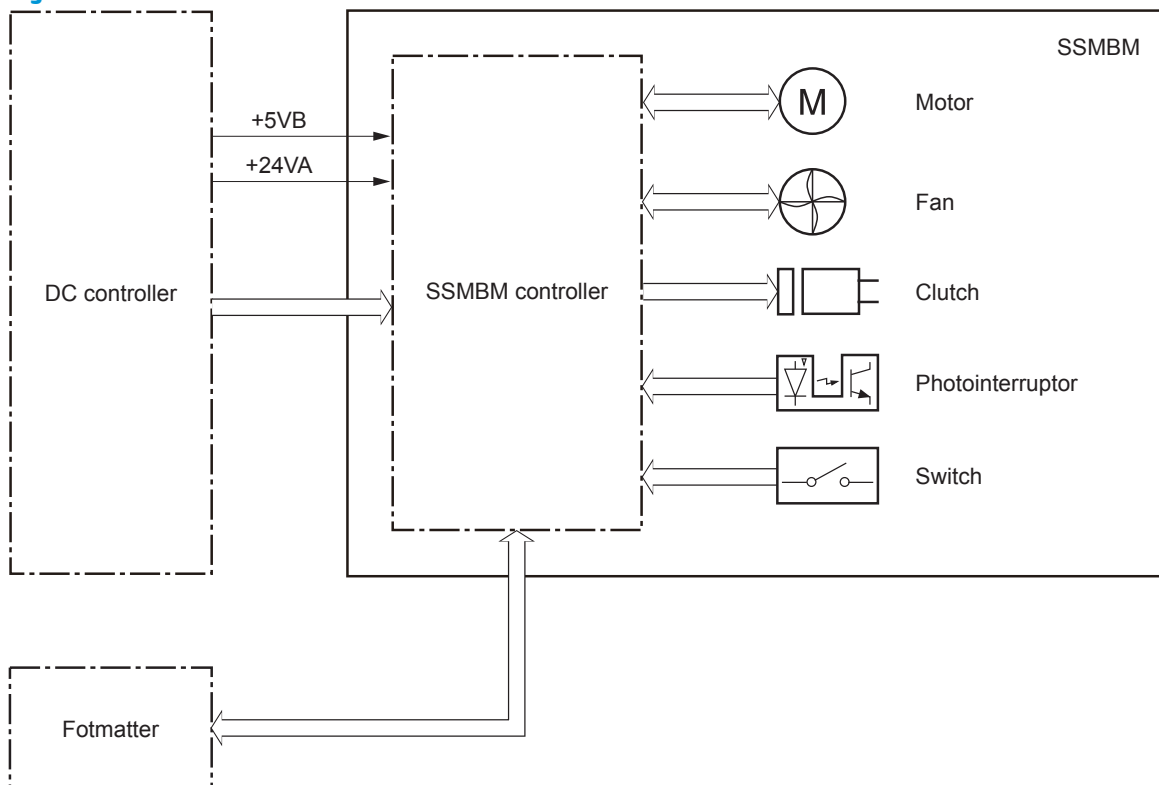
### 2-bin staple stacker multi-bin mailbox (SSMBM)

The 2-bin (SSMBM) is available for the M631, M632, and M633 models. It is installed above the printer and delivers the paper to the output tray after stapling.

#### Controller

The SSMBM controller controls the operation sequence of the SSMBM.

**Figure 1-38** SSMBM controller

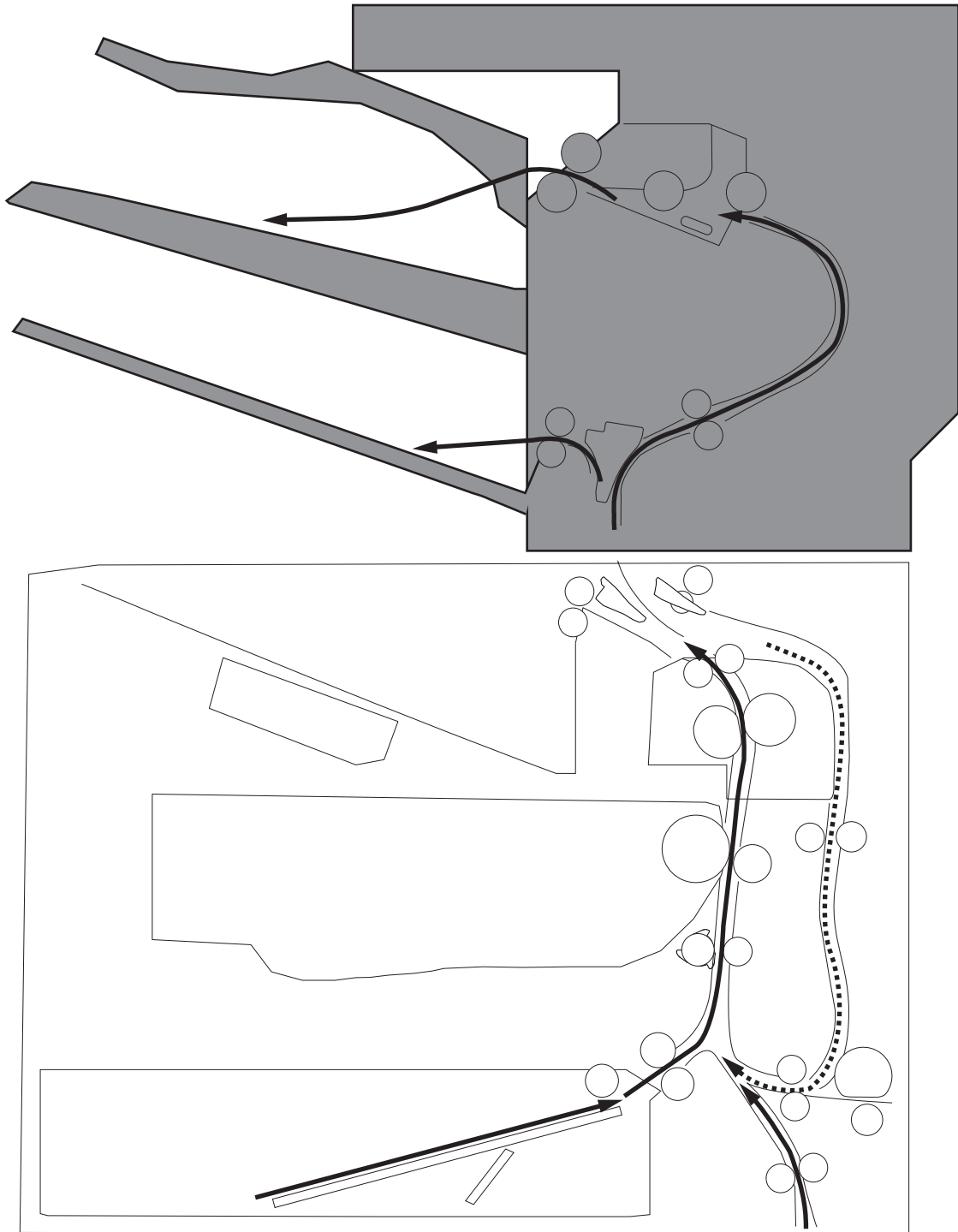


#### Paper path

The following figure shows the paper path for the 2-bin SSMBM:



**Figure 1-39** Paper path for the 2-bin SSMBM



## Motors

The 2-bin SSMBM has six motors for the paper feed, paper alignment, and stapling.

**Table 1-31 Motors for the 2-bin SSMBM**

Component		Components driven
M11	SS output motor	Output bin 1 delivery roller, exit feed roller
M12	SS feed motor	Output bin 2 delivery roller, inlet feed roller
M14	Jogger motor	Jogger guide
M15	Y alignment motor	Alignment roller Engages/disengages the output in 1 delivery order
M16	Staple motor	Staple
M17	Lifter motor	Lift up the output bin 1

 **NOTE:** The SSMBM does not detect motor failures.

## Fan

The SSMBM has a fan that prevents the temperature from rising in the SSMBM. The SSMBM controller detects fan failure.

**Table 1-32 Fan for the 2-bin SSMBM**

Component		Cooling area	Type	Speed
Fan11	MBM fan	Inside the SSMBM	Intake	Full/Low

## Delivery functions

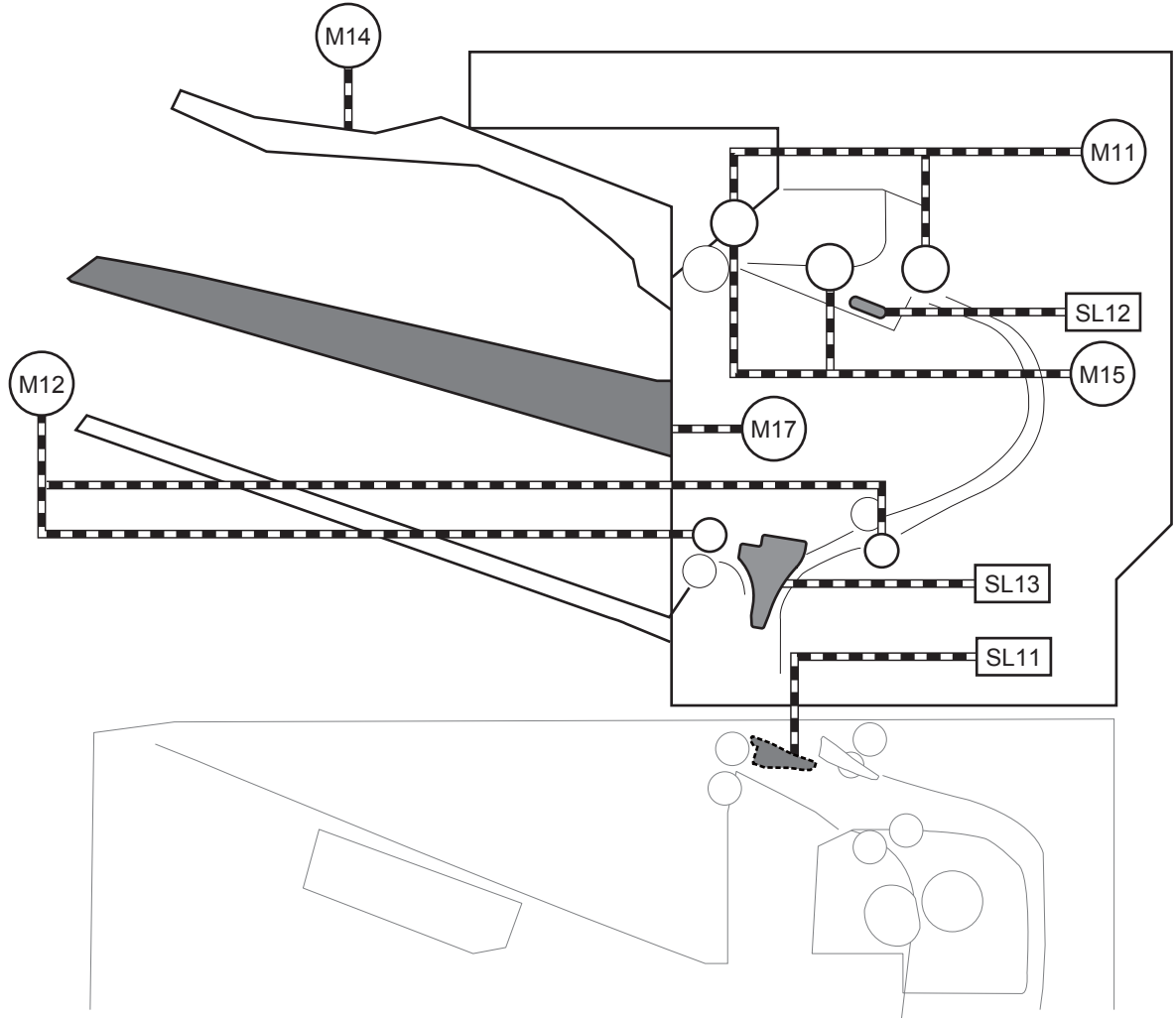
**Table 1-33 Delivery functions for the SSMBM**

Function	Supported feature
Mailbox mode	Yes
Stacker mode	No
Function separator mode	No
Job separator mode	No
Collator mode	No
Staple control	Yes
Automatic delivery	Yes

## Delivery operation

The SSMBM delivers paper from the printer to the specified output bin for each print job (mailbox mode).

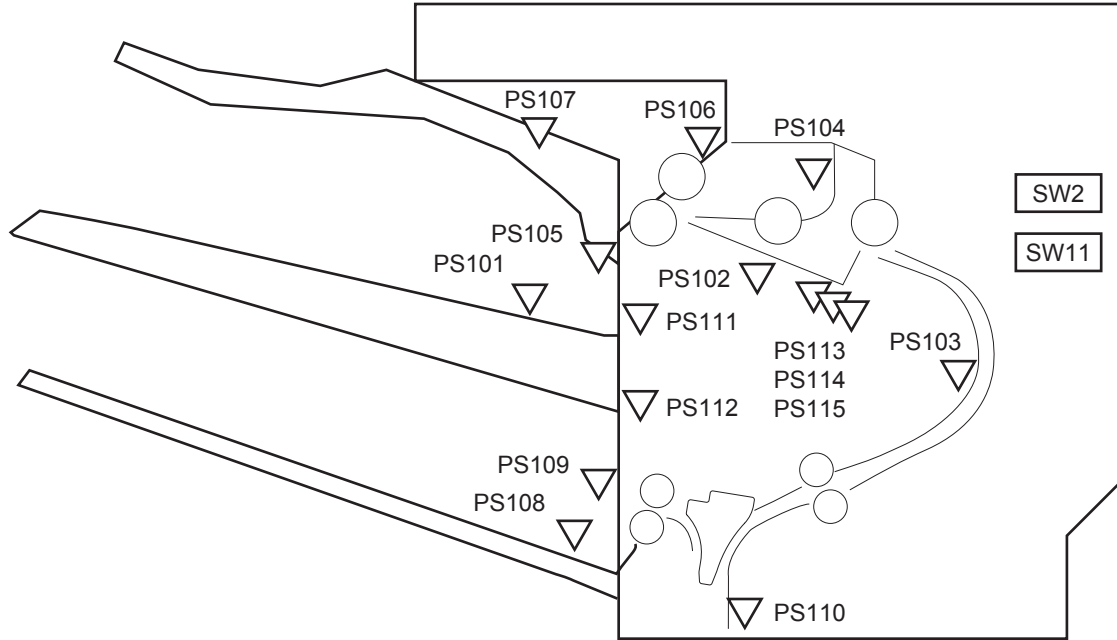
**Figure 1-40** Motors and solenoids for the 2-bin SSMBM



**Table 1-34** Motors and solenoids for the 2-bin SSMBM

Abbreviation	Component
M11	SS output motor
M12	SS feed motor
M14	Jogger motor
M15	Y alignment motor
M16	Staple motor
M17	Lifter motor
SL11	Inlet flapper solenoid
SL12	Stamp solenoid
SL13	Output bin 2 flapper solenoid

**Figure 1-41** Sensors and switches for the 2-bin SSMBM



**Table 1-35** Sensors and switches for the 2-bin SSMBM

Abbreviation	Component
PS101	Bin 1 media presence sensor
PS102	SS exit sensor
PS103	Staple inlet sensor
PS104	Y alignment home position sensor
PS105	Bin 1 media full sensor
PS106	Alienation home position sensor
PS107	Jogger home position sensor
PS108	Bin 2 media presence sensor
PS109	Bin 2 media full sensor
PS110	SS inlet sensor
PS111	Bin 1 upper limit sensor
PS112	Bin 1 lower limit sensor
PS113	Staple low sensor
PS114	Staple ready sensor
PS115	Staple home position sensor
SW2	SS door switch
SW11	Staple door switch

## Jam detection

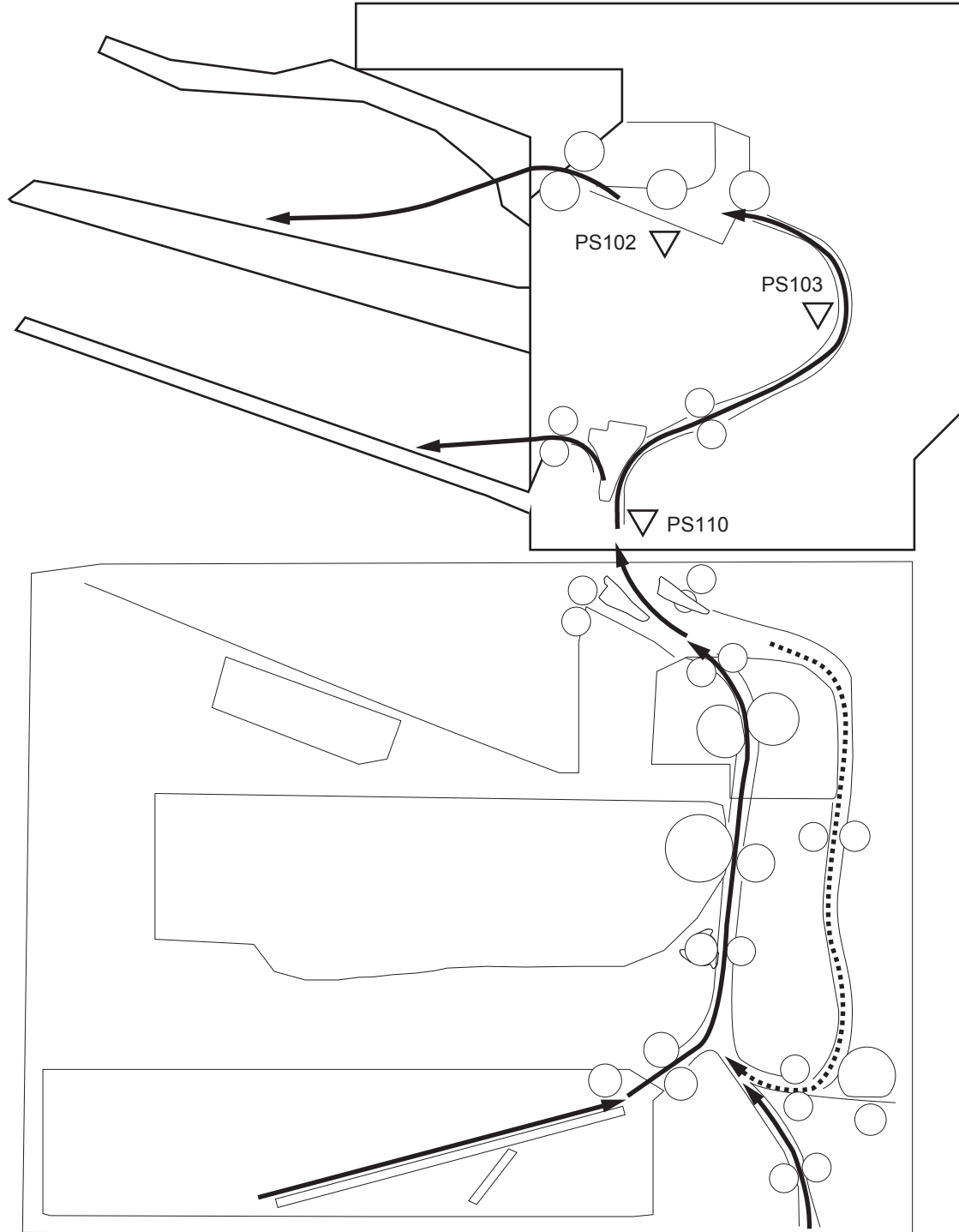
The SSMBM detects the following types of jams:

- Residual paper jam
- Feed delay jam
- Feed stay jam

The 2-bin SSMBM uses the following sensors to detect the presence of the paper and to check whether the paper is being fed correctly.

- SS exit sensor (PS102)
- Staple inlet sensor (PS103)
- SS inlet sensor (PS110)

**Figure 1-42** Paper path and location of sensors for the 2-bin SSMBM



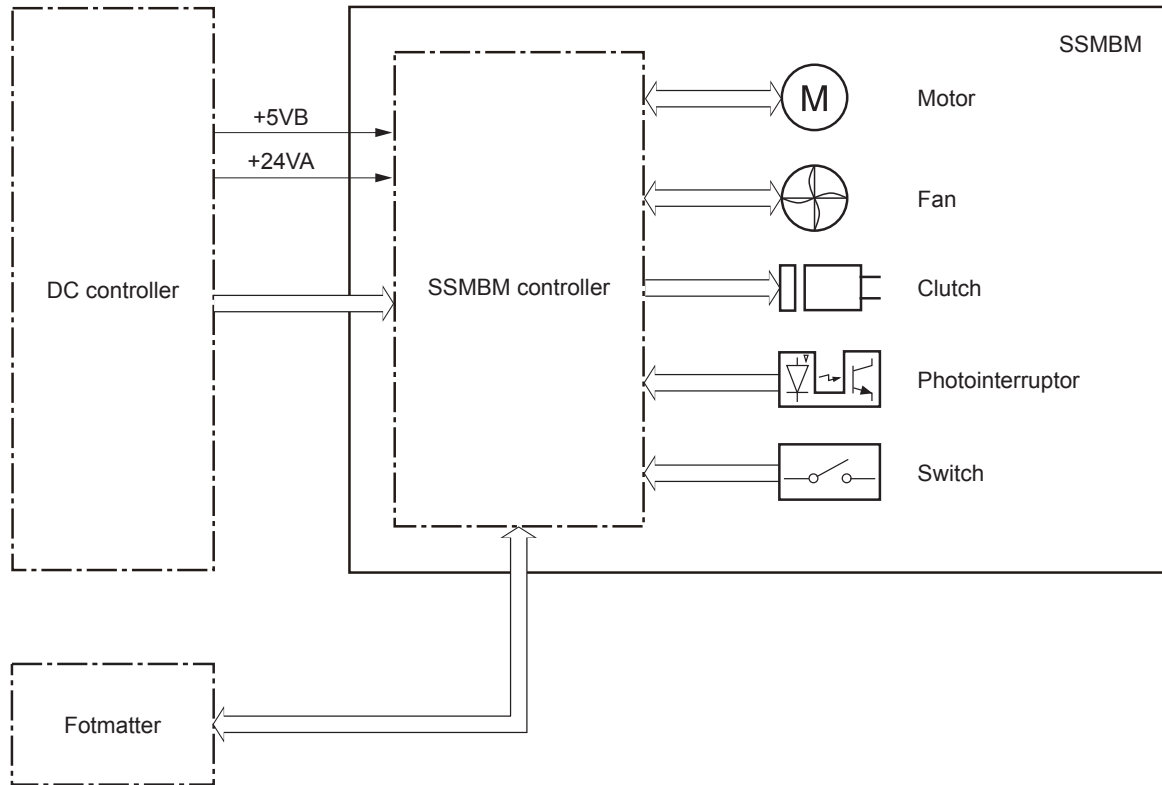
### **5-bin staple stacker multi bin mailbox (SSMBM)**

The 5-bin (SSMBM) is available for the M607, M608, and M609 models. It is installed above the printer and delivers the paper to the output tray after stapling.

## Controller

The SSMBM controller controls the operation sequence of the SSMBM.

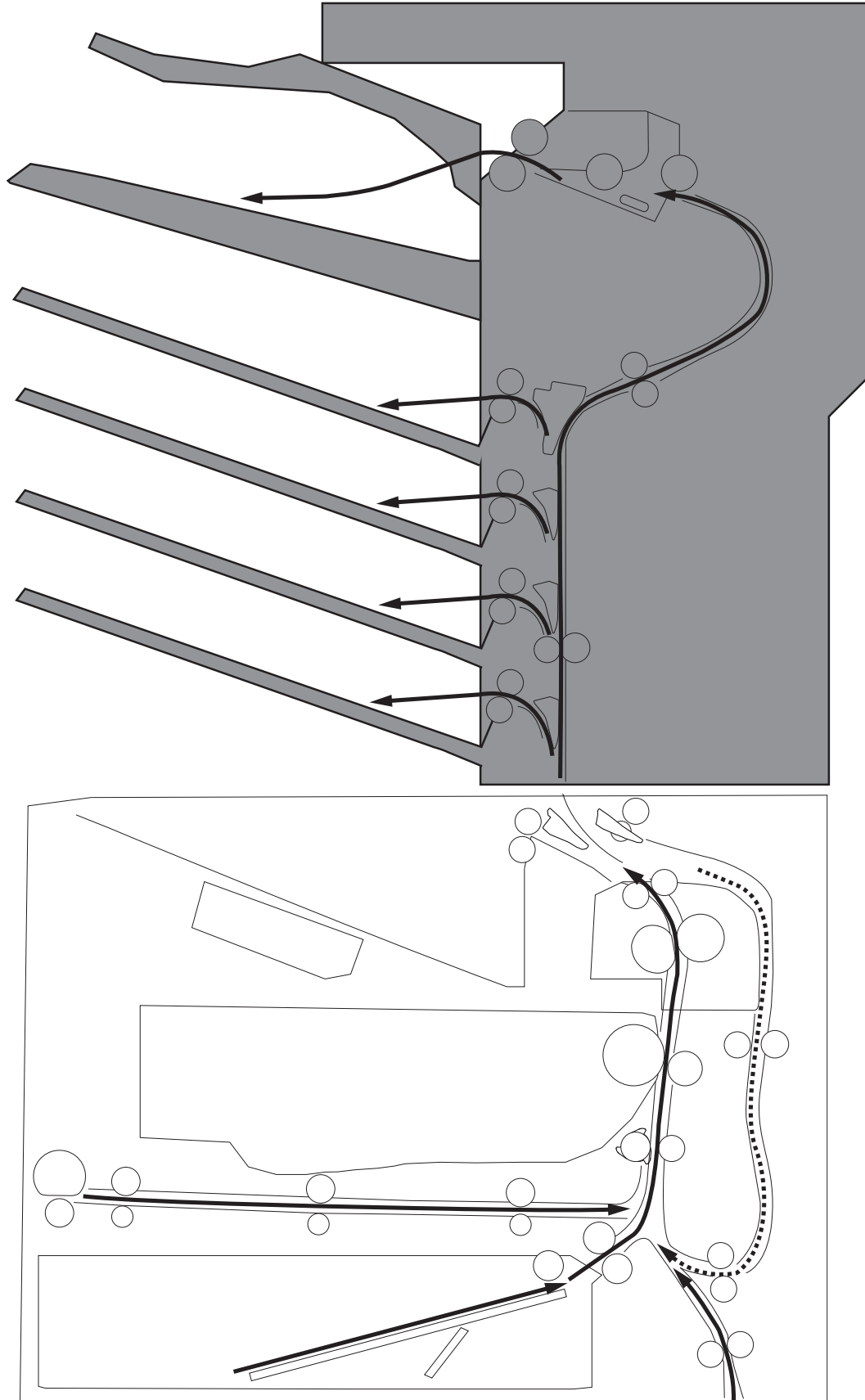
**Figure 1-43** SSMBM controller



## Paper path

The following figure shows the paper path for the 5-bin SSMBM

**Figure 1-44** Paper path for the 5-bin SSMBM





## Motors

The 5-bin SSMBM has six motors for the paper feed, paper alignment, and stapling.

**Table 1-36 Motors for the 5-bin SSMBM**

Component		Components driven
M11	SS output motor	Output bin 1 delivery roller, exit feed roller
M12	SS feed motor	Output bin 2 delivery roller, inlet feed roller
M13	MBM feed motor	Output bin 3 delivery roller, output bin 4 delivery roller, output bin 5 delivery roller, feed roller
M14	Jogger motor	Jogger guide
M15	Y alignment motor	Alignment roller Engages/disengages the output in 1 delivery order
M16	Staple motor	Staple
M17	Lifter motor	Lift up the output bin 1

 **NOTE:** The SSMBM does not detect motor failures.

## Fan

The SSMBM has a fan that prevents the temperature from rising in the SSMBM. The SSMBM controller detects fan failure

**Table 1-37 Fan for SSMBM**

Component		Cooling area	Type	Speed
Fan11	MBM fan	Inside the SSMBM	Intake	Full/Low

## Delivery functions

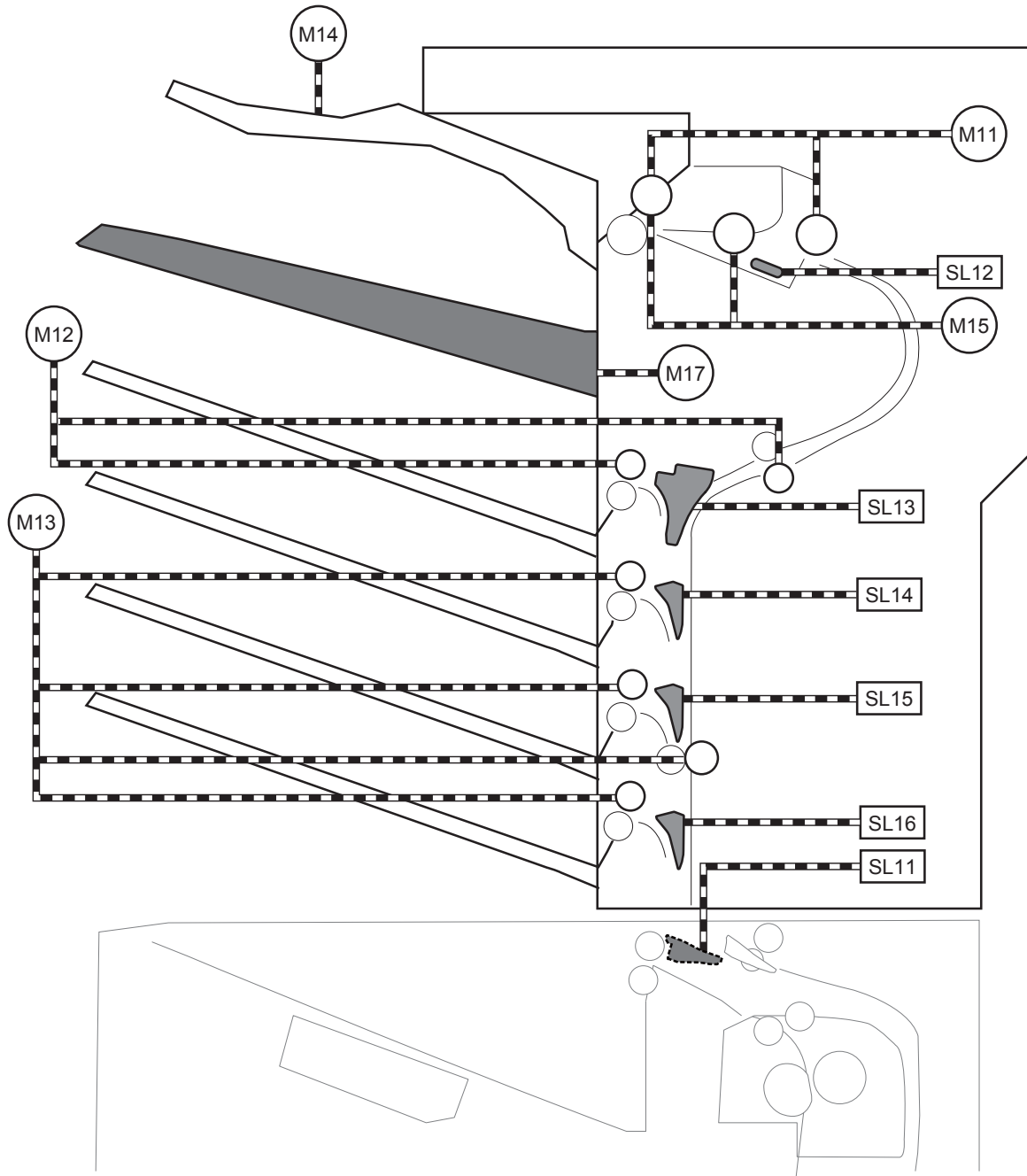
**Table 1-38 Delivery functions for the SSMBM**

Function	Supported feature
Mailbox mode	Yes
Stacker mode	No
Function separator mode	No
Job separator mode	No
Collator mode	No
Staple control	Yes
Automatic delivery	Yes

## Delivery operation

The SSMBM delivers paper from the printer to the specified output bin for each print job (mailbox mode).

**Figure 1-45** Motors and solenoids for the 5-bin SSMBM



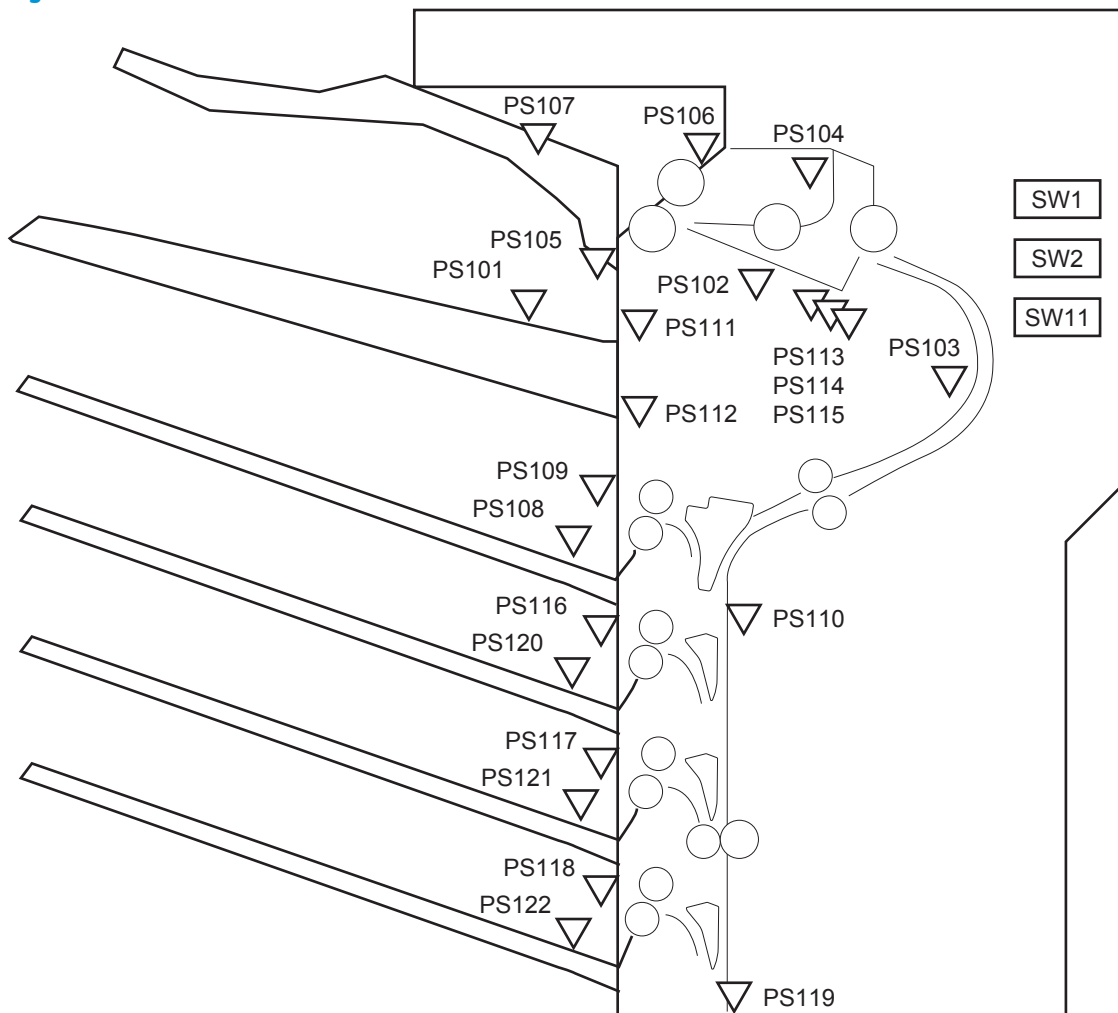
**Table 1-39** Motors and solenoids for the 5-bin SSMBM

Abbreviation	Component
M11	SS output motor
M12	SS feed motor
M13	MBM feed motor

**Table 1-39 Motors and solenoids for the 5-bin SSMBM (continued)**

Abbreviation	Component
M14	Jogger motor
M15	Y alignment motor
M16	Staple motor
M17	Lifter motor
SL11	Inlet flapper solenoid
SL12	Stamp solenoid
SL13	Output bin 2 flapper solenoid
SL14	Output bin 3 flapper solenoid
SL15	Output bin 4 flapper solenoid
SL16	Output bin 5 flapper solenoid

**Figure 1-46 Sensors and switches for the 5-bin SSMBM**



**Table 1-40 Sensors and switches for the 5-bin SSMBM**

<b>Abbreviation</b>	<b>Component</b>
PS101	Bin 1 media presence sensor
PS102	SS exit sensor
PS103	Staple inlet sensor
PS104	Y alignment home position sensor
PS105	Bin 1 media full sensor
PS106	Alienation home position sensor
PS107	Jogger home position sensor
PS108	Bin 2 media presence sensor
PS109	Bin 2 media full sensor
PS110	SS inlet sensor
PS111	Bin 1 upper limit sensor
PS112	Bin 1 lower limit sensor
PS113	Staple low sensor
PS114	Staple read sensor
PS115	Staple home position sensor
PS116	Bin 3 media full sensor
PS117	Bin 4 media full sensor
PS118	Bin 5 media full sensor
PS119	MBM inlet sensor
PS120	Bin 3 media presence sensor
PS121	Bin 4 media presence sensor
PS122	Bin 5 media presence sensor
SW1	MBM door switch
SW2	SS door switch
SW11	Staple door switch

## Jam detection

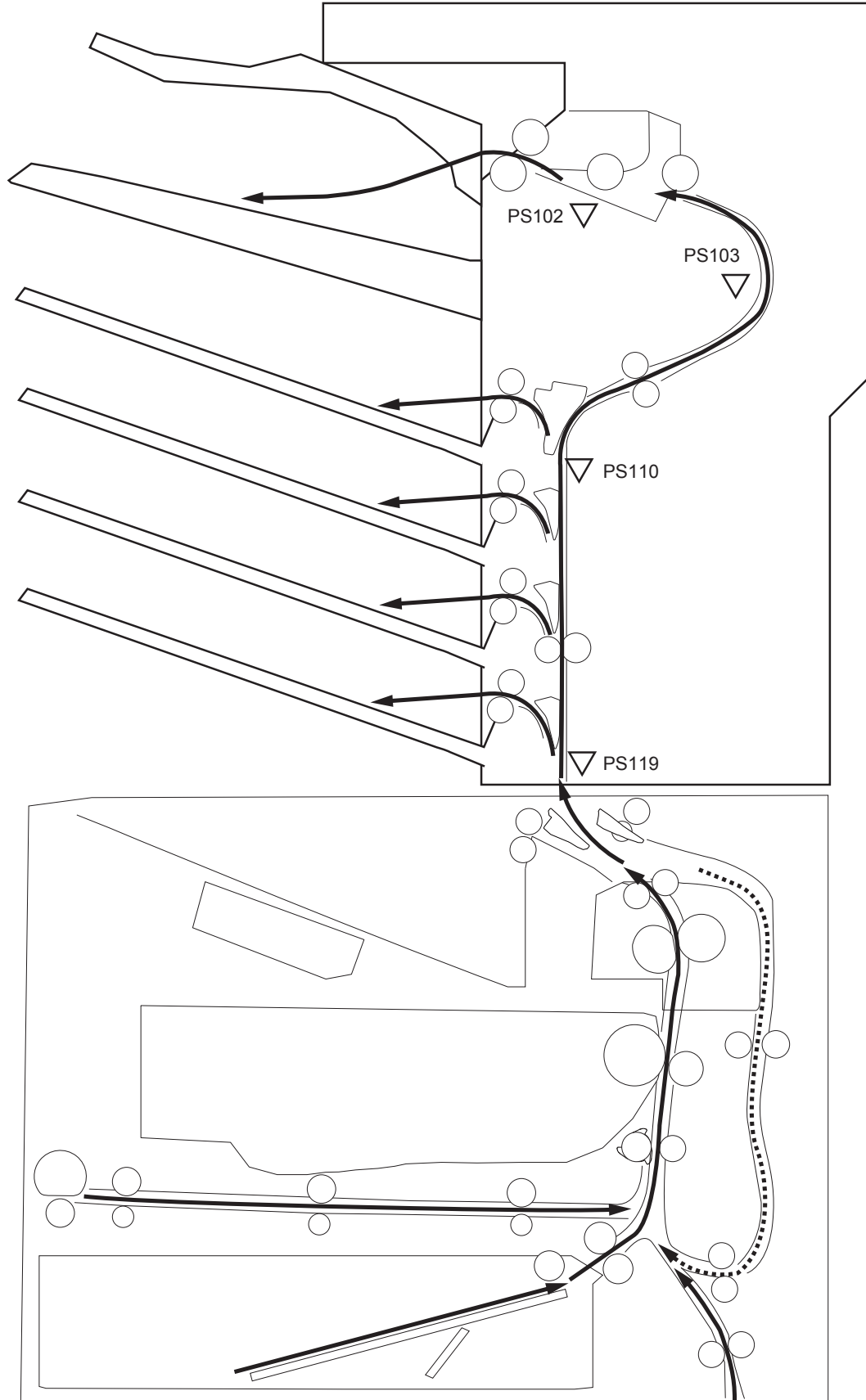
The SSMBM detects the following types of jams:

- Residual paper jam
- Feed delay jam
- Feed stay jam

The 5-bin SSMBM uses the following sensors to detect the presence of the paper and to check whether the paper is being fed correctly.

- SS exit sensor (PS102)
- Staple inlet sensor (PS103)
- SS inlet sensor (PS110)
- MBM inlet sensor (PS119)

**Figure 1-47** Paper path and location of sensors for the 5-bin SSMBM



## Scanning and image capture system (M631, M632, M633)



**NOTE:** This section is for the M631, M632, and M633 printers only.

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The scanner is a carriage-type platen scanner which includes the frame, glass, scan module, and a scan control board (SCB). The scanner has a sensor to detect legal-sized media and a switch to indicate when the document feeder is opened.

The document feeder and control panel are attached to the scanner. If the scanner fails, it can be replaced as a whole unit. The scanner replacement part does not include the document feeder, control panel, or SCB.

# Document feeder system (M631, M632, M633)



**NOTE:** This section is for the M631, M632, and M633 printers only.

---

## Document feed system

This section describes the following:

- Sensors in the document feeder
- Document feeder paper path
- Simplex single-pass scanning
- Electronic duplexing (e-duplex) single-pass scanning
- Deskew operation
- Document feeder hinges

The printer supports single-pass electronic duplexing (e-duplex) copy jobs. Two separate scan modules scan the front-side and back-side of an e-duplex copy job page in a single pass through the document feeder.

For the WF class, this ADF supports a smart background which auto-crops and adjusts the image extents.

## Sensors in the document feeder

The document feeder contains the following sensors:

- **ADF paper present sensor:** Detects whether a document is present in the document feeder. If paper is present in the document feeder when copies are made, the printer scans the document using the document feeder. If no paper is present when copies are made, the printer scans the document using the scanner glass.
- **ADF Y (length) sensor:** Detects whether a legal-size original is present in the document feeder.
- **ADF jam cover sensor:** Detects whether the document feeder cover is open or closed.
- **ADF paper path deskew sensor:** Detects the top of the page as it enters the deskew rollers.
- **ADF paper path pick success sensor:** Detects a successful one page feed from the document feeder tray.



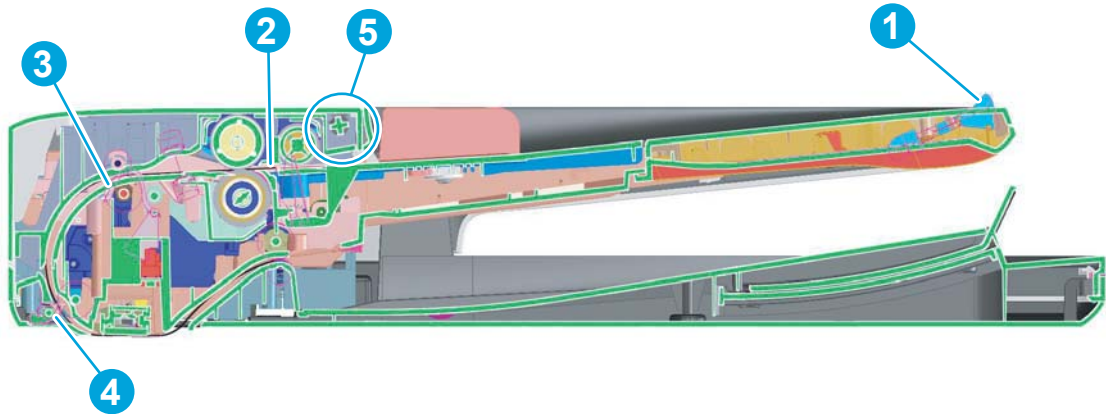
**NOTE:** This sensor uses ultrasonic sound to detect a multi-page paper feed.

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- **Paper path sensor 1:** Detects the top of the page as it approaches the front-side scan module (document feeder glass).



**Figure 1-48 Document feeder sensors**

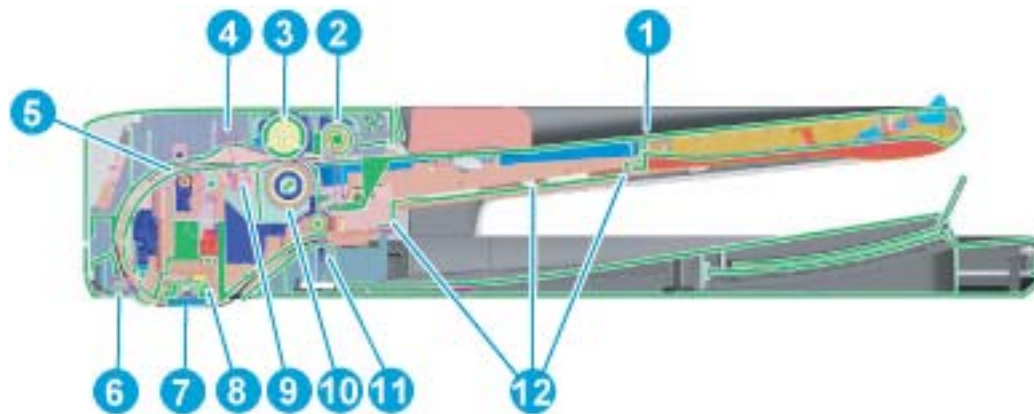


**Table 1-41 Document feeder sensors**

Item	Description
1	ADF Y (length) sensor
2	ADF paper present sensor
3	ADF deskew sensor
4	Paper path sensor 1
<p><b>NOTE:</b> For an e-duplex copy job, this sensor is used to activate the front-side scan module (in the scanner base) and the front-side background selector (in the document feeder), if needed.</p>	
5	ADF jam cover sensor (open the jam access cover and insert a folded piece of paper to activate the flag)

## Document feeder paper path

**Figure 1-49 Document feeder paper path**



**Table 1-42 Document feeder paper path**

Item	Description	Item	Description
1	Input tray	7	Front-side scan module
2	Pre-pick roller	8	Back-side scan module
<p><b>NOTE:</b> This scan module (document feeder glass) is located in the scanner base.</p>			

**Table 1-42 Document feeder paper path (continued)**

Item	Description	Item	Description
3	Pick roller	9	ADF pick success transmitter
4	ADF pick success receiver	10	Separator roller
5	Deskew drive roller	11	Exit drive roller
6	Prescan drive roller	12	Lift plate

## Document feeder simplex operation

Following is the basic sequence of operation for a document feeder simplex job.

1. The ADF jam cover sensor detects when the cover door is in the closed position.
2. The ADF paper present sensor activates when paper is loaded onto the input tray.
3. The feed motor rotates to raise the lift plate and starts to pick the loaded paper.
4. The ADF multi-pick (ultrasonic) sensor activates when the leading edge of the media is driven past the sensor. The printer firmware registers a successful pick operation.
5. The ADF paper path deskew activates when the leading edge of the paper passes it. The printer firmware registers the leading edge of the paper position.
6. The leading edge of the paper drives into the nip point of the deskew drive roller and the deskew pinch rollers. This creates a buckle of paper by the nip point for pick-skew correction.
7. The deskew motor rotates the deskew drive roller to pull the paper into the prescan drive roller.
8. The pick motor stops turning and allows both the pick and feed roller to turn freely while the paper is pulled in by the deskew drive roller.
9. The feed motor rotates to drive the paper into the prescan front-side sensor. The firmware registers the leading edge position of the paper as the multi-pick sensor activates.
10. The feed motor continues to rotate and drive the leading edge of the paper through the preset distance from the multi-pick sensor to the front-side scan zone. The scanner begins the scanning and data retrieval process.
11. The ADF multi-pick (ultrasonic) sensor deactivates when the trailing edge of the paper passes the sensor. The firmware registers the trailing edge of the paper position.
12. The feed motor continues to rotate and drive the trailing edge of the paper through the preset distance from the ADF multi-pick (ultrasonic) sensor to the front-side scan zone. The scanner ends the scanning and data retrieval process.
13. The feed motor continues to rotate and ejects the trailing edge of the paper into the output bin.
14. One of the following occurs:
  - If the copy job is complete, the ADF paper present sensor deactivates. The feed motor reverses rotation to raise the pick roller.
  - If the copy job is not complete, the ADF paper present sensor is active. The printer firmware detects additional pages in the input tray and the process repeats.

## Document feeder e-duplex operation

Following is the basic sequence of operation for a document feeder simplex job.



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**NOTE:** For an e-duplex copy job, the background scan operation begins immediately after the simplex sequence of operation ends.

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1. The feed motor continues to drive the paper until the leading edge activates the prescan back-side sensor. The printer firmware registers the position of the leading edge of the paper.
2. The feed motor continues to rotate to drive the leading edge of the paper through the preset distance from prescan back-side sensor to the back-side background selector scan zone. The back-side background scan module begins scanning and retrieval of the data.
3. The prescan back-side sensor deactivates when the trailing edge of the paper passes it. The printer firmware registers the trailing edge of the paper position.
4. The feed motor continues to rotate to drive the trailing edge of the paper edge past the back-side background selector scan zone.
5. The feed motor continues to rotate and ejects the trailing edge of the paper into the output bin.
6. One of the following occurs:
  - If the copy job is complete, the ADF paper present sensor deactivates. The feed motor reverses rotation to raise the pick roller.
  - If the copy job is not complete, the ADF paper present sensor is active. The printer firmware detects additional pages in the input tray and the process repeats.

## Deskew operation

Sliding side guides on the input tray make sure that the paper stack is correctly aligned at the center of the input tray when paper is loaded in the tray. The correct position of the loaded paper is parallel with the direction of travel into the document feeder paper path.

The document feeder further reduces paper skew due to improper loading of paper in the input tray by buckling the paper to create a paper buffer.

The document feeder aligns the leading edge of the paper parallel with the deskew drive rollers before it is driven further into the document feeder paper path.

 **NOTE:** If the page to be copied is smaller than the minimal sliding guide setting, do not use the document feeder for the copy job. Attempting to copy too small of a page using the document feeder can result in document feeder jams and/or damage to the original page. Instead, use the flatbed glass to copy the page.

**Figure 1-50** Deskew operation



## Document feeder hinges

The document feeder hinges allow positioning the assembly vertically above the scanner glass to accommodate the placement of books and other objects up to 25 mm (1.0 in) in height on the scanner glass. The document feeder still closes (the bottom of the ADF is kept parallel to the scanner glass) and allows the printer to operate.

The document feeder hinges provide height adjustment of 25 mm (1.0 in) when a maximum downward force of 4.5 kg (10 lb) is applied at the front edge of the assembly, with the fulcrum (such as the spine of a book) centered on the scanner glass and parallel to its long axis.

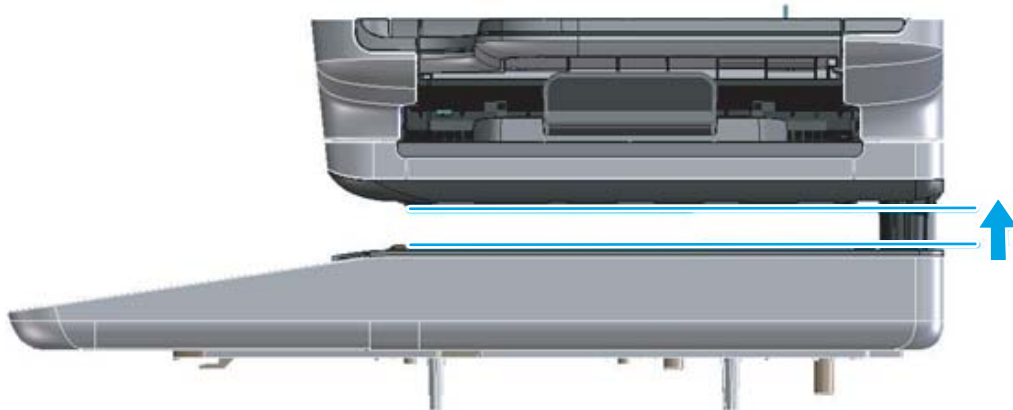
The document feeder will withstand a downward force of about 4.5 kg (10 lb) applied at the front edge center of the assembly—when the fulcrum (such as the spine of a book) is located anywhere on the scanner glass and parallel to its long axis—without breaking, deforming, detaching or experiencing performance degradation.

The document feeder hinges support the assembly in the open position and prevent the document feeder from suddenly closing in a damaging or loud manner.

The hinges can hold the document feeder static in all positions higher than 100 mm (3.93 in); measured at the front of the assembly. Less than 2.3 kg (5 lb) of force is required to open or close the document feeder.

The hinges allow the document feeder to open to an angle of between 60° and 80° from the horizontal position (this angle will not allow the printer to tip over).

**Figure 1-51** Document feeder open (book mode)



**Figure 1-52** Document feeder open (60° to 80°)





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## 2 Solve problems

- [Solve problems checklist](#)
- [Troubleshooting process](#)
- [Tools for troubleshooting](#)
- [Improve print quality](#)
- [Print quality troubleshooting guide](#)
- [Clean the printer](#)
- [Solve paper handling problems](#)
- [Solve performance problems](#)
- [Solve connectivity problems](#)
- [Service mode functions](#)
- [Firmware upgrades](#)
- [Solve fax problems \(M631, M632, M633\)](#)
- [Solve email problems \(M631, M632, M633\)](#)

### For additional service and support information

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

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

At these locations, find information on the following topics:

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

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

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





# Solve problems checklist

- [Solve problems checklist](#)
- [Print menu map](#)
- [Print current settings pages](#)
- [View, print and clear the event log](#)
- [Pre-boot menu options](#)

## 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. If the control panel is blank or black, check the following before proceeding:
  - Check to make sure that the printer is not in Sleep mode (tap the touchscreen control panel or press a button on the LCD control panel).
  - Check the power switch button (it should be blinking). Tap the power button to bring the printer out of Sleep mode.
  - Check the power cable.
  - Check that the power is turned on.
  - Make sure that the line voltage is correct for the printer power configuration. (See the label that is on the back of the printer for voltage requirements.) If a power strip is in use, and its voltage is not within specifications, connect the printer directly into the electrical outlet. If it is already connected into the outlet, try a different outlet.

If the control panel is not responding to touch (touchscreen models), or if it appears black or blank, try the following:



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**NOTE:** The following conditions indicate that the printer has frozen while in Sleep mode. Opening a door, tapping the control panel (touchscreen control panels), or pressing a control-panel button (LCD control panels) causes the printer to wake up from Sleep mode.

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- The control-panel home button LED is illuminated.
  - The power-switch LED flashes once every three to five seconds.
- a. Turn the printer power off, and then on again.
  - b. Verify that the control panel is correctly functioning by accessing the control panel diagnostics. See the Control-panel checks section of the printer *Troubleshooting Manual*.



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**TIP:** The LED on the formatter blinks if the control panel is not detected or the cables are not properly seated.

---

If the control panel does not respond to the diagnostic button, try the following:

- Try printing from a host computer. Does the printer print a test page?
  - Is the printer HP Embedded Web Server (EWS) accessible?
  - Turn the power off.
  - Reseat the cable connections on the bottom of the control-panel assembly and the control-panel connectors at the formatter.
  - Turn the printer power on, and then check for functionality of the control-panel by tapping the touchscreen or pressing a button on the LCD control panel.
- c. Try upgrading the firmware. If the firmware upgrade fails to resolve the problem, and the printer still freezes while in Sleep mode, elevate the case after collecting the following info:
- Try printing to the printer from a host computer. Does the printer print a page?
  - Is the printer HP Embedded Web Server (EWS) accessible?
  - Turn the printer power off, and then on again. Save the printer diagnostic file (see instructions further down in this section).
  - Try printing to the printer from a host computer. Does the printer print a page?
  - Is the printer HP Embedded Web Server (EWS) accessible?
  - Turn the printer power off, and then on again. Save the printer diagnostic file.

#### To save diagnostic files from a touchscreen control panel

1. From the Home screen on the printer control panel, swipe (right), and then touch the [Support Tools](#) button.
2. Open the following menus:
  - [Troubleshooting](#)
  - [Retrieve Diagnostic Data](#)
3. Follow the prompts on the control-panel display to save the data.



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**NOTE:** The exported data might contain personally (customer) identifiable information.

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#### To save diagnostic files from a LCD control panel

1. From the Home screen on the printer control panel, use the down arrow ▼ button to select the [Print](#) menu.
2. Use the right arrow ► button to scroll to and select the [Support Tools](#) menu, and then press the [OK](#) button.
3. Use the down arrow ▼ button to scroll to and select the [Troubleshooting](#) menu, and then press the [OK](#) button.

4. Use the down arrow ▼ button to scroll to and select the [Retrieve Diagnostic Data](#) item, and then press the **OK** button.
5. Follow the prompts on the control-panel display to save the data.



---

**NOTE:** The exported data might contain personally (customer) identifiable information.

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- d. If the error persists, replace the control-panel assembly.
2. The control panel should indicate a [Ready](#), [Paused](#), or [Sleep mode on](#) status. If an error message displays, resolve the error.
    - Try using the Power-on checks section in the printer *Troubleshooting Manual* to solve the problem.
  3. For network connection errors, check the cables.
    - a. Check the network cable connections between the printer and the computer or network port. Make sure that the connections are secure.
- 
- b. Make sure that the cables are not faulty by trying different cables, if possible.
  - c. Check the network connection. Verify that the port is active.
4. Print a configuration page. If the printer is connected to a network, an HP Jetdirect page also prints.



---

**NOTE:** The network LEDs should be illuminated and flashing.

---

#### **Print a configuration page from a touchscreen control panel**

- a. From the Home screen on the printer control panel, swipe (right), and then touch the [Reports](#) button.
- b. Touch the [Configuration/Status Pages](#) item
- c. Touch [Configuration Page](#) to select it.



---

**TIP:** Multiple report pages can be selected, and then printed together.

---

- d. Touch the [Print](#) button to print the pages.

#### **Print a configuration page from a LCD control panel**

- a. From the Home screen on the printer control panel, use the down arrow ▼ button to select the [Print](#) menu.
- b. Use the right arrow ► button to scroll to [Reports](#), and then press the **OK** button.
- c. Use the down arrow ▼ button to scroll to [Configuration/Status Pages](#), and then press the **OK** button.
- d. Use the down arrow ▼ or ▲ buttons to scroll to [Configuration Page](#), and then press the **OK** button to select it.
- e. Use the down arrow ▼ and right arrow ► buttons to scroll to [Print](#), and then press the **OK** button to print the pages.




---

**TIP:** Multiple report pages can be selected, and then printed together.

---

- If the pages do not print, check that at least one tray contains paper.

---

 **TIP:** Make sure that the selected paper size and type meet HP specifications. Also open the **Trays** menu on the printer control panel and verify that the tray is configured correctly for the paper type and size.

---

- If the page jams in the printer, follow the instructions on the control panel to clear the jam.
- If the page does not print correctly, the problem is with the printer hardware.
- If the page prints correctly, the printer hardware is working. The problem is with the host computer, with the print driver, or with the program.

**5.** Print a supplies status page and then check that the maintenance items below are not at their end-of-life.

---


 **TIP:** If a maintenance item needs to be replaced, order the part number provided below.

---

**Print a supplies status page from a touchscreen control panel**

- a. From the Home screen on the printer control panel, swipe (right), and then touch the **Reports** button.
- b. Touch the **Configuration/Status Pages** item
- c. Touch **Supplies Status Page** to select it.

---

 **TIP:** Multiple report pages can be selected, and then printed together.


---

- d. Touch the **Print** button to print the pages.


**Print a supplies status page from a LCD control panel**

- a. From the Home screen on the printer control panel, use the down arrow ▼ button to select the **Print** menu.
- b. Use the right arrow ► button to scroll to **Reports**, and then press the **OK** button.
- c. Use the down arrow ▼ button to scroll to **Configuration/Status Pages**, and then press the **OK** button.
- d. Use the down arrow ▼ or ▲ buttons to scroll to **Supplies Status Page**, and then press the **OK** button to select it.
- e. Use the down arrow ▼ and right arrow ► buttons to scroll to **Print**, and then press the **OK** button to print the pages.

---

 **TIP:** Multiple report pages can be selected, and then printed together.

---

 **NOTE:** HP long-life consumables and maintenance kit life specifications are estimations. Actual individual life/yield during normal use varies depending on usage, environment, media, and other factors. Estimated life is not an implied guarantee or warrantable.

---

- Maintenance kit 110V/220V (includes the fuser, pickup and feed rollers, and secondary transfer roller); estimated life: 225,000 pages

- J8J87A (110V)
  - J8J88A (220V)
  - Fuser kit
    - J8J87-67901 (110V; new)
    - RM2-1256-000CN (110V; service)
    - J8J87-67901 (220V; new)
    - RM2-1257-000CN (2200V; service)
  - Toner cartridge
    - CF237Y
  - Document feeder roller kit; estimated life: 150,000 pages
    - J8J95A (new)
    - 5851-7202 (service)
- 6.** Verify that the correct print driver for this printer is installed. Check the program to make sure that the print driver for this printer is used. The print driver can be downloaded from the following Web sites: [www.hp.com/support/ljM607](http://www.hp.com/support/ljM607), [www.hp.com/support/ljM608](http://www.hp.com/support/ljM608), or [www.hp.com/support/ljM609](http://www.hp.com/support/ljM609), [www.hp.com/support/ljM631MFP](http://www.hp.com/support/ljM631MFP), [www.hp.com/support/ljM632MFP](http://www.hp.com/support/ljM632MFP), or [www.hp.com/support/ljM633MFP](http://www.hp.com/support/ljM633MFP).
- 7.** Print a short document from a different program that has worked in the past. If this solution works, the problem is with the program. 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.** If the printer is connected to the network, connect the printer directly to a host computer with a USB cable. Redirect the printer to the correct port, or reinstall the software (make sure to select the new connection type).


## Print menu map

To more easily navigate individual settings, print a report of the complete [Administration](#) menu.

### Print the settings menu map from a touchscreen control panel

1. From the Home screen on the printer control panel, swipe (right), and then touch the [Reports](#) button.
2. Touch the [Configuration/Status Pages](#) item
3. Touch [Settings Menu Map](#) to select it.

---

 **TIP:** Multiple report pages can be selected, and then printed together.


---

4. Touch the [Print](#) button to print the pages.

### Print the settings menu map from a LCD control panel

1. From the Home screen on the printer control panel, use the down arrow ▼ button to select the [Print](#) menu.
2. Use the right arrow ► button to scroll to [Reports](#), and then press the [OK](#) button.
3. Use the down arrow ▼ button to scroll to [Configuration/Status Pages](#), and then press the [OK](#) button.
4. Use the down arrow ▼ or ▲ buttons to scroll to [Settings Menu Map](#), and then press the [OK](#) button to select it.
5. Use the down arrow ▼ and right arrow ► buttons to scroll to [Print](#), and then press the [OK](#) button to print the pages.

---

 **TIP:** Multiple report pages can be selected, and then printed together.

---


## Print current settings pages

Printing the current settings page provides a map of the user configurable settings that might be helpful in the troubleshooting process.

### Print the current settings page from a touchscreen control panel

1. From the Home screen on the printer control panel, swipe (right), and then touch the [Reports](#) button.
2. Touch the [Configuration/Status Pages](#) item
3. Touch [Current Settings](#) to select it.

---

 **TIP:** Multiple report pages can be selected, and then printed together.

---


4. Touch the [Print](#) button to print the pages.

### Print the current settings page from a LCD control panel

1. From the Home screen on the printer control panel, use the down arrow ▼ button to select the [Print](#) menu.
2. Use the right arrow ► button to scroll to [Reports](#), and then press the [OK](#) button.
3. Use the down arrow ▼ button to scroll to [Configuration/Status Pages](#), and then press the [OK](#) button.

4. Use the down arrow ▼ or ▲ buttons to scroll to [Current Settings](#), and then press the **OK** button to select it.
5. Use the down arrow ▼ and right arrow ► buttons to scroll to [Print](#), and then press the **OK** button to print the pages.

---

 **TIP:** Multiple report pages can be selected, and then printed together.

---

## View, print and clear the event log

- [View or print the event log from the Troubleshooting menu](#)
- [View, print, or clear the event log from the Service menu](#)


Printing the event log might be helpful in the troubleshooting process. For more information, see the Interpret control-panel messages and event log entries section in the printer troubleshooting manual.

## View or print the event log from the Troubleshooting menu

### View or print the event log from a touchscreen control panel

1. From the Home screen on the printer control panel, swipe (right), and then touch the [Support Tools](#) button.
2. Open the following menus:
  - [Troubleshooting](#)
  - [Event log](#)
3. The event log displays on the screen. Touch the [Print](#) button to print the log.

---


 **NOTE:** Touch the [Done](#) button to return to the [Troubleshooting](#) menu.

---

### View or print the event log from a LCD control panel

1. From the Home screen on the printer control panel, use the down arrow ▼ button to select the [Print](#) menu.
2. Use the right arrow ► button to scroll to and select the [Support Tools](#) menu, and then press the **OK** button.
3. Use the down arrow ▼ button to scroll to and select the [Troubleshooting](#) menu, and then press the **OK** button.
4. Use the down arrow ▼ button to scroll to and select the [Event log](#) menu, and then press the **OK** button.
5. The event log displays on the screen. Use the left arrow ◀ or right arrow ► buttons to select the [Print](#) item, and then press the **OK** button.

---

 **NOTE:** Select the [Done](#) item to return to the [Troubleshooting](#) menu.

---

## View, print, or clear the event log from the Service menu

### View, print, or clear the event log from a touchscreen control panel

1. From the Home screen on the printer control panel, swipe (right), and then touch the [Support Tools](#) button.
2. Touch the [Service](#) button to display the sign on screen.



---

**NOTE:** Make sure that [Service Access Code](#) displays in the access type area.

---

3. Type in the following service access personal identification number (PIN) for the printer:
  - 05060717 (M607/M608/M609)
  - 05063117 (M631/M632/M633)
4. Touch [Event log](#) to display log. Touch the [Print](#) button to print the log.
5. Touch one of the following:
  - [Clear](#) (removes all log entries)
  - [Print](#) (prints the log)
  - [Done](#) (return to the [Service](#) menu)

### View, print, or clear the event log from a LCD control panel

1. From the Home screen on the printer control panel, use the down arrow ▼ button to select the [Print](#) menu.
2. Use the right arrow ► button to scroll to and select the [Support Tools](#) menu, and then press the [OK](#) button.
3. Use the down arrow ▼ button to scroll to and select the [Service](#) menu, and then press the [OK](#) button.
4. On the sign-in screen, enter the following service access code for the printer (use the printer keypad):



---

**NOTE:** Make sure that [Service Access Code](#) displays in the access type area.

---

- 05060717 (M607/M608/M609)
- 05063117 (M631/M632/M633)
5. After the PIN is entered press the [OK](#) button.
6. Use the down arrow ▼ button to scroll to [Event Code](#), and then press the [OK](#) button.
7. Use the left arrow ◀ or right arrow ► buttons to select from the following:



---

**NOTE:** Press the [OK](#) button after selecting an option.

---

- [Clear](#) (removes all log entries)
- [Print](#) (prints the log)
- [Done](#) (return to the [Service](#) menu)



## Pre-boot menu options

The **Pre-boot** menus are available prior to the printer initializing.

**CAUTION:** The **Format Disk** option (printers with a hard-disk drive only) performs a disk initialization for the entire disk. The operating system, firmware files, and third party files (among other files) will be completely lost. HP does not recommend this action.

**TIP:** The Pre-boot menu can be remotely accessed by using a telnet network protocol to establish an administration connection to the printer. See [Remote Admin on page 97](#).

### Open the Pre-boot menu from a touchscreen control panel

1. Touch the middle of the control-panel display when you see the **1/8** under the logo.

**Figure 2-1** Open the Pre-boot menu



2. On the **Pre-boot** menu screen, use the following buttons to navigate the tests.

**Figure 2-2** Pre-boot menu



Use this button to see more information about a selected item.



Use this button to scroll up through menu items.



Use this button to select a highlighted menu item.



Use this button to scroll down through menu items.



Use this button to go back to the previous menu.



Not used.



Use this button to exit a diagnostic test.

3. Use the arrow buttons on the touchscreen to navigate the **Pre-boot** menu.
4. Touch the **OK** button to select a menu item.

### Open the Pre-boot menu from a LCD control panel

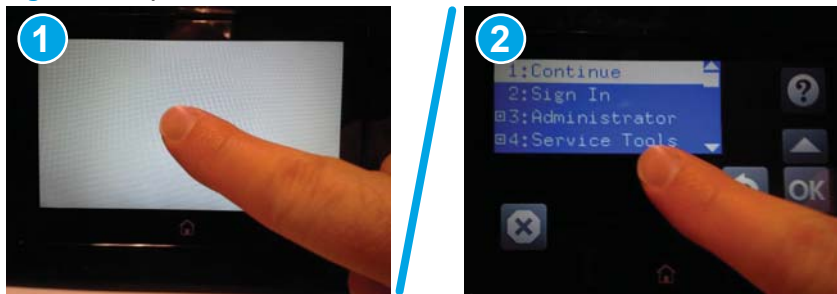
1. Press the **Cancel** button when you see the **1/8** under the logo.
2. Use the arrow buttons on the control panel to navigate the **Pre-boot** menu.
3. Press the **OK** button to select a menu item.

### Cold reset using the Pre-boot menu from a touchscreen control panel

**CAUTION:** This procedure resets all printer configurations and settings to factory defaults (customer configurations and settings are lost).

1. Touch the middle of the control-panel display when you see the **1/8** under the logo.

**Figure 2-3** Open the Pre-boot menu



2. Use the ▼ button to highlight the **+3:Administrator** item, and then touch the **OK** button.
3. Use the ▼ button to highlight the **+8:Startup Options** item, and then touch the **OK** button.
4. Use the ▼ button to highlight the **2 Cold Reset** item, and then touch the **OK** button to select it.
5. Touch the Home button to return to the main **Pre-boot** menu and highlight the **1:Continue** item, and then touch the **OK** button.


**NOTE:** The printer will initialize.

### Cold reset using the Pre-boot menu from a LCD control panel

**CAUTION:** This procedure resets all printer configurations and settings to factory defaults (customer configurations and settings are lost).

1. Press the **Cancel** button when you see the **1/8** under the logo.
2. Use the down arrow ▼ button to highlight the **+3:Administrator** item, and then press the **OK** button.
3. Use the down arrow ▼ button to highlight the **+8:Startup Options** item, and then press the **OK** button.
4. Use the down arrow ▼ button to highlight the **2 Cold Reset** item, and then press the **OK** button to select it.
5. Touch the Home button to return to the main **Pre-boot** menu and highlight the **1:Continue** item, and then touch the **OK** button.

 **NOTE:** The printer will initialize.

 **NOTE:** Some of the pre-boot options in the following tables are not supported by the current version of the printer firmware and are included for information only. Future versions of firmware will support these options.

**Table 2-1 Pre-boot menu options (1 of 7)**

Menu option	First level	Second level	Third level	Description
Continue				<p>Selecting the <a href="#">Continue</a> item exits the <a href="#">Pre-boot</a> menu and continues the normal boot process.</p> <p>If a selection is not made in the initial menu within 30 seconds, the printer returns to a normal boot (the same as selecting <a href="#">Continue</a>).</p> <p>If the user navigates to another menu, the timeout does not apply.</p>
Sign In				<p>Enter the administrator PIN or service PIN if one is required to open the <a href="#">Pre-boot</a> menu.</p>
Administrator				<p>This item navigates to the <a href="#">Administrator</a> submenus.</p> <p>If authentication is required (and the user is not already signed in) the <a href="#">Sign In</a> prompt displays. The user is required to sign in.</p>
	Download	Network		<p>This item initiates a Pre-boot firmware download process. A USB Thumbdrive option will work on all FutureSmart printers. USB or Network connections are not currently supported.</p>
		USB		
		USB Thumbdrive		
	Format Disk			<p>This item reinitializes the disk and cleans all disk partitions.</p> <p><b>CAUTION:</b> Selecting the <a href="#">Format Disk</a> item removes <b>all</b> data.</p> <p>A delete confirmation prompt is <b>not</b> provided.</p> <p>The system is <b>not</b> bootable after this action and a <b>99.09.67</b> error displays on the control panel. A firmware download must be performed to return the system to a bootable state.</p>
	Partial Clean			<p>This item reinitializes the disk (removing all data except the firmware repository where the master firmware bundle is downloaded and saved).</p> <p><b>CAUTION:</b> Selecting the <a href="#">Partial Clean</a> item removes <b>all</b> data except the firmware repository. A delete confirmation prompt is <b>not</b> provided.</p> <p><b>CAUTION:</b> This procedure resets all printer configurations and settings to factory defaults (customer configurations and settings are lost).</p> <p>This allows a user to reformat the disk by removing the firmware image from the active directory without having to download new firmware code (printer remains bootable).</p>

**Table 2-1 Pre-boot menu options (1 of 7) (continued)**

Menu option	First level	Second level	Third level	Description
	Change Password			Select this item to set or change the administrator password.
	Clear Password			Select the <a href="#">Clear Password</a> item to remove a password from the <a href="#">Administrator</a> menu. Before the password is actually cleared, a message will be shown asking to confirm that the password should be cleared. Press the <b>OK</b> button to confirm the action.  When the confirmation prompt displays, press the <b>OK</b> button to clear the password.

**Table 2-2 Pre-boot menu options (2 of 7)**

Menu option	First level	Second level	Third level	Description
Administrator (continued)	Manage Disk	Clear disk		Select the <a href="#">Clear disk</a> item to enable using an external device for job storage. Job storage is normally enabled only for the Boot device. This will be grayed out unless the <b>99.09.68</b> error is displayed.
		Lock Disk		Select the <a href="#">Lock Disk</a> item to lock (mate) a new secure disk to this printer.  The secure disk already locked to this printer will remain accessible to this printer. Use this function to have more than one encrypted disk accessible by the printer when using them interchangeably.  The data stored on the secure disk locked to this printer always remains accessible to this printer.
		Leave Unlocked		Select the <a href="#">Leave Unlocked</a> item to use a new secure disk in an unlocked mode for a single service event. The secure disk that is already locked to this printer will remain accessible to this printer and uses the old disk's encryption password with the new disk.  The secure disk that is already locked to this printer remains accessible to this printer.
		Clear Disk Pwd		Select the <a href="#">Clear Disk Pwd</a> item to continue using the non-secure disk and clear the password associated with the yet-to-be installed secure disk.  <b>CAUTION:</b> Data on the missing secure disk will be permanently inaccessible.
		Retain Password		Select the <a href="#">Retain Password</a> item to use the non-secure disk for this session only, and then search for the missing secure disk in future sessions.
	Boot Device		Secure Erase	Select the <a href="#">Secure Erase</a> item to erase all of the data on the disk and unlock it if required.  This might take a long time.  <b>NOTE:</b> The system will be unusable until the system files are reinstalled. The ATA secure-erase command is a one-pass overwrite, which erases the entire disk including firmware. The disk remains an encrypted disk.

**Table 2-2 Pre-boot menu options (2 of 7) (continued)**

Menu option	First level	Second level	Third level	Description
			Erase/Unlock	Select the <a href="#">Erase/Unlock</a> item to cryptographically erase all data on the disk and unlock the disk to allow a user to gain access to it from any printer.  <b>NOTE:</b> The system will be unusable until the system files are reinstalled. It erases the encryption key. The encryption key is erased, so the disk becomes a non-encrypted disk.
			Get Status	This item provides disk status information if any is available.

**Table 2-3 Pre-boot menu options (3 of 7)**

Menu option	First level	Second level	Third level	Description
Administrator  (continued)	Manage Disk  (continued)	Internal Device		Select the <a href="#">Internal Device</a> item to erase the internal device or get a status about the internal device.
			Secure Erase	Select the <a href="#">Secure Erase</a> item to erase all of the data on the disk and unlock it if required.  This might take a long time.  <b>NOTE:</b> The system will be unusable until the system files are reinstalled. The ATA secure-erase command erases the entire disk, including firmware. The disk remains an encrypted disk.
			Erase/Unlock	Select the <a href="#">Erase/Unlock</a> item to cryptographically erase all of the data on disk and unlock the disk to allow the user to gain access to it from any printer.  <b>NOTE:</b> The system will be unusable until the system files are reinstalled. The HP High Performance Secure Hard Disk is erased.
			Get Status	This item provides disk status information if any is available.
		External Device		Select the <a href="#">External Device</a> item to erase the external device or get status about the external device.
			Secure Erase	Select the <a href="#">Secure Erase</a> item to erase all of the data on the disk and unlock it if required.  This might take a long time.  <b>NOTE:</b> The system will be unusable until the system files are reinstalled.  The ATA secure-erase command erases the entire disk, including firmware. The disk remains an encrypted disk.
			Erase/Unlock	Select the <a href="#">Erase/Unlock</a> item to cryptographically erase all of the data on disk and unlock the disk to allow a user to gain access to it from any printer.  <b>NOTE:</b> The system will be unusable until the system files are reinstalled. The encryption key is erased, so the disk becomes a non-encrypted disk.
			Get Status	This item provides disk status information if any is available.

