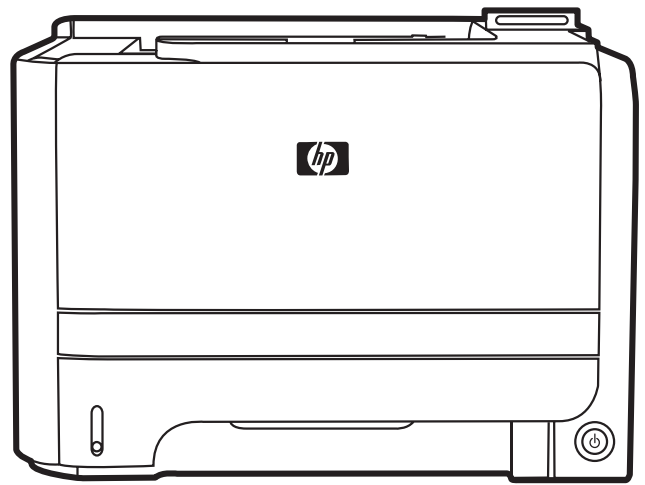
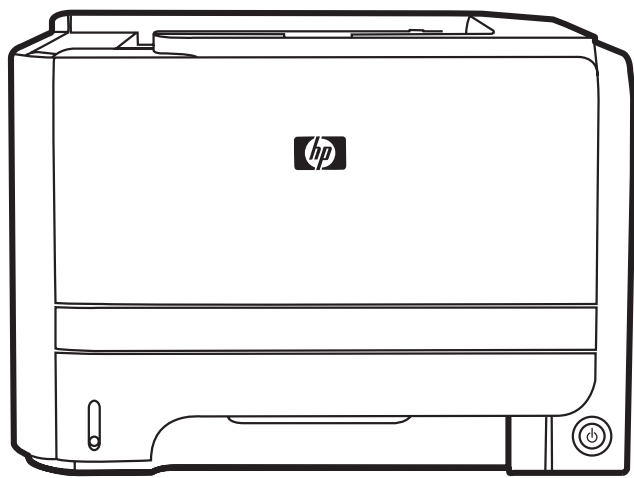


# HP LaserJet P2050 and P2030 Series Printers

## Service Manual





# HP LaserJet P2030 Series and HP LaserJet P2050 Series Printers Service Manual



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# 1 Product basics

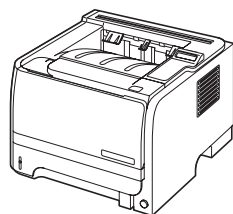
- [Product comparison](#)
- [Product features](#)
- [Product walkaround](#)
- [Supported product software](#)
- [System minimum requirements](#)
- [Connectivity](#)

# Product comparison

## HP LaserJet P2050 Series Printers

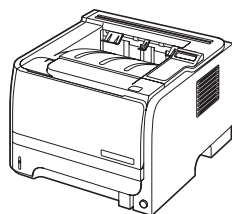
HP LaserJet P2055d printer

CE457A



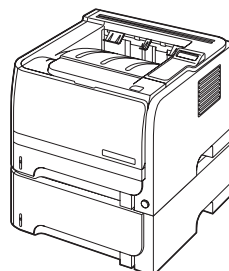
HP LaserJet P2055dn printer

CE459A



HP LaserJet P2055x printer

CE460A



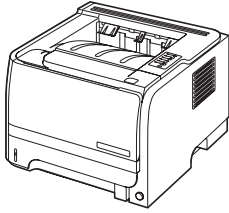
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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• Prints up to 35 pages per minute (ppm) on Letter size paper and 33 ppm on A4 size paper</li><li>• Contains 64 megabytes (MB) of random access memory (RAM) and is expandable to 320 MB.</li><li>• HP print cartridge, rated for up to 2,300 pages</li><li>• Tray 1 holds up to 50 sheets</li><li>• Tray 2 holds up to 250 sheets</li><li>• 125-sheet face-down output bin</li><li>• Straight-through output path</li><li>• 2-line control-panel display</li><li>• Hi-speed USB 2.0 port</li><li>• One open dual inline memory module (DIMM) slot</li></ul> | <p>Has the same features as the HP LaserJet P2035d model printer, plus the following:</p> <ul style="list-style-type: none"><li>• Gigabit networking port</li><li>• HP Jetdirect print server/networking solution</li><li>• Contains 128 MB RAM and is expandable to 384 MB.</li></ul> | <p>Has the same features as the HP LaserJet P2035dn model printer, plus the following:</p> <ul style="list-style-type: none"><li>• 500-sheet input tray (Tray 3)</li></ul> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
-

## HP LaserJet P2030 Series Printers

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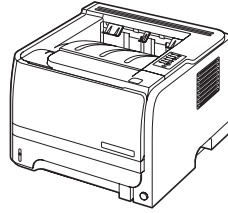
### HP LaserJet P2035 printer

CE461A



### HP LaserJet P2035n printer

CE462A



- 
- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• Prints up to 30 pages per minute (ppm) on Letter-size paper and 30 ppm on A4-size paper</li><li>• Contains 16 megabytes (MB) of random access memory (RAM).</li><li>• HP print cartridge, rated for up to 2,300 pages</li><li>• Tray 1 holds up to 50 sheets</li><li>• Tray 2 holds up to 250 sheets</li><li>• 125-sheet face-down output bin</li><li>• Straight-through output path</li><li>• Hi-speed USB 2.0 port</li><li>• Parallel port</li></ul> | <p>Has the same features as the HP LaserJet P2035 model, with the following differences:</p> <ul style="list-style-type: none"><li>• 10/100 networking port</li><li>• No parallel port</li></ul> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
-

# Product features

## HP LaserJet P2050 Series Printers

Feature	Description
<b>Performance</b>	<ul style="list-style-type: none"><li>• 600 MHz processor</li></ul>
<b>User interface</b>	<ul style="list-style-type: none"><li>• 2-line display</li><li>• HP ToolboxFX (a Web-based status and problem-solving tool)</li><li>• Windows® and Macintosh printer drivers</li><li>• Embedded Web server to access support and order supplies (for network-connected models only)</li></ul>
<b>Printer drivers</b>	<ul style="list-style-type: none"><li>• HP PCL 6 (included on CD)</li><li>• HP PCL 5c Universal Print Driver for Windows (HP UPD PCL 5c) (available for download from the Web)</li><li>• HP postscript emulation Universal Print Driver for Windows (HP UPD PS) (available for download from the Web)</li><li>• XML Paper Specification (XPS) Driver (available for download from the Web)</li></ul>
<b>Resolution</b>	<ul style="list-style-type: none"><li>• FastRes 1200—produces 1200-dots-per-inch (dpi) print quality for fast, high-quality printing of business text and graphics</li><li>• ProRes 1200—produces 1200-dpi printing for the best quality in line art and graphic images</li><li>• 600 dpi—provides the fastest printing</li></ul>
<b>Fonts</b>	<ul style="list-style-type: none"><li>• 45 internal scalable fonts available for PCL and 35 for HP postscript emulation</li><li>• 80 device-matching screen fonts in TrueType format available with the software solution</li></ul>
<b>Accessories</b>	<ul style="list-style-type: none"><li>• 500-sheet input tray</li><li>• HP Jetdirect external print server</li></ul>
<b>Connectivity</b>	<ul style="list-style-type: none"><li>• Hi-Speed USB 2.0 connection</li><li>• Gigabit networking connection (HP LaserJet P2055dn and HP LaserJet P2055x only)</li></ul>
<b>Supplies</b>	<ul style="list-style-type: none"><li>• The supplies status page contains information about toner level, page count, and estimated pages remaining.</li><li>• The product checks for an authentic HP print cartridge at installation.</li><li>• Integration with HP Sure Supply Web site for replacement-cartridge reordering</li></ul>
<b>Supported operating systems</b>	<ul style="list-style-type: none"><li>• Microsoft® Windows® 2000, Windows® Server 2003, Windows® XP, and Windows Vista™</li><li>• Macintosh OS X V10.3, V10.4, and V10.5</li><li>• Novell NetWare (TCP/IP only) (HP LaserJet P2055dn and HP LaserJet P2055x only)</li></ul>
<b>Accessibility</b>	<ul style="list-style-type: none"><li>• The online user guide is compatible with text screen-readers.</li><li>• The print cartridge can be installed and removed by using one hand.</li><li>• All doors can be opened by using one hand.</li><li>• Media can be loaded in Tray 1 by using one hand.</li></ul>

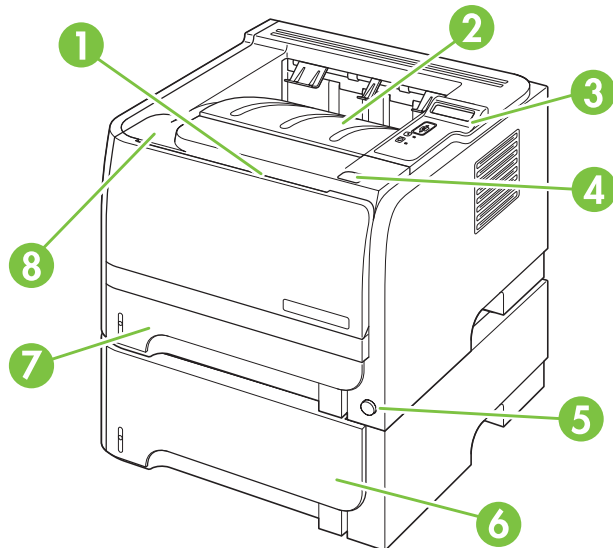
## HP LaserJet P2030 Series Printers

Feature	Description
<b>Performance</b>	<ul style="list-style-type: none"> <li>266 MHz processor</li> </ul>
<b>User interface</b>	<ul style="list-style-type: none"> <li>2-button, 6 LED control panel</li> <li>Windows® and Macintosh printer drivers</li> <li>Embedded Web server to access support and order supplies (for network-connected models only)</li> </ul>
<b>Printer drivers</b>	<ul style="list-style-type: none"> <li>Host-based printer drivers for Windows and Macintosh, included on the product CD</li> <li>HP UPD PCL 5c printer driver (available for download from the Web)</li> <li>XML Paper Specification (XPS) printer driver (available for download from the Web)</li> </ul>
<b>Resolution</b>	<ul style="list-style-type: none"> <li>FastRes 1200—produces 1200-dots-per-inch (dpi) print quality for fast, high-quality printing of business text and graphics</li> <li>600 dpi—provides the fastest printing</li> </ul>
<b>Fonts</b>	<ul style="list-style-type: none"> <li>45 internal scalable fonts</li> <li>80 device-matching screen fonts in TrueType format available with the software solution</li> </ul>
<b>Connectivity</b>	<ul style="list-style-type: none"> <li>Hi-Speed USB 2.0 connection</li> <li>Parallel connection (HP LaserJet P2035 printer only)</li> <li>10/100 networking port (HP LaserJet P2035n printer only)</li> </ul>
<b>Supplies</b>	<ul style="list-style-type: none"> <li>The supplies status page contains information about toner level, page count, and estimated pages remaining.</li> <li>The product checks for an authentic HP print cartridge at installation.</li> <li>Integration with HP Sure Supply Web site for replacement-cartridge reordering</li> </ul>
<b>Accessories</b>	<ul style="list-style-type: none"> <li>HP Jetdirect external print server</li> </ul>
<b>Supported operating systems</b>	<ul style="list-style-type: none"> <li>Microsoft® Windows® 2000, Windows® Server 2003, Windows® XP, and Windows Vista™</li> <li>Macintosh OS X V10.3, V10.4, and V10.5</li> </ul>
<b>Accessibility</b>	<ul style="list-style-type: none"> <li>The online user guide is compatible with text screen-readers.</li> <li>The print cartridge can be installed and removed by using one hand.</li> <li>All doors can be opened by using one hand.</li> <li>Media can be loaded in Tray 1 by using one hand.</li> </ul>

# Product walkaround

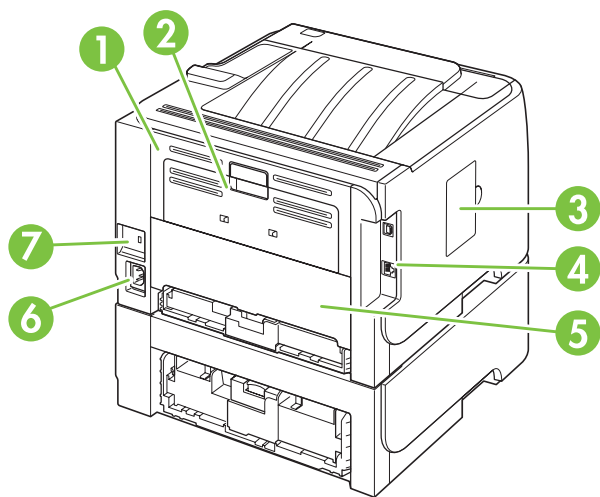
## HP LaserJet P2050 Series Printers

### Front view



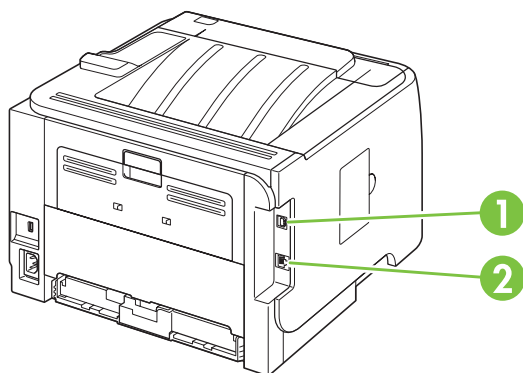
1	Tray 1 (pull to open)
2	Top output bin
3	Control panel
4	Print-cartridge-door release button
5	On/off switch
6	Optional Tray 3 (included with the HP LaserJet P2055x printer)
7	Tray 2
8	Print-cartridge door

Rear view



1	Jam-release door (pull the green handle to open)
2	Straight-through paper path (pull to open)
3	DIMM cover (provides access to the DIMM slot)
4	Interface ports
5	Rear duplex jam-release door
6	Power connection
7	Slot for a cable-type security lock

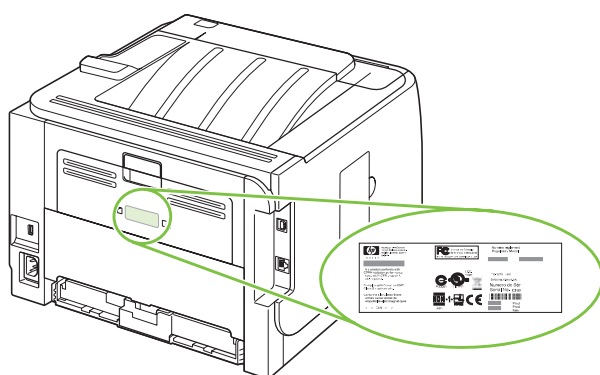
## Interface ports



1	Hi-Speed USB 2.0 connection, for connecting directly to a computer
2	Gigabit networking connection (10/100/1000 networking port)

## Model and serial number label

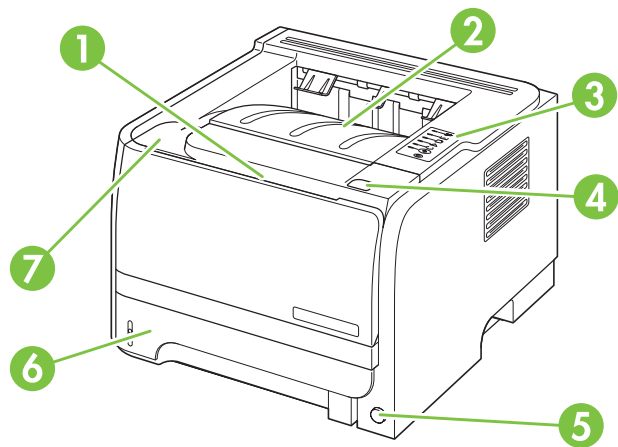
The label that contains the model and serial numbers is on the outside of the rear output door (straight-through paper path).





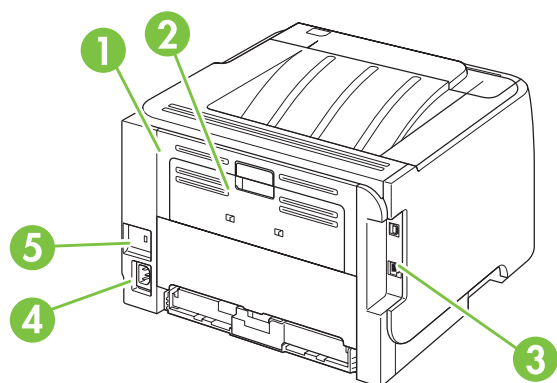
# HP LaserJet P2030 Series Printers

## Front view



1	Tray 1 (pull to open)
2	Top output bin
3	Control panel
4	Print-cartridge-door release button
5	On/off switch
6	Tray 2
7	Print-cartridge door

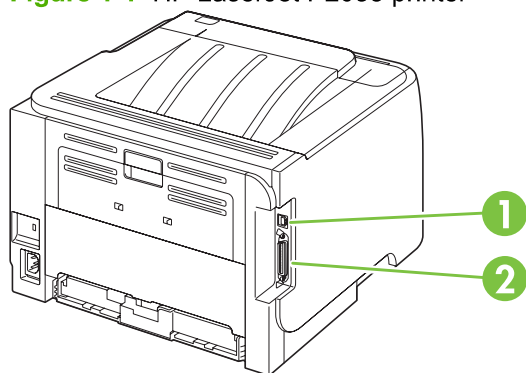
## Rear view



1	Jam-release door (pull the green handle to open)
2	Straight-through paper path (pull to open)
3	Interface ports
4	Power connection
5	Slot for a cable-type security lock

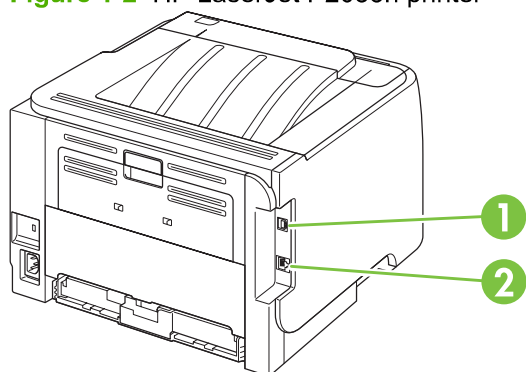
Interface ports

Figure 1-1 HP LaserJet P2035 printer



1	Hi-Speed USB 2.0 port
2	Parallel port

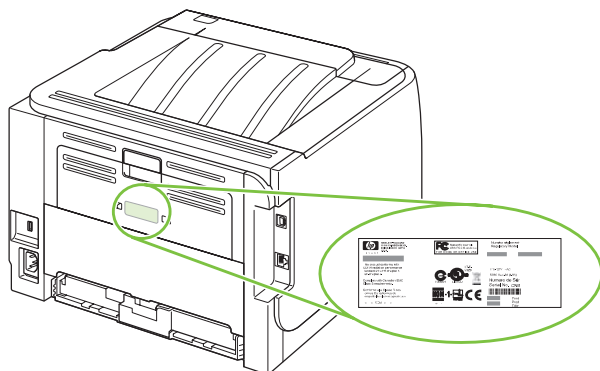
Figure 1-2 HP LaserJet P2035n printer



1	Hi-Speed USB 2.0 port
2	10/100 network port

## Model and serial-number label location

The label that contains the model and serial numbers is on the rear of the product.



# Supported product software

## Software included with the product

There are several options for completing a recommended install. Easy Install will complete the installation with default settings. Advanced Install allows you to select custom settings and choose the components that are installed.

## Software installation types for Windows

You can choose from the following types of software installations:

- **Recommended Installation** . This method installs the full set of drivers and software, including status, alerting, and troubleshooting tools. This method is recommended for computers in a direct-connect or a home/small network environment.
- **Express Installation**. This method installs the minimum set of drivers and software. This method is recommended for servers or computers in a network environment.

## Macintosh software

- HP Printer Utility

## Supported printer drivers for Windows (HP LaserJet P2050 Series Printers)

- HP PCL 6 (on the product CD)
- HP PCL 5c Universal Print Driver (HP UPD PCL 5c) (available for download from the Web)
- HP postscript emulation Universal Print Driver (HP UPD PS) (available for download from the Web)
- XPS (XML Paper Specification) driver (available for download from the Web)

The printer drivers include online Help that has instructions for common printing tasks and also describes the buttons, checkboxes, and drop-down lists that are in the printer driver.



**NOTE:** For more information about the UPD, see [www.hp.com/go/upd](http://www.hp.com/go/upd).

## Supported printer drivers for Windows (HP LaserJet P2030 Series Printers)

The product features a host-based printer driver.

The printer drivers include online Help that has instructions for common printing tasks and also describes the buttons, checkboxes, and drop-down lists that are in the printer driver.

## Supported printer drivers for Macintosh (HP LaserJet P2050 Series Printers only)

The HP installer provides PostScript® Printer Description (PPD) files, Printer Dialog Extensions (PDEs), and the HP Printer Utility for use with Macintosh computers.

The PPDs, in combination with the Apple PostScript printer drivers, provide access to device features. Use the Apple PostScript printer driver that comes with the computer.

## Supported printer drivers for Macintosh (HP LaserJet P2030 Series Printers only)

The HP installer provides a printer driver and the HP Printer Utility for use with Macintosh computers.

## Other software provided

### Software for Windows

#### HP ToolboxFX (HP LaserJet P2050 Series Printers only)

HP ToolboxFX is a software program that you can use for the following tasks:

- Checking the product status
- Checking the supplies status and ordering supplies online
- Setting up alerts
- Setting up e-mail notification for certain product and supplies events
- Viewing and changing product settings
- Viewing product documentation
- Gaining access to troubleshooting and maintenance tools

You can view HP ToolboxFX when the product is directly connected to your computer or is connected to a network. HP ToolboxFX is installed as part of the basic installation (recommended).

#### Status Alerts software (HP LaserJet P2030 Series Printers only)

The Status Alerts software provides information about the current status of the product.

The software also provides pop-up alerts when certain events occur, such as an empty tray or a problem with the product. The alert includes information about solving the problem.

## Software for networks

#### HP Web Jetadmin

HP Web Jetadmin is a browser-based management tool for HP Jetdirect-connected printers within your intranet, and it should be installed only on the system administrator's computer.

To download a current version of HP Web Jetadmin and for the latest list of supported host systems, go to [www.hp.com/go/webjetadmin](http://www.hp.com/go/webjetadmin).

When installed on a host server, any client can gain access to HP Web Jetadmin by using a supported Web browser (such as Microsoft® Internet Explorer 4.x or Netscape Navigator 4.x or later) by navigating to the HP Web Jetadmin host.

#### Embedded Web server (HP LaserJet P2055dn, HP LaserJet P2055x, and HP LaserJet P2035n printers only).

The device is equipped with an embedded Web server, which provides access to information about device and network activities. This information appears in a Web browser, such as Microsoft Internet Explorer, Netscape Navigator, Apple Safari, or Firefox.

The embedded Web server resides on the device. It is not loaded on a network server.

The embedded Web server provides an interface to the device that anyone who has a network-connected computer and a standard Web browser can use. No special software is installed or configured, but you must have a supported Web browser on your computer. To gain access to the embedded Web server, type the IP address for the device in the address line of the browser. (To find the IP address, print a configuration page. For more information about printing a configuration page, see [Print the information pages on page 48.](#))

For a complete explanation of the features and functionality of the embedded Web server, see [Embedded Web server \(HP LaserJet P2055dn, HP LaserJet P2055x, and HP LaserJet P2035n only\) on page 57.](#)

## Software for other operating systems

OS	Software
UNIX	<p>To download the HP UNIX modelscripts, follow these steps.</p> <ol style="list-style-type: none"><li>1. Go to <a href="http://www.hp.com">www.hp.com</a>, and click <b>Software &amp; Driver Download</b>.</li><li>2. Type the name of the product in the product name box.</li><li>3. In the list of operating systems, click <b>UNIX</b>.</li><li>4. Download the appropriate file or files.</li></ol>
Linux	For information, go to <a href="http://www.hp.com/go/linuxprinting">www.hp.com/go/linuxprinting</a> .
Citrix	Use the printer driver provided with the product.

# System minimum requirements

## Windows requirements

- 512 MB of RAM
- 350 MB of disk space

## Macintosh requirements

- 256 MB of RAM
- 150 MB of disk space



# Connectivity

## Supported networks (HP LaserJet P2050 Series Printers)

The product supports the TCP/IP network protocol. It is the most widely used and accepted networking protocol. Many networking services use this protocol. This product also supports IPv4 and IPv6. The following tables list the networking services/protocols that are supported on the product.

**Table 1-1 Printing**

Service name	Description
port9100 (Direct Mode)	The default TCP/IP printing port on the HP Jetdirect print server, accessed by software such as HP Standard Port
Line printer daemon (LPD)	LPD provides line printer spooling services for TCP/IP systems. Use LPD services on the HP Jetdirect print server.
WS Print	Use the Microsoft Web Services for Devices (WSD) Print services supported on the HP Jetdirect print server.

**Table 1-2 Network product discovery**

Service name	Description
SLP (Service Location Protocol)	Device Discovery Protocol, used to help find and configure network devices. Used primarily by Microsoft-based software programs.
multicast Domain Name Service (mDNS—also known as “Rendezvous” or “Bonjour”)	Device Discovery Protocol, used to help find and configure network devices. Used primarily by Apple Macintosh-based software programs.
WS Discovery	Allows Microsoft WS discovery protocols on the print server.
LLMNR (TCP/IP v6)	Indicates whether link local multicast name resolution (LLMNR) requests are responded to over IPv6.
NetBIOS over TCP/IP	Provides communication among applications on separate computers within a local area network. Because the programming interface runs through TCP/IP (NBT), each computer in the network has both a NetBIOS name and an IP address relevant to a host name (even though the two names might not be the same).
DNS Client	DNS domain name that the HP Jetdirect print server resides in (for example, support.hp.com).

**Table 1-3 Messaging and management**

Service name	Description
HTTP (hypertext transfer protocol)	Allows Web browsers to communicate with embedded Web server.
EWS (embedded Web server)	Allows a user to manage the product through a Web browser.
SNMP (simple network management protocol)	Used by network programs for product management. SNMP V3 and standard MIB-II (Management Information Base) objects are supported.

**Table 1-3 Messaging and management (continued)**

Service name	Description
Web Jetadmin (WJA)	Management program that provides controlled access to HP Jetdirect and product features.
EPC	HP Easy Printer Care Software 2.0 (EPC 2.0) provides HP Web Jetadmin-type functions for small and micro businesses with up to 15 HP LaserJet products. EPC 2.0 delivers effortless laser product upkeep and protection for your printing investment, in addition to simple, consolidated supplies replenishment.

**Table 1-4 IP addressing**

Service name	Description
DHCP (dynamic host configuration protocol)	For Automatic IP address assignment. DHCP server provides the product with an IP address. Generally requires no user intervention for product to obtain IP address from a DHCP server.
BOOTP (bootstrap protocol)	For Automatic IP address assignment. BOOTP server provides the product with an IP address. Requires the administrator to type the product MAC hardware address on the BOOTP server in order for the product to obtain an IP address from that server.
Auto IP	For Automatic IP address assignment. If neither a DHCP server nor a BOOTP server is present, this service allows the product to generate a unique IP address.
Manual IP	Manually configure the IP address on the print server by using the product control panel or the embedded Web server.
Telnet	Set configuration parameters by using the default IP address to create a Telnet connection from your system to the HP Jetdirect print server. When configured, the print server saves the configuration when turned off and then turned on.
RARP	You can configure the print server to use RARP on UNIX and Linux systems. Use RARP to answer the print server's RARP request and supply the print server with the IP address. The RARP method allows you to only configure the IP address.
ARP/PING	You can configure an HP Jetdirect print server with an IP address using the <code>arp</code> command from a supported system. The workstation from which the configuration is made must be located on the same network segment as the HP Jetdirect print server.

## Supported network (HP LaserJet P2030 Series Printers)

The product supports the TCP/IP network protocol. It is the most widely used and accepted networking protocol. Many networking services use this protocol. This product also supports IPv4 and IPv6. The following tables list the networking services/protocols that are supported on the product.

**Table 1-5 Printing**

Service name	Description
port9100 (Direct Mode)	Printing service
Line printer daemon (LPD)	Printing service

**Table 1-6 Network product discovery**

Service name	Description
SLP (Service Location Protocol)	Device Discovery Protocol, used to help find and configure network devices. Used primarily by Microsoft-based software programs.
multicast Domain Name Service (mDNS—also known as “Rendezvous” or “Bonjour”)	Device Discovery Protocol, used to help find and configure network devices. Used primarily by Apple Macintosh-based software programs.

**Table 1-7 Messaging and management**

Service name	Description
HTTP (hypertext transfer protocol)	Allows Web browsers to communicate with embedded Web server.
EWS (embedded Web server)	Allows a user to manage the product through a Web browser.
SNMP (simple network management protocol)	Used by network programs for product management. SNMP V1, V2, and standard MIB-II (Management Information Base) objects are supported.

**Table 1-8 IP addressing**

Service name	Description
DHCP (dynamic host configuration protocol)	For Automatic IP address assignment. DHCP server provides the product with an IP address. Generally requires no user intervention for product to obtain IP address from a DHCP server.
BOOTP (bootstrap protocol)	For Automatic IP address assignment. BOOTP server provides the product with an IP address. Requires the administrator to type the product MAC hardware address on the BOOTP server in order for the product to obtain an IP address from that server.
Auto IP	For Automatic IP address assignment. If neither a DHCP server nor a BOOTP server is present, this service allows the product to generate a unique IP address.



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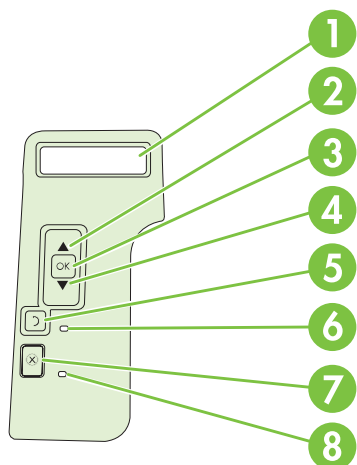
## 2 Control panel

- [Control panel \(HP LaserJet P2050 Series Printers only\)](#)
- [Control panel \(HP LaserJet P2030 Series Printers only\)](#)

# Control panel (HP LaserJet P2050 Series Printers only)

## Control-panel layout

Use the control panel to obtain product and job status information and to configure the product.



Number	Button or light	Function
1	Control-panel display	Shows status information, menus, help information, and error messages.
2	▲ Up arrow	Navigates to the next submenu or the next value in a menu selection list, moves the cursor forward a single position, or increases the value of numeric items
3	OK button	<ul style="list-style-type: none"><li>• Saves the selected value for an item</li><li>• Performs the action that is highlighted on the control-panel display</li><li>• Clears an error condition when the condition is clearable</li></ul>
4	▼ Down arrow	Navigates to the next item in the list, or decreases the value of numeric items
5	↶ Back button	Backs up one level in the menu tree or backs up one numeric entry
6	Ready light	<ul style="list-style-type: none"><li>• <b>On:</b> The product is online and ready to accept data to print.</li><li>• <b>Off:</b> The product cannot accept data because it is offline (paused) or has experienced an error.</li><li>• <b>Blinking:</b> The product is processing a job.</li></ul>
7	⊗ Cancel button	Cancels the current print job
8	Error light	<ul style="list-style-type: none"><li>• <b>Off:</b> The product is functioning without error.</li><li>• <b>Blinking:</b> Action is required. See the control-panel display.</li></ul>

# Use the control-panel menus

To gain access to the control-panel menus, complete the steps below.

## Use the menus

- 1. Press **OK**.
- 2. Press the down arrow ▼ or the up arrow ▲ to navigate the listings.
- 3. Press **OK** to select the appropriate option.
- 4. Press the back button ↶ to return to the previous level.

 **NOTE:** Asterisks that appear on the control panel note that the menu item is selected.

The following are the main menus.

Main menus (Setup menu)	<b>Reports</b>
	<b>System setup</b>
	<b>Service</b>
	<b>Network config.</b> (HP LaserJet P2055dn and HP LaserJet P2055x only)

## Reports menu

Use the **Reports** menu to print reports that provide information about the product.

Menu item	Description
Demo page	Prints a page that demonstrates print quality.
Menu structure	Prints a map of the control-panel-menu layout. Lists the active settings for each menu.
Config report	Prints a list of all the product settings. Includes network information when the product is connected to a network.
Supplies status	Prints the status for the print cartridge, including the following information: <ul style="list-style-type: none"><li>• Estimated pages remaining</li><li>• Part number</li><li>• Number of pages printed</li></ul>
Network report	Prints a list of all product network settings
PCL font list	Prints a list of all the PCL 5c fonts that are installed
PCL 6 font list	Prints a list of all the PCL 6 fonts that are installed
PS font list	Prints a list of all the PostScript (PS) fonts that are installed
Service page	Prints the service report
Usage page	Prints a page that lists PCL 5c pages, PCL 6 pages, PS pages, pages that were jammed or mispicked in the product; and reports the page count



## System setup menu

Use this menu to establish basic product settings. The **System setup** menu has several sub-menus.

Menu item	Sub-menu item	Sub-menu item	Description
Language			Select the language for the control-panel display messages and the product reports.
Quiet mode		On Off	Enable or disable quiet mode. When quiet mode is turned on, the product prints at a slower speed. This setting is used for heavy media.  The default setting is <b>Off</b> .
Paper setup	Def. paper size	A list of available sizes appears.	Select the size for printing internal reports or any print job that does not specify a size.
	Def. paper type	A list of available media types appears.	Select the media type for printing internal reports or any print job that does not specify a type.
	Tray n <b>NOTE:</b> n = 1, 2, or 3	Paper type Paper size	Select the default size and type for the tray from the list of available sizes and types.
	Paper out action	Wait forever Override Cancel	Select how the product should react when a print job requires a size or type that is not available or when a specified tray is empty.  Select <b>Wait forever</b> to make the product wait until you load the correct media and press <b>OK</b> . This is the default setting.  Select <b>Override</b> to print on a different size or type after a specified delay.  Select <b>Cancel</b> to automatically cancel the print job after a specified delay.  If you select either <b>Override</b> or <b>Cancel</b> , the control panel prompts you to specify the number of seconds to delay. Press the up arrow ▲ to increase the time, up to 3600 seconds. Press the down arrow ▼ to decrease the time.
Print quality	Cartridge low	(1-20)	The percentage threshold determines when the product begins reporting low toner.
Print density	(1-5)		Select the amount of toner to apply to thicken edges and lines.  The default setting is <b>3</b> .

Menu item	Sub-menu item	Sub-menu item	Description
Display contrast	Medium		Adjust the contrast of the LCD.
	Darker		
	Darkest		
	Lightest		
	Lighter		
Courier font	Regular		Select a version of the Courier font.
	Dark		The default is <b>Regular</b> .

## Service menu

Use this menu to restore default settings, clean the product, and activate special modes that affect print output.

Menu item	Description
<b>Cleaning mode</b>	<p>Use this option to clean the product if you see toner specks or other marks on the printed output. The cleaning process removes dust and excess toner from the paper path.</p> <p>When you select this item, the product prompts you to load plain paper in Tray 1 and then press <b>OK</b> to begin the cleaning process. Wait until the process is complete. Discard the page that prints.</p>
<b>USB speed</b>	<p>Sets the USB speed to <b>High</b> or <b>Full</b>. For the product to actually operate at high speed, it must have high speed enabled and be connected to an EHCI host controller that is also operating at high speed. This menu item also does not reflect the current operating speed of the product.</p> <p>The default setting is <b>High</b>.</p>
<b>Less paper curl</b>	<p>If printed pages are consistently curled, use this option to set the product to a mode that reduces curl.</p> <p>The default setting is <b>Off</b>.</p>
<b>Archive print</b>	<p>If you are printing pages to be stored for a long time, use this option to set the product to a mode that reduces toner smearing and dusting.</p> <p>The default setting is <b>Off</b>.</p>
<b>Restore defaults</b>	<p>Sets all customized settings to the factory default values.</p>

## Network config. menu (HP LaserJet P2055dn and HP LaserJet P2055x only)

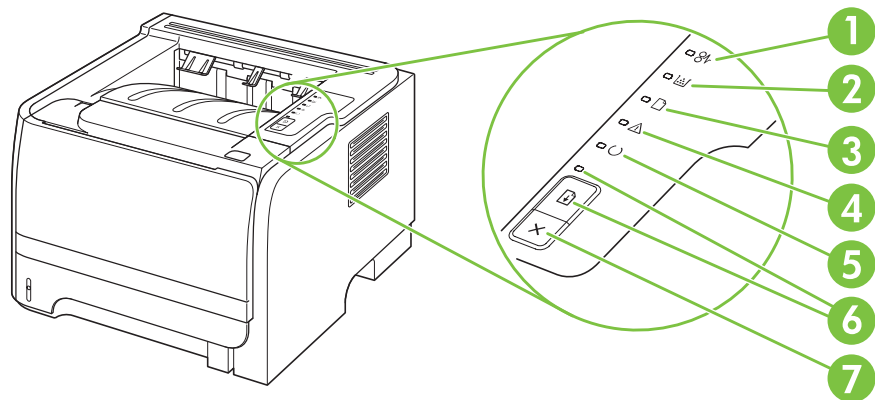
Use this menu to establish network configuration settings.

Menu item	Description
<b>CFG TCP/IP</b>	<p>Access the TCP/IP menu and set TCP/IP protocol parameters.</p> <p><b>BOOTP=YES*</b> Enable IPv4 configuration by a BOOTP Server.</p> <p><b>DHCP=YES*</b> Enable IPv4 configuration by a DHCP Server. (This item only displays on the control panel when <b>BOOTP=NO*</b>.)</p> <p>If <b>DHCP=YES*</b> and the print server has a DHCP lease, you can configure the following DHCP settings:</p> <ul style="list-style-type: none"><li>• <b>RELEASE:</b> Select whether to release (<b>YES</b>) or save (<b>NO</b>) the current lease.</li><li>• <b>RENEW:</b> Select whether to renew (<b>YES</b> or <b>NO</b>) the lease.</li></ul> <p><b>AUTO IP=YES*</b> Automatically assign a link-local IPv4 address in the form 169.254.x.x.</p> <p>To manually set an IP, specify <b>BOOTP=NO*</b>, <b>DHCP=NO*</b> and <b>AUTO IP=NO*</b>, and then set the following TCP/IPv4 parameters from the control panel:</p> <p>Each byte of the IPv4 address (IP)</p> <p>Subnet Mask (SM)</p> <p>Syslog Server (LG)</p> <p>Default Gateway (GW)</p> <p>Idle Timeout period (default is 270 seconds, 0 disables the timeout)</p> <p><b>CFG DNS 1:</b> IPv4 address of a primary DNS server (one byte at a time).</p> <p><b>CFG DNS 2:</b> IPv4 address of a secondary DNS server (one byte at a time).</p> <p><b>IPv6 = YES*:</b> Enable IPv6 operation. Select NO to disable IPv6 operation.</p> <p><b>POLICY=RTR_AV/RTR_UN/ALWAYS:</b> Set one of the following IPv6 addressing policies:</p> <ul style="list-style-type: none"><li>• <b>RTR_AV:</b> (default) Stateful auto-configuration method is determined by a router. The router specifies whether the print server obtains its address, configuration information, or both from a DHCPv6 server.</li><li>• <b>RTR_UN:</b> Try to obtain stateful configuration from a DHCPv6 server (when a router is not available).</li><li>• <b>ALWAYS:</b> Always try to obtain stateful configuration from a DHCPv6 server (whether or not a router is available).</li></ul> <p><b>MANUAL= KEEP/DISABLE:</b> Set the behavior of a manually configured IPv6 address detected on the print server.</p> <ul style="list-style-type: none"><li>• <b>KEEP</b> (default): Maintain the address in an active state.</li><li>• <b>DISABLE:</b> Maintain the address, but in an inactive state.</li></ul> <p>Print an HP Jetdirect configuration page to verify your settings. (The print server can overwrite selected parameters with values that ensure proper operation.)</p>

Menu item	Description
<b>WEB</b>	<p>Embedded Web server accepts communications using HTTPS (Secure HTTP) only, or both HTTP and HTTPS.</p> <ul style="list-style-type: none"> <li>● <b>HTTPS:</b> Accept only HTTPS (print server appears as a secure site).</li> <li>● <b>HTTP/HTTPS:</b> Accept either HTTP or HTTPS.</li> </ul>
<b>SECURITY</b>	<p>Reset current security settings to factory defaults.</p> <ul style="list-style-type: none"> <li>● <b>KEEP</b> (default): Retain current security settings.</li> <li>● <b>RESET:</b> Reset security settings to factory defaults.</li> </ul>
<b>FIREWALL</b>	<p>Disable Firewall.</p> <ul style="list-style-type: none"> <li>● <b>KEEP</b> (default): Retain Firewall operation as configured.</li> <li>● <b>DISABLE:</b> Disable Firewall operation.</li> </ul>
<b>PRINT</b>	<p>Print a configuration page for the selected item.</p> <p><b>SECURITY:</b> Print the current security settings.</p>
<b>CFG LINK</b>	<p>Manually configure the HP Jetdirect print server's network link.</p> <p>Set the link speed and communication mode. These must match the network. The available settings depend on the print server model.</p> <p><b>CAUTION:</b> Changing the link setting can cause the loss of network communication with the print server.</p> <ul style="list-style-type: none"> <li>● <b>AUTO</b> (default): Use auto negotiation to set the highest link speed and communication mode allowed. If auto negotiation fails, either 100TX HALF or 10TX HALF is set depending on the detected link speed of the hub/switch port. (A 1000T half-duplex selection is not supported.)</li> <li>● <b>10T HALF:</b> 10 Mbps, half-duplex operation.</li> <li>● <b>10T FULL:</b> 10 Mbps, Full-duplex operation.</li> <li>● <b>100TX HALF:</b> 100 Mbps, half-duplex operation.</li> <li>● <b>100TX FULL:</b> 100 Mbps, full-duplex operation.</li> <li>● <b>100TX AUTO:</b> Limits auto-negotiation to a maximum link speed of 100 Mbps.</li> <li>● <b>1000TX FULL:</b> 1000 Mbps, full-duplex operation.</li> </ul>

# Control panel (HP LaserJet P2030 Series Printers only)

The printer control panel is comprised of six lights and two buttons. The lights produce patterns that identify the printer status.



1	<b>Jam light:</b> Indicates a jam in the printer
2	<b>Toner light:</b> When the print cartridge is low, the Toner light illuminates. When the print cartridge is out of the printer, the Toner light blinks.
3	<b>Paper out light:</b> Indicates the printer is out of paper
4	<b>Attention light:</b> Indicates the print cartridge door is open or other errors exist
5	<b>Ready light:</b> Indicates the printer is ready to print
6	<b>Go button and light</b>
7	<b>Cancel button:</b> To cancel the print job currently printing, press the <b>Cancel</b> button.

 **NOTE:** See [Status-light patterns \(HP LaserJet P2030 Series Printers only\)](#) on page 209 for a description of the light patterns.

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## 3 Paper and print media

- [Supported paper and print media](#)
- [Load paper and print media](#)
- [Configure trays](#)
- [Use paper output options](#)

# Supported paper and print media

## Paper for the HP LaserJet P2050 Series Printers

### Supported paper and print media sizes

This product supports a number of paper sizes, and it adapts to various media.



**NOTE:** To obtain best results, select the correct paper size and type in the printer driver before printing.

**Table 3-1 Supported paper and print media sizes**

Size and dimensions	Tray 1	Tray 2	Optional 500-sheet Tray 3	Duplexer
Letter 216 x 279 mm (8.5 x 11 inches)	✓	✓	✓	✓
Legal 216 x 356 mm (8.5 x 14 inches)	✓	✓	✓	✓
A4 210 x 297 mm (8.27 x 11.69 inches)	✓	✓	✓	✓
A5 148 x 210 mm (5.83 x 8.27 inches)	✓	✓	✓	
A6 105 x 148 mm (4.1 x 5.8 inches)	✓	✓	✓	
B5 (JIS) 182 x 257 mm (7.17 x 10.12 inches)	✓	✓	✓	
Executive 184 x 267 mm (7.24 x 10.51 inches)	✓	✓	✓	
Postcard (JIS) 100 x 148 mm (3.9 x 5.8 inches)	✓			
Double Postcard (JIS) 148 x 200 mm (5.8 x 7.9 inches)	✓			
16K 184 x 260 mm (7.2 x 10.2 inches)	✓			
16K 195 x 270 mm (7.7 x 10.6 inches)	✓			
16K 197 x 273 mm (7.8 x 10.8 inches)	✓			
8.5 x 13 216 x 330 mm (8.5 x 13 inches)	✓	✓	✓	✓



**Table 3-1 Supported paper and print media sizes (continued)**

Size and dimensions	Tray 1	Tray 2	Optional 500-sheet Tray 3	Duplexer
Envelope Commercial #10 105 x 241 mm (4.13 x 9.49 inches)	✓			
Envelope B5 ISO 176 x 250 mm (6.7 x 9.8 inches)	✓			
Envelope C5 ISO 162 x 229 mm (6.93 x 9.84 inches)	✓			
Envelope DL ISO 110 x 220 mm (4.33 x 8.66 inches)	✓			
Envelope Monarch 98 x 191 mm (3.9 x 7.5 inches)	✓			
Custom 76 x 127 mm to 216 x 356 mm (3.0 x 5.0 inches to 8.5 x 14 inches)	✓			

## Supported paper and print media types

For a complete list of specific HP-brand paper that this product supports, go to [www.hp.com/go/ljp2050series\\_software](http://www.hp.com/go/ljp2050series_software).

Paper type (control panel)	Paper type (printer driver)	Tray 1	Tray 2	Optional 500-sheet Tray 3	Duplexer
<b>PLAIN 75–95 G</b>	<b>Plain</b>	✓	✓	✓	✓
<b>LIGHT 60-74 G</b>	<b>Light 60-74g</b>	✓	✓	✓	✓
<b>MID-WEIGHT</b>	<b>Mid-weight</b>	✓	✓	✓	✓
<b>HEAVY 111–130 G</b>	<b>Heavy 111–130g</b>	✓	✓	✓	
<b>EXTRA HEAVY 131–175 G</b>	<b>Extra heavy 131–175g</b>	✓			
<b>TRANSPARENCY</b>	<b>Monochrome Laser Transparency</b>	✓	✓	✓	
<b>LABELS</b>	<b>Labels</b>	✓			
<b>LETTERHEAD</b>	<b>Letterhead</b>	✓	✓	✓	✓
<b>PREPRINTED</b>	<b>Preprinted</b>	✓	✓	✓	✓
<b>PREPUNCHED</b>	<b>Prepunched</b>	✓	✓	✓	✓
<b>COLOR</b>	<b>Colored</b>	✓	✓	✓	✓
<b>ROUGH</b>	<b>Rough</b>	✓	✓	✓	
<b>BOND</b>	<b>Bond</b>	✓	✓	✓	✓

Paper type (control panel)	Paper type (printer driver)	Tray 1	Tray 2	Optional 500-sheet Tray 3	Duplexer
RECYCLED	Recycled	✓	✓	✓	✓
ENVELOPE	Envelope	✓			

## Tray and bin capacity

Tray or bin	Paper type	Specifications	Quantity
Tray 1	Paper	Range: 60 g/m <sup>2</sup> (16 lb) bond to 200 g/m <sup>2</sup> (54 lb) bond	Maximum stack height: 5 mm (0.3 inch) Equivalent to 50 sheets of 75 g/m <sup>2</sup> (20 lb) bond
	Envelopes	Less than 60 g/m <sup>2</sup> (16 lb) bond to 90 g/m <sup>2</sup> (24 lb) bond	Up to 5 envelopes
	Labels	Maximum 0.23 mm (0.009 inch) thick	Maximum stack height: 5 mm (0.3 inch)
	Transparencies	Minimum 0.13 mm (0.005 inch) thick	Maximum stack height: 5 mm (0.3 inch)
Tray 2	Paper	Range: 60 g/m <sup>2</sup> (16 lb) bond to 135 g/m <sup>2</sup> (36 lb) bond	Equivalent to 250 sheets of 75 g/m <sup>2</sup> (20 lb) bond Maximum stack height for A6 paper: 15 mm (0.59 inch)
	Transparencies	Minimum 0.13 mm (0.005 inch) thick	Maximum stack height: 26 mm (1.0 inch)
Optional 500-sheet Tray 3	Paper	Range: 60 g/m <sup>2</sup> (16 lb) bond to 135 g/m <sup>2</sup> (36 lb) bond	Equivalent to 500 sheets of 75 g/m <sup>2</sup> (20 lb) bond Maximum stack height for A6 paper: 40 mm (1.6 inches)
	Transparencies	Minimum 0.13 mm (0.005 inch) thick	Maximum stack height: 54 mm (2.1 inches)
Standard top bin	Paper		Up to 125 sheets of 75 g/m <sup>2</sup> (20 lb) bond

## Paper for the HP LaserJet P2030 Series Printers

### Supported paper and print media sizes

This product supports several paper sizes, and it adapts to various media.



**NOTE:** To obtain the best print results, select the appropriate paper size and type in the print driver before printing.

**Table 3-2 Supported paper and print media sizes**

Size and dimensions	Tray 1	Tray 2
Letter 216 x 279 mm (8.5 x 11 inches)	✓	✓
Legal 216 x 356 mm (8.5 x 14 inches)	✓	✓
A4 210 x 297 mm (8.27 x 11.69 inches)	✓	✓
A5 148 x 210 mm (5.83 x 8.27 inches)	✓	✓
A6 105 x 148 mm (4.1 x 5.8 inches)	✓	✓
B5 (JIS) 182 x 257 mm (7.17 x 10.12 inches)	✓	✓
Executive 184 x 267 mm (7.24 x 10.51 inches)	✓	✓
Postcard (JIS) 100 x 148 mm (3.9 x 5.8 inches)	✓	
Double Postcard (JIS) 148 x 200 mm (5.8 x 7.9 inches)	✓	
16K 184 x 260 mm (7.2 x 10.2 inches)	✓	
16K 195 x 270 mm (7.7 x 10.6 inches)	✓	
16K 197 x 273 mm (7.8 x 10.8 inches)	✓	
8.5 x 13 216 x 330 mm (8.5 x 13 inches)	✓	✓
Envelope Commercial #10 105 x 241 mm (4.13 x 9.49 inches)	✓	
Envelope B5 ISO 176 x 250 mm (6.7 x 9.8 inches)	✓	
Envelope C5 ISO 162 x 229 mm (6.39 x 9.02 inches)	✓	
Envelope DL ISO	✓	

**Table 3-2 Supported paper and print media sizes (continued)**

Size and dimensions	Tray 1	Tray 2
110 x 220 mm (4.33 x 8.66 inches)		
Envelope Monarch	✓	
98 x 191 mm (3.9 x 7.5 inches)		
Custom	✓	
76 x 127 mm to 216 x 356 mm (3.0 x 5.0 inches to 8.5 x 14 inches)		

## Supported paper and print media types

For a complete list of specific HP-brand paper that this product supports, go to [www.hp.com/support/ljp2030series](http://www.hp.com/support/ljp2030series).

Paper type (printer driver)	Tray 1	Tray 2
Plain Paper	✓	✓
Light 60–74 g/m <sup>2</sup>	✓	✓
Midweight (96–110 g/m <sup>2</sup> )	✓	✓
Heavy (111–130 g/m <sup>2</sup> )	✓	✓
Extra Heavy (131–175 g/m <sup>2</sup> )	✓	
Transparency	✓	✓
Labels	✓	
Letterhead	✓	✓
Preprinted	✓	✓
Prepunched	✓	✓
Color	✓	✓
Rough	✓	✓
Bond	✓	✓
Recycled	✓	✓
Envelope	✓	
HP Multipurpose Paper	✓	✓
HP Office Paper	✓	✓
HP LaserJet Paper	✓	✓
HP Premium Choice Paper	✓	✓

## Tray and bin capacity

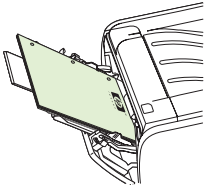
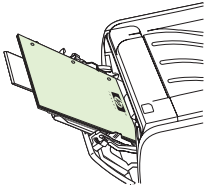
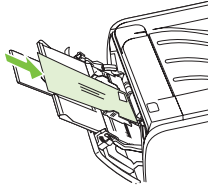
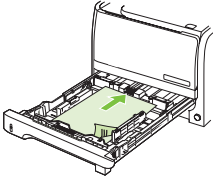
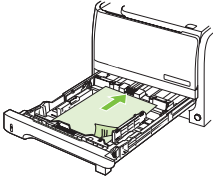
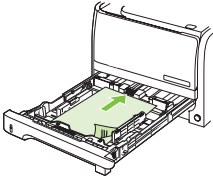
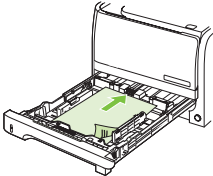
Tray or bin	Paper type	Specifications	Quantity
Tray 1	Paper	Range: 60 g/m <sup>2</sup> (16 lb) bond to 200 g/m <sup>2</sup> (54 lb) bond	Maximum stack height: 5 mm (0.3 inch) Equivalent to 50 sheets of 75 g/m <sup>2</sup> (20 lb) bond
	Envelopes	Less than 60 g/m <sup>2</sup> (16 lb) bond to 90 g/m <sup>2</sup> (24 lb) bond	Up to 5 envelopes
	Labels	Maximum 0.23 mm (0.009 inch) thick	Maximum stack height: 5 mm (0.3 inch)
	Transparencies	Minimum 0.13 mm (0.005 inch) thick	Maximum stack height: 5 mm (0.3 inch)
Tray 2	Paper	Range: 60 g/m <sup>2</sup> (16 lb) bond to 135 g/m <sup>2</sup> (36 lb) bond	Equivalent to 250 sheets of 75 g/m <sup>2</sup> (20 lb) bond Maximum stack height for A6 paper: 15 mm (0.59 inch)
	Transparencies	Minimum 0.13 mm (0.005 inch) thick	Maximum stack height: 26 mm (1.0 inch)
Standard top bin	Paper		Up to 125 sheets of 75 g/m <sup>2</sup> (20 lb) bond

# Load paper and print media

## Load trays

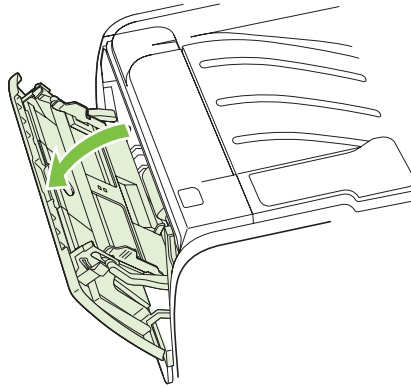
### Paper orientation for loading trays

If you are using paper that requires a specific orientation, load it according to the information in the following table.

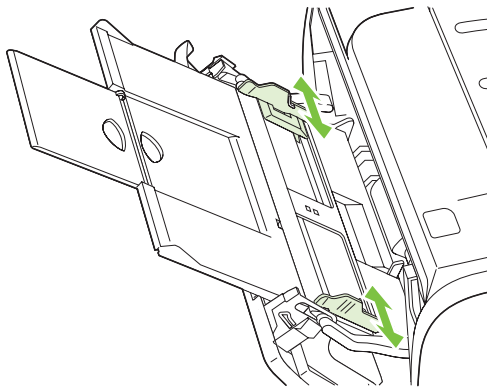
Tray	Single-sided printing	Duplex printing (HP LaserJet P2050 Series Printers only)	Envelope printing
Tray 1	Face-up Top edge leading into the product 	Face-up Top edge leading into the product 	Front of envelope face-up Short edge with postage leading into the product 
Tray 2	Face-down Top edge at the front of the tray 	Face-down Top edge at the front of the tray 	Use only Tray 1 for printing envelopes.
Optional Tray 3 (HP LaserJet P2050 Series Printers only)	Face-down Top edge at the front of the tray 	Face-down Top edge at the front of the tray 	Use only Tray 1 for printing envelopes.

## Tray 1

Tray 1 is accessed from the front of the product. The product prints from Tray 1 before trying to print from other trays.

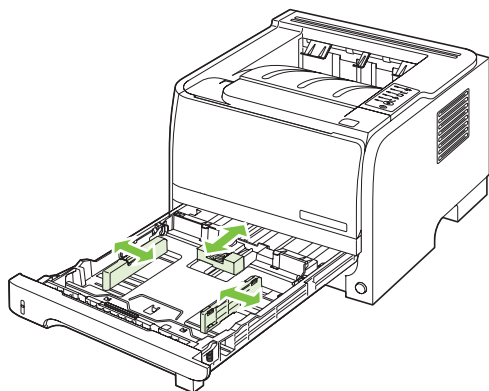



Media guides ensure that the media is correctly fed into the product and that the print is not skewed (crooked on the media). When loading media, adjust the media guides to match the width of the media that you are using.