**Table 2-4 Pre-boot menu options (4 of 7)**

Menu option	First level	Second level	Third level	Description
Administrator (continued)	Configure LAN  <b>NOTE:</b> This configuration is only active when the Pre-boot menu is open.	IP Mode [DHCP]		The network can be configured to obtain the network settings from a DHCP server or as static.  Use this item for automatic IP address acquisition from the DHCP server.
		IP Mode [STATIC]		Use this item to manually assign the network addresses.
			IP Address	Use this item to manually enter the IP addresses.
			Subnet Mask	Use this item to manually enter the subnet mask.
			Default Gateway	Use this item to manually enter the default gateway.
			Save	Select the <a href="#">Save</a> item to save the manual settings.

**Table 2-5 Pre-boot menu options (5 of 7)**

Menu option	First level	Second level	Third level	Description
Administrator (continued)	Startup Options			Select the <a href="#">Startup Options</a> item to specify options that can be set for the next time the printer is turned on and initializes to the <b>Ready</b> state.
		Show Revision		<b>Not currently functional:</b> Select the <a href="#">Show Revision</a> item to allow the printer to initialize and show the firmware version when the printer reaches the <b>Ready</b> state.  Once the printer power is turned on the next time, the <a href="#">Show Revision</a> item is unchecked so that the firmware revision is not shown.
		Cold Reset		Select the <a href="#">Cold Reset</a> item to clear the IP address and all customer settings. (This item also returns all settings to factory defaults.)  <b>NOTE:</b> Items in the <a href="#">Service</a> menu are not reset.
		Skip Disk Load		Select the <a href="#">Skip Disk Load</a> item to disable installed third-party applications.
		Skip Cal		Select the <a href="#">Skip Cal</a> item to skip the printer calibration for the very next power-initialization cycle only.
		Lock Service		<b>CAUTION:</b> Select the <a href="#">Lock Service</a> item to lock the <a href="#">Service</a> menu access (both in the <a href="#">Pre-boot</a> menu and the <a href="#">Device Maintenance</a> menu).  Service personnel must have the administrator remove the <a href="#">Lock Service</a> setting before they can open the <a href="#">Service</a> menu.
		Skip FSCK		Select the <a href="#">Skip FSCK</a> item to disable Chkdisk/ScanVolume during startup.

**Table 2-5 Pre-boot menu options (5 of 7) (continued)**

Menu option	First level	Second level	Third level	Description
Administrator (continued)	Startup Options (continued)	First Power		<p><b>Not currently functional:</b> This item allows the printer to initialize as if it is the first time it has been turned on.</p> <p>For example, the user is prompted to configure first-time settings like date/time, language, and other settings.</p> <p>Select this item so that it is enabled for the next time the printer power is turned on.</p> <p>When the printer power is turned on the next time, this item is unchecked so that the pre-configured settings are used during configuration, and the first-time setting prompt is not used.</p>
		Embedded Jetdirect Off		<p>Select the <b>Embedded Jetdirect Off</b> item to disable the embedded HP Jetdirect.</p> <p>By default this item is unchecked so that HP Jetdirect is always enabled.</p>
		WiFi Accessory		<p>Select the <b>WiFi Accessory</b> item to enable the wireless accessory.</p>

**Table 2-6 Pre-boot menu options (6 of 7)**

Menu option	First level	Second level	Third level	Description
Administrator (continued)	Diagnostics			<p>Diagnostic items are useful to diagnose hardware components and their interface connections. Use these items to troubleshoot specific hardware components, and the interface between them and other components.</p>
		Memory	Do Not Run	<p>Use the <b>Do Not Run</b> item to exclude the <b>Memory</b> diagnostic when executing multiple diagnostics.</p>
			Short	<p>Use the <b>Short</b> item to select a brief memory test.</p> <p><b>NOTE:</b> This test requires about four minutes to execute.</p>
			Long	<p>Use the <b>Long</b> item to select an extended memory test.</p> <p><b>NOTE:</b> This test requires about twenty minutes to execute.</p>
		Disk	Do Not Run	<p>Use the <b>Do Not Run</b> item to exclude the <b>Disk</b> diagnostic when executing multiple diagnostics.</p>
			Short	<p>Use the <b>Short</b> item to select a brief firmware self-test.</p> <p><b>NOTE:</b> This test requires about two or three minutes to execute.</p>



**Table 2-6 Pre-boot menu options (6 of 7) (continued)**

Menu option	First level	Second level	Third level	Description
			Long	Use the <a href="#">Long</a> item to select an extended firmware self-test.  <b>NOTE:</b> This test requires about sixty minutes to execute.
			Optimized	Use the <a href="#">Optimized</a> item to select a test that checks the active sectors on the disk.  <b>NOTE:</b> This test requires about thirty minutes to execute.
			Raw	Use the <a href="#">Raw</a> item to select a test that checks every sector on the disk.  <b>NOTE:</b> This test requires about fifty minutes to execute.
			Smart	Use the <a href="#">Smart</a> item to select a very brief test that checks the drive self-monitoring analysis and reporting technology (SMART) status—the drive detects and reports reliability indicators to help anticipate disk failures (SMART status).
		CPB		Use the <a href="#">CPB</a> item to verify the integrity of the copy processor board (CPB) and the formatter PCA connections.
		Interconnect		Use the <a href="#">Interconnect</a> item to verify the integrity of the interconnect PCA (ICB) and its connections.
		Run Selected		Select the <a href="#">Run Selected</a> item to execute a selected test.  <b>NOTE:</b> If more than one test is selected, they are executed in sequence.

**Table 2-7 Pre-boot menu options (7 of 7)**

Menu option	First level	Second level	Third level	Description
Administrator (continued)	Remote Admin	Start Telnet		The <a href="#">Remote Admin</a> item allows a service technician to access to the printer Pre-boot menu remotely, and to navigate the menu selections from a remote location.  <b>IMPORTANT:</b> A Remote Admin connection must be initiated by a person that is physically present at the printer.  This person will also need to provide a randomly generated PIN to the remote service technician.  <b>NOTE:</b> For more information about using the <a href="#">Remote Admin</a> function, see <a href="#">Remote Admin on page 97</a> .
			Stop Telnet	
			Refresh IP	

**Table 2-7 Pre-boot menu options (7 of 7) (continued)**

Menu option	First level	Second level	Third level	Description
	System Triage	Copy Logs		If the device will not boot to the <b>Ready</b> state, or the diagnostic log feature found in the <a href="#">Troubleshooting</a> menu is not accessible, then use the <a href="#">System Triage</a> item to copy the diagnostic logs to a USB flash drive at the next printer start up.  The files can then be sent to HP to help diagnose the problem.
	Change Svc PWD			Use this item to change the <a href="#">Service</a> menu personal identification number (PIN).
	Reset Svc PWD			If the <a href="#">Service</a> menu personal identification number (PIN) has been changed. Use this item to reset it to the original PIN.
Service Tools	Reset Password			Use this item to reset the Pre-boot administrator password.
	Subsystems			For manufacturing use only. Do not change these values.
Developer Tools	Netexec			

## Remote Admin

The Remote Admin feature allows remote access the printer Pre-boot menu (BIOS environment). The printer functions as a telnet server which uses the telnet networking protocol to transmit text data. Any computer (with telnet installed and enabled) can function as the telnet client to remotely display and interact with the Pre-boot menu.



---

**IMPORTANT:** While the Remote Admin function allows remote access the Pre-boot menu, for security reasons the Remote Admin connection must be initiated by a person that is physically present at the printer.

---

This section describes the following Remote Admin items.

- [Required software and network connection](#)
- [Connect a remote connection](#)
- [Disconnect a remote connection](#)

### Required software and network connection

Before using the Remote Admin feature, make sure that the telnet network protocol is installed, and enabled, on the remote telnet client computer.



---

**NOTE:** This section describes enabling and configuring the telnet feature for computers using a Windows® operating system.

---

HP recommends that the telnet client computer be a Windows based system, however, there are other operating systems that support the telnet network protocol. For information about enabling and configuring the telnet network protocol for other operating systems, see the owner's manual for that operating system.

---

## Telnet client

### Enable the Windows telnet client

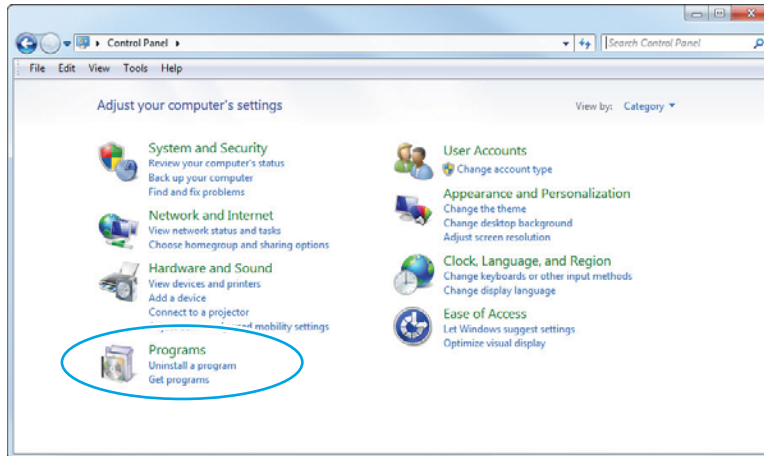
All computers using the Windows operating system have the telnet client installed, however, the telnet client function might not be enabled by default.



**NOTE:** The figures and menus in this section are for the Windows 7 Enterprise® operating system. Screens and menu selections might vary slightly for other operating systems.

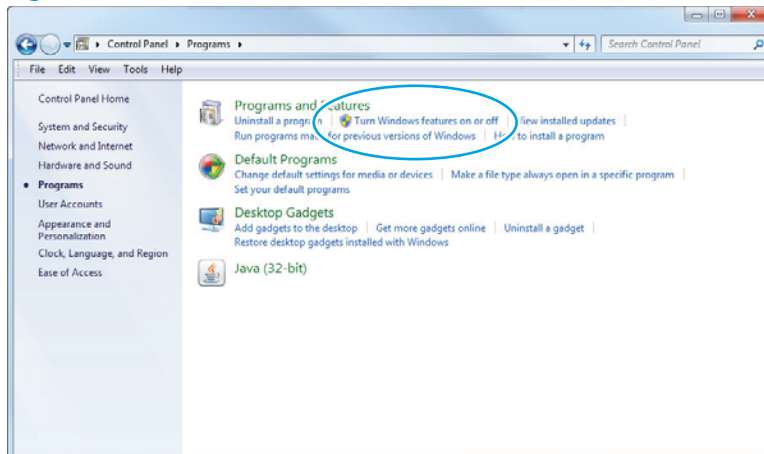
1. Use the **Start** menu to open the **Control Panel**, and then click the **Programs** item to select it.

**Figure 2-4** Open the Control Panel




2. Click the **Turn Windows features on or off** item to select it.

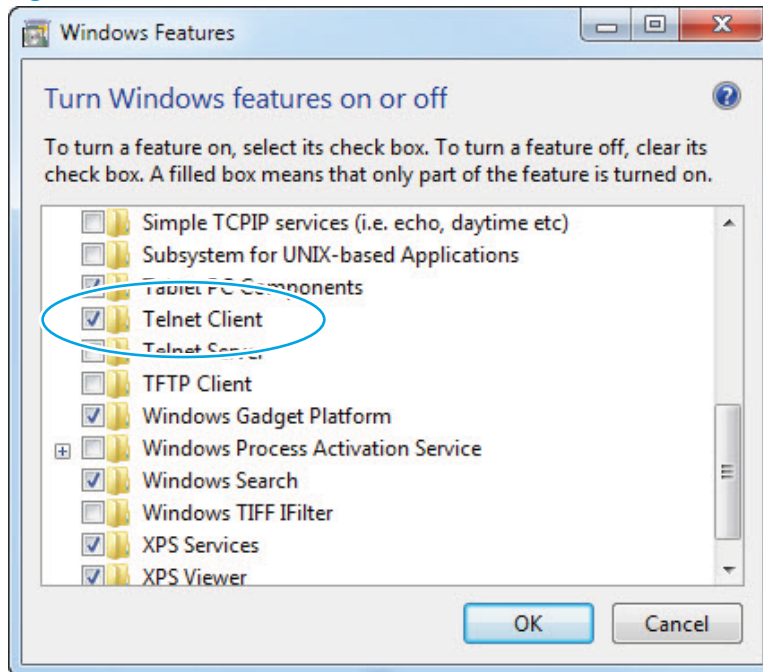
**Figure 2-5** Turn Windows features on or off



3. In the **Windows Features** box, scroll down to **Telnet Client**. If the check box is not checked, click the box to select it, and then click the **OK** button.

 **TIP:** If the check box is already checked then the telnet client function is already enabled. Click the **Cancel** button.

**Figure 2-6** Enable the telnet client feature



### Network connection


The remote telnet client computer must have direct network access to the printer for the Remote Admin function to operate. This means that the telnet client computer must be on the same network as the printer. The Remote Admin function cannot be accessed through a network firewall or other remote access network security programs.

If a private network is not accessible, ask the network administrator to set up a virtual private network (VPN) connection to the network.

### Connect a remote connection

#### Start the telnet server function at the printer

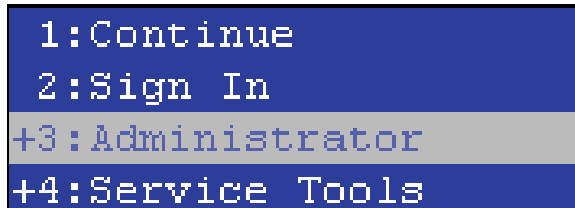
For security reasons the Remote Admin feature must be initiated by a person that is physically present at the printer. The following steps must be performed by a person that is physically present at the printer.

 **NOTE:** This person might need to sign in with an administrator or service password depending on how the printer is configured.

1. Turn the printer on.
2. The HP logo displays on the printer control panel. When a "1/8" with an underscore displays, touch the middle of the screen to open the **Pre-boot** menu.

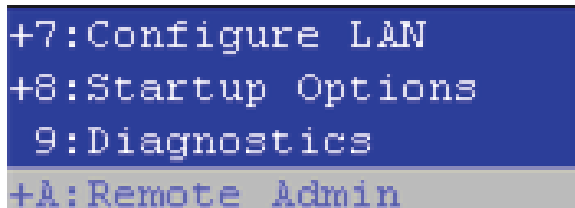
- Use the arrow buttons on the touchscreen to scroll down and highlight the **+3:Administrator** item, and then touch the **OK** button to select it.

**Figure 2-7** Select the +3:Administrator item



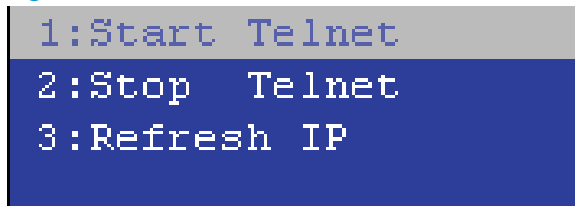
- Use the arrow buttons on the touchscreen to scroll down and highlight the **+A:Remote Admin** item, and then touch the **OK** button to select it.

**Figure 2-8** Select the +A:Remote Admin item



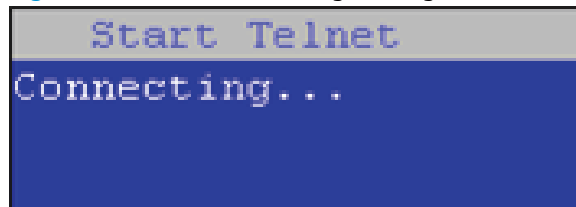
- Use the arrow buttons on the touchscreen to scroll down and highlight the **1:Start Telnet** item, and then touch the **OK** button to select it.

**Figure 2-9** Select the 1:Start Telnet item



- Do one of the following
  - If a connecting message displays briefly, go to step [7](#).

**Figure 2-10** Telnet connecting message




- If an error message displays, use the steps below to identify the problem.

**Figure 2-11** Telnet error message

```
Start Telnet
Unable to connect
Contact network
administrator.
```

- a. The printer network cable is not correctly connected.
  - b. The BIOS LAN settings are incorrect.
    - The printer should be configured to use a static IP address, but is configured to use DHCP instead.
    - The printer is configured to use a static IP address, but the IP address is incorrect.
  - c. The printer is correctly configured to use DHCP, but the DHCP server is not turned on or is malfunctioning.
7. When the printer telnet server function is initialized, the following screen appears. Use the information on this screen to connect the remote telnet client computer to the printer.

---

 **NOTE:** The printer is now ready to receive remote telnet client commands.

---

- **IP:** The static or dynamically allocated IP address for the printer.
- **Port:** The standard telnet port (23).
- **Pin:** A randomly generated 4-digit personal identification number (PIN).

**Figure 2-12** Telnet server function initialized

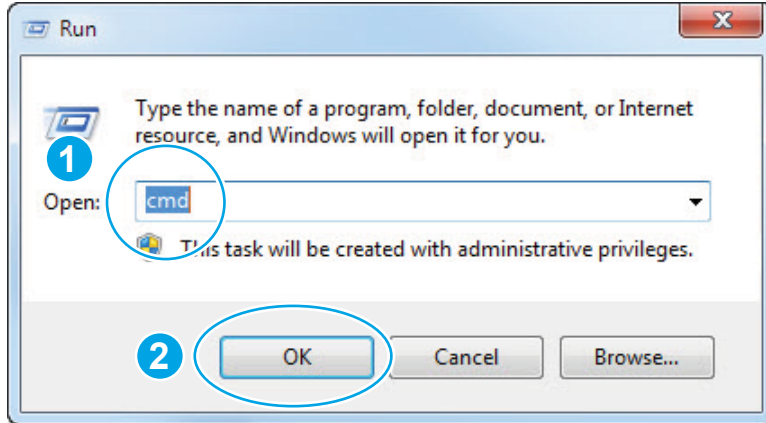
```
Start Telnet
IP: 16.88.109.66
Port: 23
Pin : 4031
```

### Start the telnet client function at the remote computer

The following steps establish a Remote Admin connection from a remote computer to the printer.

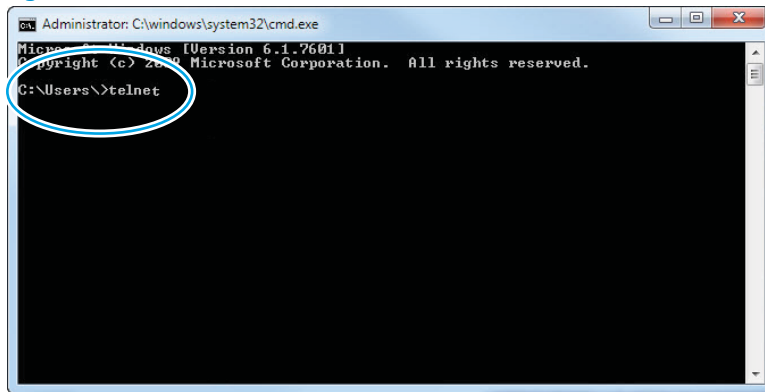
1. From the **Start** menu click **Run** to open a dialog box, type `cmd` in the **Open** field, and then click the **OK** button to open a Windows command window.

**Figure 2-13** Open a command window





2. From any displayed directory, type `telnet` at the prompt, and then press the **Enter** key.

**Figure 2-14** Start a telnet session

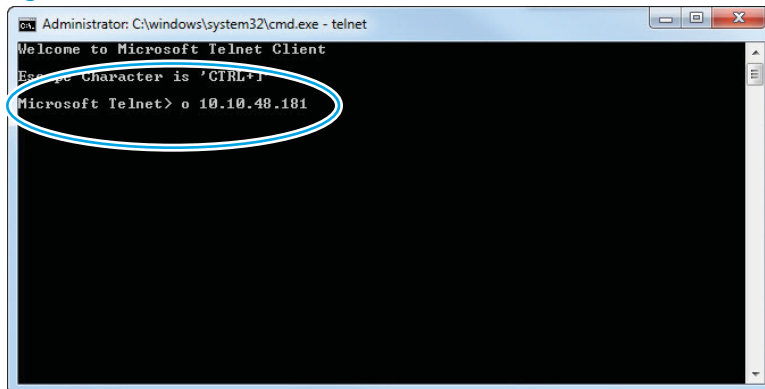


3. Type `<IP ADDRESS>` at the telnet prompt, and then press the **Enter** key.

 **NOTE:** For `<IP ADDRESS>`, substitute the IP address that was displayed in step 7 in [Start the telnet server function at the printer on page 99](#).


 **TIP:** If the telnet connection fails to establish a connection, the printer is probably behind a firewall or on a different network than the remote telnet client computer. See [Network connection on page 99](#).

**Figure 2-15** Establish a telnet connection

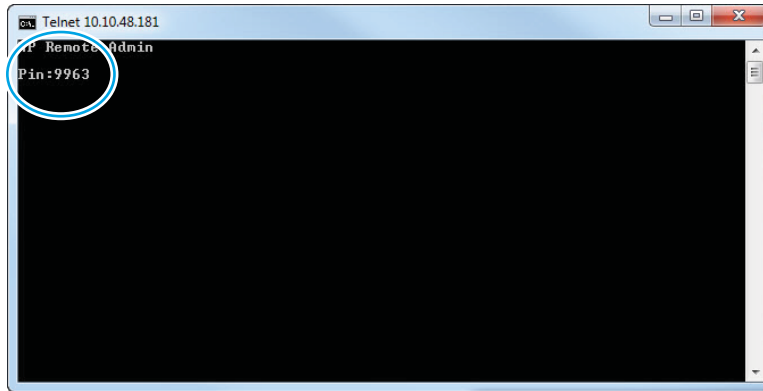





4. Type the PIN that was displayed in step 7 in [Start the telnet server function at the printer on page 99](#) at the prompt, and then press the **Enter** key.

 **IMPORTANT:** Make sure to type the PIN correctly. After five incorrect PIN entries, the printer terminates the Remote Admin connection. The Remote Admin feature must be re-initiated at the printer. See [Start the telnet server function at the printer on page 99](#).

**Figure 2-16** Enter the PIN

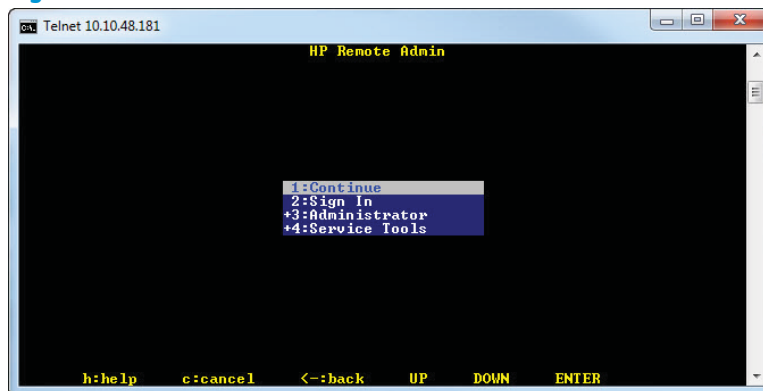


5. The following screen displays when the correct PIN is entered and the Remote Admin connection is successful. For information about the Pre-boot menu and options, see [Pre-boot menu options on page 87](#).

 **NOTE:** Because a Remote Admin connection is an unsecure telnet network protocol connection, the following Pre-boot menu items are disabled for the remote telnet client computer.


- The **+3:Administrator** menu **4:Change Password** item.
- The **+3:Administrator** menu **5:Clear Password** item.
- The **+3:Administrator** menu **6:Disk Manage** item.

**Figure 2-17** Remote Admin window



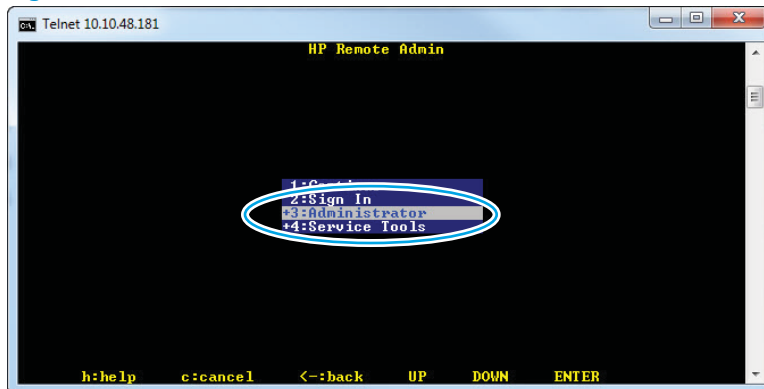
## Disconnect a remote connection

The Remote Admin connection can be terminated from the printer control panel or the remote telnet client computer.

 **NOTE:** The following procedure describes terminating a Remote Admin connection from the remote telnet client computer.

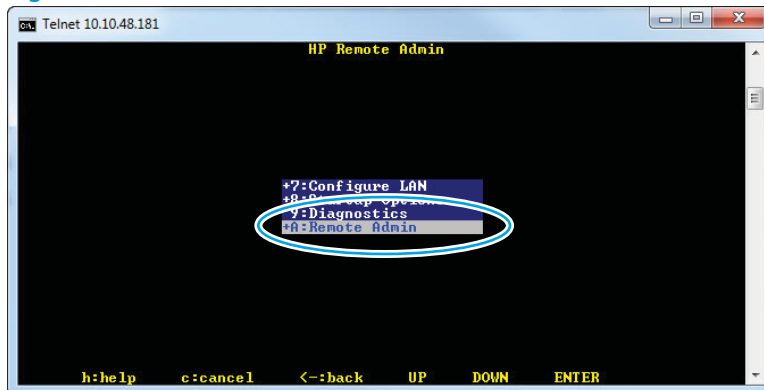
1. From the Pre-boot main menu, use the arrow buttons on the keyboard to scroll down to the **+3:Administrator** item, and then press the **Enter** key.

**Figure 2-18** Access the administrator menu




2. Use the arrow buttons on the keyboard to scroll down to the **+A:Remote Admin** item, and then press the **Enter** key.

**Figure 2-19** Access the remote admin menu

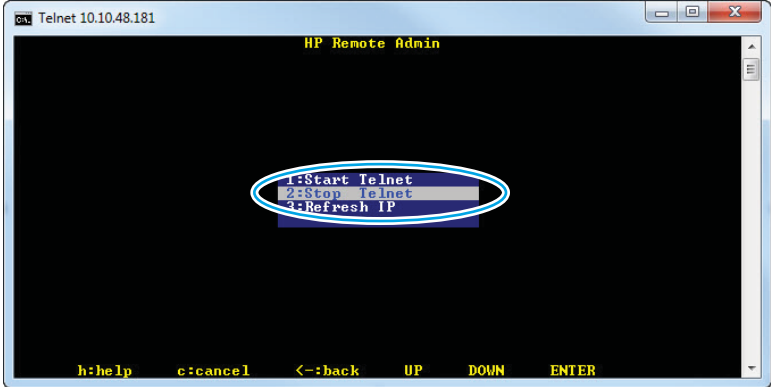


3. Use the arrow buttons on the keyboard to scroll down to the **2:Stop Telnet** item, and then press the **Enter** key. The Remote Admin connection between the printer and the remote telnet client computer terminates.

 **IMPORTANT:** The printer remains in the Pre-boot menu. Have the person that is physically present at the printer do the following:

- Touch the **Home** button to return to the main Pre-boot menu and highlight the **1:Continue** item, and then touch the **OK** button. The printer will continue to initialize.

**Figure 2-20** Terminate the telnet connection



# Troubleshooting process

- [Determine the problem source](#)
- [Power subsystem](#)
- [Control panel checks \(touchscreen models\)](#)

## Determine the problem source

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

- Use the pre-troubleshooting check list to gather information about the problem from the customer. See [Pre-troubleshooting checklist on page 106](#).
- Use the troubleshooting flowchart to pinpoint the root cause of hardware malfunctions. The flowchart provides guides to the section of this chapter that contain steps to correct the malfunction. See [Troubleshooting flowchart on page 107](#).

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	<ul style="list-style-type: none"><li>• Is the printer installed on a solid, level surface (+/- 1°)?</li><li>• Is the power-supply voltage within <math>\pm 10</math> volts of the specified power source?</li><li>• Is the power-supply plug inserted in the printer and the wall outlet (not a surge protector)?</li><li>• Is the operating environment within the specified parameters?</li><li>• Is the printer exposed to ammonia gas, such as that produced by diazo copiers or office cleaning materials? <b>NOTE:</b> Diazo copiers produce ammonia gas as part of the copying processes. Ammonia gas (from cleaning supplies or a diazo copier) can have an adverse effect on some printer components (for example, the toner cartridge or cartridges OPC).</li><li>• Is the printer exposed to direct sunlight?</li><li>• Is the printer exposed to an air conditioning or heating vent that can cause temperature fluctuations?</li></ul>

General topic	Questions
Media	<ul style="list-style-type: none"> <li>• Does the customer use only supported media?</li> <li>• Is the media in good condition (no curls, folds, or distortion)?</li> <li>• Is the media stored correctly and within environmental limits?</li> </ul>
Input trays	<ul style="list-style-type: none"> <li>• Is the amount of media in the tray within specifications?</li> <li>• Is the media correctly placed in the tray?</li> <li>• Are the paper guides aligned with the stack (no gaps in the stack or excessive pressure causing the stack to bow)?</li> <li>• Is the tray (or trays) correctly installed in the printer?</li> </ul>
Toner cartridge	<ul style="list-style-type: none"> <li>• Is the toner cartridge (or cartridges) installed correctly?</li> </ul>
Transfer unit and fuser	<ul style="list-style-type: none"> <li>• Are the transfer unit and fuser installed correctly?</li> </ul> <p><b>NOTE:</b> 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?</p>
Covers	<ul style="list-style-type: none"> <li>• Is the toner cartridge door closed?</li> </ul>
Condensation	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Was a toner cartridge (or cartridges) opened soon after being moved from a cold to a warm room? If so, allow the toner cartridge (or cartridges) to sit at room temperature for 1 to 2 hours.</li> </ul>
Miscellaneous	<ul style="list-style-type: none"> <li>• Check for and remove any non-HP components (toner cartridges, memory modules, and EIO cards) from the printer.</li> <li>• Remove the printer from the network and ensure that the failure is associated with the printer before beginning troubleshooting.</li> <li>• For any color print-quality issues (color printers only), calibrate the printer, and then print a diagnostics page to verify print quality.</li> </ul>

## 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 2-8 Troubleshooting flowchart**

<b>1</b> <b>Power on</b>	Is the printer on and does a readable message display?	Follow the power-on troubleshooting checks. See <a href="#">Power subsystem on page 108</a> .
	Yes ↓	No →

**Table 2-8 Troubleshooting flowchart (continued)**

<b>2</b> <b>Control panel messages</b>	Does an error message appear on control-panel display?		After the errors have been corrected, go to step 3.
	No ↓	Yes →	
<b>3</b> <b>Event log</b>	Open the <a href="#">Troubleshooting</a> menu and view or 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 document (CPMD) for this printer. <b>NOTE:</b> The CPMD is not provided in this service manual. The CPMD for this printer is available on the HP Service Access Workbench (SAW) Web site. Go to <a href="http://h41302.www4.hp.com/km/saw/home.do">http://h41302.www4.hp.com/km/saw/home.do</a> . After successfully printing and evaluating the event log, see step 4.
	Yes ↓	No →	
<b>4</b> <b>Information pages</b>	Open the <a href="#">Reports</a> 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 →	
<b>5</b> <b>Print quality</b>	Does the print quality meet the customer's requirements?		Compare the images with the sample defects in the print quality troubleshooting guide. See the printer specific image defects section in the printer troubleshooting service manual. After the print quality is acceptable, see step 6.
	Yes ↓	No →	
<b>6</b> <b>Interface</b>	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 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.



**NOTE:** For touchscreen control panel models, also try the control panel checks in the printer *Troubleshooting Manual*.

## Power-on troubleshooting overview

Startup sounds are heard when the printer power is turned and is operating correctly. If these sounds are heard, the dc side of the power supply is functioning.

If startup sounds are heard, 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.



---

**NOTE:** Depressing, and holding down, the test-page switch causes the printer to continually print test pages. Releasing the switch stops the test page continuous printing.

---

## 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 (for example, fans or motors) and look for illuminated lights on the control panel and formatter LEDs.



---

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

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

4. Check the following:
  - a. Turn the printer on, and then listen for startup noises. If normal startup noises are heard, go to step c below.
  - b. If normal startup noises are not heard, turn the printer off, and then remove any installed accessories (for example, envelope feeders, paper feeders, or output accessories).  
  
Turn the printer on, and then listen for startup noises. If normal startup noises are heard, the problem might be with one of the accessories.
  - c. Turn the printer off and then remove the power connector from the formatter. Turn the printer on, and then use a small pointed object (like a paper clip) to depress the engine test-page switch located on the rear or right side (depending on printer model) of the printer (near the formatter).



---


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

---



- d. If the engine test page prints, the print engine is operating normally. Replace the formatter.


---

 **NOTE:** **M631dn only:** If the engine test page does not print, turn the printer off, remove the embedded MultiMedia Card (eMMC), and then try the engine test again. If the page prints, the problem might be the eMMC.

---

- e. If after replacing the formatter 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).

---


### Troubleshooting a blank control panel

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).
  - Check the cables and connections on the formatter and at the control panel.
  - Faulty components installed on the formatter (for example, memory DIMM or disk drive).
  - Faulty control panel.
  - **M631dn only:** Make sure that the embedded MultiMedia Card (eMMC) PCA is fully seated.
  - For touchscreen models, use the control panel checks section in the printer *Troubleshooting Manual* to troubleshoot the control panel
- 
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).
  2. Make sure that the power switch is in the *on* position.
  3. Make sure that startup noises are heard, which indicates that the power supply is operational.
  4. Make sure that the control-panel display wire harness is connected (at both ends).
  5. Make sure that the formatter connectors are fully seated. Make sure the power switch is in the on position, and then verify that the heartbeat LED is blinking.
  6. Remove any external solutions, and then try to turn the printer on again.
  7. If the control panel display is blank, but startup sounds are heard 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.

- a. Remove the formatter.
- b. Use a small pointed object to depress the test-page switch located on the rear of the printer.

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

---



- c. 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).
- d. Use the control-panel diagnostics to test the control panel. See the control panel checks section in the printer *Troubleshooting Manual*. If the error persists, proceed to step [8](#).
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 power supply.
9. If after replacing the power supply 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 (touchscreen models)

 **NOTE:** The printer includes a diagnostic test mode for the touchscreen control panels. Diagnostic tests are not available for the LCD control panel.

- [Control-panel diagnostics \(touchscreen models\)](#)
- [Control panel diagnostic flowcharts \(touchscreen models\)](#)

## Control-panel diagnostics (touchscreen models)

- [Touchscreen diagnostic mode \(touchscreen models\)](#)
- [Control-panel system diagnostics \(touchscreen models\)](#)

## Touchscreen diagnostic mode (touchscreen models)

Use the diagnostics in this section to test the control-panel hardware and embedded firmware. These tests are useful for checking control-panel functionality independent of the printer control-panel system diagnostics. To test the control panel using the system diagnostics, see [Control-panel system diagnostics \(touchscreen models\) on page 119](#).


1. **Small touchscreen only:** Locate the diagnostic-tests access button on the back of the control panel.

**Figure 2-21** Diagnostic-tests access button (small touchscreen)



- 2. Small touchscreen only:** Press the diagnostics-access button. Repeatedly pressing the button cycles through the available diagnostics.

 **NOTE:** A pen, pencil, or other small blunt object is needed to press the button.

 **TIP:** When pressed, the button illuminates green.

**Figure 2-22** Press the diagnostics-access button (small touchscreen)



- 3. Large touchscreen only:** Locate the diagnostic-tests access button on the back of the control panel.

**Figure 2-23** Diagnostic-tests access button (large touchscreen)




4. **Large touchscreen7 only:** Press the diagnostics-access button. Repeatedly pressing the button cycles through the available diagnostics.


**Figure 2-24** Press the diagnostics-access button (large touchscreen)



5. A yellow screen appears (after the first press of the button) indicating that the control-panel firmware is version A (a magenta screen indicates version B firmware).

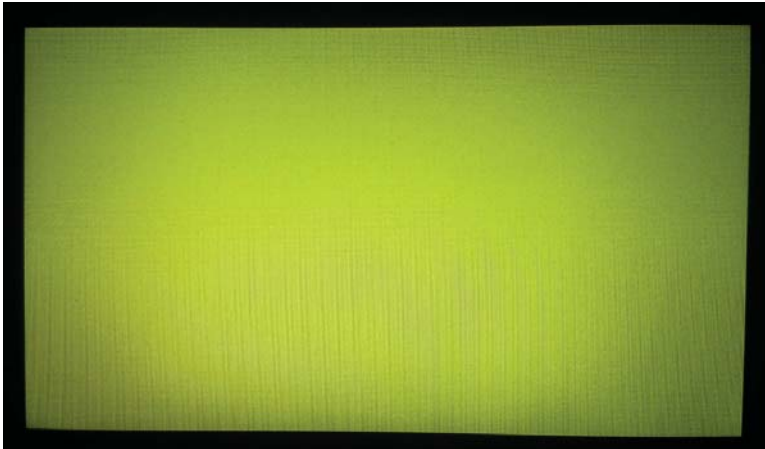
---

 **NOTE:** If a different color appears on the screen, contact your global business unit (GBU) to determine the firmware version.

 **TIP:** After 4 seconds of inactivity, the diagnostic mode times out and is exited.

---

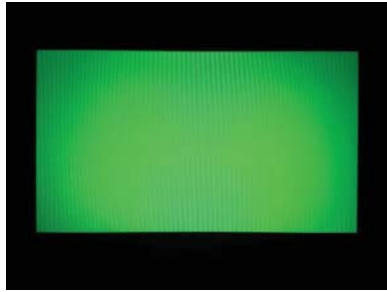
**Figure 2-25** Control-panel version A yellow screen



6. Touch the screen to cycle the screen through the following:
  - A red screen.



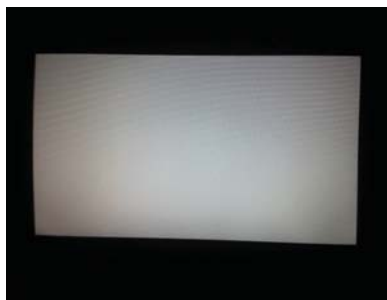
- A green screen.



- A blue screen.



- Five brightness levels of a white screen.



- A final black screen.

---

💡 **TIP:** When the final black screen displays, press the Home button to cycle through the diagnostic screens and test its functionality.

---



7. Pressing the diagnostic-tests button with the black screen displayed, exits the diagnostic mode.



## Control-panel system diagnostics (touchscreen models)

Use the diagnostics in this section to test the control-panel hardware and display using the printer firmware system diagnostics.

- [Open the control-panel system diagnostic tests](#)
- [Screen test](#)
- [Touch test](#)
- [SoftKey test](#)
- [Backlight test](#)
- [Sound test](#)
- [Keyboard test \(M632z/633z only\)](#)
- [Version](#)

### Open the control-panel system diagnostic tests

#### Open the control-panel system diagnostic tests from a touchscreen control panel

1. Turn the printer power off, and then on again.
2. Touch the middle of the control-panel display when you see the 1/8 under the logo.

**Figure 2-26** Open the Pre-boot menu



3. On the **Pre-boot** menu screen, use the following buttons to navigate the tests.

**Figure 2-27** Pre-boot menu



Use this button to see more information about a selected item.



Use this button to scroll up through menu items.



Use this button to select a highlighted menu item.



Use this button to scroll down through menu items.



Use this button to go back to the previous menu.



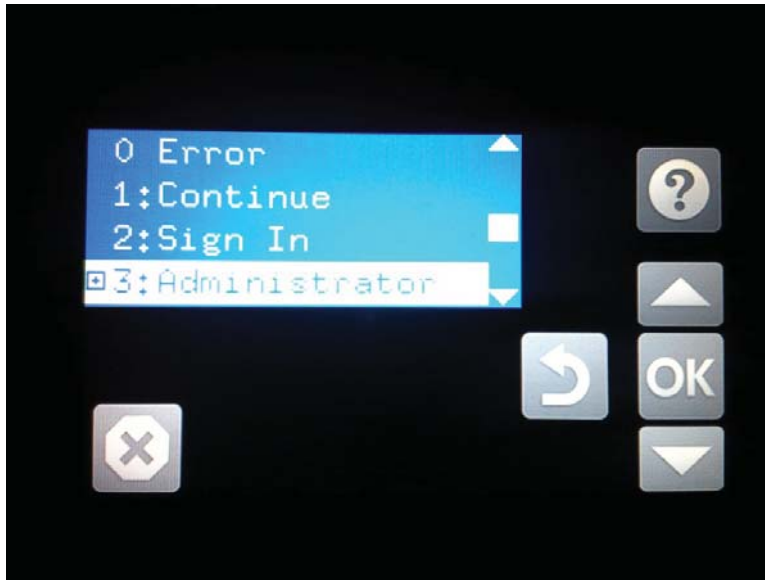
Not used.



Use this button to exit a diagnostic test.

4. Use the **down arrow** ▼ button to scroll to **+3 Administration**, and then press the **OK** button to select it.

**Figure 2-28** Access the administration menu



5. Use the **down arrow** ▼ button to scroll to **+E CP Diagnostics**, and then press the **OK** button to select it.

---

 **NOTE:** An administrator password might be required to continue.

---

**Figure 2-29** Access the diagnostics menu



## Screen test

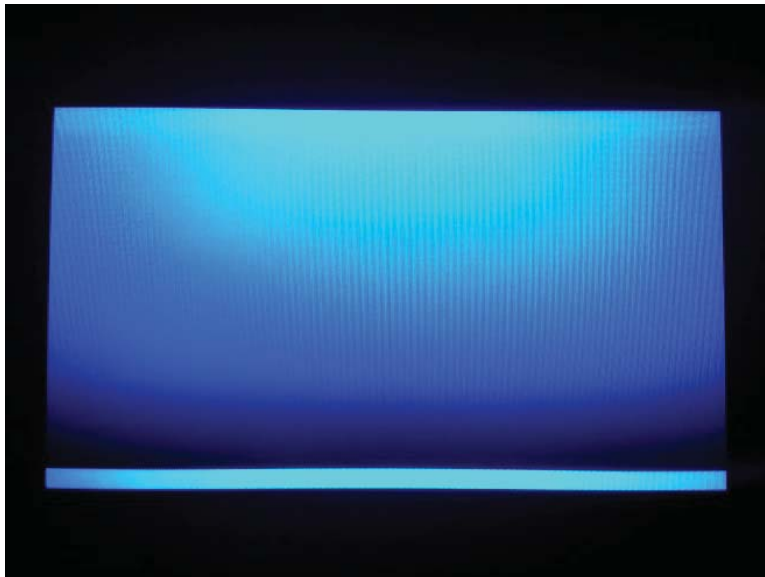
1. Open the control-panel system diagnostic tests. See [Open the control-panel system diagnostic tests on page 119](#).
2. With 1 Screen Test highlighted, press the OK button to select it.

**Figure 2-30** Open the screen test



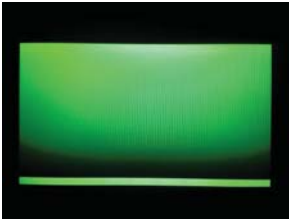
3. The blue vertical gradient screen appears.

**Figure 2-31** Blue vertical gradient screen

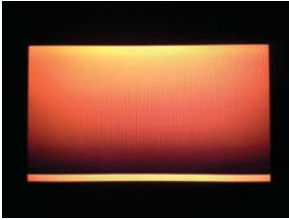


4. Touch the touchscreen to scroll through the remaining touchscreen test screens.

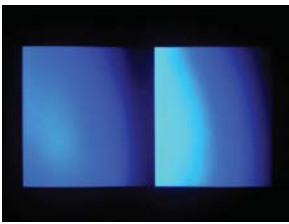
 **NOTE:** Touch the Home button to exit the test.



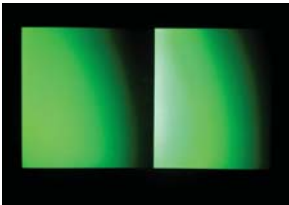
Green vertical gradient



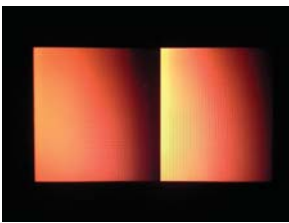
Red vertical gradient



Blue horizontal gradient



Green horizontal gradient



Red horizontal gradient



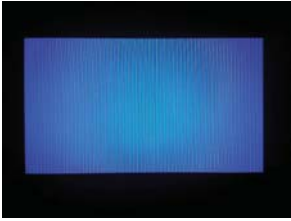
Blue with black horizontal interlaced



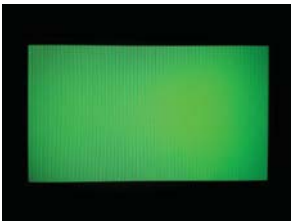
Green with black horizontal interlaced



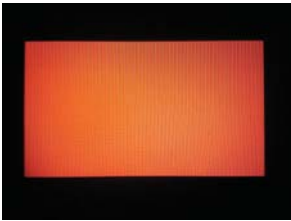
Red with black horizontal interlaced



Blue with black vertical interlaced



Green with black vertical interlaced



Red with black vertical interlaced



Black with white center

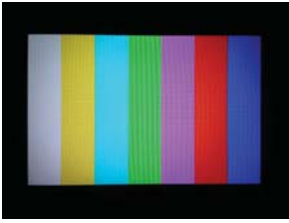


White with black center

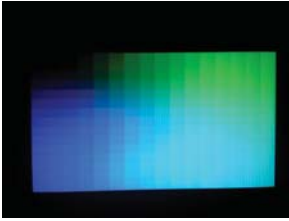


Checkerboard

---



Multicolor stripes

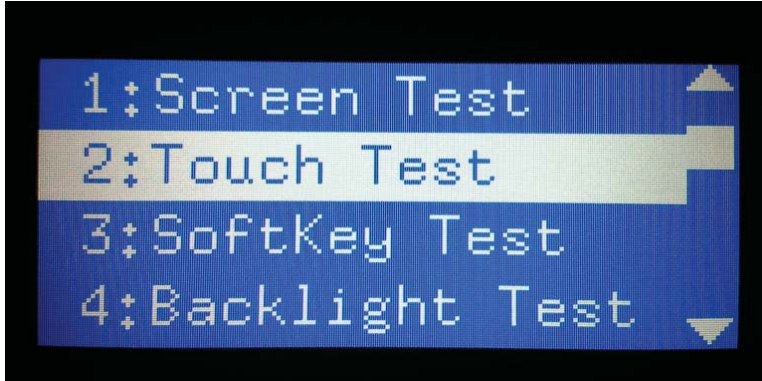


Blue green grid meshing

## Touch test

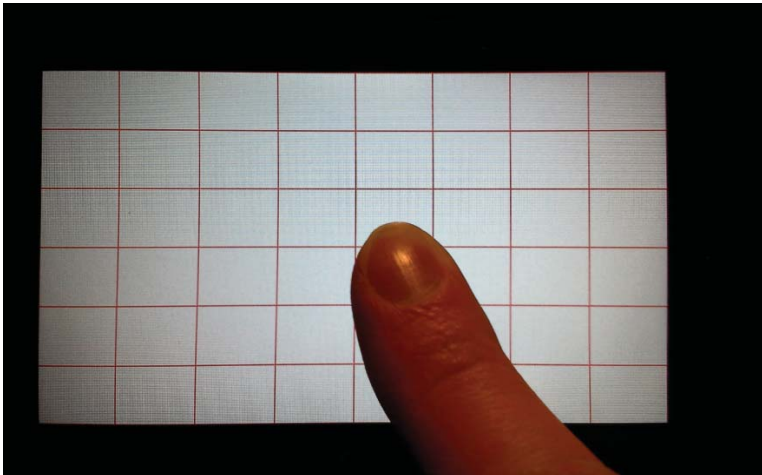
1. Open the control-panel system diagnostic tests. See [Open the control-panel system diagnostic tests on page 119](#).
2. Use the **down arrow** ▼ button to scroll to **2 Touch Test**, and then press the **OK** button to select it.

**Figure 2-32** Open the touch test



3. Use your finger to touch the white grid on the display.

**Figure 2-33** Touch the white grid



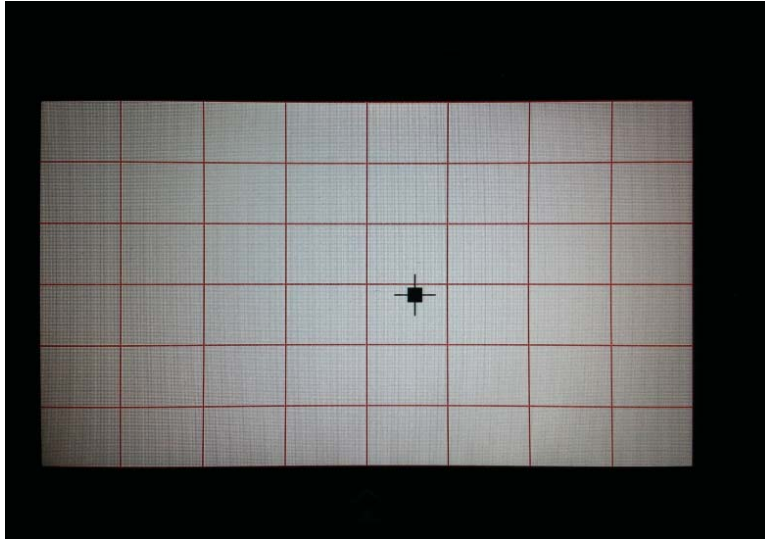


4. A mark appears on the grid where it was touched.

 **NOTE:** Touch the Home button to exit the test.

---

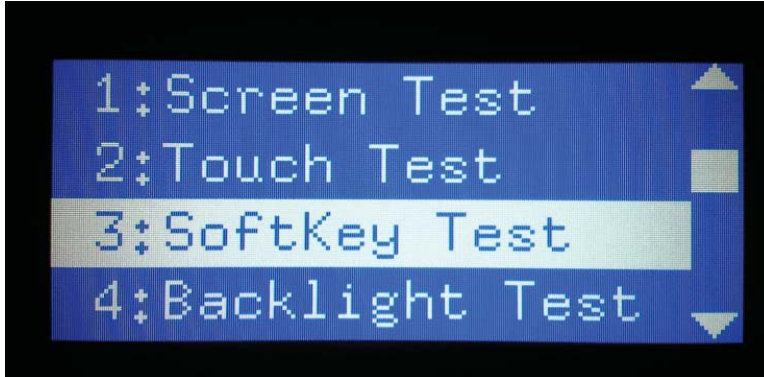
**Figure 2-34** Verify the mark



## SoftKey test

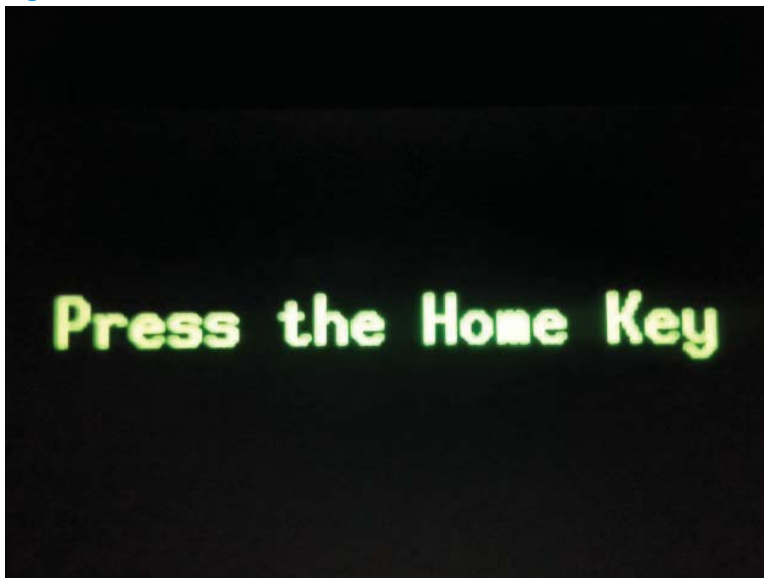
1. Open the control-panel system diagnostic tests. See [Open the control-panel system diagnostic tests on page 119](#).
2. Use the **down arrow ▼** button to scroll to **3 SoftKey Test**, and then press the **OK** button to select it.

**Figure 2-35** Open the softkey test




3. When prompted, touch the Home button.

**Figure 2-36** Touch the Home button

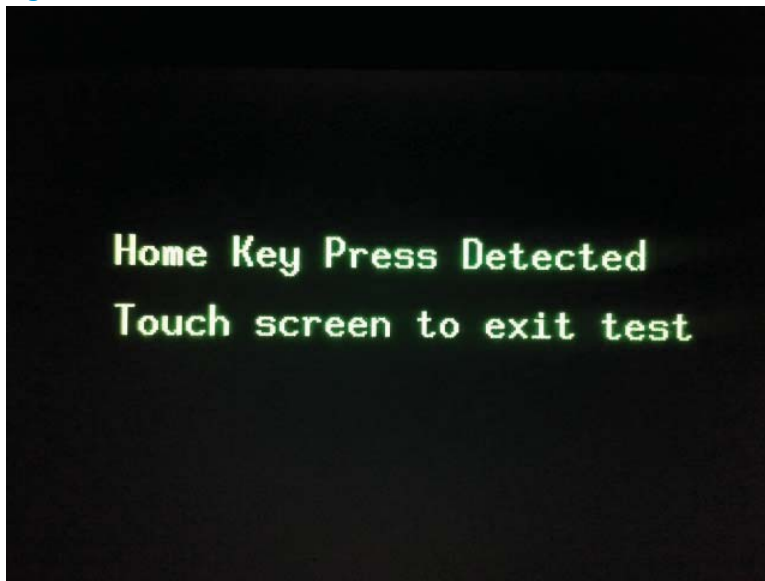


4. If the test is successful, the following screen appears on the display.

 **NOTE:** Touch the screen to exit the test.

---


**Figure 2-37** Successful test



## Backlight test

1. Open the control-panel system diagnostic tests. See [Open the control-panel system diagnostic tests on page 119](#).
2. Use the **down arrow ▼** button to scroll to **4 Backlight Test**, and then press the **OK** button to select it.  
After selecting the **4 Backlight Test**, the screen automatically dims, and then returns to full brightness.

---

 **NOTE:** Touch any key to exit the test.

---

**Figure 2-38** Open the backlight test




## Sound test

1. Open the control-panel system diagnostic tests. See [Open the control-panel system diagnostic tests on page 119](#).
2. Use the **down arrow ▼** button to scroll to **5 Sound Test**, and then press the **OK** button to select it.

After selecting the **5 Sound Test**, the printer emits a series of audible tones.

---


 **NOTE:** Touch any key to exit the test.

---

**Figure 2-39** Open the sound test



## Keyboard test (M632z/633z only)

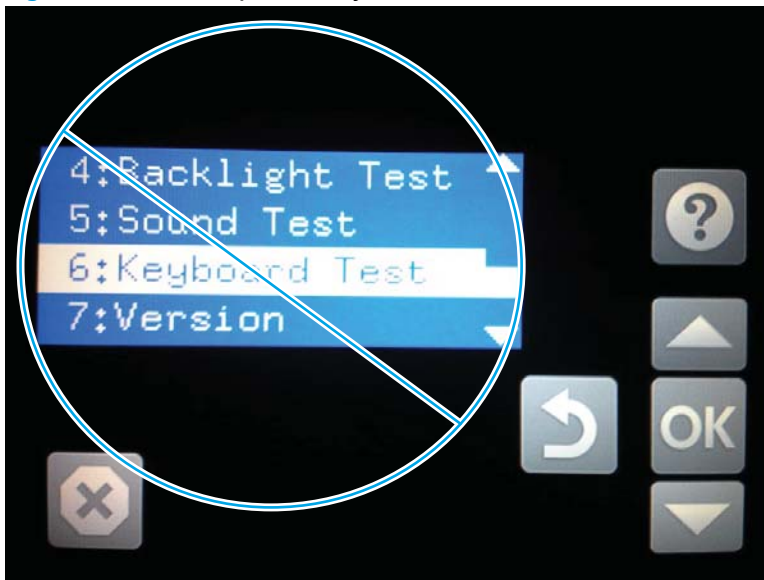
 **IMPORTANT:** The control-panel system diagnostic tests include a [6 Keyboard Test](#) item. This test is **not** valid for printers that do not have a pull out keyboard installed, even though this option is present in the control-panel system diagnostic tests menu.

If the [6 Keyboard Test](#) is opened on the M632z or 633z printers, the printer power must be turned off to exit the test.

HP does not recommend turning the printer power off during the control-panel system diagnostic tests.

1. Open the control-panel system diagnostic tests. See [Open the control-panel system diagnostic tests on page 119](#).
2. Use the [down arrow](#) ▼ button to scroll to [6 Keyboard Test](#), and then press the [OK](#) button to select it.

**Figure 2-40** Do not open the keyboard test




3. When prompted, touch the H key on the keyboard or the Home button to exit the test.

## Version

1. Open the control-panel system diagnostic tests. See [Open the control-panel system diagnostic tests on page 119](#).
2. Use the **down arrow ▼** button to scroll to **7 Version**, and then press the **OK** button to select it.


---

 **NOTE:** Touch any key to exit the test.

---

Select **7 Version** to view the following types of information:

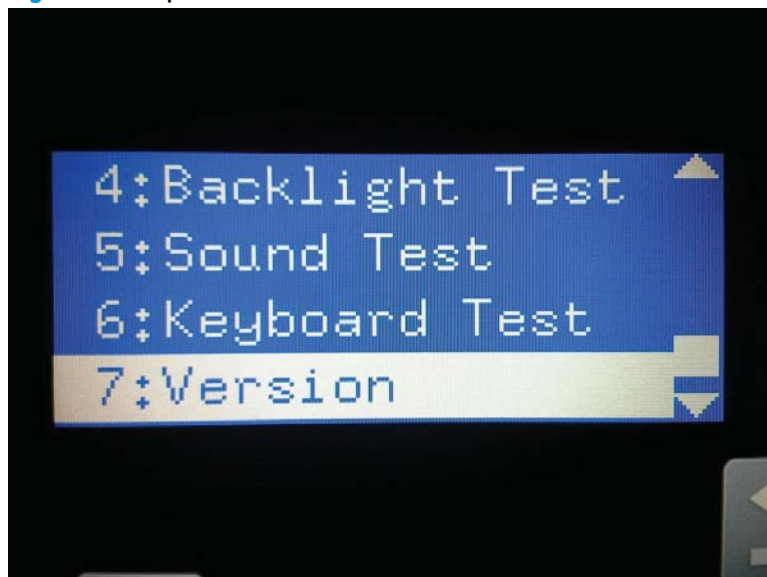
---

 **NOTE:** The following types of information are for the control panel only, not the printer.

---

- Panel ID
- Hardware (version)
- Firmware (version)
- KB Hw (version)
- KB Firm (version)
- LCD Vendor
- Touch Controller Version

**Figure 2-41** Open the sound test



## Control panel diagnostic flowcharts (touchscreen models)

Use the flowcharts in this section to troubleshoot the following control panel problems.

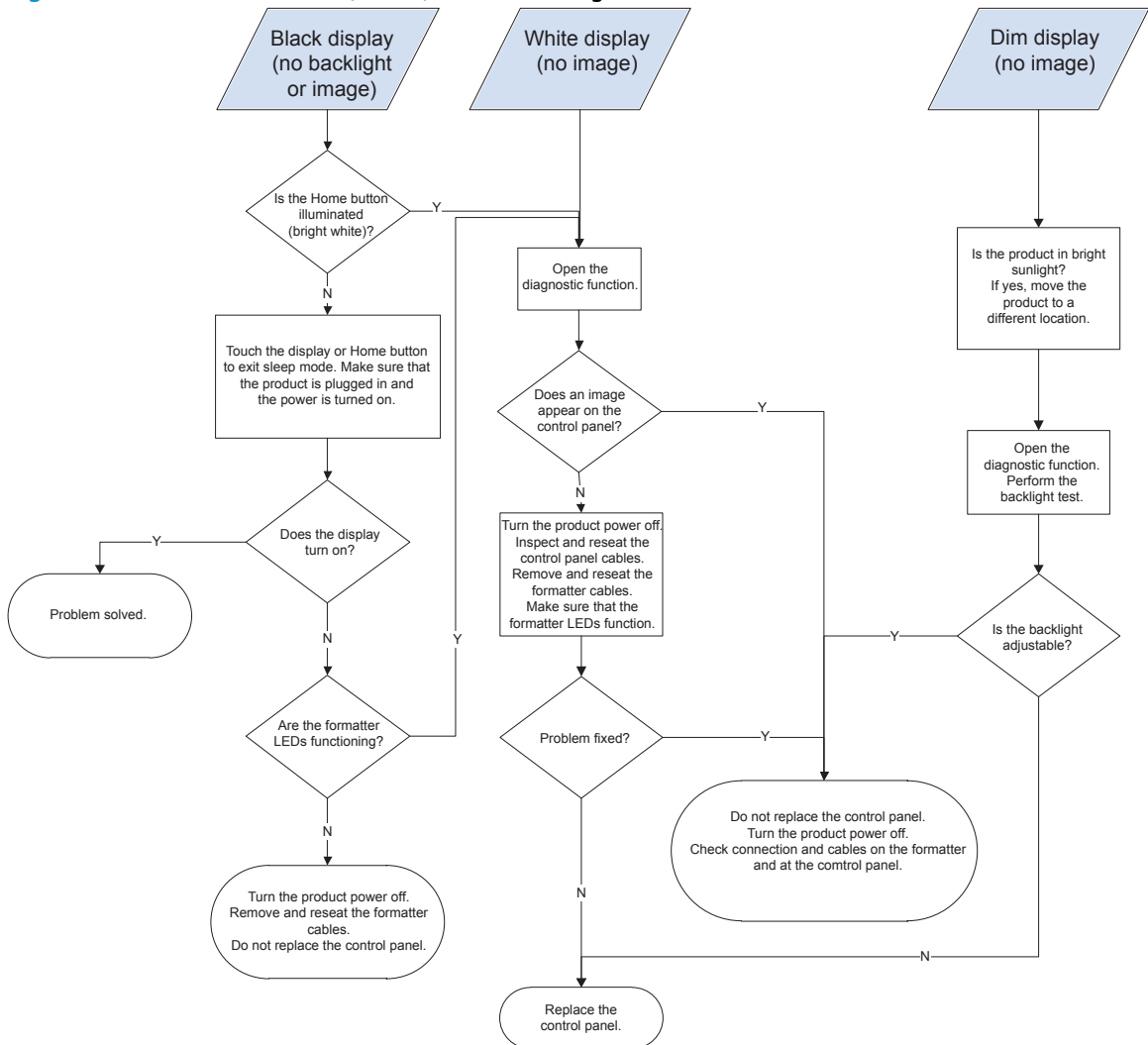
- Touchscreen is blank, white, or dim (no image).
- Touchscreen is slow to respond or requires multiple presses to respond.
- Touchscreen has an unresponsive zone.
- No control panel sound.
- [Home](#) button is unresponsive.
- Hardware integration pocket (HIP) is not functioning (control panel functional).



## Touchscreen black, white, or dim (no image)

**NOTE:** To open the diagnostic function, press the button on the back of the control panel.

**Figure 2-42** Touchscreen blank, white, or dim (no image)

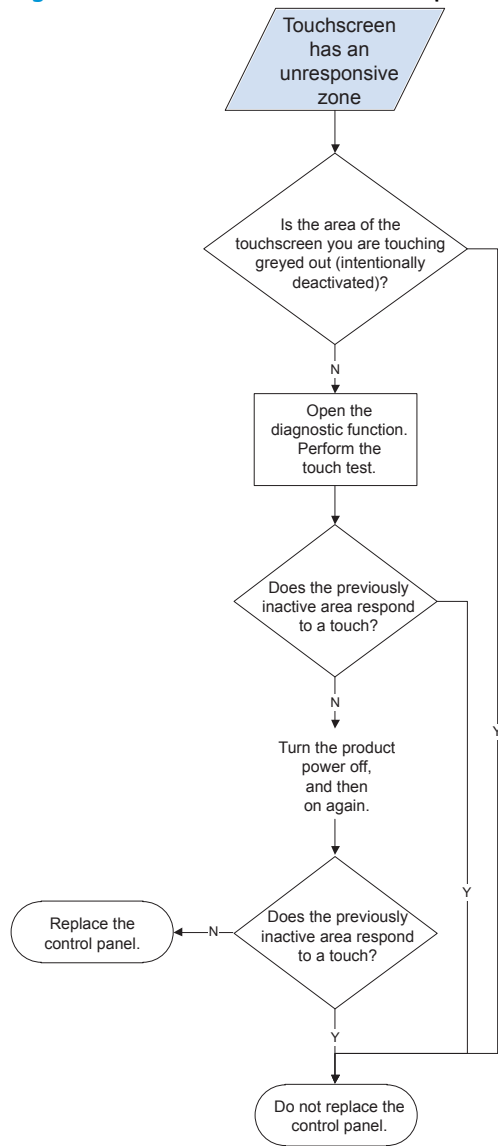


## Touchscreen has an unresponsive zone



**NOTE:** To open the diagnostic function, press the button on the back of the control panel.

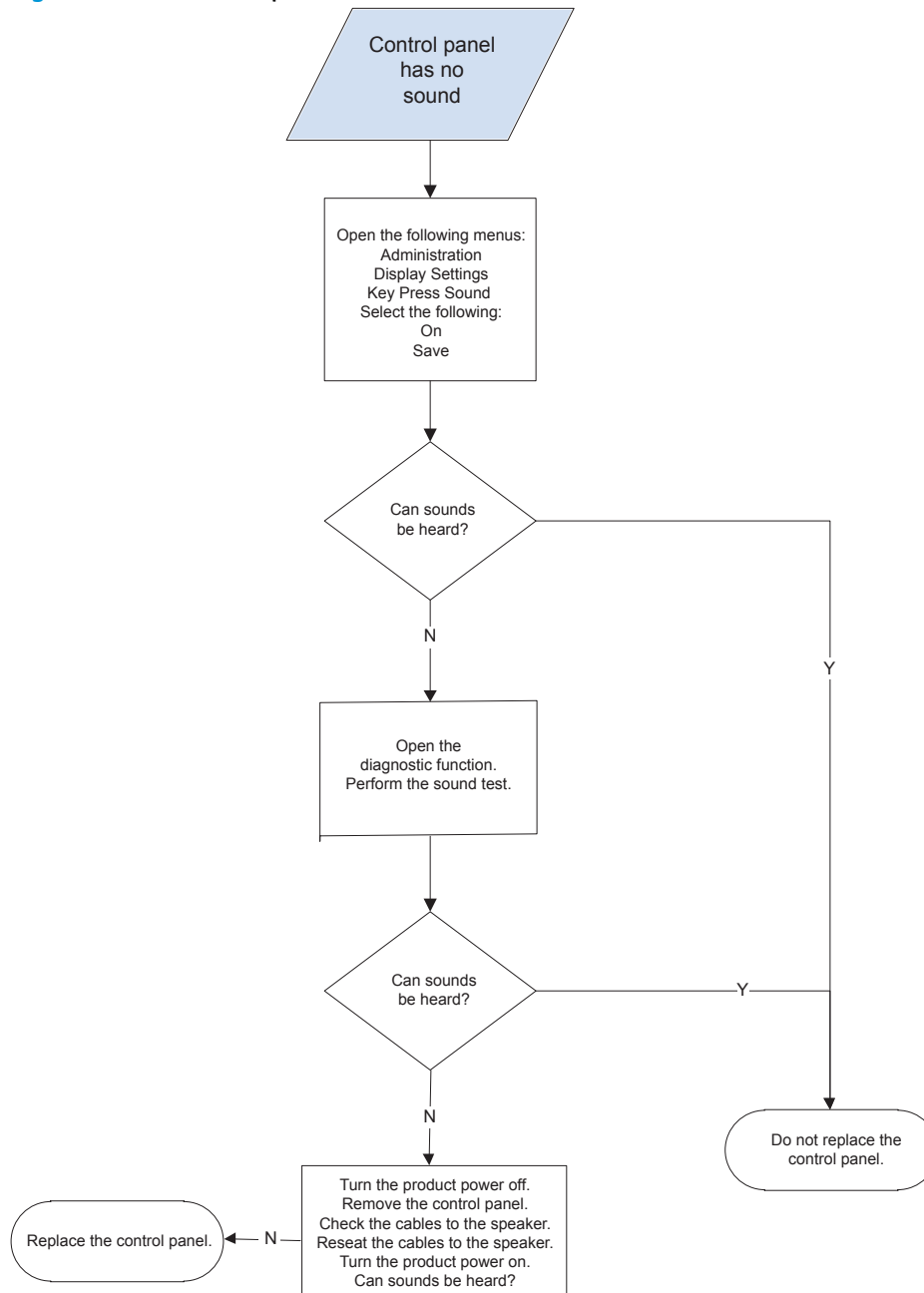
**Figure 2-43** Touchscreen has an unresponsive zone



## No control panel sound

 **NOTE:** To open the diagnostic function, press the button on the back of the control panel.

**Figure 2-44** No control panel sound

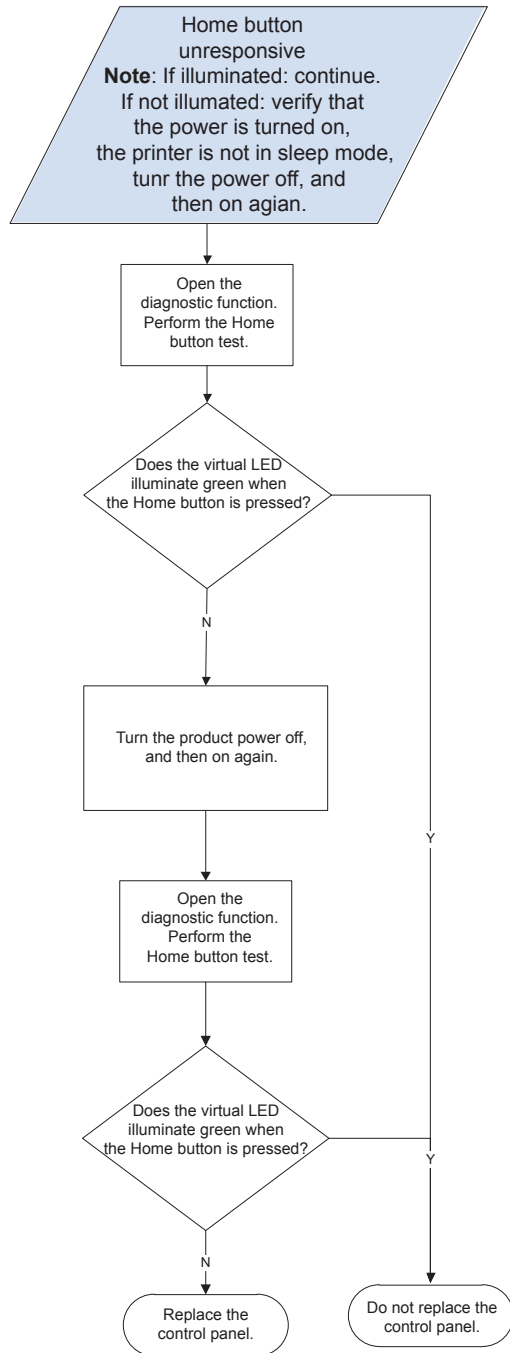


## Home button is unresponsive



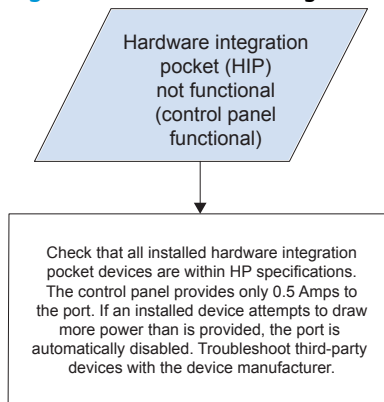
**NOTE:** To open the diagnostic function, press the button on the back of the control panel.

**Figure 2-45** Home button is unresponsive



## Hardware integration pocket (HIP) is not functioning (control panel functional)

**Figure 2-46** Hardware integration pocket (HIP) is not functioning (control panel functional)



# Tools for troubleshooting



**NOTE:** This section describes tools that can help to solve printer problems.

---

- [Individual component diagnostics](#)
- [Diagrams](#)
- [Internal test and information pages](#)
- [Control-panel menus](#)
- [Control panel message document \(CPMD\)](#)

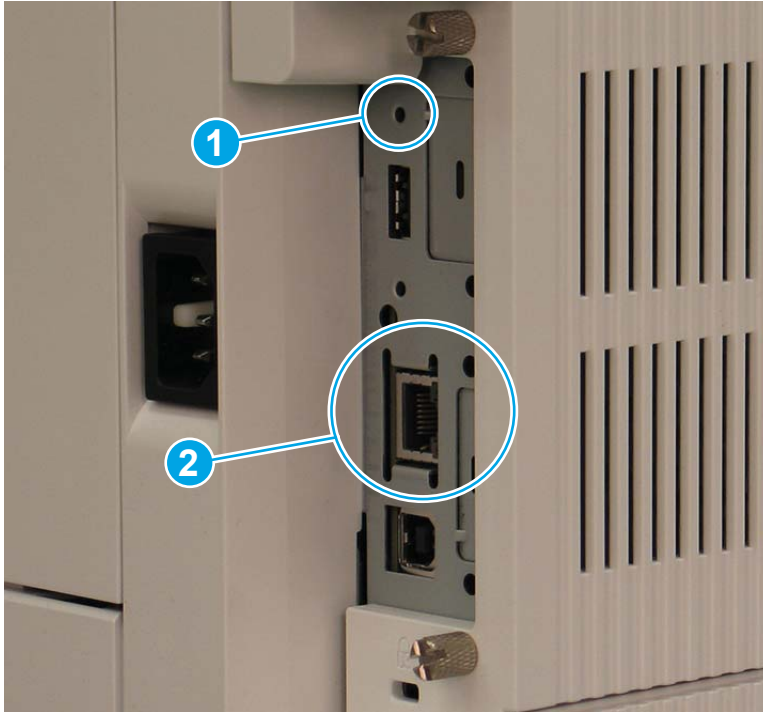
## Individual component diagnostics

### Tools for troubleshooting: LED diagnostics

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

#### Understand lights on the formatter

Three LEDs on the formatter indicate that the printer is functioning correctly.



- 
- |   |                   |
|---|-------------------|
| 1 | Heartbeat LED     |
| 2 | HP Jetdirect LEDs |
- 

#### Heartbeat LED

The heartbeat LED indicates that the formatter is functioning correctly. While the printer is initializing after it is turned on, the LED blinks rapidly, and then turns off. When the printer has finished the initialization sequence, the heartbeat LED pulses on and off.

The following list describes the heartbeat LED operation while the printer is executing the firmware boot process.

If after initialization, the heartbeat LED is not solid green, see [Table 2-9 Heartbeat LED, printer operational on page 142](#).

- Green
  - Blinking: The printer is correctly functioning.
  - Solid: The FW has not yet booted.
- Amber

- **Blinking:** The control panel is not detected.
- **Solid:** The FFC between the formatter and DC controller is not connected or is damaged.
- **Red**
  - **Solid:** Valid SPI code; there is a problem releasing ASIC and running the BIOS
  - Solid:** BIOS initiates PROSAC to change the LED from red to green.
  - Solid:** PROSAC is not running (No ROM or SPI code).
  - **Blinking:** Valid SPI code not found.
- **Off:** No 5V or 3.3V PROSAC power.

The following table describes the heartbeat LED operation when the printer completes the firmware boot process and is in the **Ready** state.

**Table 2-9 Heartbeat LED, printer operational**

LED color	Description
Green	<ul style="list-style-type: none"> <li>● Normal operation               <ul style="list-style-type: none"> <li>◦ Formatter is operating normally</li> <li>◦ Firmware is operating normally</li> <li>◦ Control panel is connected</li> </ul> </li> </ul>
Yellow	<ul style="list-style-type: none"> <li>● Formatter cannot connect to the control panel               <ul style="list-style-type: none"> <li>◦ Check control panel connections</li> <li>◦ Verify control panel functionality</li> </ul> </li> </ul>
Red	<ul style="list-style-type: none"> <li>● Formatter error or failure               <ul style="list-style-type: none"> <li>◦ Serial peripheral interface (SPI) flash memory boot error</li> <li>◦ Power on self-test (formatter) failed</li> <li>◦ Diagnostic (formatter) failed</li> </ul> </li> </ul>
Off	<p><b>TIP:</b> The heartbeat LED is off if the power cable is disconnected, the printer power switch is in the off position, or the printer is in <a href="#">Sleep Mode</a>.</p> <ul style="list-style-type: none"> <li>● Firmware or system freeze               <ul style="list-style-type: none"> <li>◦ Check control panel for an error message</li> <li>◦ Control panel failure</li> </ul> </li> </ul> <p><b>NOTE:</b> This condition is not usually caused by a formatter failure. Turn the power off, and then on again. If the error persists, perform a firmware upgrade.</p>



## HP Jetdirect LEDs

The embedded HP Jetdirect print server has two LEDs. The yellow LED indicates network activity, and the green LED indicates the link status. A blinking yellow LED indicates network traffic. If the green LED is off, a link has failed.

For link failures, check all the network cable connections. In addition, try to manually configure the link settings on the embedded print server by using the printer control-panel menus.


1. From the [Home](#) screen on the printer control panel, scroll to and touch the [Administration](#) button.
2. Open the following menus:
  - [Network Settings](#)
  - [Embedded Jetdirect Menu](#)
  - [Link Speed](#)
3. Select the appropriate link speed, and then touch the [OK](#) button.


## Tools for troubleshooting: Engine diagnostics

The printer contains extensive internal engine diagnostics that help in troubleshooting print quality, paper path, noise, assembly, and timing issues.

### Engine test button

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

 **NOTE:** Depressing, and holding down, the test-page switch causes the printer to continually print test pages. Releasing the switch stops the test page continuous printing.

 **TIP:** Depending on the printer model, the engine test button is located on the right side or rear side of the printer.

**Figure 2-47** Engine test button (1 of 2)



**Figure 2-48** Engine test button (2 of 2)



### Defeating interlocks

Different tests can be used to isolate different types of issues. For assembly or noise isolation, run the diagnostic test when the toner cartridge door or rear door is open.

Defeating the door interlocks allows observation of the paper pick operation (and view the page enter registration).

---


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

---

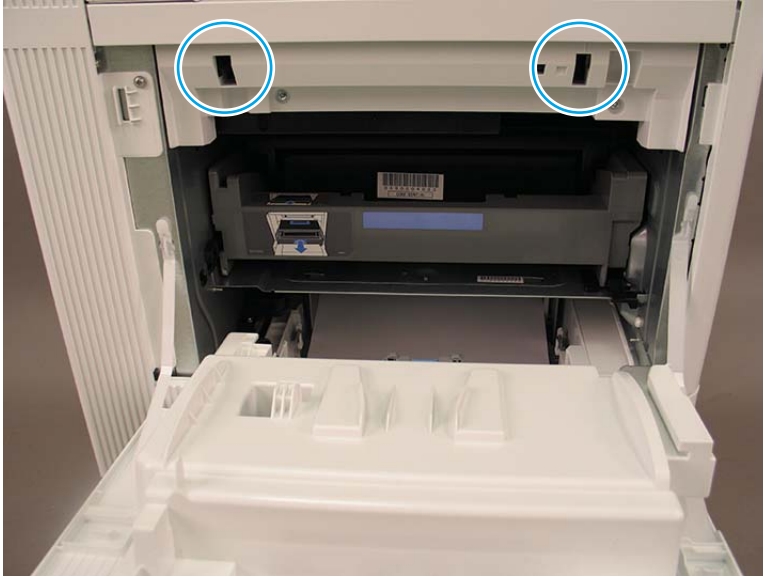
### Defeat the toner cartridge door interlocks

1. Open the toner cartridge door.

2. Insert a folded piece of paper into the slots.

 **TIP:** Fold a stiff piece of paper, for example a business card or index card, into two 10 mm (.375 in) strips, and insert the strips into the slots for the cartridge door logic switches.


**Figure 2-49** Defeat the toner cartridge door interlocks



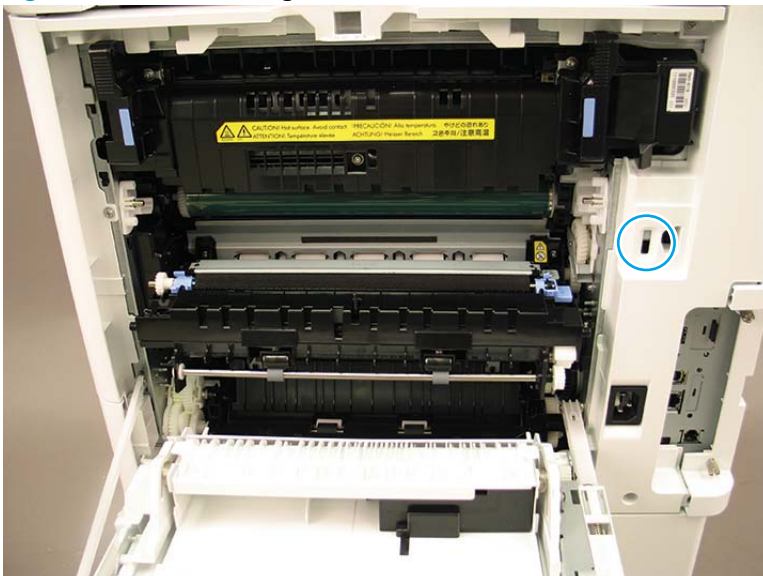
### Defeat the right or rear door interlock

 **NOTE:** For the M607, M608, and M609 printers, this is the rear door.

1. Open the right or rear door.
2. Insert a folded piece of paper into the slot.

 **TIP:** Fold a stiff piece of paper, for example a business card or index card, into two 10 mm (.375 in) strips, and insert the strips into the slot for the cartridge door logic switches.

**Figure 2-50** Defeat the right or rear door interlock



## Disable cartridge check

Use this diagnostic test to print internal pages or send an external job to the printer when the toner cartridge is removed or exchanged. Supply errors are ignored while the printer is in this mode. When the printer is in this mode, access the troubleshooting menus and print internal pages (the print quality pages will be the most useful). This test can be used to isolate problems, such as noise, and to isolate print-quality problems that are related to the toner cartridge.



**NOTE:** Do not remove or exchange the toner cartridge until after beginning the disable cartridge check diagnostic.

### Disable cartridge check from a touchscreen control panel

1. From the Home screen on the printer control panel, swipe (right), and then touch the [Support Tools](#) button.
2. Open the following menus:
  - [Troubleshooting](#)
  - [Diagnostic Tests](#)
  - [Disable Cartridge Check](#)
3. Follow the prompts to perform a [Disable Cartridge Check](#).

### Disable cartridge check from a LCD control panel

1. From the Home screen on the printer control panel, use the down arrow ▼ button to select the [Print](#) menu.
2. Use the right arrow ► button to scroll to and select the [Support Tools](#) menu, and then press the [OK](#) button.
3. Use the down arrow ▼ button to scroll to and select the [Troubleshooting](#) menu, and then press the [OK](#) button.
4. Use the down arrow ▼ button to scroll to and select the [Diagnostic Test](#) menu, and then press the [OK](#) button.
5. Use the down arrow ▼ button to scroll to and select [Disable Cartridge Check](#), and then press the [OK](#) button.
6. Follow the prompts to perform a [Disable Cartridge Check](#).

## Tools for troubleshooting: Paper path and sensor diagnostic tests

- [Paper path page](#)
- [Paper path sensors test](#)
- [Manual sensor tests](#)

### Paper path page

This page contains the following type of information:

- Paper path usage
- Scanner usage (MFP printers)
- Paper type usage
- Print mode usage (sides)

### View or print the paper path page from a touchscreen control panel

1. From the Home screen on the printer control panel, swipe (right), and then touch the [Support Tools](#) item.
2. Open the following menus:
  - [Troubleshooting](#)
  - [Paper Path Page](#)



**NOTE:** The paper path page can only be viewed on the large touchscreen printers. For small touchscreen printers, print the pages.

---

3. Touch [Print](#) to print the pages, or touch [Cancel](#) to return to the [Troubleshooting](#) menu.

### Print the paper path page from a LCD control panel

1. From the Home screen on the printer control panel, use the down arrow ▼ button to select the [Print](#) menu.
2. Use the right arrow ► button to scroll to and select the [Support Tools](#) menu, and then press the [OK](#) button.
3. Use the down arrow ▼ button to scroll to and select the [Troubleshooting](#) menu, and then press the [OK](#) button.
4. Use the down arrow ▼ button to scroll to and select the [Paper Path Page](#) item, and then press the [OK](#) button.
5. Use the left arrow ◀ or right arrow ► buttons to select the [Print](#) item, and then press the [OK](#) button.



**NOTE:** Touch the [Cancel](#) button to return to the [Troubleshooting](#) menu.

---

### Paper path sensors test

This test displays the status of each paper-path sensor and allows viewing of sensor status while printing an internal test page.

### Access the paper path sensors test from a touchscreen control panel

1. From the Home screen on the printer control panel, swipe (right), and then touch the [Support Tools](#) button.
2. Open the following menus:

- [Troubleshooting](#)
  - [Diagnostic Tests](#)
  - [Paper Path Sensor Test](#)
3. Select from the following:
- [Options](#) (configure the [Paper Path Sensor Test](#))




---

**NOTE:** Depending on the printer model, not all options are available.

---

- [Number of copies](#)
- [Paper tray](#) (source to print from)
- [Output Sides](#) (simplex or duplex testing)
- [Staple](#) (model dependant)
- [Output bin](#) (model dependant)
- [Done](#) (return to the [Troubleshooting](#) menu)
- [Start](#) (begins the test)

#### Access the paper path sensors test from a LCD control panel

1. From the Home screen on the printer control panel, use the down arrow ▼ button to select the [Print](#) menu.
2. Use the right arrow ► button to scroll to and select the [Support Tools](#) menu, and then press the [OK](#) button.
3. Use the down arrow ▼ button to scroll to and select the [Troubleshooting](#) menu, and then press the [OK](#) button.
4. Use the down arrow ▼ button to scroll to and select the [Diagnostic Test](#) menu, and then press the [OK](#) button.
5. Use the down arrow ▼ button to scroll to and select [Paper path Sensor Test](#), and then press the [OK](#) button.
6. Use the left arrow ◀ or right arrow ► buttons to select from the following:
  - [Options](#) (configure the [Paper Path Sensor Test](#))




---

**NOTE:** Depending on the printer model, not all options are available.

---

- [Number of copies](#)
- [Paper tray](#) (source to print from)
- [Output Sides](#) (simplex or duplex testing)

- **Staple** (model dependant)
- **Output bin** (model dependant)
- **Done** (return to the **Troubleshooting** menu)
- **Start** (begins the test)



## Manual sensor tests

The [Manual Sensor Test](#) screen shows the sensor number, sensor name, sensor state (active or inactive), and the number of times the sensor has been toggled (activated).

### Access the manual sensor test from a touchscreen control panel

1. From the Home screen on the printer control panel, swipe (right), and then touch the [Support Tools](#) button.
2. Open the following menus:
  - [Troubleshooting](#)
  - [Diagnostic Tests](#)
  - [Manual Sensor Test](#)
3. Select from the following:
  - [All sensors](#) (choose the group of sensors to test)
    - [Input tray sensors](#)
    - [Output bin sensors](#)
    - [Engine sensors](#)
  - [Done](#) (return to the [Troubleshooting](#) menu)
  - [Reset](#) (reset the selected sensor's state)

### Access the manual sensor test from a LCD control panel

1. From the Home screen on the printer control panel, use the down arrow ▼ button to select the [Print](#) menu.
2. Use the right arrow ► button to scroll to and select the [Support Tools](#) menu, and then press the [OK](#) button.
3. Use the down arrow ▼ button to scroll to and select the [Troubleshooting](#) menu, and then press the [OK](#) button.
4. Use the down arrow ▼ button to scroll to and select the [Diagnostic Test](#) menu, and then press the [OK](#) button.
5. Use the down arrow ▼ button to scroll to and select [Manual Sensor Test](#), and then press the [OK](#) button.
6. Use the left arrow ◀ or right arrow ► buttons to select from the following:
  - [Options](#) (configure the [Paper Path Sensor Test](#))
    - [All sensors](#) (choose the group of sensors to test)

- [Input tray sensors](#)
- [Output bin sensors](#)
- [Engine sensors](#)
- [Done](#) (return to the [Troubleshooting](#) menu)
- [Reset](#) (reset the selected sensor's state)
- [Done](#) (return to the [Troubleshooting](#) menu)
- [Start](#) (begins the test)

## Tools for troubleshooting: Print/stop test

Use this diagnostic test to isolate the cause of problems such as image-formation defects and jams within the engine. During this test, stop the paper anywhere along the printer paper path. The test can be programmed to stop printing internal pages or an external print job when the paper reaches a certain position. The test can also be programmed to stop from 0 to 60,000 ms.

### Access the print/stop test from a touchscreen control panel

1. From the Home screen on the printer control panel, swipe (right), and then touch the [Support Tools](#) button.
2. Open the following menus:
  - [Troubleshooting](#)
  - [Diagnostic Tests](#)
  - [Print/Stop Test](#)
3. Touch the [Stop next print job](#) check box to enable the [Print/Stop Test](#).
4. Touch the [Delay ms \(0 to 60000\)](#) box (a 10-key keypad appears), and then enter the time to stop printing delay (in milliseconds).
5. To perform the test, send a print job (the job will stop at the specified time).



---

**NOTE:** Touch the [Done](#) button to return to the [Troubleshooting](#) menu.

---

### Access the print/stop test from a LCD control panel

1. From the Home screen on the printer control panel, use the down arrow ▼ button to select the [Print](#) menu.
2. Use the right arrow ► button to scroll to and select the [Support Tools](#) menu, and then press the [OK](#) button.
3. Use the down arrow ▼ button to scroll to and select the [Troubleshooting](#) menu, and then press the [OK](#) button.
4. Use the down arrow ▼ button to scroll to and select the [Diagnostic Test](#) menu, and then press the [OK](#) button.
5. Use the down arrow ▼ button to scroll to and select [Print/Stop Test](#), and then press the [OK](#) button.
6. Use the up arrow ▲ or down arrow ▼ buttons to scroll to the [Stop next print job](#) item, and then press the [OK](#) button to select the checkbox (enables the test).
7. Use the down arrow ▼ button to scroll to the [Delay ms \(0 to 60000\)](#) item, and then use the printer 10-key keypad to enter the time to stop printing delay (in milliseconds).
8. To perform the test, send a print job (the job will stop at the specified time).



---

**NOTE:** Use the arrow buttons to scroll to the [Done](#) button, and then press [OK](#) to return to the [Troubleshooting](#) menu.

---

### Common print stop test timing millisecond (ms) stops

- **600 ms:** The page has passed the registration area and the leading edge is just short of entering the fuser. The image can be seen on the paper but has not fused. If the defect is visible then the cause might be the drum, transfer roller, or a roller prior to, or in, the registration area.
- **1200 ms:** The leading edge is about 18mm (0.71 in) into the top output bin. The image has gone through the fuser. If the defect was not visible prior to the fuser, and is visible after the fuser, then the fuser is the likely cause of the print quality defect. Inspect the fuser for damage, debris, or labels stuck to the fuser. Replace the fuser. Discuss media specifications and proper care of the fuser with the customer.

## Tools for troubleshooting: Component tests

Use the procedure below to test various printer mechanical and electromechanical assemblies.

### Individual component diagnostics

This test activates individual parts independently to isolate problems.

Each component test can be performed once or repeatedly. If the **Repeat** option is enabled, the test cycles the component on and off. This process continues until the test automatically terminates.



**NOTE:** The cartridge door interlocks must be defeated to run the component tests. A control-panel display prompt appears to indicate removing the toner cartridge, during certain tests.

### Access the individual component diagnostics from a touchscreen control panel

1. From the Home screen on the printer control panel, swipe (right), and then touch the **Support Tools** button.
2. Open the following menus:
  - **Troubleshooting**
  - **Diagnostic Tests**
  - **Component Test**
3. Select from the following:
  - **Drum Motor >** (displays the components list)



**NOTE:** The list of components depending on the printer model.

- **Repeat** (select this item to continuously run the test)



**NOTE:** The test continues until the it stops automatically.

- **Done** (return to the **Troubleshooting** menu)
- **Start** (starts the component test)

### Access the individual component diagnostics from a LCD control panel

1. From the Home screen on the printer control panel, use the down arrow ▼ button to select the **Print** menu.
2. Use the right arrow ► button to scroll to and select the **Support Tools** menu, and then press the **OK** button.
3. Use the down arrow ▼ button to scroll to and select the **Troubleshooting** menu, and then press the **OK** button.
4. Use the down arrow ▼ button to scroll to and select the **Diagnostic Test** menu, and then press the **OK** button.
5. Use the down arrow ▼ button to scroll to and select **Component Test**, and then press the **OK** button.
6. Use the left arrow ◀ or right arrow ► buttons to select from the following:

- [Drum Motor >](#) (displays the components list)



---

**NOTE:** The list of components depending on the printer model.

---

- [Repeat](#) (select this item to continuously run the test)



---

**NOTE:** The test continues until the it stops automatically.

---

- [Done](#) (return to the [Troubleshooting](#) menu)
- [Start](#) (starts the component test)

## Tools for troubleshooting: Scanner tests (MFP)

Use these diagnostic tests to manually test the scanner optical carriage.

### Continuous scan test (MFP)

This section lists describes accessing the [Continuous Scan](#) test.

#### Access the continuous scan test from a MFP touchscreen control panel

1. From the Home screen on the printer control panel, swipe (right), and then touch the [Support Tools](#) button.
2. Open the following menus:
  - [Troubleshooting](#)
  - [Diagnostic Tests](#)
  - [Continuous Scan](#)
3. Select from the following:
  - [2-sided](#) (duplex test)
  - [Done](#) (return to the [Troubleshooting](#) menu)
  - [Start](#) (starts the test)

## Tools for troubleshooting: Scanner tests (MFP)

Use these diagnostic tests to manually test the fax module.

### Run fax test (MFP)

This section lists describes accessing the [Run Fax Test](#) procedure.

#### Access the run fax test from a MFP touchscreen control panel

1. From the Home screen on the printer control panel, swipe (right), and then touch the [Support Tools](#) button.
2. Open the following menus:
  - [Troubleshooting](#)
  - [Diagnostic Tests](#)
  - [Run Fax Test](#)
3. Select from the following:
  - [Done](#) (return to the [Troubleshooting](#) menu)
  - [Start](#) (starts the test)



## Diagrams

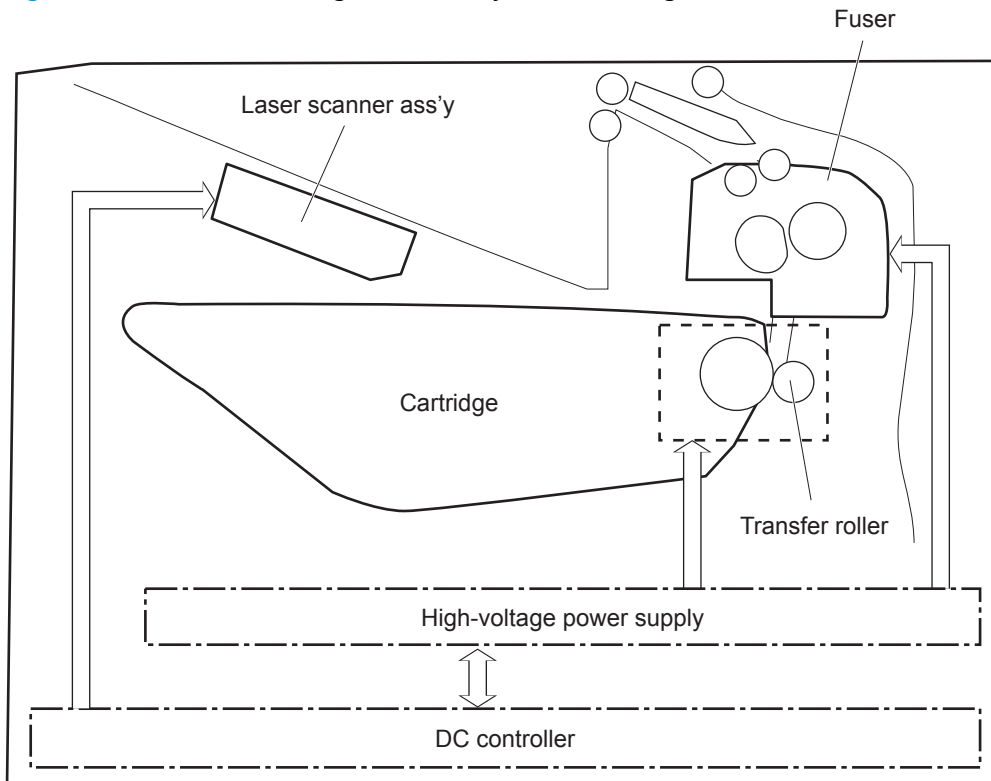
Use the diagrams in this section to identify printer components.

### Diagrams: Block diagrams

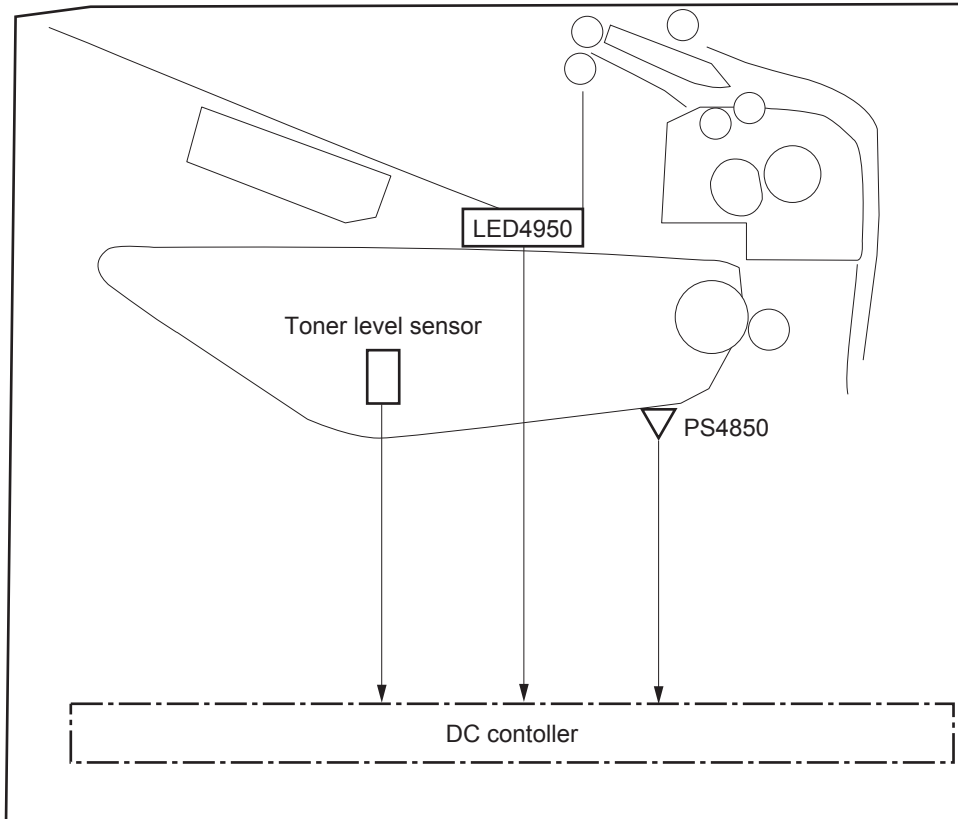
Use the diagrams in this section to identify printer sensors, switches, and assemblies.

### Diagrams Electrical components

**Figure 2-51** Printer base, image formation system block diagram



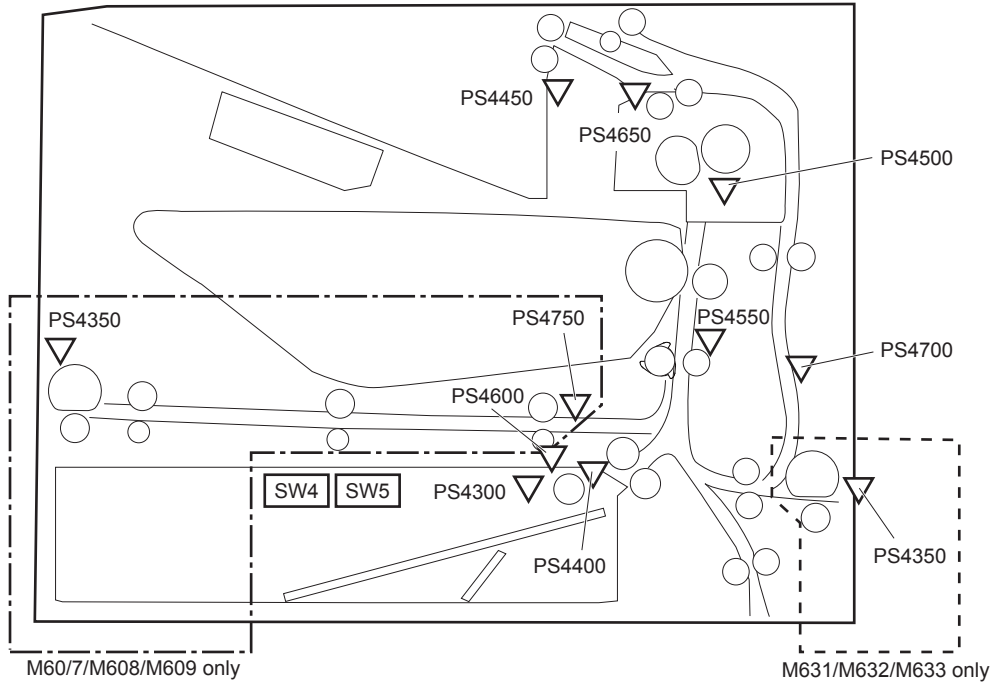
**Figure 2-52** Printer base, sensors (image formation) block diagram



**Table 2-10** Printer base, sensors (image formation) block diagram

Item	Description
LED4950	Pre-exposure LED
PS4850	Developer alienation sensor
NA	Toner level sensor

**Figure 2-53** Printer base, sensors (pickup, feed, and delivery) block diagram



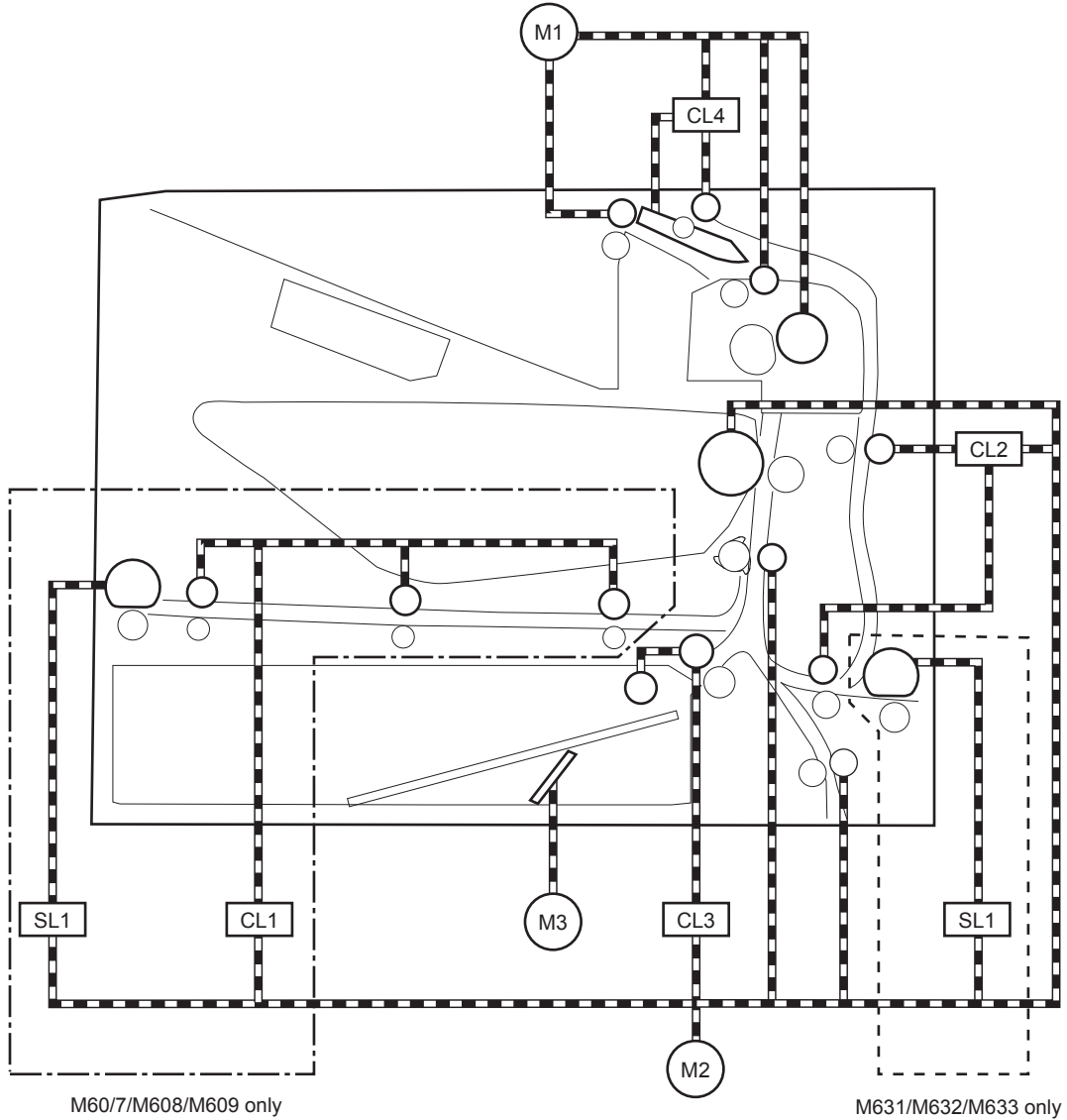
**Table 2-11** Printer base, sensors (pickup, feed, and delivery) block diagram

Item	Description	Item	Description
PS4300	Tray 2 media out sensor	PS4600	Retard roller rotation sensor
PS4350	Tray 1 media out sensor	PS4650	Fuser output sensor
PS4400	Tray 2 media surface sensor	PS4700	Duplex feed sensor
PS4450	FD1 media full sensor	PS4750	Tray 1 feed sensor
PS4500	Fuser loop sensor	SW4	Tray 2 media size switch 1
PS4550	Registration sensor	SW5	Tray 2 media size switch 2

<sup>1</sup> M607, M608, and M609 duplex models and M631, M632, and M633 only.

<sup>2</sup> M607, M608, and M609 models only.

**Figure 2-54** Printer base, motors, solenoids, and clutches block diagram



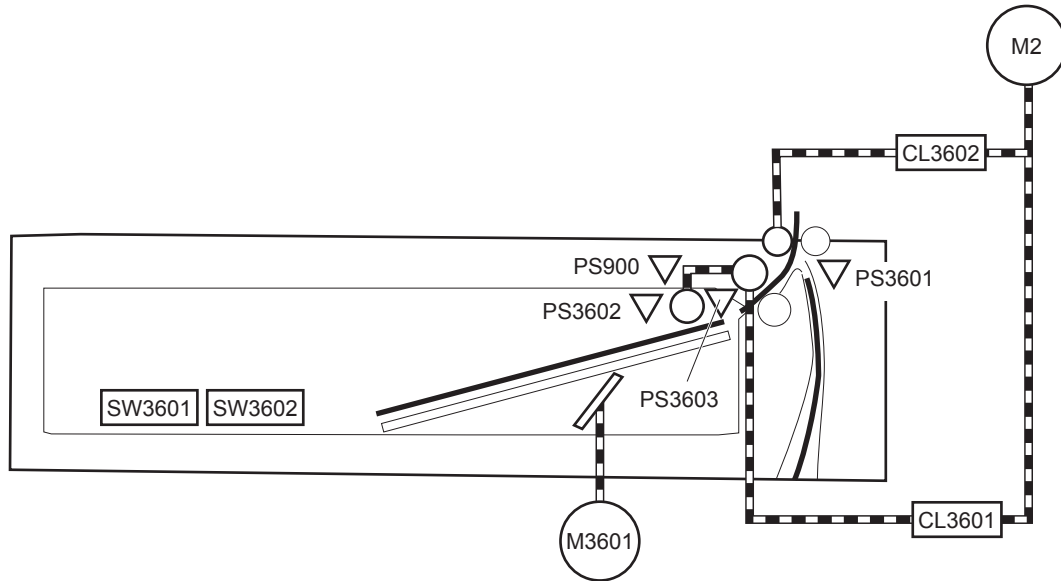
**Table 2-12** Printer base, motors, solenoids, and clutches block diagram

Item	Description	Item	Description
M1	Fuser motor	CL1	Tray 1 feed clutch
M2	Drum motor	CL2	Duplex feed clutch
M3	Lifter motor	CL3	Tray 2 pickup clutch
SL1	Tray 1 pickup solenoid	CL4	Duplex switchback clutch

<sup>1</sup> M607, M608, and M609 duplex models and M631, M632, and M633 only.

<sup>2</sup> M607, M608, and M609 models only.

**Figure 2-55** 1x550-sheet paper feeder, electrical components block diagram



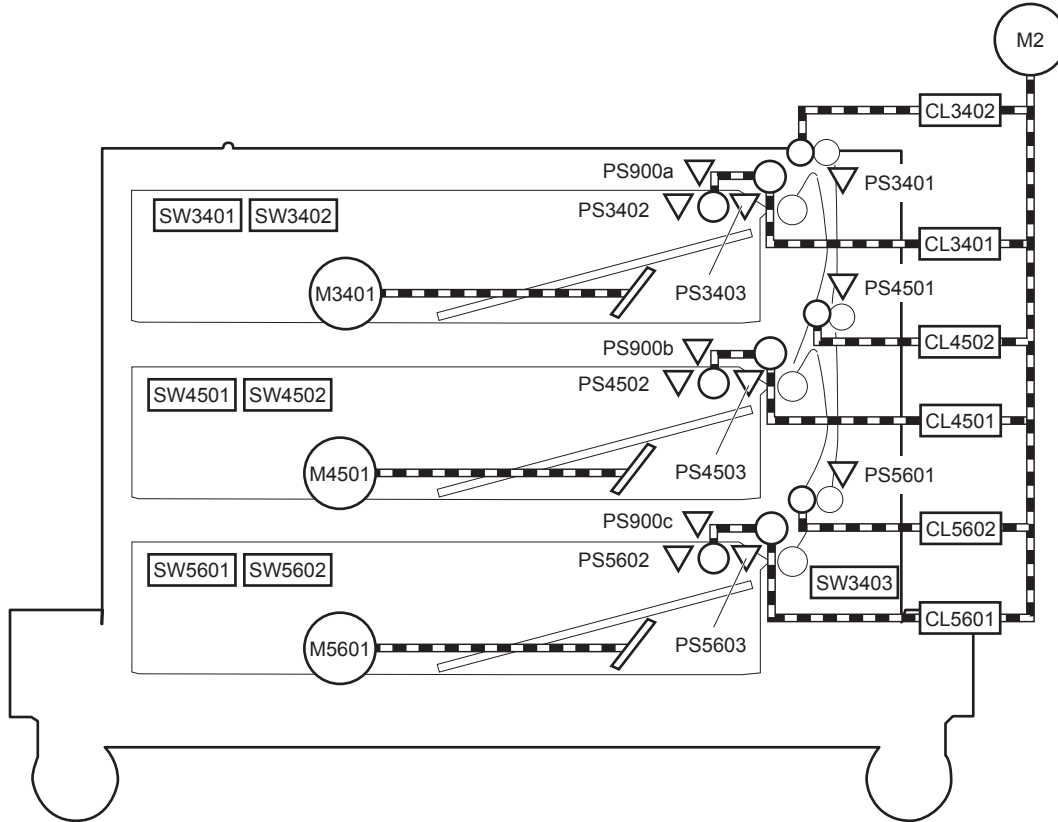
**Table 2-13** 1x550-sheet paper feeder, electrical components block diagram

Item	Description	Item	Description
M2	Drum motor	SW3603	PF Door switch
M3601	PF Lifter motor	PS3601	PF Feed sensor
CL3601	PF pickup clutch	PS3602	PF Media out sensor
CL3602	PF Feed clutch	PS3603	PF Media surface sensor
SW3601	PF Media size switch 1	PS900	PF Retard roller rotation sensor
SW3602	PF Media size switch 2		

<sup>1</sup> Located in the printer.

<sup>2</sup> 1x500-sheet paper feeder only.

**Figure 2-56** 1x550-sheet and 3x550-sheet paper decks, electrical components block diagram



**Table 2-14** 1x550-sheet and 3x550-sheet paper decks, electrical components block diagram

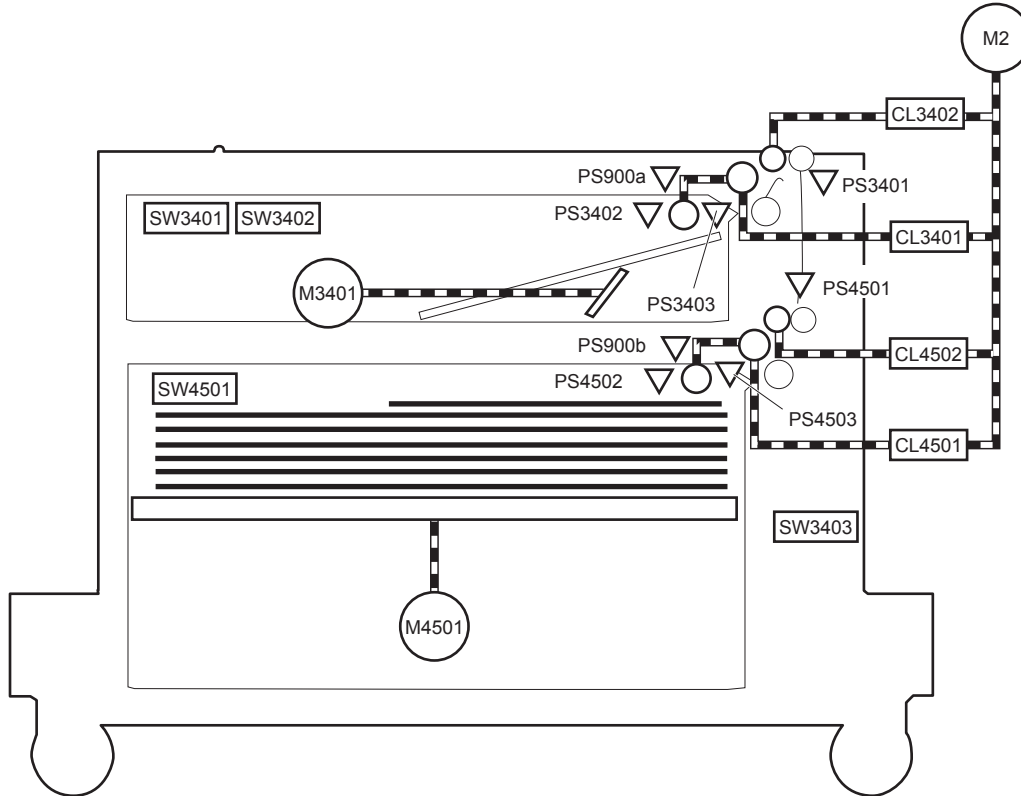
Item	Description	1x550 PD	3x550 PD
M2	Drum motor	No	No
M3401	PD cassette 1 lifter motor	Yes	Yes
M4501	PD cassette 2 lifter motor	No	Yes
M5601	PD cassette 3 lifter motor	No	Yes
CL3401	PD cassette 1 pickup clutch	Yes	Yes
CL3402	PD cassette 1 feed clutch	Yes	Yes
CL4501	PD cassette 2 pickup clutch	No	Yes
CL4502	PD cassette 2 feed clutch	No	Yes
CL5601	PD cassette 3 pickup clutch	No	Yes
CL5602	PD cassette 3 feed clutch	No	Yes
SW3401	PD Cassette 1 media size switch 1	Yes	Yes
SW3402	PD Cassette 1 media size switch 2	Yes	Yes
SW4501	PD Cassette 2 media size switch 1	No	Yes
SW4502	PD Cassette 2 media size switch 2	No	Yes
SW5601	PD Cassette 3 media size switch 1	No	Yes
SW5602	PD Cassette 3 media size switch 2	No	Yes

**Table 2-14 1x550-sheet and 3x550-sheet paper decks, electrical components block diagram (continued)**

<b>Item</b>	<b>Description</b>	<b>1x550 PD</b>	<b>3x550 PD</b>
SW3403	PD door switch	Yes	Yes
PS3401	PD cassette 1 feed sensor	Yes	Yes
PS3402	PD cassette 1 media out sensor	Yes	Yes
PS3403	PD cassette 1 media surface sensor	Yes	Yes
PS4501	PD cassette 2 feed sensor	No	Yes
PS4502	PD cassette 2 media out sensor	No	Yes
PS4503	PD cassette 2 media surface sensor	No	Yes
PS5601	PD cassette 3 feed sensor	No	Yes
PS5602	PD cassette 3 media out sensor	No	Yes
PS5603	PD cassette 3 media surface sensor	No	Yes
PS900a	PD retard roller rotation sensor 1	Yes	Yes
PS900b	PD retard roller rotation sensor 2	No	Yes
PS900c	PD retard roller rotation sensor 3	No	Yes

<sup>1</sup> Located in the printer.

**Figure 2-57** 2,550-sheet paper deck, electrical components block diagram



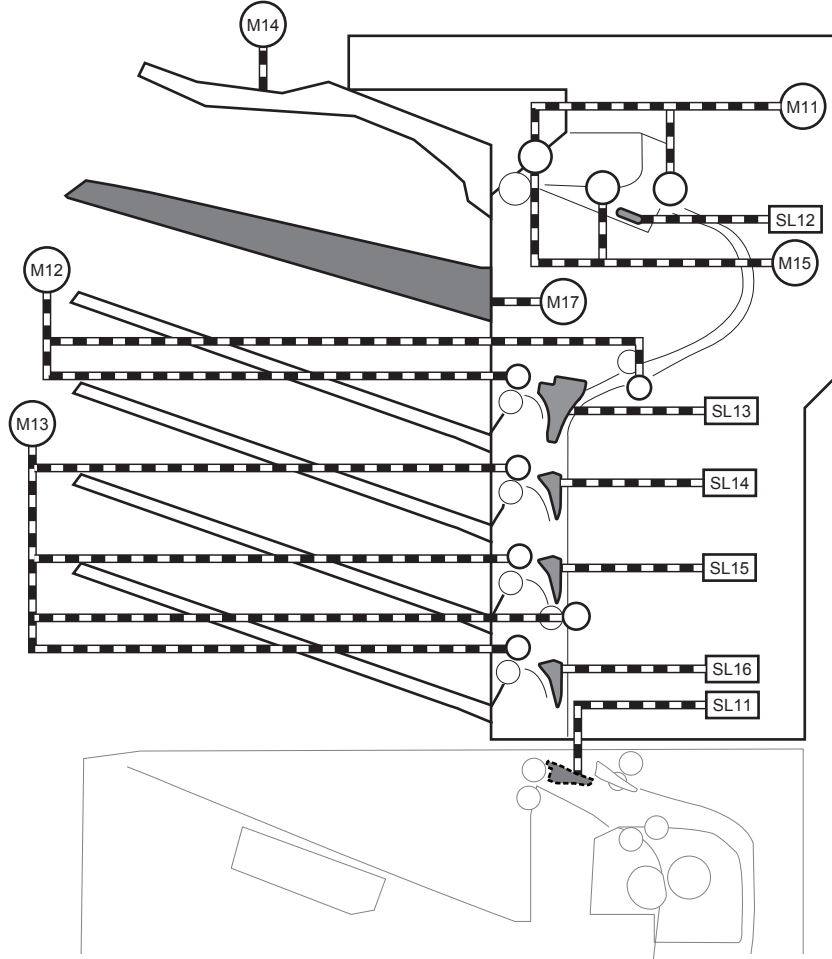
**Table 2-15** 2,550-sheet paper deck, electrical components block diagram

Item	Description	Item	Description
M2	Drum motor	SW3403	PD door switch
M3401	PD cassette 1 lifter motor	PS3401	PD cassette 1 feed sensor
M4501	PD cassette 2 lifter motor	PS3402	PD cassette 1 media out sensor
CL3401	PD cassette 1 pickup clutch	PS3403	PD cassette 1 media surface sensor
CL3402	PD cassette 1 feed clutch	PS900	Retard roller rotation sensor
CL4501	PD cassette 2 pickup clutch	PS4501	PD cassette 2 feed sensor
CL4502	PD cassette 2 feed clutch	PS4502	PD cassette 2 media out sensor
SW3401	PD Cassette 1 media size switch 1	PS4503	PD cassette 2 media surface sensor
SW3402	PD Cassette 1 media size switch 2	PS900a	PD retard roller rotation sensor 1
SW4501	PD Cassette 2 media size switch 1	PS900b	PD retard roller rotation sensor 2

<sup>1</sup> Located in the printer.



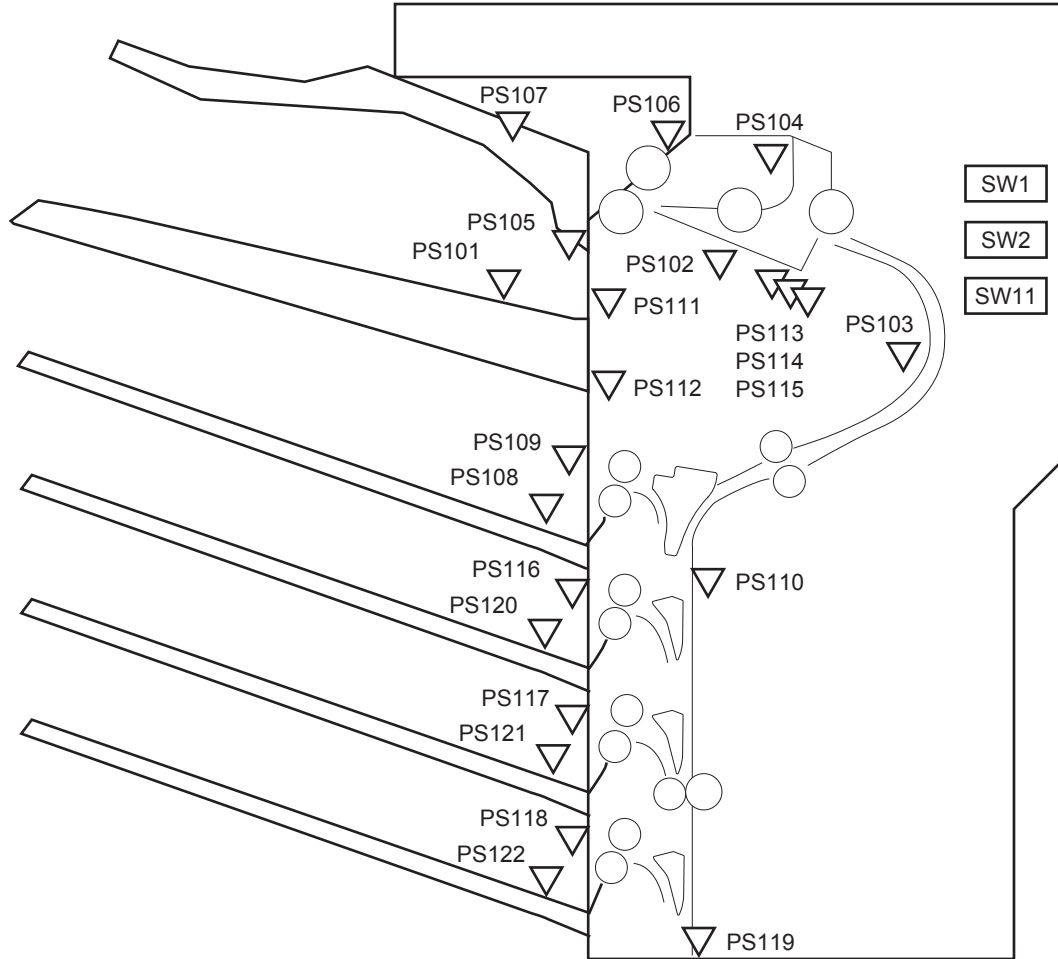
**Figure 2-58** Stapler stacker multi bin mailbox (5 bin; SSBM), motors and solenoids block diagram



**Table 2-16** Stapler stacker multi bin mailbox (5 bin; SSBM), motors and solenoids block diagram

Item	Description	Item	Description
M11	SS output motor	SL11	Inlet flapper solenoid
M12	SS feed motor	SL12	Stamp solenoid
M13	MBM feed motor	SL13	Output bin 2 flapper solenoid
M14	Jogger motor	SL14	Output bin 3 flapper solenoid
M15	Y alignment motor	SL15	Output bin 4 flapper solenoid
M16	Staple motor	SL16	Output bin 5 flapper solenoid
M17	Lifter motor		

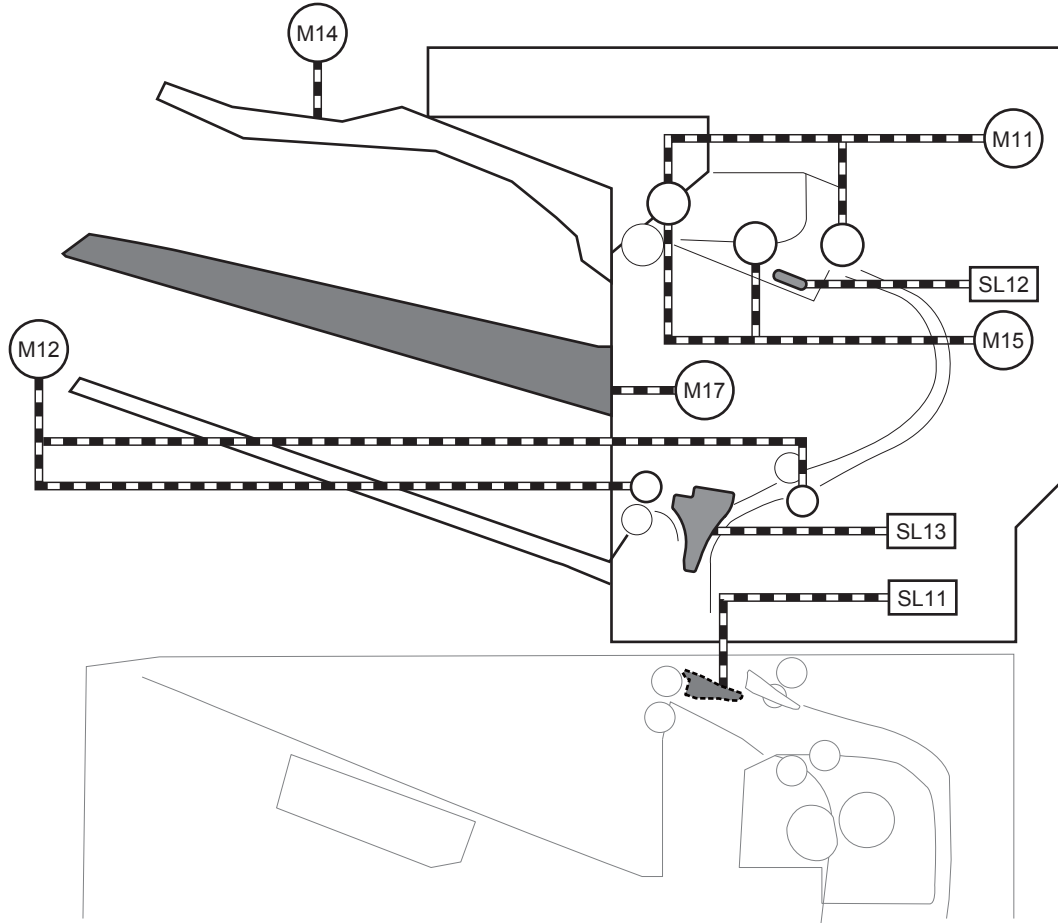
**Figure 2-59** Stapler stacker multi bin mailbox (5 bin; SSBM), sensors and switches block diagram



**Table 2-17** Stapler stacker multi bin mailbox (5 bin; SSBM), sensors and switches block diagram

Item	Description	Item	Description
PS101	Bin 1 media presence sensor	PS114	Staple ready sensor
PS102	SS exit sensor	PS115	Staple home position sensor
PS103	Staple inlet sensor	PS116	Bin 3 media full sensor
PS104	Y alignment home position sensor	PS117	Bin 4 media full sensor
PS105	Bin 1 media full sensor	PS118	Bin 5 media full sensor
PS106	Alienation home position sensor	PS119	MBM inlet sensor
PS107	Jogger home position sensor	PS120	Bin 3 media presence sensor
PS108	Bin 2 media presence sensor	PS121	Bin 4 media presence sensor
PS109	Bin 2 media full sensor	PS122	Bin 5 media presence sensor
PS110	SS inlet sensor	SW1	MBM door switch
PS111	Bin 1 upper limit sensor	SW2	SS door switch
PS112	Bin 1 lower limit sensor	SW11	Staple door switch
PS113	Staple low sensor		

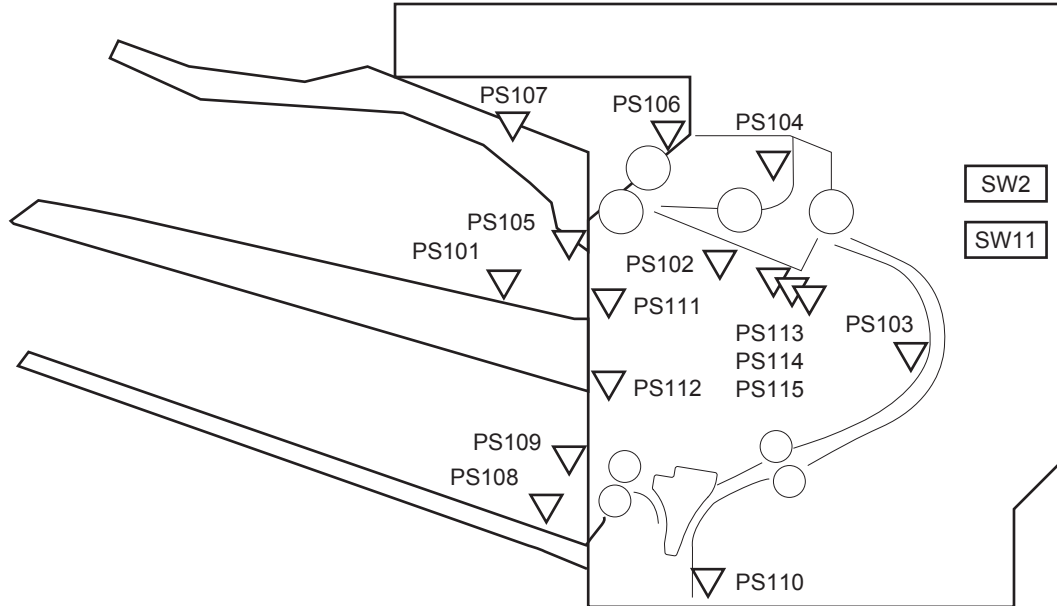
**Figure 2-60** Stapler stacker multi bin mailbox (2 bin; SSBM), motors and solenoids block diagram



**Table 2-18** Stapler stacker multi bin mailbox (2 bin; SSBM), motors and solenoids block diagram

Item	Description	Item	Description
M11	SS output motor	M17	Lifter motor
M12	SS feed motor	SL11	Inlet flapper solenoid
M14	Jogger motor	SL12	Stamp solenoid
M15	Y alignment motor	SL13	Output bin 2 flapper solenoid
M16	Staple motor		

**Figure 2-61** Stapler stacker multi bin mailbox (2 bin; SSBM), sensors and switches block diagram



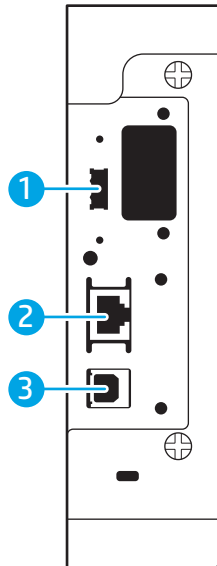
**Table 2-19** Stapler stacker multi bin mailbox (2 bin; SSBM), sensors and switches block diagram

Item	Description	Item	Description
PS101	Bin 1 media presence sensor	PS110	SS inlet sensor
PS102	SS exit sensor	PS111	Bin 1 upper limit sensor
PS103	Staple inlet sensor	PS112	Bin 1 lower limit sensor
PS104	Y alignment home position sensor	PS113	Staple low sensor
PS105	Bin 1 media full sensor	PS114	Staple ready sensor
PS106	Alienation home position sensor	PS115	Staple home position sensor
PS107	Jogger home position sensor	SW2	SS door switch
PS108	Bin 2 media presence sensor	SW11	Staple door switch
PS109	Bin 2 media full sensor		

## Diagrams: External plug and port locations

Use the following figure to locate and identify the printer external port locations.

**Figure 2-62** External plug and port locations (M607, M608, and M609)

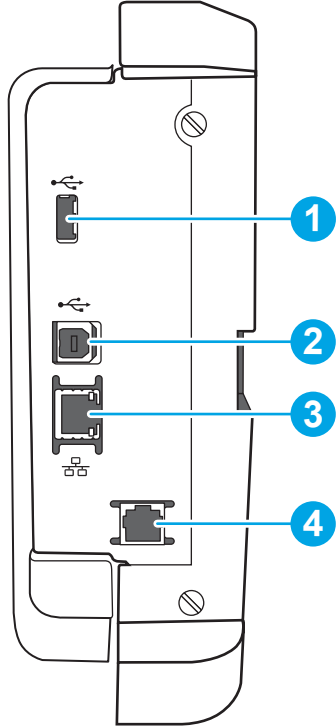


**Table 2-20** External plug and port locations (M607, M608, and M609)

Item	Description
1	Host USB port for connecting external USB devices (this port might be covered)
2	Local area network (LAN) Ethernet (RJ-45) network port
3	Hi-Speed USB 2.0 printing port

**NOTE:** For easy-access USB printing, use the USB port near the control panel.

**Figure 2-63** External plug and port locations (M631, M632, and M633)



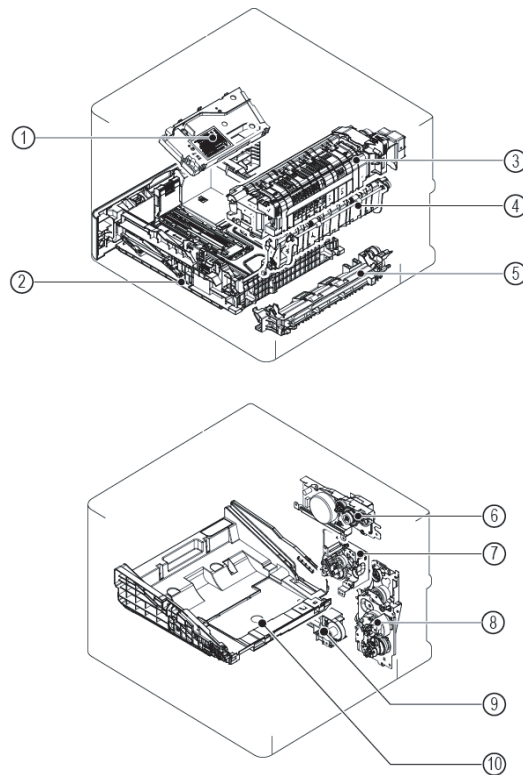
**Table 2-21** External plug and port locations (M631, M632, and M633)

Item	Description
1	Host USB port for connecting external USB devices (this port might be covered) <b>NOTE:</b> For easy-access USB printing, use the USB port near the control panel.
2	Hi-Speed USB 2.0 printing port
3	Local area network (LAN) Ethernet (RJ-45) network port
4	Fax port (fax models only)

## Diagrams: Locations of major assemblies

### Main assemblies (printer base)

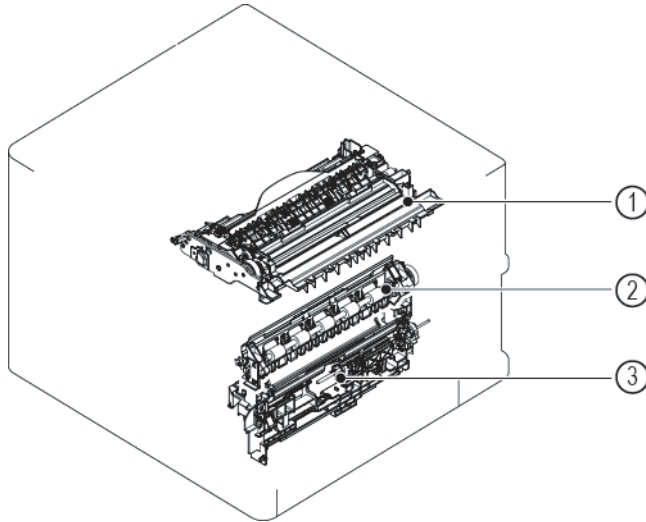
**Figure 2-64** Printer base (M607, M608, and M609), main assemblies (1 of 2)



**Table 2-22** Printer base (M607, M608, and M609), main assemblies (1 of 2)

Item	Description	Item	Description
1	Laser scanner assembly	6	Fuser drive assembly
2	Tray 2	7	Developer drive assembly
3	Fuser	8	Main drive assembly
4	Transfer assembly	9	Lifter drive assembly
5	Feed frame assembly	19	Cartridge (toner) tray assembly

**Figure 2-65** Printer base (M607, M608, and M609), main assemblies (2 of 2)

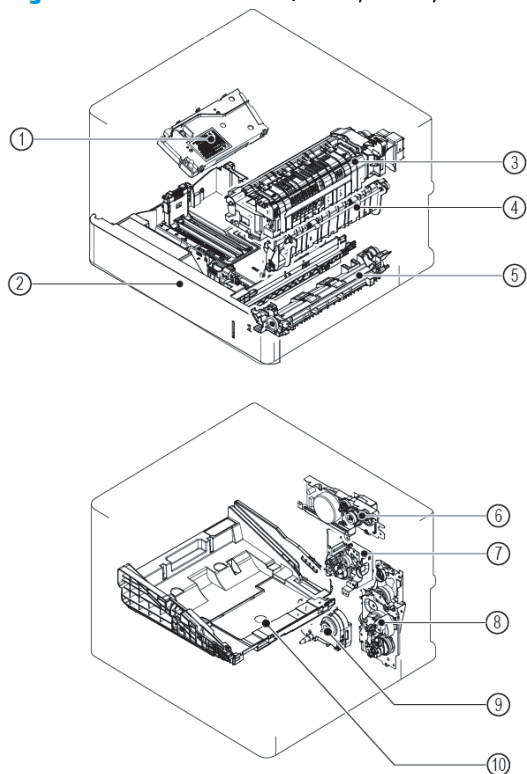


**Table 2-23** Printer base (M607, M608, and M609), main assemblies (2 of 2)

Item	Description
1	Delivery assembly
2	Registration assembly
3	Pickup assembly



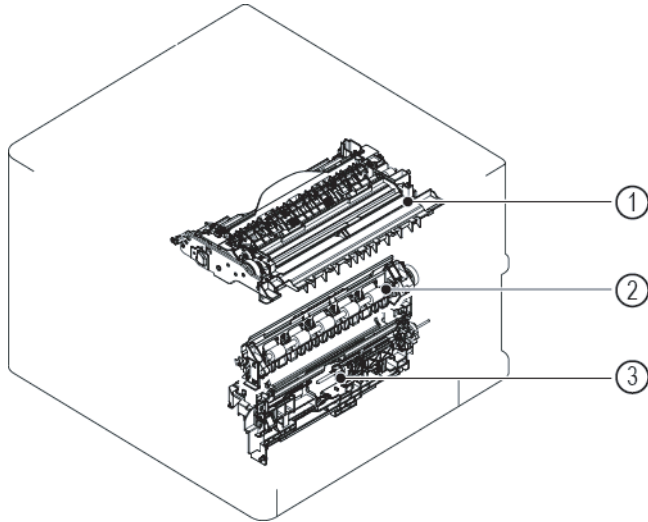
**Figure 2-66** Printer base (M631, M632, and M633), main assemblies (1 of 2)



**Table 2-24** Printer base (M631, M632, and M633), main assemblies (1 of 2)

Item	Description	Item	Description
1	Laser scanner assembly	6	Fuser drive assembly
2	Tray 2	7	Developer drive assembly
3	Fuser	8	Main drive assembly
4	Transfer assembly	9	Lifter drive assembly
5	Feed frame assembly	19	Cartridge (toner) tray assembly

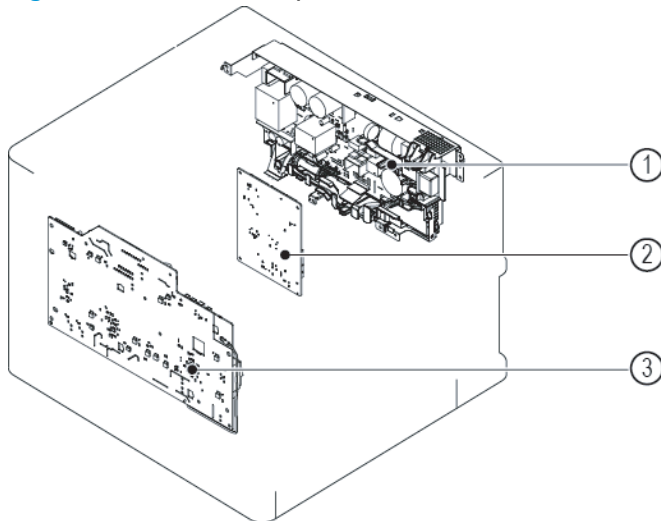
**Figure 2-67** Printer base (M631, M632, and M633), main assemblies (2 of 2)



**Table 2-25** Printer base (M631, M632, and M633), main assemblies (2 of 2)

Item	Description
1	Delivery assembly
2	Registration assembly
3	Pickup assembly

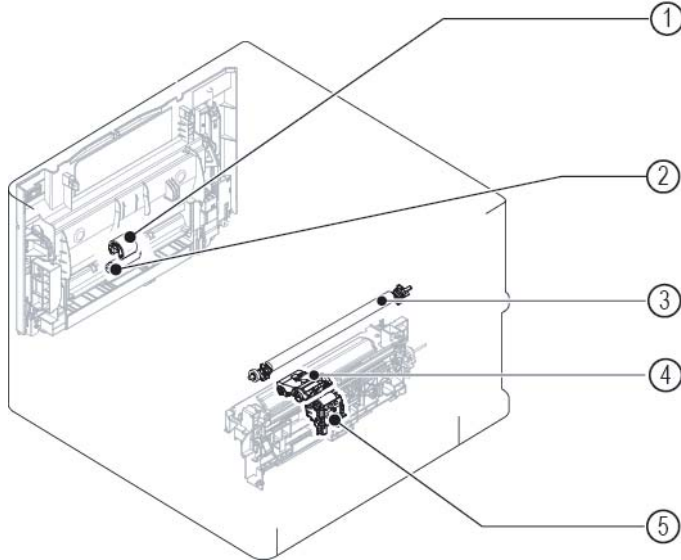
**Figure 2-68** Printer base, printed circuit assemblies (PCAs)



**Table 2-26** Printer base, printed circuit assemblies (PCAs)

Item	Description
1	Low-voltage power supply (LVPS) PCA
2	DC controller PCA
3	High-voltage power supply (HVPS) PCA

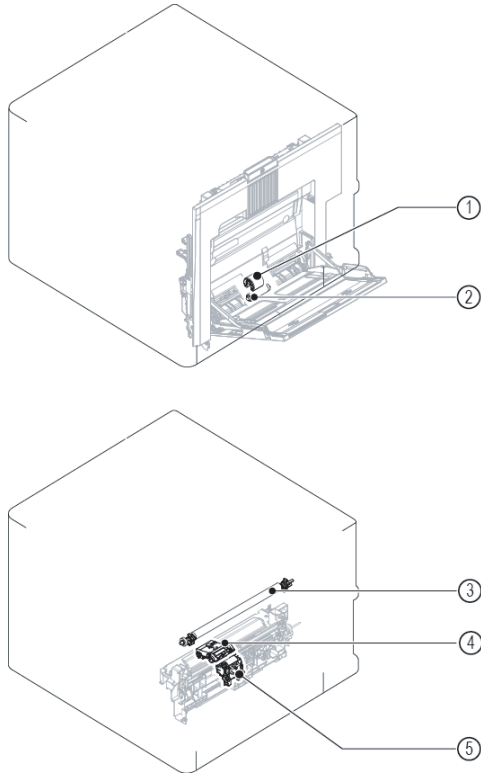
**Figure 2-69** Printer base (M607, M608, and M609), roller assemblies



**Table 2-27** Printer base (M607, M608, and M609), roller assemblies

Item	Description	Item	Description
1	Tray 1 pickup roller	4	Tray 2 pickup roller assembly
2	Tray 1 separation roller	5	Tray 2 retard roller assembly
3	Transfer roller assembly		

**Figure 2-70** Printer base (M631, M632, and M633), roller assemblies



**Table 2-28** Printer base (M631, M632, and M633), roller assemblies

Item	Description	Item	Description
1	Tray 1 pickup roller	4	Tray 2 pickup roller assembly
2	Tray 1 separation roller	5	Tray 2 retard roller assembly
3	Transfer roller assembly		

## Main assemblies (1x550-sheet paper feeder)

Figure 2-71 1x550-sheet paper feeder, main assemblies

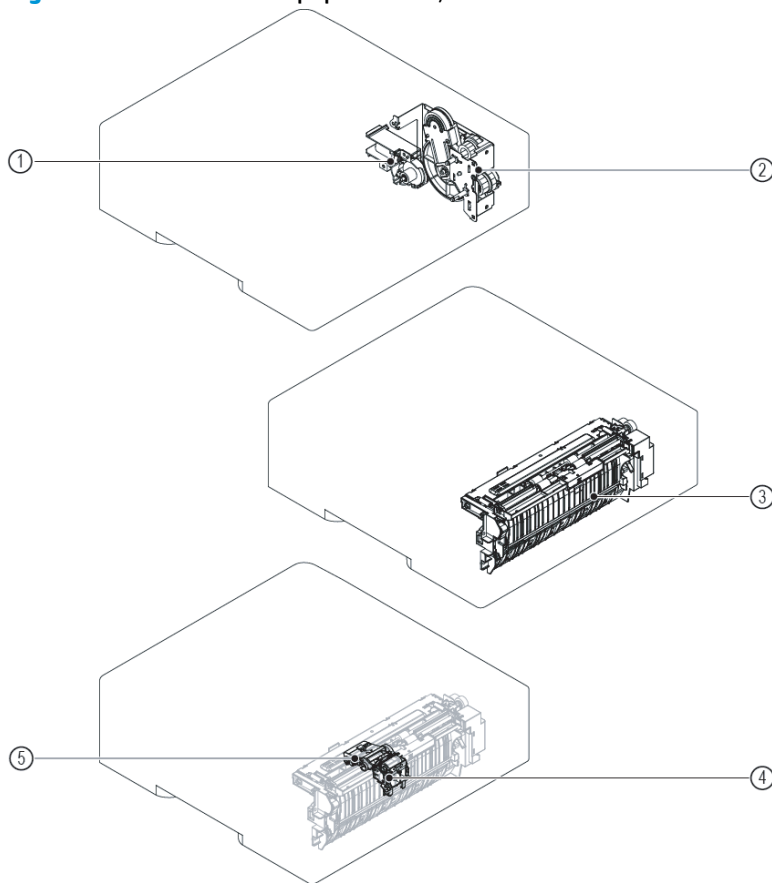
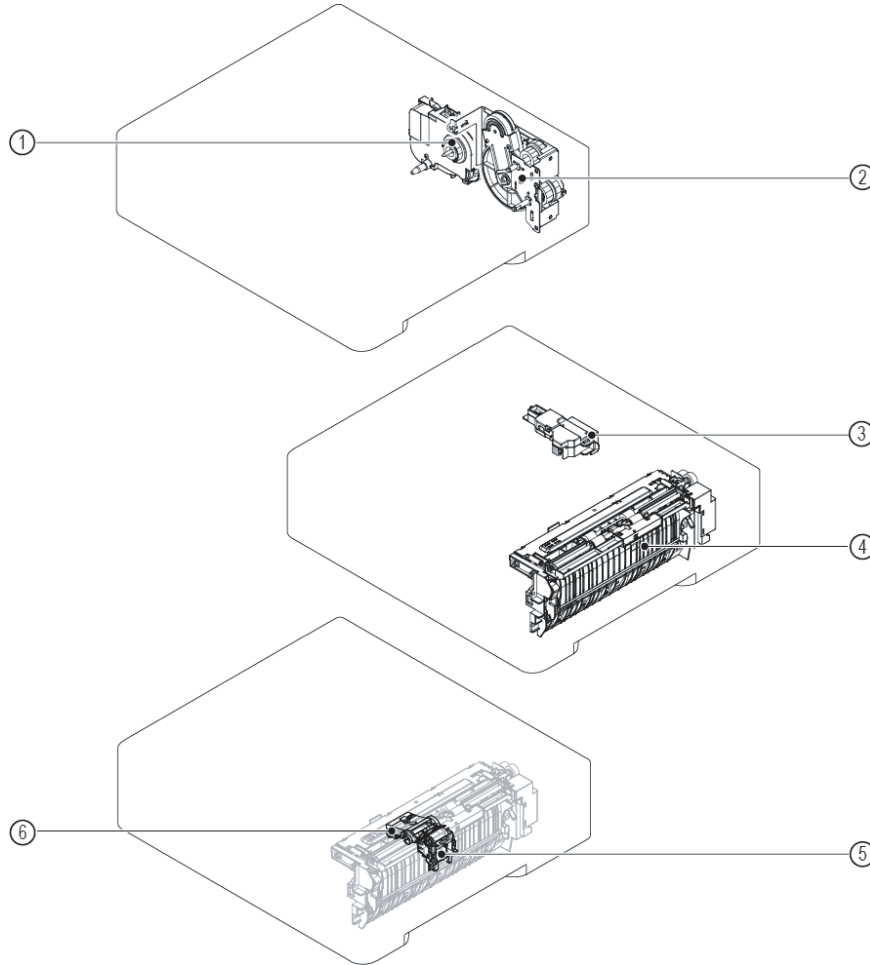


Table 2-29 1x550-sheet paper feeder, main assemblies

Item	Description	Item	Description
1	Lifter drive assembly	4	PF retard roller assembly
2	Drive assembly	5	PF pickup roller assembly
3	Pickup assembly		

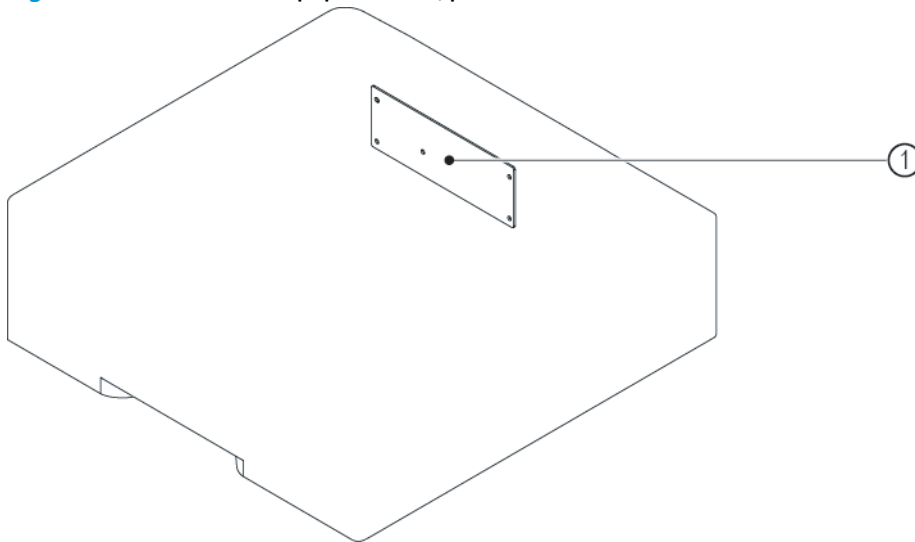
**Figure 2-72** 1x550-sheet paper feeder (M631/M632/M633 envelope feeder), main assemblies



**Table 2-30** 1x550-sheet paper feeder (M631/M632/M633 envelope feeder), main assemblies

Item	Description	Item	Description
1	Lifter drive assembly	4	Pickup assembly
2	Drive assembly	5	PF retard roller assembly
3	Auto close assembly	6	PF pickup roller assembly

**Figure 2-73** 1x550-sheet paper feeder, printed circuit assemblies (PCAs)



**Table 2-31** 1x550-sheet paper feeder, printed circuit assemblies (PCAs)

Item	Description
1	Paper feeder controller PCA

## Main assemblies (1x550-sheet paper deck)

Figure 2-74 1x550-sheet paper deck, main assemblies (1 of 2)