## Tray 2

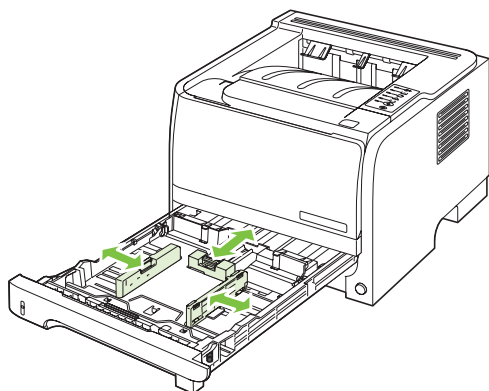
Media guides ensure that the media feeds correctly into the product and that the print is not skewed. Tray 2 has side and rear media guides. When loading media, adjust the media guides to match the length and width of the media that you are using.



 **NOTE:** When you add new media, make sure that you remove all of the media from the input tray and straighten the stack of new media. This reduces jams by preventing multiple sheets of media from feeding through the product at one time.

### Load A6-size paper

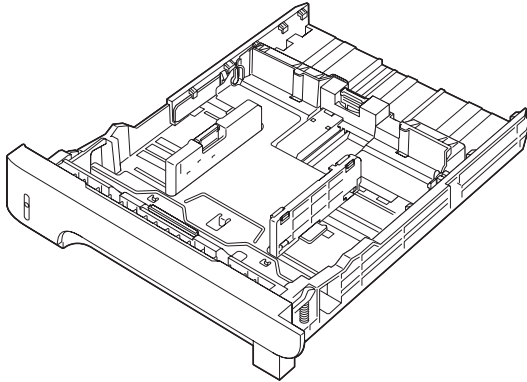
When loading A6-size paper, adjust the length by sliding forward only the center panel of the rear media guide.






## Optional Tray 3 (HP LaserJet P2050 Series Printers only)

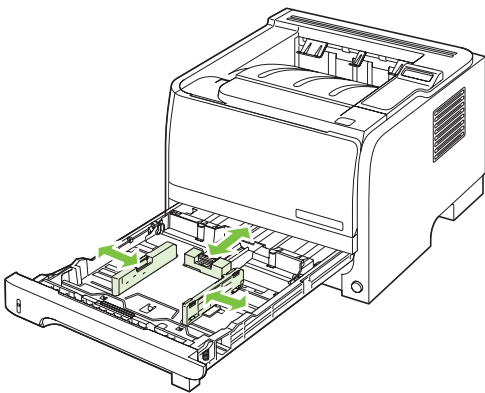
Media guides ensure that the media feeds correctly into the product and that the print is not skewed. Tray 2 has side and rear media guides. When loading media, adjust the media guides to match the length and width of the media that you are using.



 **NOTE:** When you add new media, make sure that you remove all the media from the input tray and straighten the stack of new media. This reduces jams by preventing multiple sheets of media from feeding through the product at one time.

## Load A6-size paper

When loading A6-size paper, adjust the length by sliding forward only the center panel of the rear media guide.



## Manual feed

You can use manual feed when printing mixed media. For example, you can use manual feed to print an envelope, and then a letter, and then an envelope, and so on. Load envelopes in Tray 1 and load letterhead in Tray 2.

To print using manual feed, open the product Properties or Printer Setup, and then select **Manual Feed (tray 1)** from the **Source Tray** drop-down list. After you have enabled manual feed, press the **OK** button to print.

# Configure trays

## Configure trays (HP LaserJet P2050 Series Printers only)

- 1. Press **OK**.
- 2. Press the down arrow ▼ to select **System setup**, and then press **OK**.
- 3. Press the down arrow ▼ to select **Paper setup**, and then press **OK**.
- 4. Press the down arrow ▼ to select the desired tray, and then press **OK**.
- 5. Press the down arrow ▼ to select **Paper type** or **Paper size**, and then press **OK**.
- 6. Press the down arrow ▼ to select the size or type.
- 7. Press **OK** to save the settings.

## Configure trays (HP LaserJet P2030 Series Printers only)

Use either the printer driver or the embedded Web server to configure the trays for a particular paper type and size.

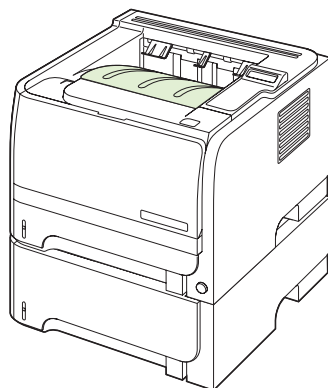
Printer driver	Click the <b>Paper/Quality</b> tab and select the type and size in the <b>Paper Options</b> area.
Embedded Web server (HP LaserJet P2035n only)	Click the <b>Settings</b> tab, and then click the <b>Paper Handling</b> option from the left-side pane.

## Use paper output options

The product has two output locations: the top (standard) output bin and the straight-through paper path (rear output).

### Print to the top (standard) output bin

The top output bin collects paper face-down, in the correct order. The top output bin should be used for most print jobs, including transparencies. To use the top output bin, be sure that the rear output (straight-through paper path) is closed. To avoid jams, do not open or close the rear output while the product is printing.



## Print to the straight-through paper path (rear output)

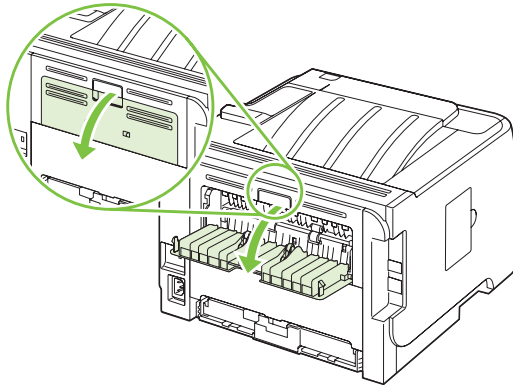
The product always uses the straight-through paper path if it is open. Paper exits face-up, with the last page on top (reverse order).

Printing from Tray 1 to the rear output provides the straightest path. Opening the straight-through paper path might improve performance with the following paper types:

- Envelopes
- Labels
- Small custom-size paper
- Postcards
- Paper heavier than 120 g/m<sup>2</sup> (32 lb)

To open the straight-through paper path, grasp the handle at the top of the rear door, and pull the door down.

 **NOTE:** Be sure to open the straight-through paper path, not the jam-release door.





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## 4 Manage and maintain

- [Print the information pages](#)
- [Use the HP ToolboxFX software \(HP LaserJet P2050 Series Printers only\)](#)
- [Manage a network product](#)
- [Manage supplies](#)
- [Replace supplies and parts](#)
- [Install memory \(HP LaserJet P2050 Series Printers only\)](#)
- [Clean the product](#)

# Print the information pages

## Print the information pages (HP LaserJet P2050 Series Printers only)

From the product control panel, you can print information pages that give details about the product and its current configuration using the **Reports** menu.

Name of report	Description
Demo page	Prints a page that demonstrates print quality.
Menu structure	Prints the control-panel menu map that shows the layout and current settings for the control-panel menu items.
Config report	Prints the current product configuration.
Supplies status	Prints a supplies status page that shows the supplies levels for the product, an approximate number of pages remaining, cartridge-usage information, the serial number, a page count, and ordering information, when available.
Network Report	Prints a list of all product network settings.
Usage Page	Prints a page that shows a count of all paper sizes that have passed through the product, lists whether they were one-sided or two-sided, and shows a page count.
PCL Font List	Prints a PCL font list that shows all the PCL 5c fonts that are currently available to the product.
PS font list	Prints a PS font list that shows all the PS fonts that are currently available to the product.
PCL 6 Font List	Prints a list of installed PCL6 fonts.
Service Page	Prints the service report.

### Print the information pages

1. Press **OK**.
2. Press the down arrow ▼ to select **Reports**, and then press **OK**.
3. Press the down arrow ▼ to select the required report, and then press **OK** to print.

## Print the information pages (HP LaserJet P2030 Series Printers only)

You can print the following information pages.

### Demo page

The Demo page contains examples of text and graphics. To print a Demo page, do one of the following:

- Press the **Go** button when the product Ready light is on and no other jobs are printing.
- Select it from the **Print Information Pages** drop-down list on the **Services** tab in **Printer Preferences**.



## Configuration page

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

- Press and hold the **Go** button for 5 seconds when the product Ready light is on and no other jobs are printing.
- Select it from the **Print Information Pages** drop-down list on the **Services** tab in **Printer Preferences**.

## Supplies Status page

You can print the Supplies Status page by selecting it from the **Print Information Pages** drop-down list on the **Services** tab in **Printer Preferences**. The Supplies Status page provides the following information:

- The estimated number of pages remaining on the print cartridge
- The number of pages and print jobs that have been processed
- Ordering and recycling information

## Use the HP ToolboxFX software (HP LaserJet P2050 Series Printers only)

HP ToolboxFX is a program that you can use to complete the following tasks:

- Check the product status.
- Configure the product settings.
- View troubleshooting information.
- View online documentation.

You can view HP ToolboxFX when the product is directly connected to a computer or when it is connected to the network. You must perform the recommended full software installation to use HP ToolboxFX.

### View HP ToolboxFX

Open HP ToolboxFX in one of these ways:

- In the Windows notification area or on your desktop, double-click the HP ToolboxFX icon.
- On the Windows **Start** menu, click **Programs** (or **All Programs** in Windows XP), click **HP**, click **HP LaserJet P2050 Series**, and then click **HP ToolboxFX**.

## Status

The **Status** folder contains links to the following main pages:

- **Device status.** This page indicates product conditions such as a jam or an empty tray. After you correct a problem, click **Refresh status** to update the product status.
- **Supplies status.** View details such as the estimated percent of toner remaining in the print cartridge and the number of pages that have been printed with the current print cartridge. This page also has links for ordering supplies and for finding recycling information.
- **Device configuration.** View a detailed description of the current product configuration, including the amount of memory installed and whether optional trays are installed.
- **Network summary.** View a detailed description of the current network configuration, including the IP address and network status.
- **Print info pages.** Print the Configuration page and other information pages, such as the Supplies status page.
- **Event log.** View a history of product errors. The most recent error is listed first.

## Event log

The Event log is a table that contains codes corresponding to error messages that have appeared on the product control-panel display, a brief description of each error, and the number of pages that printed when each error occurred. For more information about error messages, see [Interpret control-panel messages \(HP LaserJet P2050 Series Printers only\) on page 219](#).

## Alerts

The **Alerts** folder contains links to the following main pages:

- **Set up Status Alerts.** Set up the product to send you pop-up alerts for certain events, such as low toner levels.
- **Set up E-mail Alerts.** Set up the product to send you e-mail alerts for certain events, such as low toner levels.

### Set up Status Alerts

Use this to set up the product so that it sends alerts to your computer when jams, low levels of toner in HP print cartridges, a non-HP print cartridge in use, empty input trays, and specific error messages occur.

You can select to receive a pop-up, a notification area icon, a desktop alert, or any combination of these. The pop-up and desktop alerts only appear when the product is printing from the computer on which you set up the alerts. Desktop alerts are only visible momentarily, and disappear automatically.

Change the **Cartridge low threshold** setting, which sets the toner level that causes a low toner alert, on the **System setup** page.

---


 **NOTE:** You must click **Apply** before your changes take effect.

---

### Set up E-mail Alerts

Use this to configure up to two e-mail addresses to receive alerts when certain events occur. You can specify different events for each e-mail address. Use the information for the e-mail server that will send out the e-mail alert messages for the product.

---

 **NOTE:** You can only configure e-mail alerts to be sent from a server that does not require user authentication. If your e-mail server requires you to log in with a username and password, you cannot enable e-mail alerts.

---

**NOTE:** You must click **Apply** before your changes take effect.

---

## Help

The **Help** folder contains links to the following main pages:

- **Troubleshooting.** View troubleshooting help topics, print troubleshooting pages, and clean the product.
- **Paper and Print Media.** Print information about how to obtain optimal results from your product using various types of paper and print media.
- **How do I?** Link to the user-guide index.
- **User Guide.** View information about the product usage, warranty, specifications, and support. The User Guide is available in both HTML and PDF format.

## Device Settings

The **Device Settings** folder contains links to the following main pages:

- **Device Information.** View information such as the product description and a contact person.
- **Paper Handling.** Configure trays or change the product paper-handling settings, such as default paper size and default paper type.
- **Printing.** Change the default product print settings, such as number of copies and paper orientation.
- **PCL 6.** Change the PCL settings.
- **PCL 5c.** Change the PCL settings.
- **PostScript.** Change the PS settings.
- **Paper Types.** Change the mode settings for each media type, such as letterhead, prepunched, or glossy paper.
- **System Setup.** Change the system settings, such as jam recovery and auto-continue. Change the **Cartridge low threshold** setting, which sets the toner level that causes a low toner alert.
- **Troubleshooting.** Gain access to various procedures required to maintain the product.
- **Password.** Set a password to protect the device settings. Once a password is set, users will be prompted to enter the password before being allowed to change device settings. This password is the same as the embedded Web server password.

## Device Information

The Device Information page stores data about your product for future reference. The information that you type in the fields on this page appears on the Configuration page. You can type any character in each of these fields.



---

**NOTE:** You must click **Apply** before your changes take effect.

---

## Paper Handling

Use these options to configure your default settings. These are the same options that are available on the control-panel menus on the control panel. For more information, see [Control panel on page 21](#).

The following options are available for handling print jobs when the product is out of media:

- Select **Wait for paper to be loaded**.
- Select **Cancel** from the **Paper out action** drop-down list to cancel the print job.
- Select **Override** from the **Paper out time** drop-down list to send the print job to another paper tray.

The **Paper out time** field specifies how long the product waits before acting on your selections. You can specify from 0 to 3600 seconds.

---

 **NOTE:** You must click **Apply** before your changes take effect.

---

## Printing

Use these options to configure the settings for all print functions. These are the same options that are available on the control panel. For more information, see [Control panel on page 21](#).

---

 **NOTE:** You must click **Apply** before your changes take effect.

---

## PCL6

Use these options to configure the settings when you are using the PCL print personality.

---

 **NOTE:** You must click **Apply** before your changes take effect.

---

## PCL5c

Use these options to configure the settings when you are using the PCL print personality.

---

 **NOTE:** You must click **Apply** before your changes take effect.

---

## PostScript

Use this option when you are using the PostScript print personality. When the **Print PostScript error** option is turned on, the PostScript error page automatically prints when PostScript errors occur.

---

 **NOTE:** You must click **Apply** before your changes take effect.

---

## Print quality

Use the HP ToolboxFX print-quality options to improve the appearance of print jobs. These are the same options that are available on the product control panel. For more information, see [Control panel \(HP LaserJet P2050 Series Printers only\) on page 22](#).

The four options provided for controlling print quality are resolution, REt (Resolution Enhancement technology), print density, and EconoMode.

- **Resolution.** Select 600 resolution for average print jobs and FastRes 1200 for higher-quality print jobs. Select ProRes 1200 for the highest-quality print job, but a longer printing time.
- **REt.** You can turn on REt, which HP provides for improved print quality.

- **Print density.** For increased print density, select a higher number. For decreased print density, select a lower number.
- **EconoMode.** Turn EconoMode on when you are printing average print jobs. EconoMode is a feature that allows the product to use less toner per page. Selecting this option might extend the life of the toner supply and might reduce cost per page. However, it reduces print quality. The printed image is lighter, but it is adequate for printing drafts or proofs. HP does not recommend full-time use of EconoMode. If EconoMode is used full-time, it is possible that the toner supply can outlast the mechanical parts in the print cartridge. If print quality begins to degrade under these circumstances, install a new print cartridge, even if there is toner supply remaining in the cartridge.

 **NOTE:** You must click **Apply** before the changes take effect.

---

## Paper Types

Use these options to configure print modes that correspond to the various media types. To reset all modes to factory defaults, select **Restore modes**.

 **NOTE:** You must click **Apply** before your changes take effect.

---

## System Setup

Use these system settings to configure miscellaneous print settings. These settings are not available on the control panel.

 **NOTE:** You must click **Apply** before your changes take effect.

---

## Troubleshooting

During the printing process, paper, toner and dust particles can accumulate inside the product. Over time, this buildup can cause print-quality problems such as toner specks or smearing. The HP ToolboxFX provides an easy method for cleaning the paper path. For more information, see [Clean the paper path \(HP LaserJet P2050 Series Printers only\) on page 70](#).

## Network Settings

The system administrator can use this tab to control the network-related settings for the product when it is connected to an IP-based network.

## Shop for Supplies

This button, at the top of each page, links to a Web site where you can order replacement supplies. You must have Internet access to use this feature.

## Other Links

This section contains links that connect you to the Internet. You must have Internet access to use any of these links. If you use a dial-up connection and did not connect when you first opened HP ToolboxFX,

you must connect before you can visit these Web sites. Connecting might require that you close HP ToolboxFX and reopen it.

- **HP Instant Support.** Connects to the HP Instant Support Web site.
- **Support and Troubleshooting.** Connects to the support site for the product where you can search for help with a specific problem.
- **Product Registration.** Connects to the HP product registration Web site.



# Manage a network product

## Embedded Web server (HP LaserJet P2055dn, HP LaserJet P2055x, and HP LaserJet P2035n only)

The embedded Web server allows you to view product and network status and to manage printing functions from your computer. Use the embedded Web server for the following tasks:


- View product status information
- Determine the remaining life on all supplies and order new ones
- View and change the size and type of paper loaded in each tray
- View and change the product default configuration settings
- View and change network configuration

You do not need to install any software on the computer. Use one of these supported Web browsers:

- Internet Explorer 6.0 (and later)
- Netscape Navigator 7.0 (and later)
- Firefox 1.0 (and later)
- Mozilla 1.6 (and later)
- Opera 7.0 (and later)
- Safari 1.2 (and later)
- Konqueror 3.2 (and later)

The embedded Web server works when the product is connected to a TCP/IP-based network. The embedded Web server does not support IPX-based connections or direct USB connections.

---

 **NOTE:** You do not have to have Internet access to open and use the embedded Web server. However, if you click a link on any of the pages, you must have Internet access in order to go to the site associated with the link.

---

## Open the embedded Web server

To open the embedded Web server, type the IP address or hostname of the product in the address field of a supported Web browser.

---

 **TIP:** After you open the URL, bookmark it so that you can return to it quickly in the future.

---

The embedded Web server has three tabs that contain settings and information about the product: the **Status** tab, the **Settings** tab, and the **Networking** tab.

## Status tab

This tab provides information about product and supplies status, product and network configuration, and supplies reordering.

## Settings tab

This tab allows you to configure the product from your computer. If this product is networked, consult with the network administrator before changing settings on this tab.

## Networking tab

This tab allows the network administrator to control network-related settings for the product when it is connected to an IP-based network.

## Links

Links are located in the upper-right part of the Status pages. You must have Internet access in order to use any of these links. If you use a dial-up connection and did not connect when you first opened the embedded Web server, you must connect before you can visit these Web sites. Connecting might require that you close the embedded Web server and reopen it.

- **Order Supplies.** Click this link to connect to the Sure Supply Web site and order genuine HP supplies from HP or a reseller of your choice.
- **Product Support.** Click this link to connect to the support site for the product. You can search for help regarding general topics.

## Use HP Web Jetadmin software

HP Web Jetadmin is a Web-based software solution for remotely installing, monitoring, and troubleshooting network-connected peripherals. The intuitive browser interface simplifies cross-platform management of a wide range of devices, including HP and non-HP devices. Management is proactive, allowing system administrators the ability to resolve issues before users are affected. Download this free, enhanced-management software at [www.hp.com/go/webjetadmin\\_software](http://www.hp.com/go/webjetadmin_software).

To obtain plug-ins to HP Web Jetadmin, click **plug-ins**, and then click the **download** link that is next to the name of the plug-in that you want. The HP Web Jetadmin software can automatically notify you when new plug-ins are available. On the **Product Update** page, follow the directions to automatically connect to the HP Web site.

If installed on a host server, HP Web Jetadmin is available to any client through a supported Web browser, such as Microsoft Internet Explorer 6.0 for Windows or Netscape Navigator 7.1 for Linux. Browse to the HP Web Jetadmin host.

---

 **NOTE:** Browsers must be Java-enabled. Browsing from an Apple computer is not supported.

---

## Use security features

The product supports security standards and recommended protocols that help you keep the product secure, protect critical information on your network, and simplify the way you monitor and maintain the product.

For in-depth information about HP's secure imaging and printing solutions, visit [www.hp.com/go/secureprinting](http://www.hp.com/go/secureprinting). The site provides links to white papers and FAQ documents about security features.

## Secure the embedded Web server

You can configure the embedded Web server so that access to some tabs requires a password.

# Manage supplies

Using, storing, and monitoring the print cartridge can help ensure high-quality output.

## Supplies life

For information regarding specific product yield, see [www.hp.com/go/learnaboutsupplies.com](http://www.hp.com/go/learnaboutsupplies.com).

To order supplies, see [Parts and diagrams on page 253](#).

## Manage the print cartridge

### Print-cartridge storage

Do not remove the print cartridge from its package until you are ready to use it.

---

△ **CAUTION:** To prevent damage to the print cartridge, do not expose it to light for more than a few minutes.

---

### Use genuine HP print cartridges


When you use a genuine new HP print cartridge, you can obtain the following supplies information:

- Percentage of supplies remaining
- Estimated number of pages remaining
- Number of pages printed

### HP policy on non-HP print cartridges

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

---

 **NOTE:** Any damage caused by a non-HP print cartridge is not covered under the HP warranty and service agreements.

---

To install a new HP print cartridge, see [Change the print cartridge on page 62](#). To recycle the used cartridge, follow the instructions included with the new cartridge.

### Print-cartridge authentication

The device automatically authenticates the print cartridge when it is inserted into the device. During authentication, the device notifies you whether a cartridge is a genuine HP print cartridge.

If the device control-panel message states that this is not a genuine HP print cartridge and you believe you purchased an HP print cartridge, see [HP fraud hotline and Web site on page 59](#).

### HP fraud hotline and Web site

Call the HP fraud hotline (1-877-219-3183, toll-free in North America) or go to [www.hp.com/go/anticounterfeit](http://www.hp.com/go/anticounterfeit) when you install an HP print cartridge and the control-panel message says the cartridge is non-HP. HP will help determine if the cartridge is genuine and take steps to resolve the problem.

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


- You are experiencing a high number of problems with the print cartridge.
- The cartridge does not look like it usually does (for example, the orange pull tab is missing, or the packaging differs from HP packaging).

# Replace supplies and parts

## Supply replacement guidelines

Keep the following guidelines in mind when setting up the product.

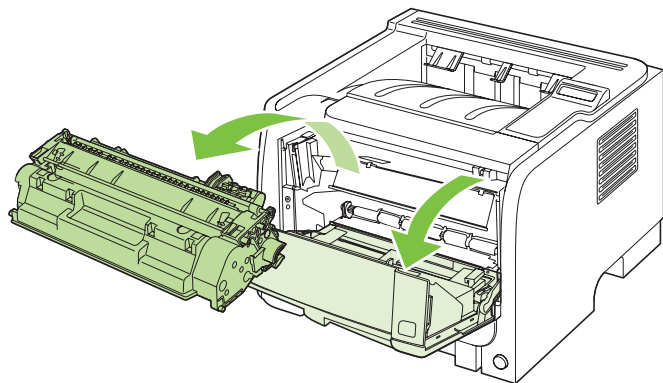
- Sufficient space is required above and in the front of the product for removing supplies.
- The product should be located on a flat, sturdy surface.

 **NOTE:** Hewlett-Packard recommends the use of HP supplies in this product. Use of non-HP supplies can cause problems requiring service that is not covered by the HP warranty or service agreements.

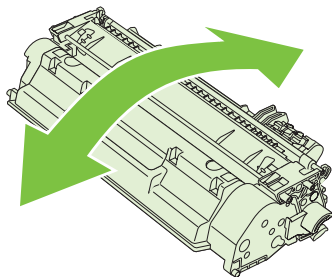
## Redistribute toner

When toner is low, faded or light areas appear on the printed page. You might be able to temporarily improve print quality by redistributing the toner.

1. Push the button to open the print-cartridge door, and then remove the print cartridge.

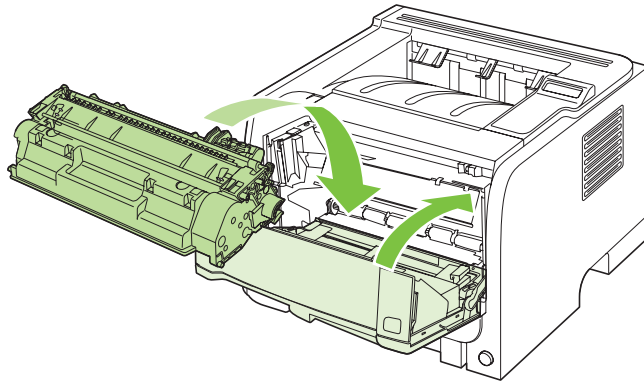


2. To redistribute the toner, gently rock the print cartridge from front to back.



△ **CAUTION:** If toner gets on your clothing, wipe it off with a dry cloth and wash the clothing in cold water. *Hot water sets toner into the fabric.*

3. Reinsert the print cartridge into the product, and then close the print-cartridge door.

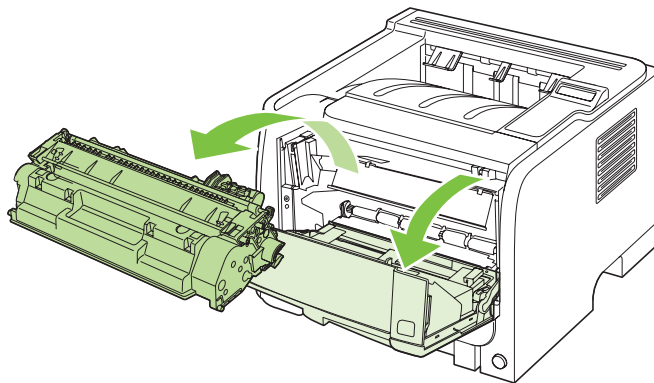


If the print is still light, install a new print cartridge.

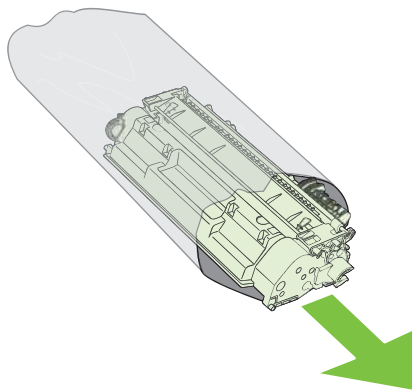
## Change the print cartridge

When a print cartridge approaches the end of useful life, you are prompted to order a replacement. You can continue printing with the current cartridge until redistributing the toner no longer yields acceptable print quality.

1. Push the button to open the print-cartridge door, and then remove the print cartridge.

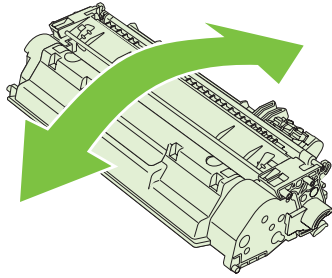


2. Remove the new print cartridge from the bag. Place the used print cartridge in the bag for recycling.

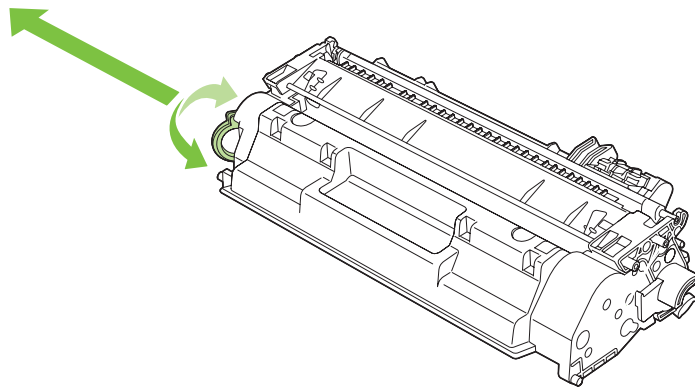


3. Grasp both sides of the print cartridge and distribute the toner by gently rocking the print cartridge.

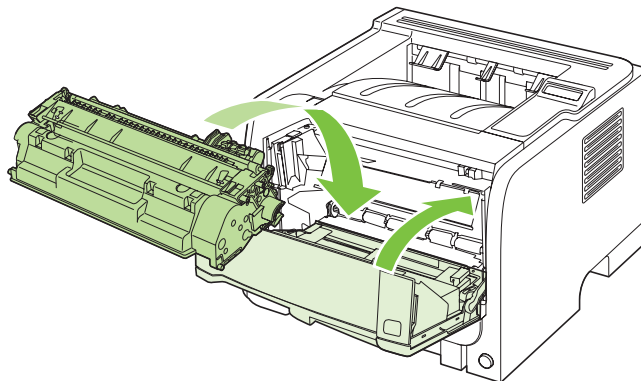
△ **CAUTION:** Do not touch the shutter or the surface of the roller.



4. Bend the tab on the left side of the cartridge until the tab breaks loose. Pull the tab until all the tape is removed from the cartridge. Place the tab and tape in the print-cartridge box to return for recycling.




5. Align the print cartridge with the tracks inside the product, insert the print cartridge until it is firmly seated, and then close the print-cartridge door.



6. Installation is complete. Place the used print cartridge in the box in which the new cartridge arrived. See the enclosed recycling guide for recycling instructions.

For additional help, go to [www.hp.com/support/ljp2050series](http://www.hp.com/support/ljp2050series) or [www.hp.com/support/ljp2030series](http://www.hp.com/support/ljp2030series).

# Install memory (HP LaserJet P2050 Series Printers only)

 **NOTE:** Single inline memory modules (SIMMs) used in previous HP LaserJet products are not compatible with the product.

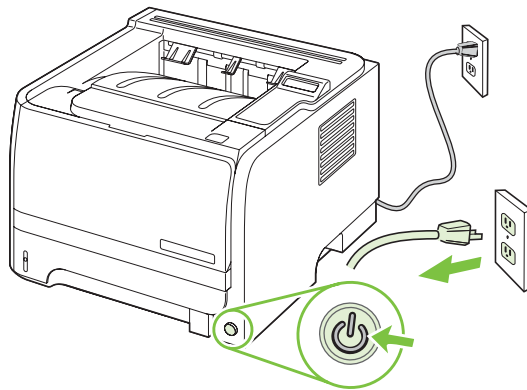
## Install product memory

This product has one DIMM slot.

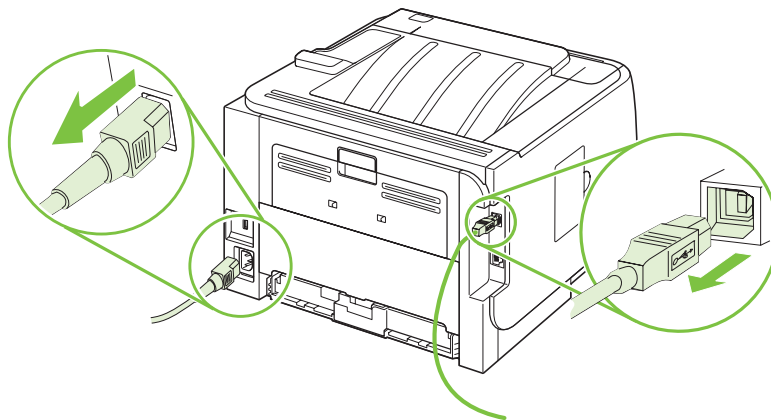
△ **CAUTION:** Static electricity can damage DIMMs. When handling DIMMs, either wear an antistatic wrist strap or frequently touch the surface of the DIMM antistatic package, then touch bare metal on the product.

If you have not already done so, print a configuration page to find out how much memory is installed in the product before adding more memory. See [Print the information pages on page 48](#).

1. After the configuration page has printed, turn the product off and disconnect the power cord.

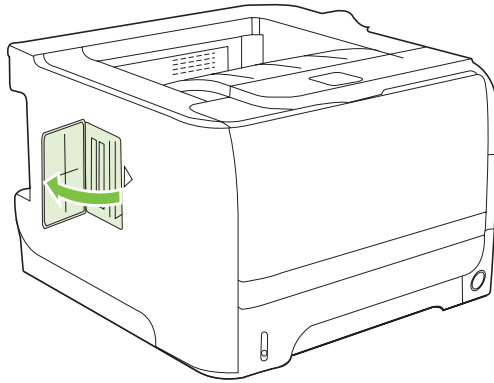


2. Disconnect all interface cables.

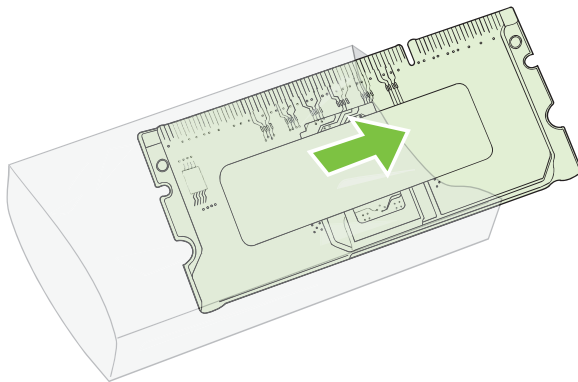




3. Open the DIMM-access door on the left side of the product.



4. Remove the DIMM from the antistatic package.

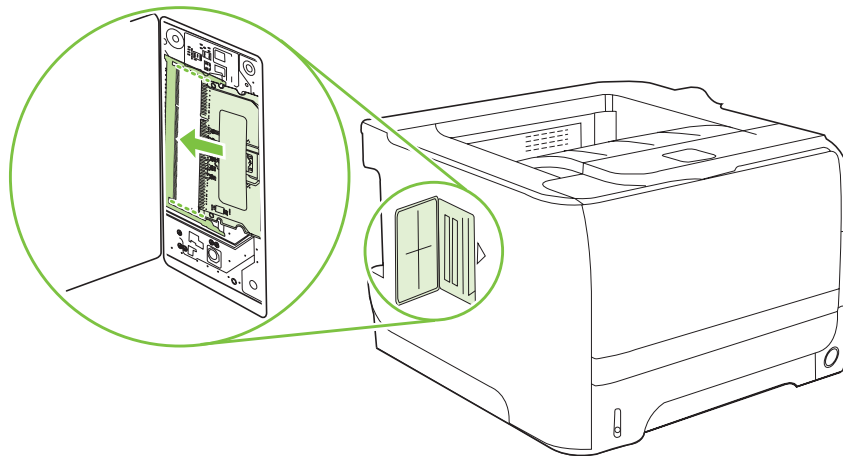


---

△ **CAUTION:** To reduce the possibility of damage caused by static electricity, always wear an electrostatic discharge (ESD) wrist strap or touch the surface of the antistatic package before handling DIMMs.

---

5. Hold the DIMM by the edges, and align the notches on the DIMM with the DIMM slot. (Check that the locks on each side of the DIMM slot are open.)

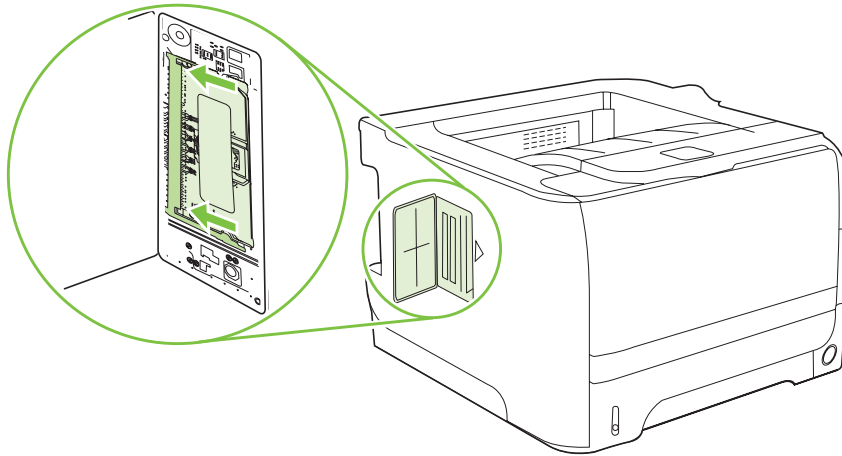


6. Hold the DIMM at a 45-degree angle, and then push the upper contacts of the DIMM firmly into the slot. Make sure that the locks on each side of the DIMM snap into place.

---

△ **CAUTION:** Pressing the DIMM straight down can damage the contact pins.

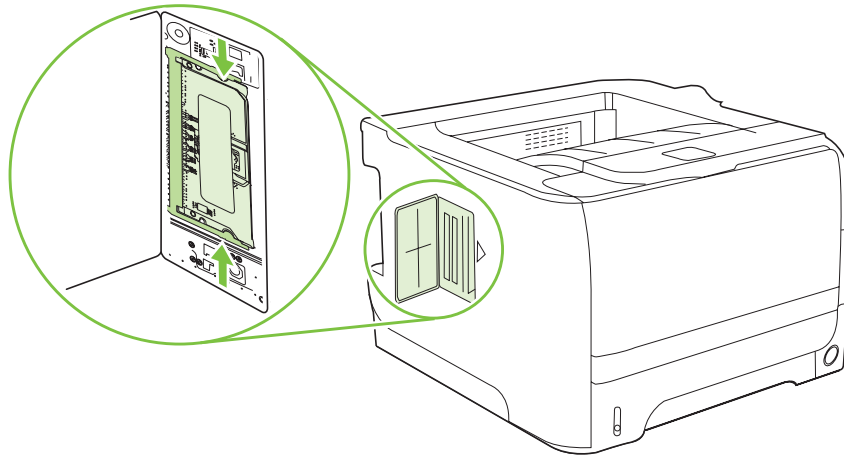
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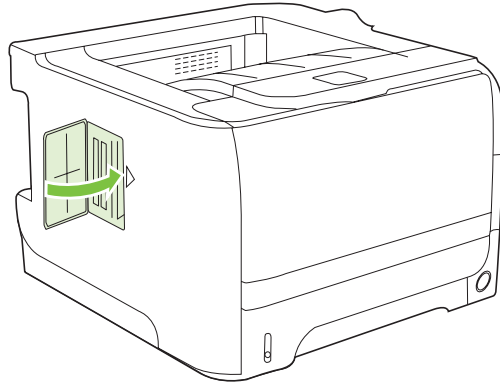
---

📝 **NOTE:** To remove a DIMM, first release the locks.

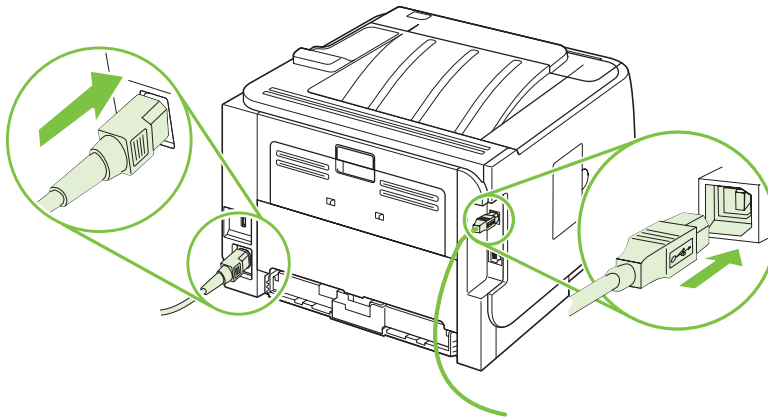
---



7. Close the access door, and press firmly until it snaps into place.



8. Reconnect the interface cable or cables and the power cord.




9. Turn the product on.

## Check DIMM installation

After installing the DIMM, make sure that the installation was successful.

1. Turn the product on. Check that the Ready light is illuminated after the product has gone through the startup sequence. If an error message appears, a DIMM might have been incorrectly installed. See [Interpret control-panel messages \(HP LaserJet P2050 Series Printers only\) on page 219](#).
2. Print a configuration page (see [Print the information pages on page 48](#)).
3. Check the memory section on the configuration page and compare it to the configuration page that was printed before the memory installation. If the amount of memory has not increased, the DIMM might not be installed correctly, or the DIMM might be defective. Repeat the installation procedure. If necessary, install a different DIMM.

 **NOTE:** If you installed a product language (personality), check the "Installed Personalities and Options" section on the configuration page. This area should list the new product language.

## Save resources (permanent resources)

Utilities or jobs that you download to the product sometimes include resources (for example, fonts, macros, or patterns). Resources that are internally marked as permanent remain in the product memory until you turn the product off.

Use the following guidelines if you use the page description language (PDL) ability to mark resources as permanent. For technical details, see an appropriate PDL reference for PCL or PS.

- Mark resources as permanent only when it is absolutely necessary that they remain in memory while the product is turned on.
- Send permanent resources to the product only at the beginning of a print job and not while the product is printing.

 **NOTE:** Overusing permanent resources or downloading them while the product is printing might affect product performance or the ability to print complex pages.

---

## Enable memory for Windows

1. **Windows XP and Windows Server 2003 (using the default Start menu view):** Click **Start**, click **Settings**, and then click **Printers and Faxes**.

-or-

**Windows 2000, Windows XP, and Windows Server 2003 (using the Classic Start menu view):** Click **Start**, click **Settings**, and then click **Printers**.

-or-

**Windows Vista:** Click **Start**, click **Control Panel**, and then in the category for **Hardware and Sound** click **Printer**.

2. Right-click the driver icon, and then select **Properties**.
3. Click the **Device Settings** tab.
4. Expand the area for **Installable Options**.
5. Next to **Printer Memory**, select the total amount of memory that is installed.
6. Click **OK**.

## Clean the product

Clean the outside of the printer with a clean, damp cloth when necessary.

△ **CAUTION:** Do not use ammonia-based cleaners on or around the printer.

---

During the printing process, paper, toner, and dust particles can accumulate inside the printer. Over time, this buildup can cause print quality problems, such as toner specks or smearing, and paper jams. To correct and prevent these types of problems, you can clean the print cartridge area and the printer media path.

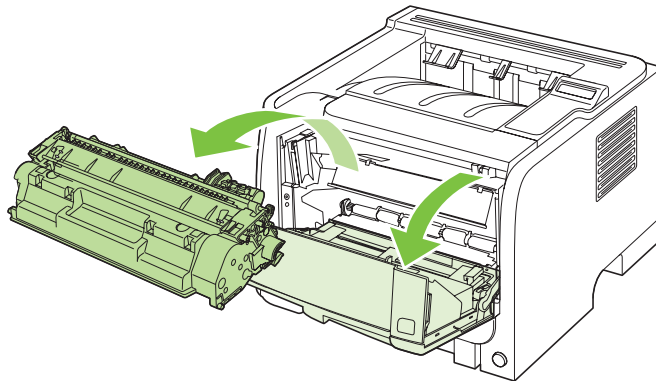
## Clean the print-cartridge area

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

△ **WARNING!** To avoid injury, turn the product off, disconnect the power cord, and wait for the product to cool before cleaning it.

---

1. Open the print-cartridge door, and then remove the print cartridge.

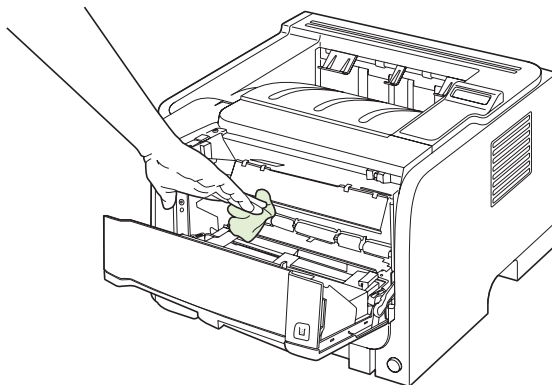


△ **CAUTION:** Do not touch the black sponge-transfer roller inside the product. Doing so can damage the product.

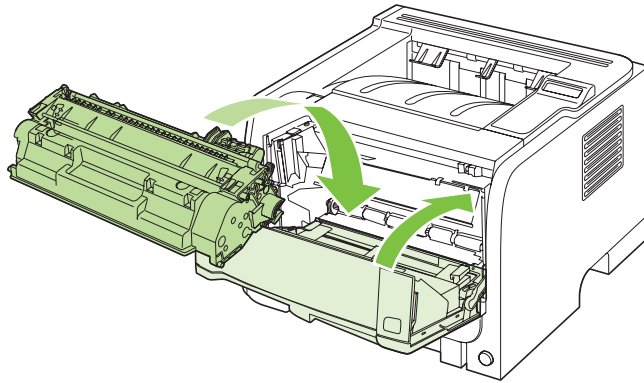
**CAUTION:** To prevent damage, do not expose the print cartridge to light. Cover it with a piece of paper.

---

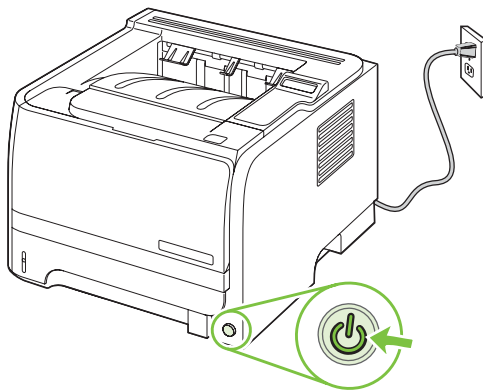
2. With a dry, lint-free cloth, wipe any residue from the media-path area and the print-cartridge cavity.



3. Replace the print cartridge, and close the print-cartridge door.



4. Reconnect the power cord, and turn the product on.



## Clean the paper path (HP LaserJet P2050 Series Printers only)

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

1. Open HP ToolboxFX. See [View HP ToolboxFX on page 50](#).
2. Click the **Device Settings** folder, and then click the **Troubleshooting** page.
3. In the area for **Cleaning Mode**, click **Start** to begin the cleaning process.

The product processes a single page, and then returns to the **Ready** state when the cleaning process is complete. When possible, use transparencies for this process.

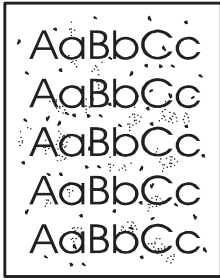
---


 **NOTE:** You can also access the **Cleaning mode** from the **Service** menu on the control panel. See [Service menu on page 27](#).

---

## Clean the paper path (HP LaserJet P2030 Series Printers only)

If you are experiencing toner specks or dots on the printouts, clean the product media path. This process uses a transparency to remove dust and toner from the media path. Do not use bond or rough paper.



 **NOTE:** For best results use a sheet of transparency. If you do not have any transparencies, you can use copier grade media (70 to 90 g/m<sup>2</sup> (18 to 24 lb)) with a smooth surface.

1. Make sure that the product is idle and the Ready light is on.
2. Load the transparency in Tray 1.
3. Print a cleaning page.

Windows


1. Open the printer-driver **Properties** screen, and then click the **Device Settings** tab.

2. In the **Cleaning Page** area, click **Start**.

Macintosh

1. Open the HP Printer Utility.

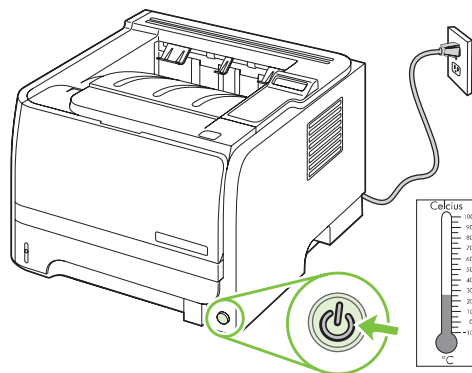
2. Select the **Cleaning Page** option, and click the **OK** button.

 **NOTE:** The cleaning process takes about 2 minutes. The cleaning page stops periodically during the cleaning process. Do not turn the product off until the cleaning process has finished. You might need to repeat the cleaning process several times to thoroughly clean the product.

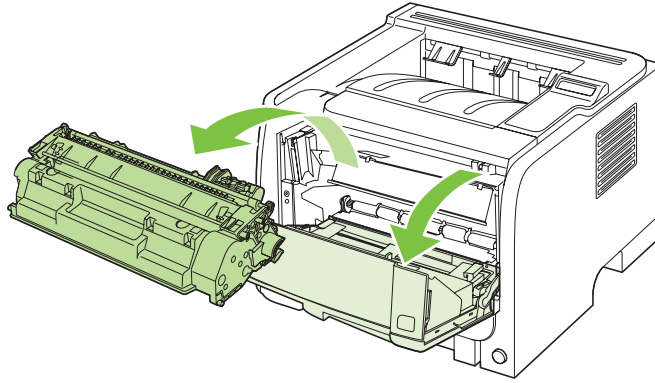
## Clean the Tray 1 pickup roller

If the product is having trouble picking up paper from Tray 1, follow these instructions.

1. Turn the product off, disconnect the power cord, and wait for the product to cool.



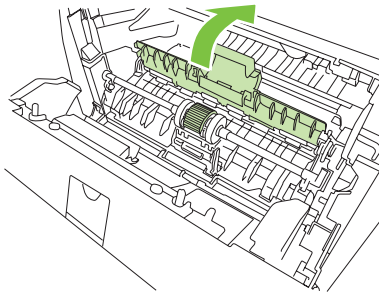
2. Push the button to open the print-cartridge door, and then remove the print cartridge.



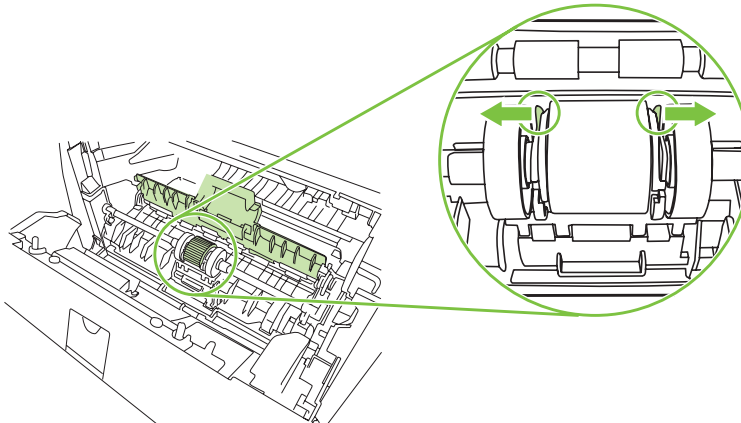
△ **CAUTION:** Do not touch the black sponge-transfer roller inside the product. Doing so can damage the product.

**CAUTION:** To prevent damage, do not expose the print cartridge to light. Cover it with a piece of paper.

3. Lift the pickup roller cover.

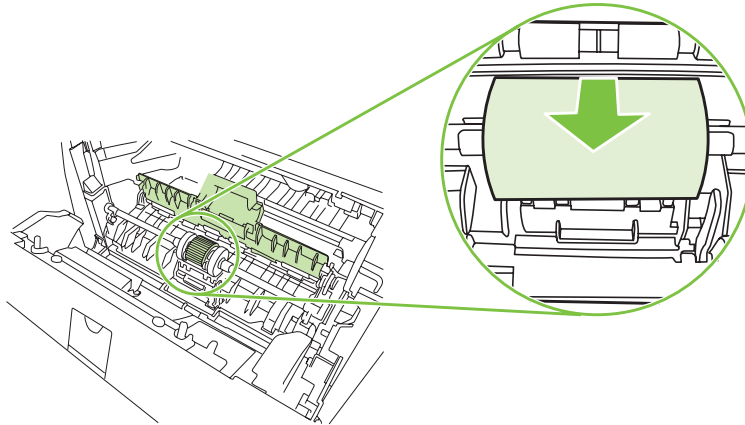


4. Press the two black retaining tabs outward until the pickup roller is released from its seat.

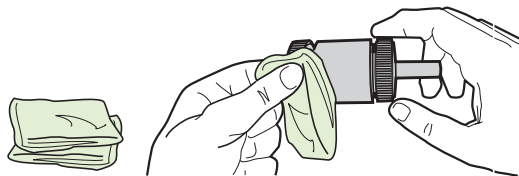





5. Remove the pickup roller from the product.

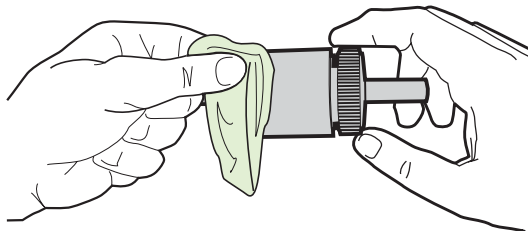


6. Dab a lint-free cloth in water, and scrub the roller.

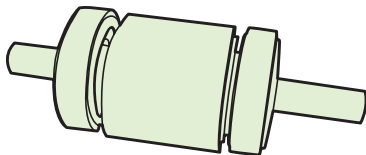


 **NOTE:** Do not touch the surface of the roller with bare fingers.

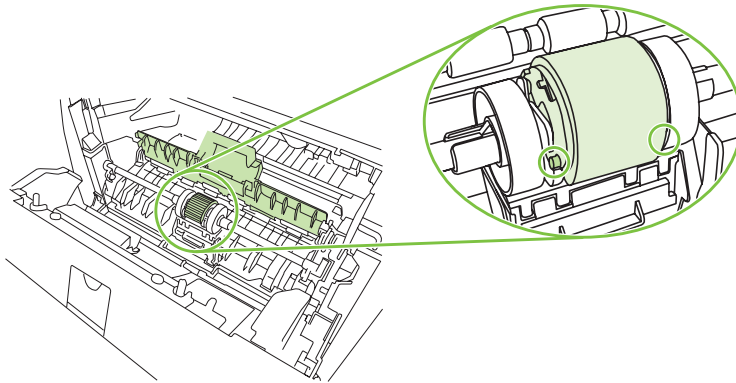
7. Using a dry, lint-free cloth, wipe the pickup roller to remove loosened dirt.



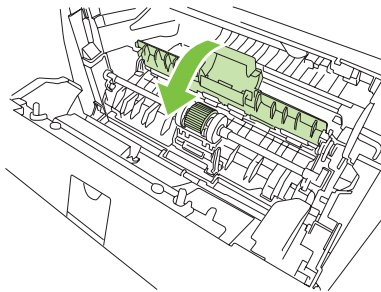
8. Allow the pickup roller to dry completely.



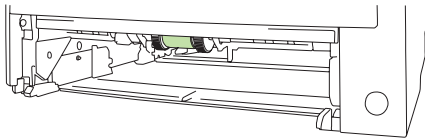
9. Line up the black retaining tabs in the product with the grooves in the pickup roller, and then press the pickup roller into the pickup roller seat until the retaining tabs click.



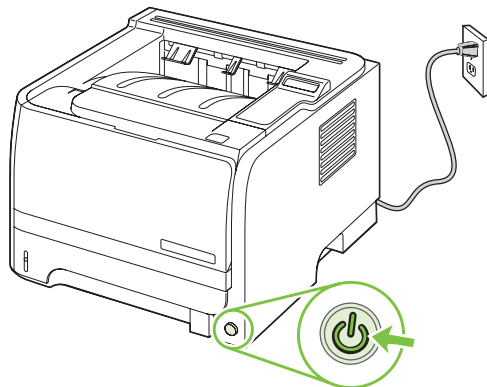
10. Close the pickup roller cover.



11. Reinstall the print cartridge, and close the print-cartridge door.



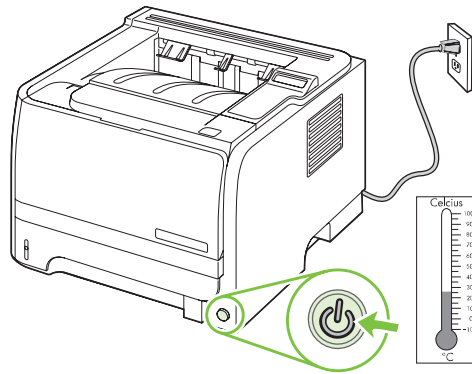
12. Reconnect the power cord, and turn the product on.



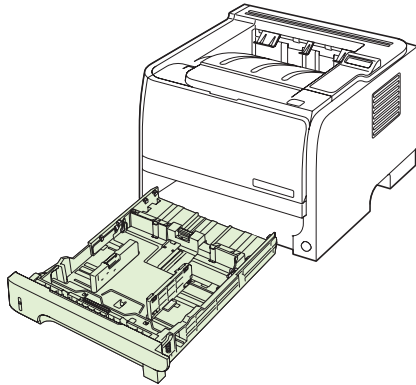
## Clean the Tray 2 pickup roller

If the product is having trouble picking up paper from Tray 2, follow these instructions.

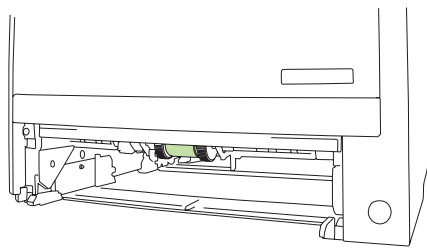
1. Turn the product off, disconnect the power cord and wait for the product to cool.



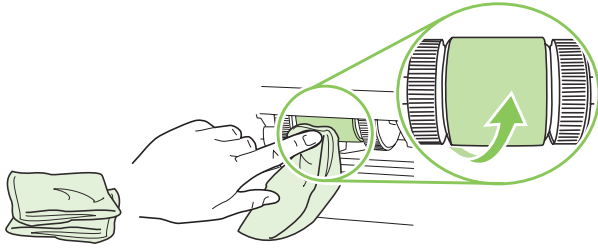
2. Remove Tray 2.