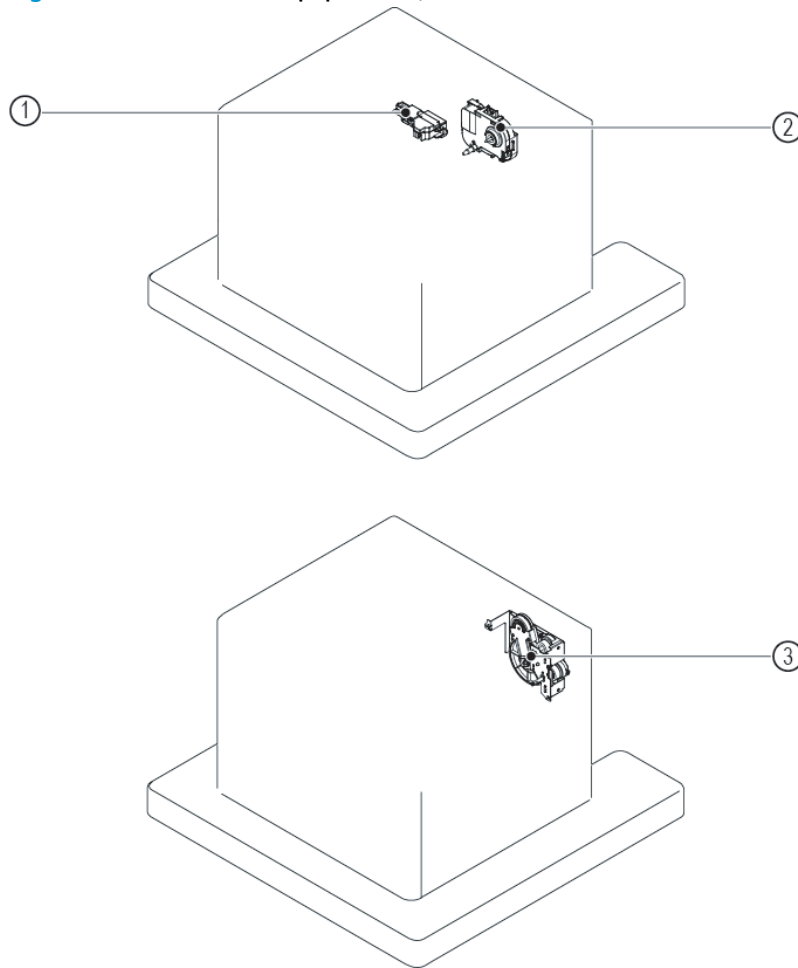
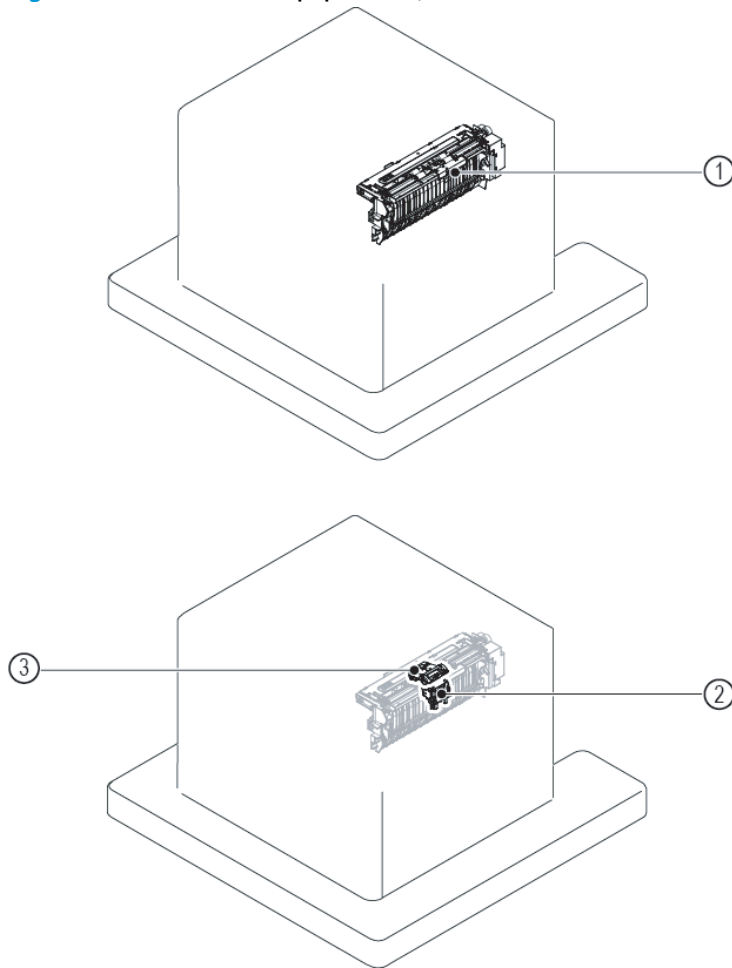


Table 2-32 1x550-sheet paper deck, main assemblies (1 of 2)

Item	Description	Item	Description
1	Cassette auto close assembly	3	Cassette drive assembly
2	Cassette lifter drive assembly		



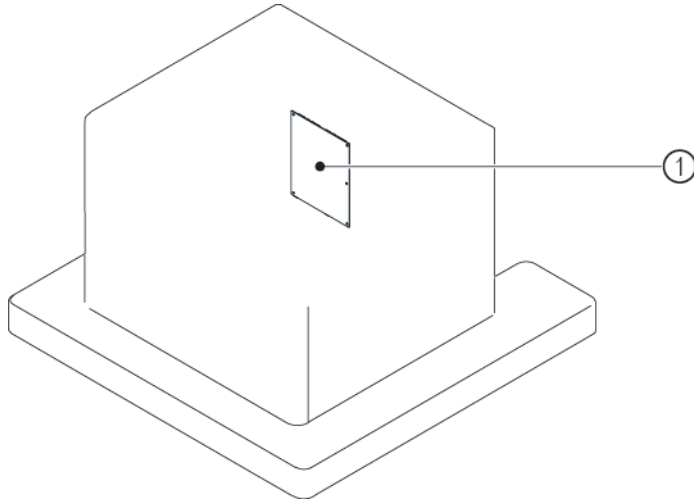
**Figure 2-75** 1x550-sheet paper deck, main assemblies (2 of 2)



**Table 2-33** 1x550-sheet paper deck, main assemblies (2 of 2)

Item	Description	Item	Description
1	Cassette pickup assembly	3	PD pickup roller assembly
2	PD retard roller assembly		

**Figure 2-76** 1x550-sheet paper deck, printed circuit assemblies (PCAs)



**Table 2-34** 1x550-sheet paper deck, printed circuit assemblies (PCAs)

Item	Description
1	Paper deck controller PCA

## Main assemblies (3x550-sheet paper deck)

Figure 2-77 3x550-sheet paper deck, main assemblies (1 of 2)

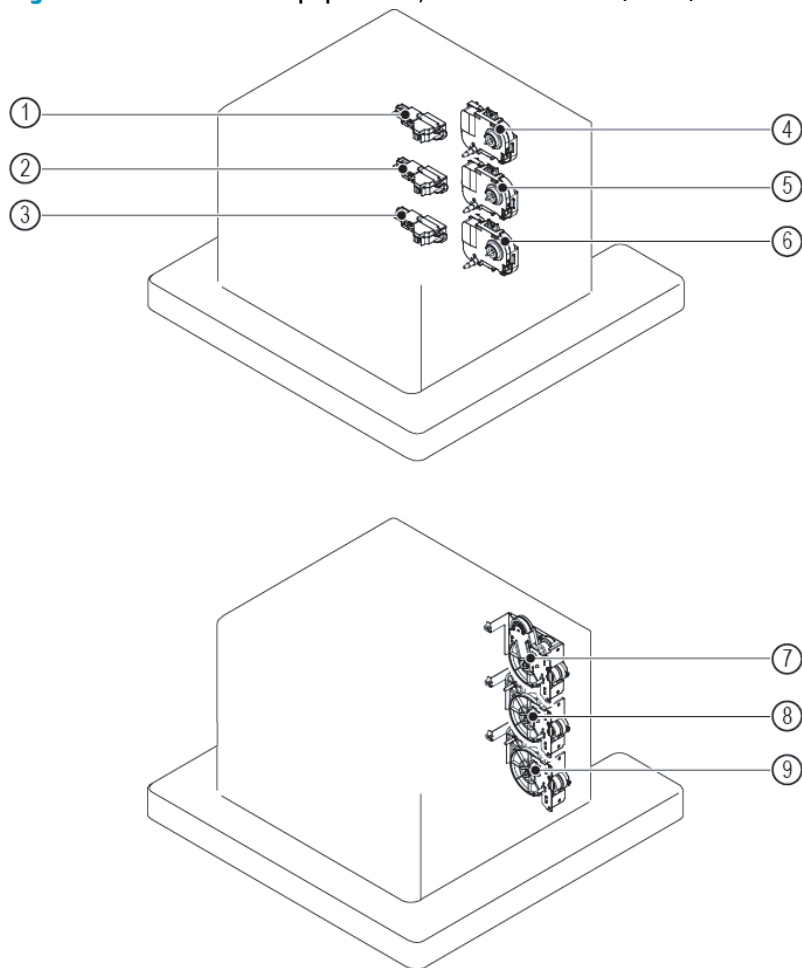
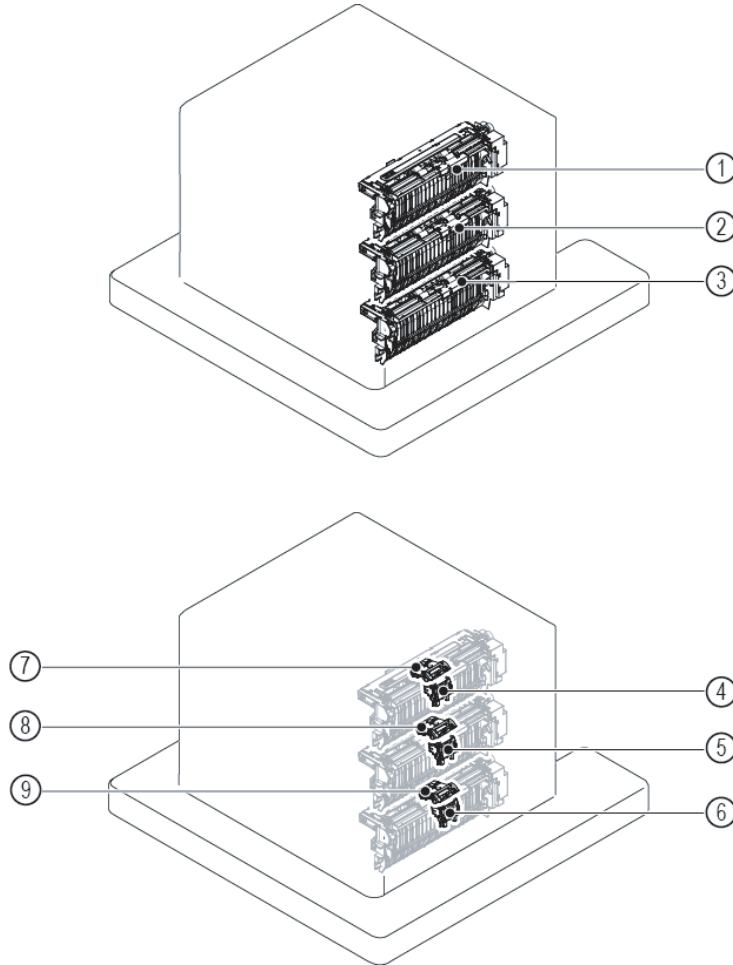


Table 2-35 3x550-sheet paper deck, main assemblies (1 of 2)

Item	Description	Item	Description
1	Cassette 1 auto close assembly	6	Cassette 3 lifter drive assembly
2	Cassette 2 auto close assembly	7	Cassette 1 drive assembly
3	Cassette 3 auto close assembly	8	Cassette 2 drive assembly
4	Cassette 1 lifter drive assembly	9	Cassette 3 drive assembly
5	Cassette 2 lifter drive assembly		

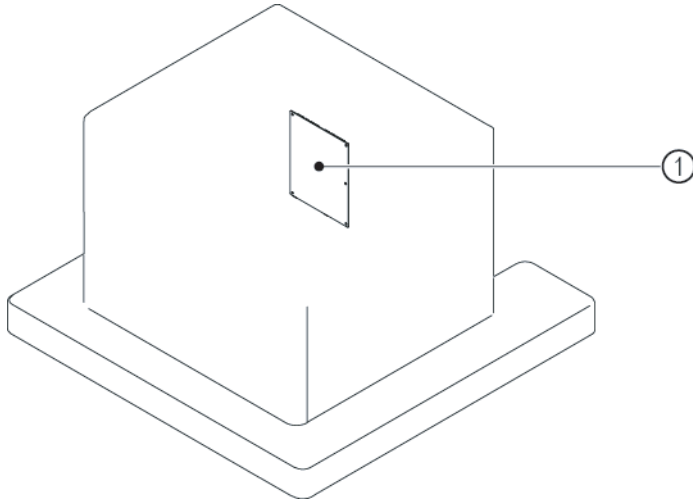
**Figure 2-78** 3x550-sheet paper deck, main assemblies (2 of 2)



**Table 2-36** 3x550-sheet paper deck, main assemblies (2 of 2)

Item	Description	Item	Description
1	Cassette 1 pickup assembly	6	PD 3 retard roller assembly
2	Cassette 2 pickup assembly	7	PD 1 pickup roller assembly
3	Cassette 3 pickup assembly	8	PD 2 pickup roller assembly
4	PD 1 retard roller assembly	9	PD 3 pickup roller assembly
5	PD 2 retard roller assembly		

**Figure 2-79** 3x550-sheet paper deck, printed circuit assemblies (PCAs)



**Table 2-37** 3x550-sheet paper deck, printed circuit assemblies (PCAs)

Item	Description
1	Paper deck controller PCA

## Main assemblies (2,100-sheet paper deck; M607/M608/M609)

Figure 2-80 2,100-sheet paper deck (M607/M608/M609), main assemblies

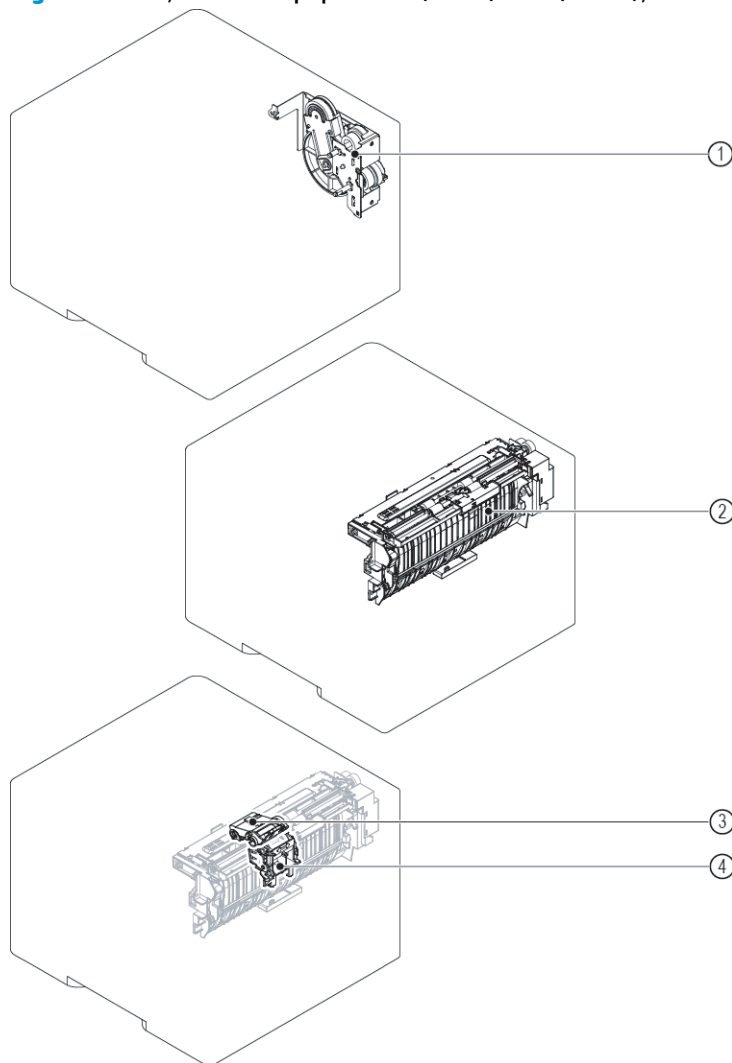
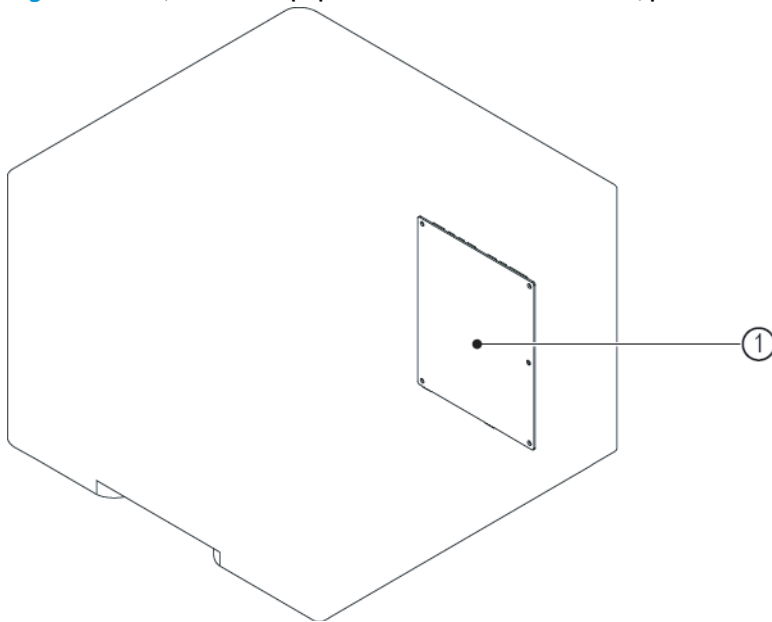


Table 2-38 2,100-sheet paper deck (M607/M608/M609), main assemblies

Item	Description	Item	Description
1	Drive assembly	3	HCI retard roller assembly
2	Pickup assembly	4	HCI pickup roller assembly

**Figure 2-81** 2,100-sheet paper deck (M607/M608/M609), printed circuit assemblies (PCAs)

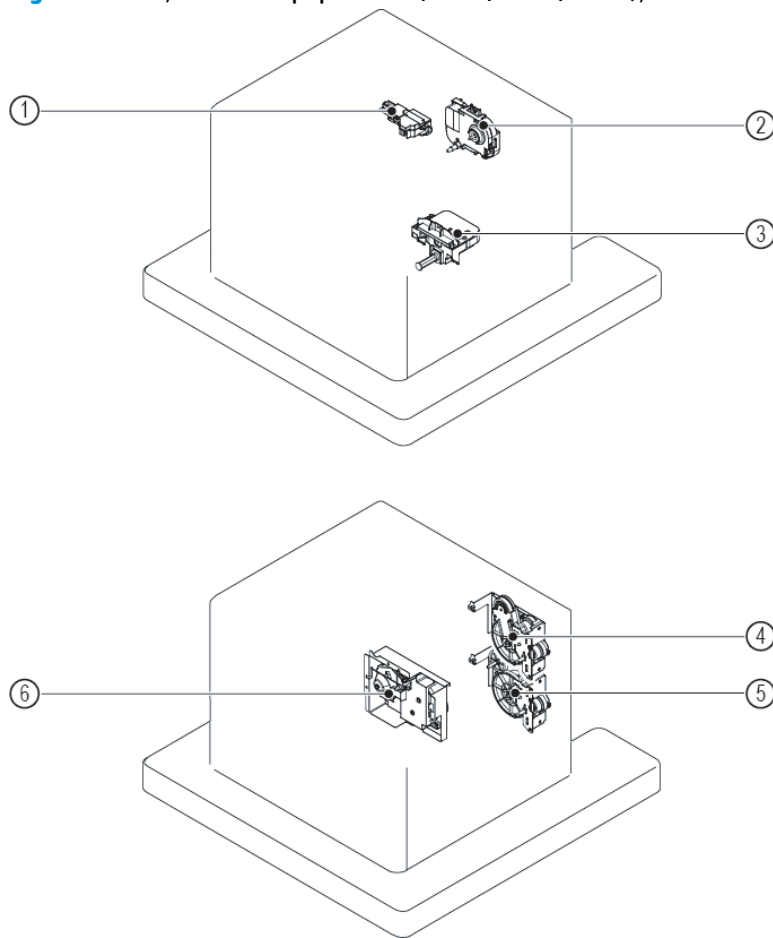


**Table 2-39** 2,100-sheet paper deck (M607/M608/M609), printed circuit assemblies (PCAs)

Item	Description
1	HCI controller PCA

**Main assemblies (2,550-sheet paper deck; M631/M632/M633) (1 of 2)**

**Figure 2-82** 2,550-sheet paper deck (M631/M632/M633), main assemblies (1 of 2)

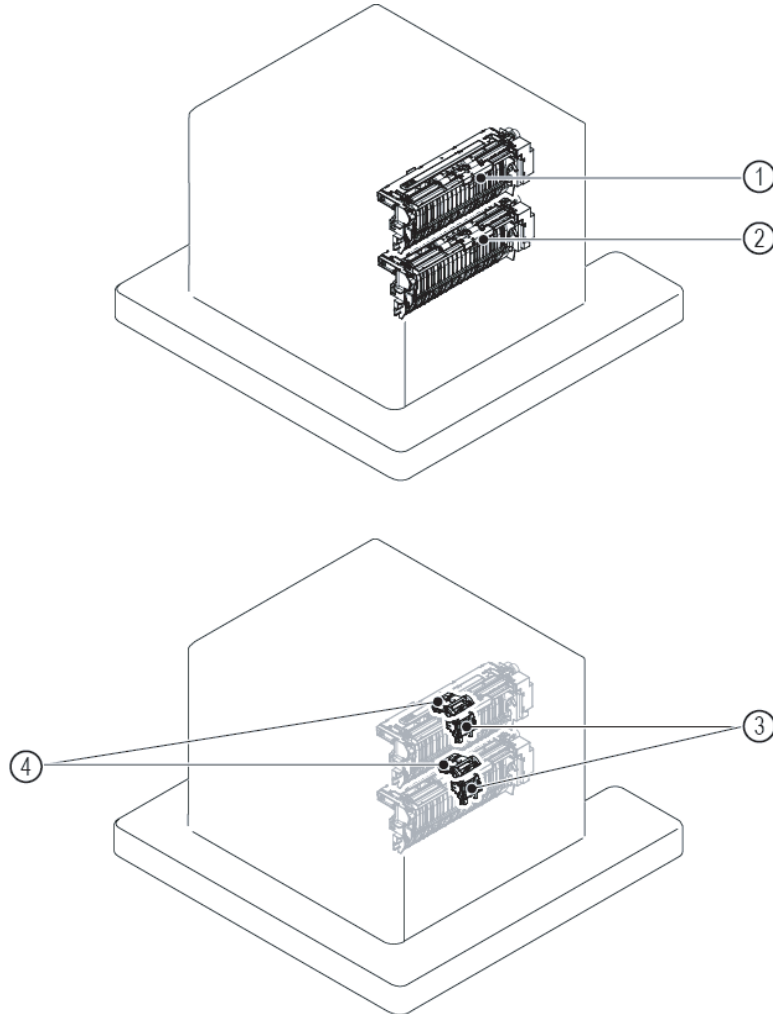


**Table 2-40** 2,550-sheet paper deck (M631/M632/M633), main assemblies (1 of 2)

Item	Description	Item	Description
1	Cassette auto close assembly	4	Cassette drive assembly
2	Cassette lifter drive assembly	5	Tray drive assembly
3	Tray auto close assembly	6	Tray lifter drive assembly



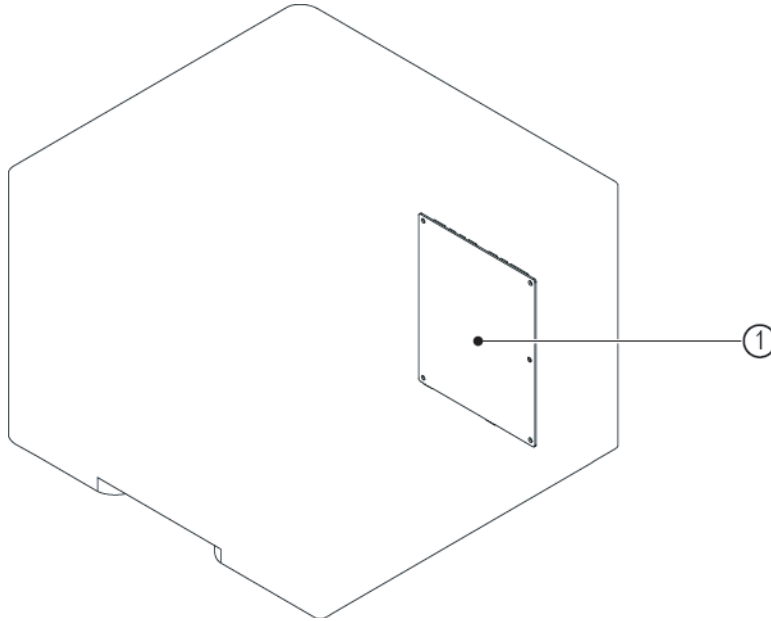
**Figure 2-83** 2,550-sheet paper deck (M631/M632/M633), main assemblies (2 of 2)



**Table 2-41** 2,550-sheet paper deck (M631/M632/M633), main assemblies (2 of 2)

Item	Description	Item	Description
1	Cassette pickup assembly	3	PD retard roller assembly
2	Tray pickup assembly	4	PD pickup roller assembly

**Figure 2-84** 2,550-sheet paper deck (M631/M632/M633), printed circuit assemblies (PCAs)

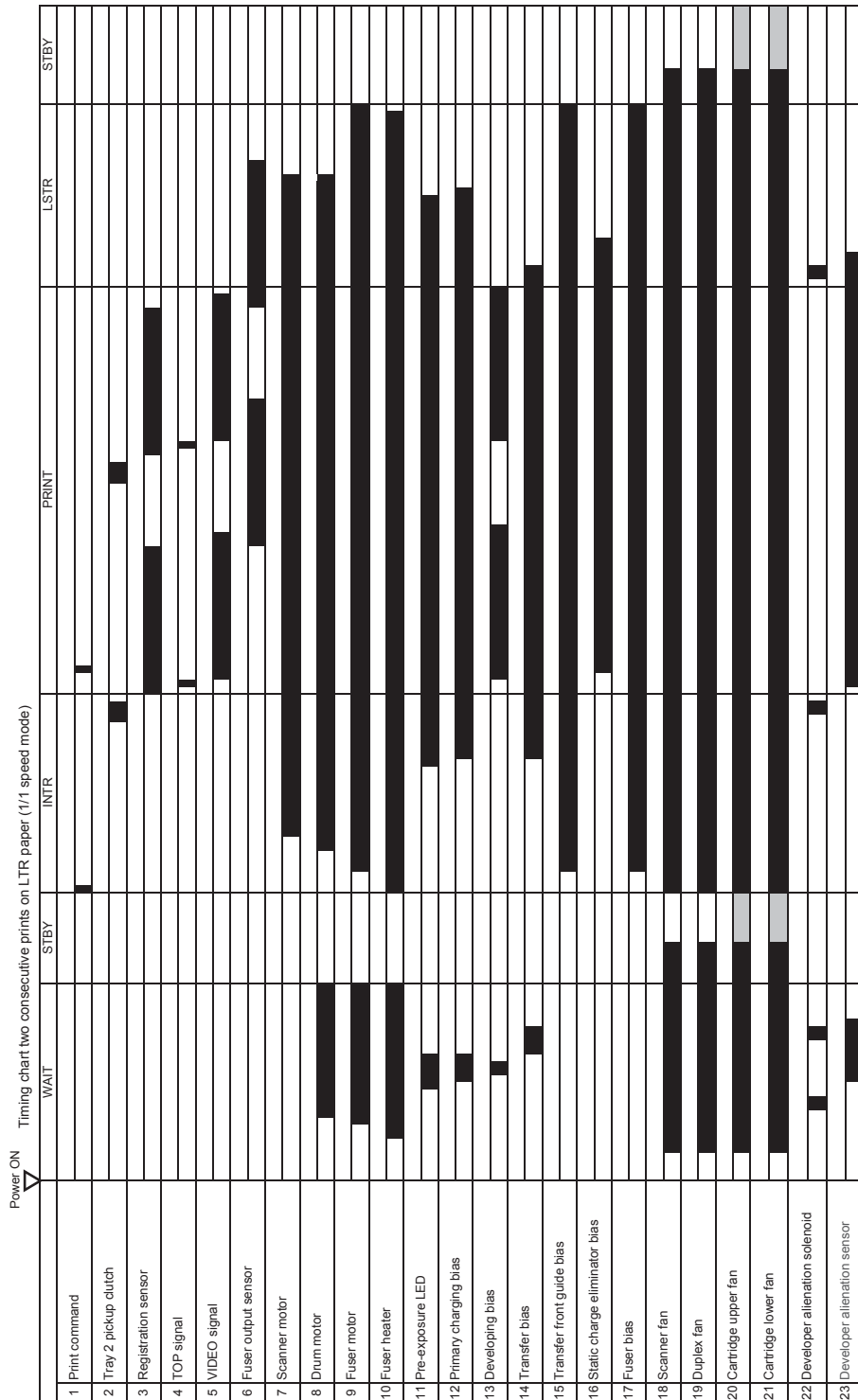


**Table 2-42** 2,550-sheet paper deck (M631/M632/M633), printed circuit assemblies (PCAs)

Item	Description
1	HCI controller PCA

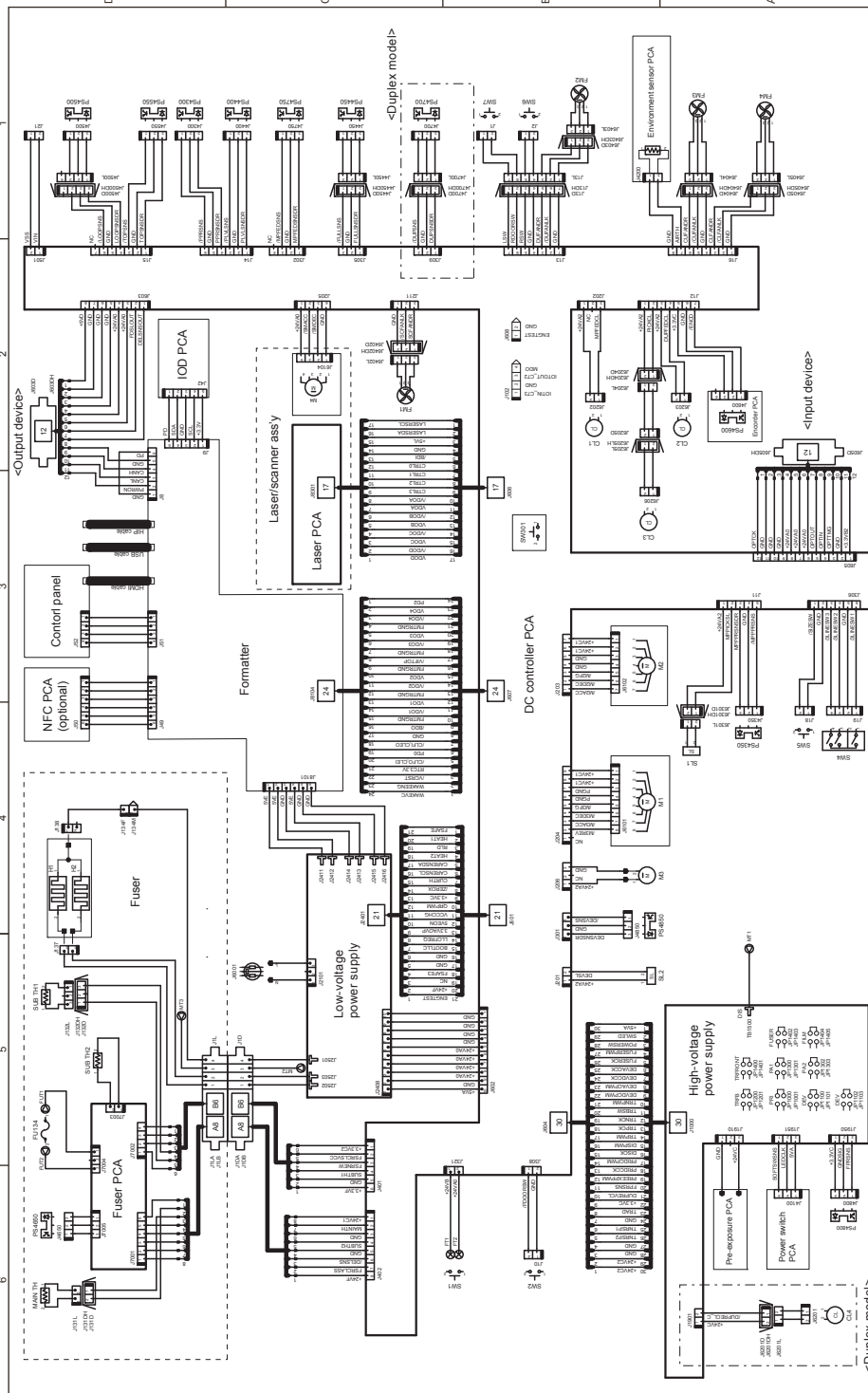
# Diagrams: General timing chart

Figure 2-85 General timing chart



## Diagrams: General circuit diagrams

**Figure 2-86** General circuit diagram for the printer base (M607, M608, and M609)



**Figure 2-87** General circuit diagram for the printer base (M631, M623, and M633)

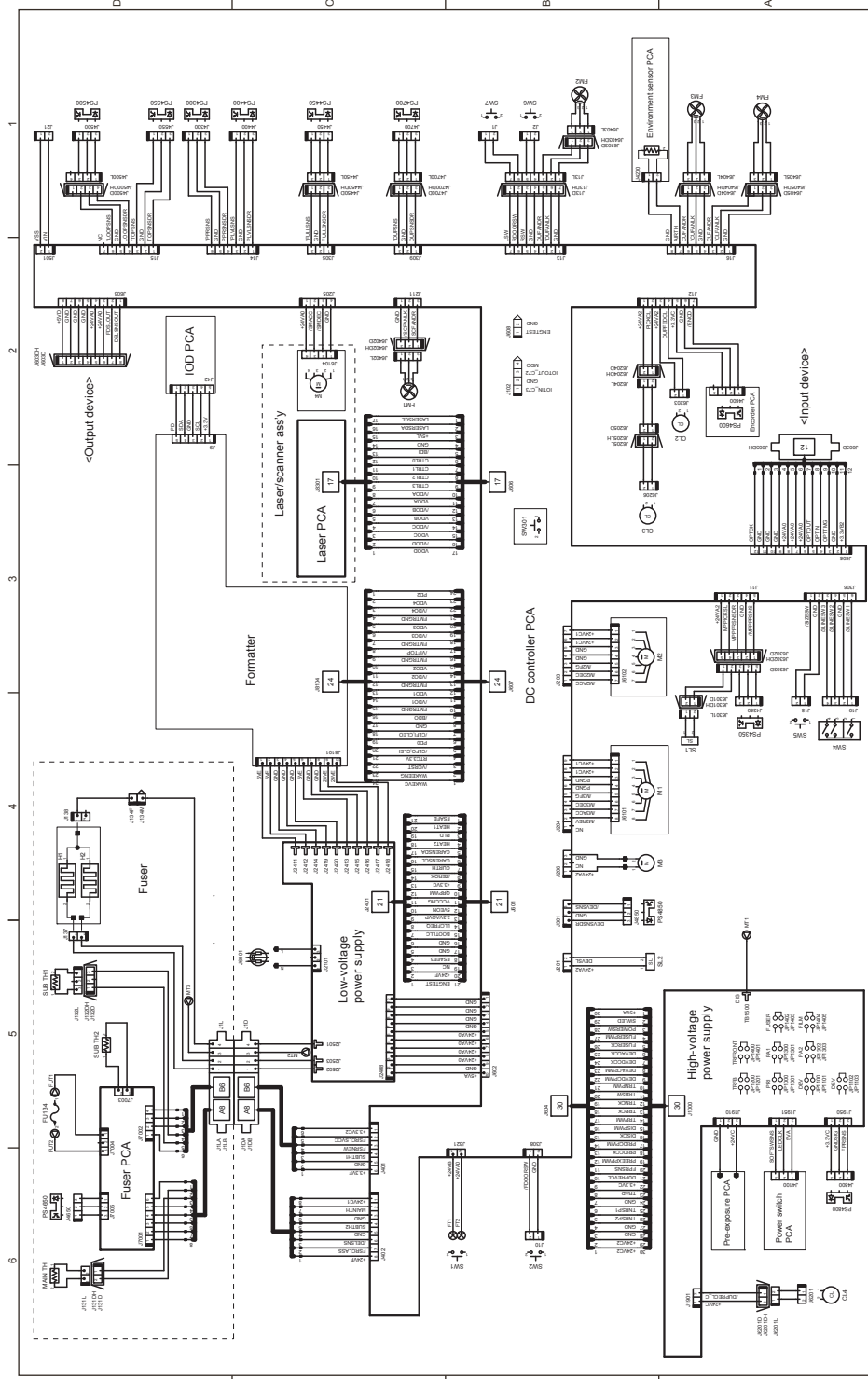
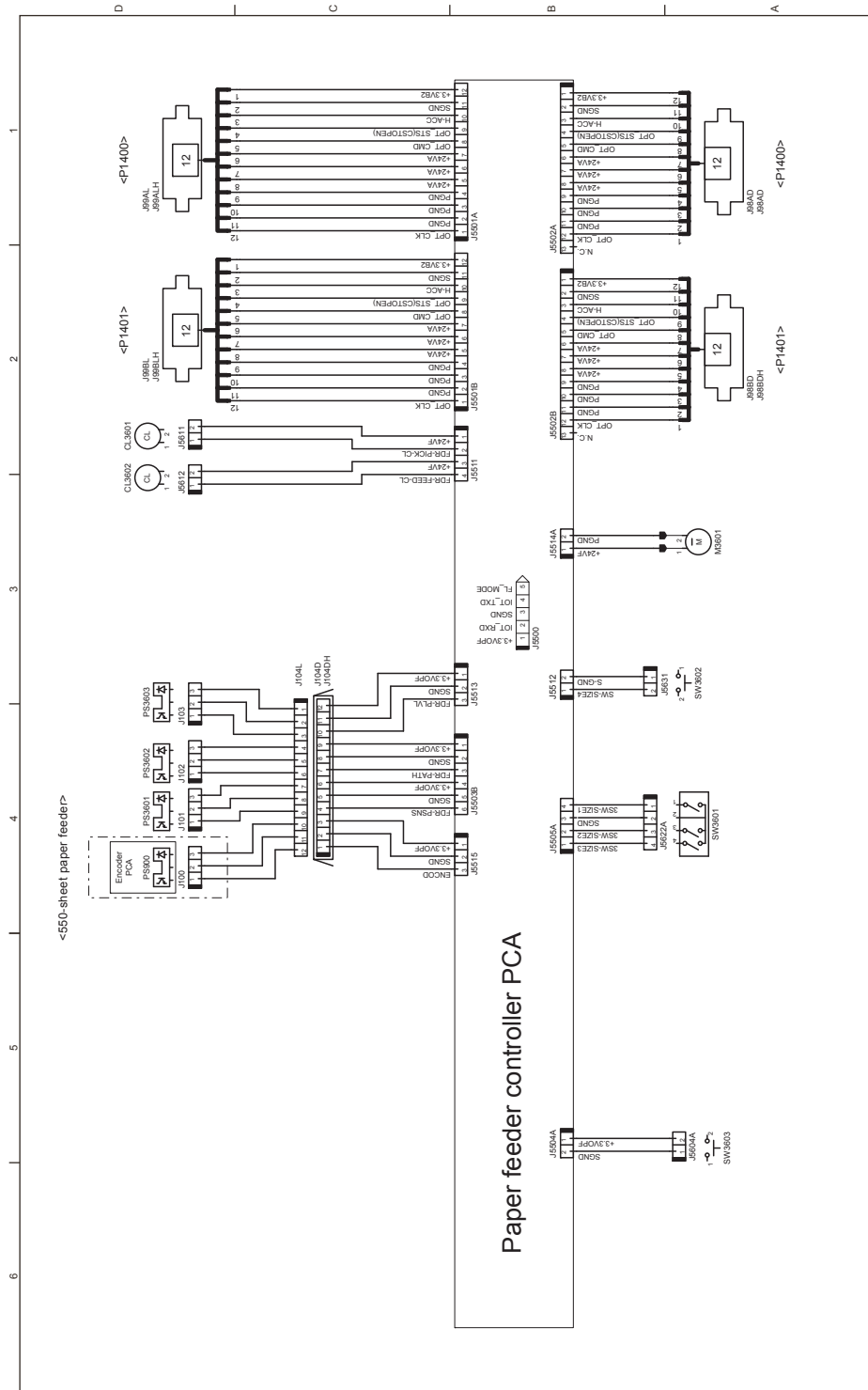
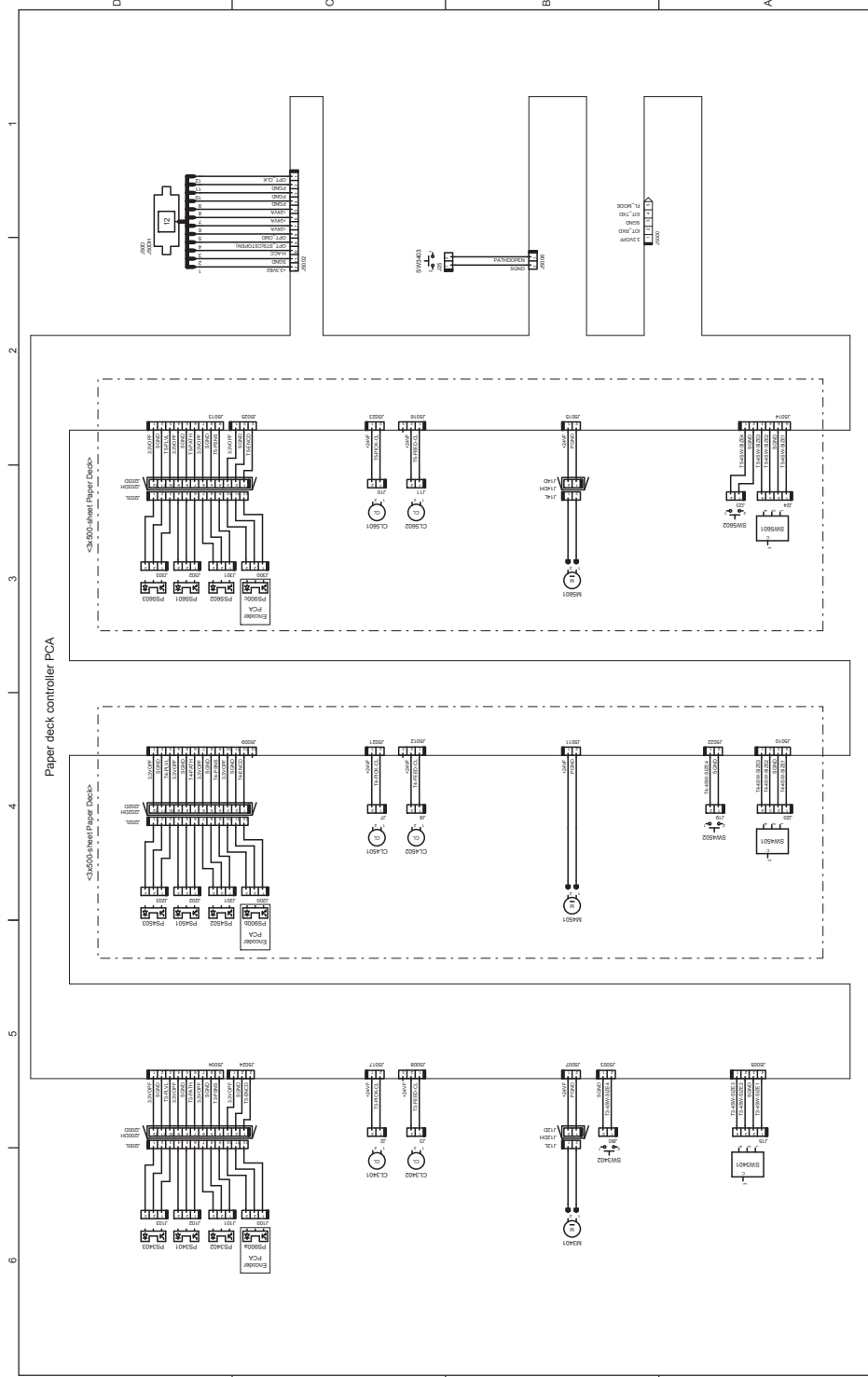


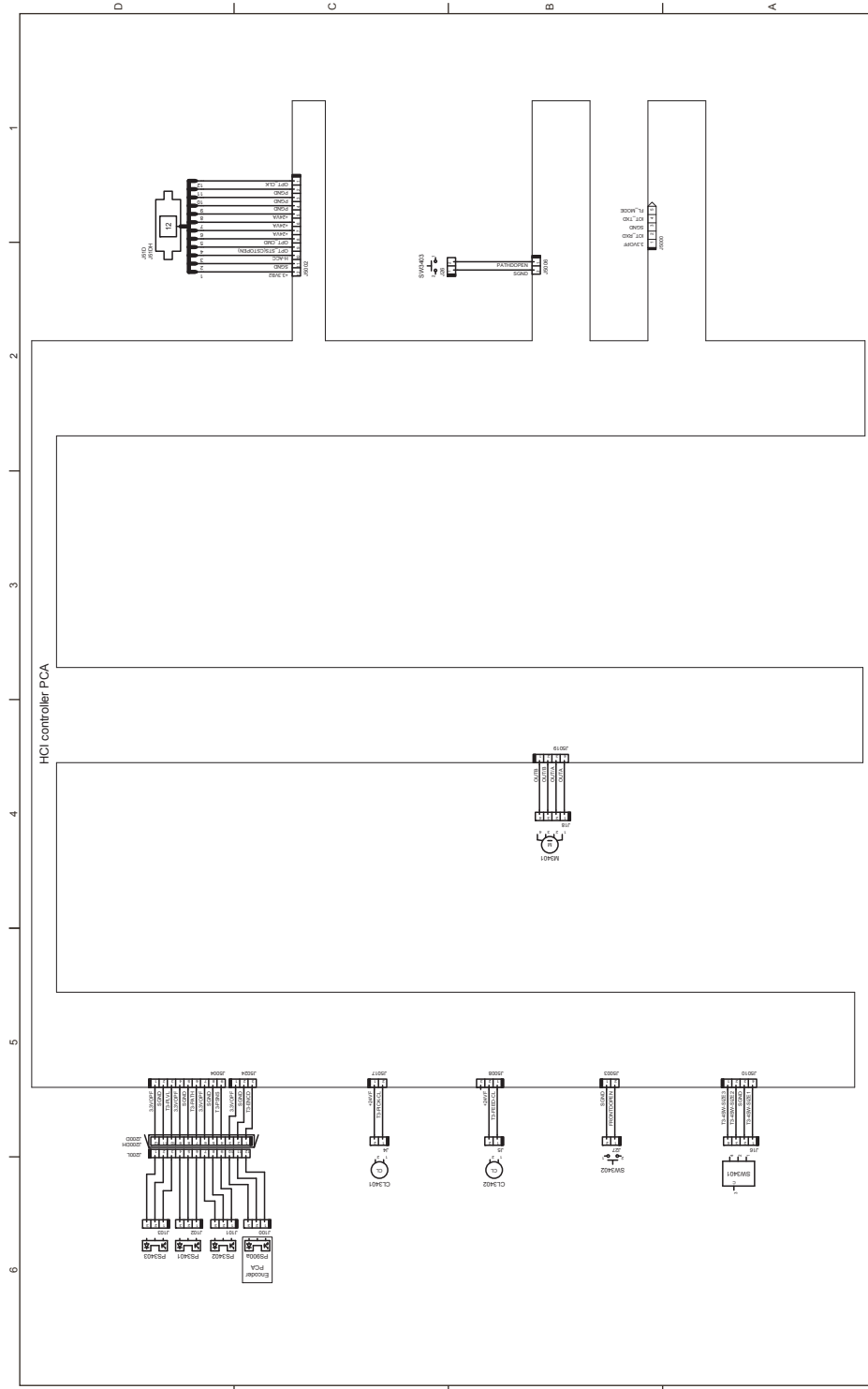
Figure 2-88 General circuit diagram for the 550-sheet paper feeder



**Figure 2-89** General circuit diagram for the 1x550-sheet and 3x-550-sheet paper deck

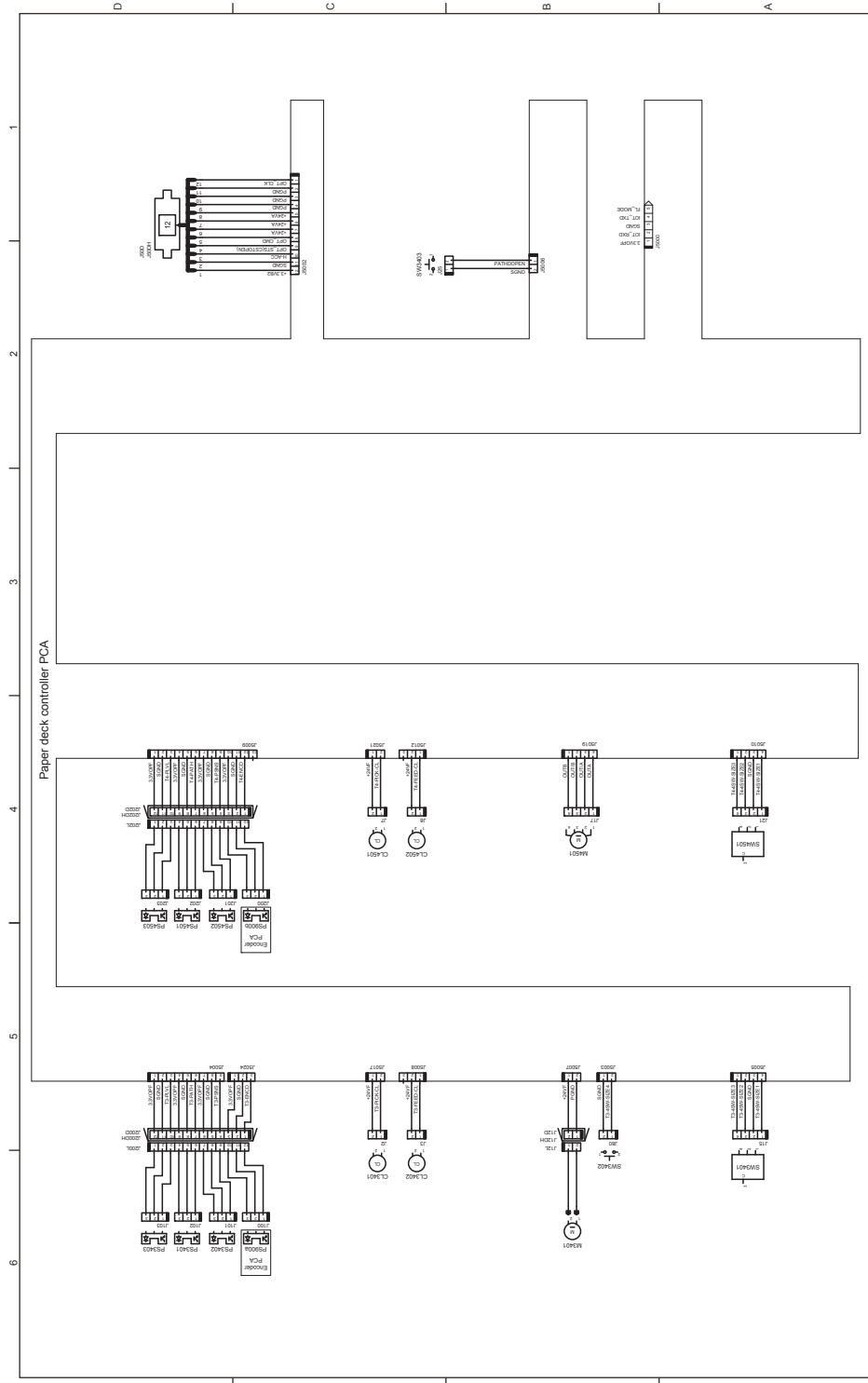


**Figure 2-90** General circuit diagram for the 2,100-sheet paper deck

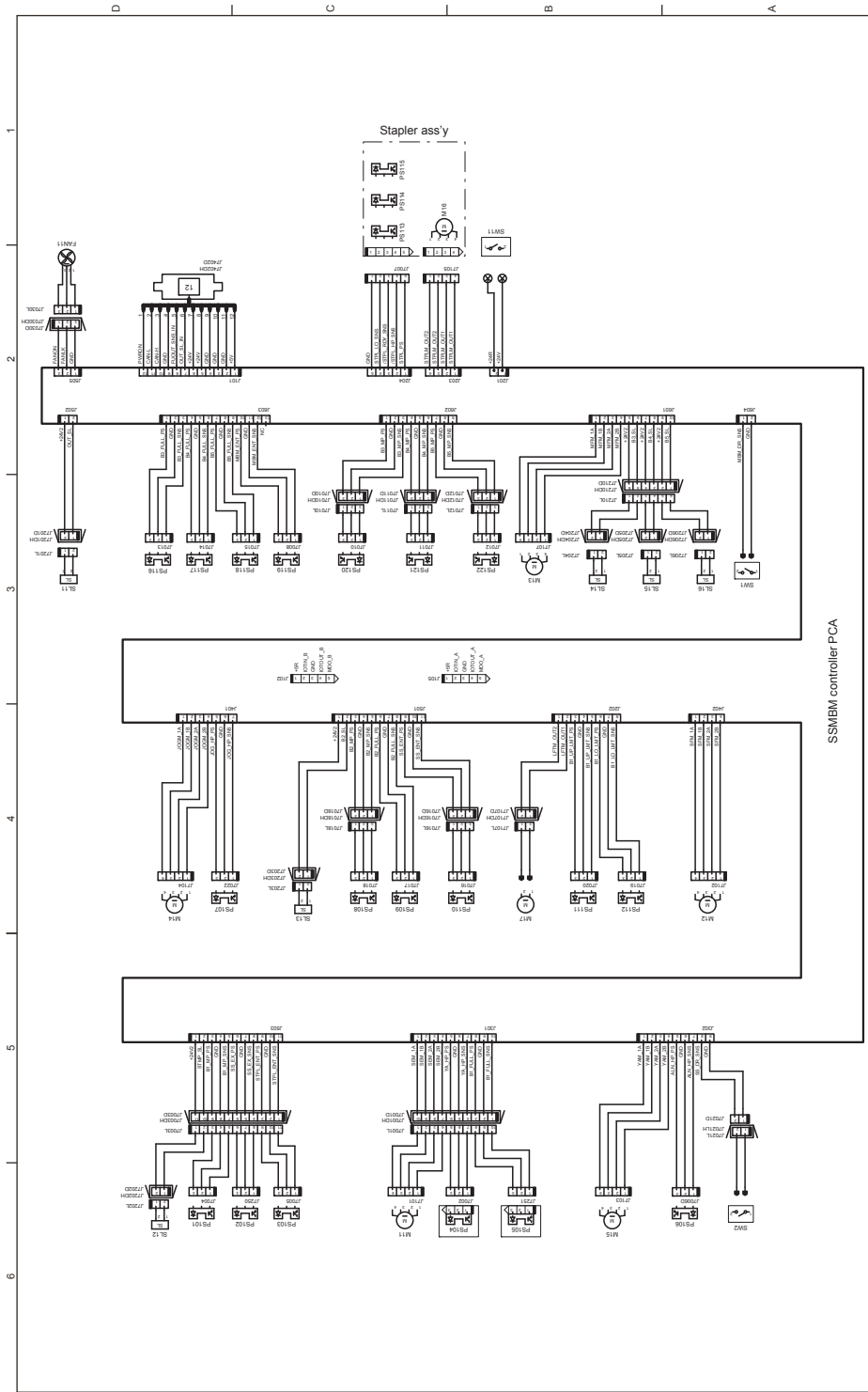




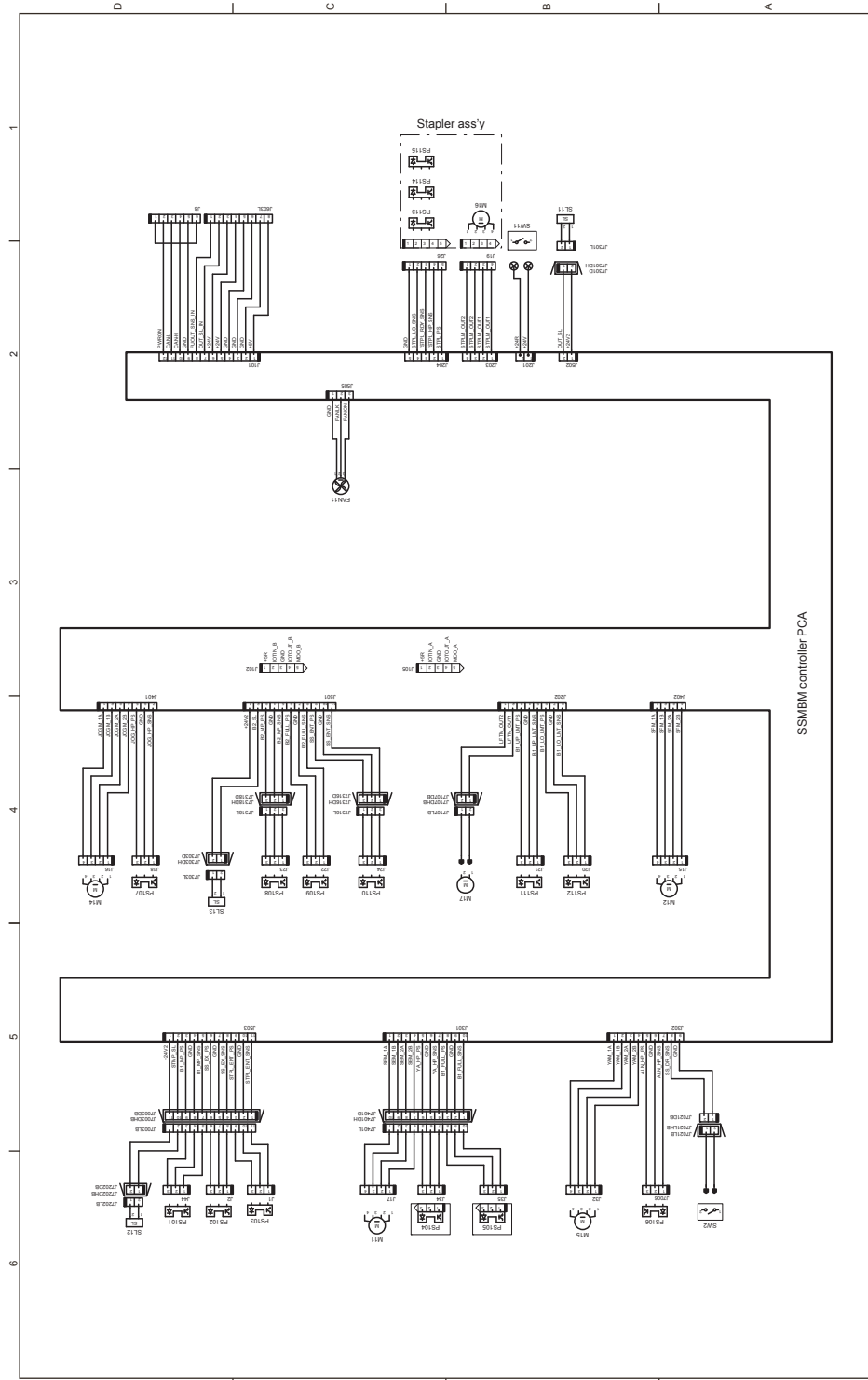
**Figure 2-91** General circuit diagram for the 2,550-sheet paper deck



**Figure 2-92** General circuit diagram for the 5 bin stapler stacker multi-bin mail box



**Figure 2-93** General circuit diagram for the 2 bin stapler stacker multi-bin mail box



## Internal test and information pages

### Print a configuration page



**NOTE:** Depending on the model, up to six pages print when printing a configuration page.

- Configuration Page
- Wireless HP Jetdirect (2 pages)
- Embedded HP Jetdirect
- Fax Accessory Page (2 pages)

### Print the configuration page from a touchscreen control panel

1. From the Home screen on the printer control panel, swipe (right), and then touch the **Reports** button.
2. Touch the **Configuration/Status Pages** item
3. Touch **Configuration Page** to select it.



**TIP:** Multiple report pages can be selected, and then printed together.

4. Touch the **Print** button to print the pages.

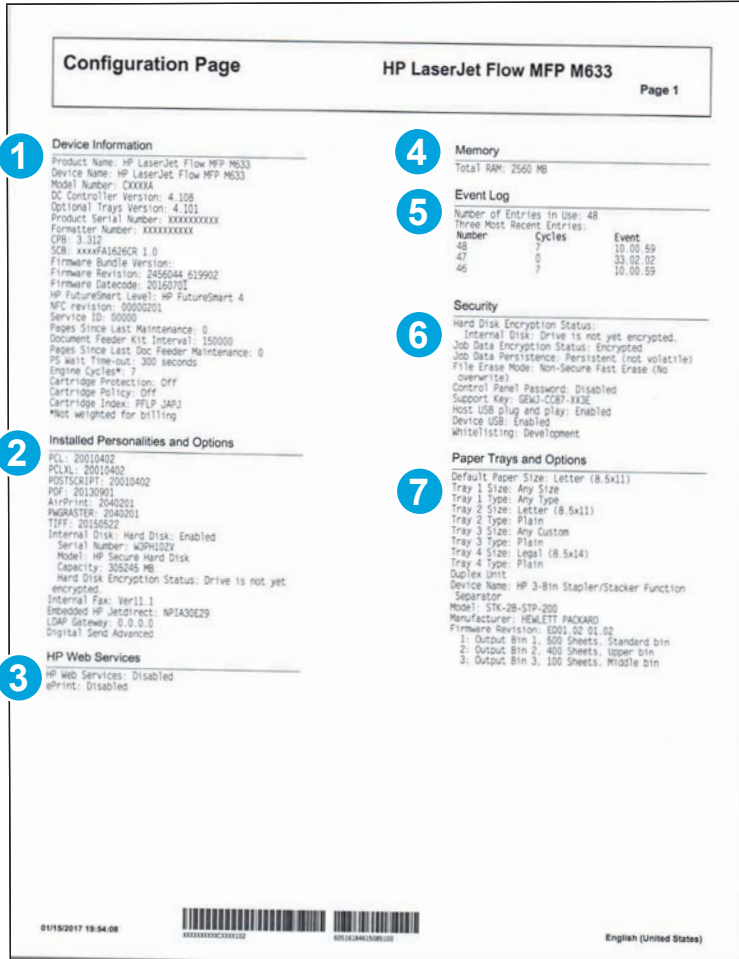
### Print the configuration page from a LCD control panel

1. From the Home screen on the printer control panel, use the down arrow ▼ button to select the **Print** menu.
2. Use the right arrow ► button to scroll to **Reports**, and then press the **OK** button.
3. Use the down arrow ▼ button to scroll to **Configuration/Status Pages**, and then press the **OK** button.
4. Use the down arrow ▼ or ▲ buttons to scroll to **Configuration Page**, and then press the **OK** button to select it.
5. Use the down arrow ▼ and right arrow ► buttons to scroll to **Print**, and then press the **OK** button to print the pages.



**TIP:** Multiple report pages can be selected, and then printed together.

**Figure 2-94** Configuration report



**Table 2-43** Configuration page

Item	Description	Item	Description
1	Device information	5	Event Log
2	Installed personalities and options	6	Security
3	HP Web services	7	Paper Trays and Options
4	Memory		

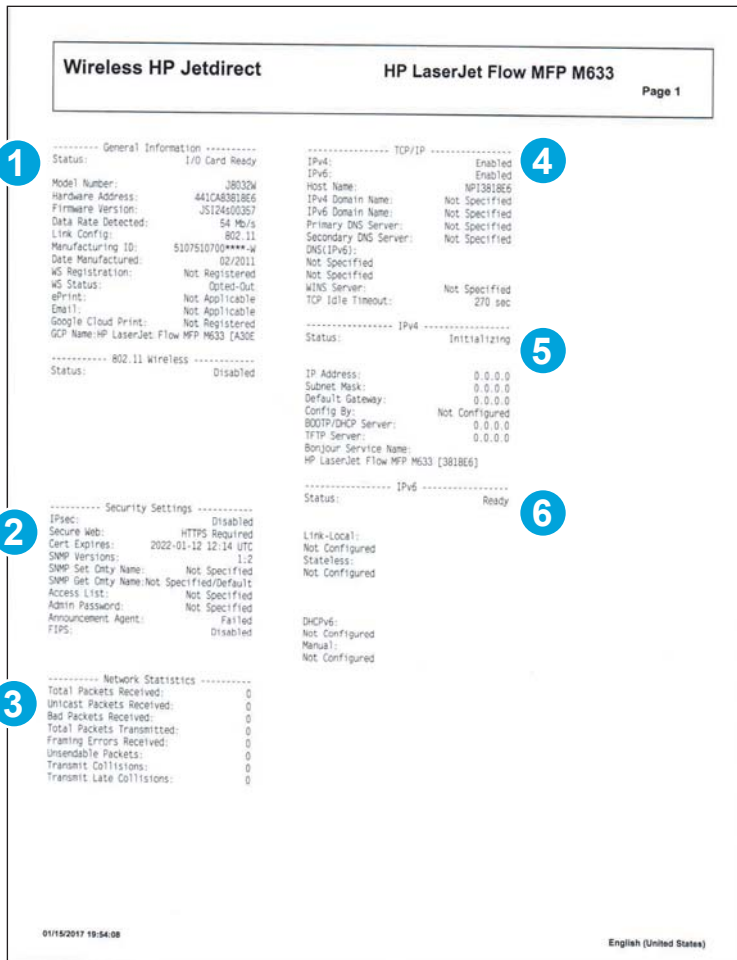
The wireless page contains the following information:



**NOTE:** Wireless models only.

Always make sure the status line under the general information line indicates "**I/O Card Ready.**"

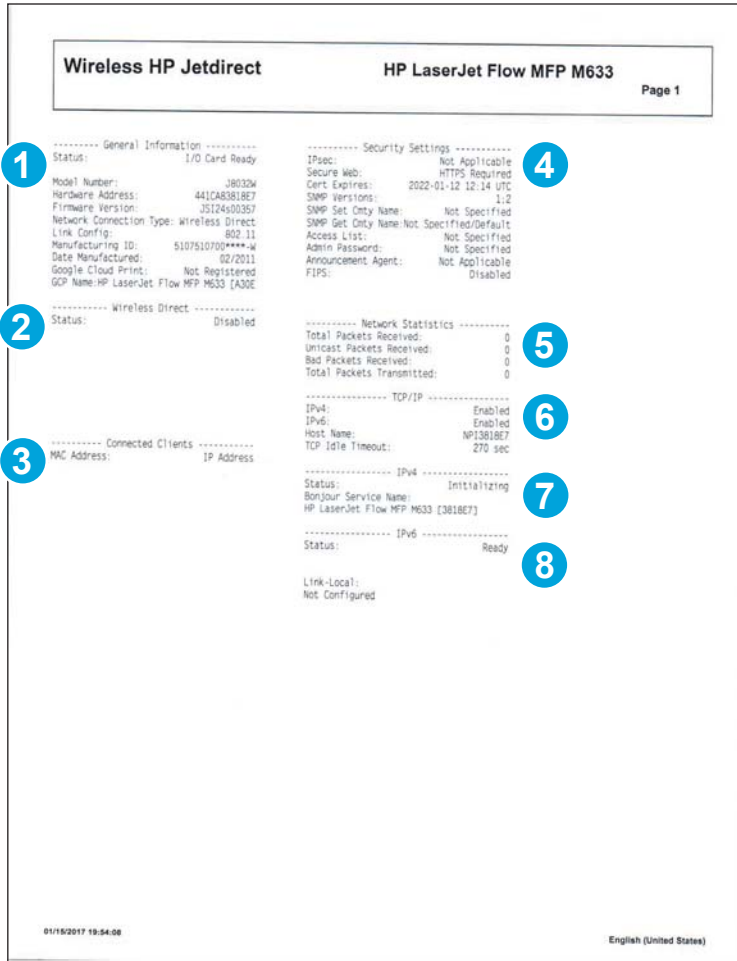
**Figure 2-95** Wireless page (1 of 2)



**Table 2-44** Wireless page (1 of 2)

Item	Description
1	<b>General Information</b> indicates the printer status, model number, hardware firmware version, port select, port configuration, auto negotiation, manufacturing identification, and manufactured date.
2	<b>Security Settings</b> information
3	<b>Network Statistics</b> indicates the total packets received, unicast packets received, bad packets received, framing errors received, total packets transmitted, unsendable packets, transmit collisions, and transmit late collisions.
4	<b>TCP/IP</b> information, including the IP address.
5	<b>IPv4</b> information.
6	<b>IPv6</b> information.

**Figure 2-96** Wireless page (2 of 2)



**Table 2-45** Wireless page (2 of 2)

Item	Description
1	<b>General Information</b> indicates the printer status, model number, hardware firmware version, port select, port configuration, auto negotiation, manufacturing identification, and manufactured date.
2	<b>Wireless Direct</b> indicates the wireless function status.
3	<b>Connected Clients</b> indicates the MAC or IP address of connected clients.
4	<b>Security Settings</b> information
5	<b>Network Statistics</b> indicates the total packets received, unicast packets received, bad packets received, framing errors received, total packets transmitted, unsendable packets, transmit collisions, and transmit late collisions.
6	<b>TCP/IP</b> information, including the IP address.
7	<b>IPv4</b> information.
8	<b>IPv6</b> information.

The Embedded HP Jetdirect page contains the following information:

Figure 2-97 HP embedded Jetdirect page

The screenshot shows the following content:

```

Embedded HP Jetdirect          HP LaserJet Flow MFP M633          Page 1

----- General Information -----
Status: I/O Card Initializing

Model Number: J8032E
Hardware Address: 705A0FA30E29
Firmware Version: JS12400357
LAA: 705A0FA30E29
Port Config: unknown
Auto Negotiation: On
Manufacturing ID: 5107510700****-W
Date Manufactured: 02/2011
MS Registration: Not Registered
ePrint Status: Opted-Out
ePrint: Not Applicable
Email: Not Applicable
Google Cloud Print: Not Registered
GCP Name: HP LaserJet Flow MFP M633 [A30E]

----- Security Settings -----
802.1X: Not Specified
IPsec: Disabled
Secure Web: HTTPS Required
Cert. Expires: 2022-01-12 12:14 UTC
SNMP Versions: 1:2
SNMP Set Only Name: Not Specified
SNMP Get Only Name: Not Specified/Default
Access List: Not Specified
Admin Password: Not Specified
Announcement Agent: Failed
FIPS: Disabled

----- Network Statistics -----
Total Packets Received: 0
Unicast Packets Received: 0
Bad Packets Received: 0
Total Packets Transmitted: 0
Framing Errors Received: 0
Unsendable Packets: 0
Transmit Collisions: 0
Transmit Late Collisions: 0
Last Wake:
0003708500000000000000000000000000
0000000000000000000000000000000000
0000000000000000000000000000000002

----- TCP/IP -----
IPv4: Enabled
IPv6: Enabled
Host Name: NPIA30E29
IPv4 Domain Name: Not Specified
IPv6 Domain Name: Not Specified
Primary DNS Server: Not Specified
Secondary DNS Server: Not Specified
DNS (IPv6): Not Specified
WINS Server: Not Specified
TCP Idle Timeout: 600 sec

----- IPv4 -----
Status: Initializing

IP Address: 0.0.0.0
Subnet Mask: 0.0.0.0
Default Gateway: 0.0.0.0
Config By: Not Configured
BOOTP/DHCP Server: 0.0.0.0
TFTP Server: 0.0.0.0
Bonjour Service Name:
HP LaserJet Flow MFP M633 [A30E29]

----- IPv6 -----
Status: Ready

Link-Local:
fe80::725a:ffff:fea3:e29
Stateless:
Not Configured

DHCPv6:
Not Configured
Manual:
Not Configured

01/15/2017 19:54:08
English (United States)
    
```

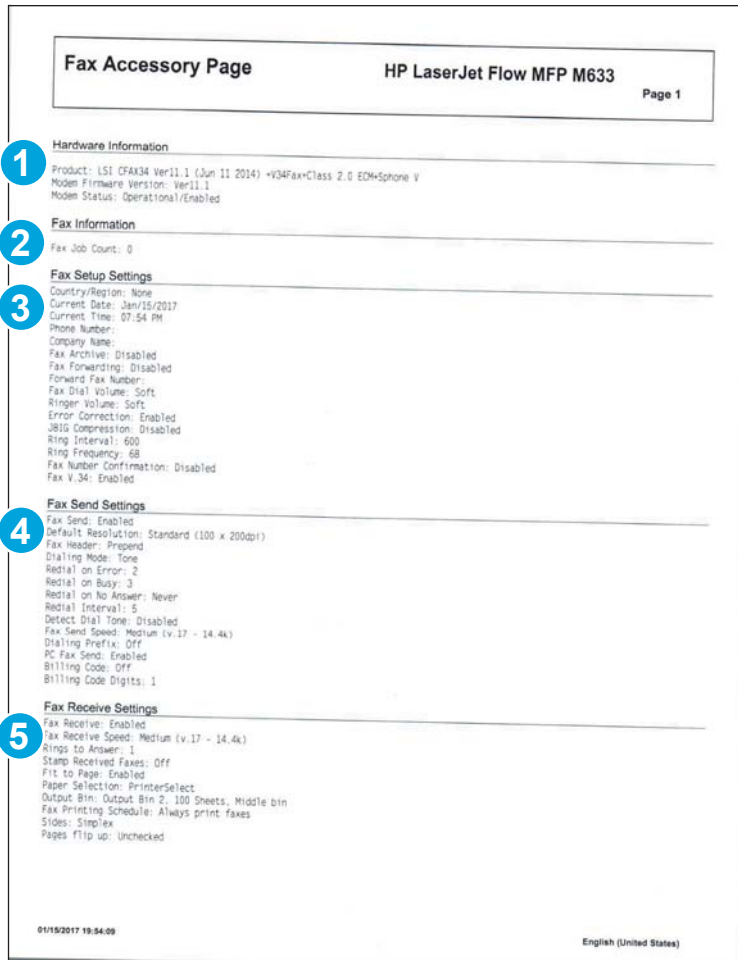
Item	Description
1	<b>General Information</b> indicates the printer status, model number, hardware firmware version, port select, port configuration, auto negotiation, manufacturing identification, and manufactured date.
4	<b>Security Settings</b> information
3	<b>Network Statistics</b> indicates the total packets received, unicast packets received, bad packets received, framing errors received, total packets transmitted, unsendable packets, transmit collisions, and transmit late collisions.
4	<b>TCP/IP</b> information, including the IP address
5	<b>IPv4</b> information
6	<b>IPv6</b> information



## Fax accessory page

The fax accessory page contains the following information:

**Figure 2-98** Fax accessory page (1 of 2)



**Table 2-47** Fax accessory page (1 of 2)

Item	Description
1	<b>Hardware Information</b> shows the product information, modem firmware version, and modem status.
2	<b>Fax Information</b> shows a fax job count.
3	<b>Fax Setup Settings</b> shows the fax setup settings (for example, the fax phone number, company name, and error correction settings).
4	<b>Fax Send Settings</b> shows the fax send settings (for example, the default resolution, fax send speed, and billing code settings).
5	<b>Fax Receive Settings</b> shows the fax receive settings (for example, the fax receive speed, rings to answer, and output bin settings).

**Figure 2-99** Fax accessory page (2 of 2)



**Table 2-48** Fax accessory page (2 of 2)

Item	Description
1	<b>Fax Report Setting</b> shows the sent fax report, received fax report, and fax T.30 tracer report settings.

### Finding important information on the configuration pages

Certain information, such as the firmware date codes, the IP address, and the email gateways, is especially helpful while servicing the printer. This information is on the various configuration pages.

**Table 2-49** Important information on the configuration pages

Type of information	Specific information	Configuration page
<b>Firmware date codes</b>  When performing a remote firmware upgrade procedure, all of these firmware components are upgraded.	DC controller	Look on the configuration page, under “Device Information.”
	Firmware datecode	Look on the configuration page, under “Device Information.”
	HP embedded Jetdirect firmware version.	Look on the Embedded HP Jetdirect page, under “General Information.”

**Table 2-49 Important information on the configuration pages (continued)**

Type of information	Specific information	Configuration page
<b>Accessories and internal storage</b>  All optional devices that are installed on the printer should be listed on the main configuration page.  In addition, separate pages print for the optional paper handling devices and the fax accessory. These pages list more-detailed information for those devices.	Embedded HP Jetdirect  Total RAM	Look on the configuration page, under "Installed Personalities and Options." Shows model and ID.  Look on the configuration page, under "Memory."
Additional sheet feeder and paper deck accessories.	Additional 550-sheet feeders	Look on the main configuration page, under "Paper Trays and Options".
<b>Engine cycles and event logs</b>  Total page counts and maintenance kit counts are important for ongoing printer maintenance.  The configuration page lists only the three most recent errors. To see a list of the 50 most recent errors, print an event log from the <a href="#">Diagnostics</a> menu.	Engine cycles	Look on the configuration page, under "Device Information".
Event-log information	Event-log information	Look on the configuration page, under "Event Log."
IP address	Wireless connectivity information	Look on the wireless page, under "IPv4".

## Print a fuser test page

Use the fuser test page to evaluate problems with fuser print quality.

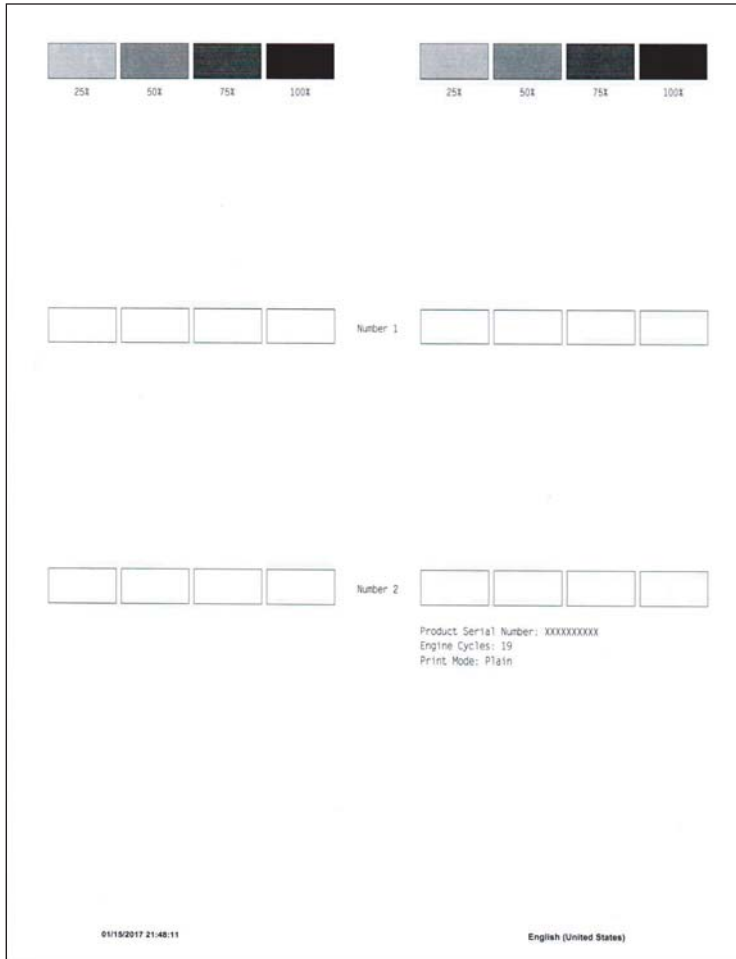
### Print a fuser test page from a touchscreen control panel

1. From the Home screen on the printer control panel, swipe (right), and then touch the [Support Tools](#) button.
2. Open the following menus:
  - [Troubleshooting](#)
  - [Print Quality Pages](#)
3. Touch the [Fuser Test Page](#) checkbox, and then touch the [Print](#) button.

### Print a fuser test page from a LCD control panel

1. From the Home screen on the printer control panel, use the down arrow ▼ button to select the [Print](#) menu.
2. Use the right arrow ► button to scroll to and select the [Support Tools](#) menu, and then press the [OK](#) button.
3. Use the down arrow ▼ button to scroll to and select the [Troubleshooting](#) menu, and then press the [OK](#) button.
4. Use the down arrow ▼ button to scroll to and select the [Print Quality Pages](#) menu, and then press the [OK](#) button.
5. Use the down arrow ▼ button to scroll to [Fuser Test Page](#), and then press the [OK](#) button.
6. Use the down arrow ▼ and the right arrow ► buttons to select the [Print](#) item, and then press the [OK](#) button.

**Figure 2-100** Fuser test page



## Control-panel menus

- [Copy menu \(MFP models only\)](#)
- [Scan menu \(MFP models only\)](#)
- [Print menu](#)
- [HP JetAdvantage menu \(MFP models only\)](#)
- [Quick Sets menu \(MFP models only\)](#)
- [Contacts menu \(fax models only\)](#)
- [Supplies menu](#)
- [Trays menu](#)
- [Reports menu](#)
- [Settings menu](#)
- [Support Tools menu](#)



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**NOTE:** For touchscreen printers, touch an item to navigate to sub menus. For LCD printers, use the arrow buttons and the **OK** button to navigate to sub menus.

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## Copy menu (MFP models only)

**Touchscreen printers:** At the printer control panel, touch the [Copy](#) button.

**LCD printers:** Use the arrow buttons to scroll to the [Copy](#) button, and then press the [OK](#) button.

**Table 2-50 Copy menu (MFP models only)**

First level	Second level	Third level	Fourth-level	Description
Sides	Original Sides	1-sided		Use this item to indicate whether the original document is printed on one or both sides, and whether the copies should be printed on one or both sides.
		2-sided		
	<b>NOTE:</b> For 2-sided, the <a href="#">Pages flip up</a> option is available.			
	Output Sides		Use this item to select the source tray for the copy job.	
	1-sided			<b>NOTE:</b> The A3 Tray 2 or the A3 Tray 3 is the default tray.
		2-sided		
	<b>NOTE:</b> For 2-sided, the <a href="#">Pages flip up</a> option is available.			
Quick Sets and Defaults	Load			Use this item to determine create or load copy quick sets.
	Save			
Options	Sides	Original Sides		Use this item to indicate whether the original document is printed on one or both sides, and whether the copies should be printed on one or both sides.
		1-sided		
		2-sided		
		<b>NOTE:</b> For 2-sided, the <a href="#">Pages flip up</a> option is available.		
	Output Sides	1-sided		
		2-sided		
		<b>NOTE:</b> For 2-sided, the <a href="#">Pages flip up</a> option is available.		
	Staple	None		Use to enable/disable stapling and position the staple on the page.
		Top left angled		
Top right angled				

**Table 2-50 Copy menu (MFP models only) (continued)**

First level	Second level	Third level	Fourth-level	Description
	Scan Mode	Standard Document Book Mode 2-sided ID		Use to describe the type of original.  <b>NOTE:</b> Use the <b>2-sided ID</b> option to automatically place the images from a two sided identification card (like a drivers licence for example) on a single page.
	Reduce/Enlarge	Automatic  <b>NOTE:</b> When <b>Automatic</b> is selected, the <b>Include Margins</b> option is available.  Manual  <b>NOTE:</b> When <b>Manual</b> is selected, use the % dialog box to enter the percentage for document scaling (25 to 400 percent).		Use this to automatically or manually scale the original to fit on the output page.
	Original Size	Choose from a list of sizes.		Use this to describe the size or sizes of the originals.
	Paper Selection	Paper Size Paper Type Paper Tray		Select from a list of paper sizes, types, and available trays for the copy job.  <b>NOTE:</b> The list of trays depends on the printer configuration.
	Booklet	Booklet Format (check box)  <b>NOTE:</b> When <b>Booklet Format</b> is selected, the <b>Borders on each page</b> option is available.		Use this item to set the copy job to a booklet format.
	Content Orientation	Automatically detect Portrait Landscape		Use this to automatically detect, or manually describe the original content orientation..
	Pages per Sheet	One Two Four (right, then down) Four (down, then right) Add page borders		Use this to print the original to a single page or to print multiple originals to a single page.  <b>NOTE:</b> <b>Add page borders</b> is only available when printing multiple originals on a single page.



**Table 2-50 Copy menu (MFP models only) (continued)**

First level	Second level	Third level	Fourth-level	Description
	Image Adjustment	Sharpness Darkness Contrast Background Cleanup		Use the sliders to adjust the values for these items.
	Optimize Text/Picture	Text Mixed Printed picture Photograph		Use this to improve print quality.
	Edge-to-Edge	Normal (recommended) Edge-to-Edge		Use to avoid shadows that can appear along the edges of copies when the original document is printed close to the edges.  Combine with the <a href="#">Reduce/Enlarge</a> feature to ensure that the entire page is printed on the copies  When the <a href="#">Edge-to-Edge</a> feature is turned on, the product minimizes margins and prints as close to the edge of the paper as possible.
	Erase Edges	Apply same width to all edges (check box) Top Edge Bottom Edge Left Edge Right Edge		Use this to remove blemishes, such as dark borders or staple marks, by cleaning the specified edges of the scanned image. In each of the text boxes enter the measurements, in inches, for how much of the top edge, bottom edge, left edge, and right edge to clean.
	Collate	Collate on Collate off		If you are making more than one copy, select the <a href="#">Collate on</a> option to assemble the pages in the correct order in each set of copies.
	Multi-feed Detection	On Off		When enabled, scanning stops if HP EveryPage technology detects multiple pages being fed at one time.  When disabled, this feature will not stop scanning when multi-feeds are detected.

## Scan menu (MFP models only)

**To display:** At the printer control panel, touch the [Scan](#) button.



**NOTE:** Some items below (for example, [Scan to Email](#)) require printer configuration of the feature. If not already configured, follow the prompts on the control-panel display.

**Table 2-51 Scan menu (MFP models only)**

First level	Description
<a href="#">Scan to Email</a>	Use this to scan the original and attach it to an email.
<a href="#">Scan to Fax</a>	Use this to scan the original and send it as a fax.
<a href="#">Scan to Network Folder</a>	Use this to scan the original and save it to a network folder.
<a href="#">Scan to USB Drive</a>	Use this to scan the original and save it to a USB drive.
<a href="#">Scan to Job Storage</a>	Use this to scan the original and save it to the printer memory.
<a href="#">Scan to SharePoint</a>	Use this to scan the original and save it to a SharePoint site.

## Print menu

**Touchscreen printers:** At the printer control panel, touch the **Print** button.

**LCD printers:** Use the arrow buttons to scroll to the **Print** button, and then press the **OK** button.

**Table 2-52 Print menu**

First level	Second level	Third level	Fourth-level	Description
Print from Job Storage	Choose			Use this to view and select jobs stored in the printer memory.
	Print List			Use this to print the list of jobs stored in the printer memory.
	Print			Use this to print the selected job.
Print from USB Drive	Choose			Use this to view and select jobs stored on a USB drive.
	Print			Use this to print the selected job.

## HP JetAdvantage menu (MFP models only)

**To display:** At the printer control panel, touch the [HP JetAdvantage](#) button.



**NOTE:** To use this feature, the printer must be connected to a network. Go to <http://www8.hp.com/us/en/solutions/business-solutions/printingsolutions/privateprint.html> for more information.

**Table 2-53 HP JetAdvantage menu (MFP models only)**

First level	Description
E-mail	Enter the email address associated with a HP JetAdvantage account.
Password	Enter the password associated with a HP JetAdvantage account.
Log in	Use this to access a HP JetAdvantage account.

## Quick Sets menu (MFP models only)

Use the HP Embedded Web Server (EWS) to configure [Quick Sets](#) for the printer.

**To display:** At the printer control panel, touch the [Quick Sets](#) button.

## Contacts menu (fax models only)

**To display:** At the printer control panel, touch the [Contacts](#) button.



**NOTE:** [Contacts](#) is an application that can create contacts.



**TIP:** Use the symbols located at the lower left corner of the screen to add contacts and groups to the [Contacts](#) display.

**Table 2-54** [Contacts](#) menu (fax models only)

First level	Second level	Description
Local	Local	Choose from a list of contacts.
	Fax Speed Dials	Choose from a list of speed dial phone numbers.

## Supplies menu


**Touchscreen printers:** At the printer control panel, touch the [Supplies](#) button.

**LCD printers:** Use the arrow buttons to scroll to the [Supplies](#) button, and then press the **OK** button.



**NOTE:** The supplies listed in the [Supplies](#) menu depend on the printer configuration.

**Table 2-55 Supplies menu (fax models only)**

First level	Second level	Third level	Fourth level	Description
Black Cartridge				<p>This displays the following information about the supply:</p> <ul style="list-style-type: none"> <li>• Status</li> <li>• HP part number</li> <li>• Pages printed</li> <li>• Approximate pages remaining</li> </ul>
Maintenance Kit				<p>This displays the following information about the supply:</p> <ul style="list-style-type: none"> <li>• Status</li> <li>• HP part number</li> </ul>
Document Feeder Kit (MFP models only)				<p>This displays the following information about the supply:</p> <ul style="list-style-type: none"> <li>• Status</li> <li>• HP part number</li> </ul>
Staple Cartridge (SSMBM models only)				<p>This displays the following information about the supply:</p> <ul style="list-style-type: none"> <li>• Status</li> <li>• HP part number</li> </ul>
	Low Warning Thresholds	Black Cartridge Maintenance Kit (MFP models only) Document Feeder Kit (MFP models only)		<p>Set the level at which the supply is considered low.</p>
	Low Warning Threshold Message	On Off		<p>When this feature is enabled, a low supply message appears on the control-panel display when a supply is low.</p>

**Table 2-55 Supplies menu (fax models only) (continued)**

First level	Second level	Third level	Fourth level	Description
	Low Behavior	Stop  Continue  <b>NOTE:</b> Select the setting that is currently display to display all options.		Specifies how the product reacts when a supply is low.  <b>Stop:</b> The printer stops until the supply is replaced.  <b>Continue:</b> A supply very low message appears on the control panel display, but printing continues.
	Very Low Behavior	Black Cartridge  Maintenance Kit (MFP models only)  Document Feeder Kit (MFP models only)  <b>NOTE:</b> The supplies listed depend on the printer configuration.	Stop  Continue  Prompt to continue	Specifies how the product reacts when a supply is low.  <b>Stop:</b> The printer stops until the supply is replaced.  <b>Continue:</b> A supply very low message appears on the control panel display, but printing continues.  <b>Prompt to continue:</b> A supply very low message appears on the control panel display, printing continues after acknowledging the low condition.
	Store Usage Data	On Supplies  Not on Supplies		Use this to determine where data about supply usage is stored.
	Cartridge Protection	Off  Protect cartridges		Select <b>Protect cartridges</b> to permanently protect cartridges so that they can be used only in this printer or fleet of printers.
	Cartridge Policy	Off  Authorized HP		Select <b>Authorized HP</b> to allow only genuine HP cartridges to be used in this printer.
	Reset Supplies	Black Cartridge  Maintenance Kit (MFP models only)  Document Feeder Kit (MFP models only)  <b>NOTE:</b> The supplies listed depend on the printer configuration.	Cancel  Reset	After replacing a supply kit, select it from the list and then select <b>Reset</b> .



Select this to print a supplies status page.



## Trays menu


**Touchscreen printers:** At the printer control panel, touch the **Trays** button.

**LCD printers:** Use the arrow buttons to scroll to the **Trays** button, and then press the **OK** button.



**NOTE:** The trays listed in the this menu depend on the printer configuration.

**Table 2-56** Trays menu

First level	Second level	Third level	Fourth level	Description
Tray <X>	Size			Choose from a list of paper sizes.
	Type			Choose from a list of paper types.
	Status			This shows the tray status (for example, “Empty” might display).
	Capacity			This shows the tray capacity.
	Use Requested Tray	Exclusively		Controls how the printer handles jobs that have specified a specific input tray. Two options are available:  <b>Exclusively:</b> The printer never selects a different tray when the user has indicated that a specific tray should be used, even if that tray is empty.  <b>When available:</b> The printer uses the selected tray unless it is empty or unavailable.
		When available		
	Manual Feed Prompt	Always prompt		Indicate whether a prompt should appear when the type or size for a job does not match the specified tray and the product pulls from the multipurpose tray instead. Two options are available:  <b>Always prompt:</b> A prompt always displays before using the multipurpose tray.  <b>Prompt on mismatch:</b> A prompt only displays if the job size/type does not match the tray configuration.
		Prompt on mismatch		

**Table 2-56 Trays menu (continued)**

First level	Second level	Third level	Fourth level	Description
	Size/Type Prompt	Display Do not display		<p>Controls whether the tray configuration message displays whenever a tray is closed. Two options are available:</p> <p><b>Display:</b> Shows the tray configuration message when a tray is closed. The user is able to configure the tray settings directly from this message.</p> <p><b>Do not display:</b> Prevents the tray configuration message from automatically appearing.</p>
	Use Another Tray	Allow Do not allow		<p>Use to turn on or off the control-panel prompt to select another tray when the specified tray is empty. Two options are available:</p> <p><b>Allow:</b> When this option is selected, the user is prompted either to add paper to the selected tray or to choose a different tray.</p> <p><b>Do not allow:</b> When this option is selected, the user is not given the option of selecting a different tray. The product prompts the user to add paper to the tray that was initially selected.</p>
	Alternative Letterhead Mode	Off On		<p>Use to load letterhead or preprinted paper into the tray the same way for all print jobs, whether you are printing to one side of the sheet or to both sides of the sheet.</p> <p>When this option is selected, load the paper as you would for printing on both sides. See the user documentation that came with the product for instructions about loading letterhead for printing on both sides.</p> <p>When this option is selected, the product speed slows to the speed required for printing on both sides.</p>

**Table 2-56 Trays menu (continued)**

First level	Second level	Third level	Fourth level	Description
	Duplex Blank Pages	Automatic  Always		Control how the product handles two-sided jobs (duplexing).  <b>Automatic:</b> Enables Smart Duplexing, which instructs the printer not to process blank pages.  <b>Always:</b> Disables Smart Duplexing and forces the duplexer to flip the sheet of paper even if it is printed on only one side. This might be preferable for certain jobs that use paper types such as letterhead or prepunched paper.
	Override A4/Letter	No  Yes		Prints on letter-size paper when an A4 job is sent but no A4-size paper is loaded in the printer (or to print on A4 paper when a letter-size job is sent but no letter-size paper is loaded). This option also overrides A3 with ledger-size paper and ledger with A3-size paper.

## Reports menu

**Touchscreen printers:** At the printer control panel, touch the **Reports** button.

**LCD printers:** Use the arrow buttons to scroll to the **Reports** button, and then press the **OK** button.

**Table 2-57 Reports menu (fax models only)**

First level	Second level	Third level	Description	
<b>Configuration/Status Pages</b>  <b>NOTE:</b> It is possible to select and print multiple reports.  <b>TIP:</b> Large touchscreen printers have a <b>View</b> feature for the report pages.	Settings Menu Map (check box)	Cancel Print	A map of the available printer configuration settings.	
	Current Setting Page (check box)	Cancel Print	Print a summary of the current printer settings.  <b>TIP:</b> This is helpful if settings need to be changed to service the printer. Use this report to record the present printer configuration.	
	Configuration Page (check box)	Cancel Print	Shows the printer settings and installed accessories.	
	How to Connect Page (check box)	Cancel Print	Show information required to connect to the printer by using a network.	
	Supplies Status Page (check box)	Cancel Print	Shows the approximate remaining life for the supplies; reports statistics on total number of pages and jobs processed, serial number, page counts, and maintenance information.  <b>IMPORTANT:</b> HP provides approximations of the remaining life for the supplies as a customer convenience. The actual remaining supply levels might be different than the approximations provided.	
	Usage Page (check box)	Cancel Print	Shows a page count for jobs processed by the printer (for example, total page count for pages printed).	
	File Directory Page (check box)	Cancel Print	Shows the file name and folder name for files that are stored in the printer memory.	
	Web Services Status Page (check box)	Cancel Print	Shows the detected Web Services for the printer.	
	<b>Fax Reports (fax models only)</b>  <b>TIP:</b> Large touchscreen printers have a <b>View</b> feature for the report pages.	Fax Activity Log (check box)	Cancel Print	Contains a list of the faxes that have been sent from or received by this printer.
		Billing Codes Report (check box)	Cancel Print	Provides a list of billing codes used for outgoing faxes. This report shows how many sent faxes were billed to each code.

**Table 2-57 Reports menu (fax models only) (continued)**

<b>First level</b>	<b>Second level</b>	<b>Third level</b>	<b>Description</b>
	<a href="#">Blocked Fax List</a> (check box)	<a href="#">Cancel</a> <a href="#">Print</a>	A list of phone numbers that are blocked from sending faxes to this printer.
	<a href="#">Fax Call Report</a> (check box)	<a href="#">Cancel</a> <a href="#">Print</a>	A detailed report of the last fax operation, either sent or received.
<a href="#">Other pages</a>	<a href="#">Demonstration Page</a> (check box)	<a href="#">Cancel</a> <a href="#">Print</a>	Print a demonstration page.
	<a href="#">PCL Font List</a> (check box)	<a href="#">Cancel</a> <a href="#">Print</a>	Print the available PCL fonts.
	<a href="#">PS Font List</a> (check box)	<a href="#">Cancel</a> <a href="#">Print</a>	Print the available PS fonts.

## Settings menu

**Touchscreen printers:** At the printer control panel, touch the [Settings](#) button.

**LCD printers:** Use the arrow buttons to scroll to the [Settings](#) button, and then press the [OK](#) button.

**Table 2-58 Settings menu (fax models only)**

First level	Second level	Third level	Fourth level	Description
General	Date/Time Settings	Date/Time Format	Date Format Time Format	Use these items to specify the date and time and to configure date/time settings.
		Date/Time		Set the following: <ul style="list-style-type: none"> <li>Date</li> <li>Time</li> <li>Time Zone</li> </ul>
	Energy Settings	Sleep Schedule	New Event Done	Create a printer <a href="#">Wake Event</a> and/or <a href="#">Sleep Event</a> schedule.
		Sleep Settings	Done	Set the following <a href="#">Sleep Settings</a> : <ul style="list-style-type: none"> <li>Sleep after inactivity</li> <li>Auto off after sleep</li> </ul>
	Display Settings	Display Brightness		Use the slider to adjust the display brightness.
		System Sound	On Off	Turn the printer sound on or off.
		Language Settings	Language Keyboard Layout	Select from a list of languages..
		Information Screen	Show connection information Hide connection information	Determine whether the printer connection information appears on the control-panel display.
		Display Date and Time	No Yes	Determine whether the date and time appears on the control-panel display.

**Table 2-58 Settings menu (fax models only) (continued)**

First level	Second level	Third level	Fourth level	Description
		Inactivity Timeout	seconds (10 to 300)	Specifies the amount of time that elapses between any activity on the control panel and when the product resets to the default settings. When the timeout expires, the control-panel display returns to the Home menu, and any user signed in to the printer is signed out.
Fax Reports (fax models only)	Fax Activity Log (check box)			Contains a list of the faxes that have been sent from or received by this printer.
	Billing Codes Report (check box)			Provides a list of billing codes used for outgoing faxes. This report shows how many sent faxes were billed to each code.
	Blocked Fax List (check box)			A list of phone numbers that are blocked from sending faxes to this printer.
	Fax Call Report (check box)			A detailed report of the last fax operation, either sent or received.
Manage Supplies	Low Warning Thresholds	Black Cartridge		Set the level at which the supply is considered low.
		Maintenance Kit (MFP models only)		
		Document Feeder Kit (MFP models only)		
		<b>NOTE:</b> The supplies listed depend on the printer configuration.		
	Low Warning Threshold Message	On Off		When this feature is enabled, a low supply message appears on the control-panel display when a supply is low.
	Low Behavior	Stop Continue		Specifies how the product reacts when a supply is low.  <b>Stop:</b> The printer stops until the supply is replaced.  <b>Continue:</b> A supply very low message appears on the control panel display, but printing continues.
		<b>NOTE:</b> Select the setting that is currently display to display all options.		

**Table 2-58 Settings menu (fax models only) (continued)**

First level	Second level	Third level	Fourth level	Description
	Very Low Behavior	Black Cartridge  Maintenance Kit (MFP models only)  Document Feeder Kit (MFP models only)  <b>NOTE:</b> The supplies listed depend on the printer configuration.	Stop  Continue  Prompt to continue	Specifies how the product reacts when a supply is low.  <b>Stop:</b> The printer stops until the supply is replaced.  <b>Continue:</b> A supply very low message appears on the control panel display, but printing continues.  <b>Prompt to continue:</b> A supply very low message appears on the control panel display, printing continues after acknowledging the low condition.
	Store Usage Data	On Supplies  Not on Supplies		Use this to determine where data about supply usage is stored.
	Cartridge Protection	Off  Protect cartridges		Select <b>Protect cartridges</b> to permanently protect cartridges so that they can be used only in this printer or fleet of printers.
	Cartridge Policy	Off  Authorized HP		Select <b>Authorized HP</b> to allow only genuine HP cartridges to be used in this printer.
	Reset Supplies	Black Cartridge  Maintenance Kit (MFP models only)  Document Feeder Kit (MFP models only)  <b>NOTE:</b> The supplies listed depend on the printer configuration.	Cancel  Reset	After replacing a supply kit, select it from the list and then select <b>Reset</b> .
Manage Stapler/Stacker (SSMBM models only)	Operation Mode	Mailbox  Stacker  Function Separator		Use this to configure the stapler/stacker multi bin mailbox.
	Job Offset	Off  On		
Networking	Ethernet	INFORMATION	Print Security Report  Yes  No	Print a network security report page.



**Table 2-58 Settings menu (fax models only) (continued)**

First level	Second level	Third level	Fourth level	Description
		TCP/IP	HOST NAME	
			IPV4 SETTINGS	
			IPV6 SETTINGS	
			PROXY SERVER	
			PROXY PORT	
			IDLE TIME OUT	
		SECURITY	SECURE WEB	
			ISPEC	
			802.1X	
			ANNOUNCEMENT AGENT	
			RESET SECURITY	
		LINK SPEED	AUTO	<p>The link speed and communication mode of the print server must match the network. The available settings depend on the printer and installed print server.</p> <p><b>CAUTION:</b> If you change the link setting, network communications with the print server and network printer might be lost.</p> <p>The print server uses auto-negotiation to configure itself with the highest link speed and communication mode allowed. If auto-negotiation fails, either the 100TX Half feature or the 10T Half feature is set depending on the detected link speed of the hub/switch port. (A 1000T half-duplex selection is not supported.)</p>
			10T HALF	
			10T FULL	
			10T AUTO	
			100TX HALF	
			100TX FULL	
			100TX AUTO	
			1000T FULL	
			Done	
	Wireless	INFORMATION	Print Security Report	
			Yes	
			No	
		WIRELESS STATION	Status	
			WI-FI PROTECTED SETUP	

**Table 2-58 Settings menu (fax models only) (continued)**

First level	Second level	Third level	Fourth level	Description
		TCP/IP	HOST NAME	
			IPV4 SETTINGS	
			IPV6 SETTINGS	
			PROXY SERVER	
			PROXY PORT	
			IDLE TIME OUT	
		SECURITY	SECURE WEB	
			ISPEC	
			802.1X	
			ANNOUNCEMENT AGENT	
			RESET SECURITY	
	Wireless Direct	Status	On	Use this to configure the wireless direct settings.
			Off	
			Done	
		Channel	Range 1 to 11	
			Done	
	I/O Timeout	seconds Range 5 to 300	Done	Set the amount of time before the printer times out from inactivity.

## Support Tools menu

**Touchscreen printers:** At the printer control panel, touch the [Support Tools](#) button.

**LCD printers:** Use the arrow buttons to scroll to the [Support Tools](#) button, and then press the **OK** button.

**Table 2-59 Support Tools menu**

First level	Second-level	Third-level	Fourth-level	Fifth-level	Description	
Maintenance	<b>Backup/Restore</b>  <b>IMPORTANT:</b> The backup data might contain personally identifiable information such as user names or IP addresses. HP uses this data to understand the issue that the printer is having and to improve future versions of the printer software.	Backup Data	Password		Create a password to encrypt the file, and then select the <a href="#">Next</a> button.	
			Confirm Password		Insert a USB drive into the USB port, and then select the <a href="#">BackUp</a> button.	
				Restore Data		Insert a USB drive into the USB port, and then select the <a href="#">Restore</a> button.
		Calibration/Cleaning	Cleaning Page	Off		Use this to set up automatic cleaning.
				1000 pages		
				2000 pages		
				5000 pages		
				10000 pages		
				20000 pages		
				Clean Document Feeder Rollers (MFP models only)	Set cleaning reminder interval  (1–100) %	
			Reminder Behavior		Choose from the following the reminder behaviors:  <a href="#">Prompt to continue</a>  <a href="#">Continue</a>  <a href="#">Stop</a>	
		Calibrate Scanner (MFP models only)	Done  Start		Touch <a href="#">Start</a> to calibrate the scanner. Follow the prompts on the control-panel display to complete the process.	

**Table 2-59 Support Tools menu (continued)**

First level	Second-level	Third-level	Fourth-level	Fifth-level	Description
	USB Firmware Upgrade	Cancel Details Install			Insert a USB drive with an upgrade firmware bundle file on it into the USB port. Select <a href="#">Install</a> to upgrade the firmware.
Troubleshooting	Reports  <b>NOTE:</b> It is possible to select and print multiple reports.  <b>TIP:</b> Large touchscreen printers have a <a href="#">View</a> feature for the report pages.	Configuration/Status Pages	Settings Menu Map (check box)	Cancel Print	A map of the available printer configuration settings.
			Current Setting Page (check box)	Cancel Print	Print a summary of the current printer settings.  <b>TIP:</b> This is helpful if settings need to be changed to service the printer. Use this report to record the present printer configuration.
			Configuration Page (check box)	Cancel Print	Shows the printer settings and installed accessories.
			How to Connect Page (check box)	Cancel Print	Show information required to connect to the printer by using a network.
			Supplies Status Page (check box)	Cancel Print	Shows the approximate remaining life for the supplies; reports statistics on total number of pages and jobs processed, serial number, page counts, and maintenance information.  <b>IMPORTANT:</b> HP provides approximations of the remaining life for the supplies as a customer convenience. The actual remaining supply levels might be different than the approximations provided.
			Usage Page (check box)	Cancel Print	Shows a page count for jobs processed by the printer (for example, total page count for pages printed).

**Table 2-59 Support Tools menu (continued)**

First level	Second-level	Third-level	Fourth-level	Fifth-level	Description
			File Directory Page (check box)	Cancel Print	Shows the file name and folder name for files that are stored in the printer memory.
			Web Services Status Page (check box)	Cancel Print	Shows the detected Web Services for the printer.
		Fax Reports (fax models only)  <b>TIP:</b> Large touchscreen printers have a <a href="#">View</a> feature for the report pages.	Fax Activity Log (check box)	Cancel Print	Contains a list of the faxes that have been sent from or received by this printer.
			Billing Codes Report (check box)	Cancel Print	Provides a list of billing codes used for outgoing faxes. This report shows how many sent faxes were billed to each code.
			Blocked Fax List (check box)	Cancel Print	A list of phone numbers that are blocked from sending faxes to this printer.
			Fax Call Report (check box)	Cancel Print	A detailed report of the last fax operation, either sent or received.
		Other pages	Demonstration Page (check box)	Cancel Print	Print a demonstration page.
			PCL Font List (check box)	Cancel Print	Print the available PCL fonts.
			PS Font List (check box)	Cancel Print	Print the available PS fonts.
	Fax Tools	Fax T.30 Trace Report	Never automatically print Print after every fax Print only after fax send jobs Print only after received faxes Print only after fax send errors Print only after fax receive errors Print after any fax error	Done Print Now	Use to print or configure the fax T.30 trace report. T.30 is the standard that specifies handshaking, protocols, and error correction between fax machines.

**Table 2-59 Support Tools menu (continued)**

First level	Second-level	Third-level	Fourth-level	Fifth-level	Description
		Fax V.34	Enable Disable		Use to disable V.34 modulations if several fax failures have occurred or if phone line conditions require it.
		JBIG Compression	On Off		The JBIG compression reduces fax-transmission time, which can result in lower phone charges. However, using JBIG compression sometimes causes compatibility problems with older fax machines. If this occurs, turn off the JBIG compression.
		Fax Speaker Mode	Normal Diagnostic		Used by a technician to evaluate and diagnose fax issues by listening to the sounds of fax modulations.
		Fax Service Log	Cancel Print		Select <b>Print</b> to print a detailed fax service log.
	Print Quality Pages	Fuser test page (check box) PQ Troubleshootingpage (check box)	Cancel Print		Choose a print quality page, and then select <b>Print</b> .
	Event Log	Done Print			View and print the 50 most recent events in the Event Log. For each event, the log shows the error date and time, error code, and description or personality.
	Paper Path Page	Cancel Print			Shows how many pages were printed by paper size, source tray, paper type, and print mode.  <b>NOTE:</b> For printers with a large touchscreen, the page appears on the control-panel display.

**Table 2-59 Support Tools menu (continued)**

First level	Second-level	Third-level	Fourth-level	Fifth-level	Description
	Diagnostic Tests	Disable Cartridge Check	Cancel Continue		<p>Use this diagnostic test to print internal pages or send an external job to the printer when the toner cartridge is removed or exchanged.</p> <p>Supply errors are ignored while the printer is in this mode. When the printer is in this mode, access the troubleshooting menus and print internal pages (the print quality pages will be the most useful).</p> <p>This test can be used to isolate problems, such as noise, and to isolate print-quality problems that are related to the toner cartridge.</p>
		Paper Path Test	Number of Copies Paper Tray Output Sides Staple (SSMBM models only) Output Bin (the list of output bins depends on printer configuration).	Done Print	<p>This diagnostic test generates one or more test pages. Use these pages to isolate the cause of jams.</p> <p>Multiple copies can be printed to help isolate intermittent problems.</p>
		Print Stop Test	Stop next print job (check box) Delay ms (0 to 60000) Done		<p>Use this diagnostic test to isolate the cause of problems such as image-formation defects and jams within the engine.</p> <p>During this test, stop the paper anywhere along the printer paper path.</p> <p>Configure the test to stop from 0 to 60,000 ms during a print job.</p>

**Table 2-59 Support Tools menu (continued)**

First level	Second-level	Third-level	Fourth-level	Fifth-level	Description
		Paper Path Sensor Test	Options Done Start	Number of Copies Paper Tray Output sides Staple (SSMBM models only) Output Bin (the list of output bins depends on printer configuration). Done	Generates a test page for testing paper path sensors. Configure the paper path used for the test to test specific paper path sensors.  A list of sensors appears on the control-panel display. As the test page prints, sensors in the list toggle from an inactive to active state.
		Manual Sensor Test	All sensors Input tray sensors Output bin sensors Engine sensors	Done Reset	A list of sensors appears on the control-panel display. When the sensor is manually toggled, its state changes from inactive to active on the control-panel display.
		Component Test	Component (select from a list of components to test) Repeat Status (displays the component status during the test) Done Start	Drum motor Alienation motor Fuser motor Tray 1 pickup solenoid Tray 2 pickup solenoid Tray 3 pickup solenoid Tray 4 pickup solenoid Tray 1 feed clutch Tray 3 feed clutch Duplex refeed clutch solenoid Switchback flapper solenoid Laser Scanner Motor <b>NOTE:</b> The list of available components to test depends on the printer configuration.	Use this to test various mechanical and electromechanical components.
		Continuous Scan (MFP models only)	2-sided (check box) Done Start		Use this to test the sub scanner assembly (SSA) optical scan assembly.



**Table 2-59 Support Tools menu (continued)**

First level	Second-level	Third-level	Fourth-level	Fifth-level	Description
		Run Fax Test	Done		Use this to test the fax module functionality.
			Start		
	Generate Debug Data	Cancel			Create files that contain information about the printer that can help identify the cause of problems.
		Start			
	Retrieve Diagnostic Data	Cancel			Insert a USB drive into the USB port.  <b>IMPORTANT:</b> The data might contain personally identifiable information.
	Retrieve Fax Diagnostic Data	Cancel			Insert a USB drive into the USB port.  <b>IMPORTANT:</b> The data might contain personally identifiable information.
Service					The <b>Service</b> menu is for authorized service personnel only and is protected by a personal identification number (PIN).  <b>NOTE:</b> See the <b>Service mode functions</b> section in the printer <i>Troubleshooting Service Manual</i> for more information.

## Control panel message document (CPMD)

### Control-panel messages and event log entries

The CPMD is not provided in this service manual. The CPMD for this printer is available on the HP Service Access Workbench (SAW) Web site. Go to <http://h41302.www4.hp.com/km/saw/home.do>.

# Improve print quality

- [Improve print quality](#)

## Improve print quality

### Introduction

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

### Print from a different software program

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

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

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

#### Check the paper type setting (Windows)

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

## Check the paper type setting (OS X)

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

## Check toner-cartridge status

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 supplies status page

1. From the Home screen on the printer control panel, select the **Reports** menu.
2. Select the **Configuration/Status Pages** menu.
3. Select **Supplies Status Page**, and then select **Print** to print the 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 word "HP" on it, or has the HP logo on it. For more information on identifying HP cartridges go to [www.hp.com/go/learnaboutsupplies](http://www.hp.com/go/learnaboutsupplies).

## Print a cleaning page

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

Follow these steps to clean the printer's paper path.

1. From the Home screen on the printer control panel, select the **Support Tools** menu.
2. Select the following menus:

- [Maintenance](#)
  - [Calibration/Cleaning](#)
  - [Cleaning Page](#)
3. Select [Print](#) to print the page.

A **Cleaning...** message displays on the printer control panel. The cleaning process takes a few minutes to complete. Do not turn the printer off until the cleaning process has finished. When it is finished, discard the printed page.

## Visually inspect the toner cartridge

Follow these steps to inspect each toner cartridge.

1. Remove the toner cartridges from the printer, and verify that the sealing tape has been removed.
2. Check the memory chip for damage.
3. Examine the surface of the green imaging drum.

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

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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.

### Step three: Set the individual tray alignment

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

1. From the Home screen on the printer control panel, select the **Settings** menu.
2. Select the following menus:
  - **Copy/Print** or **Print**
  - **Print Quality**
  - **Image Registration**
3. Select **Tray**, and then select the tray to adjust.
4. Select **Print Test Page**, and then follow the instructions on the printed pages.
5. Select **Print Test Page** again to verify the results, and then make further adjustments if necessary.
6. Select **Done** to save the new settings.

### Try a different print driver

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

Download any of the following drivers from the HP Web site: [www.hp.com/support/ljM607](http://www.hp.com/support/ljM607), [www.hp.com/support/ljM608](http://www.hp.com/support/ljM608), or [www.hp.com/support/ljM609](http://www.hp.com/support/ljM609), [www.hp.com/support/ljM631MFP](http://www.hp.com/support/ljM631MFP), [www.hp.com/support/ljM632MFP](http://www.hp.com/support/ljM632MFP), or [www.hp.com/support/ljM633MFP](http://www.hp.com/support/ljM633MFP).

<b>HP PCL.6 driver</b>	<ul style="list-style-type: none"> <li>• Provided as the default driver on the printer CD. This driver is automatically installed unless you select a different one.</li> </ul>
<b>HP PCL 6 driver</b>	<ul style="list-style-type: none"> <li>• Recommended for all Windows environments</li> </ul>
<b>HP PCL-6 driver</b>	<ul style="list-style-type: none"> <li>• Provides the overall best speed, print quality, and printer-feature support for most users</li> <li>• Developed to align with the Windows Graphic Device Interface (GDI) for the best speed in Windows environments</li> <li>• Might not be fully compatible with third-party and custom software programs that are based on PCL 5</li> </ul>
<b>HP UPD PS driver</b>	<ul style="list-style-type: none"> <li>• Recommended for printing with Adobe® software programs or with other highly graphics-intensive software programs</li> <li>• Provides support for printing from postscript emulation needs, or for postscript flash font support</li> </ul>

<b>HP UPD PCL 5</b>	<ul style="list-style-type: none"> <li>• Recommended for general office printing in Windows environments</li> <li>• Compatible with previous PCL versions and older HP LaserJet printers</li> <li>• The best choice for printing from third-party or custom software programs</li> <li>• The best choice when operating with mixed environments, which require the printer to be set to PCL 5 (UNIX, Linux, mainframe)</li> <li>• Designed for use in corporate Windows environments to provide a single driver for use with multiple printer models</li> <li>• Preferred when printing to multiple printer models from a mobile Windows computer</li> </ul>
<b>HP UPD PCL 6</b>	<ul style="list-style-type: none"> <li>• Recommended for printing in all Windows environments</li> <li>• Provides the overall best speed, print quality, and printer feature support for most users</li> <li>• Developed to align with Windows Graphic Device Interface (GDI) for best speed in Windows environments</li> <li>• Might not be fully compatible with third-party and custom software programs that are based on PCL 5</li> </ul>

## Check the EconoMode settings

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



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

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

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

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

  - Select the **FastRes 1200** option.
  - Clear the **EconoMode** check box to disable it.
5. Click the **OK** button to close the **Document Properties** dialog box. In the **Print** dialog, click the **OK** button to print the job.

## Adjust print density

Complete the following steps to adjust the print density.

1. From the Home screen on the printer control panel, select the [Settings](#) menu.
2. Open the following menus:
  - [Copy/Print](#) or [Print](#)
  - [Print Quality](#)
  - [Toner Density](#)
3. Move the slider toward either [Less](#) or [More](#) to the desired density setting.



# Print quality troubleshooting guide

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**NOTE:** Use the procedures in this section to resolve most print-quality issues (for example, streaks or fading, missing black or other colors, blurred or fuzzy text, and ink streaks or smears). 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.

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- [Introduction](#)
- [Product specific image defects](#)

## Introduction

- [Toner cartridges](#)
- [Check the paper-type setting for the print job](#)
- [Check paper and the printing environment](#)
- [Information to collect](#)


## Toner cartridges

### Check toner-cartridge status

#### Print the supplies status page from a touchscreen control panel

1. From the Home screen on the printer control panel, swipe (right), and then touch the [Reports](#) button.
2. Touch the [Configuration/Status Pages](#) item
3. Touch [Supplies Status Page](#) to select it.


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 **TIP:** Multiple report pages can be selected, and then printed together.


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4. Touch the [Print](#) button to print the pages.

#### Print the supplies status page from an LCD control panel

1. From the Home screen on the printer control panel, use the down arrow ▼ button to select the [Print](#)  menu.
2. Use the right arrow ► button to scroll to [Reports](#), and then press the [OK](#) button.
3. Use the down arrow ▼ button to scroll to [Configuration/Status Pages](#), and then press the [OK](#) button.
4. Use the down arrow ▼ or ▲ buttons to scroll to [Supplies Status page](#), and then press the [OK](#) button to select it.
5. Use the down arrow ▼ and right arrow ► buttons to scroll to [Print](#), and then press the [OK](#) button to print the pages.

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 **TIP:** Multiple report pages can be selected, and then printed together.

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Check the supplies status page for the following information:

- Estimated percentage of cartridge or cartridges life remaining
- Approximate pages remaining
- Part number or numbers for HP toner cartridge or cartridges
- Number of pages printed

#### Visually inspect the toner cartridge or cartridges

1. Remove the toner cartridge or cartridges from the printer, and verify that the sealing tape has been removed.
2. Check the memory chip for damage.
3. Examine the surface of the imaging drum on the cartridge.

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

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4. If you see any scratches, fingerprints, or other damage on an imaging drum, replace the toner cartridge or cartridges.
5. If the imaging drum does not appear to be damaged, rock the toner cartridge or cartridges gently several times and reinstall it. Print a few pages to see if the problem has resolved.

## 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 paper and the printing environment

### Step one: Use paper that meets 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.

### Information to collect

- Configuration page
- Current settings page
- Supplies status page
- Demo page
- Other pages support personnel may request

## Product specific image defects



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**NOTE:** The image defects described in this section are printer-specific image defects.

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- [Resolving print quality problems](#)
- [Repetitive image defect ruler](#)
- [Printer specific image defects](#)

### Resolving print quality problems

- [Introduction](#)
- [Troubleshoot print quality problems](#)

#### Introduction

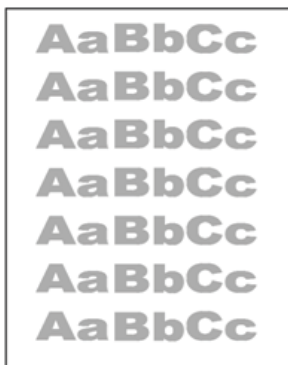
The following information provides troubleshooting steps for solving image defect issues, including the following defects:

- Light print
- Gray background or dark print
- Blank pages
- Black pages
- Dark or light bands
- Dark or light streaks
- Missing toner
- Skewed images
- Colors that do not align
- Curled paper

### Troubleshoot print quality problems

**Table 2-60 Image defects table quick reference**

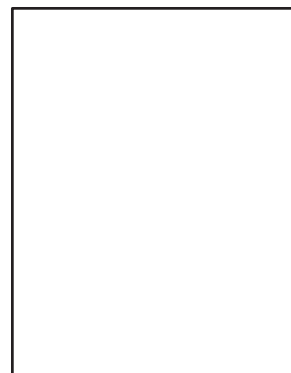
[Table 2-61 Light print on page 254](#)



[Table 2-62 Gray background or dark print on page 254](#)



[Table 2-63 Blank page — No print on page 255](#)



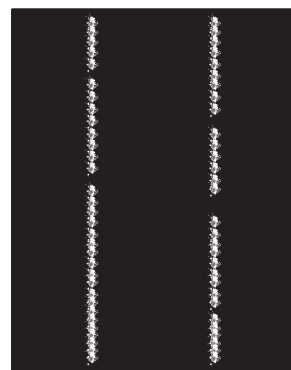
[Table 2-64 Black page on page 255](#)



[Table 2-65 Banding defects on page 256](#)



[Table 2-66 Streak defects on page 256](#)



## Table 2-60 Image defects table quick reference (continued)

Table 2-67 Fixing/fuser defects on page 257

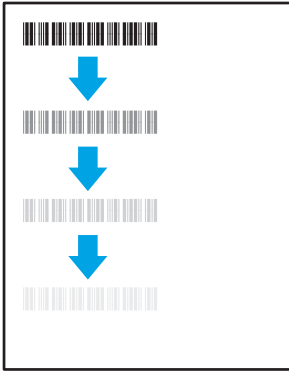


Table 2-68 Image placement defects on page 257



Table 2-69 Color plane registrations defects (color models only) on page 258

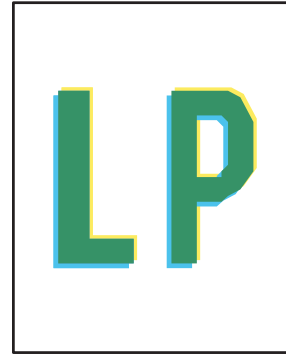


Table 2-70 Output defects on page 258

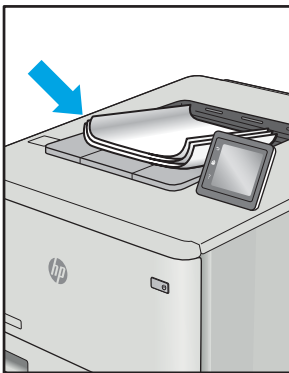


Image defects, no matter the cause, can often be resolved using the same steps. Use the following steps as a starting point for solving image defect issues.

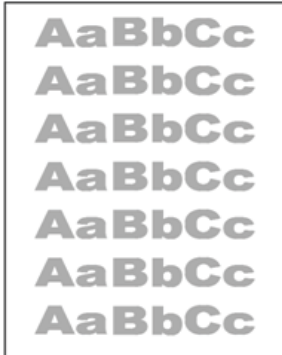
1. Reprint the document. Print quality defects can be intermittent in nature or can go away completely with continued printing.
2. Check the condition of the cartridge or cartridges. If a cartridge is in a **Very Low** state (it has passed the rated life), replace the cartridge.
3. Make sure that the driver and tray print mode settings match the media that is loaded in the tray. Try using a different ream of media or a different tray. Try using a different print mode.
4. Make sure that the printer is within the supported operating temperature/humidity range.
5. Make sure that the paper type, size, and weight are supported by the printer. See the printer support page at [support.hp.com](https://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 2-61 Light print**


Description	Sample	Possible solutions
<p><b>Light print:</b></p> <p>The printed content on the entire page is light or faded.</p>		<ol style="list-style-type: none"><li>1. Reprint the document.</li><li>2. Remove the cartridge, and then shake it to redistribute the toner.</li><li>3. <b>Mono models only:</b> Make sure that the Economode setting is disabled both at the printer control panel and in the print driver.</li><li>4. Make sure that the cartridge is installed correctly.</li><li>5. Print a Supply status page and check for life and usage of the cartridge.</li><li>6. Replace the cartridge.</li><li>7. If the problem persists, go to <a href="http://support.hp.com">support.hp.com</a>.</li></ol>

**Table 2-62 Gray background or dark print**


Description	Sample	Possible solutions
<p><b>Gray background or dark print:</b></p> <p>The image or text is darker than expected.</p>		<ol style="list-style-type: none"><li>1. Make sure that the paper in the trays has not already been run through the printer.</li><li>2. Use a different paper type.</li><li>3. Reprint the document.</li><li>4. <b>Mono models only:</b> From the Home screen on the printer control panel, go to the <a href="#">Adjust Toner Density</a> menu, and then adjust the toner density to a lower level.</li><li>5. Make sure that the printer is in within the supported operating temperature and humidity range.</li><li>6. Replace the cartridge.</li><li>7. If the problem persists, go to <a href="http://support.hp.com">support.hp.com</a>.</li></ol>




**Table 2-63 Blank page — No print**

Description	Sample	Possible solutions
<p><b>Blank page — No print:</b></p> <p>The page is completely blank and contains no printed content.</p>		<ol style="list-style-type: none"><li>1. Make sure that the cartridge is genuine HP cartridges.</li><li>2. Make sure that the cartridge is installed correctly.</li><li>3. Print with a different cartridge.</li><li>4. Check the paper type in the paper tray and adjust the printer settings to match. If necessary, select a lighter paper type.</li><li>5. If the problem persists, go to <a href="http://support.hp.com">support.hp.com</a>.</li></ol>

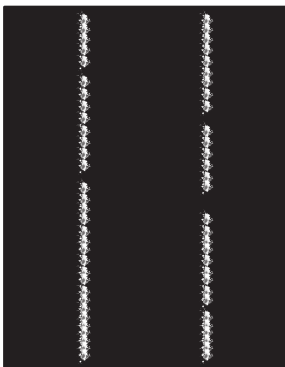
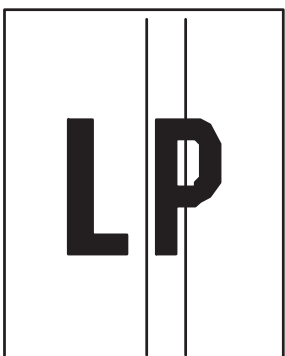
**Table 2-64 Black page**

Description	Sample	Possible solutions
<p><b>Black page:</b></p> <p>The entire printed page is black.</p>		<ol style="list-style-type: none"><li>1. Visually inspect the cartridge to check for damage.</li><li>2. Make sure that the cartridge is installed correctly.</li><li>3. Replace the cartridge</li><li>4. If the problem persists, go to <a href="http://support.hp.com">support.hp.com</a>.</li></ol>

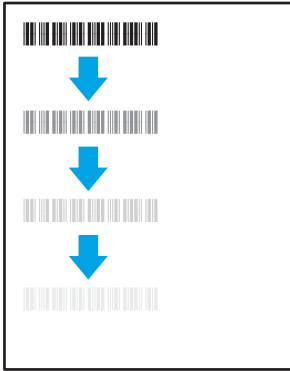
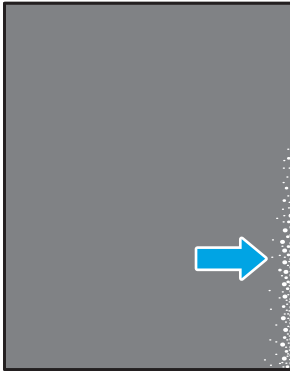
**Table 2-65 Banding defects**

Description	Sample	Possible solutions
<p><b>Repetitive wide-pitch banding and Impulse bands:</b></p> <p>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.</p>		<ol style="list-style-type: none"> <li>1. Reprint the document.</li> <li>2. Try printing from another tray.</li> <li>3. Replace the cartridge.</li> <li>4. Use a different paper type.</li> <li>5. <b>Enterprise models only:</b> From the Home screen on the printer control panel, go to the <a href="#">Adjust Paper Types</a> menu, and then choose a print mode that is designed for a slightly heavier media than what you are using. This slows the print speed and might improve the print quality.</li> <li>6. If the problem persists, go to <a href="http://support.hp.com">support.hp.com</a>.</li> </ol>


**Table 2-66 Streak defects**

Description	Sample	Possible solutions
<p><b>Light vertical streaks:</b></p> <p>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.</p>		<ol style="list-style-type: none"> <li>1. Reprint the document.</li> <li>2. Remove the cartridge, and then shake it to redistribute the toner.</li> <li>3. If the problem persists, go to <a href="http://support.hp.com">support.hp.com</a>.</li> </ol> <p><b>NOTE:</b> 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.</p>
<p><b>Dark vertical streaks and ITB cleaning streaks (color models only):</b></p> <p>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.</p>		<ol style="list-style-type: none"> <li>1. Reprint the document.</li> <li>2. Remove the cartridge, and then shake it to redistribute the toner.</li> <li>3. Print a cleaning page.</li> <li>4. Check the toner level in the cartridge.</li> <li>5. If the problem persists, go to <a href="http://support.hp.com">support.hp.com</a>.</li> </ol>


**Table 2-67 Fixing/fuser defects**

Description	Fixing/fuser	Possible solutions
<p><b>Hot fuser offset (shadow):</b></p> <p>Slight shadows, or offsets, of the image repeated down the page. The repeated image might fade with each recurrence.</p>		<ol style="list-style-type: none"> <li>1. Reprint the document.</li> <li>2. Check the paper type in the paper tray and adjust the printer settings to match. If necessary, select a lighter paper type.</li> <li>3. If the problem persists, go to <a href="http://support.hp.com">support.hp.com</a>.</li> </ol>
<p><b>Poor fusing:</b></p> <p>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.</p>		<ol style="list-style-type: none"> <li>1. Reprint the document.</li> <li>2. Check the paper type in the paper tray and adjust the printer settings to match. If necessary, select a heavier paper type.</li> <li>3. <b>Enterprise models only:</b> From the printer control panel, go to the <a href="#">Edge-to-Edge</a> menu and then select <a href="#">Normal</a>. Reprint the document.</li> <li>4. <b>Enterprise models only:</b> From the printer control panel, select <a href="#">Auto Include Margins</a> and then reprint the document.</li> <li>5. If the problem persists, go to <a href="http://support.hp.com">support.hp.com</a>.</li> </ol>

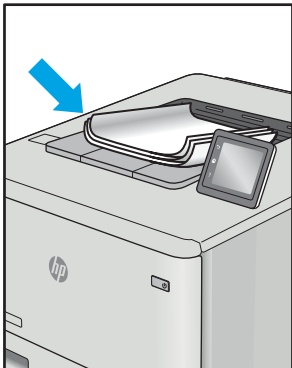
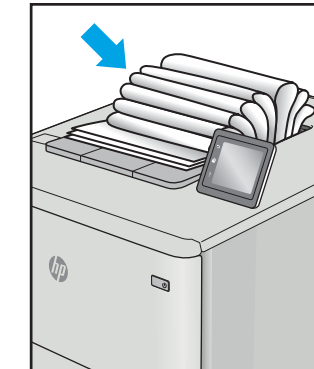
**Table 2-68 Image placement defects**

Description	Sample	Possible solutions
<p><b>Margins and skew:</b></p> <p>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.</p>		<ol style="list-style-type: none"> <li>1. Reprint the document.</li> <li>2. Remove the paper and then reload the tray. Make sure that all the paper edges are even on all sides.</li> <li>3. Make sure that the top of the paper stack is below the tray full indicator. Do not overfill the tray.</li> <li>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.</li> <li>5. If the problem persists, go to <a href="http://support.hp.com">support.hp.com</a>.</li> </ol>

**Table 2-69 Color plane registrations defects (color models only)**

Description	Sample	Possible solutions
<p><b>Color plane registrations:</b></p> <p>One or more color of the planes is not aligned with the other color planes. The primary error will typically occur with yellow.</p>		<ol style="list-style-type: none"> <li>1. Reprint the document.</li> <li>2. From the printer control panel, calibrate the printer.</li> <li>3. If a cartridge has reached a <b>Very Low</b> state or the printed output is severely faded, replace the cartridge.</li> <li>4. From the printer control panel use the <a href="#">Restore Calibration</a> feature to reset the printer's calibration settings to the factory defaults.</li> <li>5. If the problem persists, go to <a href="http://support.hp.com">support.hp.com</a>.</li> </ol>


**Table 2-70 Output defects**


Description	Sample	Possible solutions
<p><b>Output curl:</b></p> <p>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:</p> <ul style="list-style-type: none"> <li>• <b>Positive curl:</b> The paper curls toward the printed side. The defect occurs in dry environments or when printing high coverage pages.</li> <li>• <b>Negative curl:</b> The paper curls away from the printed side. The defect occurs in high-humidity environments or when printing low coverage pages.</li> </ul>		<ol style="list-style-type: none"> <li>1. Reprint the document.</li> <li>2. <b>Positive curl:</b> From the printer control panel, select a heavier paper type. The heavier paper type creates a higher temperature for printing.  <b>Negative curl:</b> From the printer control panel, select a lighter paper type. The lighter paper type creates a lower temperature for printing. Try storing the paper in a dry environment prior or use freshly opened paper.</li> <li>3. Print in duplex mode.</li> <li>4. If the problem persists, go to <a href="http://support.hp.com">support.hp.com</a>.</li> </ol>
<p><b>Output stacking:</b></p> <p>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:</p> <ul style="list-style-type: none"> <li>• Extreme paper curl</li> <li>• The paper in the tray is wrinkled or deformed</li> <li>• The paper is a non-standard paper type, such as envelopes</li> <li>• The output tray is too full</li> </ul>		<ol style="list-style-type: none"> <li>1. Reprint the document.</li> <li>2. Extend the output bin extension.</li> <li>3. If the defect is caused by extreme paper curl, complete the troubleshooting steps for Output curl.</li> <li>4. Use a different paper type.</li> <li>5. Use freshly opened paper.</li> <li>6. Remove the paper from the output tray before the tray gets too full.</li> <li>7. If the problem persists, go to <a href="http://support.hp.com">support.hp.com</a>.</li> </ol>


## Repetitive image defect ruler

When troubleshooting the source of some print image defects, one solution is to identify if it is a repetitive defect (does the print quality defect appear multiple times on the printed page?). If this is the case, use a ruler to measure occurrences of repetitive image defects to help solve image-quality problems. For more information, see [Use a ruler to measure between repetitive defects on page 260](#).

Place the ruler next to the first occurrence of the defect on the page. Find the distance between identical defects and use the table below to identify the component that is causing the defect.

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

 **NOTE:** Defects on the tray pickup rollers or the Tray 1 pickup roller do not cause a repetitive defect. Defects on these rollers cause a defect to appear only on the leading edge of the image.

 **TIP:** To make a printer specific repetitive defect ruler, use a metric ruler to transfer the measurements in [Table 2-71 Repetitive defects on page 259](#) to a transparency or the edge of a piece of paper—clearly label each ruler mark with the associated defective assembly.

**Table 2-71 Repetitive defects**


Assembly	Distance between defects
Primary charging roller <sup>1</sup>	26.7 mm (1.1 in)
Face down roller <sup>11</sup>	28.3 mm (1.1 in)
Fuser output roller	34.6 mm (1.4 in)
Developer roller <sup>1</sup>	44.1 mm (1.7 in)
Transfer roller	44.6 mm (1.8 in)
Registration roller	48 mm (1.9 in)
Tray 2 pickup roller	50 mm (2.0 in)
Tray 2 retard roller	
Tray 2 feed roller	
Fuser sleeve	75.4 mm (3.0 in)
Pressure roller	78.5 mm (3.1 in)
Photosensitive drum <sup>1</sup>	92.4 mm (3.6 in)

<sup>1</sup> The primary charging roller, photosensitive drum and developer roller cannot be cleaned. If any of these rollers are indicated, replace the toner cartridge.

## Use a ruler to measure between repetitive defects

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

1. Identify a repetitive defect on the page.

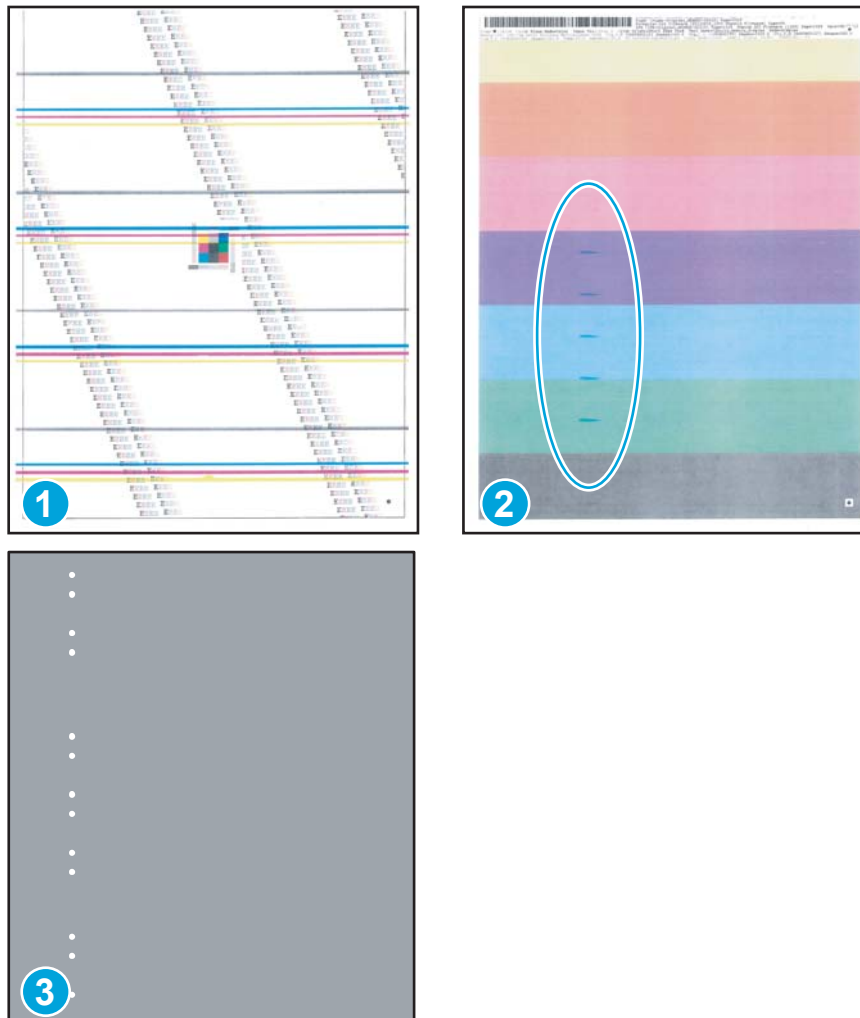
 **TIP:** Print a cleaning page to see if that resolves the defect.

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

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

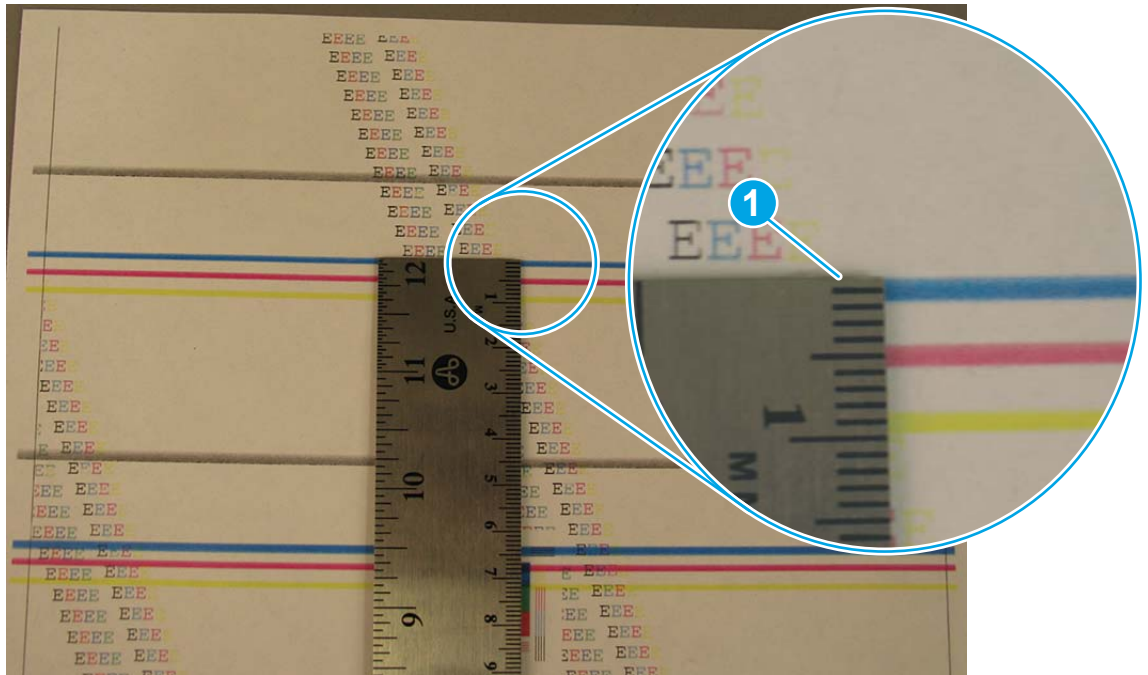
- Lines (callout 1)
- Smudges (callout 2)
- Dots or spots (callout 3)

**Figure 2-101** Examples of repetitive defects



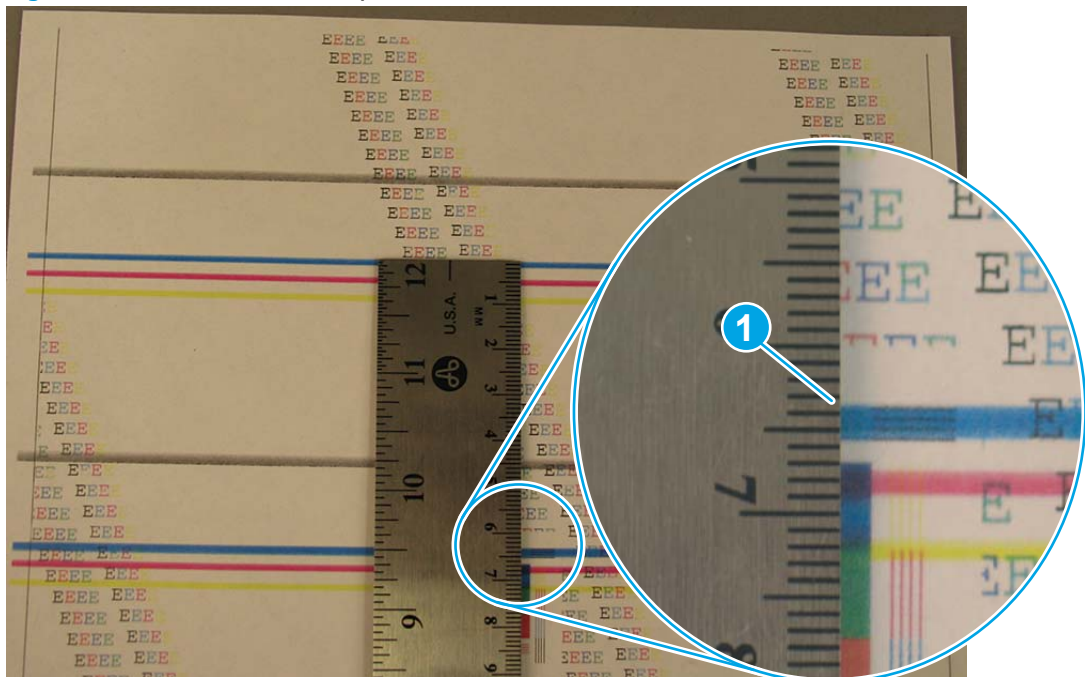
2. Position a metric ruler on the page with the “zero” ruler mark at one occurrence of the defect (callout 1).

**Figure 2-102** Place the ruler on the page




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

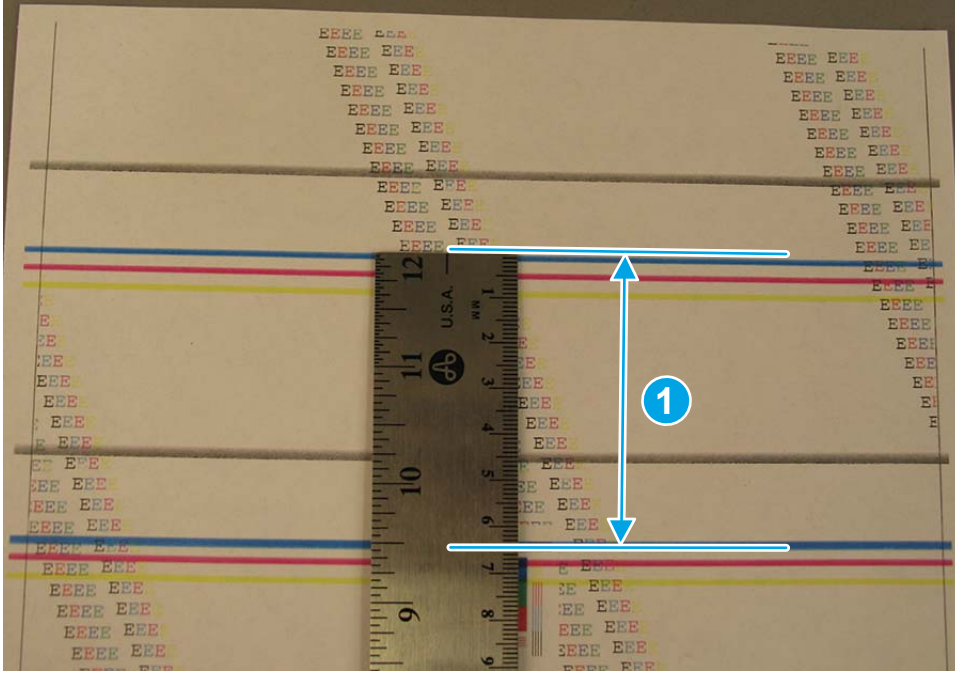
**Figure 2-103** Locate the next repetitive defect



4. Measure the distance (in millimeters) between the two occurrences (callout 1), and then use [Table 2-71 Repetitive defects on page 259](#) 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 2-104** Determine the defective assembly





## Printer specific image defects

### Image defect events



**NOTE:** The image defects described in this section are defects that occurred during development and that could not be fully eliminated. Customers might observe these defects.

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- [44 mm \(44.1 mm\) wide pitch banding](#)
- [18 mm leading edge blur](#)
- [46 mm leading edge blur](#)
- [25 mm leading edge blur](#)
- [50 mm trailing edge blur](#)
- [75 mm trailing edge blur](#)
- [104 mm trailing edge blur](#)
- [111 mm trailing edge blur](#)
- [120 mm trailing edge blue duplex side](#)
- [Hot offset](#)
- [Mottle/graininess](#)
- [Mottle/graininess](#)

## 44 mm (44.1 mm) wide pitch banding

Figure 2-105 44 mm (44.1 mm) wide pitch banding



### Description of the defect

Soft, gradual bands can be seen over a constant density area. It appears as slight gradients which repeat at approximately 44.1 mm pitch. This phenomenon is a density variation which appears on the PQ due to the gap variation between OPC and developer sleeve. This gap varies due to the part's accuracy of the OPC, developer sleeve, and the spacer placed between the OPC and the developer sleeve.

### Conditions that can cause the defect

This defect occurs in fill areas. This does not occur in text regions.

### Solutions for the defect

- Resend the job.
- If the defect is persistent and more severe than acceptable limit sample, then replace the cartridge.

### Parts related to the defect



**NOTE:** The following item(s) might need to be repaired or replaced to prevent this defect from occurring.

- Toner cartridge

## 18 mm leading edge blur

Figure 2-106 18 mm leading edge blur



### Description of the defect

A dark and usually sharp band occurring 18 mm from the leading edge. This impulse band is caused by the leading edge of the media impacting the OPC and causing a disturbance on the developer.

### Conditions that can cause the defect

This defect occurs in fill areas where the leading edge of the media does not follow the correct path into the transfer nip. This does not occur in text regions

### Solutions for the defect

- Resend the job.
- If the defect is persistent, try printing in Quiet Mode (1/2 speed) which, because of the slower process speed, allows the media to enter the transfer nip more reliably and with less impact force.

At the printer control panel open the following menus: Settings > General > Quiet Mode > On.

### Parts related to the defect



**NOTE:** The following item(s) might need to be repaired or replaced to prevent this defect from occurring.

- Media
- Paper path

## 46 mm leading edge blur

Figure 2-107 46 mm leading edge blur



### Description of the defect

A dark and usually sharp band occurring 46 mm from the leading edge. This impulse band is a latent image caused by the leading edge of the media entering the transfer nip.

### Conditions that can cause the defect

This defect occurs in fill areas. This does not occur in text regions.

### Solutions for the defect

- Resend the job.
- If the defect is persistent, try printing in Quiet Mode (1/2 speed) which, because of the slower process speed, allows the media to enter the transfer nip more reliably and with less impact force.

At the printer control panel open the following menus: Settings > General > Quiet Mode > On.

### Parts related to the defect



**NOTE:** The following item(s) might need to be repaired or replaced to prevent this defect from occurring.

- Media
- Paper path

## 25 mm leading edge blur

**Figure 2-108** 25 mm leading edge blur



### Description of the defect

A dark and usually sharp band occurring 25 mm from the trailing edge. This impulse band is a developer blur caused by the trailing edge of the media exiting the registration rollers.

### Conditions that can cause the defect

This defect occurs in fill areas. This does not occur in text regions.

### Solutions for the defect

- Resend the job.
- If the defect is persistent, try printing in Quiet Mode (1/2 speed) which, because of the slower process speed, allows the media to enter the transfer nip more reliably and with less impact force.

At the printer control panel open the following menus: Settings > General > Quiet Mode > On.

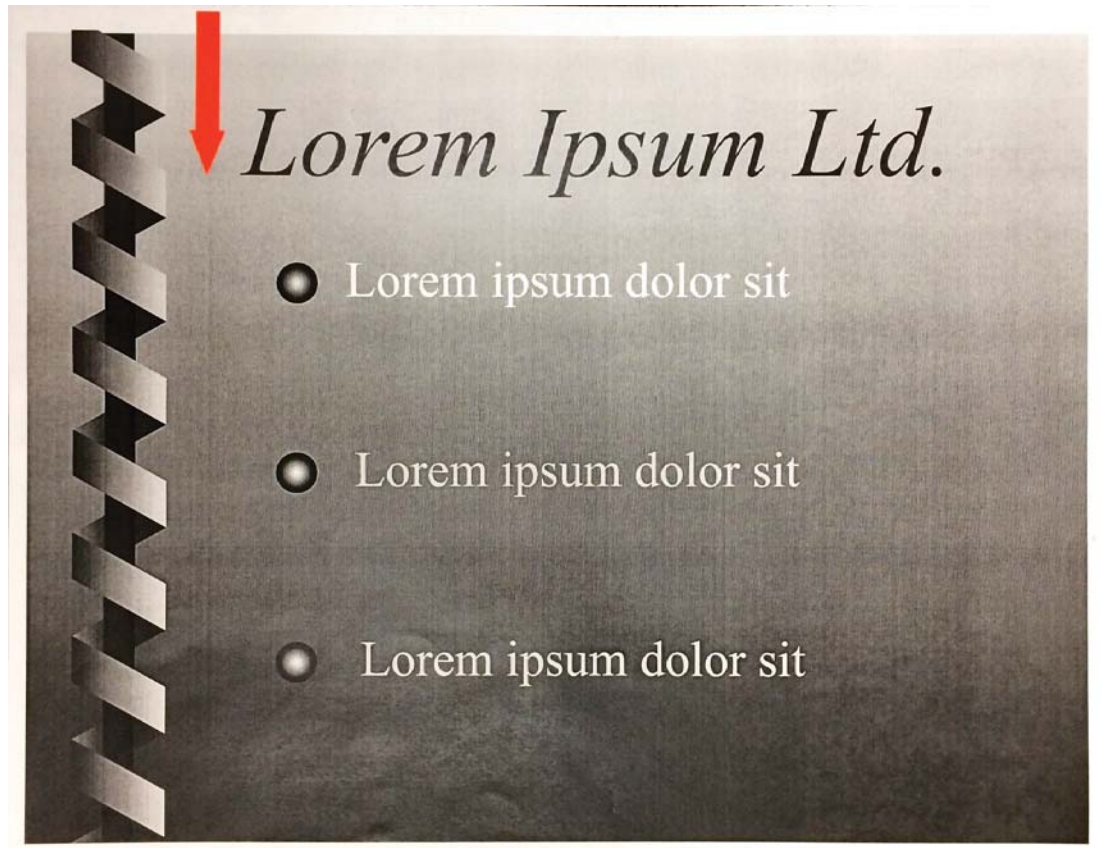
### Parts related to the defect

 **NOTE:** The following item(s) might need to be repaired or replaced to prevent this defect from occurring.

- Media
- Paper path

## 50 mm trailing edge blur

Figure 2-109 50 mm trailing edge blur



### Description of the defect

A dark and usually sharp band occurring 50 mm from the trailing edge. This impulse band is a transfer blur caused by the trailing edge of the media exiting the registration rollers.

### Conditions that can cause the defect

This defect occurs in fill areas. This does not occur in text regions.

### Solutions for the defect

- Resend the job.
- If the defect is persistent, try printing in Quiet Mode (1/2 speed) which, because of the slower process speed, allows the media to enter the transfer nip more reliably and with less impact force.

At the printer control panel open the following menus: Settings > General > Quiet Mode > On.

### Parts related to the defect



**NOTE:** The following item(s) might need to be repaired or replaced to prevent this defect from occurring.

- Media
- Paper path

## 75 mm trailing edge blur

Figure 2-110 75 mm trailing edge blur



### Description of the defect

A dark and usually sharp band occurring 75 mm from the trailing edge. This impulse band is a latent image blur caused by the trailing edge of the media exiting the feed/re-feed roller nip.

### Conditions that can cause the defect

This defect occurs in fill areas. This does not occur in text regions.

### Solutions for the defect

- Resend the job.
- If the defect is persistent, try printing in Quiet Mode (1/2 speed) which, because of the slower process speed, allows the media to enter the transfer nip more reliably and with less impact force.

At the printer control panel open the following menus: Settings > General > Quiet Mode > On.

### Parts related to the defect



**NOTE:** The following item(s) might need to be repaired or replaced to prevent this defect from occurring.

- Media
- Paper path

## 104 mm trailing edge blur

Figure 2-111 104 mm trailing edge blur



### Description of the defect

A dark and usually sharp band occurring 104 mm from the trailing edge. This impulse band is a developer blur caused by the input clutch (pick motor clutch) being turned off.

### Conditions that can cause the defect

This defect occurs in fill areas. This does not occur in text regions.

### Solutions for the defect

- Resend the job.
- If the defect is persistent, try printing in Quiet Mode (1/2 speed) which, because of the slower process speed, allows the media to enter the transfer nip more reliably and with less impact force.

At the printer control panel open the following menus: Settings > General > Quiet Mode > On.