3. Inside the empty tray slot, locate the pickup roller on the top side, near the front of the product.

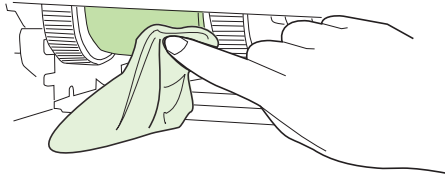


4. Dab a lint-free cloth in water, and then scrub the roller as you rotate it toward the back of the product.

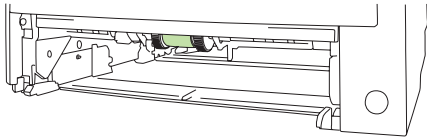


 **NOTE:** Do not touch the surface of the roller with bare fingers.

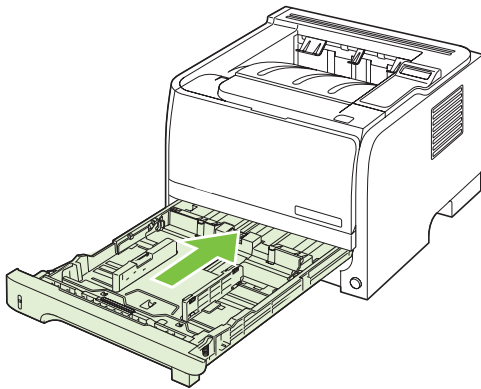
5. Using a dry, lint-free cloth, wipe the pickup roller to remove loosened dirt.



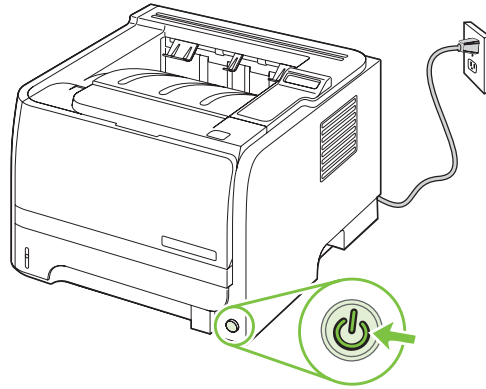
6. Allow the pickup roller to dry completely.



7. Replace Tray 2.



8. Reconnect the power cord, and turn the product on.





---

# 5 Theory of operation

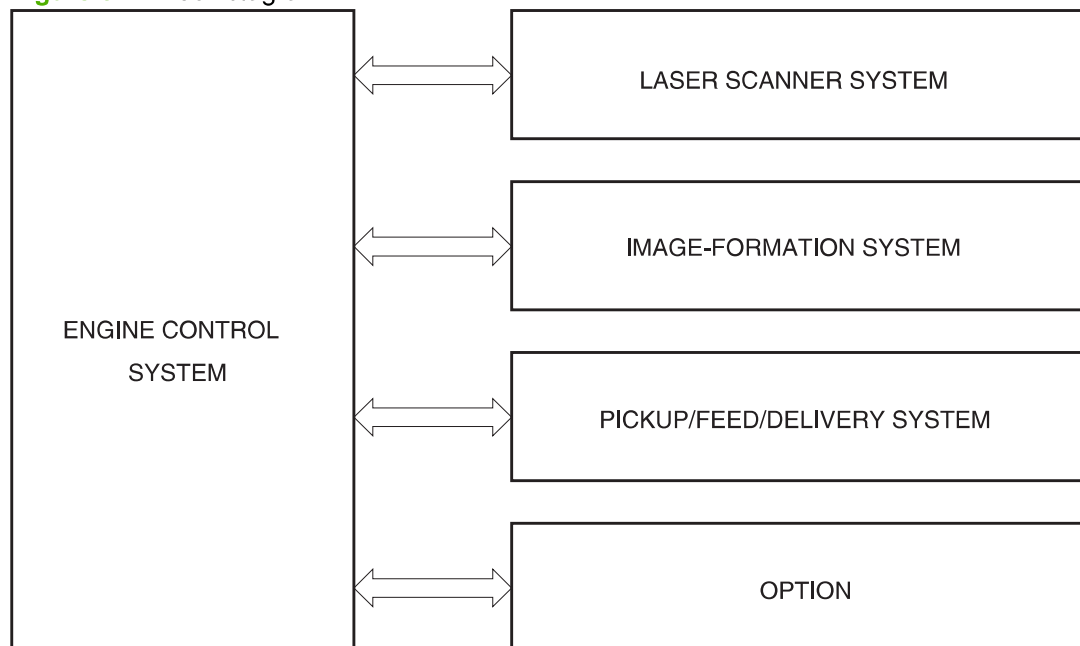
- [Introduction](#)
- [Internal components](#)
- [Timing](#)
- [Engine control system](#)
- [Laser/scanner system](#)
- [Image-formation system](#)
- [Pickup/feed/delivery system](#)

# Introduction

This chapter presents an overview of the relationships between major components in the product, and includes a detailed discussion of the image-formation system. The following systems are discussed:

- Engine control system
- Laser/scanner system
- Image-formation system
- Pickup/feed/delivery system
- Option

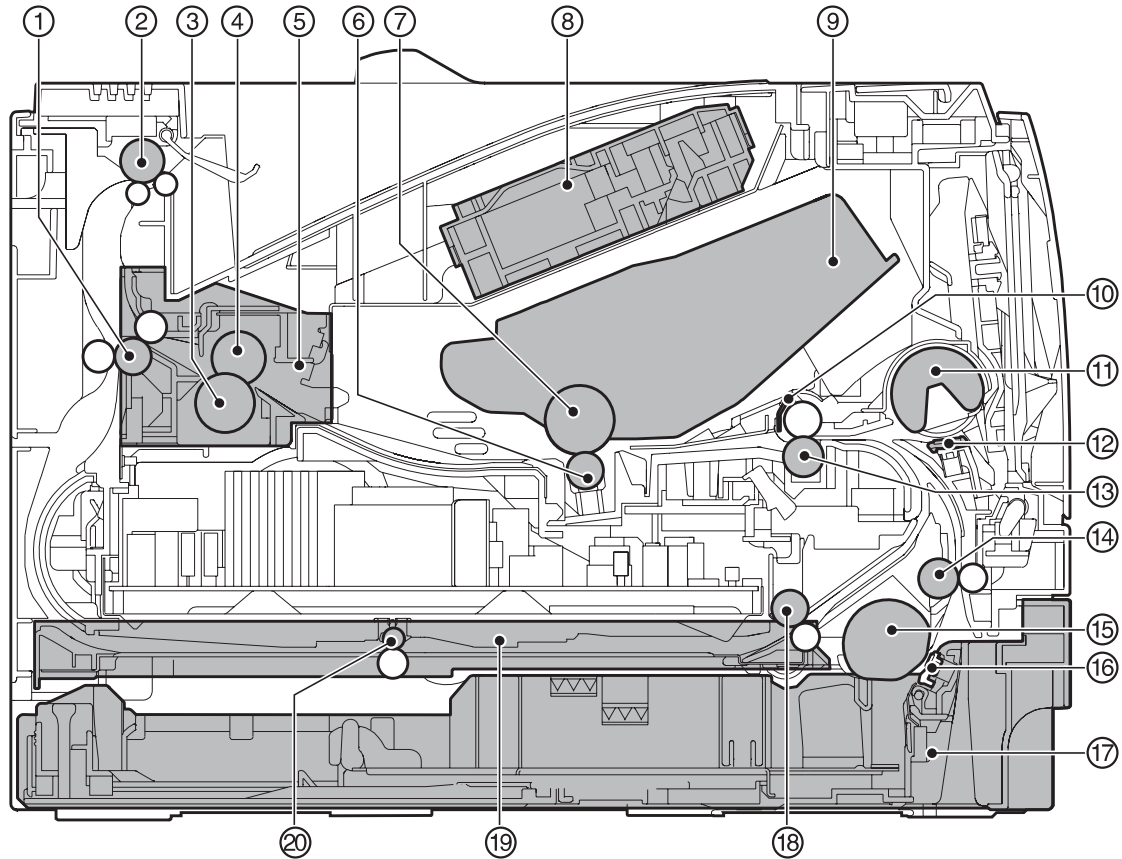
**Figure 5-1** Block diagram





# Internal components

**Figure 5-2** Cross-section of product



1	Fuser delivery roller
2	Face-down delivery roller
3	Pressure roller
4	Fuser film
5	Fuser
6	Transfer roller
7	Photosensitive drum
8	Laser scanner
9	Print cartridge
10	Registration shutter
11	Tray 1 pickup roller
12	Tray separation pad
13	Registration roller
14	Feed roller
15	Tray 2 pickup roller
16	
17	
18	
19	
20	

<b>16</b>	Tray 2 separation pad
<b>17</b>	Tray 2
<b>18</b>	Duplex re-pickup roller (HP LaserJet P2050 Series Printers only)
<b>19</b>	Duplex feed unit (HP LaserJet P2050 Series Printers only)
<b>20</b>	Duplex feed roller (HP LaserJet P2050 Series Printers only)

# Timing

## Sequence of operation

The microprocessor on the DC controller controls the product operation sequences.

**Table 5-1 Sequence of operation**

Name	Timing	Purpose
WAIT	From power-on or the door is closed until the end of the main motor initial drive.	Detects presence of a print cartridge.
STBY (standby)	From the end of the WAIT or LSTR period until either a print command is sent from the formatter or the power is turned off.	Prepares the product to receive print commands
INTR (initial rotation)	From the time the print command is received from the formatter until the fuser reached its targeted temperature.	Starts each high-voltage biases, the laser scanner, and fuser in preparation for printing.
PRINT	From the end of the INTR period until the last media completes the fusing operation.	Forms the image on the photosensitive drum and transfers the toner image to the media.
LSTR (last rotation)	From the end of the PRINT period (when high-voltage is turned off) until the main motor stops rotating.	Delivers the last page of a print job.  After LSTR, the product either returns to STBY or, if another print command was sent from the formatter, enters INTR.

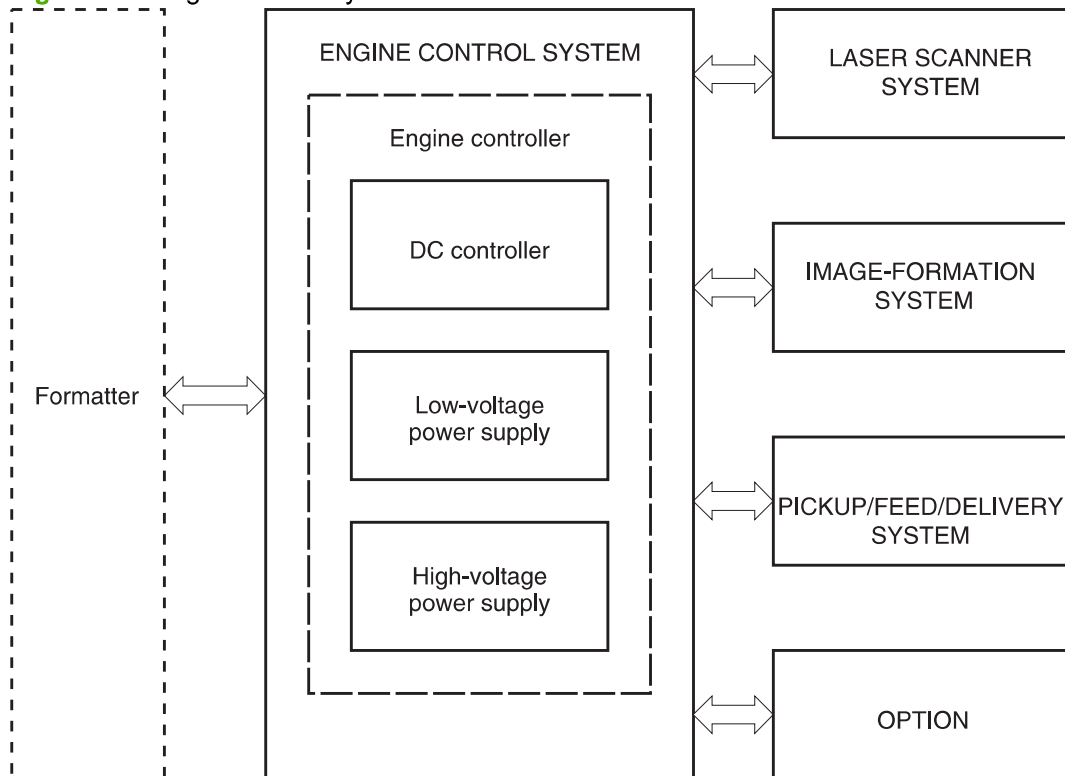
## Engine control system

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

The engine control system contains the following components:

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

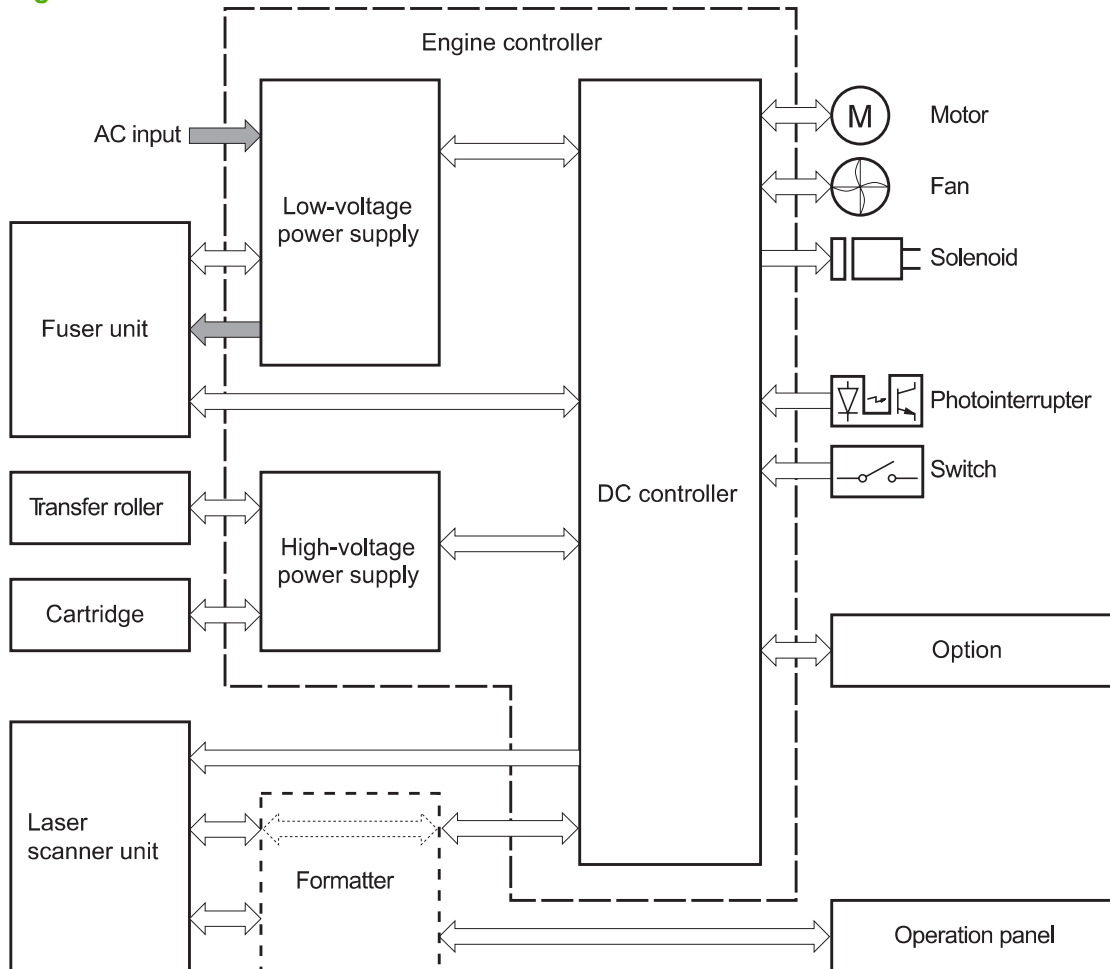
**Figure 5-3** Engine control system



## DC controller

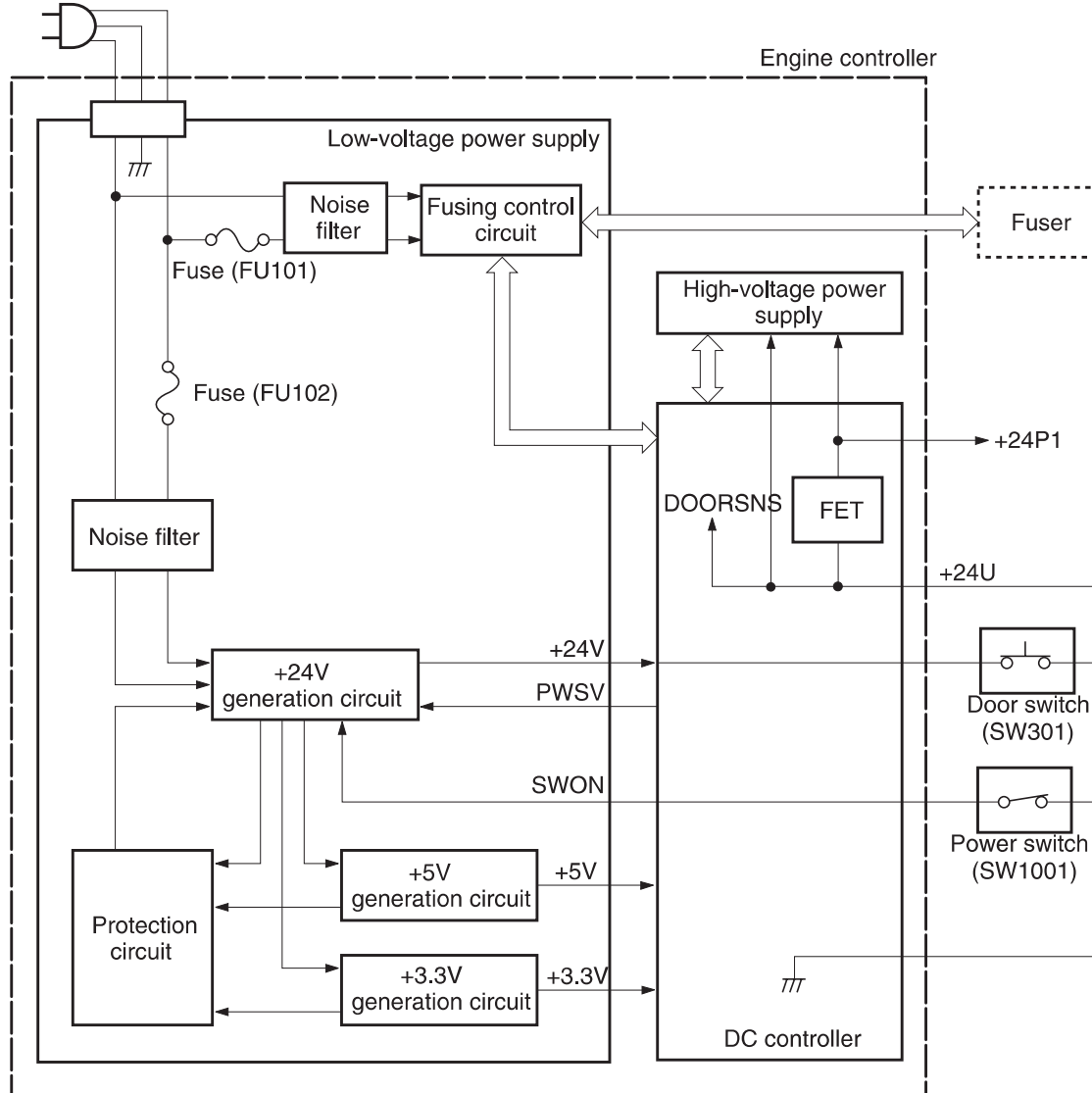
The DC controller controls the operational sequence of the product.

**Figure 5-4** DC controller



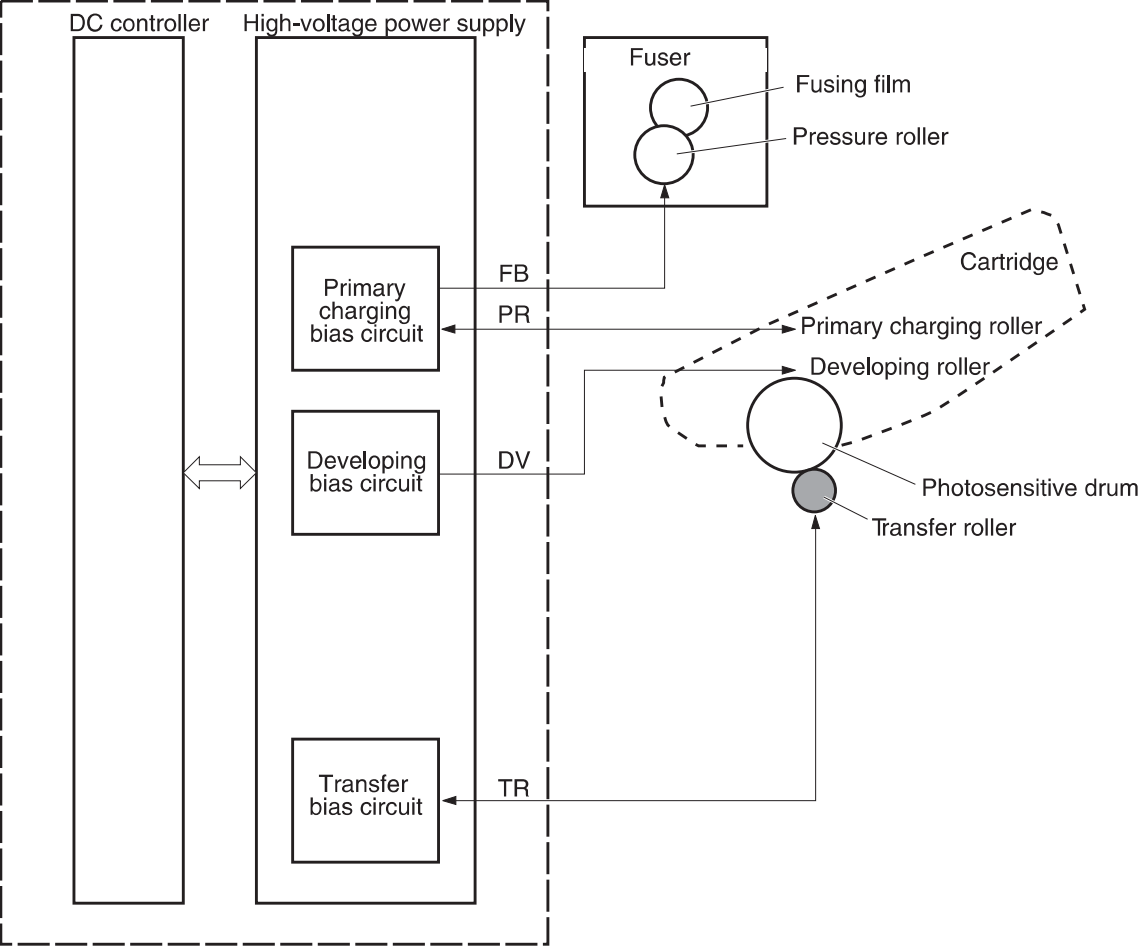
## Low-voltage power supply

**Figure 5-5** Low-voltage power supply



# High-voltage power supply

Figure 5-6 High-voltage power supply

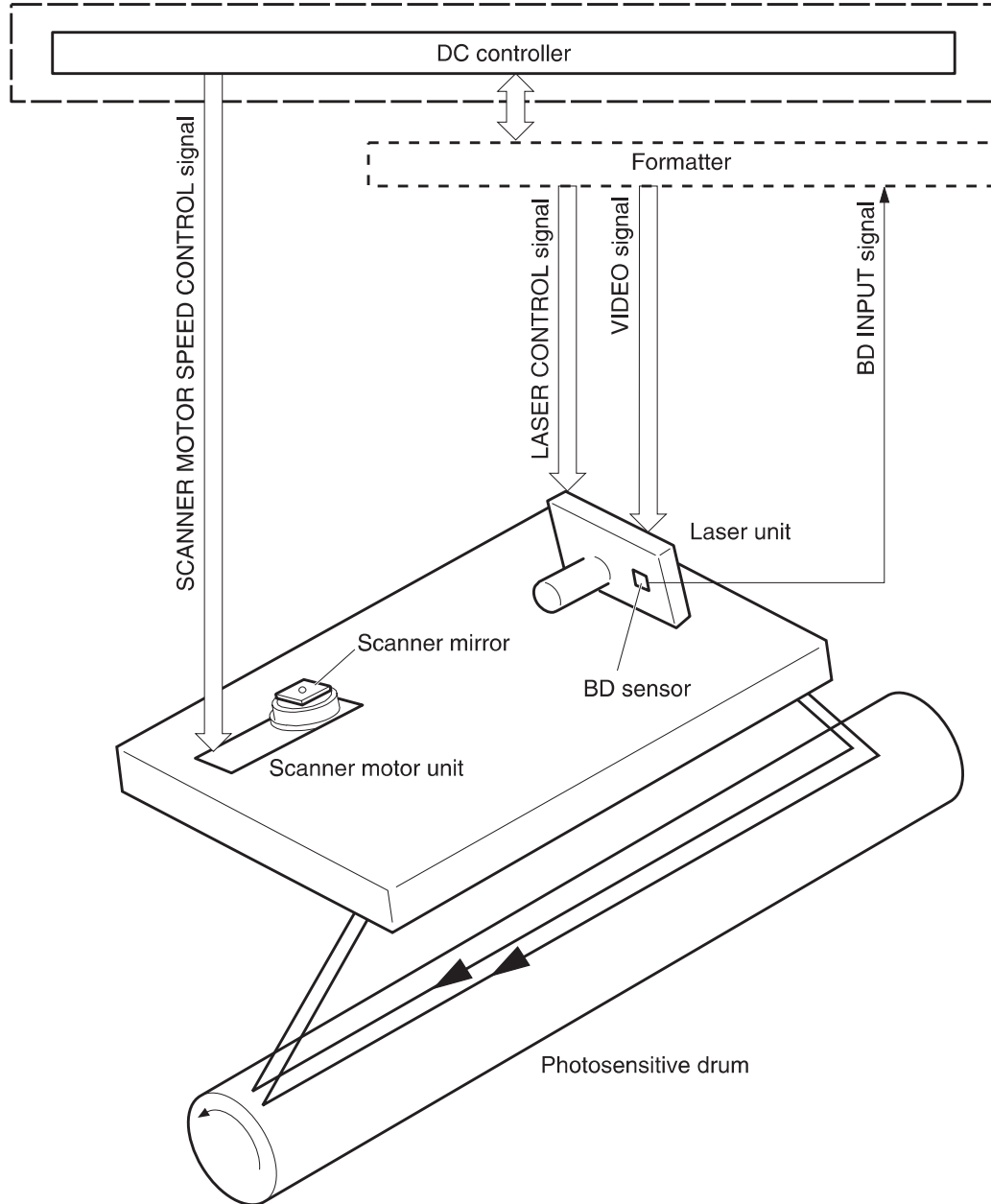


## Laser/scanner system

The formatter sends video signals to the DC controller, which controls the laser/scanner. When the laser/scanner system receives those signals, it converts them to latent images on the photosensitive drum.

**Figure 5-7** Laser/scanner system

Engine controller





## Laser failure detection

The optical unit failure detection sensor manages the laser/scanner unit failure-detection functions. The DC controller identifies the laser/scanner unit failure and notifies the formatter if the laser/scanner unit encounters the following conditions:

- Scanner motor failure
- BD failure

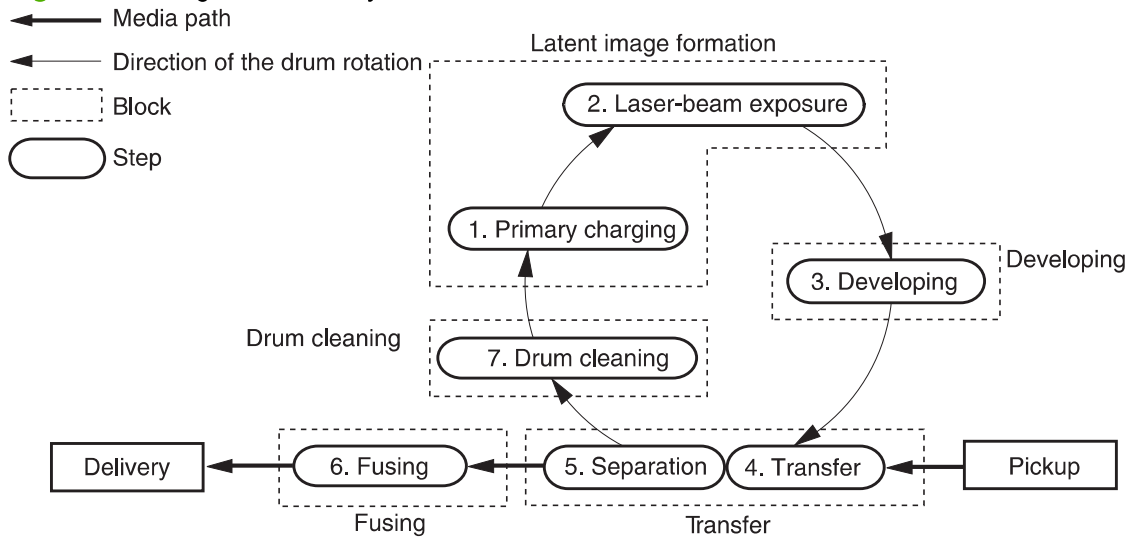
# Image-formation system

Laser printing requires the interaction of several different technologies, including electronics, optics, and electrophotographics, to provide a printed page. Each process functions independently and must be coordinated with the other product processes. Image formation consists of the following five processes:

- electrostatic latent-image formation
- developing
- transfer
- fusing
- drum cleaning

The five processes contain seven steps.