### Parts related to the defect



**NOTE:** The following item(s) might need to be repaired or replaced to prevent this defect from occurring.

- Media
- Paper path



## 111 mm trailing edge blur

Figure 2-112 111 mm trailing edge blur



### Description of the defect

A dark and usually sharp band occurring 111 mm from the leading edge. This impulse band is a latent image blur caused by the leading edge of the media entering the fuser nip.

### Conditions that can cause the defect

This defect occurs in fill areas. This does not occur in text regions.

### Solutions for the defect

- Resend the job.
- If the defect is persistent, try printing in Quiet Mode (1/2 speed) which, because of the slower process speed, allows the media to enter the transfer nip more reliably and with less impact force.

At the printer control panel open the following menus: Settings > General > Quiet Mode > On.

### Parts related to the defect

 **NOTE:** The following item(s) might need to be repaired or replaced to prevent this defect form occurring.

- Media
- Paper path

## 120 mm trailing edge blue duplex side

Figure 2-113 120 mm trailing edge blue duplex side



### Description of the defect

A dark and usually sharp band occurring 120 mm from the trailing leading edge of a duplex page. This impulse band is a developer blur caused by the trailing edge of the media exiting the re-feed roller nip.

### Conditions that can cause the defect

This defect occurs in fill areas. This does not occur in text regions.

### Solutions for the defect

- Resend the job.
- If the defect is persistent, try printing in Quiet Mode (1/2 speed) which, because of the slower process speed, allows the media to enter the transfer nip more reliably and with less impact force.

At the printer control panel open the following menus: Settings > General > Quiet Mode > On.

### Parts related to the defect

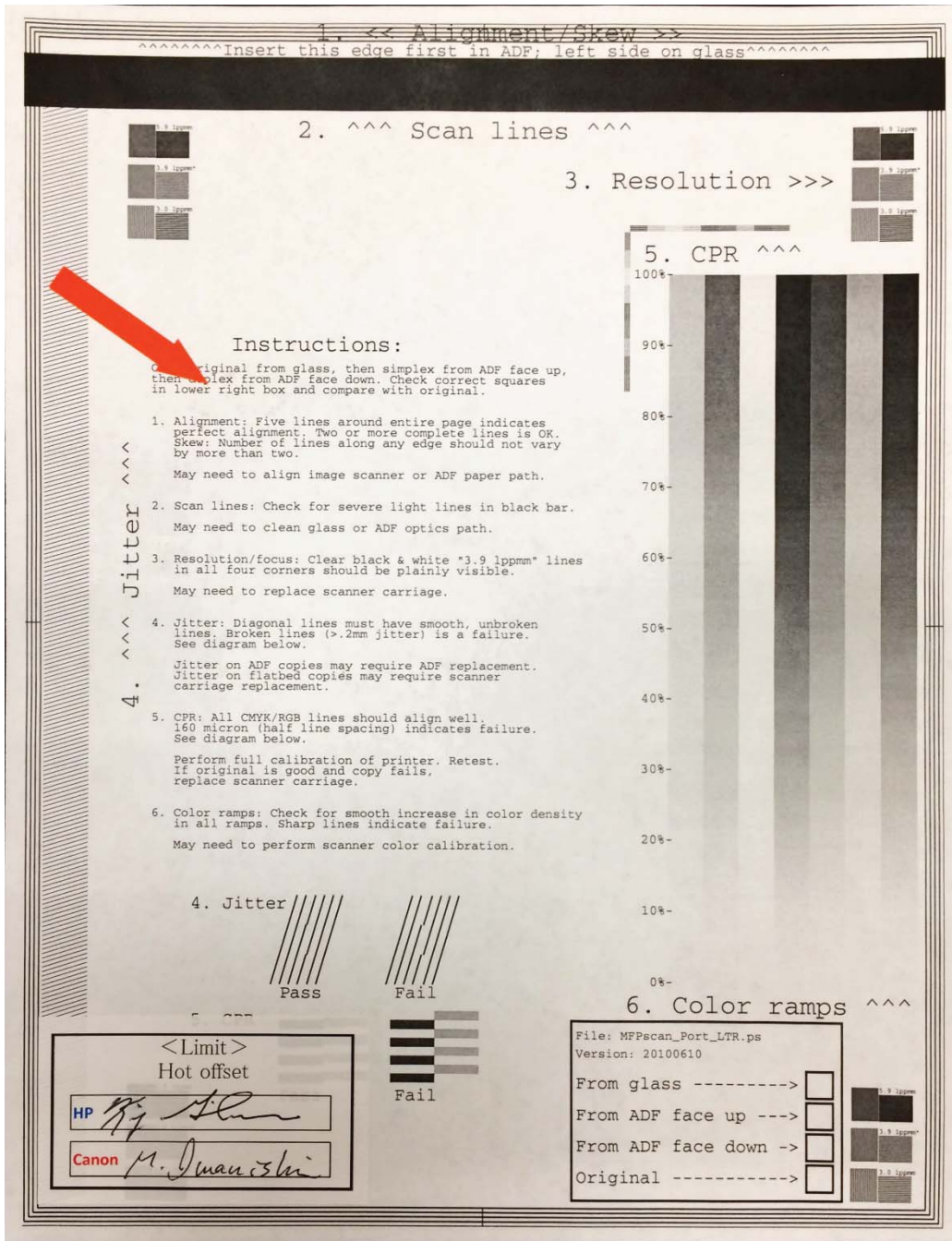


**NOTE:** The following item(s) might need to be repaired or replaced to prevent this defect form occurring.

- Media
- Paper path

Hot offset

Figure 2-114 Hot offset



Description of the defect

Slight offset of the image repeated approximately 75 mm down the page. The fuser is too hot. This issue occurs when the fuser thermistor detection temperature did not follow the target temperature. This issue also occurs when printing large duplex jobs (> 500 duplex pages) where the internal printer and fuser build up excessive heat.

### Conditions that can cause the defect

Additionally, hot offset might occur if the wrong media type is selected and might occur more commonly if the fuser is late in life.

### Solutions for the defect

- Resend the job after letting the fuser cool.
- Resend the job using a lighter fuser mode.
- If the error persists, replace the fuser.

### Parts related to the defect



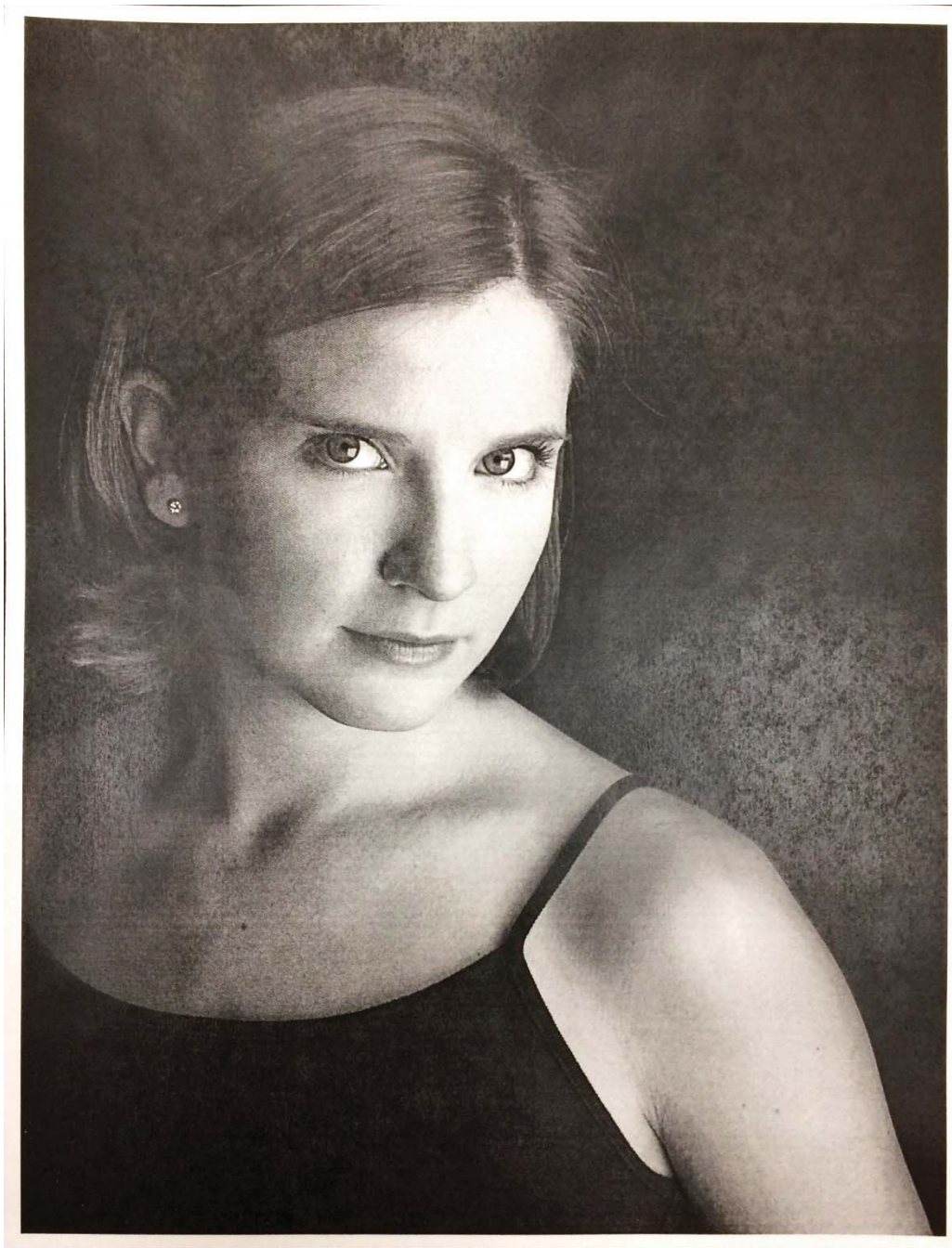
---

**NOTE:** The following item(s) might need to be repaired or replaced to prevent this defect from occurring.

- Fuser

## Mottle/graininess

**Figure 2-115** Mottle/graininess



### Description of the defect

Large areas of fill look blotchy, grainy, non-uniform, or mottled. Graininess/fixing mottle is a phenomenon that occurs by how the toner (dot) is pressed or melted depending on the media roughness. This leads to the density variance or uneven gloss. This defect is caused by inconsistently melted toner. This defect tends to become worse as the printer becomes hot.

### Conditions that can cause the defect

- The defect appears in large areas of fill and is more severe in low temperature and humidity environments.
- The defect appears in large areas of fill and becomes worse as the printer temperature become hot.

### Solutions for the defect

- Resend the job after letting the printer cool.
- Change the print mode from Full Speed to Quiet Mode (1/2 speed) to improve the issue. At the printer control panel open the following menus: Settings > General > Quiet Mode > On.
- If the error persists, replace the fuser.

### Parts related to the defect



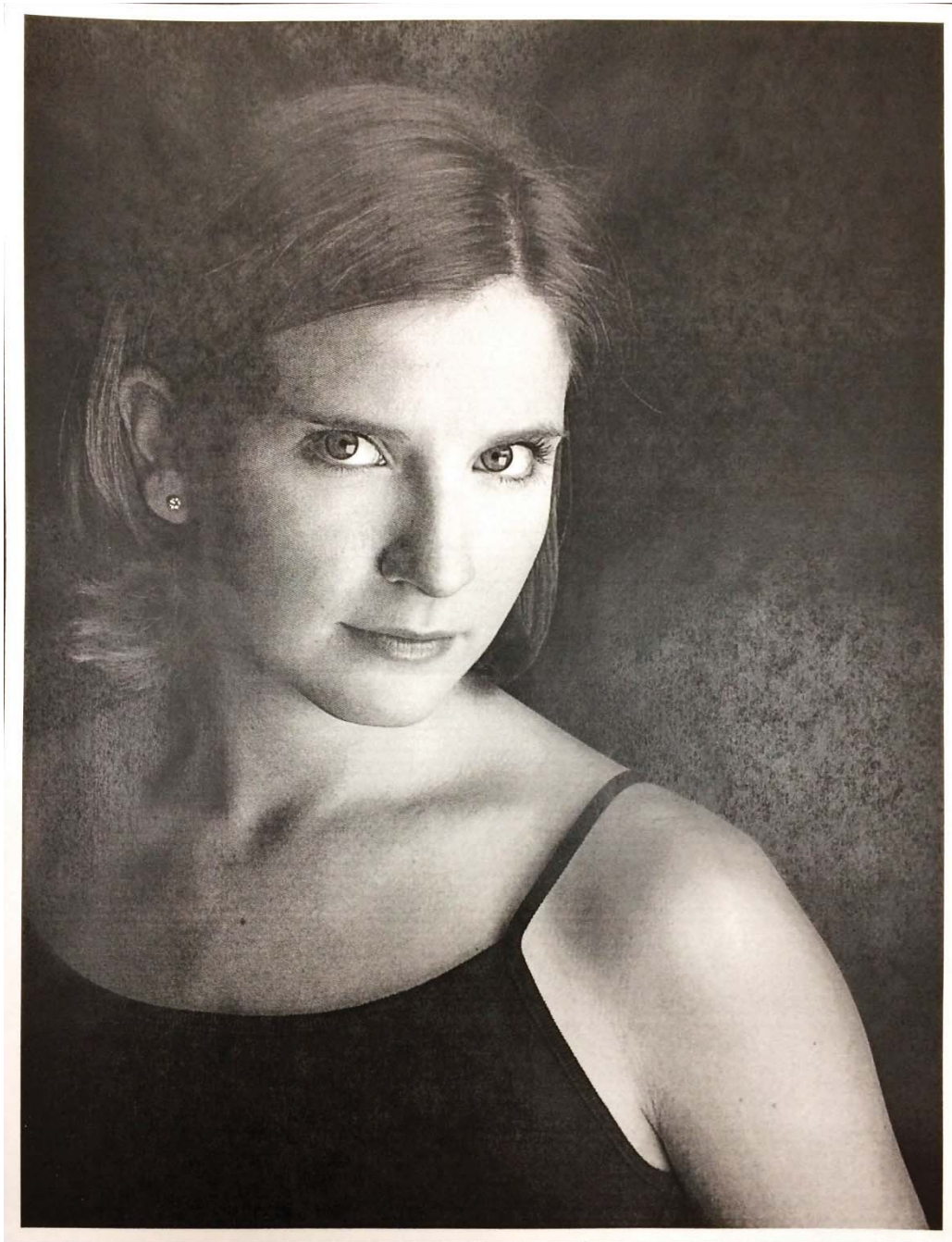
---

**NOTE:** The following item(s) might need to be repaired or replaced to prevent this defect form occurring.

- Media
- Toner
- Fuser

## Mottle/graininess

**Figure 2-116** Mottle/graininess



### Description of the defect

Large areas of fill look blotchy, grainy, non-uniform, or mottled. Graininess/fixing mottle is a phenomenon that occurs by how the toner (dot) is pressed or melted depending on the media roughness. This leads to the density variance or uneven gloss. This defect is caused by inconsistently melted toner. This defect tends to become worse as the printer becomes hot.

### Conditions that can cause the defect

- The defect appears in large areas of fill and is more severe in low temperature and humidity environments.
- The defect appears in large areas of fill and becomes worse as the printer temperature become hot.

### Solutions for the defect

- Resend the job after letting the printer cool.
- Change the print mode from Full Speed to Quiet Mode (1/2 speed) to improve the issue. At the printer control panel open the following menus: Settings > General > Quiet Mode > On.
- If the error persists, replace the fuser.

### Parts related to the defect



---

**NOTE:** The following item(s) might need to be repaired or replaced to prevent this defect form occurring.

- Media
- Toner
- Fuser



# Clean the printer



**NOTE:** To clean the printer exterior, use a soft, water-moistened cloth.

---

- [Clean the paper path](#)
- [Print a cleaning page](#)
- [Check the scanner glass for dirt and smudges \(MFP\)](#)
- [Clean the pickup rollers and separation pad in the document feeder \(MFP\)](#)
- [Clean the Tray 1 roller and separation pad](#)
- [Clean the Tray 2-X rollers](#)

## Clean the paper path

Over time, particles of toner and paper accumulate inside the printer. This can cause print-quality problems during printing. Cleaning the paper path eliminates or reduces these problems.

Clean the paper path and toner-cartridge areas every time that the toner cartridge is changed or whenever print-quality problems occur. As much as possible, keep the printer free from dust and debris.

## Print a cleaning page

### Print the cleaning from a touchscreen control panel

1. From the Home screen on the printer control panel, swipe (right), and then touch the [Support Tools](#) button.
2. Open the following menus:
  - [Maintenance](#)
  - [Calibration/Cleaning](#)
  - [Cleaning Page](#)
3. Touch the [Print](#) button.



**NOTE:** Use the [Cleaning Page](#) screen to setup an [Automatic Cleaning Interval](#). Touch the desired page interval, and then touch the [Done](#) button.


---

### Print the cleaning page from an LCD control panel

1. From the Home screen on the printer control panel, use the down arrow ▼ button to select the [Print](#) menu.
2. Use the right arrow ► button to scroll to and select the [Support Tools](#) menu, and then press the [OK](#) button.
3. Use the down arrow ▼ button to scroll to and select the [Maintenance](#) menu, and then press the [OK](#) button.
4. Use the down arrow ▼ button to scroll to and select the [Calibration/Cleaning](#) menu, and then press the [OK](#) button.

5. Use the down arrow ▼ button to scroll to **Cleaning Page**, and then press the **OK** button.
6. Use the down arrow ▼ and the right arrow ► buttons to select the **Print** item, and then press the **OK** button.

---

 **NOTE:** Use the **Cleaning Page** screen to setup an **Automatic Cleaning Interval**. Use the arrow buttons to scroll to the desired page interval, and then press the **OK** button.

---

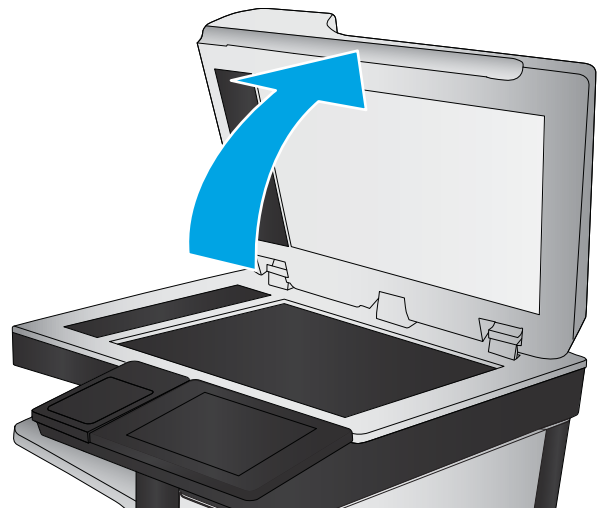
## Check the scanner glass for dirt and smudges (MFP)

Over time, specks of debris might collect on the scanner glass and white plastic backing, which can affect performance. Use the following procedure to clean the scanner if the printed pages have streaks, unwanted lines, black dots, poor print quality, or unclear text.

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



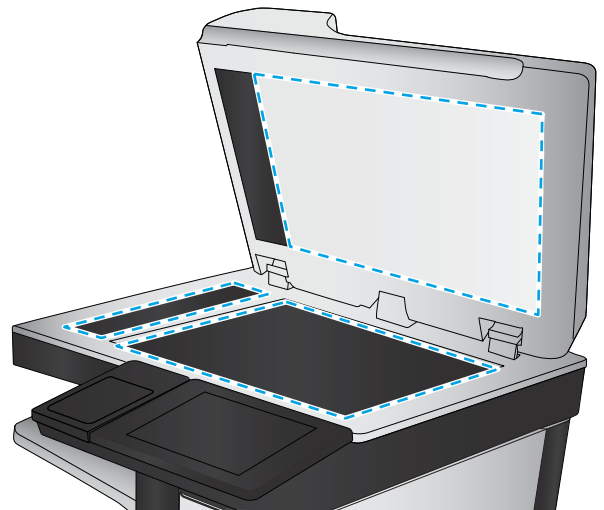
2. Open the scanner lid.



3. Clean the scanner glass, the document feeder strips, and the white plastic backing with a soft cloth or sponge that has been moistened with nonabrasive glass cleaner.

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

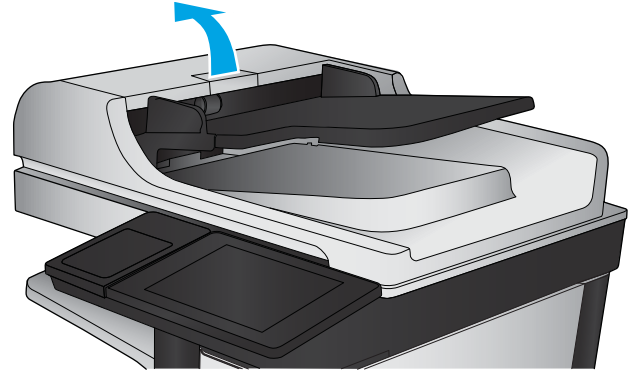
**NOTE:** If you are having trouble with streaks on copies when you are using the document feeder, be sure to clean the small strip of glass on the left side of the scanner.



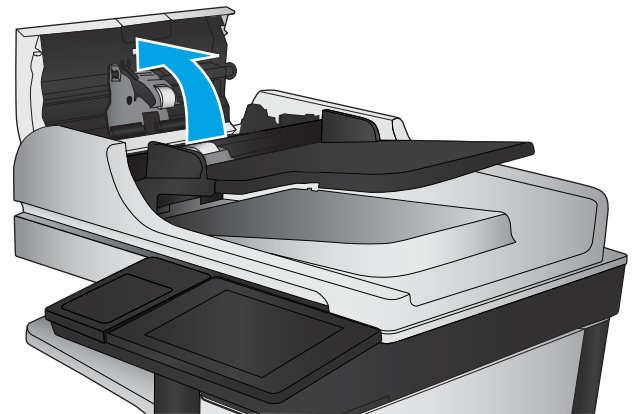
4. Dry the glass and white plastic parts with a chamois or a cellulose sponge to prevent spotting.
5. Connect the power cable to an outlet, and then press the power button to turn the printer on.

## Clean the pickup rollers and separation pad in the document feeder (MFP)

1. Lift the document-feeder latch.

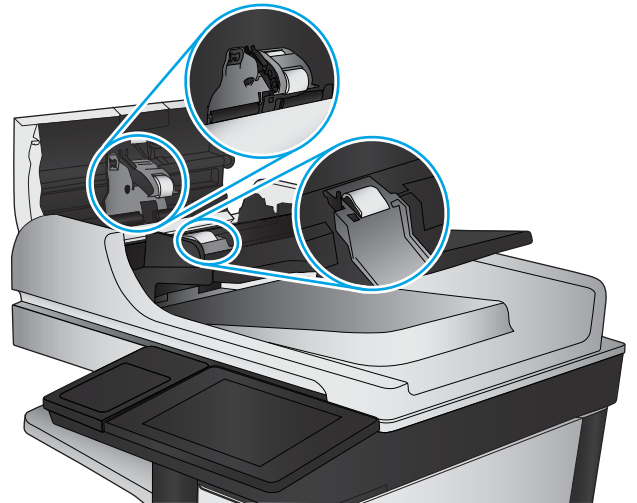


2. Open the document-feeder cover.



3. Remove any visible lint or dust from each of the feed rollers and the separation pad using compressed air or a clean lint-free cloth moistened with warm water.


**NOTE:** Lift up the roller assembly to access and clean the second roller.



4. Close the document-feeder cover.

If the error persists, install a document feeder maintenance kit (B5L52-67903 ).

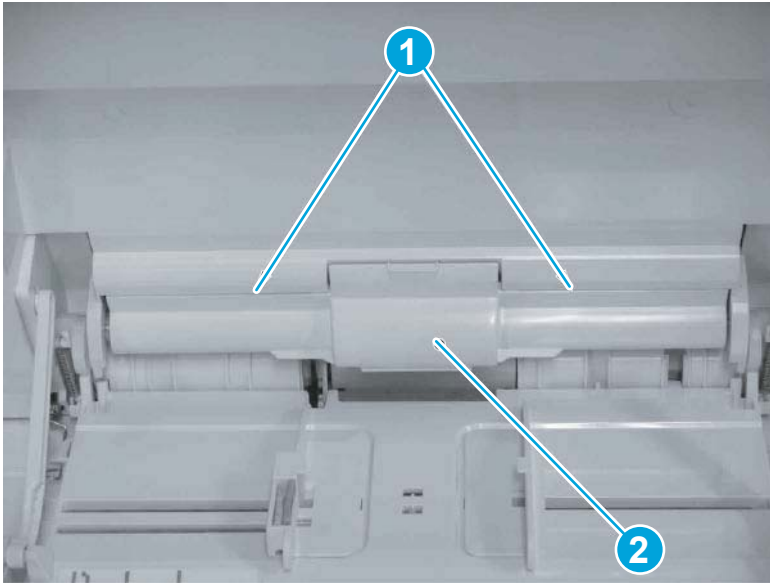
## Clean the Tray 1 roller and separation pad

 **NOTE:** The MFP printer is shown in the following figures. However, the procedure is correct for all printer models.

### Step 1: Clean the Tray 1 roller


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


**Figure 2-117** Remove the cover



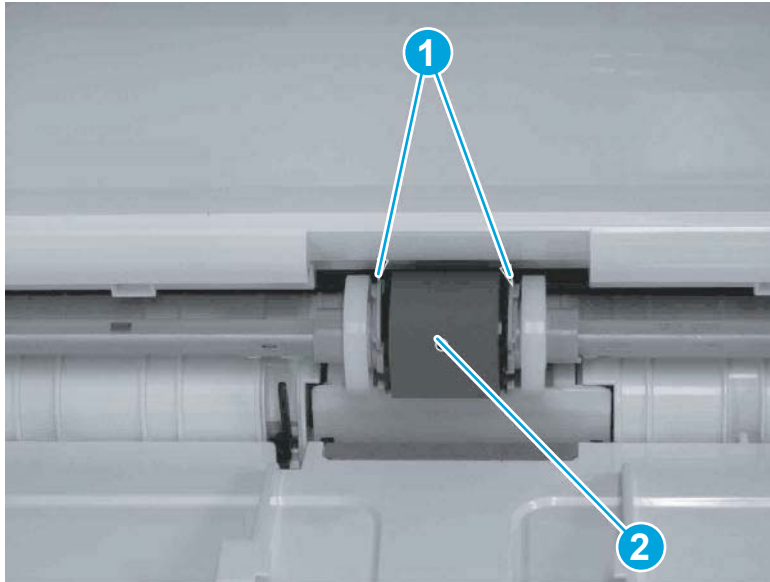
2. Release two tabs (callout 1), and then remove the roller (callout 2).

 **IMPORTANT:** Use a damp, lint-free cloth to gently clean the rollers.

 **NOTE:** When handling the rollers or pads, avoid touching the spongy surfaces. Skin oils and fingerprints on a roller surface can cause print-quality problems.

 **Reinstallation tip:** Reverse the removal steps to install the assembly.

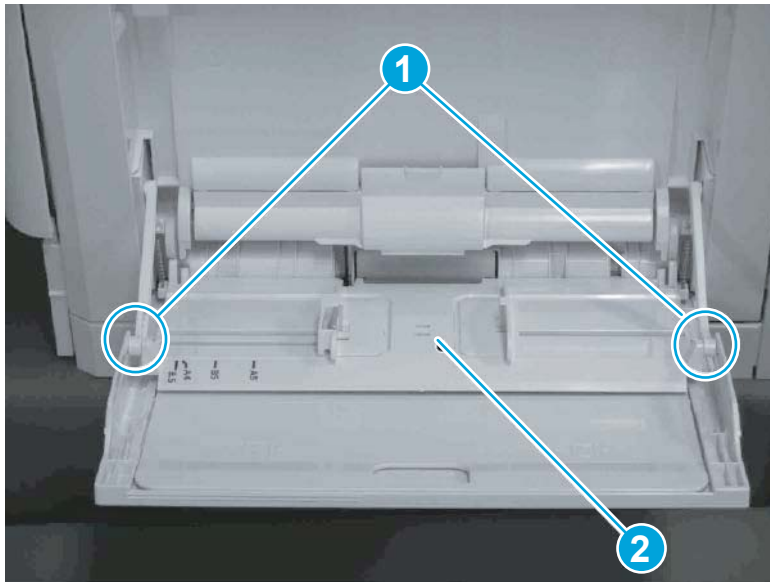
**Figure 2-118** Remove the roller



## Step 2: Clean the separation pad assembly

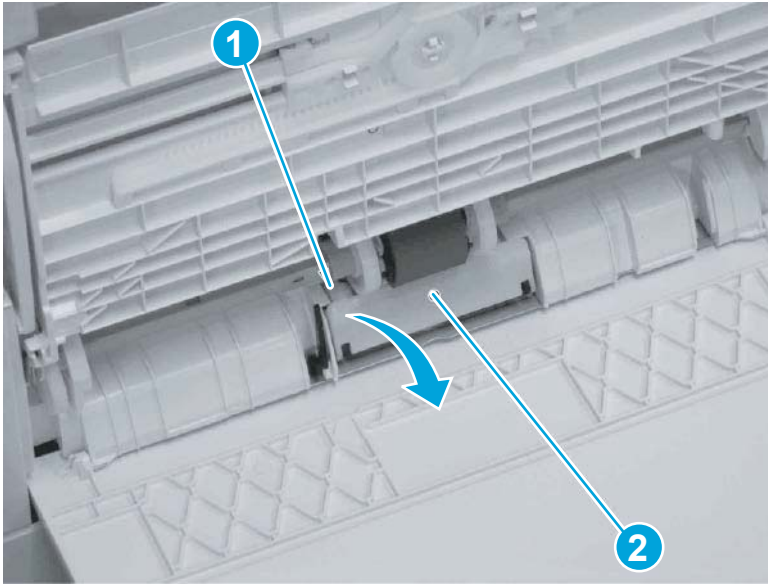
1. Open Tray 1, careful release two retainer arms (callout 1), and then move the lift plate (callout 2) up and out of the way.

**Figure 2-119** Move the lift plate out of the way



2. Release one tab (callout 1), and then rotate the top of the cover (callout 2) down to release it.


**Figure 2-120** Release the cover




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

---

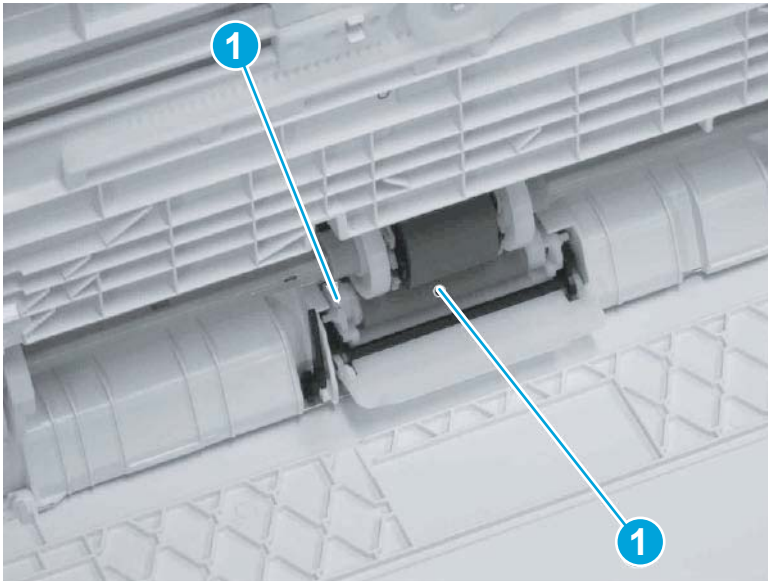
 **IMPORTANT:** Use a damp, lint-free cloth to gently clean the rollers.

 **NOTE:** When handling the rollers or pads, avoid touching the spongy surfaces. Skin oils and fingerprints on a roller surface can cause print-quality problems.

 **Reinstallation tip:** Reverse the removal steps to install the assembly.

---

**Figure 2-121** Remove the roller





## Clean the Tray 2-X rollers

**CAUTION:** Removing and reinstalling the separation roller, and reinstalling the pick and feed roller assembly requires specialized tools. These tools are provided in a replacement roller kit. If these tools are not available, the rollers should not be removed and cleaned.

### Step 1: Clean the Tray 2-X rollers

1. Open the paper tray for which the rollers will be replaced.

**Figure 2-122** Open the tray (M607/M608/M609)



**Figure 2-123** Open the tray (M631/M632/M633)



2. **M607, M608, and M609 Tray 2 rollers only:** At the rear of the printer, do the following:  
**M631, M632, and M633 Tray 2 rollers only:** At the right side of the printer, do the following:

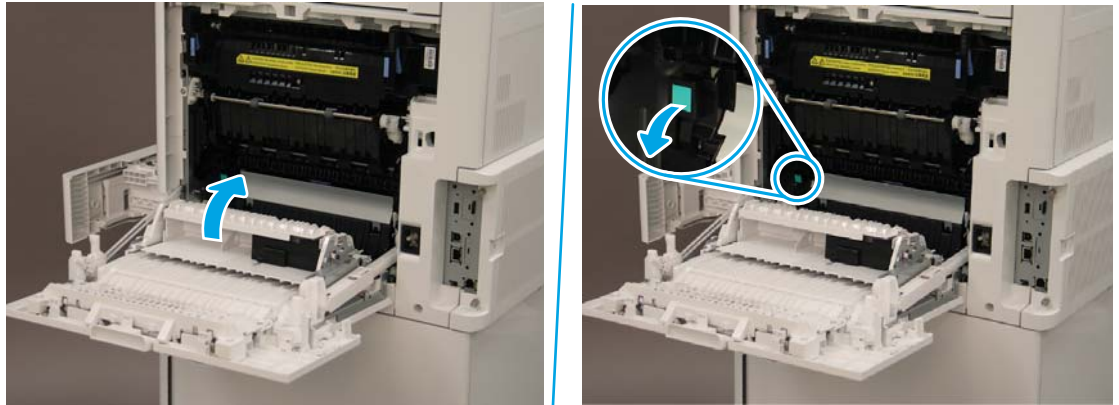
**NOTE:** When this step is complete, go to step 5.

- a. Open the rear cover.
- b. Raise the transfer assembly.


- c. Lower the access cover.

 **NOTE:** The M631/ M632/M633 printer is shown below. However the instructions are valid for the M607/M608/M609 printer.

**Figure 2-124** Lower the access cover (Tray 2 rollers)



- 3. **Tray 3 rollers only:** Open the lower door, and then lower the access cover.

 **NOTE:** When this step is complete, go to step 5.

**Figure 2-125** Lower the access cover (Tray 3 rollers)



- M631z/M632fht/Flow M632z/FlowM633z only:** Open the right door of the paper feeder. Locate the green tab on the feed assembly cover. Release the tab to lower the access cover.

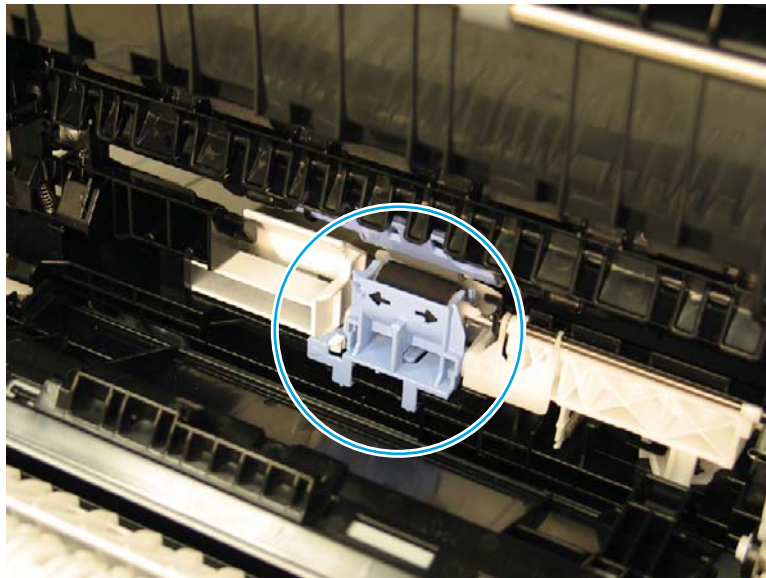
 **NOTE:** When this step is complete, go to step 5.

**Figure 2-126** Lower the access cover (M631z/M632fht/Flow M632z/FlowM633z)



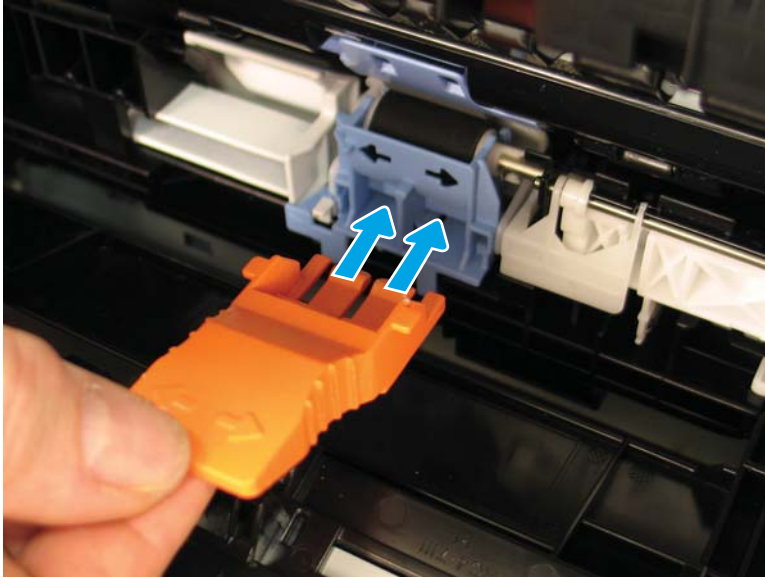
- Locate the separation roller.

**Figure 2-127** Locate the separation roller



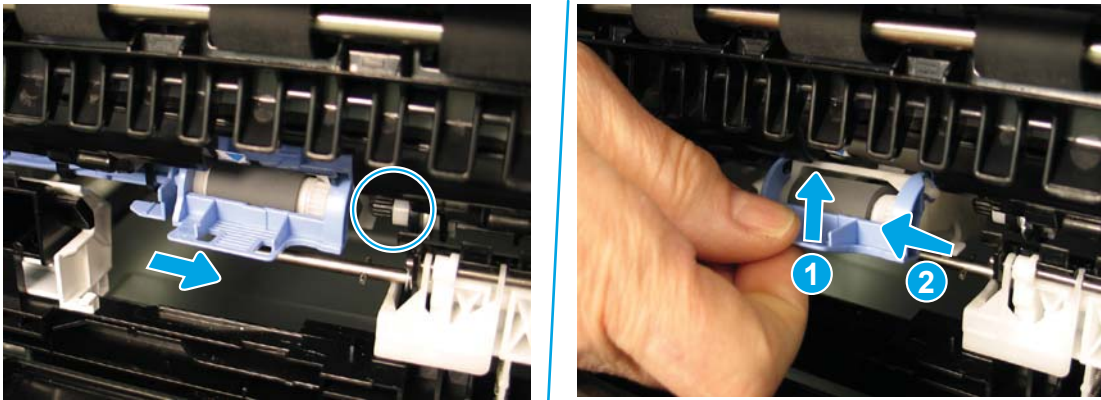
6. Install the orange tool on the separation roller until it snaps into place.

**Figure 2-128** Install the separation roller tool




7. Slide the roller to the left.


**Figure 2-129** Slide the roller to the left



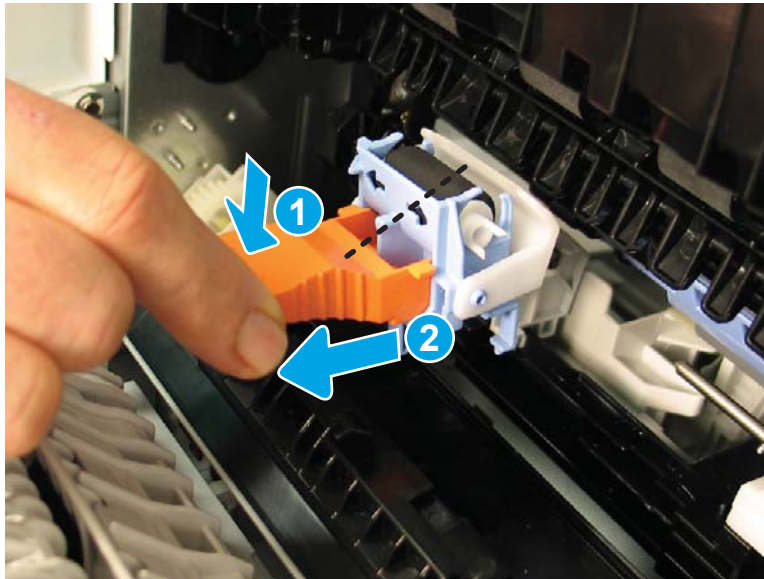
8. Tilt the end of the tool down (callout 1) and then pull straight out of the printer (callout 2) to remove the separation roller.

 **IMPORTANT:** Use a damp, lint-free cloth to gently clean the rollers.

 **NOTE:** When handling rollers or pads, avoid touching the spongy surfaces. Skin oils and fingerprints on a roller surface can cause print-quality problems.

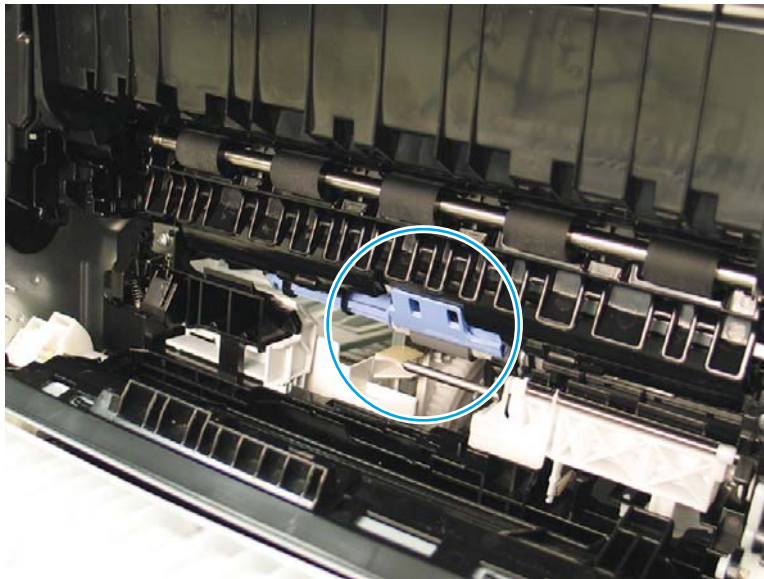
 **Reinstallation tip:** Leave the roller tool attached to the roller assembly. The tool is necessary to reinstall the separation roller.

**Figure 2-130** Remove the roller



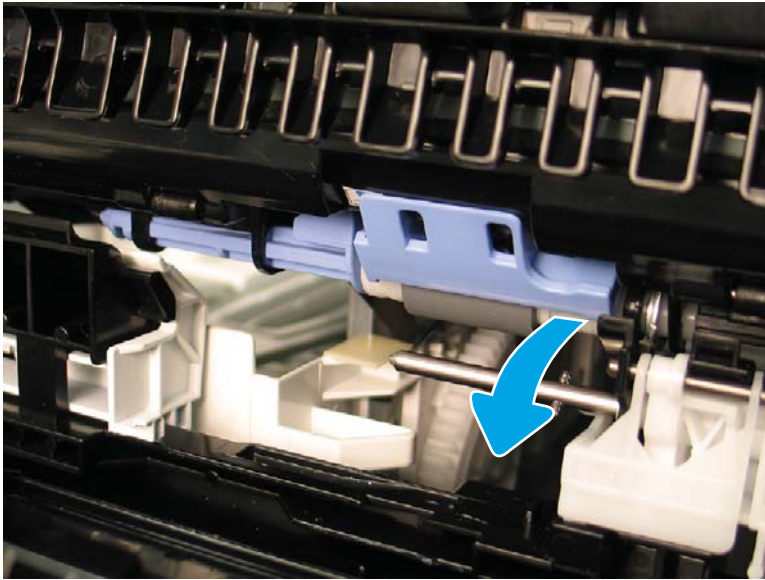
9. Locate the pickup and feed roller.

**Figure 2-131** Locate the pickup and feed roller



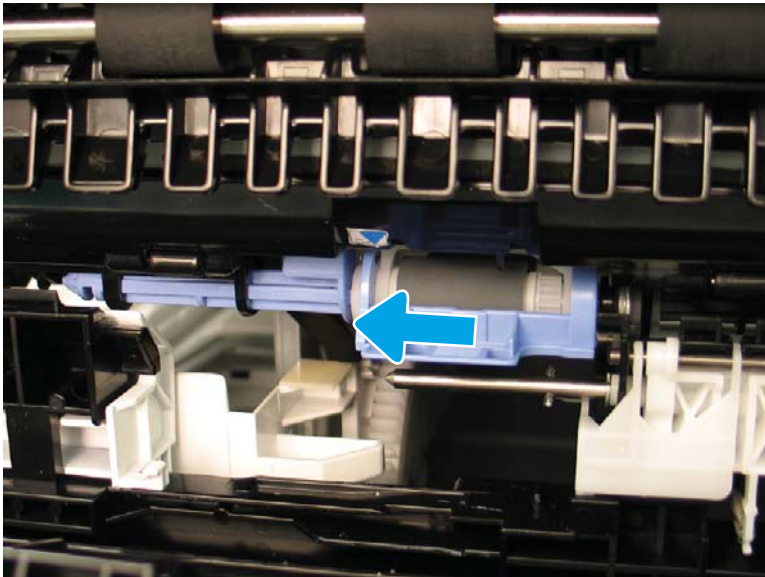
10. Locate and pull down the blue tab to unlock the pickup and feed rollers.

**Figure 2-132** Unlock the pickup and feed rollers



11. Use the tab as a handle to slide the rollers to the left to compress the left blue post until it clicks into place.

**Figure 2-133** Slide the rollers to the left




12. Slightly move the rollers to the right to free them from the blue post. Make sure that the roller is clear of the black post on the right.

Slightly lift up the front of the roller assembly (callout 1), and then pull the assembly away from the printer (callout 2) to remove it.

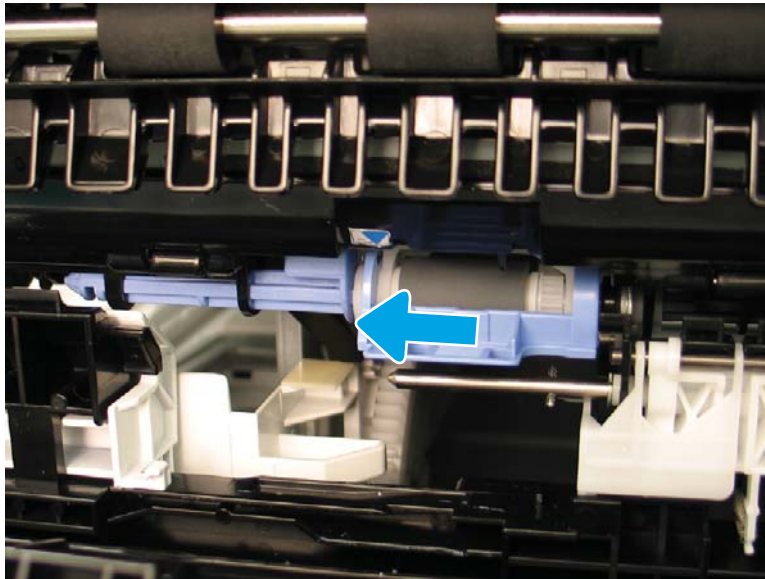
---

 **IMPORTANT:** Use a damp, lint-free cloth to gently clean the rollers.

 **NOTE:** When handling rollers or pads, avoid touching the spongy surfaces. Skin oils and fingerprints on a roller surface can cause print-quality problems.

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**Figure 2-134** Remove the rollers



## Solve paper handling problems

- [Printer feeds incorrect page size](#)
- [Printer pulls from incorrect tray](#)
- [Printer will not duplex or duplexes incorrectly](#)
- [Paper does not feed from Tray 2-X](#)
- [Output is curled or wrinkled](#)
- [Printer does not pick up paper or misfeeds](#)
- [Clear paper jams](#)

### Printer feeds incorrect page size

**Table 2-72 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 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.

### Printer pulls from incorrect tray

**Table 2-73 Printer pulls from incorrect tray**

Cause	Solution
A driver for a different printer is in use.	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

**Table 2-74 Printer will not duplex (print 2-sided jobs) or duplexes incorrectly**

Cause	Solution
The duplex job is trying to use unsupported paper.	Verify that the paper is supported for duplex printing.



**Table 2-74 Printer will not duplex (print 2-sided jobs) or duplexes incorrectly (continued)**

Cause	Solution
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-X, load the paper printed side up with the top of the page toward the right of the printer.
The printer model does not support automatic 2-sided printing.	The printer model does not support automatic 2-sided printing.

## Paper does not feed from Tray 2-X

**Table 2-75 Paper does not feed from Tray 2-X**

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

**Table 2-76 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.
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 is damaged or in poor condition.	Remove paper from the input tray and load paper that is in good condition.

**Table 2-76 Output is curled or wrinkled (continued)**

Cause	Solution
The printer is operating in an excessively humid environment.	Verify that the printing environment is within humidity specifications.
The print job consist of 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

Use the following procedures if the printer will not pick or misfeeds paper.

### The printer does not pick up paper

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



**NOTE:** Tray 1 and Tray 2 are optimal for paper pickup when using special paper or media other than 20lb plain paper. For Tray 1 and Tray 2 the printer increases the number of attempts to pick up a page, which increases the reliability of successfully picking the page from the tray and decreases the possibility of a mispick jam.

HP recommends using Tray 1 or Tray 2 if the printer is experiencing excessive or reoccurring jams from trays other than Tray 1 and Tray 2, or for print jobs that require media other than 20lb plain paper.

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 rollers above the tray 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)

- Check to see if there are areas on the page that might have had staples removed. This can cause jams and/or mispicks.
- 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 correctly installed.
- 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

**Table 2-77 Paper does not feed automatically**

Cause	Solution
Manual feed is selected in the software program.	Load Tray 1 with paper, or, if the paper is loaded, press the <b>OK</b> 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.

**Table 2-77 Paper does not feed automatically (continued)**

<b>Cause</b>	<b>Solution</b>
The paper size is not configured correctly for the input tray.	Print a configuration page or use the control panel to determine the paper size for which the tray is configured.
The guides in the tray are not against the paper.	Verify that the rear and width paper guides are touching the paper.

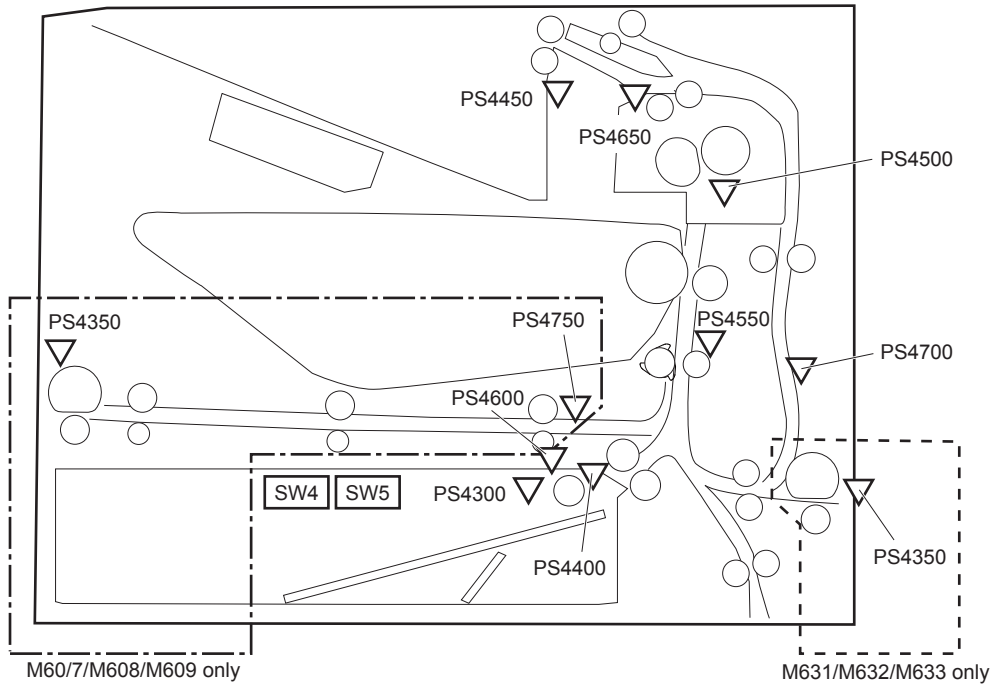
## Clear paper jams

- [Paper path jam sensor locations](#)
- [Paper jam locations \(M631, M632, and M633\)](#)
- [Paper jam locations \(M607, M608, and M609\)](#)
- [Auto-navigation for clearing jams](#)
- [Experiencing frequent or recurring paper jams?](#)
- [Clear paper jams in the document feeder](#)
- [Clear paper jams in Tray 1 \(M631, M632, and M633\)](#)
- [Clear paper jams in Tray 1 \(M607, M608, and M609\)](#)
- [Clear paper jams in Trays 2, 3, 4, or 5 \(M631, 632, and 633\)](#)
- [Clear paper jams in Trays 2, 3, or 4 \(M607, M608, and M609\)](#)
- [Clear paper jams in the 2,550-sheet high-capacity input tray \(M631, M632, and M633\)](#)
- [Clear paper jams in the 2,100-sheet high-capacity input tray \(M607, M608, and M609\)](#)
- [Clear paper jams in the right door and fuser area \(M631, M632, and M633\)](#)
- [Clear paper jams in the rear door and fuser area \(M607, M608, and M609\)](#)
- [Clear paper jams in the output bin \(M631, M632, and M633\)](#)
- [Clear paper jams in the output bin \(M607, M608, and M609\)](#)
- [Clear paper jams in the duplexer \(M631, M632, and M631\)](#)
- [Clear paper jams in the duplexer \(M607, M608, and M609\)](#)
- [Clear paper jams in the envelope feeder \(M631, M632, and M633\)](#)
- [Clear paper jams in the envelope feeder \(M607, M608, and M609\)](#)
- [Clear paper jams in the HP Stapling Mailbox \(M631, M632, and M633\)](#)
- [Clear paper jams in the HP Stapling Mailbox accessory \(M607, M608, and M609\)](#)
- [Clear staple jams \(M631, M632, and M633\)](#)
- [Clear staple jams \(M607, M608, and M609\)](#)
- [Change jam recovery](#)

## Paper path jam sensor locations

 **NOTE:** Use the figures below to identify the locations of sensors where recurring jams are found.

**Figure 2-135** Printer base, sensors (pickup, feed, and delivery) block diagram



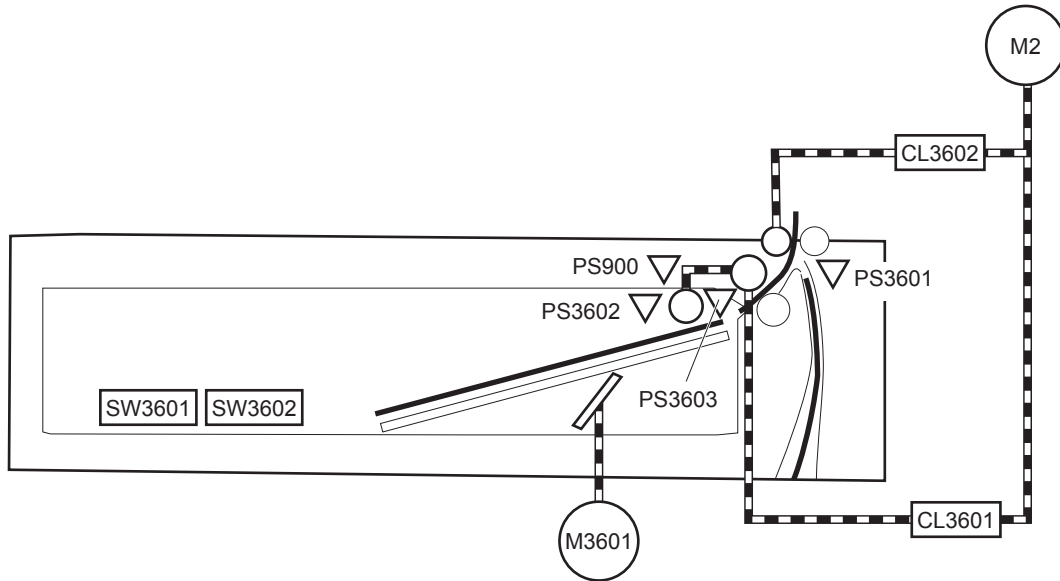
**Table 2-78** Printer base, sensors (pickup, feed, and delivery) block diagram

Item	Description	Item	Description
PS4300	Tray 2 media out sensor	PS4600	Retard roller rotation sensor
PS4350	Tray 1 media out sensor	PS4650	Fuser output sensor
PS4400	Tray 2 media surface sensor	PS4700	Duplex feed sensor
PS4450	FD1 media full sensor	PS4750	Tray 1 feed sensor
PS4500	Fuser loop sensor	SW4	Tray 2 media size switch 1
PS4550	Registration sensor	SW5	Tray 2 media size switch 2

<sup>1</sup> M607, M608, and M609 duplex models and M631, M632, and M633 only.

<sup>2</sup> M607, M608, and M609 models only.

**Figure 2-136** 1x550-sheet paper feeder, electrical components block diagram



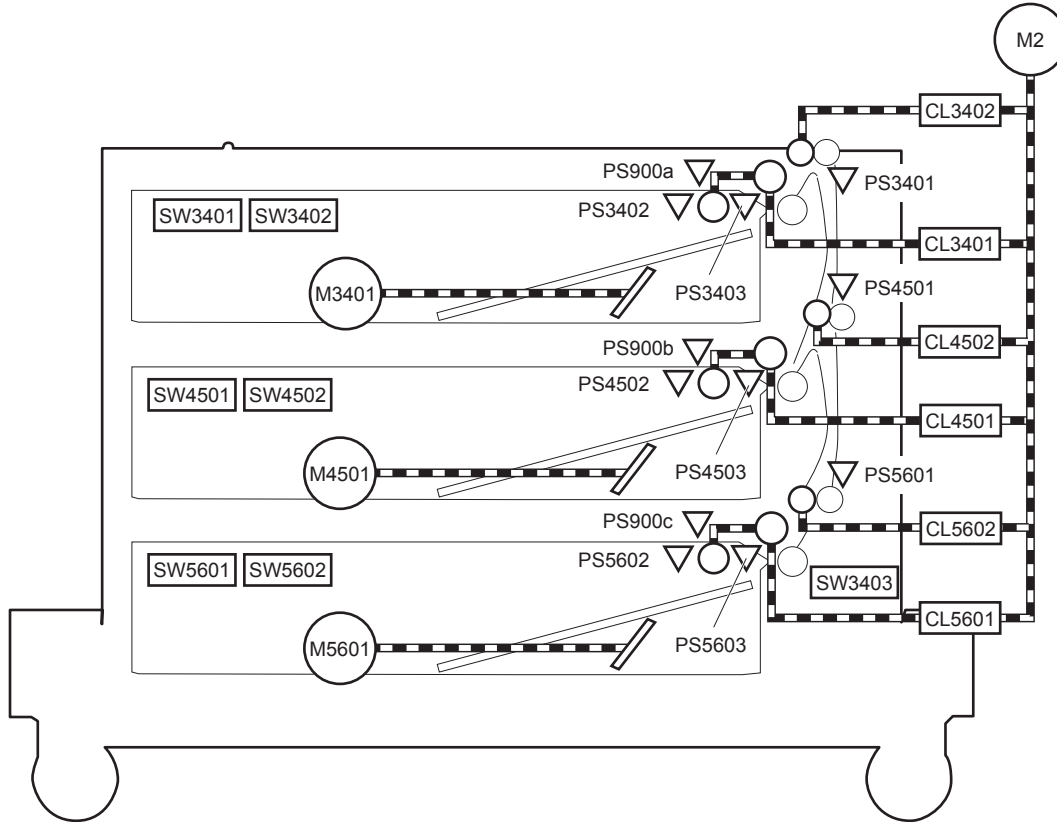
**Table 2-79** 1x550-sheet paper feeder, electrical components block diagram

Item	Description	Item	Description
M2	Drum motor	SW3603	PF Door switch
M3601	PF Lifter motor	PS3601	PF Feed sensor
CL3601	PF pickup clutch	PS3602	PF Media out sensor
CL3602	PF Feed clutch	PS3603	PF Media surface sensor
SW3601	PF Media size switch 1	PS900	PF Retard roller rotation sensor
SW3602	PF Media size switch 2		

<sup>1</sup> Located in the printer.

<sup>2</sup> 1x500-sheet paper feeder only.

**Figure 2-137** 1x550-sheet and 3x550-sheet paper decks, electrical components block diagram



**Table 2-80** 1x550-sheet and 3x550-sheet paper decks, electrical components block diagram

Item	Description	1x550 PD	3x550 PD
M2	Drum motor	No	No
M3401	PD cassette 1 lifter motor	Yes	Yes
M4501	PD cassette 2 lifter motor	No	Yes
M5601	PD cassette 3 lifter motor	No	Yes
CL3401	PD cassette 1 pickup clutch	Yes	Yes
CL3402	PD cassette 1 feed clutch	Yes	Yes
CL4501	PD cassette 2 pickup clutch	No	Yes
CL4502	PD cassette 2 feed clutch	No	Yes
CL5601	PD cassette 3 pickup clutch	No	Yes
CL5602	PD cassette 3 feed clutch	No	Yes
SW3401	PD Cassette 1 media size switch 1	Yes	Yes
SW3402	PD Cassette 1 media size switch 2	Yes	Yes
SW4501	PD Cassette 2 media size switch 1	No	Yes
SW4502	PD Cassette 2 media size switch 2	No	Yes
SW5601	PD Cassette 3 media size switch 1	No	Yes
SW5602	PD Cassette 3 media size switch 2	No	Yes

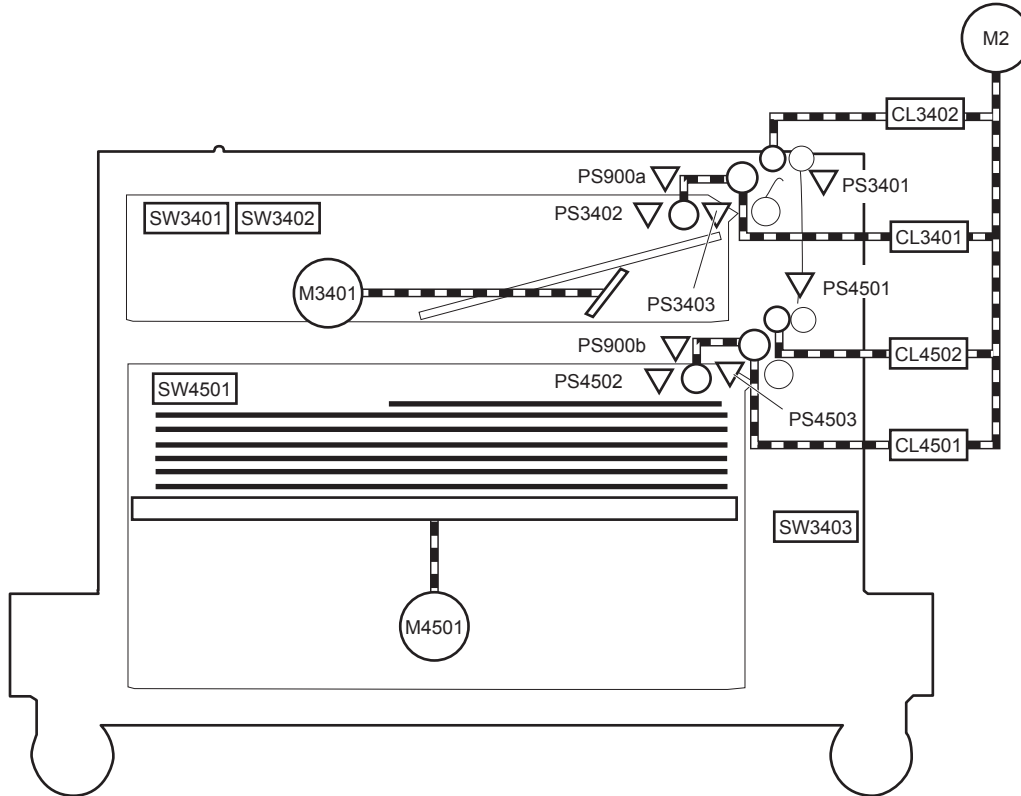


**Table 2-80 1x550-sheet and 3x550-sheet paper decks, electrical components block diagram (continued)**

<b>Item</b>	<b>Description</b>	<b>1x550 PD</b>	<b>3x550 PD</b>
SW3403	PD door switch	Yes	Yes
PS3401	PD cassette 1 feed sensor	Yes	Yes
PS3402	PD cassette 1 media out sensor	Yes	Yes
PS3403	PD cassette 1 media surface sensor	Yes	Yes
PS4501	PD cassette 2 feed sensor	No	Yes
PS4502	PD cassette 2 media out sensor	No	Yes
PS4503	PD cassette 2 media surface sensor	No	Yes
PS5601	PD cassette 3 feed sensor	No	Yes
PS5602	PD cassette 3 media out sensor	No	Yes
PS5603	PD cassette 3 media surface sensor	No	Yes
PS900a	PD retard roller rotation sensor 1	Yes	Yes
PS900b	PD retard roller rotation sensor 2	No	Yes
PS900c	PD retard roller rotation sensor 3	No	Yes

<sup>1</sup> Located in the printer.

**Figure 2-138** 2,550-sheet paper deck, electrical components block diagram

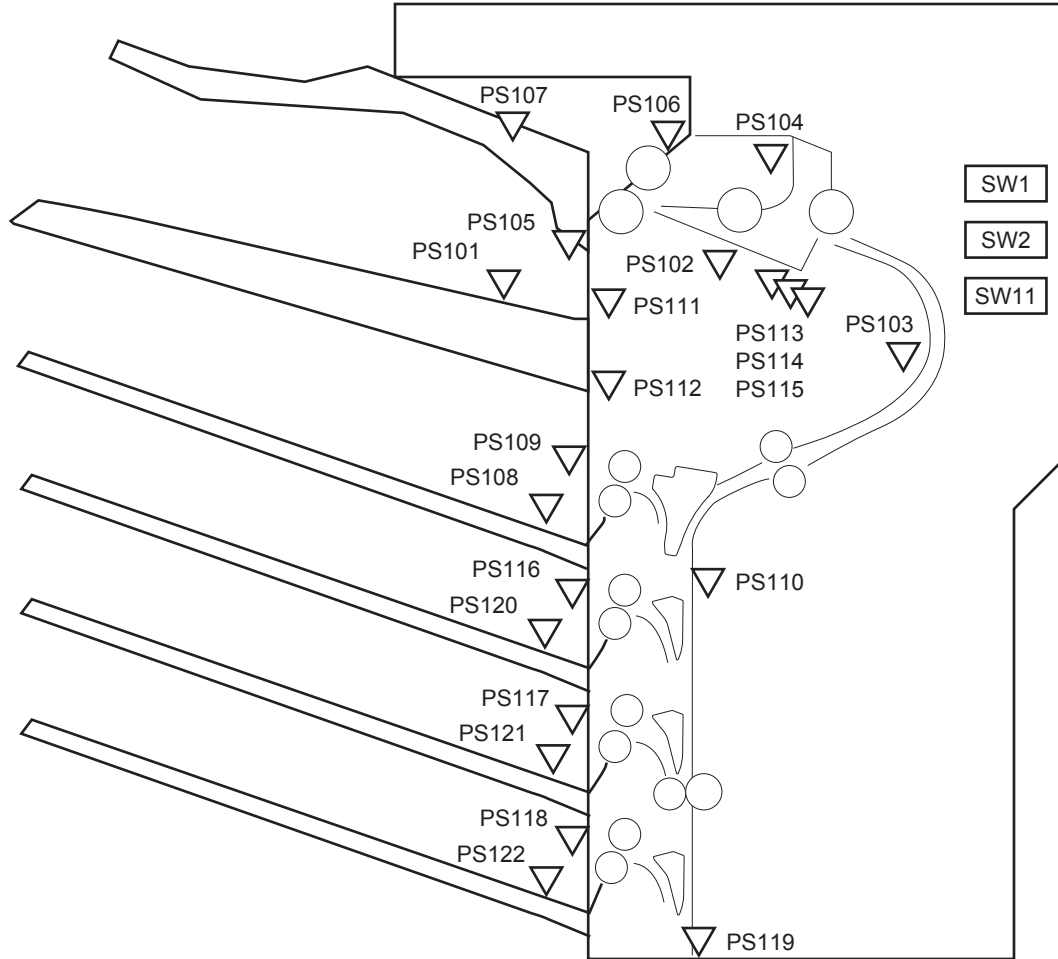


**Table 2-81** 2,550-sheet paper deck, electrical components block diagram

Item	Description	Item	Description
M2	Drum motor	SW3403	PD door switch
M3401	PD cassette 1 lifter motor	PS3401	PD cassette 1 feed sensor
M4501	PD cassette 2 lifter motor	PS3402	PD cassette 1 media out sensor
CL3401	PD cassette 1 pickup clutch	PS3403	PD cassette 1 media surface sensor
CL3402	PD cassette 1 feed clutch	PS900	Retard roller rotation sensor
CL4501	PD cassette 2 pickup clutch	PS4501	PD cassette 2 feed sensor
CL4502	PD cassette 2 feed clutch	PS4502	PD cassette 2 media out sensor
SW3401	PD Cassette 1 media size switch 1	PS4503	PD cassette 2 media surface sensor
SW3402	PD Cassette 1 media size switch 2	PS900a	PD retard roller rotation sensor 1
SW4501	PD Cassette 2 media size switch 1	PS900b	PD retard roller rotation sensor 2

<sup>1</sup> Located in the printer.

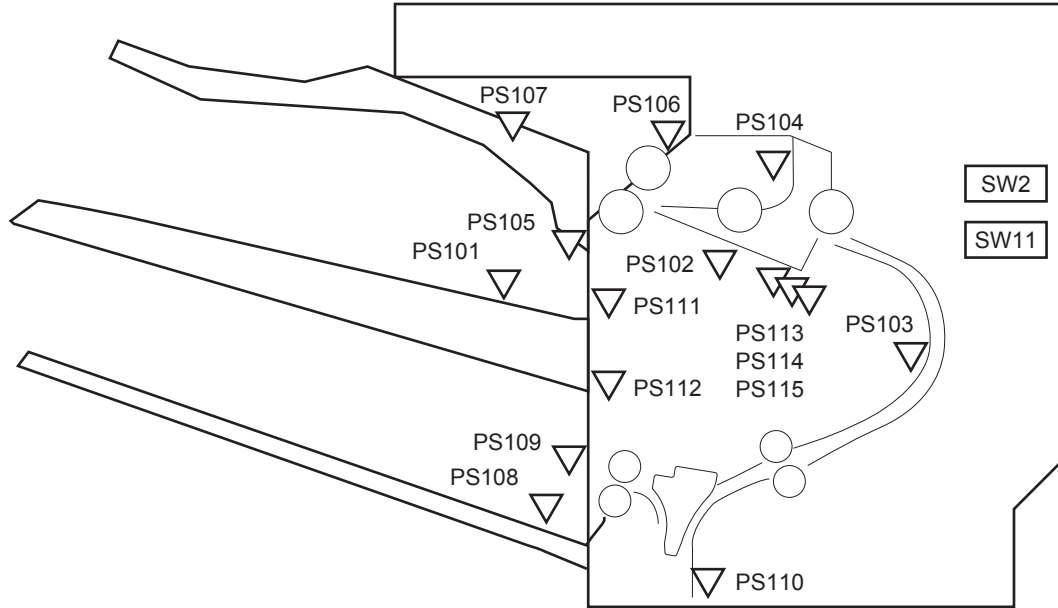
**Figure 2-139** Stapler stacker multi bin mailbox (5 bin; SSBM), sensors and switches block diagram



**Table 2-82** Stapler stacker multi bin mailbox (5 bin; SSBM), sensors and switches block diagram

Item	Description	Item	Description
PS101	Bin 1 media presence sensor	PS114	Staple ready sensor
PS102	SS exit sensor	PS115	Staple home position sensor
PS103	Staple inlet sensor	PS116	Bin 3 media full sensor
PS104	Y alignment home position sensor	PS117	Bin 4 media full sensor
PS105	Bin 1 media full sensor	PS118	Bin 5 media full sensor
PS106	Alienation home position sensor	PS119	MBM inlet sensor
PS107	Jogger home position sensor	PS120	Bin 3 media presence sensor
PS108	Bin 2 media presence sensor	PS121	Bin 4 media presence sensor
PS109	Bin 2 media full sensor	PS122	Bin 5 media presence sensor
PS110	SS inlet sensor	SW1	MBM door switch
PS111	Bin 1 upper limit sensor	SW2	SS door switch
PS112	Bin 1 lower limit sensor	SW11	Staple door switch
PS113	Staple low sensor		

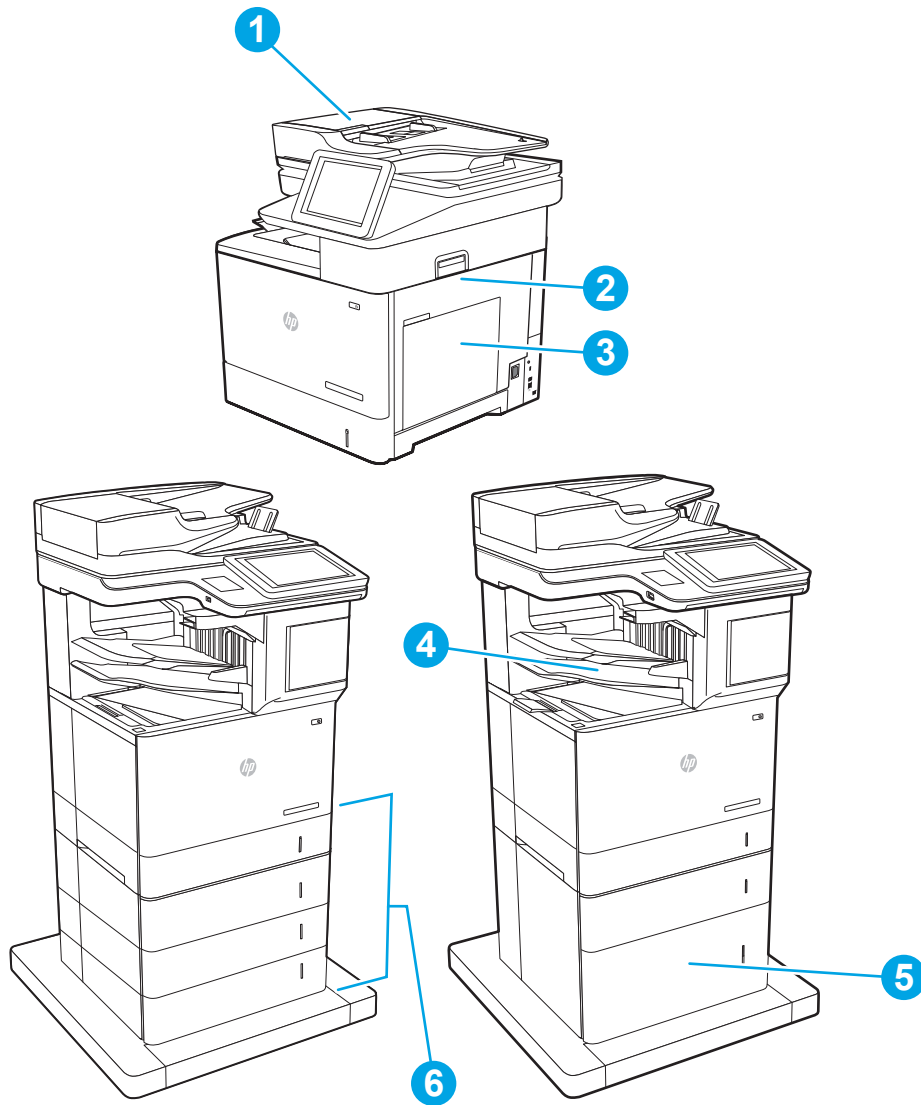
**Figure 2-140** Stapler stacker multi bin mailbox (2 bin; SSBM), sensors and switches block diagram



**Table 2-83** Stapler stacker multi bin mailbox (2 bin; SSBM), sensors and switches block diagram

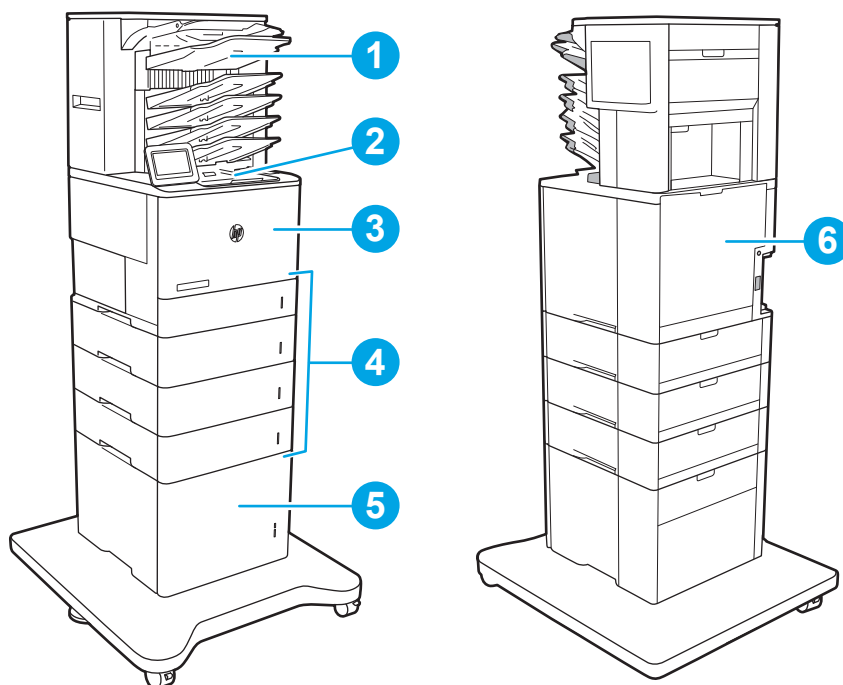
Item	Description	Item	Description
PS101	Bin 1 media presence sensor	PS110	SS inlet sensor
PS102	SS exit sensor	PS111	Bin 1 upper limit sensor
PS103	Staple inlet sensor	PS112	Bin 1 lower limit sensor
PS104	Y alignment home position sensor	PS113	Staple low sensor
PS105	Bin 1 media full sensor	PS114	Staple ready sensor
PS106	Alienation home position sensor	PS115	Staple home position sensor
PS107	Jogger home position sensor	SW2	SS door switch
PS108	Bin 2 media presence sensor	SW11	Staple door switch
PS109	Bin 2 media full sensor		

## Paper jam locations (M631, M632, and M633)



1	Document feeder
2	Duplexer and fuser
3	Tray 1
4	Output bin, HP Stapling Mailbox
5	2,100-sheet HCl feeder
6	Trays 2-5 Envelope feeder (not shown)

## Paper jam locations (M607, M608, and M609)



1	HP Stapling Mailbox
2	Output bin
3	Tray 1
4	Trays 2–5
5	2,100-sheet HCI feeder
6	Duplexer and fuser
	Envelope feeder (not shown)

## Auto-navigation for clearing jams

The auto-navigation feature assists you in clearing jams by providing step-by-step instructions on the control panel. When you complete a step, the product displays instructions for the next step until you have completed all steps in the procedure.

## Experiencing frequent or recurring paper jams?

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

1. Use only paper that meets HP specifications for this product.
2. Use paper that is not wrinkled, folded, or damaged. If necessary, use paper from a different package.
3. Use paper that has not previously been printed or copied on.
4. Make sure the tray is not overfilled. If it is, remove the entire stack of paper from the tray, straighten the stack, and then return some of the paper to the tray.

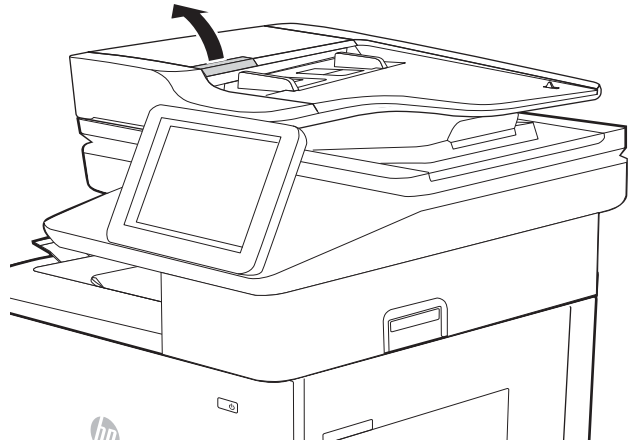
5. Make sure the paper guides in the tray are adjusted correctly for the size of paper. Adjust the guides so they are touching the paper stack without bending it.
6. Make sure that the tray is fully inserted in the product.
7. If you are printing on heavy, embossed, or perforated paper, use the manual feed feature and feed sheets one at a time.
8. Open the [Trays](#) menu on the product control panel. Verify that the tray is configured correctly for the paper type and size.
9. Make sure the printing environment is within recommended specifications.

## Clear paper jams in the document feeder

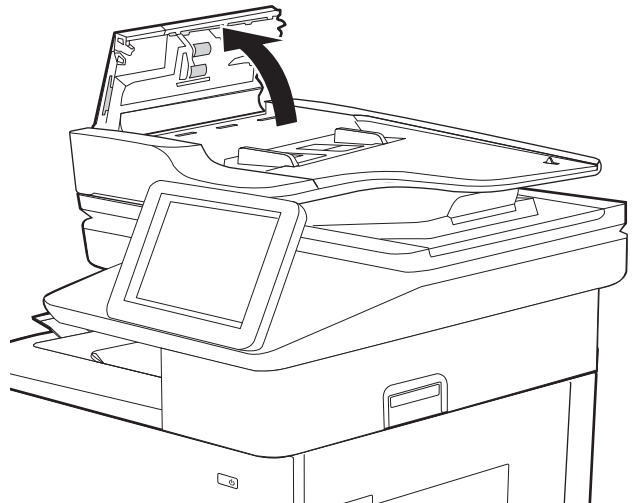
The following information describes how to clear paper jams in the document feeder. When a jam occurs, the control panel displays the following message and an animation that assists in clearing the jam.

- **31.13.XX Jam in Document Feeder**

1. Lift the latch to release the document-feeder cover.

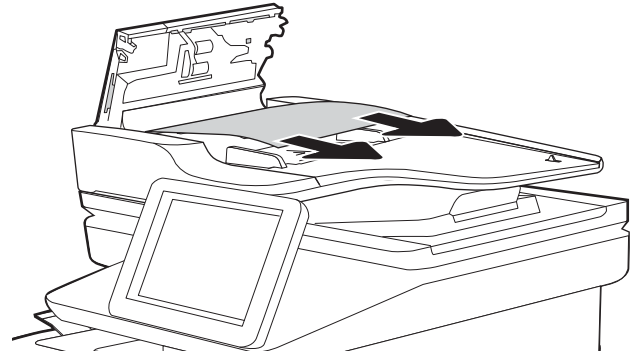


2. Open the document-feeder cover.

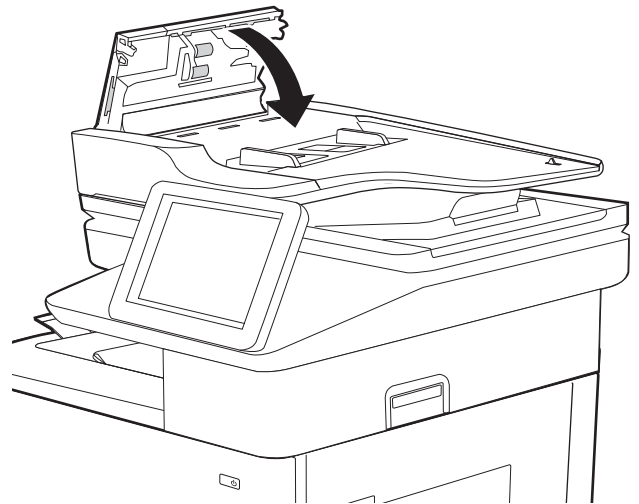





3. Remove any jammed paper.




4. Close the document-feeder cover.



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 **NOTE:** To avoid jams, make sure the guides in the document-feeder input tray are adjusted tightly against the document. Remove all staples and paper clips from original documents.

 **NOTE:** Original documents that are printed on heavy, glossy paper can jam more frequently than originals that are printed on plain paper.

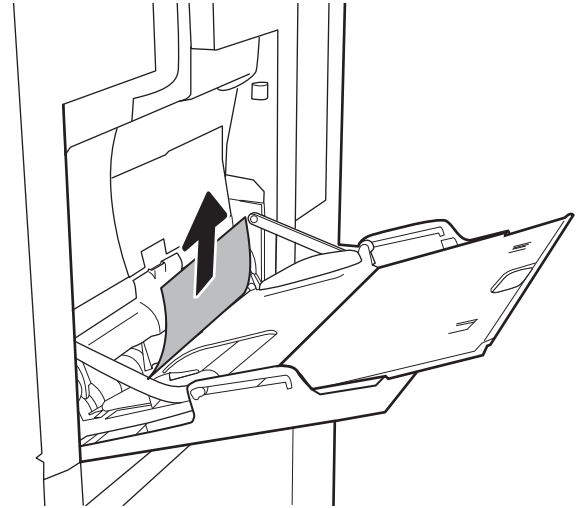
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## Clear paper jams in Tray 1 (M631, M632, and M633)

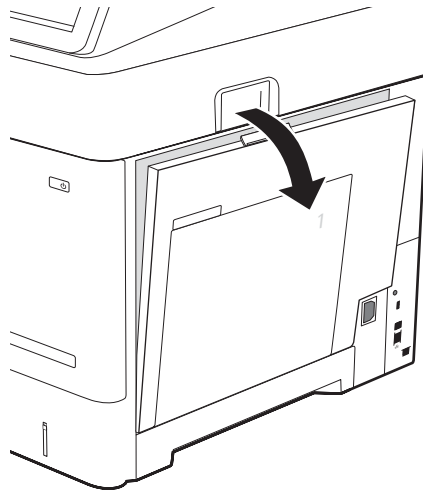
The following information describes how to clear a paper jam in Tray 1. When a jam occurs, the control panel displays the following message and an animation that assists in clearing the jam.

- **13.A1.XX Jam in Tray 1**

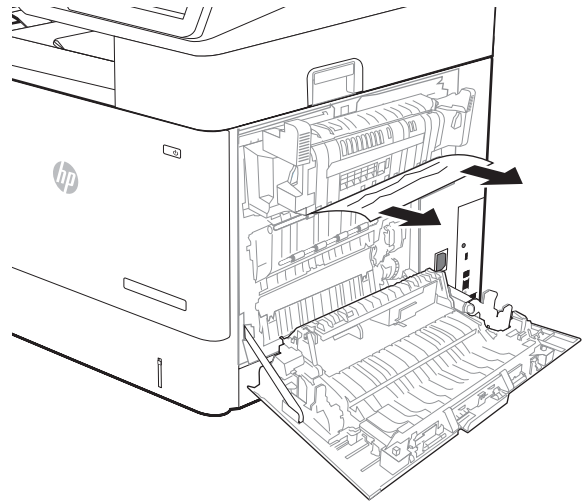
1. If jammed paper is visible in Tray 1, clear the jam by gently pulling the paper straight out.



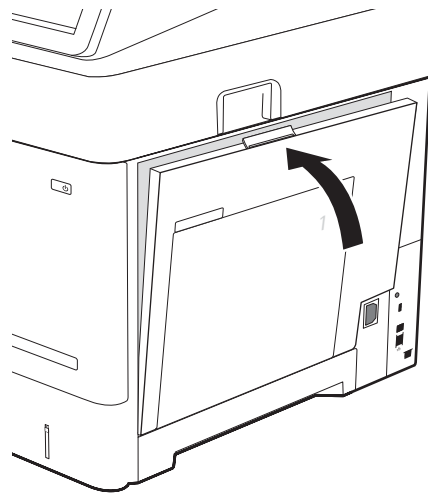
2. If you cannot remove the paper, or if no jammed paper is visible in Tray 1, close Tray 1 and open the right door.



3. Gently pull out any jammed paper.



4. Close the right door.

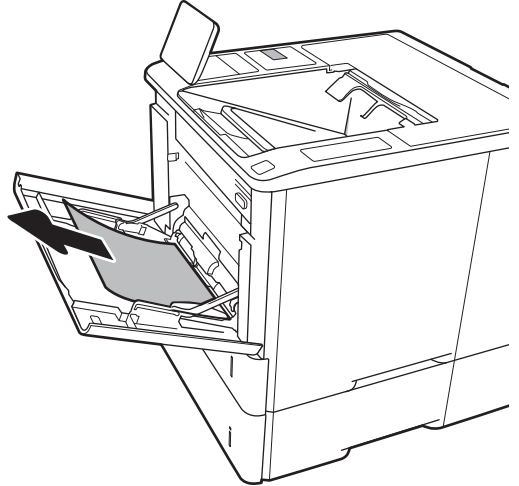


## Clear paper jams in Tray 1 (M607, M608, and M609)

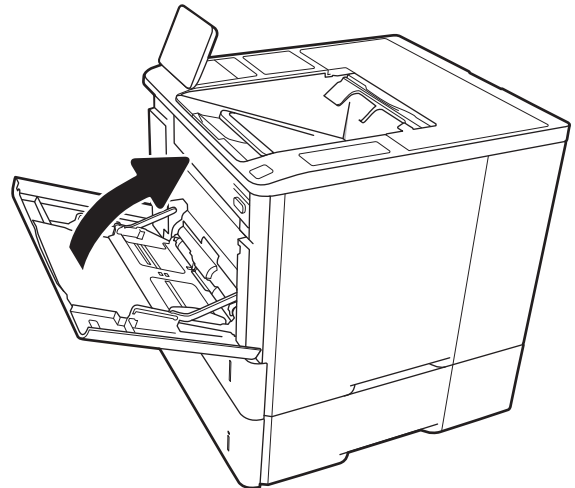
The following information describes how to clear a paper jam in Tray 1. When a jam occurs, the control panel displays the following message and an animation that assists in clearing the jam.

- **13.A1.XX Jam in Tray 1**

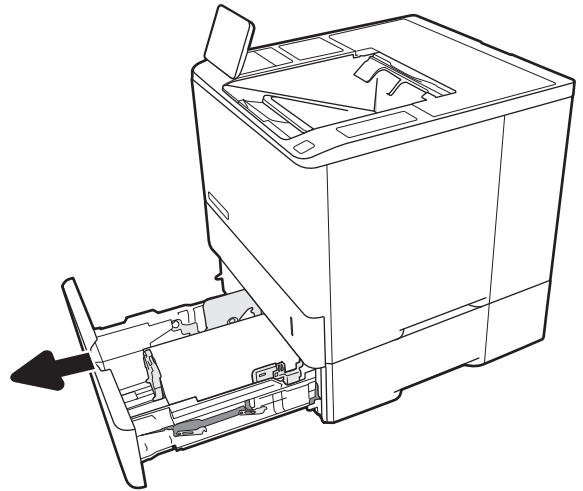
1. If jammed paper is visible in Tray 1, clear the jam by gently pulling the paper straight out.



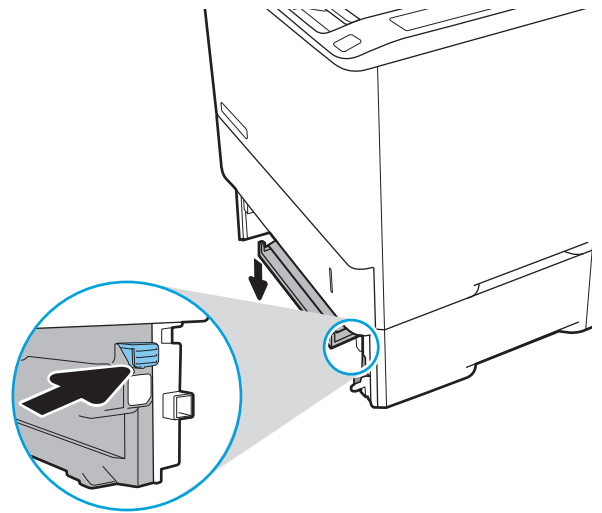
2. Close Tray 1.



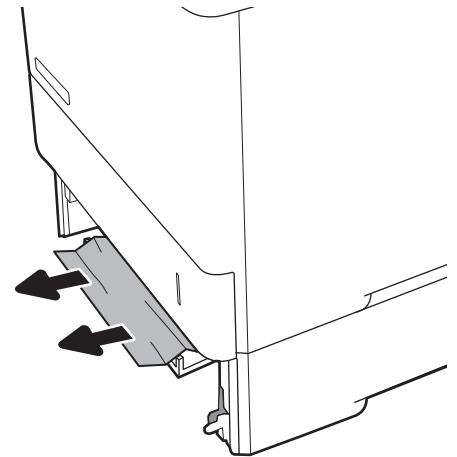
3. Pull Tray 2 out of the printer.



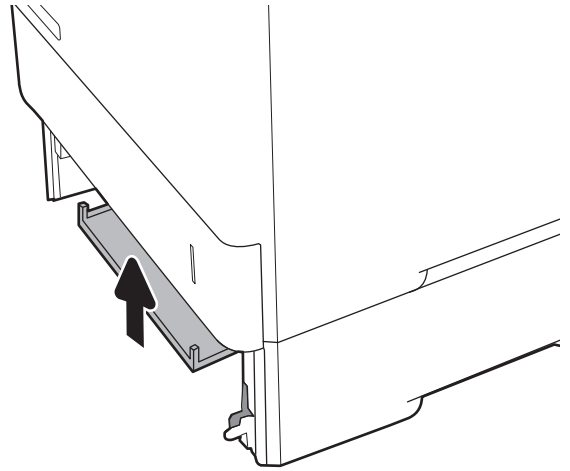
4. Lower the jam plate in the Tray 2 opening.



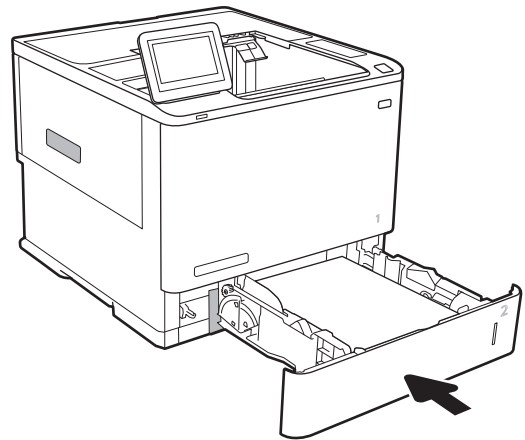
5. Pull any jammed paper straight out.



6. Raise the jam plate back into position.



7. Install Tray 2 in the printer.



## Clear paper jams in Trays 2, 3, 4, or 5 (M631, 632, and 633)

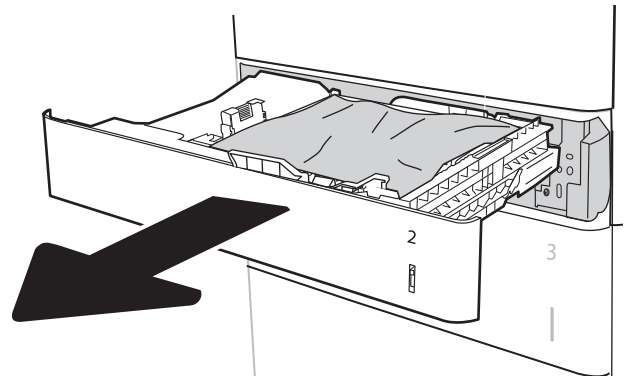
The following information describes how to clear a paper jam in Trays 2, 3, 4, or 5. When a jam occurs, the control panel displays one of the following messages and an animation that assists in clearing the jam.

- **13.A2.XX Jam in Tray 2**
- **13.A3.XX Jam in Tray 3**
- **13.A4.XX Jam in Tray 4**
- **13.A5.XX Jam in Tray 5**

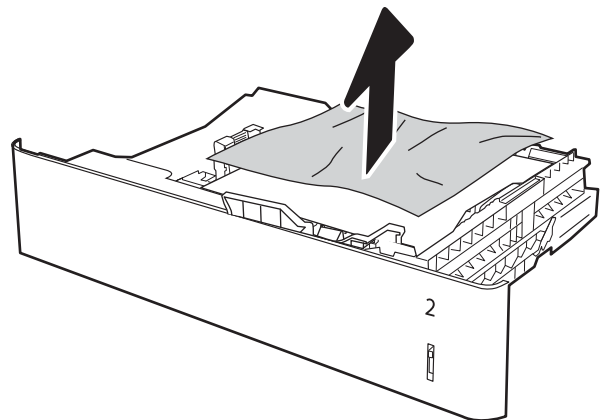


**NOTE:** The following procedure shows Tray 2. The method to clear jams in Trays 3, 4, and 5 is the same.

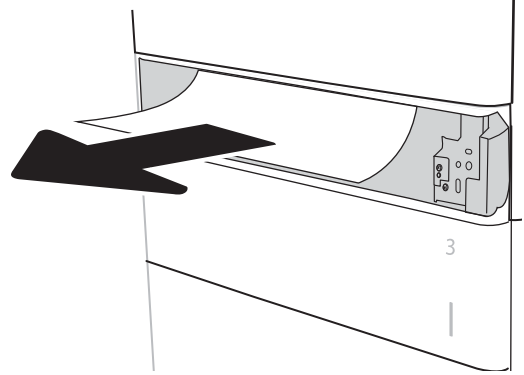
1. Pull the tray completely out of the printer by pulling and lifting it up slightly.



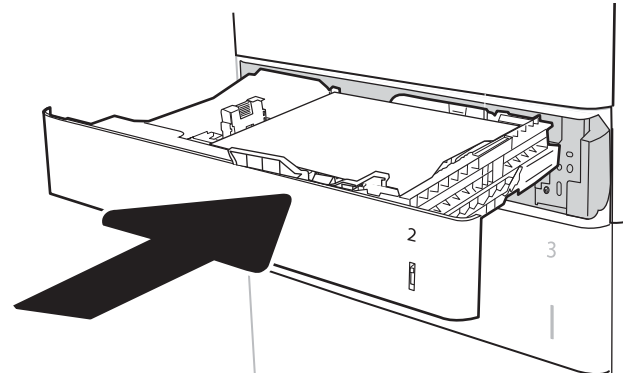
2. Remove any jammed or damaged sheets of paper from the tray.



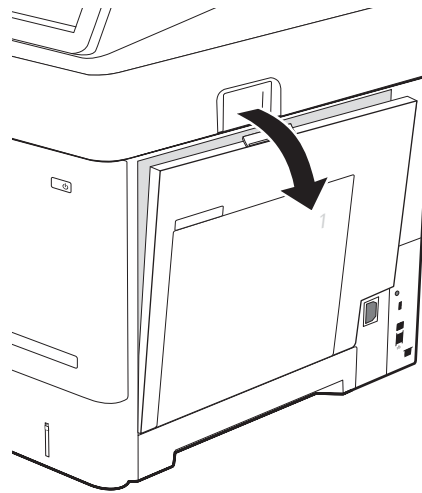
3. Remove any paper from the feed rollers inside the printer.



4. Reinsert and close the tray.

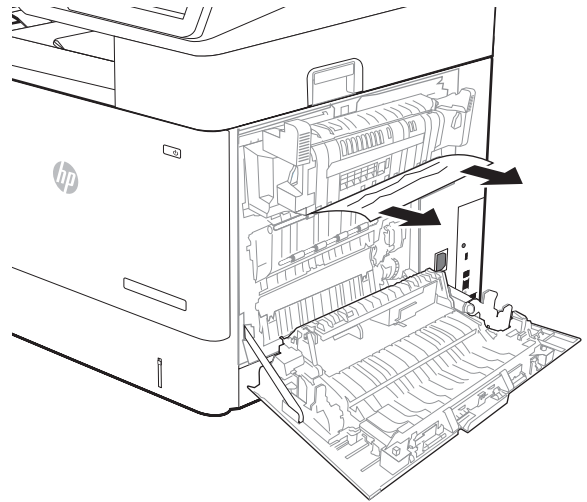


5. Open the right door.





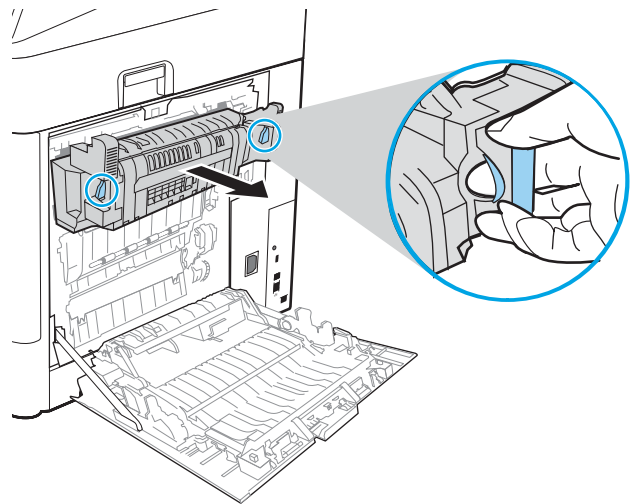
6. Remove any jammed paper.



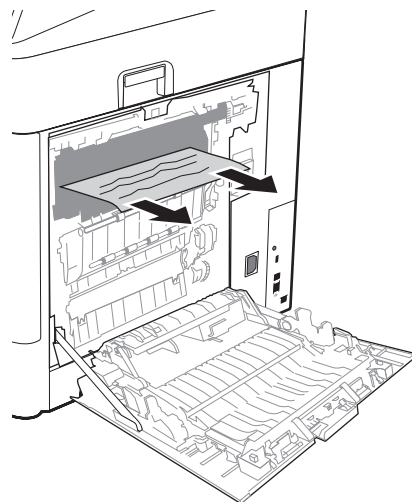
7. Remove the fuser by grabbing the two side latches and pulling the fuser straight out of the printer.



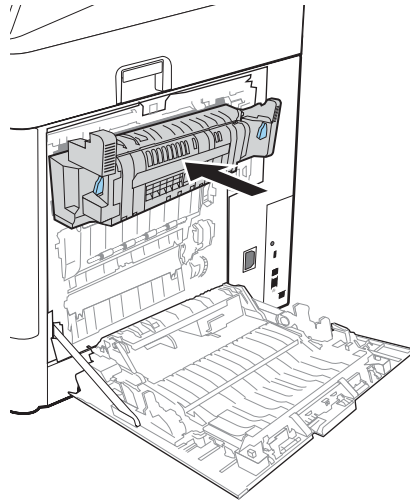
**CAUTION:** The fuser can be hot while the printer is in use. Wait for the fuser to cool before handling it.



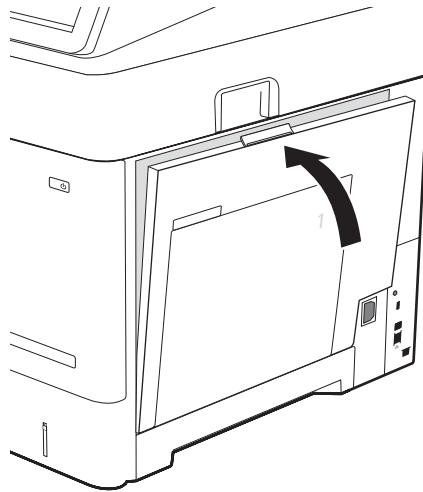
8. Remove any jammed paper from the fuser opening.



9. Reinstall the fuser.



10. Close the right door.



## Clear paper jams in Trays 2, 3, or 4 (M607, M608, and M609)

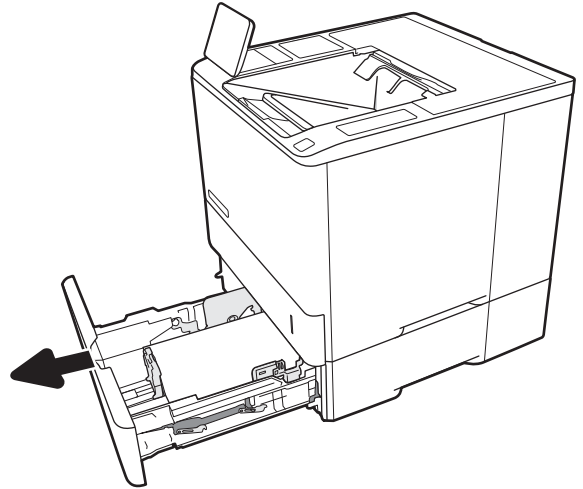
The following information describes how to clear a paper jam in Trays 2, 3, 4, or 5. When a jam occurs, the control panel displays one of the following messages and an animation that assists in clearing the jam.

- **13.A2.XX Jam in Tray 2**
- **13.A3.XX Jam in Tray 3**
- **13.A4.XX Jam in Tray 4**
- **13.A5.XX Jam in Tray 5**

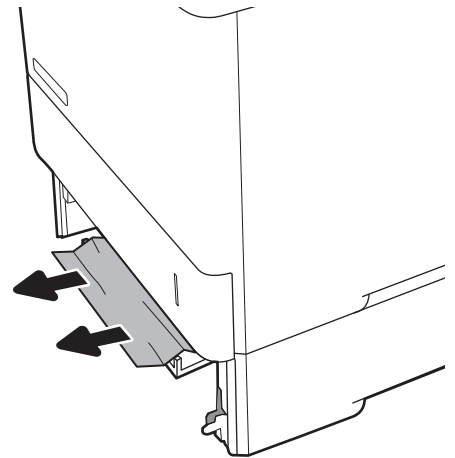


**NOTE:** The following procedure shows Tray 2. The method to clear jams in Trays 3, 4, and 5 is the same.

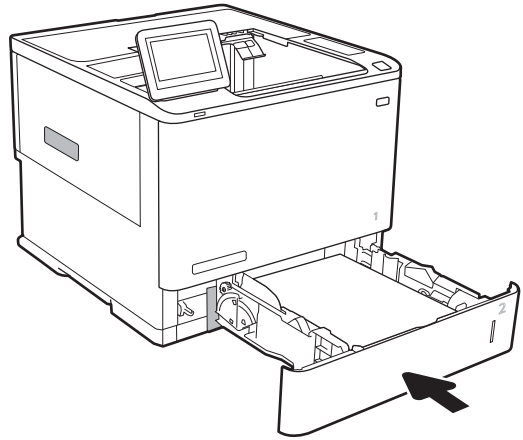
1. Pull the tray completely out of the printer by pulling and lifting it up slightly.



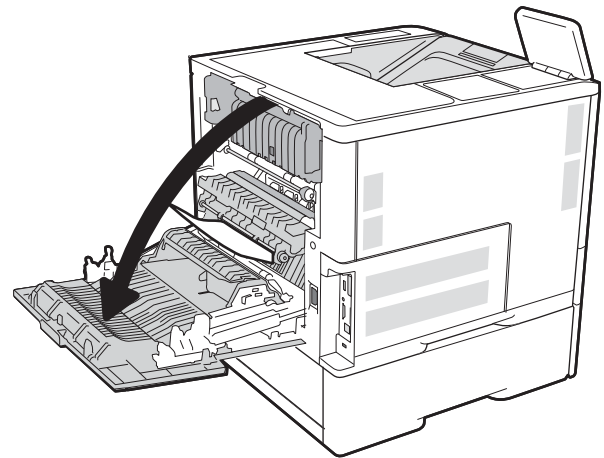
2. Remove any jammed or damaged sheets of paper.



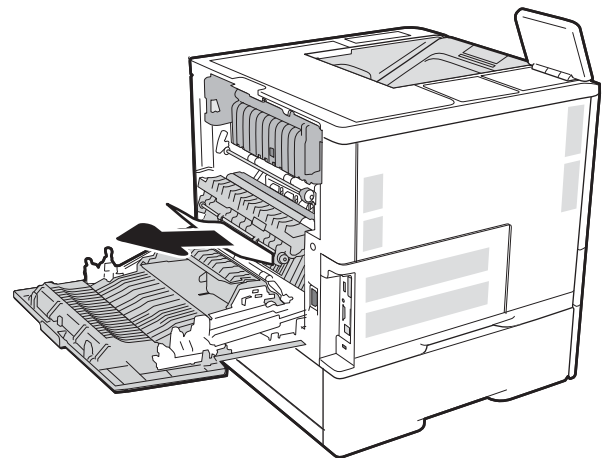
3. Reinsert and close the tray.



4. Open the rear door.



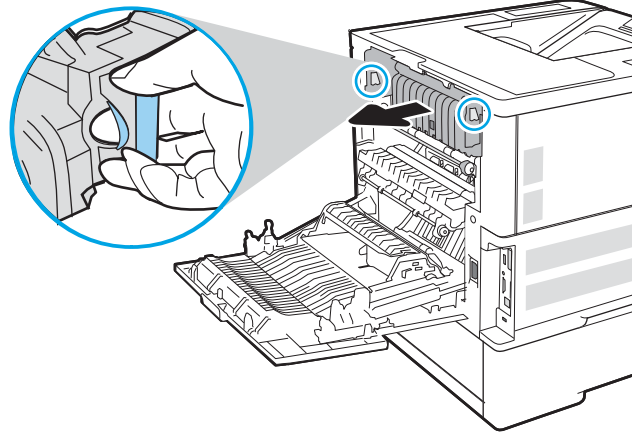
5. Remove any jammed paper.



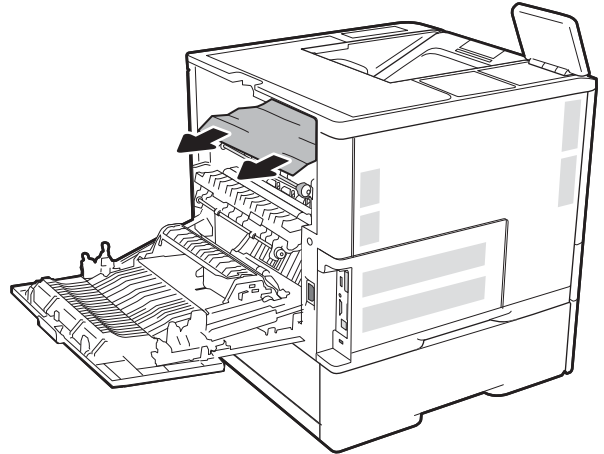
6. Remove the fuser by grabbing the two side latches and pulling the fuser straight out of the printer.



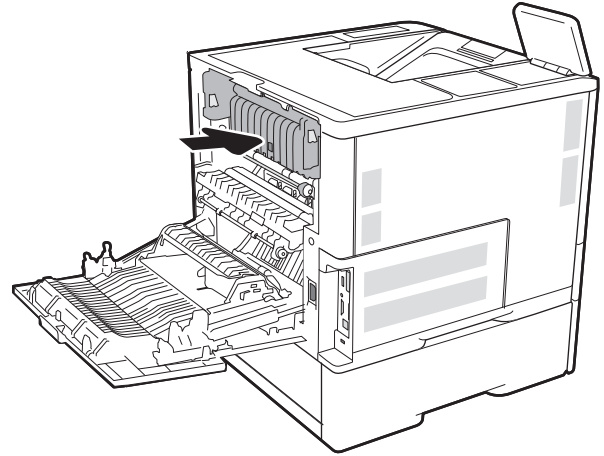
**CAUTION:** The fuser can be hot while the printer is in use. Wait for the fuser to cool before handling it.



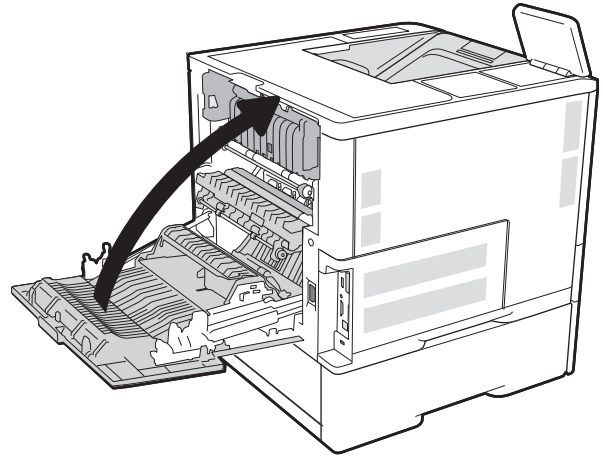
7. Remove any jammed paper from the fuser opening.



8. Reinstall the fuser.



9. Close the rear door

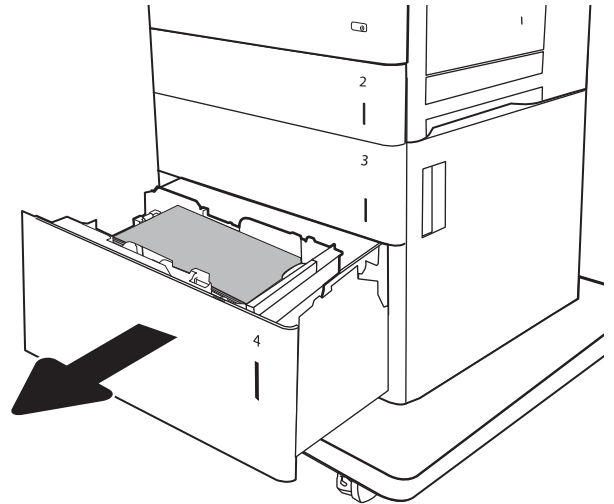


## Clear paper jams in the 2,550-sheet high-capacity input tray (M631, M632, and M633)

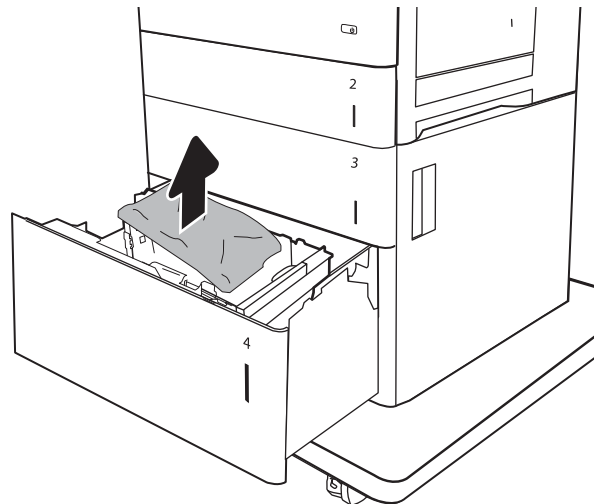
The following information describes how to clear a paper jam in the 2,100-sheet high-capacity tray. When a jam occurs, the control panel displays one of the following messages and an animation that assists in clearing the jam.

- **13.AY.XX Jam in Tray Y**, where Y equals the tray number assigned to the HCI
- **13.FF.EE Door Open Jam**

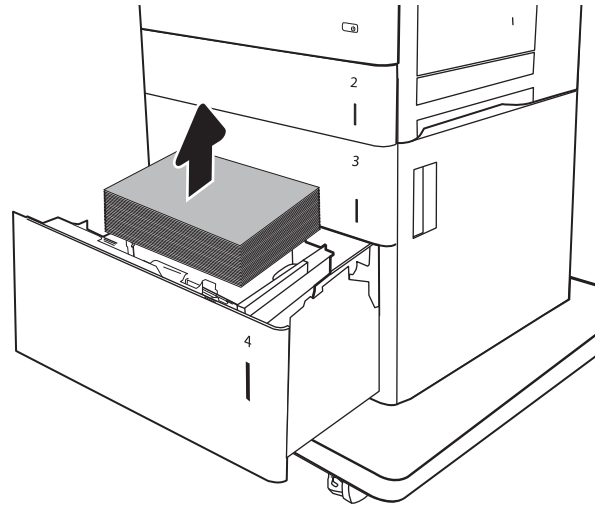
1. Open the 2,100-sheet high-capacity input tray.



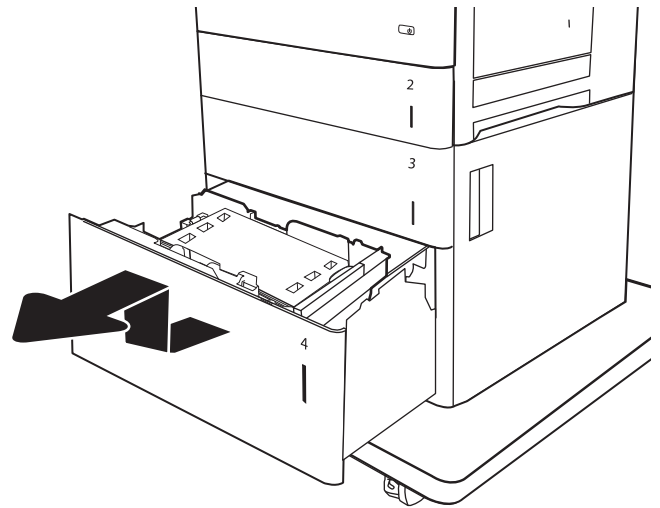
2. Remove and discard any damaged sheets.



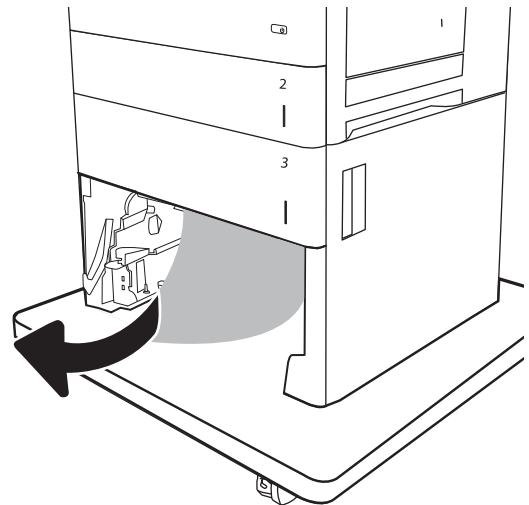
3. Remove the paper from the tray.



4. Lift the tray up and then pull it straight out to remove it.



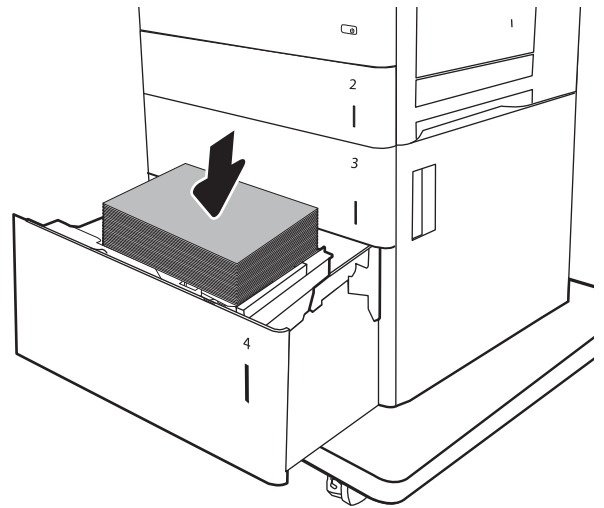
5. If jammed paper is in the feed area, pull it down to remove it.



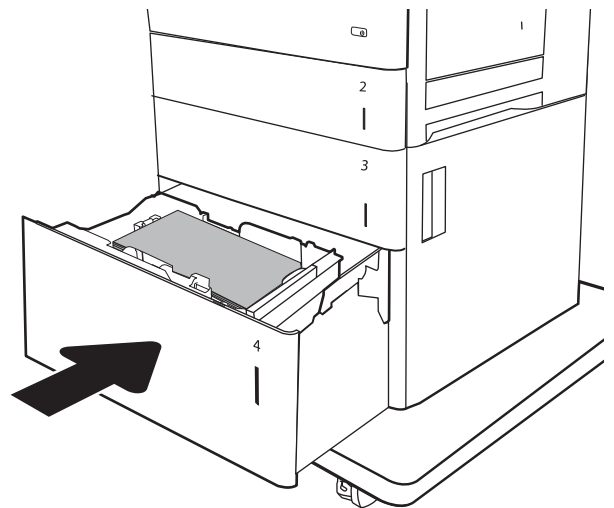


6. Reinstall the tray, and then load full reams of paper into the tray. The tray holds 2,100 sheets of paper.

**NOTE:** For best results, load full reams of paper. Avoid dividing reams into smaller sections.



7. Close the tray.

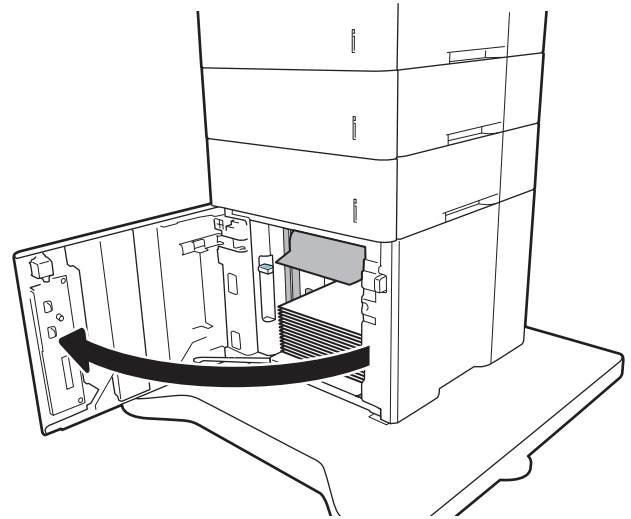


## Clear paper jams in the 2,100-sheet high-capacity input tray (M607, M608, and M609)

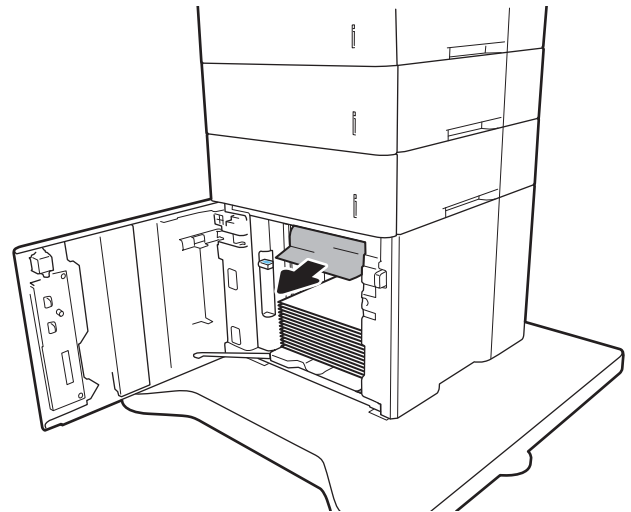
The following information describes how to clear a paper jam in the 2,100-sheet high-capacity tray. When a jam occurs, the control panel displays one of the following messages and an animation that assists in clearing the jam.

- **13.AY.XX Jam in Tray Y**, where Y equals the tray number assigned to the HCI
- **13.FF.EE Door Open Jam**

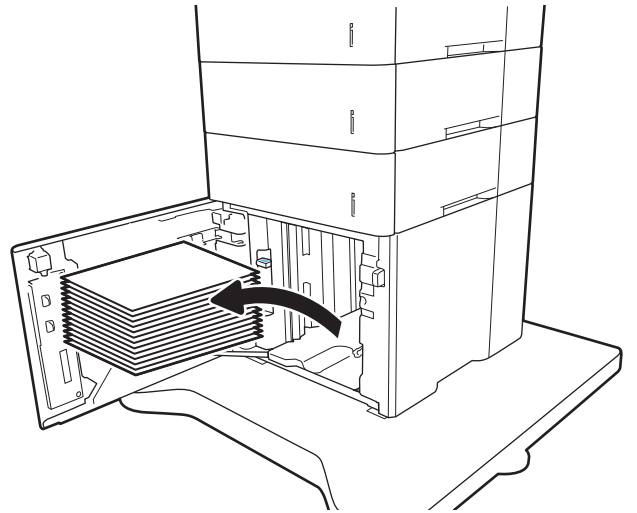
1. Open the 2,100-sheet high-capacity input tray.



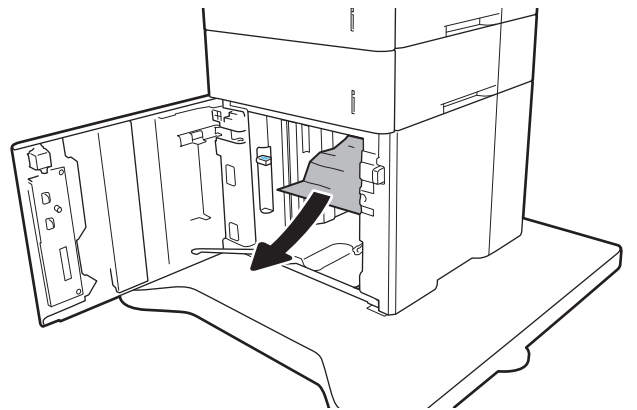
2. Remove and discard any damaged sheets.



3. Remove the paper from the tray.

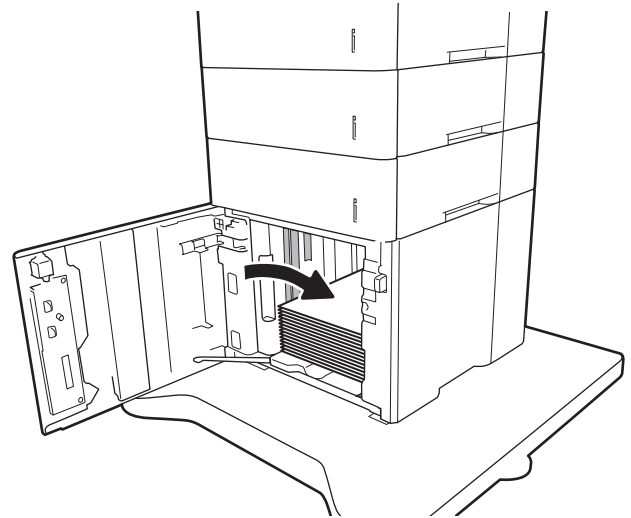


4. If jammed paper is in the feed area, pull it down to remove it.

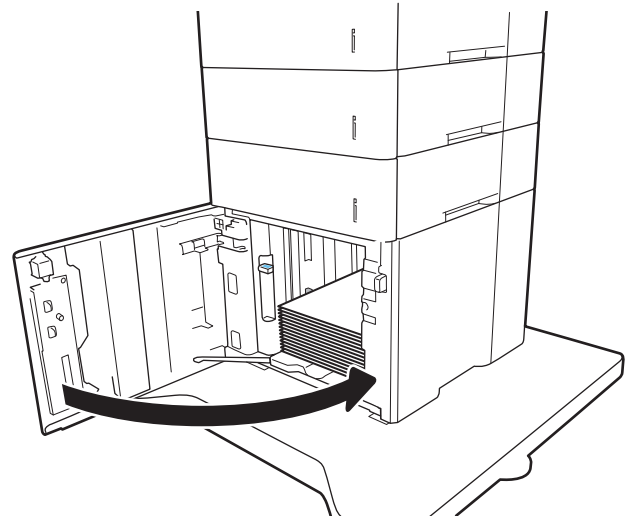


5. Load full reams of paper into the HCI. The tray holds 2,100 sheets of paper.

**NOTE:** For best results, load full reams of paper. Avoid dividing reams into smaller sections.



6. Close the HCI door.



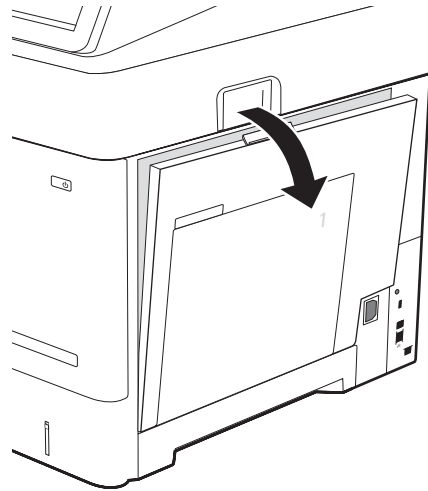
## Clear paper jams in the right door and fuser area (M631, M632, and M633)

Use the following procedure to clear paper jams in the right door, duplexer, and fuser area. When a jam occurs, the control panel displays one of the following messages and an animation that assists in clearing the jam.

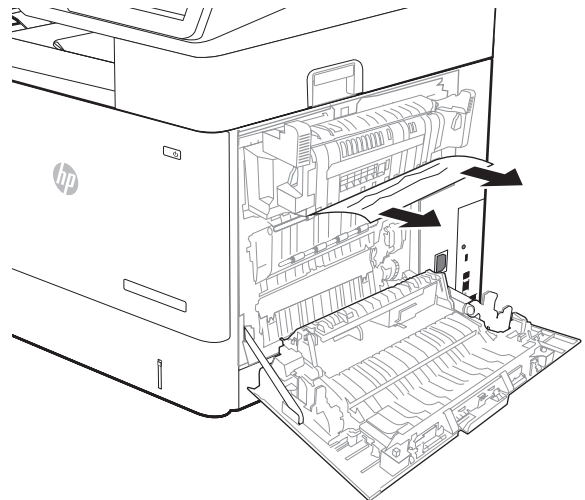
- **13.B2.XX Jam in <cover or door>**
- **13.B9.XX Jam in Fuser**
- **13.FF.EE Door Open Jam**

**⚠ CAUTION:** The fuser is hot while the printer is in use. Wait for the fuser to cool before clearing jams.

1. Open the right door.



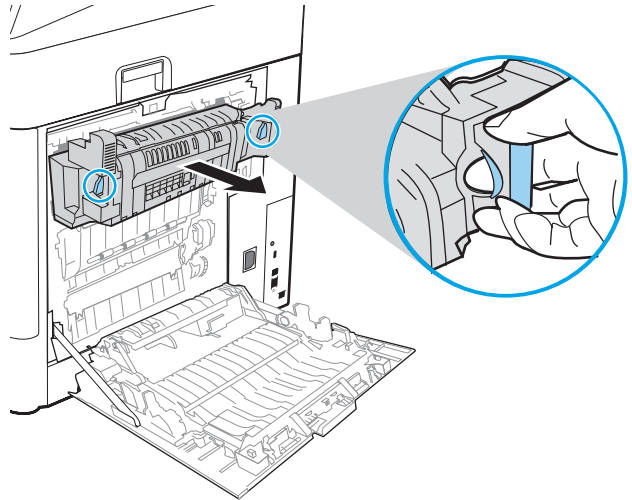
2. Remove any jammed paper.



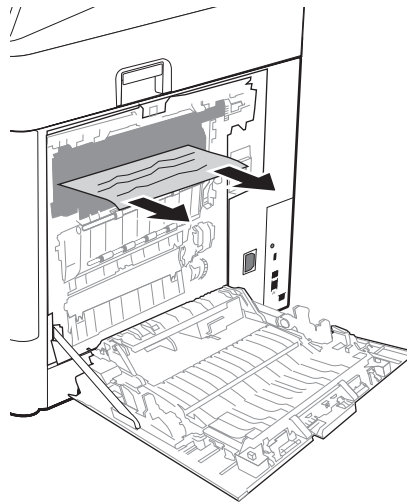
3. Remove the fuser by grabbing the two side latches and pulling the fuser straight out of the printer.



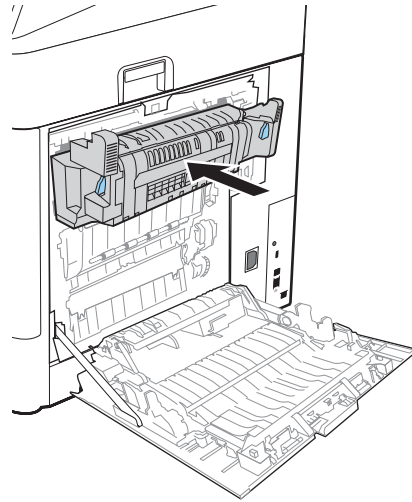
**CAUTION:** The fuser can be hot while the printer is in use. Wait for the fuser to cool before handling it.



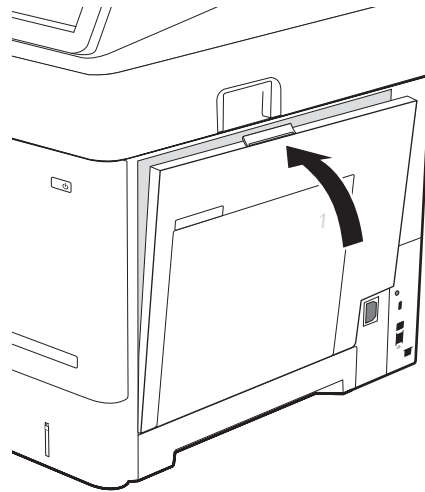
4. Remove any jammed paper from the fuser opening.



5. Reinstall the fuser.



6. Close the right door.



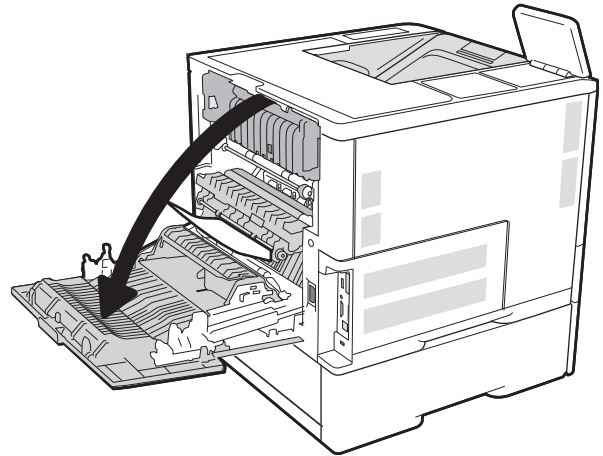
## Clear paper jams in the rear door and fuser area (M607, M608, and M609)

Use the following procedure to clear paper jams in the rear door and fuser area. When a jam occurs, the control panel displays one of the following messages and an animation that assists in clearing the jam.

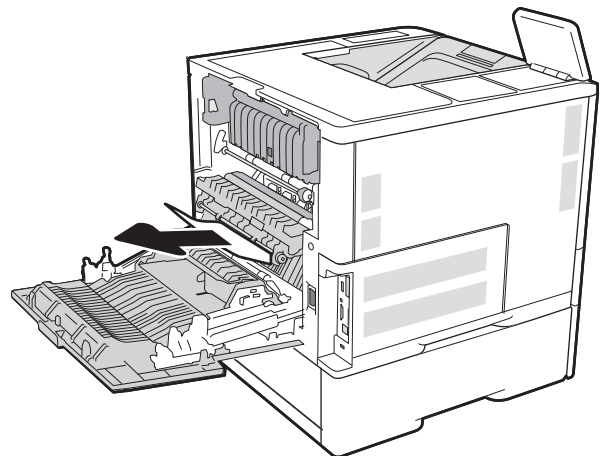
- **13.B2.XX Jam in <cover or door>**
- **13.B9.XX Jam in Fuser**

**CAUTION:** The fuser is hot while the printer is in use. Wait for the fuser to cool before clearing jams.

1. Open the rear door.



2. Remove any jammed paper.

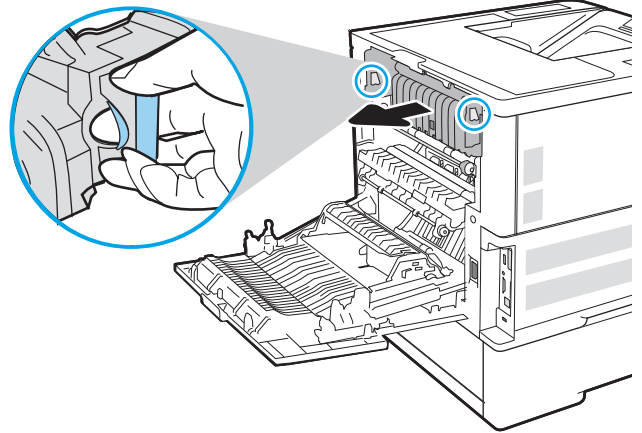




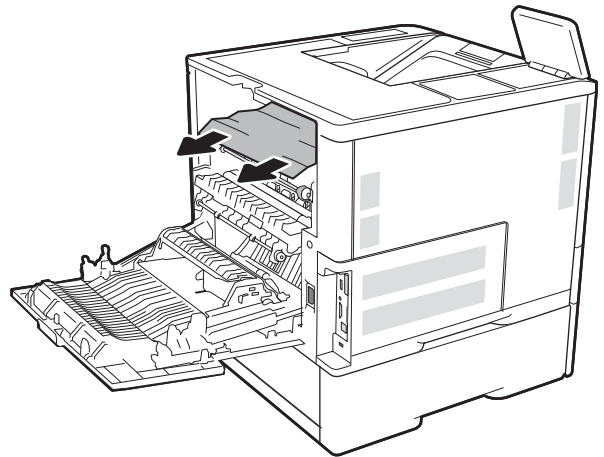
3. Remove the fuser by grabbing the two side latches and pulling the fuser straight out of the printer.



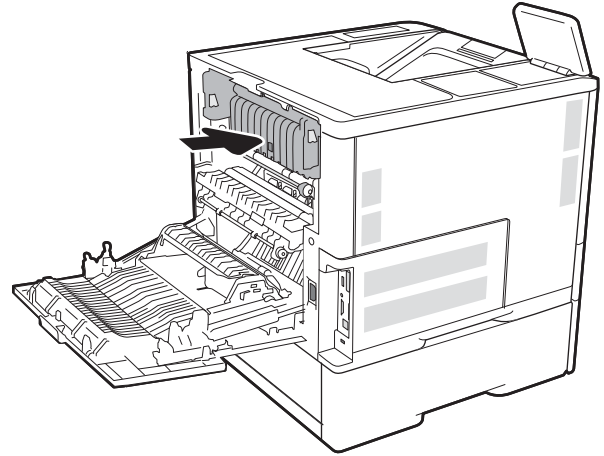
**CAUTION:** The fuser can be hot while the printer is in use. Wait for the fuser to cool before handling it.



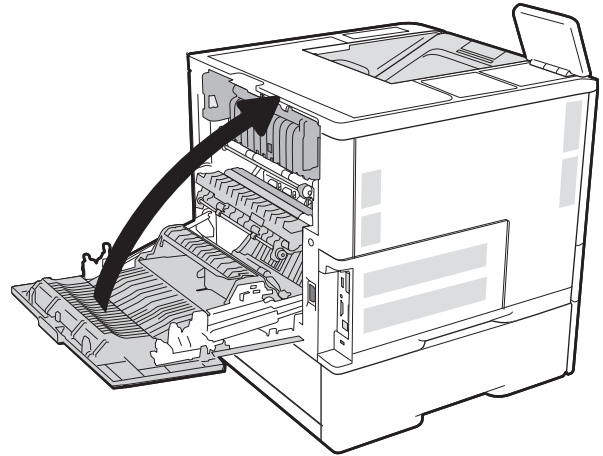
4. Remove any jammed paper from the fuser opening.



5. Reinstall the fuser.



6. Close the rear door

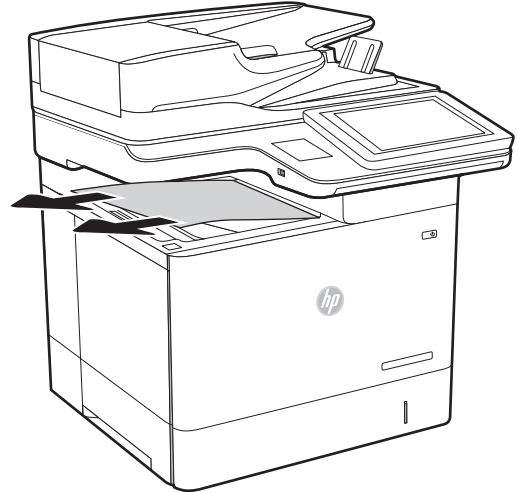


## Clear paper jams in the output bin (M631, M632, and M633)

The following information describes how to clear a paper jam in the output bin. When a jam occurs, the control panel displays the following message and an animation that assists in clearing the jam.

- **13.E1.XX Jam at Standard Output Bin**

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

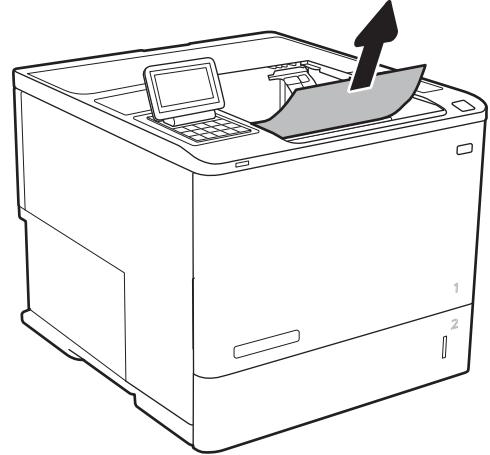


## Clear paper jams in the output bin (M607, M608, and M609)

The following information describes how to clear a paper jam in the output bin. When a jam occurs, the control panel displays the following message and an animation that assists in clearing the jam.

- **13.E1.XX Jam at Standard Output Bin**

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

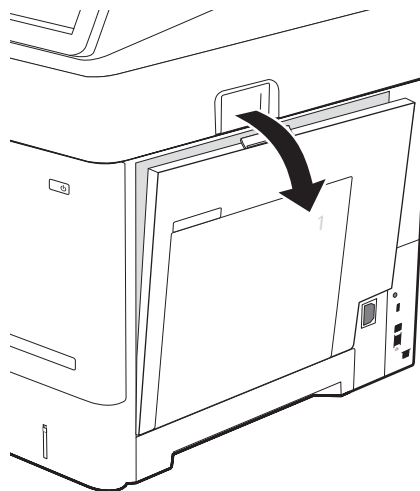


## Clear paper jams in the duplexer (M631, M632, and M631)

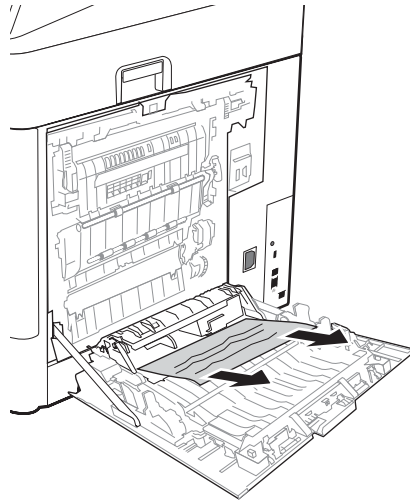
Use the following procedure to check for paper in all possible jam locations in the automatic duplexer. When a jam occurs, the control panel displays one of the following error messages and an animation that assists in clearing the jam.

- **13.B2.XX Jam in <cover or door>**
- **13.CX.XX Jam in Duplexer**
- **13.DX.XX Jam in Duplexer**

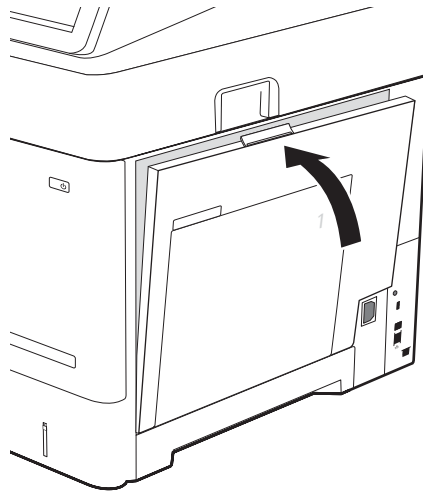
1. Open the right door.



2. Remove any jammed paper.



3. Close the right door

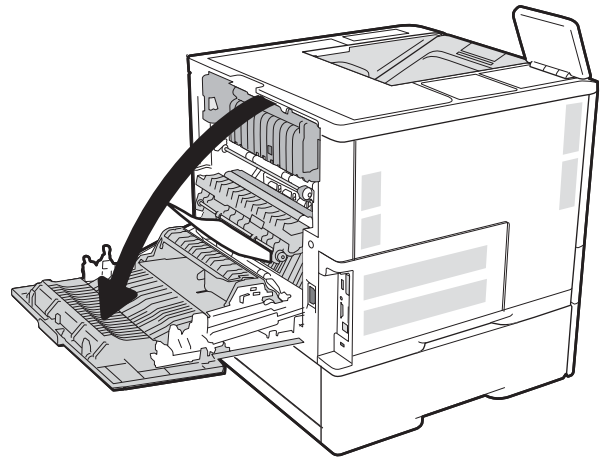


## Clear paper jams in the duplexer (M607, M608, and M609)

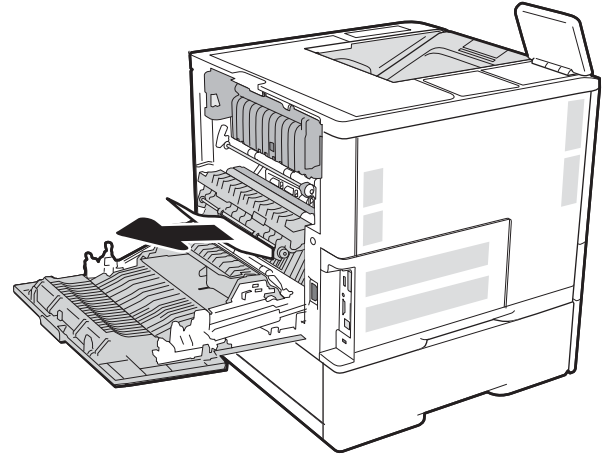
Use the following procedure to check for paper in all possible jam locations in the automatic duplexer. When a jam occurs, the control panel displays an animation that assists in clearing the jam.

- **13.CX.XX Jam in Duplexer**
- **13.DX.XX Jam in Duplexer**
- **13.B2.XX Jam in <cover or door>**

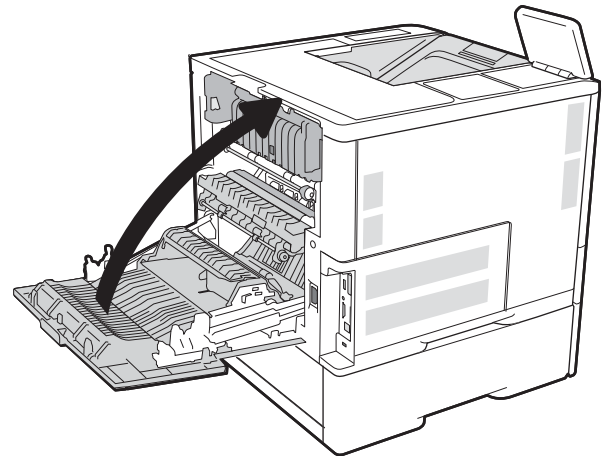
1. Open the rear door.



2. Remove any jammed paper.



3. Close the rear door



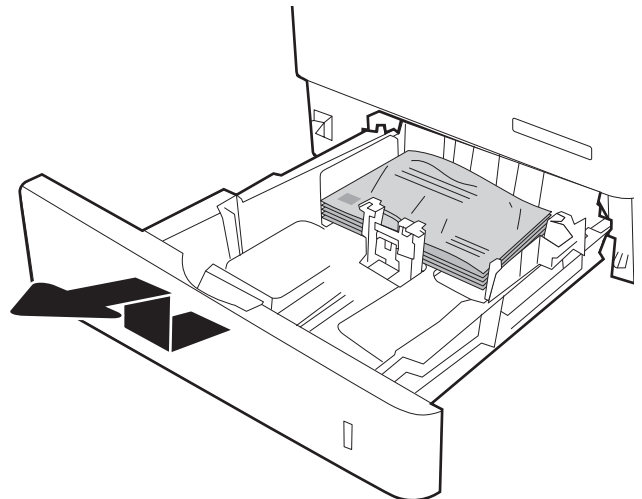


## Clear paper jams in the envelope feeder (M631, M632, and M633)

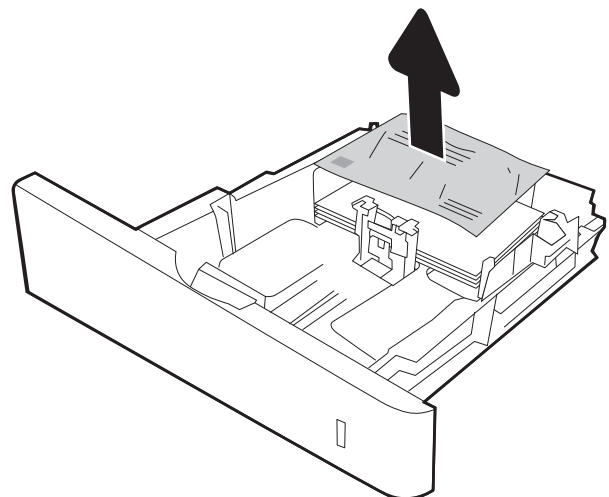
Use the following procedure to clear jams in the envelope feeder. When a jam occurs, the control panel displays one of the following messages and an animation that assists in clearing the jam.

- **13.A3.XX Jam in Tray 3**
- **13.A4.XX Jam in Tray 4**

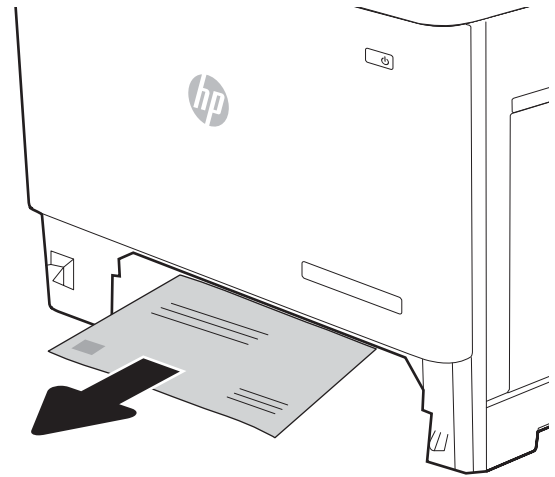
1. Pull the tray completely out of the printer by pulling and lifting it up slightly.



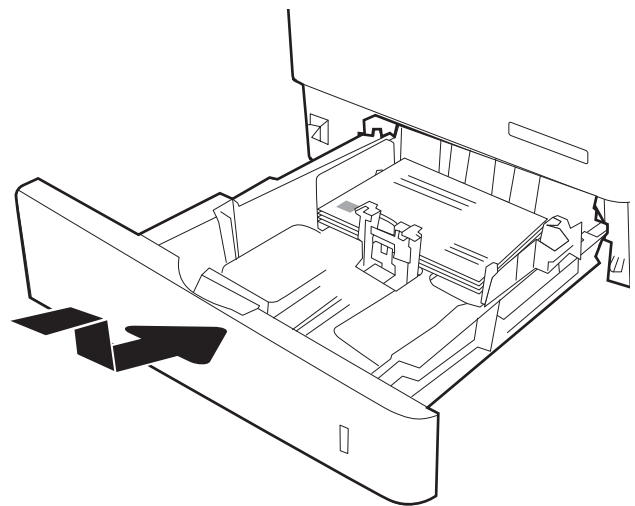
2. Remove any jammed or damaged envelopes from the tray.



3. Remove any envelopes from the feed rollers inside the printer.



4. Reinsert and close the tray.

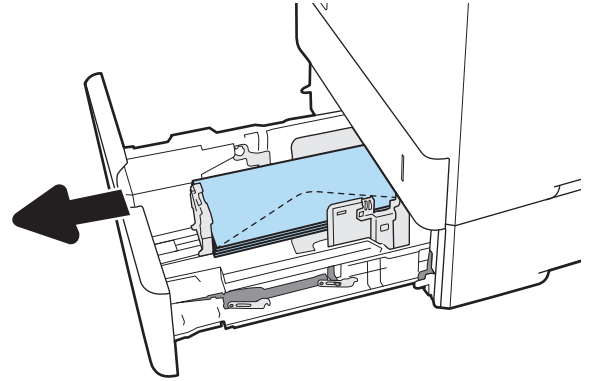


## Clear paper jams in the envelope feeder (M607, M608, and M609)

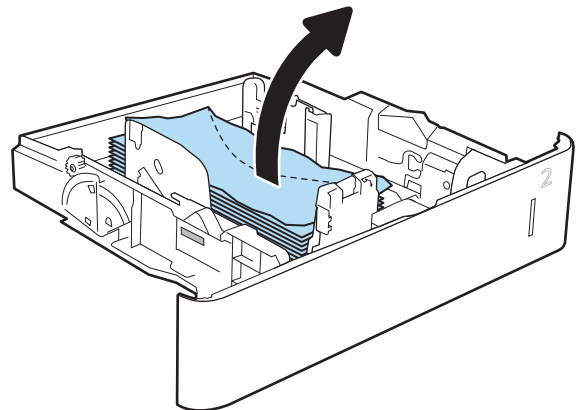
Use the following procedure to clear jams in the envelope feeder. When a jam occurs, the control panel displays one of the following messages and an animation that assists in clearing the jam.

- **13.A3.XX Jam in Tray 3**
- **13.A4.XX Jam in Tray 4**

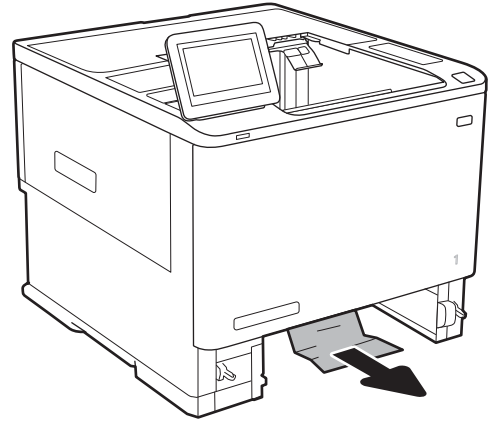
1. Pull the tray completely out of the printer by pulling and lifting it up slightly.



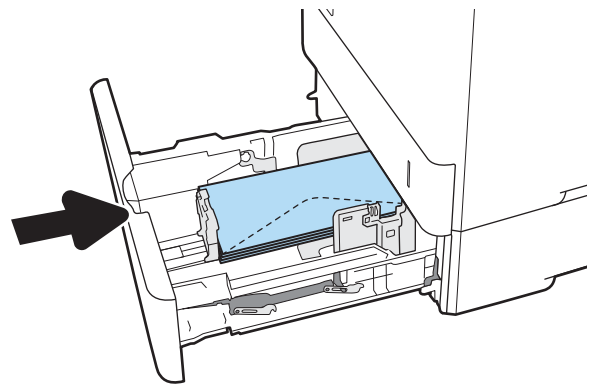
2. Remove any jammed or damaged envelopes from the tray.