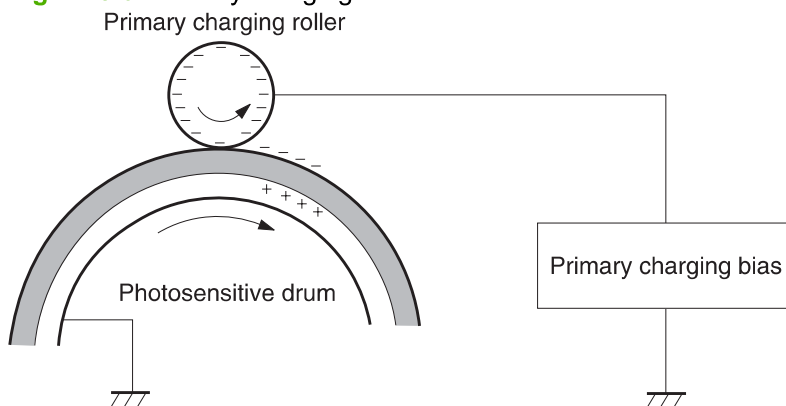
**Figure 5-8** Image-formation system



## Step 1: Primary charging

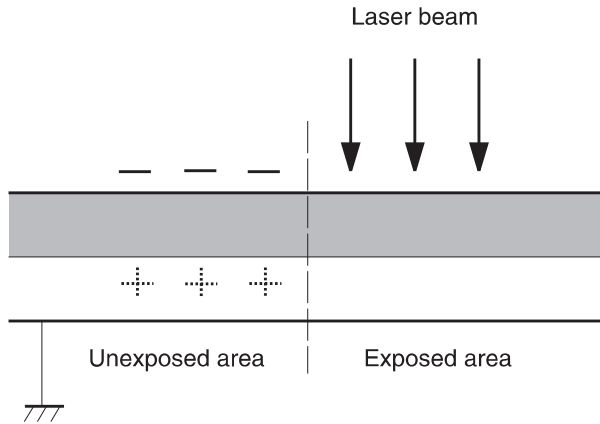
DC and AC biases are applied to the primary charging roller, which transfers a uniform negative potential to the photosensitive drum.

**Figure 5-9** Primary charging



### Step 2: Laser beam exposure

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

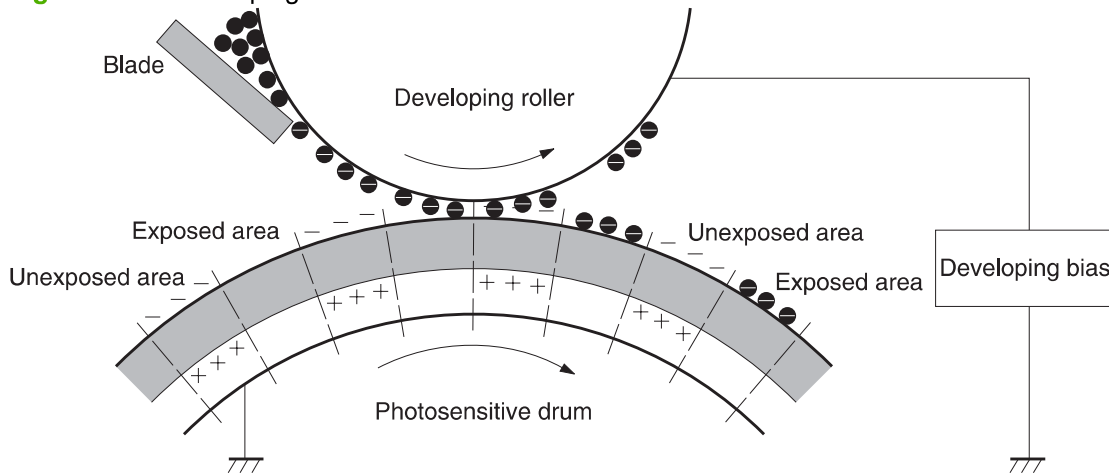


### Step 3: Developing

The developing cylinder comes in contact with the photosensitive drum to deposit toner onto the electrostatic latent image.

**NOTE:** The charges on the exposed area of the drum are shown as positive in [Figure 5-10 Developing on page 91](#). The charges are actually negative, but they are more positive than the charges on the developing cylinder.

**Figure 5-10** Developing

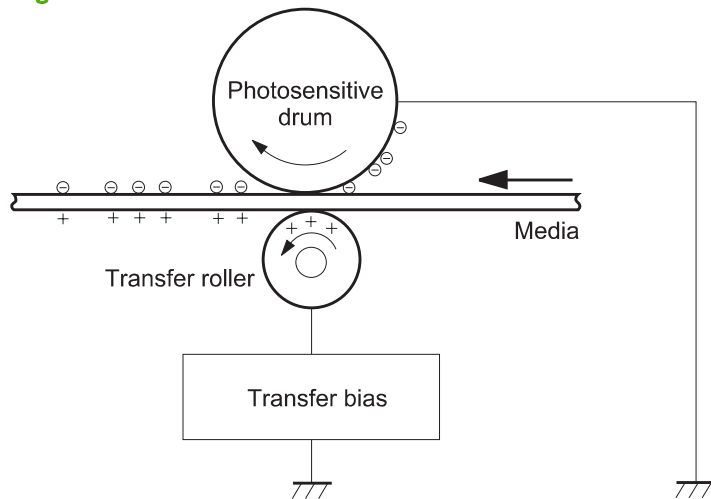


Toner acquires a negative charge through friction from the developing cylinder and the blade. When the negatively charged toner comes in contact with the drum, the toner adheres to the electrostatic latent image. The image on the drum becomes visible because of the toner.

### Step 4: Transfer

The transfer charging roller, to which a dc positive bias is applied, imparts a positive charge on the print media. When the print media comes in contact with the photosensitive drum, the toner is transferred to the print media.

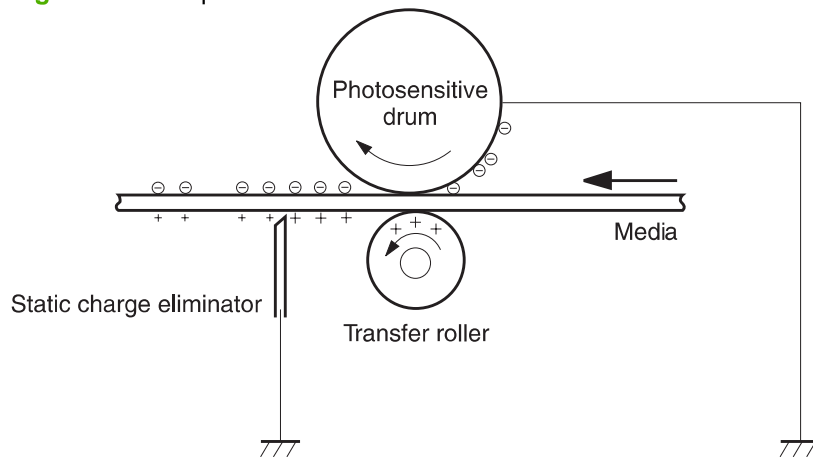
**Figure 5-11** Transfer



### Step 5: Separation

The elasticity of the print media causes its separation from the photosensitive drum. A static charge eliminator aids separation by weakening any electrostatic adhesion.

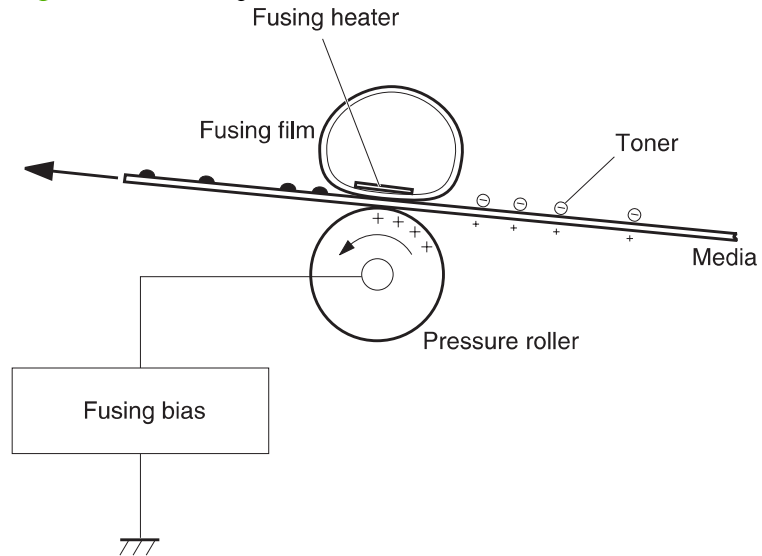
**Figure 5-12** Separation



### Step 6: Fusing

The dc negative bias applied to the fusing film strengthens the holding force of the toner on the print media and prevents the toner from scattering.

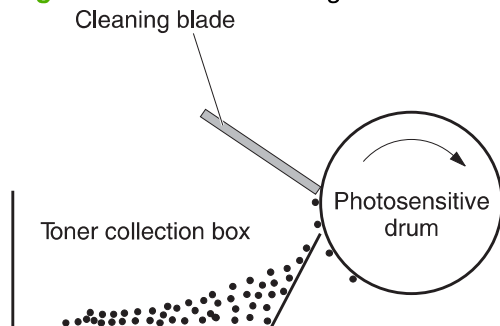
**Figure 5-13** Fusing



### Step 7: Drum cleaning

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

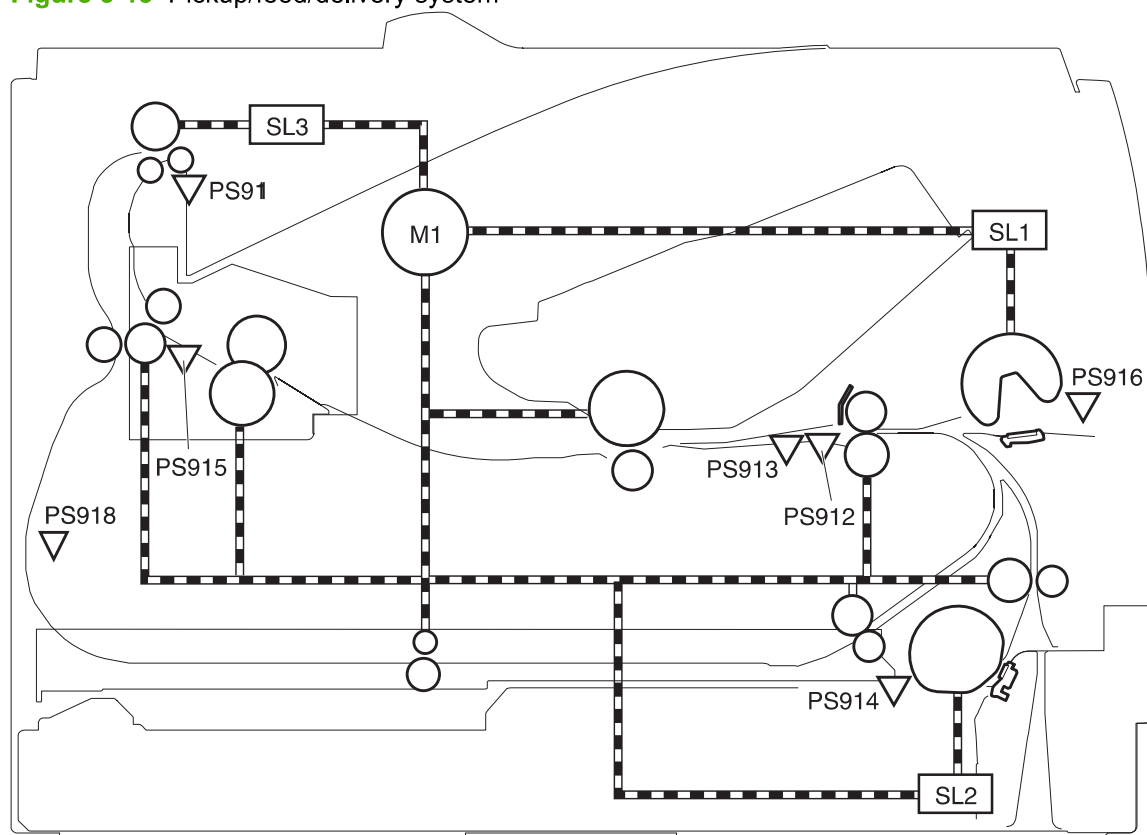
**Figure 5-14** Drum cleaning



## Pickup/feed/delivery system

The pickup/feed/delivery system consists of several types of feed rollers and sensors. The DC controller uses two motors and two solenoids to drive the rollers. Three media-detection sensors detect media as it passes through the product. If media does not reach or pass each sensor within a specified period, the DC controller determines that a jam has occurred and alerts the formatter.

**Figure 5-15** Pickup/feed/delivery system



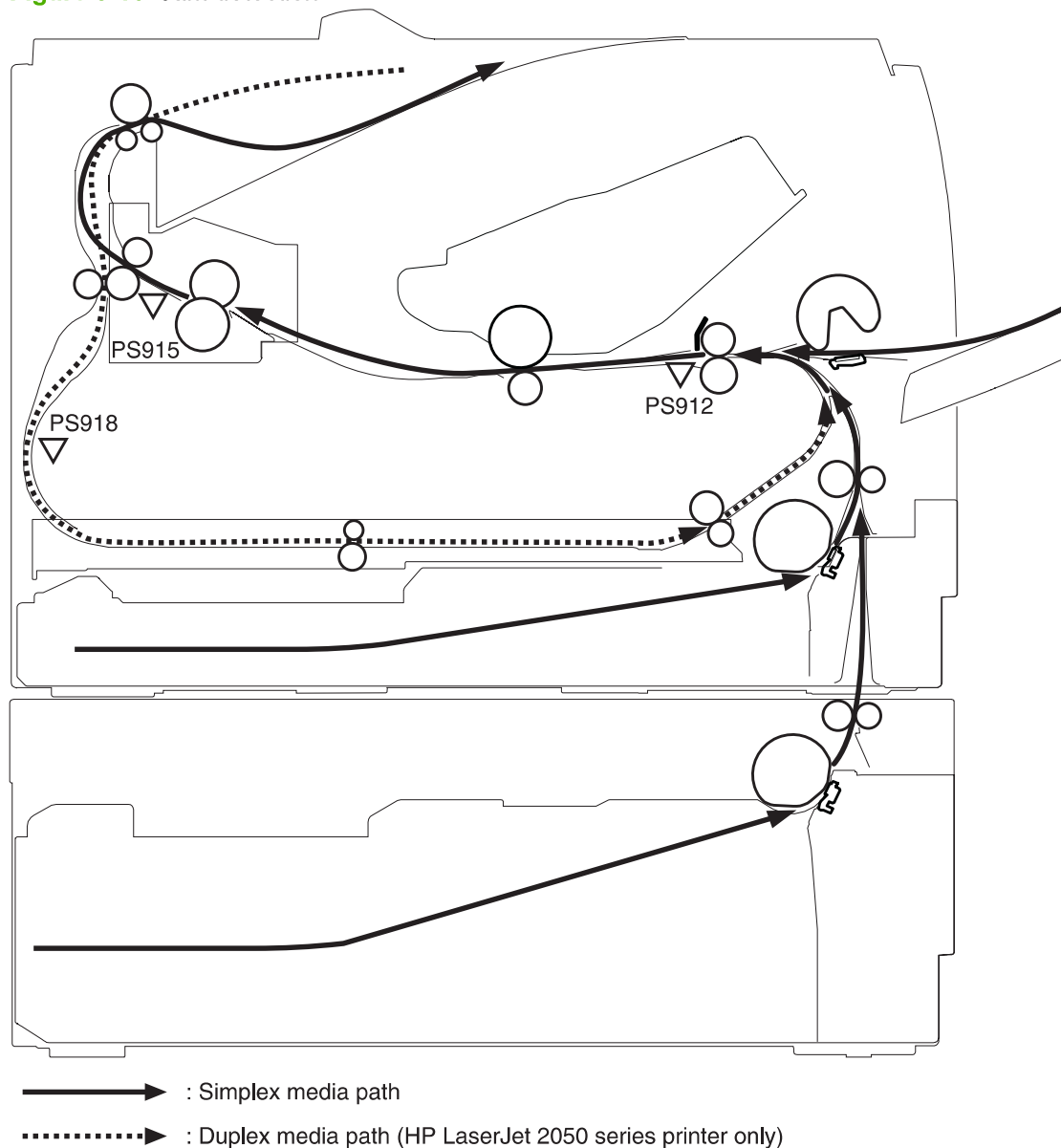
M1	Main motor
SL1	Tray 1 pickup solenoid
SL2	Tray 2 pickup solenoid
SL3	Duplex solenoid (HP LaserJet P2050 Series Printers only)
PS911	Tray 3 media sensor (HP LaserJet P2050 Series Printers only)
PS912	Top-of-page sensor
PS913	Width-detection sensor
PS914	Tray 2 media sensor
PS915	Fuser delivery sensor
PS916	Tray 1 media presence sensor
PS918	Duplex sensor (HP LaserJet P2050 Series Printers only)

## Jam detection

The product uses the following sensors to detect the presence of media and to check whether media is being fed correctly or has jammed:

- Top sensor (SR912)
- Fuser delivery sensor (SR915)
- Duplex reverse sensor (SR918)

**Figure 5-16** Jam detection








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## 6 Removal and replacement

- [Introduction](#)
- [Removal and replacement strategy](#)
- [Electrostatic discharge](#)
- [Required tools](#)
- [Before performing service](#)
- [After performing service](#)
- [Post-service test](#)
- [Print cartridge](#)
- [Tray 2 cassette](#)
- [Rollers and pads](#)
- [External panels, covers, and doors](#)
- [Internal assemblies](#)

# Introduction

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

 **NOTE:** Your product might not appear exactly as the one shown in the photos in this chapter. For example, the color of the external panels and covers might be different than your product. However, the procedures in this chapter are valid for both the HP LaserJet P2035 and the HP LaserJet P2055.


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

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

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


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


## Removal and replacement strategy

 **WARNING!** Turn the product off, wait 5 seconds, and then remove the power cord before attempting to service the product. If this warning is not followed, severe injury can result, in addition to damage to the product. The power must be on for certain functional checks during problem solving. However, the power supply should be disconnected during parts removal.



Never operate or service the product with the protective cover removed from the laser/scanner assembly. The reflected beam, although invisible, can damage your eyes.

The sheet-metal parts can have sharp edges. Be careful when handling sheet-metal parts.

 **CAUTION:** Do not bend or fold the flat flexible cables (FFCs) during removal or installation. Also, do not straighten pre-folds in the FFCs. You *must* Make sure that all FFCs are fully seated in their connectors. Failure to fully seat an FFC into a connector can cause a short circuit in a PCA.

 **NOTE:** To install a self-tapping screw, first turn it counterclockwise to align it with the existing thread pattern, and then carefully turn it clockwise to tighten. Do not overtighten. If a self-tapping screw-hole becomes stripped, repair the screw-hole or replace the affected assembly.

## Electrostatic discharge

  **CAUTION:** Some parts are sensitive to electrostatic discharge (ESD). Look for the ESD reminder when removing product parts. Always perform service work at an ESD-protected workstation or mat. If an ESD workstation or mat is not available, ground yourself by touching the sheet-metal chassis *before* touching an ESD-sensitive part.

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

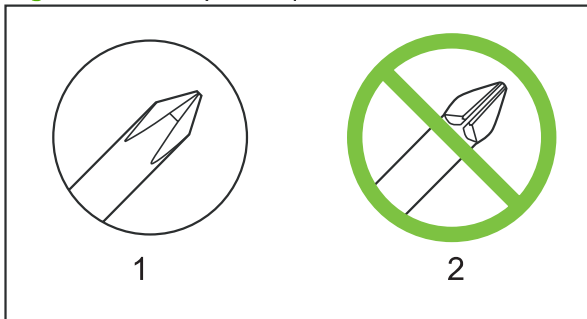
## Required tools

- #2 Phillips screwdriver with a magnetic tip and a 152-mm (6-inch) shaft length
- Small flatblade screwdriver
- Needle-nose pliers
- ESD mat (if one is available) or ESD strap
- Penlight (optional)

△ **CAUTION:** Always use a Phillips screwdriver (callout 1). Do not use a pozidrive screwdriver (callout 2) or any motorized screwdriver. These can damage screws or screw threads.

**CAUTION:** Avoid pulling directly on wires to disconnect wire-harness connectors. Pull on the plastic body of a connector to avoid damaging the connector wires.

**Figure 6-1** Phillips and pozidrive screwdriver comparison



## Before performing service

- Remove all media from the product.
- Turn off the power using the power switch.
- Unplug the power cable and interface cable or cables.
- Place the product on an ESD mat (if one is available) or use an ESD strap. If an ESD workstation, mat, or strap is not available, ground yourself by touching the sheet-metal chassis *before* touching an ESD-sensitive part.
- Remove the print cartridge. See [Print cartridge on page 102](#).
- Remove the Tray 2 cassette.

## After performing service

- Plug in the power cable.
- Reinstall the print cartridge.
- Reinstall the Tray 2 cassette.

## Post-service test

When service is complete, use these tests to make sure that the repair or replacement was successful.

### Print-quality test

1. Verify that you have completed the necessary reassembly steps.
2. Make sure that the input tray contains clean, unmarked paper.
3. Attach the power cord and interface cable, and then turn on the product.
4. Verify that the expected startup sounds occur.
5. Print a configuration page, and then verify that the expected printing sounds occur.
6. Print a demo page, and then verify that the print quality is as expected.
7. Send a print job from the host computer, and then verify that the output meets expectations. For HP LaserJet P2050 Series Printers, print a duplex page.
8. If necessary, restore any customer-specified settings.
9. Clean the outside of the product with a damp cloth.

## Print cartridge

△ **CAUTION:** If toner gets on any clothing, wipe it off with a dry cloth and wash the clothing in cold water. *Hot water sets toner into the fabric.*

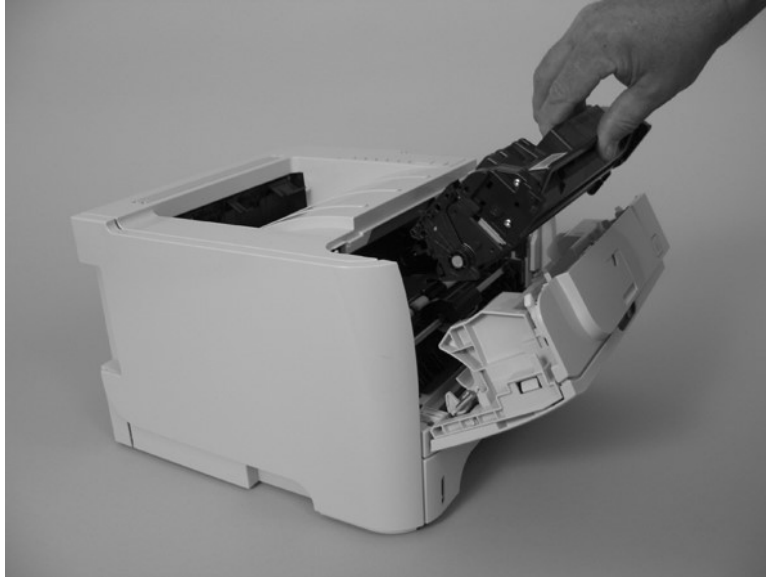
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1. Open the print-cartridge door.
2. Grasp the handle on the print cartridge, and then pull the cartridge up and out of the product.

△ **CAUTION:** When the print cartridge is removed, do not expose it to direct or strong light. Protect the print cartridge by placing a sheet of paper over it.

---

**Figure 6-2** Remove the print cartridge



3. Close the print-cartridge door.

## Tray 2 cassette

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

**Figure 6-3** Remove the Tray 2 cassette



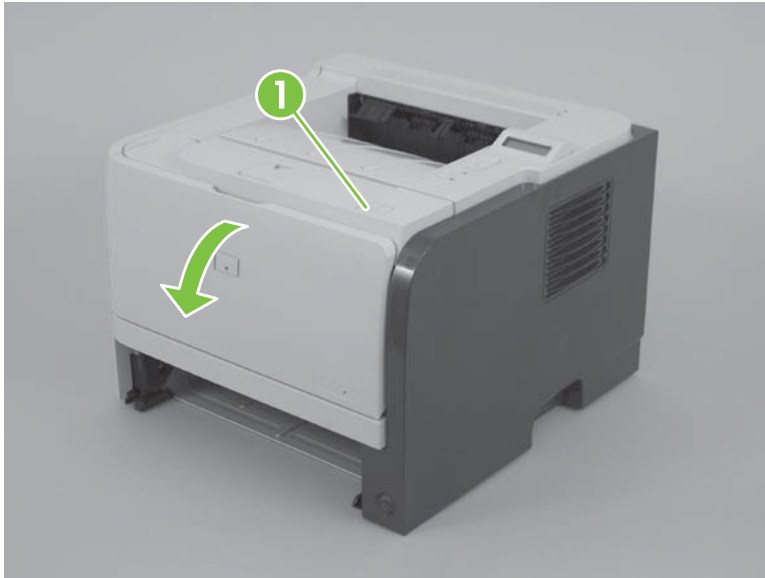
# Rollers and pads

## Pickup roller; Tray 1

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

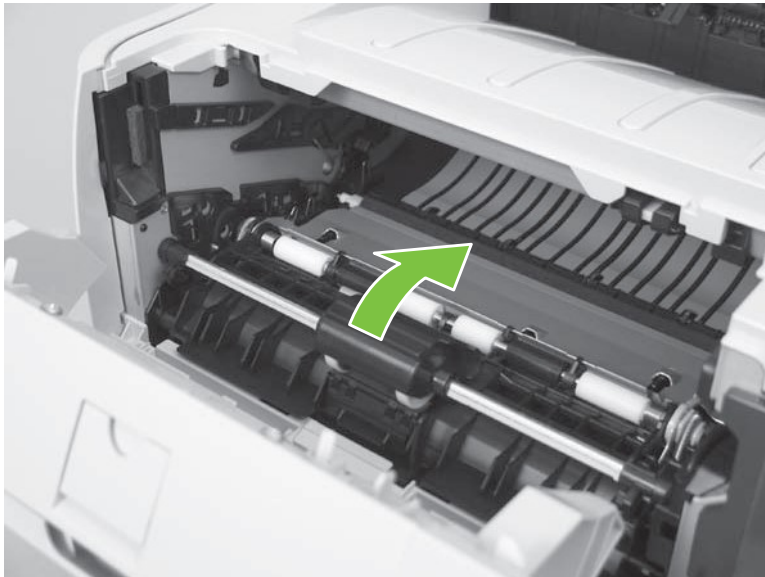
1. Press the print-cartridge door button (callout 1), and then open the print-cartridge door.