3. Remove any envelopes from the feed rollers inside the printer.



4. Reinsert and close the tray.

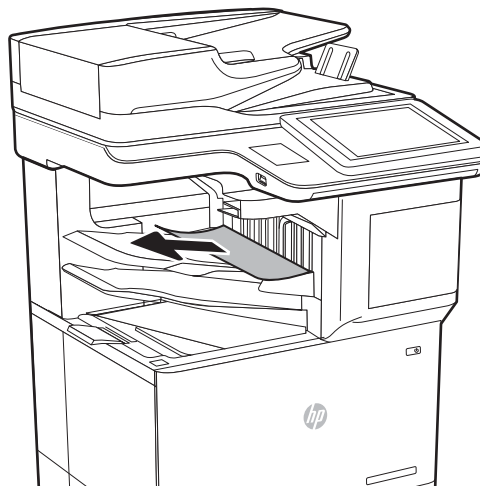


## Clear paper jams in the HP Stapling Mailbox (M631, M632, and M633)

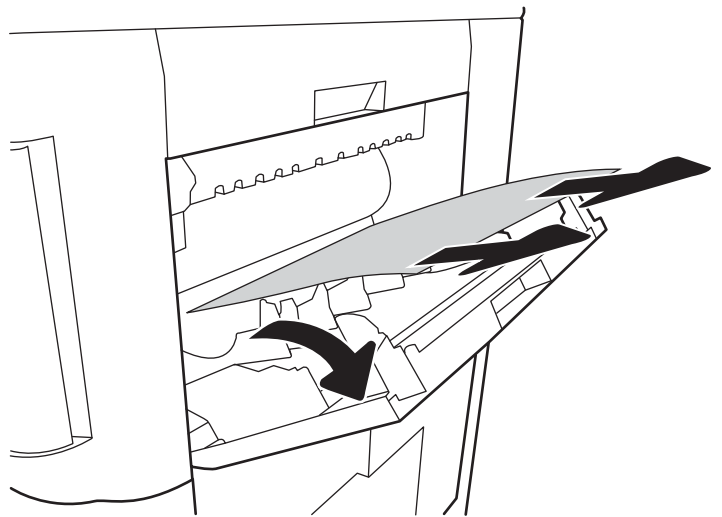
The following information describes how to clear a paper jam in the HP Stapling Mailbox. When a jam occurs, the control panel displays one of the following error messages and an animation that assists in clearing the jam.

- **13.E1.XX Jam at Standard Output Bin**
- **13.70.XX MBM Jam**
- **13.8X Stapler/Stacker Jam**

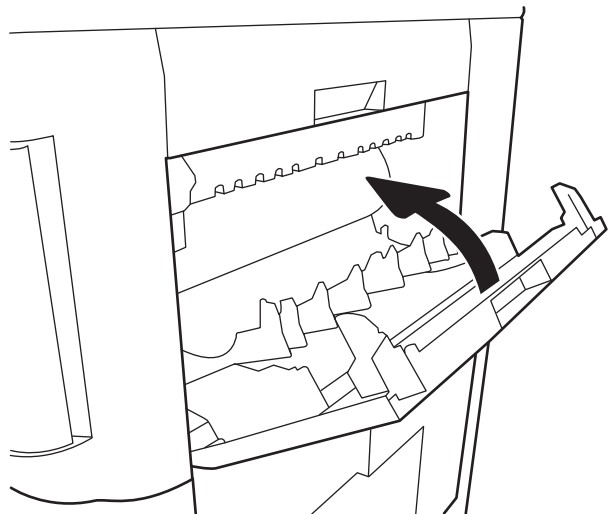
1. Remove any jammed paper from the HP Stapling Mailbox bins.



2. Open the jam-access door on the back side of the HP Stapling Mailbox. If jammed paper is visible inside the jam-access door, pull it straight out to remove it.



3. Close the HP Stapling Mailbox jam access door.

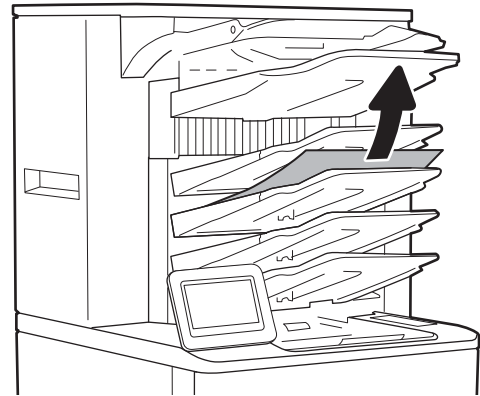


## Clear paper jams in the HP Stapling Mailbox accessory (M607, M608, and M609)

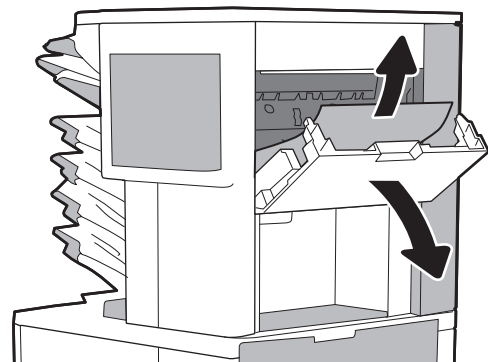
The following information describes how to clear a paper jam in the HP Stapling Mailbox. When a jam occurs, the control panel displays an animation that assists in clearing the jam.

- **13.E1.XX Jam at Standard Output Bin**  
**13.70.XX MBM Jam**

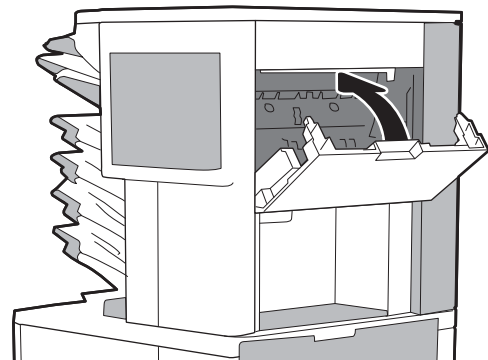
1. Remove any jammed paper from the HP Stapling Mailbox output bins.



2. Open the jam-access door on the back side of the stapler/stacker. If jammed paper is visible inside the jam-access door, pull it straight up to remove it.



3. Close the HP Stapling Mailbox jam access door.

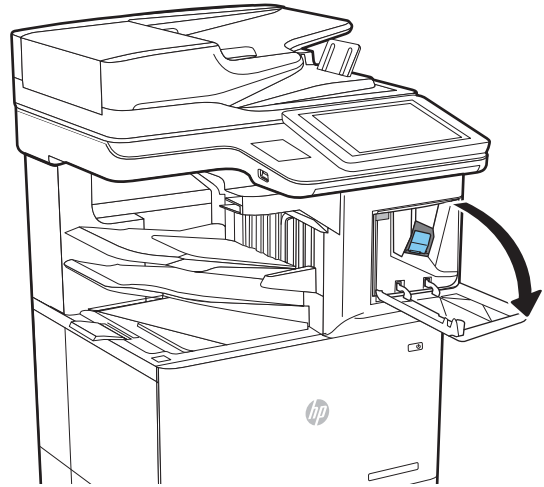


## Clear staple jams (M631, M632, and M633)

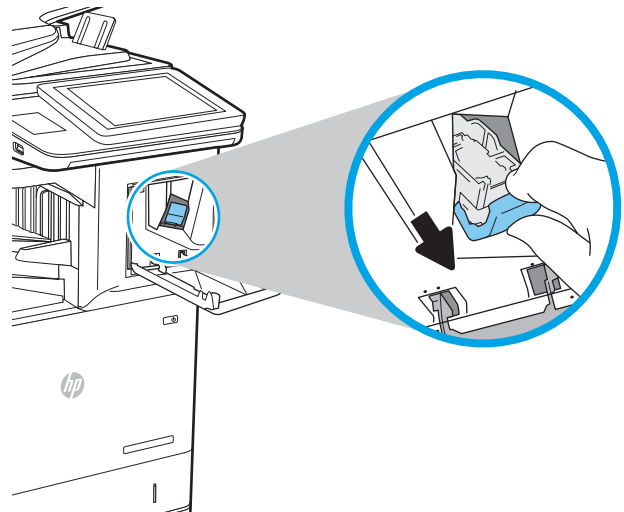
The following information describes how to clear a staple jam in the HP Stapling Mailbox. When a jam occurs, the control panel displays an animation that assists in clearing the jam.

- **13.8X.XX – Stapler/Stacker Jam**

1. Open the stapler door.

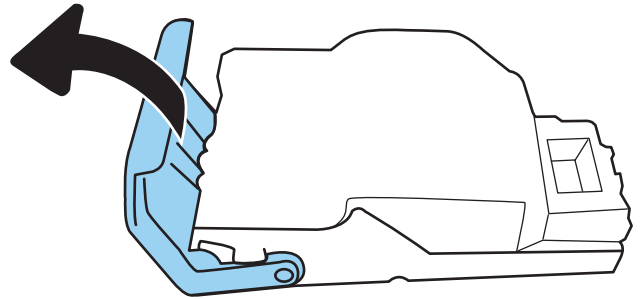


2. Pull the colored handle on the staple cartridge, and then pull the staple cartridge straight out.

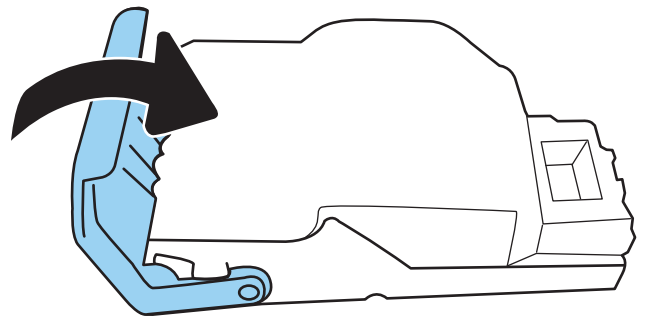




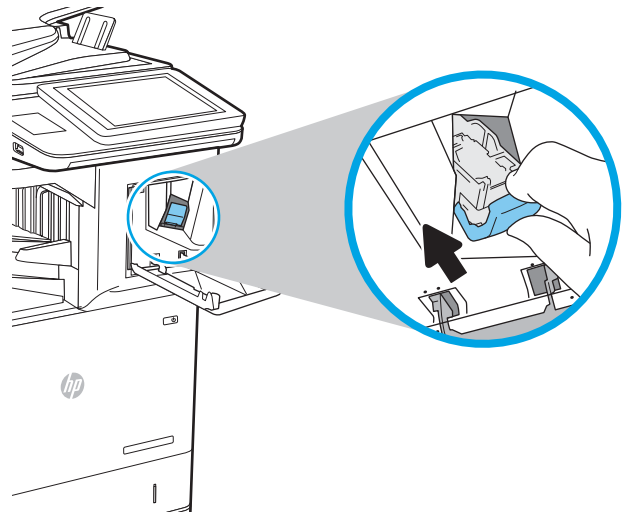
3. Lift up on the small lever at the back of the staple cartridge.



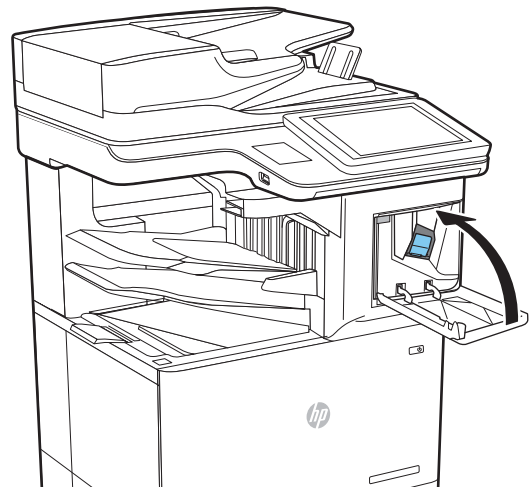
4. Remove the jammed staples.
5. Close the lever at the back of the staple cartridge. Be sure that it snaps into place.



6. Insert the staple cartridge into the stapler and push on the colored handle until it snaps into place.



7. Close the stapler door.

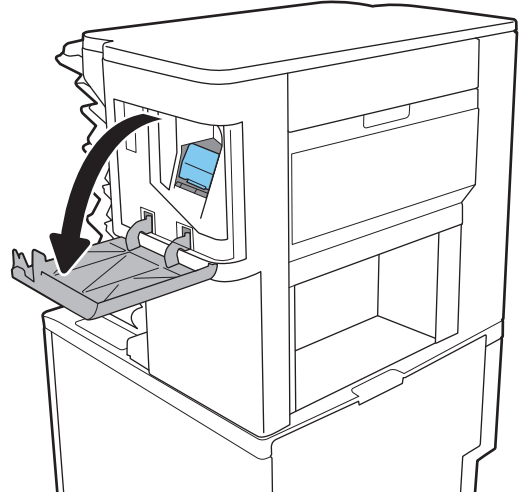


## Clear staple jams (M607, M608, and M609)

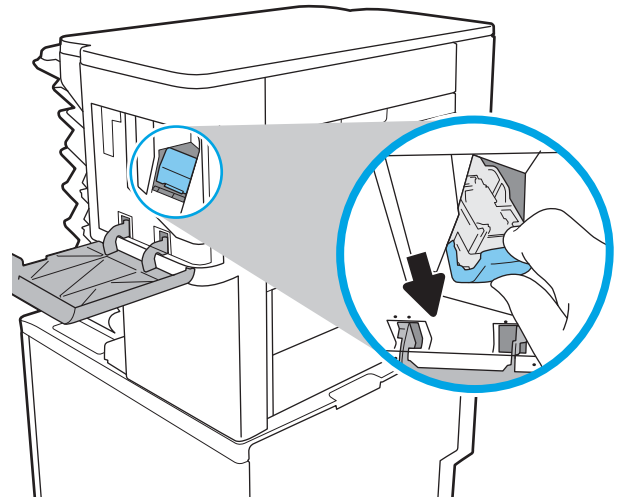
The following information describes how to clear a staple jam in the HP Stapling Mailbox. When a jam occurs, the control panel displays an animation that assists in clearing the jam.

- **13.8X.XX – Stapler/Stacker Jam**

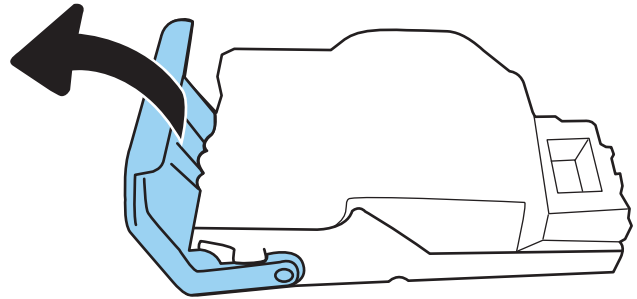
1. Open the stapler door.



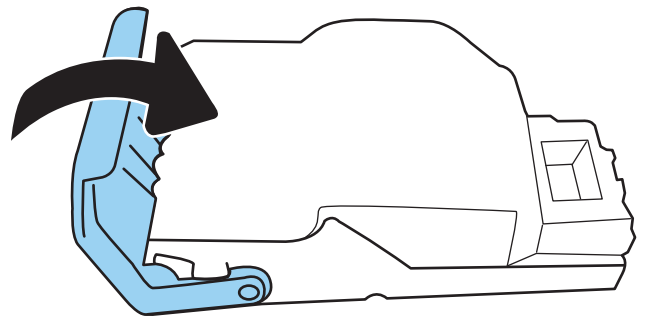
2. Pull the colored handle on the staple cartridge, and then pull the staple cartridge straight out.



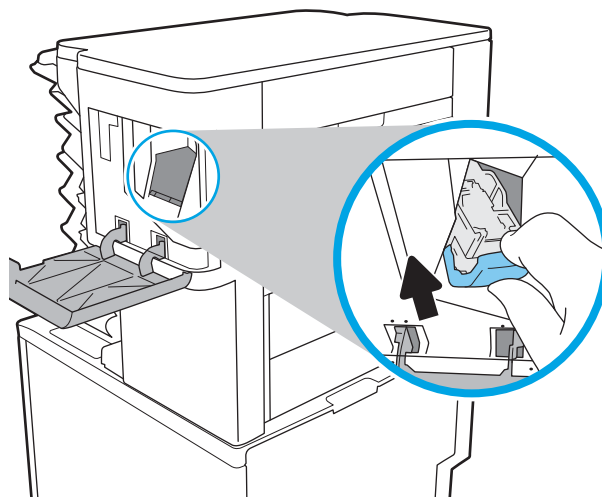
3. Lift up on the small lever at the back of the staple cartridge.



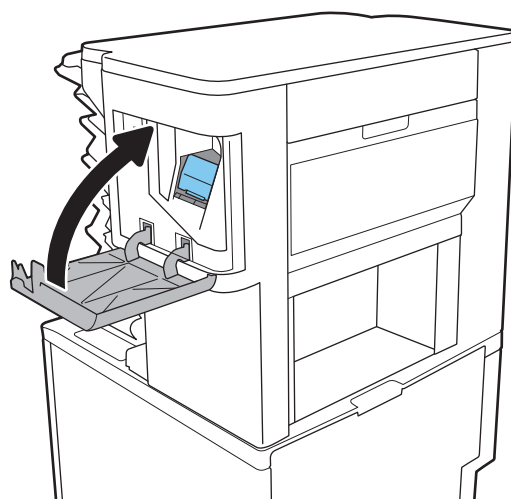
4. Remove the jammed staples.
5. Close the lever at the back of the staple cartridge. Be sure that it snaps into place.



6. Insert the staple cartridge into the stapler and push the colored handle until it snaps into place.



7. Close the stapler door.



## Change jam recovery

This printer provides a jam recovery feature that reprints jammed pages.

### Change jam recovery from a touchscreen control panel

1. From the Home screen on the printer control panel, swipe (right), and then touch the **Settings** button.
2. Open the following menus:
  - **General**
  - **Jam Recovery**
3. Select one of the following options:
  - **Automatic** — The printer attempts to reprint jammed pages when sufficient memory is available. This is the default setting.
  - **Off** — The printer does not attempt to reprint jammed pages. Because no memory is used to store the most recent pages, performance is optimal.



---

**NOTE:** Some pages can be lost if the printer runs out of paper while printing a duplex job with Jam Recovery set to **Off**.

---

- **On** — The printer always reprints jammed pages. Additional memory is allocated to store the last few pages printed.

### Change jam recovery from a LCD control panel

1. From the Home screen on the printer control panel, use the down arrow ▼ button to select the **Print** menu.
2. Use the right arrow ► button to scroll to and select the **Settings** menu, and then press the **OK** button.
3. Use the down arrow ▼ button to scroll to and select the **General** menu, and then press the **OK** button.
4. Use the down arrow ▼ button to scroll to and select the **Jam Recovery** menu, and then press the **OK** button.
5. Use the down arrow ▼ button to scroll to an option, and then press the **OK** button to select it.
  - **Automatic** — The printer attempts to reprint jammed pages when sufficient memory is available. This is the default setting.
  - **Off** — The printer does not attempt to reprint jammed pages. Because no memory is used to store the most recent pages, performance is optimal.



---

**NOTE:** Some pages can be lost if the printer runs out of paper while printing a duplex job with Jam Recovery set to **Off**.

---

- **On** — The printer always reprints jammed pages. Additional memory is allocated to store the last few pages printed.

# Solve performance problems



**NOTE:** Tray 1 and Tray 2 are optimal for paper pickup when using special paper or media other than 20lb plain paper. For Tray 1 and Tray 2 the printer increases the number of attempts to pickup a page, which increases the reliability of successfully picking the page from the tray and decreases the possibility of a mis-pick jam.

HP recommends using Tray 1 or Tray 2 if the printer is experiencing excessive or reoccurring jams from trays other than Tray 1 and Tray 2, or for print jobs that require media other than 20lb plain paper.

- [Factors affecting print performance](#)
- [Print speeds](#)
- [The printer does not print or it prints slowly](#)
- [The printer prints slowly](#)

## Factors affecting print performance

**Table 2-84 Solve performance problems**

Problem	Cause	Solution
Pages print but are totally blank.	The document might contain blank pages.	Check the original document to see if content is present on all of the pages.
	The printer might be malfunctioning.	To check the printer, print a Configuration page.
	Make sure that the printer is not feeding multiple pages (especially if very thin paper is used).	Make sure that the paper meets HP specifications for this printer.  For a complete list of specific HP-brand paper that this printer supports, go to <a href="http://www.hp.com/support/ljM607">www.hp.com/support/ljM607</a> , <a href="http://www.hp.com/support/ljM608">www.hp.com/support/ljM608</a> , or <a href="http://www.hp.com/support/ljM609">www.hp.com/support/ljM609</a> , <a href="http://www.hp.com/support/ljM631MFP">www.hp.com/support/ljM631MFP</a> , <a href="http://www.hp.com/support/ljM632MFP">www.hp.com/support/ljM632MFP</a> , or <a href="http://www.hp.com/support/ljM633MFP">www.hp.com/support/ljM633MFP</a> .
Pages print very slowly.	Heavier paper types can slow the print job.	Print on a different type of paper.
<b>NOTE:</b> Some software programs process print jobs slowly.	Complex pages can print slowly.	Proper fusing might require a slower print speed to ensure the best print quality.
	Large batches, narrow paper, and special paper such as gloss, transparency, cardstock, and HP Tough Paper can slow the print job.	Print in smaller batches, on a different type of paper, or on a different size of paper.
Pages did not print.	The printer might not be pulling paper correctly.	Make sure paper is loaded in the tray correctly.
	The paper is jamming in the printer.	Clear the jam.

**Table 2-84 Solve performance problems (continued)**

Problem	Cause	Solution
	The USB cable might be defective or incorrectly connected.	<ul style="list-style-type: none"><li>• Disconnect the USB cable at both ends and reconnect it.</li><li>• Try printing a job that has printed in the past.</li><li>• Try using a different USB cable.</li></ul>
	Other devices are running on the host computer.	The printer might not share a USB port. If an external hard drive or network switchbox is connected to the same port as the printer, the other device might be interfering with the printer. To connect and use the printer, disconnect the other device or use two USB ports on the host computer.
	The print job might not have arrived at the printer.	Check the printer status queue. Also, the <a href="#">Printing</a> message should appear on the control panel display.

## 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 printer operation. Factors that determine the print speed of the printer include the following:

- Page formatting time

The printer 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.

- 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, make sure that the correct media type in the print driver is selected.

- Printer temperature

To prevent printer damage, print speed is reduced if the printer reaches a specific internal temperature (thermal slow down). The starting temperature of the printer, ambient environment temperature, and the print job size effect the number of pages that can be printed before the printer 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 printer does not print or it prints slowly

### The printer does not print

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

1. Make sure the printer is turned on and that the control panel indicates it is ready.
  - If the control panel does not indicate the printer is ready, turn the printer off and then on again.
  - If the control panel indicates the printer is ready, try sending the job again.
2. If the control panel indicates the printer has an error, resolve the error and then try sending the job again.
3. Make sure the cables are all connected correctly. If the printer is connected to a network, check the following items:
  - Check the bottom LED next to the network connection on the printer. If the network is active, the light is green.
  - Make sure that a network cable and not a phone cord is used 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 for the printer. 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 a network cable is used to connect to the network, make sure the printer name listed on the **Ports** tab matches the one on the printer configuration page.
  - If a USB cable is used, and the printer is connected to a wireless network, make sure the box is checked next to **Virtual printer port for USB**.
6. If a personal firewall system on the computer is used, it might be blocking communication with the printer. Try temporarily disabling the firewall to see if it is the source of the problem.
7. If the host computer or the printer is connected to a wireless network, low signal quality or interference might be delaying print jobs.

## The printer prints slowly

### The printer prints slowly

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

1. Make sure the computer meets the minimum specifications for this printer. For a list of specifications, go to this Web site: [www.hp.com/support/ljM607](http://www.hp.com/support/ljM607), [www.hp.com/support/ljM608](http://www.hp.com/support/ljM608), or [www.hp.com/support/](http://www.hp.com/support/)

[ljM609](#), [www.hp.com/support/ljM631MFP](http://www.hp.com/support/ljM631MFP), [www.hp.com/support/ljM632MFP](http://www.hp.com/support/ljM632MFP), or [www.hp.com/support/ljM633MFP](http://www.hp.com/support/ljM633MFP).

2. When the printer is configured to print on some paper types, such as heavy paper, the printer 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 the host computer or the printer is connected to a wireless network, low signal quality or interference might be delaying print jobs.

# Solve connectivity problems

- [Solve wired network problems](#)
- [Solve wireless network problems](#)

## Solve wired network problems

### Introduction

Certain types of problems can indicate there is a network communication problem. These problems include the following issues:

- The periodic loss of ability to communicate with the printer
- The printer cannot be found during driver installation
- A periodic failure to print



**NOTE:** If you have been experiencing intermittent loss of network productivity, first update the printer firmware. For instructions on how to update the printer firmware, go to <http://support.hp.com>, search for your printer, and then search on “update the firmware.”

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 unable to communicate with the printer](#)
- [The printer 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 printer is disabled, or other network settings are incorrect](#)



**NOTE:** HP does not support peer-to-peer networking, as the feature is a function of Microsoft operating systems and not of the HP print drivers. For more information, go to Microsoft at [www.microsoft.com](http://www.microsoft.com).

### Poor physical connection

1. Verify that the printer is attached to the correct network port using a cable of the correct length.
2. Verify that cable connections are secure.
3. Look at the network port connection on the back of the printer, and verify that the amber activity light flashes indicating network traffic, and the green link-status light is continuously lit indicating a network link.
4. If the problem continues, try a different cable or port on the hub.

### The computer is unable to communicate with the printer

1. Test network communication by pinging the network.

- a. Open a command-line prompt on your computer.
    - For Windows, click **Start**, click **Run**, type `cmd`, and then press **Enter**.
    - For OS X, go to **Applications**, then **Utilities**, and open **Terminal**.
  - b. Type `ping` followed by the IP address for your printer.
  - c. If the window displays round-trip times, the network is working.
2. If the ping command failed, verify that the network hubs are on, and then verify that the network settings, the printer, and the computer are all configured for the same network (also known as subnet).
  3. Open the printer properties and click the **Ports** tab. Verify that the current IP address for the printer is selected. The printer IP address is listed on the printer configuration page.
  4. If you installed the printer using the HP standard TCP/IP port, select the box labeled **Always print to this printer, even if its IP address changes**.
  5. If you installed the printer using a Microsoft standard TCP/IP port, use the printer's hostname instead of the IP address.
  6. If the IP address is correct, delete the printer and then add it again.

### The printer is using incorrect link and duplex settings for the network

HP recommends leaving these settings in automatic mode (the default setting). If you change these settings, you must also change them for your network.

### New software programs might be causing compatibility problems

Verify that any new software programs are correctly installed and that they use the correct print driver.

### The computer or workstation might be set up incorrectly

1. Check the network drivers, print drivers, and the network redirection settings.
2. Verify that the operating system is configured correctly.

### The printer is disabled, or other network settings are incorrect

1. Review the printer's configuration/networking pages to check the status of the network settings and protocols.
2. Reconfigure the network settings if necessary.

### Solve wireless network problems

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

- [The wireless printer loses communication when connected to a VPN](#)
- [The network does not appear in the wireless networks list](#)
- [The wireless network is not functioning](#)
- [Reduce interference on a wireless network](#)

## Introduction

Use the troubleshooting information to help resolve issues.



**NOTE:** To determine whether HP NFC and Wi-Fi Direct printing are enabled on your printer, print a configuration page from the printer control panel.



**NOTE:** If you have been experiencing intermittent loss of network connectivity, first update the printer firmware. For instructions on how to update the printer firmware, go to <http://support.hp.com>, search for your printer, and then search on “update the firmware.”

## Wireless connectivity checklist

- For printers that do not support simultaneous wired and wireless connections, 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. (The wireless network indicator is solid when the printer is connected to a wireless network, and blinking when it is searching for a wireless network.)
- Verify that the service set identifier (SSID) is correct:
  - For a wireless connection to your network, confirm that your mobile device is connecting to the correct router/access point.
  - For a Wi-Fi Direct connection, print a configuration page to determine the printer’s SSID.

If you are not sure that 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.
- If your environment has multiple wireless signals and you need the printer to support dual band networks on both 2.4 GHz and 5 GHz, install the HP Jetdirect 2900nw print server accessory.
- For OS X, verify that the wireless router supports Bonjour.

### **The printer does not print after the wireless configuration completes**

1. Make sure that the printer is turned on and in the ready state.
2. Turn off any third-party firewalls on your computer.
3. Make sure that the wireless network is working correctly.
4. Make sure that your computer is working correctly. If necessary, restart the computer.
5. Verify that you can open the printer HP Embedded Web Server from a computer on the network.

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

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

### **The wireless connection does not work after moving the wireless router or printer**

1. Make sure that the router or printer connects to the same network that your computer connects to.
2. Print a configuration page.
3. Compare the service set identifier (SSID) on the configuration page to the SSID in the printer configuration for the computer.
4. If the numbers are not the same, the devices are not connecting to the same network. Reconfigure the wireless setup for the printer.

### **Cannot connect more computers to the wireless printer**

1. Make sure that the other computers are within the wireless range and that no obstacles block the signal. For most networks, the wireless range is within 30 m (100 ft) of the wireless access point.
2. Make sure that the printer is turned on and in the ready state.
3. Make sure there are not more than 5 concurrent Wireless Print Direct users.
4. Turn off any third-party firewalls on your computer.
5. Make sure that the wireless network is working correctly.
6. Make sure that your computer is working correctly. If necessary, restart the computer.

## The wireless printer loses communication when connected to a VPN

- Typically, you cannot connect to a VPN and other networks at the same time.

## The network does not appear in the wireless networks list

- Make sure the wireless router is turned on and has power.
- The network might be hidden. However, you can still connect to a hidden network. Make sure the router/access point is advertising the SSID by checking for its SSID in the available networks seen by your mobile device.

## The wireless network is not functioning

1. For printers that do not support simultaneous wired and wireless connections, make sure that the network cable is disconnected.
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.

## Reduce interference on a wireless network

The following tips can reduce interference in a wireless network:

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

# Service mode functions

- [Service menu](#)
- [Printer resets](#)
- [Format Disk and Partial Clean functions](#)

## Service menu

The [Service](#) menu is PIN-protected for added security. Only authorized service people have access to the [Service](#) menu. When selecting [Service](#) from the list of menus, the printer prompts the user to enter an eight-digit personal identification number (PIN).

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 **NOTE:** The printer automatically exits the [Service](#) menu after about one minute if no items are selected or changed.


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### Open the service menu from a touchscreen control panel

1. From the Home screen on the printer control panel, swipe (right), and then touch the [Support Tools](#) item.
2. Touch the [Service](#) menu item.
3. Enter the service personal identification number (PIN) for this printer:

---

 **NOTE:** Make sure that [Service Access Code](#) displays in the access type area.

 **TIP:** For a small touchscreen printer, touch the [Access Code](#) dialog box to display a virtual 10-key keypad.


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- 05060717 (M5607/M608/M609)
  - 05063117 (M631/M632/M633)
4. Touch the [Sign In](#) button.

### Open the service menu from a LCD control panel

1. From the Home screen on the printer control panel, use the down arrow ▼ button to select the [Print](#) menu.
2. Use the right arrow ► button to scroll to and select the [Support Tools](#) menu, and then press the [OK](#) button.
3. Use the down arrow ▼ button to scroll to and select the [Service](#) menu, and then press the [OK](#) button.
4. Use the down arrow ▼ button to scroll to [Service](#), and then press the [OK](#) button.
5. Use the 10-key keypad to enter the following service access code for the printer:

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 **NOTE:** After entering the PIN, press the [OK](#) button.

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- 05060717 (M607/M608/M609)

The following menu items appear in the [Service](#) menu:

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 **NOTE:** For touchscreen printers, touch an item to navigate to sub menus. For LCD printers, use the arrow buttons and the [OK](#) button to navigate to sub menus.

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**Table 2-85 Service menu**

First level	Second level	Third-level	Value	Description
Event Log	Print			Print or view the event log.
	Clear			Use this item to clear the printer event log.
Cycle Counts  <b>NOTE:</b> The cycle count range is 0 to 9999999.	Total Engine Cycles			Set the page count that was stored in NVRAM prior to installing a new formatter.
	Mono Cycle Count			Use this item to record the number of mono print jobs.
	Refurbish Cycle Count			Use this item to record the page count when the printer was refurbished.
	Document Feeder Kit Count (MFP only)			Total number of pages since the document feeder kit was replaced.
	Document Feeder Kit Interval (MFP only)			Use this item to set the interval that causes the printer to prompt the customer to replace document feeder maintenance kit.
	Clean Rollers Count (MFP only)			Total number of pages since the document feeder rollers were cleaned.
	Clean Rollers Interval (MFP only)			Use this item to set the interval that causes the printer to prompt the customer to clean the document feeder rollers and separation pad.
	ADF Count (MFP only)			Set the total pages fed through the document feeder.
	Flatbed Count (MFP only)			Set the total pages scanned from the flatbed.
	ADF Simplex Count (MFP only)			Set the total single-sided pages fed through the document feeder.
	ADF Duplex Count (MFP only)			Set the total two-sided pages fed through the document feeder.
	Copy Scan Count (MFP only)			Set the total copy pages that have been scanned.
Send Scan Count (MFP only)			Set the number of scanned pages sent to email.	
Fax Scan Count (fax models only)			Set the number of scanned pages that have been faxed.	

**Table 2-85 Service menu (continued)**

First level	Second level	Third-level	Value	Description
	Copy Pages Count (MFP only)			Set the number of scanned pages that have been printed.
Scanner Settings (MFP only)	Edge to Adjust	Glass: Rear Edge Glass: Left Edge ADF: Leading front edge ADF: Leading Back back ADF: Trailing Front edge ADF:Left Side Front ADF:Left Side Back	Adjustment	Set the calibration values.  <b>NOTE:</b> Adjustments are in millimeters (-20 to 20).
		Clear All		Clear all adjustment values (set to zero).
		Done		Done exits the menu.
Serial Number		Done		Set the serial number.  Done exits the menu.
Service ID		Done		Use this item to show the date that the printer was first used on the control panel. This eliminates the need for users to keep paper receipts for proof of warranty.  Done exits the menu.
Cold Reset Paper		Letter A4		When you perform a cold reset, the paper size that is stored in NVRAM is reset to the default factory setting. If you replace a formatter board in a country/region that uses A4 as the standard paper size, use this menu to reset the default paper size to A4. LETTER and A4 are the only available values.
MPS Settings	Low Alerts On	On Off		Use this to configure managed services specific settings.

**Table 2-85 Service menu (continued)**

First level	Second level	Third-level	Value	Description	
	Reset Supplies level	<ul style="list-style-type: none"> <li>Reset to level 1</li> <li>Reset to level 2</li> <li>Reset to level 3</li> <li>Reset to non-HP managed mode</li> </ul>	Cancel		
PTT Test Mode (fax models only)	Hook Operations	Go Off Hook		Test the internal modem for the analog fax accessory.	
		Go On Hook			
	Generate Random Data		Done	Select a value from the list.	
			Start		
	Generate Dialing Tones/Pulses	Pulse Burst	Stop	Enter a value.	
		Tone Burst	Done		
		Continuous Tone			
	Generate Pulse Dial Number	Pulse	Phone Number	Enter dial number.	
	Generate/Dial Phone Number	Tone			
	Generate Single Modem Tone	1100 Hz	Done	Select a value, and then select <b>Start</b> .	
2100 Hz		Start			
1300 Hz					
1800 Hz					
Fax Transmit Signal Loss			Enter a value (0 to 30).		
Ring Settings	Ring Interval		ms (0 to 600)		
	Ring Frequency High Limit		Hz (0 to 100)		
	PBX Ring Detect		On or Off		
Test Support	Continuous Scan (MFP only)	2-sided	Done		
		Save to Disk	Start		
	Continuous Copy (MFP only)	2-sided	Done		
		Save to Disk	Start		
	Raw Scan (MFP only)	2-sided	Done		
		Mechanical Calibration	Start		
	Continuous Print from USB		Done		<b>NOTE:</b> Insert a USB flash drive into the USB port on the printer.
			Start		

**Table 2-85 Service menu (continued)**

First level	Second level	Third-level	Value	Description
	Runtime Configuration			Choose from a list of available configurations.  <b>NOTE:</b> The list is product specific.
Fax V.29 Speed (fax models only)	V.29 9600 V.29 7200			Set the fax module rate (for example, the V.29 9600 setting means that the fax module is capable of transferring a maximum of 9600 bits per second).
Reset Supplies				Use this item after replacing a supply item (for example, the tray rollers) to reset the firmware counter (resets to zero) for that supply item.  <b>NOTE:</b> The list of supply items is printer specific and also depends on the printer configuration.

## Printer resets

- [Restore factory-set defaults](#)
- [Printer cold reset](#)

### Restore factory-set defaults

#### Restore factory-set defaults from a touchscreen control panel

1. From the Home screen on the printer control panel, swipe (right), and then touch the [Support Tools](#) item.
2. Open the following menus:
  - [Settings](#)
  - [General](#)
  - [Restore Factory Settings](#)
3. Touch [Reset](#) to reset current user specified default settings to the factory default settings, or touch [Cancel](#) to return to the [General](#) menu.

#### Restore factory-set defaults from from a LCD control panel

1. From the Home screen on the printer control panel, use the down arrow ▼ button to select the [Print](#) menu.
2. Use the right arrow ► button to scroll to and select the [Settings](#) menu, and then press the [OK](#) button.
3. Use the down arrow ▼ button to scroll to and select the [General](#) menu, and then press the [OK](#) button.
4. Use the down arrow ▼ button to scroll to and select the [Reset Factory Settings](#) item, and then press the [OK](#) button.
5. Use the left arrow ◀ or right arrow ► buttons to select the [Reset](#) item, and then press the [OK](#) button.



---

**NOTE:** Touch the [Cancel](#) button to return to the [General](#) menu.

---

### Printer cold reset

#### Cold reset using the Pre-boot menu from a touchscreen control panel

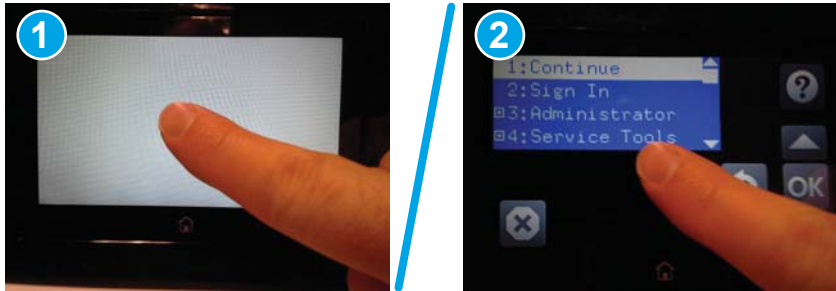
---

**CAUTION:** This procedure resets all product configurations and settings to factory defaults (customer configurations and settings are lost).

---


1. Touch the middle of the control-panel display when you see the [1/8](#) under the logo.

**Figure 2-141** Open the Pre-boot menu



2. Use the down arrow ▼ button to highlight the +3:Administrator item, and then touch the OK button.
3. Use the down arrow ▼ button to highlight the +8:Startup Options item, and then touch the OK button.
4. Use the down arrow ▼ button to highlight the 2 Cold Reset item, and then touch the OK button.
5. Touch the Home button to return to the main Pre-boot menu and highlight the 1 Continue item, and then touch the OK button.

---


 **NOTE:** The printer initializes.

---

#### Cold reset using the Pre-boot menu from a LCD control panel

1. Press the Cancel button when you see the 1/8 under the logo
2. Use the down arrow ▼ button to scroll to and select the +3:Administrator menu, and then press the OK button.
3. Use the down arrow ▼ button to scroll to and select the +8:Startup Options item, and then press the OK button.
4. Use the down arrow ▼ button to scroll to and select the 2 Cold Reset item, and then press the OK button.
5. Touch the Home button to return to the main Pre-boot menu and highlight the 1:Continue item, and then touch the OK button.

---

 **NOTE:** The printer initializes.

---

## Format Disk and Partial Clean functions



**NOTE:** Only for printers with a hard-disk drive (HDD) installed.

### Active and repository firmware locations

The firmware bundle consists of multiple parts. The main components are the Windows CE Operating System and the printer/peripheral firmware files.

There are two locations/partitions on the hard drive where the firmware components are stored:

- The Active, where the operating system and firmware currently are executing.
- The Repository, the recovery location.

If the Active location is damaged, or a **Partial Clean** was performed, the printer automatically copies over the OS and firmware files from the Repository location and the printer recovers.

If both the Active and Repository locations are damaged, or a **Format Disk** was performed, then both locations are gone and the error message **99.09.67** displays on the control-panel display. The user must upload the firmware to the printer in order for it to function again.



**CAUTION:** The **Format Disk** option performs a disk initialization for the entire disk. The operating system, firmware files, and third party files (among other files) will be completely lost. HP does not recommend this action.

### Partial Clean

The **Partial Clean** option erases all partitions and data on the disk drive, except for the firmware repository where a backup copy of the firmware file is stored. This allows the disk drive to be reformatted without having to download a firmware upgrade file to return the printer to a bootable state.

#### Characteristics of a Partial Clean

- Customer-defined settings, third-party solutions, firmware files, and the operating system are deleted.
- Rebooting the printer restores the firmware files from the Repository location, but does not restore any customer-defined settings.
- For previous HP printers, a Hard Disk Initialization is similar to executing the **Partial Clean** function for this printer.



**CAUTION:** HP recommends backing-up printer configuration data before executing a **Partial Clean** to retain customer-defined settings (if needed). See the **Backup/Restore** item in the **Device Maintenance** menu.

#### Reasons for performing a Partial Clean

- The printer continually boots up in an error state.



**NOTE:** Try clearing the error prior to executing a **Partial Clean**.

- The printer will not respond to commands from the control panel.
- Executing the **Partial Clean** function is helpful for troubleshooting hard disk problems.

- To reset the printer by deleting all solutions and customer-defined settings.
- The printer default settings are not properly working.

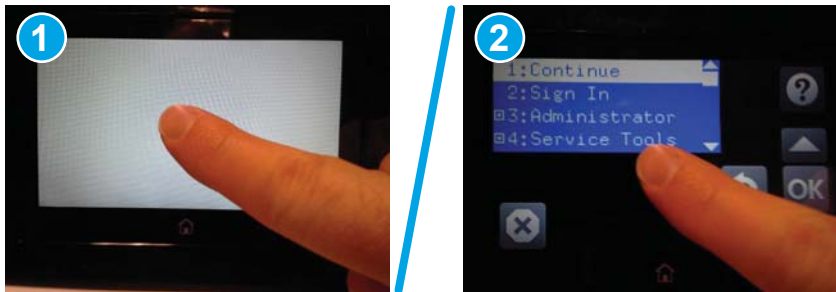
## Execute a Partial Clean

### Execute a Partial Clean from a touchscreen control panel

**CAUTION:** This procedure resets all printer configurations and settings to factory defaults (customer configurations and settings are lost).

1. Touch the middle of the control-panel display when you see the 1/8 under the logo.

**Figure 2-142** Open the Pre-boot menu



2. Use the down arrow ▼ button to highlight the +3:Administrator item, and then touch the OK button.
3. Use the down arrow ▼ button to highlight Partial Clean and then touch the OK button.
4. Touch the OK button again.
5. Touch the Home button to highlight Continue, and then touch the OK button.

**NOTE:** The printer initializes.

### Execute a Partial Clean from a LCD control panel

**CAUTION:** This procedure resets all printer configurations and settings to factory defaults (customer configurations and settings are lost).

1. Press the Cancel button when you see the 1/8 under the logo.
2. Use the down arrow ▼ button to highlight the +3:Administrator item, and then press the OK button.
3. Use the down arrow ▼ button to highlight Partial Clean and then press the OK button.
4. Press the OK button again.
5. Press the Home button to highlight Continue, and then press the OK button.

**NOTE:** The printer initializes.

## Format Disk


The **Format Disk** option erases the entire disk drive.

**CAUTION:** After executing a **Format Disk** option, the printer is *not* bootable.




## Characteristics of a Format Disk

- Customer-defined settings, third-party solutions, firmware files, and the operating system are deleted.

 **NOTE:** Rebooting the printer *does not* restore the firmware files.


- Rebooting the printer restores the firmware files from the Repository location, but does not restore any customer-defined settings.
- After executing the **Format Disk** function, the message **99.09.67** displays on the control panel.
- After executing the **Format Disk** function, the printer firmware must be reloaded.

 **CAUTION:** HP recommends not using the **Format Disk** option unless an error occurs and the solution in the printer service manual recommends this solution. After executing the **Format Disk** function, the printer is unusable.

HP recommends backing-up printer configuration data before executing a **Format Disk** to retain customer-defined settings (if needed). See the **Backup/Restore** item in the **Device Maintenance** menu.

## Reasons for performing a Format Disk


- The printer continually boots up in an error state.

 **NOTE:** Try clearing the error prior to executing a **Format Disk**.

- The printer will not respond to commands from the control panel.
- Executing the **Format Disk** function is helpful for troubleshooting hard disk problems.
- To reset the printer by deleting all solutions and customer-defined settings.

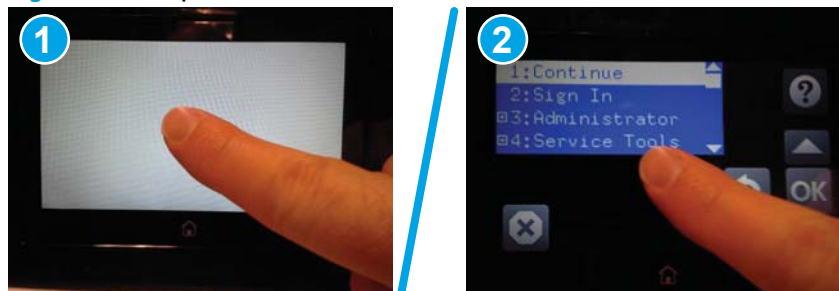
## Execute a Format Disk

### Execute a Format Disk from a touchscreen control panel

 **CAUTION:** This procedure resets all printer configurations and settings to factory defaults (customer configurations and settings are lost).

1. Touch the middle of the control-panel display when you see the **1/8** under the logo.

**Figure 2-143** Open the Pre-boot menu



2. Use the down arrow ▼ button to highlight the **+3:Administrator** item, and then touch the **OK** button.
3. Use the down arrow ▼ button to highlight **Format Disk**, and then touch the **OK** button.
4. Touch the **OK** button again.



---

**NOTE:** When the **Format Disk** operation is complete, reload the printer firmware.

---

### Execute a Format Disk from a LCD control panel



**CAUTION:** This procedure resets all printer configurations and settings to factory defaults (customer configurations and settings are lost).

---

1. Press the **Cancel** button when you see the **1/8** under the logo.
2. Use the down arrow ▼ button to highlight the **+3:Administrator** item, and then press the **OK** button.
3. Use the down arrow ▼ button to highlight **Format Disk**, and then press the **OK** button.
4. Press the **OK** button again.



---

**NOTE:** When the **Format Disk** operation is complete, reload the printer firmware.


---

# Firmware upgrades


To download the most recent firmware upgrade for the printer, go to:

- In the US, go to [www.hp.com/support/ljM607](http://www.hp.com/support/ljM607), [www.hp.com/support/ljM608](http://www.hp.com/support/ljM608), or [www.hp.com/support/ljM609](http://www.hp.com/support/ljM609), [www.hp.com/support/ljM631MFP](http://www.hp.com/support/ljM631MFP), [www.hp.com/support/ljM632MFP](http://www.hp.com/support/ljM632MFP), or [www.hp.com/support/ljM633MFP](http://www.hp.com/support/ljM633MFP).
  - a. Select **Get drivers, Software, and Firmware**, and then select the appropriate product by name.


---

 **NOTE:** More than one printer model might be listed. Make sure to select the correct model so that the upgraded firmware supports all of the printer functions.
  - b. Select the driver language and operating system.
  - c. Locate the firmware download, and then select **Download**.
- Outside the U.S., go to [www.hp.com/support](http://www.hp.com/support).
  - a. Select your country/region.
  - b. Select **Drivers & Downloads**.
  - c. Enter the product name in the **Find my product** dialogue box, and then select **Go**.

---

 **TIP:** Click on the **How do I find my product name/number?** link to see a short video on identifying the printer name and number.
  - d. Select the appropriate product by name.

---

 **NOTE:** More than one printer model might be listed. Make sure to select the correct model so that the upgraded firmware supports all of the printer functions.
  - e. Select the driver language and operating system.
  - f. Locate the firmware download, and then select **Download**.
- [Determine the installed revision of firmware](#)
- [Perform a firmware upgrade](#)

## Determine the installed revision of firmware



---

**NOTE:** Print a configuration page to determine the installed revision of firmware.

---

### Print the configuration page from a touchscreen control panel

1. From the Home screen on the printer control panel, swipe (right), and then touch the **Reports** button.
2. Touch the **Configuration/Status Pages** item
3. Touch **Configuration Page** to select it.



---

**TIP:** Multiple report pages can be selected, and then printed together.

---

4. Touch the **Print** button to print the pages.

### Print the configuration page from a LCD control panel

1. From the Home screen on the printer control panel, use the down arrow ▼ button to select the **Print** menu.
2. Use the right arrow ► button to scroll to **Reports**, and then press the **OK** button.
3. Use the down arrow ▼ button to scroll to **Configuration/Status Pages**, and then press the **OK** button.
4. Use the down arrow ▼ or ▲ buttons to scroll to **Configuration Page**, and then press the **OK** button to select it.
5. Use the down arrow ▼ and right arrow ► buttons to scroll to **Print**, and then press the **OK** button to print the pages.



---

**TIP:** Multiple report pages can be selected, and then printed together.

---

Figure 2-144 Configuration report

### Configuration Page

---

**Device Information**

Product Name: HP LaserJet Flow MFP M633  
 Device Name: HP LaserJet Flow MFP M633  
 Model Number: P-XXXX  
 DC Controller Version: 4.108  
 Optional Sys Version: 4.101  
 Product Serial Number: XXXXXXXXXXXX  
 Formatter Number: XXXXXXXXXXXX  
 FW Ver: 3.312

---

Firmware Bundle Version:  
 Firmware Revision: 2456044\_619902  
 Firmware Datecode: 20160712  
 HP FutureSmart Level: HP FutureSmart 4

---

Service ID: 00000  
 Pages Since Last Maintenance: 0  
 Document Feeder Kit Interval: 150000  
 Pages Since Last Doc Feeder Maintenance: 0  
 PS Wait Time-out: 300 seconds  
 Engine Cycles\*: 7  
 Cartridge Protection: Off  
 Cartridge Policy: Off  
 Cartridge Index: PFLP JAP)  
 \*Not weighted for billing

---

**Installed Personalities and Options**

PCL: 20010402  
 PCLXL: 20010402  
 POSTSCRIPT: 20010402  
 PDF: 20130901  
 AirPrint: 2040201  
 PWG RASTER: 2040201  
 TIFF: 20150522  
 Internal Disk: Hard Disk: Enabled  
 Serial Number: W3PH102V  
 Model: HP Secure Hard Disk  
 Capacity: 355264 Mb  
 Hard Disk Encryption Status: Drive is not yet encrypted  
 Internal Fax: Ver11.1  
 Embedded HP Jetdirect: NP1A30E29  
 LDAP Gateway: 0.0.0.0  
 Digital Send Advanced

---

**HP Web Services**

HP Web Services: Disabled  
 ePrint: Disabled

Total RAM: 2560 MB

---

**Event Log**

Number	Cycles	Event
47	7	10:00:59
48	0	33:02:02
49	7	10:00:59

---


**Security**

Hard Disk Encryption Status:  
 Internal Disk: Drive is not yet encrypted.  
 Job Data Encryption Status: Encrypted  
 Job Data Persistence: Persistent (not volatile)  
 File Erase Mode: Non-Secure Fast Erase (No overwrite)  
 Control Panel Password: Disabled  
 Support Key: GEMJ-CC87-XX3E  
 Host USB plug and play: Enabled  
 Device USB: Enabled  
 Whitelisting: Development

---

**Paper Trays and Options**

Default Paper Size: Letter (8.5x11)  
 Tray 1 Size: Any Size  
 Tray 1 Type: Any Type  
 Tray 2 Size: Letter (8.5x11)  
 Tray 2 Type: Plain  
 Tray 3 Size: Any Custom  
 Tray 3 Type: Plain  
 Tray 4 Size: Legal (8.5x14)  
 Tray 4 Type: Plain  
 Duplex Unit:  
 Device Name: HP 3-Bin Stapler/Stacker Function Separator  
 Model: STX-20-STP-200  
 Manufacturer: HEWLETT PACKARD  
 Firmware Revision: ED01.02.01.02  
 1. Output Bin 1, 500 Sheets, Standard bin  
 2. Output Bin 2, 400 Sheets, Upper bin  
 3. Output Bin 3, 100 Sheets, Middle bin

01/15/2017 19:54:08

English (United States)

## Perform a firmware upgrade

The firmware bundle is a .bdl file. This file requires an interactive upgrade method. The traditional FTP, LPR or Port 9100 methods of upgrading are not available. Use one of the following methods to upgrade the firmware for this printer.

### HP Embedded Web Server



---

**NOTE:** The firmware update might take 10 minutes or longer based on the input/output (I/O) transfer rates and the time it takes for the printer to reinitialize.

---

1. Open an Internet browser window.
2. Enter the printer IP address in the URL line.
3. Select the **Firmware Upgrade** link from the **General** tab or from the **Troubleshooting** tab.
4. Browse to the location that the firmware upgrade file was downloaded to, and then select the firmware file—the file has a .bdl file extension. Select the **Install** button to perform the upgrade.




---


**NOTE:** Do not close the browser window OR interrupt communication until the HP Embedded Web Server (EWS) displays the confirmation page.

---

5. After the printer reinitializes, print a configuration page and verify that the latest firmware version has been installed.


## USB flash drive (control-panel menu)

 **NOTE:** USB flash drives that are not using a FAT32 format, or do not have a CD formatted partition, might not be recognized by the printer. If the printer does not recognize a USB flash drive, try using a different USB flash drive.


 **TIP:** The USB port on the printer must be enabled. If it is disabled, use the [Enable Retrieve from USB](#) item in the [General Settings](#) menu to enable it.

### USB flash drive firmware (control-panel menu) update from a touchscreen control panel

1. Copy the .bdl file to a portable USB flash drive.
2. Turn the printer on, and then wait until it initializes.
3. From the Home screen on the printer control panel, swipe (right), and then touch the [Support Tools](#) item.
4. Open the following menus:
  - [Maintenance](#)
  - [USB Firmware Upgrade](#)
5. Insert the USB flash drive with the .bdl file on it into the USB port on the printer.
6. Touch the .bdl file, and then touch the [Install](#) button.

 **NOTE:** If there is more than one .bdl file on the storage device, make sure to select the correct file for this printer.


7. When the upgrade is complete, the printer restarts.

 **TIP:** Print a configuration page and verify that the upgrade firmware version was installed.

### USB flash drive firmware (control-panel menu) update from a LCD control panel

1. Copy the .bdl file to a portable USB flash drive.
2. From the Home screen on the printer control panel, use the down arrow ▼ button to select the [Print](#) menu.
3. Use the right arrow ► button to scroll to and select the [Support Tools](#) menu, and then press the [OK](#) button.
4. Use the down arrow ▼ button to scroll to and select the [Maintenance](#) menu, and then press the [OK](#) button.
5. Use the down arrow ▼ button to scroll to and select the [USB Firmware Upgrade](#) menu, and then press the [OK](#) button.
6. Insert the USB flash drive with the .bdl file on it into the USB port on the printer.
7. Use the down arrow ▼ button to scroll to the appropriate .bdl file, and then press the [OK](#) button to select.


---

 **NOTE:** If there is more than one .bdl file on the storage device, make sure to select the correct file for this printer.

---

8. Use the down arrow ▼ and right arrow ► buttons to scroll to **Install**, and then press the **OK** button to start the firmware upgrade.


---

 **TIP:** Print a configuration page and verify that the upgrade firmware version was installed.

---



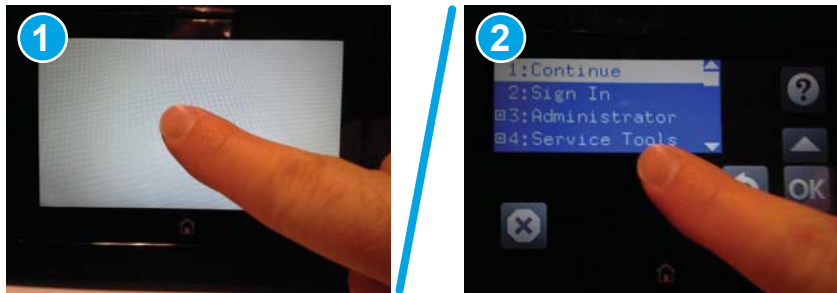
## USB flash drive (Pre-boot menu)

 **IMPORTANT:** Only use this method of performing a firmware upgrade if the printer cannot initialize to the **Ready** state.


### USB flash drive firmware (Pre-boot menu) update from a touchscreen control panel

1. Copy the .bdl file to a portable USB flash drive.
2. Touch the middle of the control-panel display when you see the 1/8 under the logo.


**Figure 2-145** Open the Pre-boot menu




3. Touch the down arrow ▼ button to highlight **+3 Administrator**, and then touch the **OK** button.
4. If necessary, touch the down arrow ▼ button to highlight **+1 Download**, and then touch the **OK** button.
5. Insert the USB flash drive with the .bdl file on it into the USB port on the printer.

 **NOTE:** If the error message **No USB Thumbdrive Files Found** displays on the control-panel display, try using a different portable storage device.


6. Touch the down arrow ▼ button to highlight **USB Thumbdrive**, and then touch the **OK** button.
7. Touch the down arrow ▼ button to highlight the .bdl file, and then touch the **OK** button.

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

 **TIP:** If there is more than one .bdl file on the storage device, make sure to select the correct file for this printer.

8. When the message **Complete** displays on the control-panel display, turn the printer power off, and then on again.
9. Touch the **OK** button to begin the upgrade. When the upgrade is complete, the printer will initialize to the **Ready** state.
10. When the upgrade process is complete, print a configuration page and verify that the upgrade firmware version was installed.

### USB flash drive firmware (Pre-boot menu) update from a LCD control panel

1. Copy the .bdl file to a portable USB flash drive.
2. Press the **Cancel**  button when you see the 1/8 under the logo.
3. Press the down arrow ▼ button to highlight **+3 Administrator**, and then press the **OK** button.

4. If necessary, press the down arrow ▼ button to highlight **+1 Download**, and then press the **OK** button.
5. Insert the USB flash drive with the .bdl file on it into the USB port on the printer.



**NOTE:** If the error message **No USB Thumbdrive Files Found** displays on the control-panel display, try using a different portable storage device.

---

6. Press the down arrow ▼ button to highlight **USB Thumbdrive**, and then press the **OK** button.
7. Press the down arrow ▼ button to highlight the .bdl file, and then press the **OK** button.



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



**TIP:** If there is more than one .bdl file on the storage device, make sure to select the correct file for this printer.

---

8. When the message **Complete** displays on the control-panel display, turn the printer power off, and then on again.
9. When the upgrade process is complete, print a configuration page and verify that the upgrade firmware version was installed.

## Solve fax problems (M631, M632, M633)

Fax troubleshooting information is not provided in this service manual. This information is available on the HP Service Access Workbench (SAW) Web site. Go to <http://h41302.www4.hp.com/km/saw/home.do>, and then use "fax troubleshooting" as the search term.

## Solve email problems (M631, M632, M633)

Email troubleshooting information is not provided in this service manual. This information is available on the HP Service Access Workbench (SAW) Web site. Go to <http://h41302.www4.hp.com/km/saw/home.do>, and then use "email troubleshooting" as the search term.



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# A Printer specifications

- [Printer dimensions](#)
- [Printer space requirements](#)
- [Power consumption, electrical specifications, and acoustic emissions](#)
- [Operating environment range](#)
- [Certificate of Volatility](#)

## Printer dimensions

- [Printer dimensions \(M607, M608, M609\)](#)
- [Printer dimensions \(M631, M632, M633\)](#)

### Printer dimensions (M607, M608, M609)

**Table A-1 Dimensions for M607n, M607dn, M608n, M608dn, M609dn models**

	Printer fully closed	Printer fully opened
Height	380 mm (17.8 in)	453 mm (17.8 in)
Depth	466 mm (18.3 in)	1,040 mm (40.9 in)
Width	431 mm (17 in)	431 mm (17 in)
Weight (with toner cartridge)	20.6 kg (45.4 lb)	

**Table A-2 Dimensions for M6608x, M609x**

	Printer fully closed	Printer fully opened
Height	505 mm (19.9 in)	581 mm (22.9 in)
Depth	466 mm (18.3 in)	1,100 mm (43.3 in)
Width	431 mm (17 in)	431 mm (17 in)
Weight (with toner cartridge)	26.3 kg (58 lb)	

**Table A-3 Dimensions for the 1x550-sheet paper feeder**

	Accessory fully closed	Accessory fully opened
Height	148 mm (5.8 in)	148 mm (5.8 in)
Depth	466 mm (18.3 in)	790 mm (31.1 in)
Width	426 mm (16.7 in)	426 mm (16.7 in)
Weight	5.7 kg (12.6 lb)	

**Table A-4 Dimensions for the printer with a 1x550-sheet paper feeder**

	Printer fully closed	Printer fully opened
Height	505 mm (19.9 in)	581 mm (22.9 in)
Depth	466 mm (18.3 in)	1,100 mm (43.3 in)
Width	431 mm (17 in)	431 mm (17 in)
Weight (with toner cartridge)	26.3 kg (58 lb)	

**Table A-5 Dimensions for the 2,100-sheet HCI with stand**

	<b>Accessory fully closed</b>	<b>Accessory fully opened</b>
Height	341 mm (13.4 in)	341 mm (13.4 in)
Depth	466 mm (18.3 in)	864 mm (34 in)
Width	426 mm (16.7 in)	426 mm (16.7 in)
Weight	9.98 kg (22 lb)	

**Table A-6 Dimensions for the printer with a 2,100-sheet HCI with stand**

	<b>Printer fully closed</b>	<b>Printer fully opened</b>
Height	698 mm (27.5 in)	773 mm (30.4 in)
Depth	466 mm (18.3 in)	1,180 mm (46.5 in)
Width	431 mm (17 in)	431 mm (17 in)
Weight (with toner cartridge)	30.6 kg (67.4 lb)	

**Table A-7 Dimensions for the envelope feeder**

	<b>Accessory fully closed</b>	<b>Accessory fully opened</b>
Height	148 mm (5.8 in)	148 mm (5.8 in)
Depth	466 mm (18.3 in)	790 mm (31.1 in)
Width	426 mm (16.7 in)	426 mm (16.7 in)
Weight	5.8 kg (12.8 lb)	

**Table A-8 Dimensions for the printer with an envelope feeder**

	<b>Printer fully closed</b>	<b>Printer fully opened</b>
Height	505 mm (19.9 in)	581 mm (22.9 in)
Depth	466 mm (18.3 in)	1,100 mm (43.3 in)
Width	431 mm (17 in)	431 mm (17 in)
Weight (with toner cartridge)	26.4 kg (58.2 lb)	

**Table A-9 Dimensions for the HP Stapling Mailbox**

	<b>Accessory fully closed</b>	<b>Accessory fully opened</b>
Height	429 mm (16.9 in)	429 mm (16.9 in)
Depth	504 mm (19.8 in)	614 mm (24 in)

**Table A-9 Dimensions for the HP Stapling Mailbox (continued)**

	<b>Accessory fully closed</b>	<b>Accessory fully opened</b>
Width	475 mm (18.7 in)	511 mm (20.1 in)
Weight	11.3 kg (25 lb)	

**Table A-10 Dimensions for the printer with an HP Stapling Mailbox**

	<b>Printer fully closed</b>	<b>Printer fully opened</b>
Height	775 mm (30.5 in)	775 mm (30.5 in)
Depth	466 mm (18.3 in)	1,100 mm (43.3 in)
Width	472 mm (18.6 in)	608 mm (23.9 in)
Weight (with toner cartridge)	31.9 kg (70.4 lb)	

<sup>1</sup> These values are subject to change. For current information, go to [www.hp.com/support/ljM607](http://www.hp.com/support/ljM607), [www.hp.com/support/ljM608](http://www.hp.com/support/ljM608), or [www.hp.com/support/ljM609](http://www.hp.com/support/ljM609), [www.hp.com/support/ljM631MFP](http://www.hp.com/support/ljM631MFP), [www.hp.com/support/ljM632MFP](http://www.hp.com/support/ljM632MFP), or [www.hp.com/support/ljM633MFP](http://www.hp.com/support/ljM633MFP).



## Printer dimensions (M631, M632, M633)

**Table A-11 Dimensions for base models (M631dn, M631h Flow, M632h, M633fh)**

	Printer fully closed	Printer fully opened
Height	640 mm (25.2 in)	865 mm (34.1 in)
Depth	558 mm (22 in)	805 mm (31.7 in)
Width	512 mm (20.15 in)	1,030 mm (40.5 in)
Weight (with toner cartridge)	33.2 kg (73.2 lb)	

**Table A-12 Dimensions for M631z**

	Printer fully closed	Printer fully opened
Height	1,234 mm (48.6 in)	1,500 mm (59.1 in)
Depth	658 mm (25.9 in)	890 mm (35 in)
Width	661 mm (26 in)	1,030 mm (40.5 in)
Weight (with toner cartridge)	62.5 kg (137.8 lb)	

**Table A-13 Dimensions for M632fht**

	Printer fully closed	Printer fully opened
Height	1,094 mm (43.2 in)	1,365 mm (53.7 in)
Depth	600 mm (26 in)	890 mm (35 in)
Width	665 mm (26.15 in)	1,030 mm (40.5 in)
Weight (with toner cartridge)	52.5 kg (115.8 lb)	

**Table A-14 Dimensions for M632z Flow, M633z Flow**

	Printer fully closed	Printer fully opened
Height	1,234 mm (48.5 in)	1,500 mm (59.1 in)
Depth	658 mm (25.9 in)	890 mm (35 in)
Width	661 mm (26 in)	1,030 mm (40.5 in)
Weight (with toner cartridge)	64.3 kg (141.8 lb)	

**Table A-15 Dimensions for the 1x550-sheet paper feeder**

	Accessory fully closed	Accessory fully opened
Height	148 mm (5.8 in)	148 mm (5.8 in)

**Table A-15 Dimensions for the 1x550-sheet paper feeder (continued)**

	Accessory fully closed	Accessory fully opened
Depth	558 mm (22 in)	869 mm (34.2 in)
Width	512 mm (20.15 in)	617 mm (24.3 in)
Weight	6.8 kg (15 lb)	

**Table A-16 Dimensions for the printer with a 1x550-sheet paper feeder**

	Printer fully closed	Printer fully opened
Height	766 mm (30.15 in)	1,010 mm (39.8 in)
Depth	558 mm (22 in)	890 mm (35 in)
Width	512 mm (20.15 in)	1,030 mm (40.5 in)
Weight (with toner cartridge)	40 kg (88.2 lb)	

**Table A-17 Dimensions for the 1x550-sheet feeder with printer stand**

	Accessory fully closed	Accessory fully opened
Height	478 mm (18.8 in)	478 mm (18.8 in)
Depth	658 mm (25.9 in)	1,050 mm (41.3 in)
Width	660 mm (26 in)	980 mm (38.6 in)
Weight	19.28 kg (42.5 lb)	

**Table A-18 Dimensions for the printer with a 1x550-sheet feeder with printer stand**

	Printer fully closed	Printer fully opened
Height	1,094 mm (43.2 in)	1,365 mm (53.7 in)
Depth	600 mm (26 in)	890 mm (35 in)
Width	665 mm (26.15 in)	1,030 mm (40.5 in)
Weight (with toner cartridge)	52.5 kg (115.8 lb)	

**Table A-19 Dimensions for the 1x550-sheet feeder and 2,100-sheet HCI with stand**

	Accessory fully closed	Accessory fully opened
Height	478 mm (18.8 in)	478 mm (18.8 in)
Depth	658 mm (25.9 in)	975 mm (38.4 in)
Width	660 mm (26 in)	980 mm (38.6 in)
Weight	24.5 kg (54 lb)	

**Table A-20 Dimensions for the printer with a 1x550-sheet feeder and 2,100-sheet HCI with stand**

	Printer fully closed	Printer fully opened
Height	1,090 mm (42.9 in)	1,360 mm (53.5 in)
Depth	658 mm (25.9 in)	890 mm (35 in)
Width	660 mm (26 in)	1,030 mm (40.5 in)
Weight (with toner cartridge)	57.7 kg (127.2 lb)	

**Table A-21 Dimensions for the envelope feeder cassette**

	Accessory fully closed	Accessory fully opened
Height	148 mm (5.8 in)	148 mm (5.8 in)
Depth	558 mm (22 in)	869 mm (34.2 in)
Width	512 mm (20.15 in)	617 mm (24.3 in)
Weight	6.9 kg (15.3 lb)	

**Table A-22 Dimensions for the printer with an envelope feeder**

	Printer fully closed	Printer fully opened
Height	766 mm (30.15 in)	1,010 mm (39.8 in)
Depth	558 mm (22 in)	890 mm (35 in)
Width	512 mm (20.15 in)	1,030 mm (40.5 in)
Weight (with toner cartridge)	39.6 kg (87.3 lb)	

**Table A-23 Dimensions for the printer with an HP Stapling Mailbox**

	Printer fully closed	Printer fully opened
Height	779 mm (30.7 in)	890 mm (35 in)
Depth	558 mm (22 in)	890 mm (35 in)
Width	512 mm (20.15 in)	1,030 mm (40.5 in)
Weight (with toner cartridge)	39.8 kg (87.7 lb)	

<sup>1</sup> These values are subject to change. For current information, go to [www.hp.com/support/ljM607](http://www.hp.com/support/ljM607), [www.hp.com/support/ljM608](http://www.hp.com/support/ljM608), or [www.hp.com/support/ljM609](http://www.hp.com/support/ljM609), [www.hp.com/support/ljM631MFP](http://www.hp.com/support/ljM631MFP), [www.hp.com/support/ljM632MFP](http://www.hp.com/support/ljM632MFP), or [www.hp.com/support/ljM633MFP](http://www.hp.com/support/ljM633MFP).

## Printer space requirements

HP recommends that the following distances 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 [\[Xref Error! Target does not exist.\]](#) or [\[Xref Error! Target does not exist.\]](#).

- From the left-side or right-side of the printer to an obstruction, add:
  - 430 mm (17 in)
- From the front-side of the printer to an obstruction, add:
  - 610 mm (24 in)
- From the back-side of the printer to an obstruction, add:
  - 460 mm (18 in)

## Power consumption, electrical specifications, and acoustic emissions

See [www.hp.com/support/ljM607](http://www.hp.com/support/ljM607), [www.hp.com/support/ljM608](http://www.hp.com/support/ljM608), or [www.hp.com/support/ljM609](http://www.hp.com/support/ljM609), [www.hp.com/support/ljM631MFP](http://www.hp.com/support/ljM631MFP), [www.hp.com/support/ljM632MFP](http://www.hp.com/support/ljM632MFP), or [www.hp.com/support/ljM633MFP](http://www.hp.com/support/ljM633MFP) 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-24 Operating environment range**

Environment	Recommended	Allowed
Temperature	17° to 25°C (62.6° to 77°F)	15° to 32.5°C (59° to 90.5°F)
Relative humidity	30% to 70% relative humidity (RH)	10% to 80% RH
Altitude	Not applicable	0 to 3048 m (0 to 10,000 ft)

# Certificate of Volatility

**Figure A-1** Certificate of Volatility (1 of 2; M607, M608, M609)

Hewlett-Packard Certificate of Volatility				
Model: M607, M608, M609	Part Number: K0Q14A, 15A, 17A, 18A, 19A		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)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes please describe the type, size, function, and steps to clear the memory below				
Type (SRAM, DRAM, etc): DDR3-DRAM	Size: 512	User Modifiable:  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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:  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Function:	Steps to clear memory:
Type (SRAM, DRAM, etc):	Size:	User Modifiable: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes please describe the type, size, function, and steps to clear the memory below				
Type (Flash, EEPROM, etc): IOD EEPROM	Size: 32KB	User Modifiable:  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Function:  Store customer setting data for backup/restore	Steps to clear memory: There are no steps to clear this data.
Type (Flash, EEPROM, etc):	Size:	User Modifiable:	Function: Contains the boot code and factory product configuration data required for the device to function. User modifications are limited to downloading digitally signed HP firmware images.	Steps to clear memory: There are no steps to clear this data.
SPI Flash	4MB	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Type (Flash, EEPROM, etc):	Size:	User Modifiable: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Function:	Steps to clear memory:
Mass Storage				
Does the device contain mass storage memory (Hard Disk Drive, Tape Backup)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes please describe the type, size, function, and steps to clear the memory below				
Type (HDD, Tape, etc): EMMC	Size: 4GB All Skews	User Modifiable: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Function: OS and User Data	Steps to clear memory: firmware update
Type (HDD, Tape, etc): HDD	Size: 320 GB Accessory Only	User Modifiable: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Function: OS and User Data	Steps to clear memory: firmware update
USB				
Does the item accept USB input and if so, for what purpose (i.e Print Jobs, device firmware updates, scan upload)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes please describe below				
Print jobs, HP digitally signed firmware upgrades, 3rd party application loading. USB ports can be disabled.				
Can any data other than scan upload be sent to the USB device)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes please describe below				
Diagnostic service logs can be uploaded. Print files can be printed via a USB thumb drive.				

**Figure A-2 Certificate of Volatility (2 of 2; M607, M608, M609)**

RF/RFID	
Does the item use RF or RFID for receive or transmit of any data including remote diagnostics. (e.g. Cellular phone, Bluetooth) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes please describe below	
Purpose: Wireless Information string	
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)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes please describe below:	
Purpose: WiFi Direct Print	
Frequency: 2.4GHz, 5GHz	Bandwidth: 2401 - 2495 MHz; depending on selected channel in 2.4GHz band. 5180 - 5825 MHz; depending on selected channel in 5GHz band.
Modulation:	Effective Radiate Power (ERP):
Specifications: 802.11 b/g/n	
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)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes please describe below:	
Purpose: Device Beaconsing Secure Print Apps	
Frequency: 2.4GHz	Bandwidth: 2400-2483.5 MHz; depending on selected channel.
Modulation:	Effective Radiate Power (ERP):
Specifications: BTLE4.0 compliant	
Other Capabilities	
Does the device employ any other method of communications such as a Modem to transmit or receive any data whatsoever? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes please describe below:	
Purpose: Device Beaconsing Secure Print Apps	
Specifications	

**Figure A-3 Certificate of Volatility (1 of 2; M631, M632, M633)**

Hewlett-Packard Certificate of Volatility				
Model: M631, M632, M633	Part Number: J8J63A, 64A,65A,J8J70A,71A,72A		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)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes please describe the type, size, function, and steps to clear the memory below				
Type (SRAM, DRAM, etc): DDR3-DRAM	Size: 2GB -- Enterprise (1.5GB Fmtr + .5GB SCB)  2.5GB -- WorkFlo w	User Modifiable:  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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:  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Function:	
Type (SRAM, DRAM, etc):	Size:	User Modifiable: <input type="checkbox"/> Yes <input type="checkbox"/> 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)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes please describe the type, size, function, and steps to clear the memory below				
Type (Flash, EEPROM, etc): IOD EEPROM	Size: 32KB	User Modifiable:  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Function:  Store customer setting data for backup/restore	Steps to clear memory: There are no steps to clear this data.
Type (Flash, EEPROM, etc):  SPI Flash	Size:  4MB	User Modifiable:  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Function: Contains the boot code and factory product configuration data required for the device to function. User modifications are limited to downloading digitally signed HP firmware images.	Steps to clear memory: There are no steps to clear this data.
Type (Flash, EEPROM, etc):	Size:	User Modifiable: <input type="checkbox"/> Yes <input type="checkbox"/> No	Function:	Steps to clear memory:
Mass Storage				
Does the device contain mass storage memory (Hard Disk Drive, Tape Backup)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes please describe the type, size, function, and steps to clear the memory below				
Type (HDD, Tape, etc): EMMC	Size: 16GB dn Model Only	User Modifiable: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Function: OS and User Data	Steps to clear memory: firmware update
Type (HDD, Tape, etc): HDD	Size: 320 GB all other models 500GB Gov skew only	User Modifiable: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Function: OS and User Data	Steps to clear memory: firmware update

**Figure A-4 Certificate of Volatility (2 of 2; M631, M632, M633)**

USB	
Does the item accept USB input and if so, for what purpose (i.e Print Jobs, device firmware updates, scan upload)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes please describe below	
Print jobs, HP digitally signed firmware upgrades, 3rd party application loading. USB ports can be disabled.	
Can any data other than scan upload be sent to the USB device? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes please describe below	
Diagnostic service logs can be uploaded. Print files can be printed via a USB thumb drive.	

RF/Rfid	
Does the item use RF or RFID for receive or transmit of any data including remote diagnostics. (e.g. Cellular phone, Bluetooth) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes please describe below	
Purpose: Wireless Information string	
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)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes please describe below:	
Purpose: WiFi Direct Print	
Frequency: 2.4GHz, 5GHz	Bandwidth: 2401 - 2495 MHz; depending on selected channel in 2.4GHz band. 5180 - 5825 MHz; depending on selected channel in 5GHz band.
Modulation:	Effective Radiate Power (ERP):
Specifications: 802.11 b/g/n	

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)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes please describe below:	
Purpose: Device Beaconsing Secure Print Apps	
Frequency: 2.4GHz	Bandwidth: 2400-2483.5 MHz; depending on selected channel.
Modulation:	Effective Radiate Power (ERP):
Specifications: BTLE4.0 compliant	

Other Capabilities	
Does the device employ any other method of communications such as a Modem to transmit or receive any data whatsoever? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes please describe below:	
Purpose: Device Beaconsing Secure Print Apps	
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