**Figure 6-4** Remove the pickup roller; Tray 1 (1 of 5)



2. Rotate the roller cover up and away from the roller assembly.

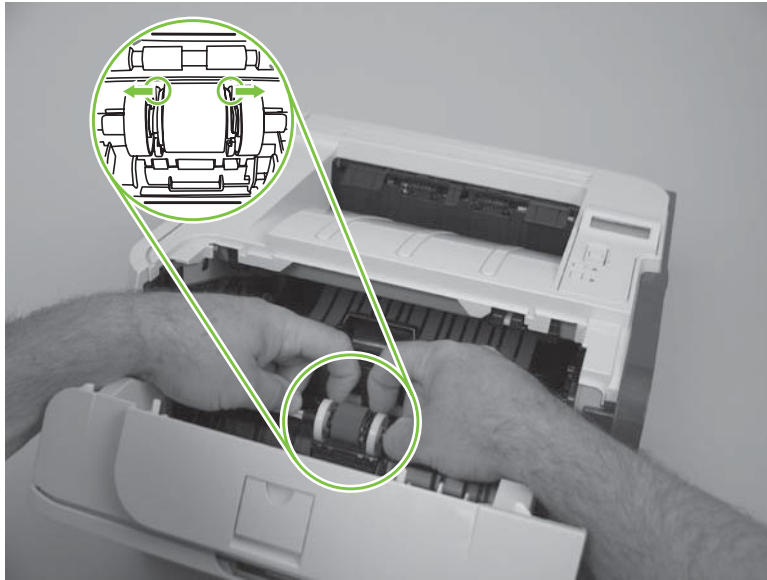
**Figure 6-5** Remove the pickup roller; Tray 1 (2 of 5)





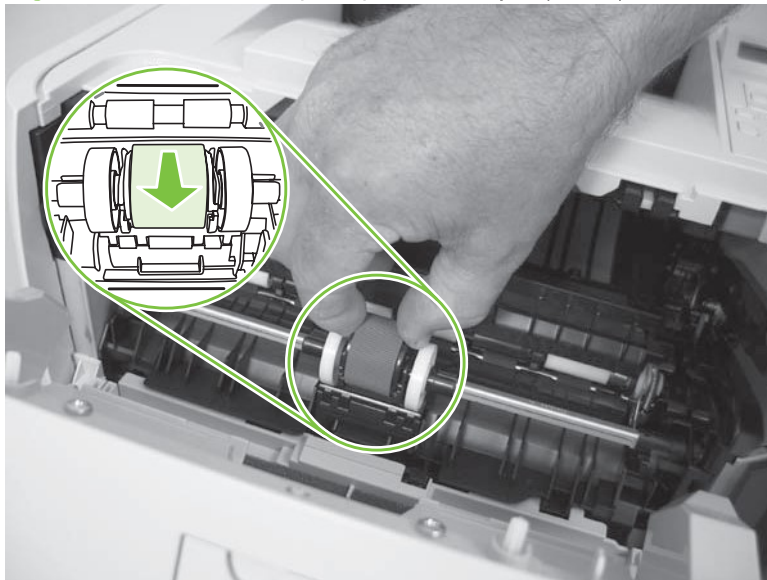
3. Release two tabs.

**Figure 6-6** Remove the pickup roller; Tray 1 (3 of 5)



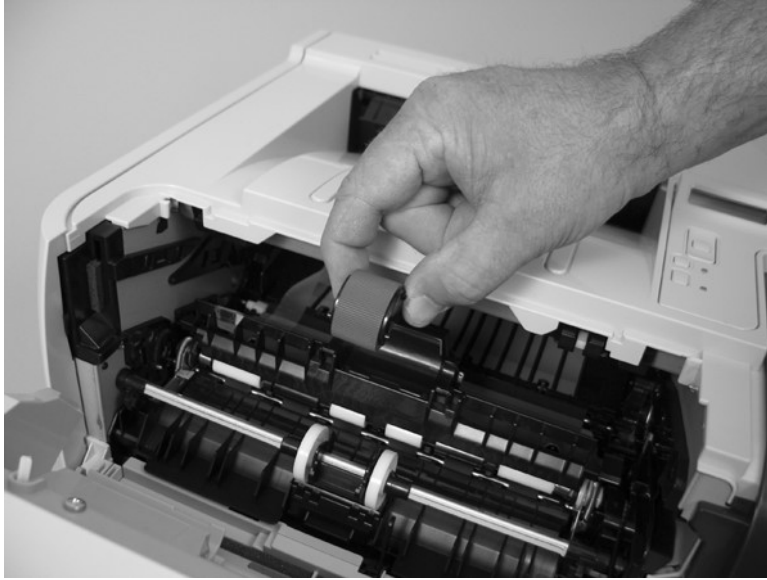
4. Rotate the pickup roller away from the product.

**Figure 6-7** Remove the pickup roller; Tray 1 (4 of 5)



5. Remove the pickup roller.

**Figure 6-8** Remove the pickup roller; Tray 1 (5 of 5)



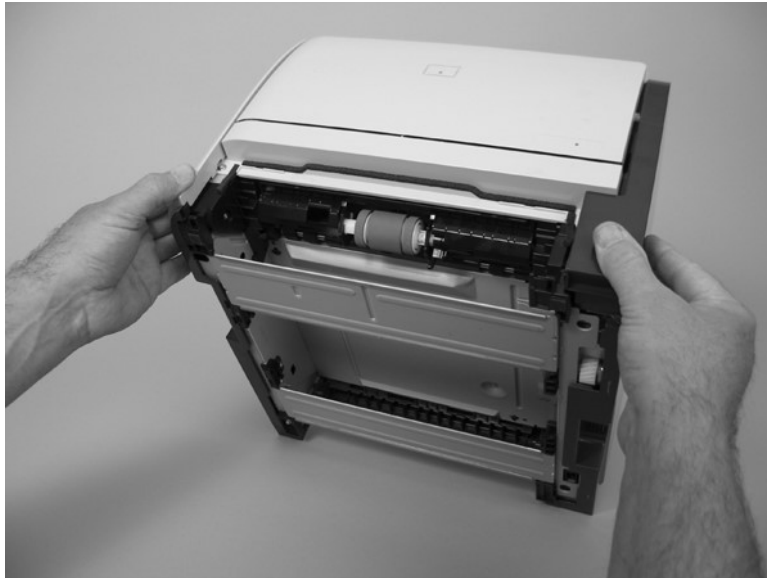
## Pickup roller assembly; Tray 2

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

1. If the Tray 2 cassette has not yet been removed to service the product, remove the cassette. See [Tray 2 cassette on page 103](#).
2. Carefully place the product front-side up.

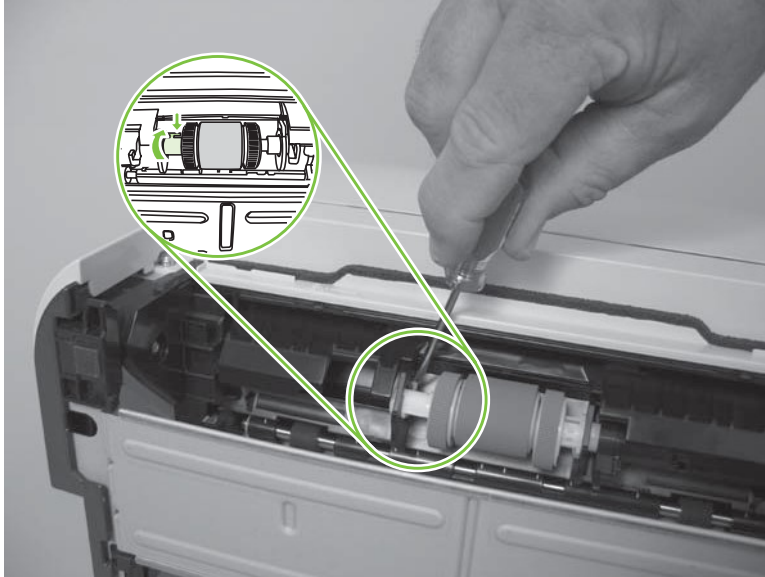
📋 **NOTE:** Debris can scratch or damage the back of the product. Before you place the product front-side up, remove any debris from the work surface. If possible, set the product on a clean, dry cloth to prevent scratching and damage.

**Figure 6-9** Remove the pickup roller assembly; Tray 2 (1 of 5)



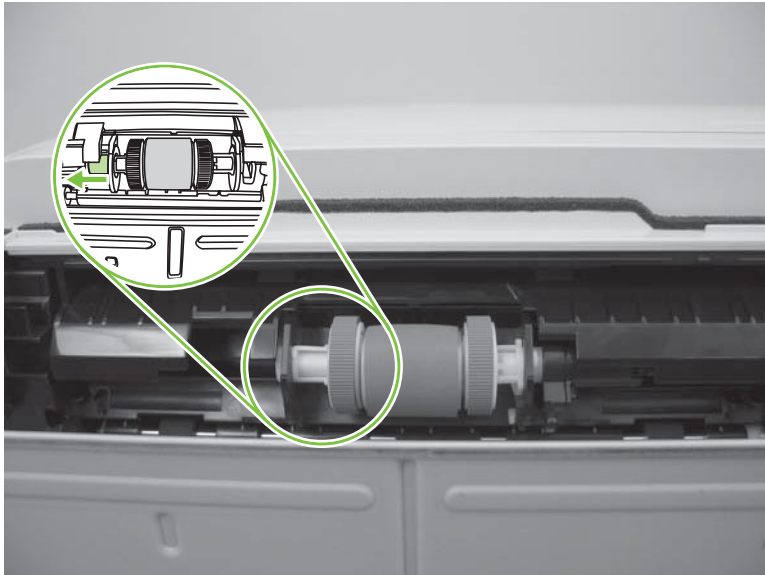
3. Use a small flat blade screwdriver to release one tab (callout 1), and then rotate the locking collar toward the inside of the product.

**Figure 6-10** Remove the pickup roller assembly; Tray 2 (2 of 5)



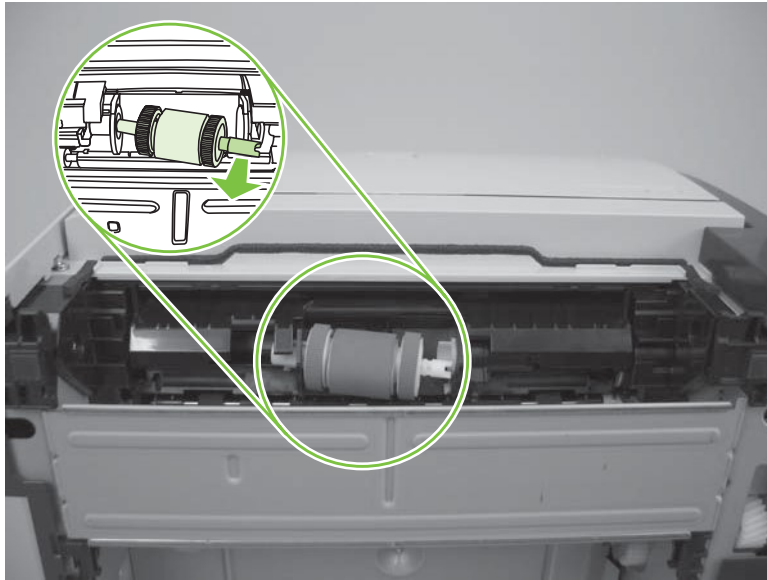
4. Slide the collar away from the rollers.

**Figure 6-11** Remove the pickup roller assembly; Tray 2 (3 of 5)



5. Rotate the drive end of the roller assembly out and away from the product.

**Figure 6-12** Remove the pickup roller assembly; Tray 2 (4 of 5)



6. Remove the pickup roller.

△ **CAUTION:** The two rollers on the end of the assembly are not captive and can slip off of the roller shaft. Do not lose the rollers when you remove the assembly.

**Figure 6-13** Remove the pickup roller; Tray 2 (5 of 5)

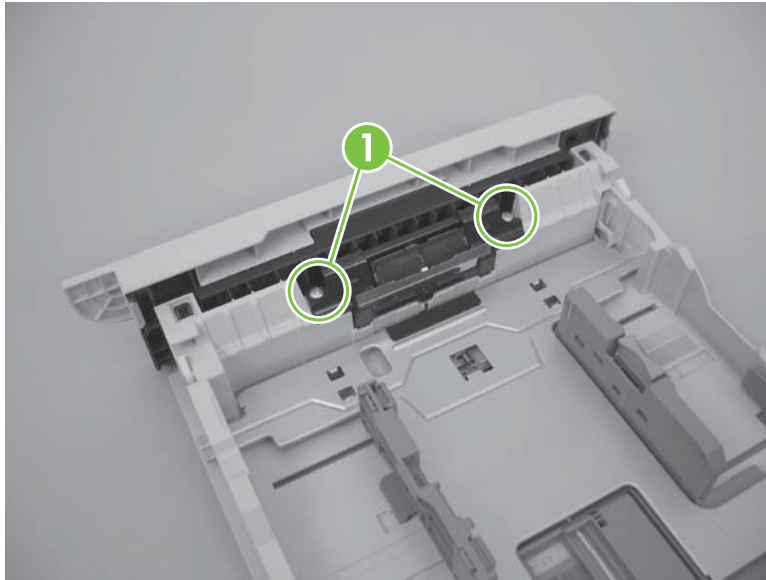


## Separation-pad assembly; Tray 2

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

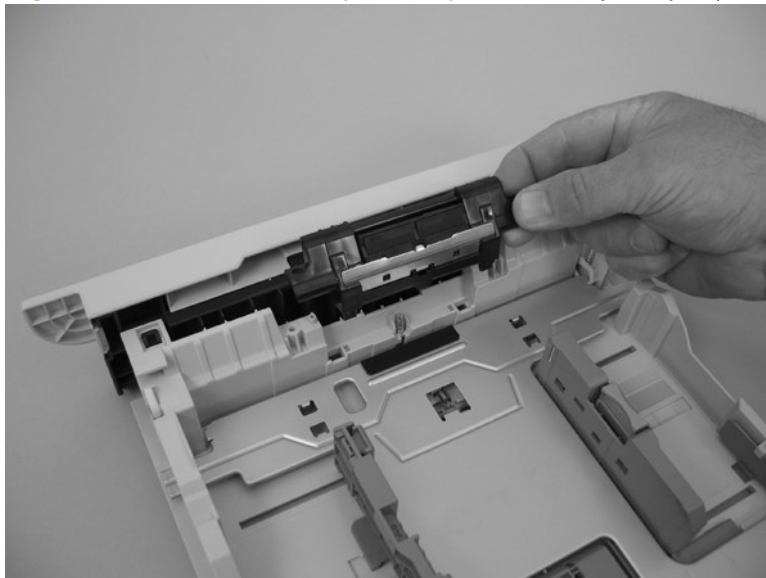
1. If the Tray 2 cassette has not yet been removed to service the product, remove the cassette. See [Tray 2 cassette on page 103](#).
2. Remove two screws (callout 1)

**Figure 6-14** Remove the separation-pad assembly; Tray 2 (1 of 2)



3. Remove the separation-pad assembly.

**Figure 6-15** Remove the separation-pad assembly; Tray 2 (2 of 2)



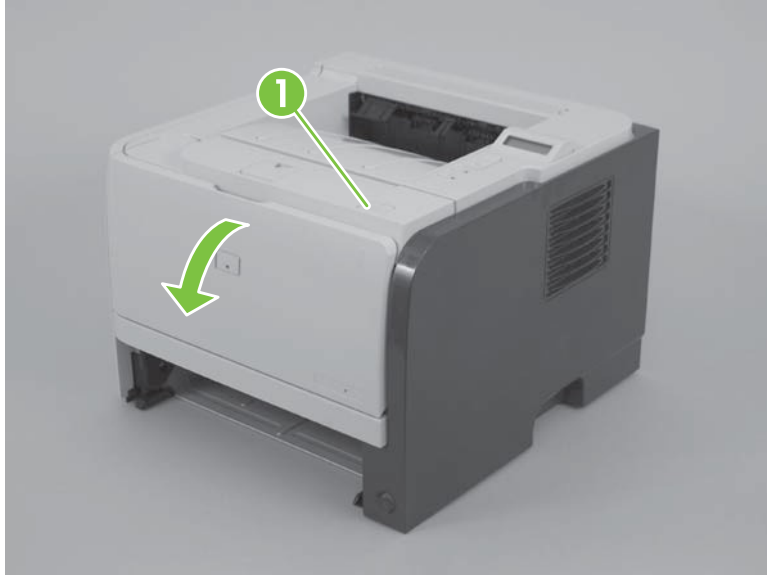
## Transfer roller

- △ **CAUTION:** Do not touch the sponge surface of the roller unless you are replacing the roller. Skin oils on the roller can cause print-quality problems.

Always wear latex gloves when handling a transfer roller for reinstallation or replacement.

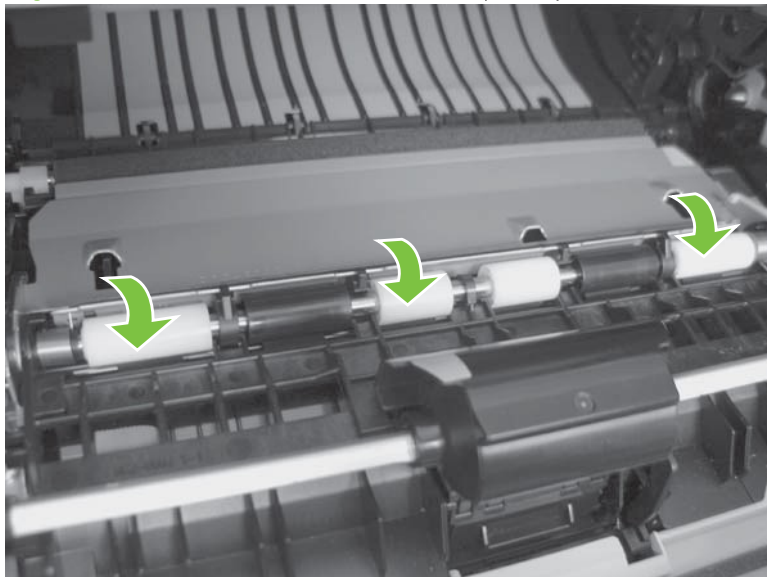
1. Press the print-cartridge door button (callout 1), and then open the print-cartridge door.

**Figure 6-16** Remove the transfer roller (1 of 5)



2. Use your finger to raise the sheet-metal flap, and then rotate it toward the Tray 1 pickup roller cover.

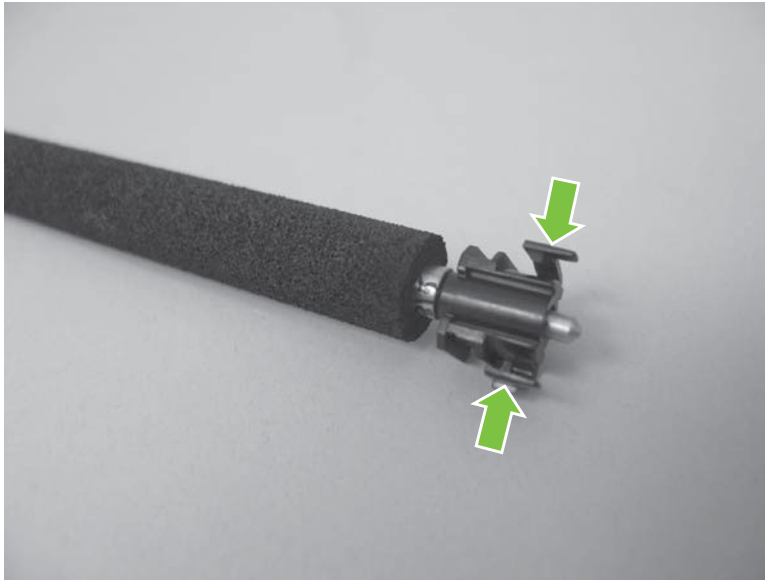
**Figure 6-17** Remove the transfer roller (2 of 5)





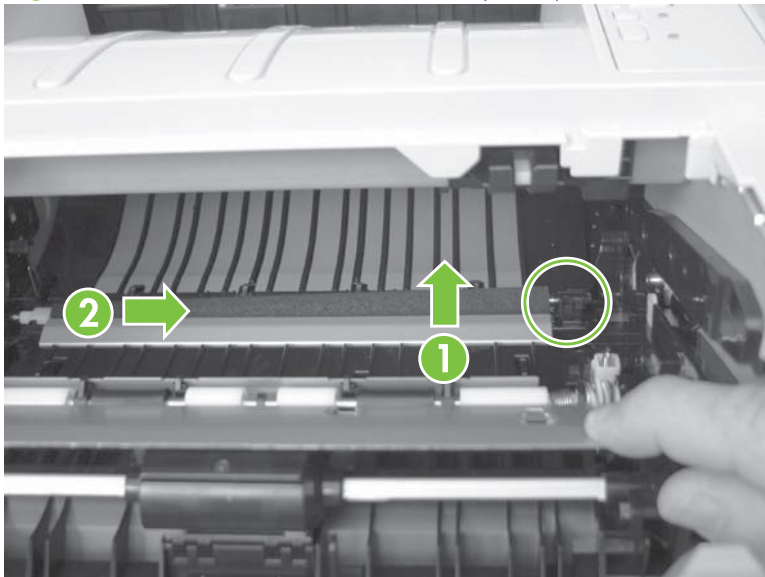
3. Before you proceed, note the location of the two tabs on the transfer-roller right-side locking clip.

**Figure 6-18** Remove the transfer roller (3 of 5)



4. Release two tabs on the right-side locking clip, lift the roller up, and then slide it toward the right side of the product to release the left end of the shaft.

**Figure 6-19** Remove the transfer roller (4 of 5)

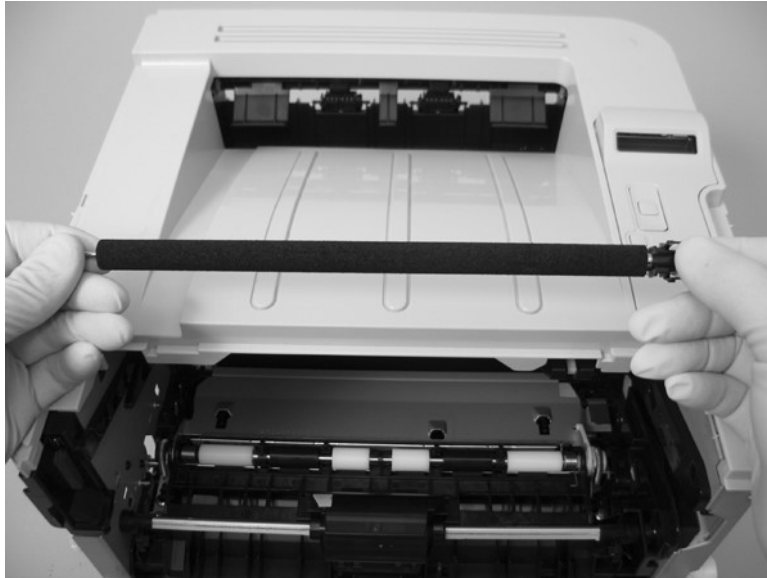





5. Remove the transfer roller.

△ **CAUTION:** The black locking clip on the right side of the transfer-roller shaft is not captive. Do not lose the locking clip when you remove the transfer roller.

**Figure 6-20** Remove the transfer roller (5 of 5)



## External panels, covers, and doors

 **NOTE:** Your product might not appear exactly as the one shown in the photos in this chapter. For example, the color of the external panels and covers might be different than your product. However, the procedures in this chapter are valid for both the HP LaserJet P2035 and the HP LaserJet P2055.

### DIMM door (HP LaserJet P2050 Series only)

1. Open the DIMM door.

**Figure 6-21** Remove the DIMM door (1 of 2; HP LaserJet P2050 Series only)



2. Pull the DIMM door away from the product to remove it.

**Figure 6-22** Remove the DIMM door (2 of 2; HP LaserJet P2050 Series only)

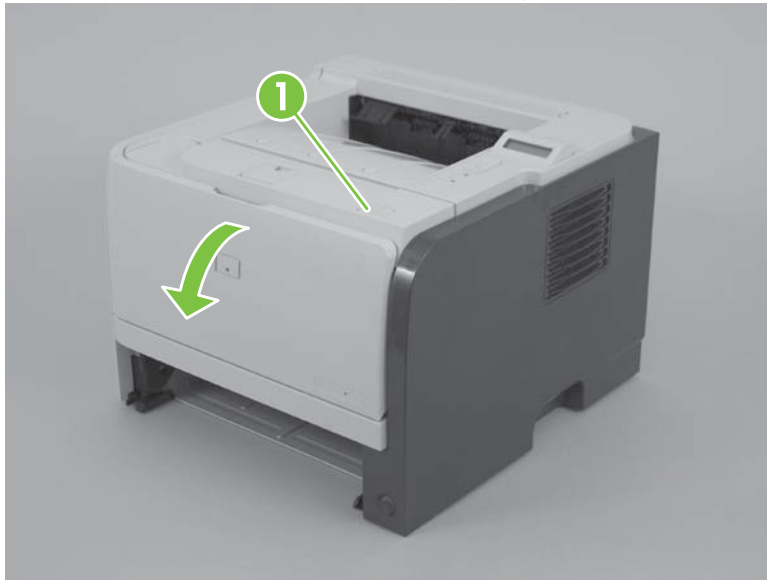


## Right cover

△ **CAUTION:** The power switch can be dislodged when the right cover is removed. Be careful when you remove the cover. If the switch is dislodged, see [Reinstall the right cover on page 117](#).

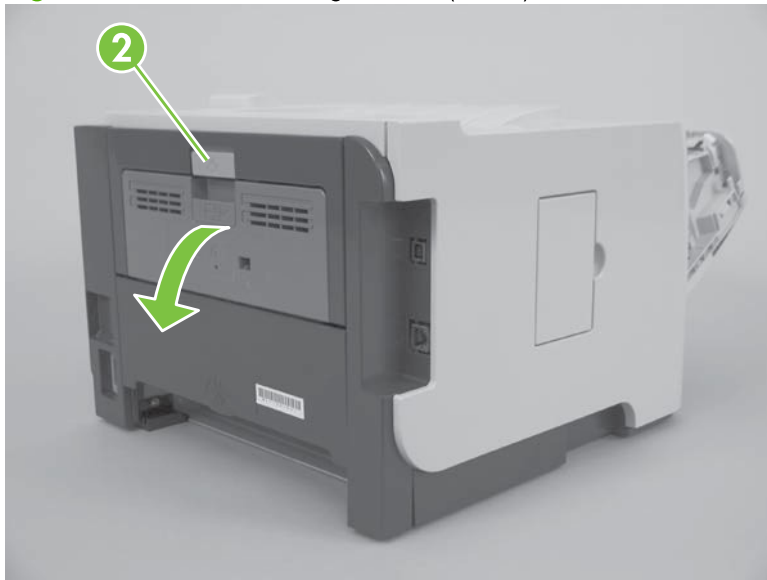
1. Press the print-cartridge door button (callout 1), and then open the print-cartridge door.

**Figure 6-23** Remove the right cover (1 of 5)



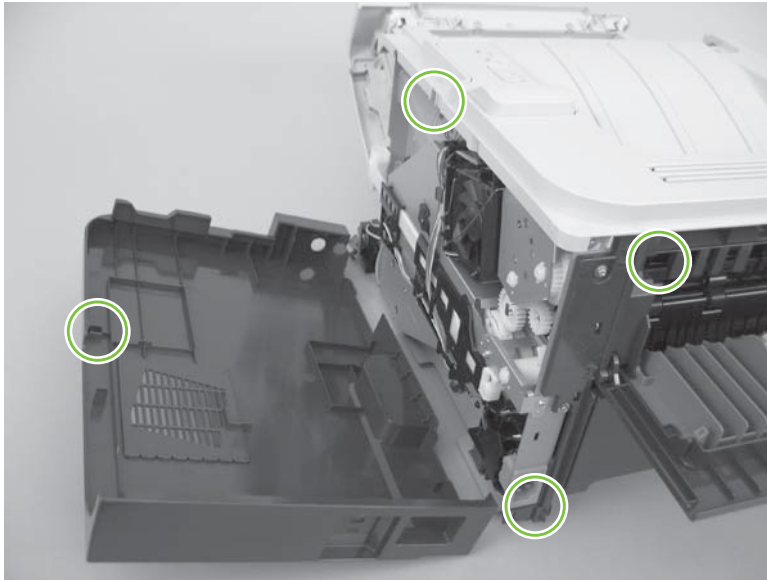
2. Lift the rear door latch (callout 2), and then open the rear door.

**Figure 6-24** Remove the right cover (2 of 5)



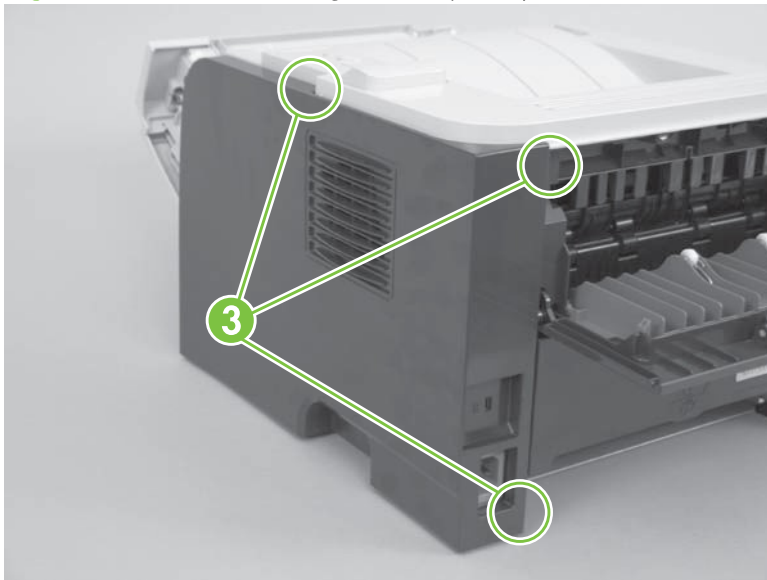
3. Before you proceed, note of the locations of the mounting tabs on the right cover.

**Figure 6-25** Remove the right cover (3 of 5)



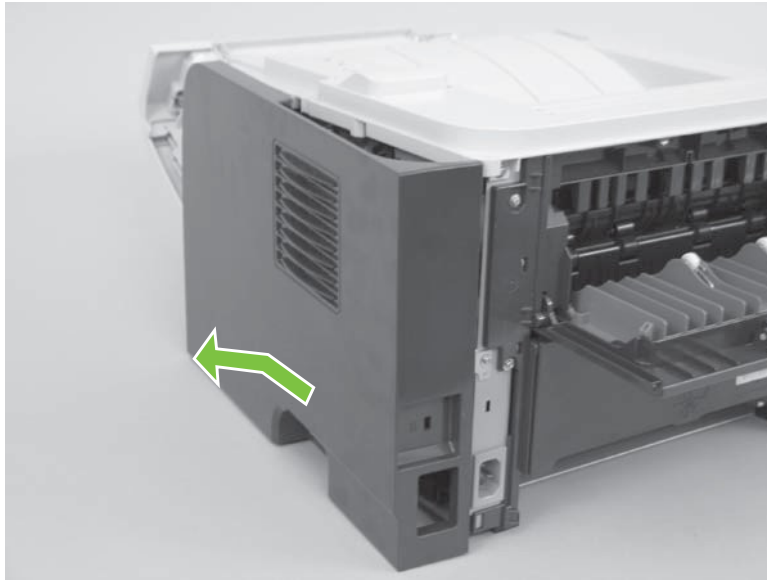
4. Release three tabs (callout 3).

**Figure 6-26** Remove the right cover (4 of 5)



5. Carefully slide the cover toward the front of the product, and then remove it.

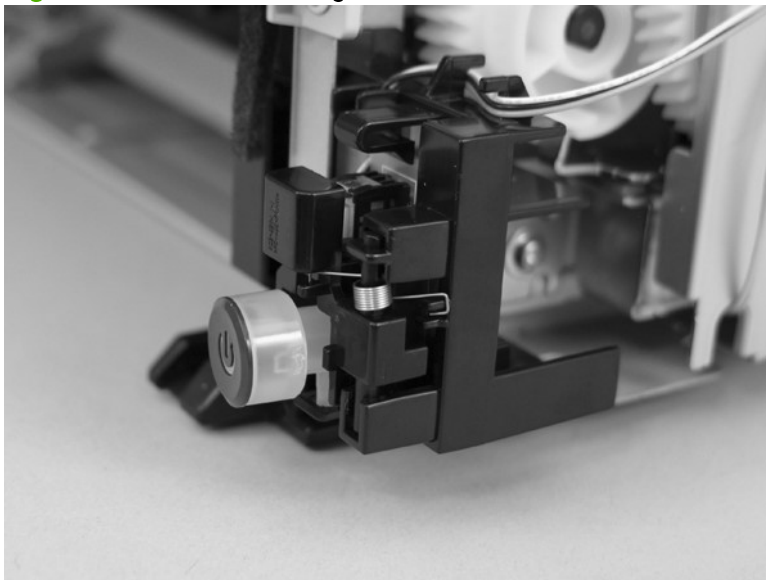
**Figure 6-27** Remove the right cover (5 of 5)



### Reinstall the right cover

If the power switch is dislodged when the cover is removed, replace it before installing the right cover.

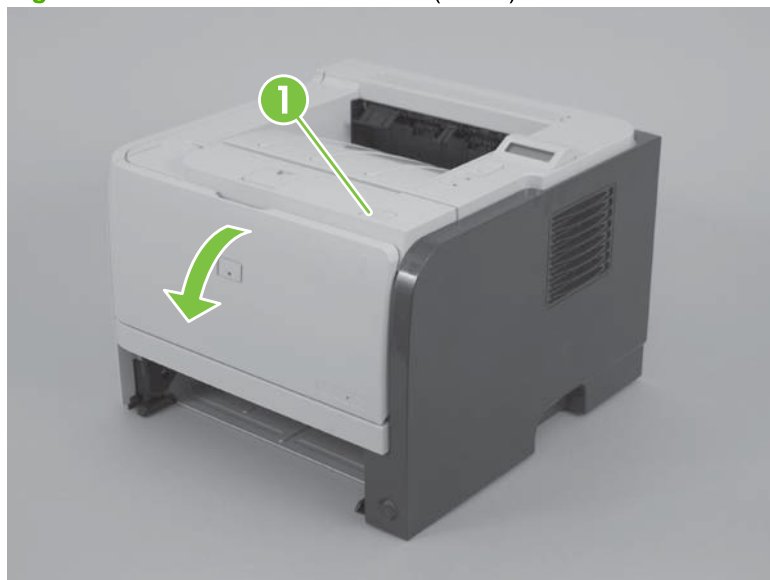
**Figure 6-28** Reinstall the right cover



## Left cover

1. Press the print-cartridge door button (callout 1), and then open the print-cartridge door.

**Figure 6-29** Remove the left cover (1 of 4)



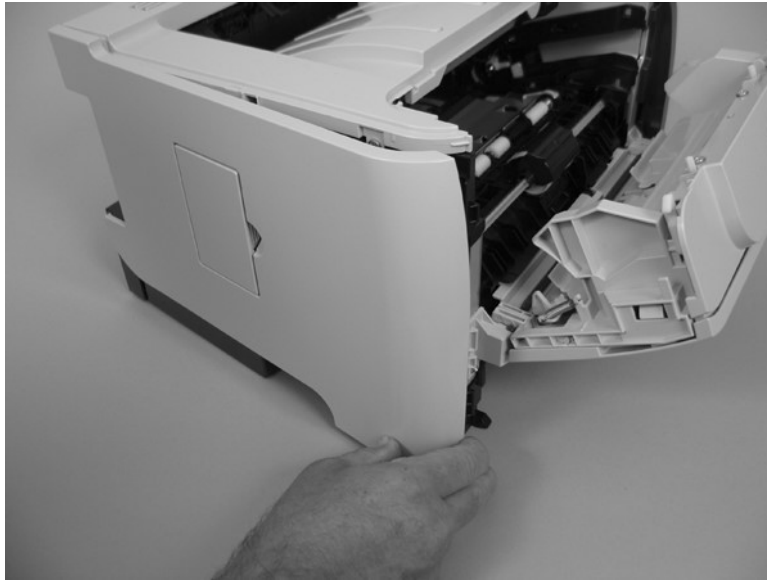
2. Grasp the top front of the cover, and then gently separate the cover from the product.

**Figure 6-30** Remove the left cover (2 of 4)



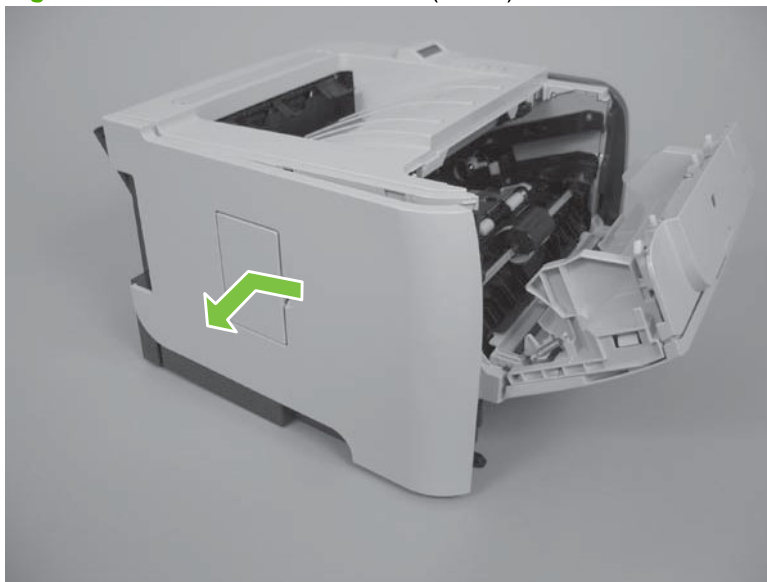
3. Grasp the bottom front of the cover, and then gently separate the cover from the product.

**Figure 6-31** Remove the left cover (3 of 4)




4. Carefully slide the cover toward the front of the product, and then remove it.

**Figure 6-32** Remove the left cover (4 of 4)



## Rear cover, rear door, and duplex-paper-feed assembly


 **NOTE:** Only the HP LaserJet P2050 Series products have a duplex-paper-feed assembly installed.

 **CAUTION:** The fuser can be hot while the product is in use. Wait for the fuser to cool before handling it.

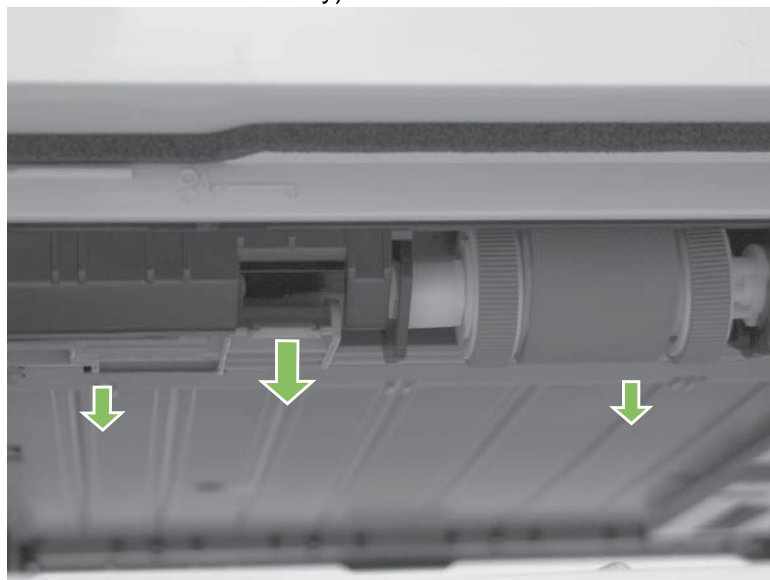
1. Remove the following components:

- Right cover. See [Right cover on page 115](#).
- Left cover. See [Left cover on page 118](#).

2. **HP LaserJet P2050 Series only:** Pull down on the green duplex-paper-feed-assembly release tab, and then lower the assembly.

 **NOTE:** To locate the assembly release tab, look up into the Tray 2 cavity (where the cassette would be installed).

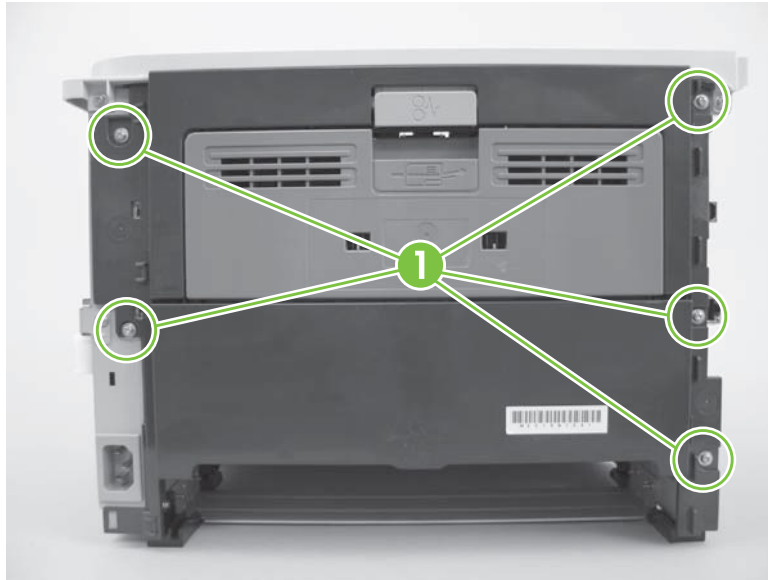
**Figure 6-33** Remove the rear cover, rear door, and duplex-paper-feed assembly (1 of 6; HP LaserJet P2050 Series only)





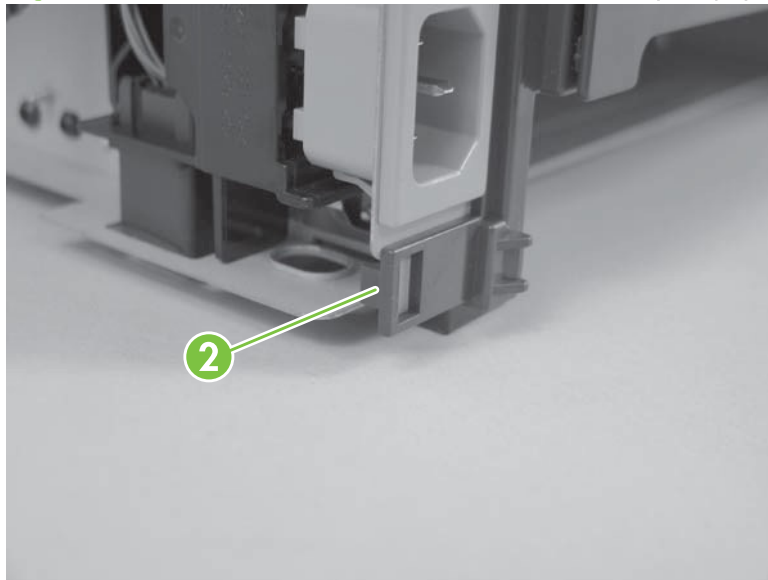
3. Remove five screws (callout 1).

**Figure 6-34** Remove the rear cover, rear door, and duplex-paper-feed assembly (2 of 6)





4. Release one tab (callout 2).

**Figure 6-35** Remove the rear cover, rear door, and duplex-paper-feed assembly (3 of 6)

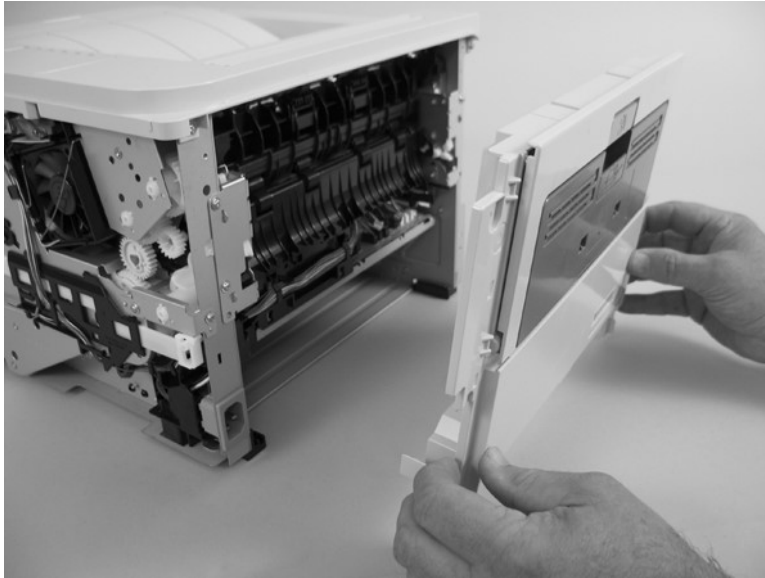


5. Carefully separate the rear cover and rear door from the product, and then remove them.

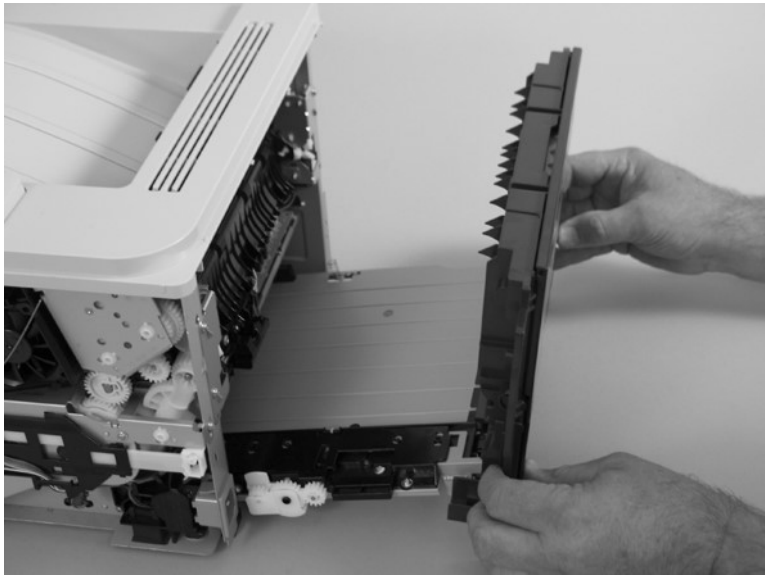
 **NOTE:** For the HP LaserJet P2050 Series, the duplex-paper-feed assembly is removed with the cover and door

 **Reinstallation tip** When you reinstall the rear cover assembly, open the rear door to make sure that the rear cover fits even against the product chassis before you install the mounting screws.

**Figure 6-36** Remove the rear cover, rear door, and duplex-paper-feed assembly (4 of 6; HP LaserJet P2030 Series)

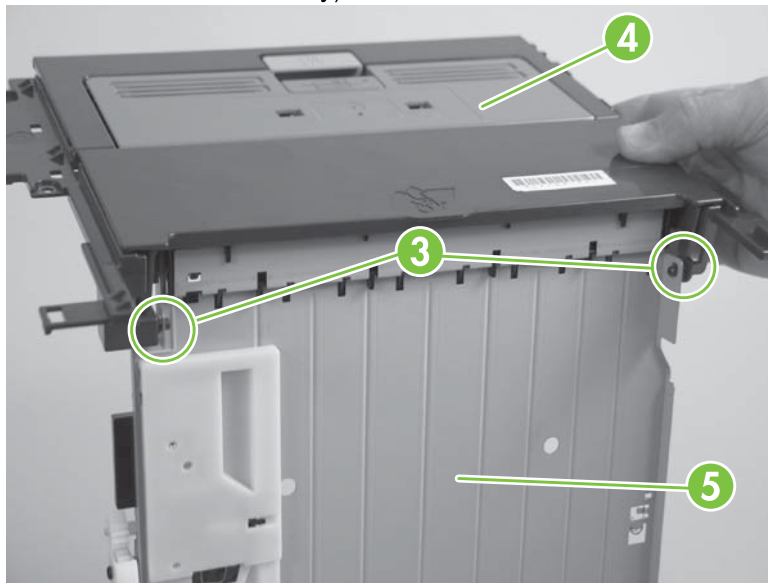


**Figure 6-37** Remove the rear cover, rear door, and duplex-paper-feed assembly (5 of 6; HP LaserJet P2050 Series)



6. **HP LaserJet P2050 Series only:** Carefully release two hinge pins (callout 3), and then separate the rear cover and rear door (callout 4) from the duplex-paper-feed assembly (callout 5).

**Figure 6-38** Remove the rear cover, rear door, and duplex-paper-feed assembly (6 of 6; HP LaserJet P2050 Series only)



## Top-cover assembly



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**NOTE:** The top-cover assembly includes the control panel assembly.

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1. Remove the following components:

- Right cover. See [Right cover on page 115](#).
- Left cover. See [Left cover on page 118](#).
- Rear cover, rear door, and duplex-paper-feed assembly. See [Rear cover, rear door, and duplex-paper-feed assembly on page 120](#).



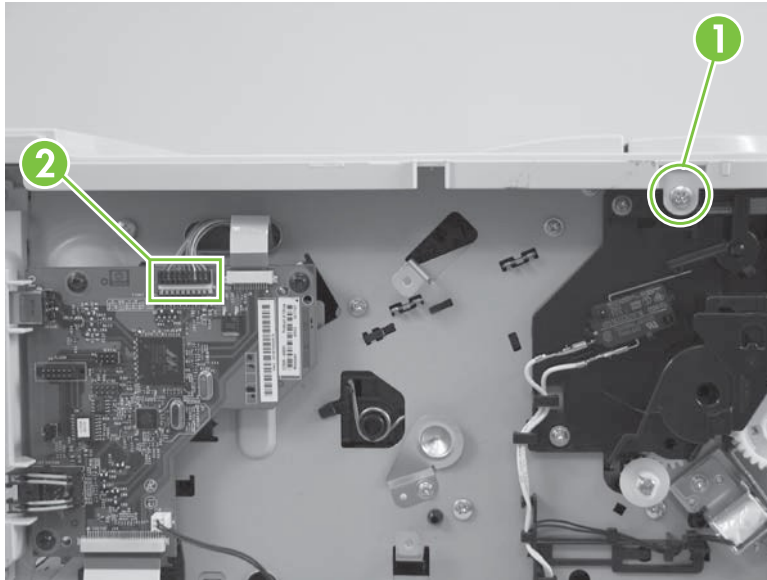
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**NOTE:** Only the HP LaserJet P2050 Series products have a duplex-paper-feed assembly installed.

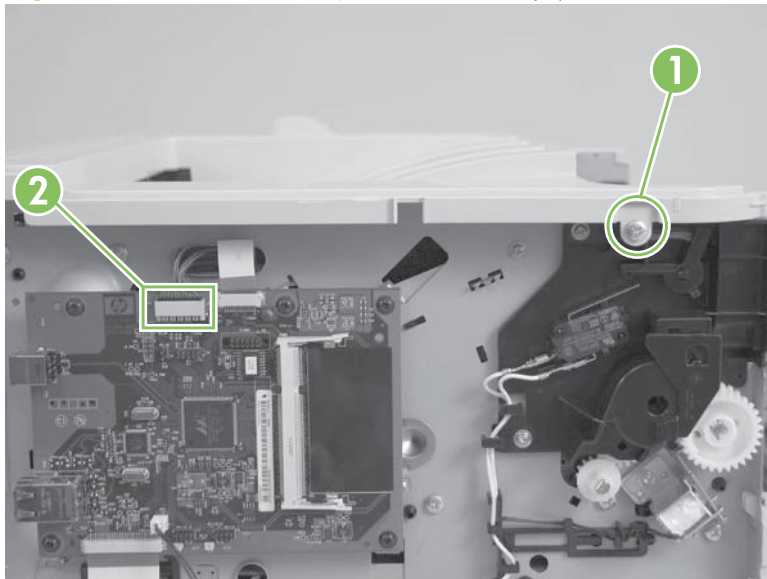
---

2. Remove one screw (callout 1), and then disconnect one connector (callout 2).

**Figure 6-39** Remove the top-cover assembly (1 of 4; HP LaserJet P2030 Series only)

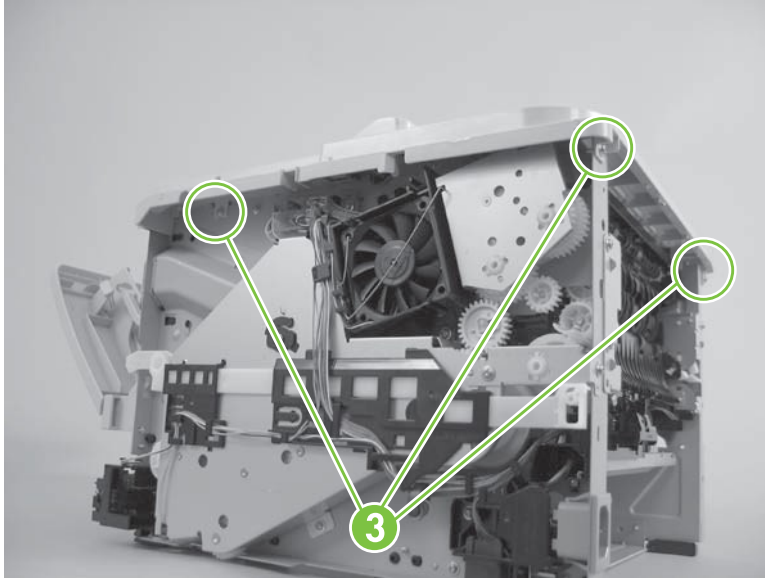


**Figure 6-40** Remove the top-cover assembly (2 of 4; HP LaserJet P2050 Series only)



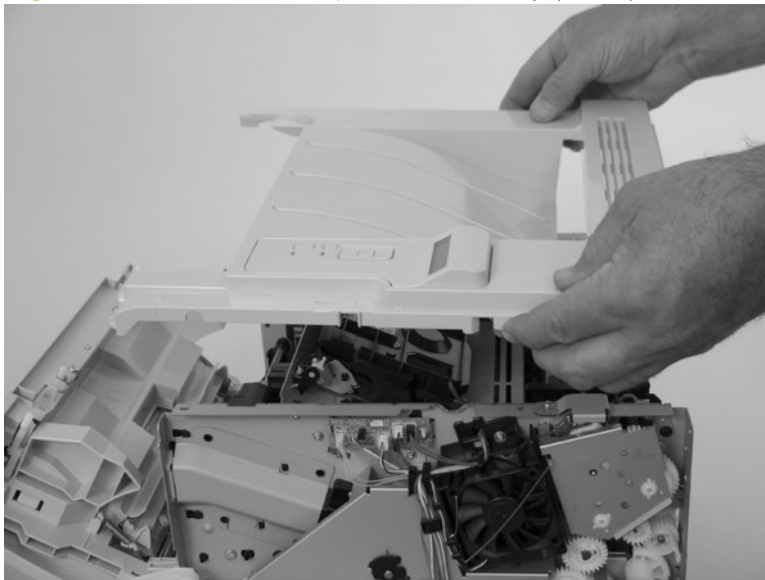
3. Remove three screws (callout 3).

**Figure 6-41** Remove the top-cover assembly (3 of 4)



4. Lift the top-cover assembly off of the product to remove it.


**Figure 6-42** Remove the top-cover assembly (4 of 4)



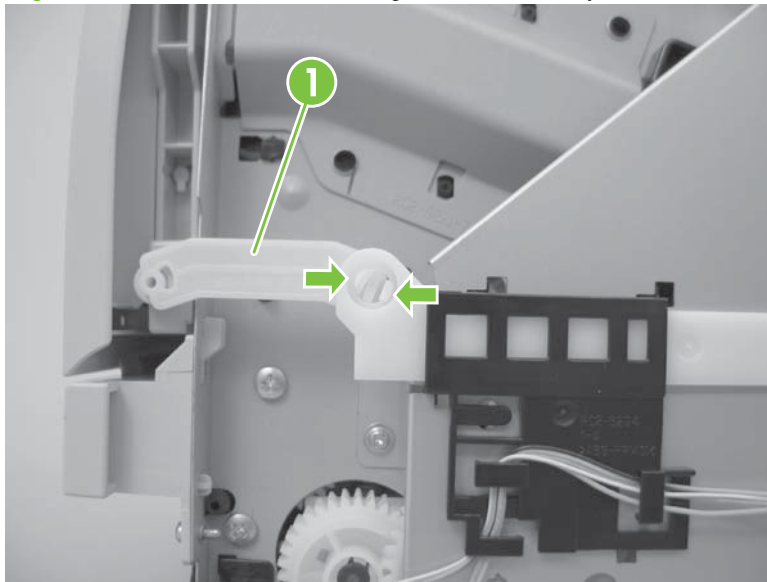
## Cartridge-door assembly and front cover

 **NOTE:** The cartridge door assembly includes the cartridge door, Tray 1, and the front cover.

1. Remove the following components:
  - Right cover. See [Right cover on page 115](#).
  - Left cover. See [Left cover on page 118](#).
2. Release two tabs, and then disengage the cartridge-door assembly link arm (callout 1).

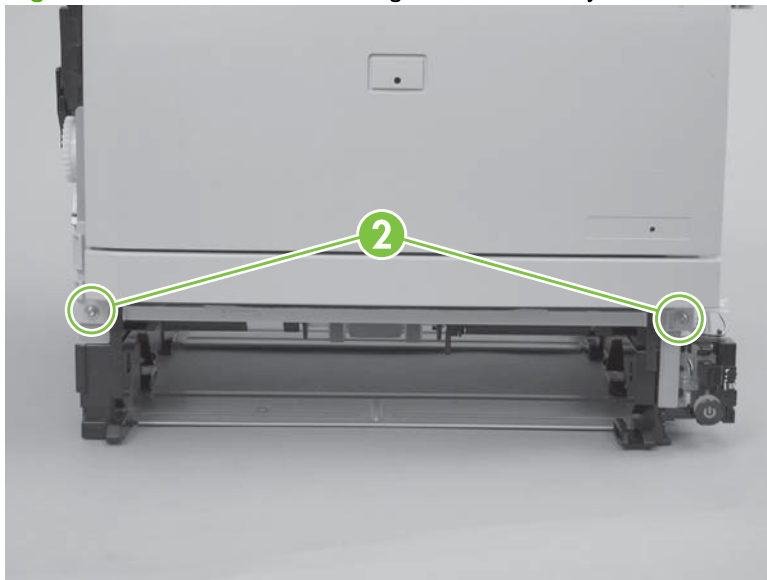
 **TIP:** The link arm releases the fuser-pressure lever when the cartridge door is opened.

**Figure 6-43** Remove the cartridge door assembly and front cover (1 of 4)



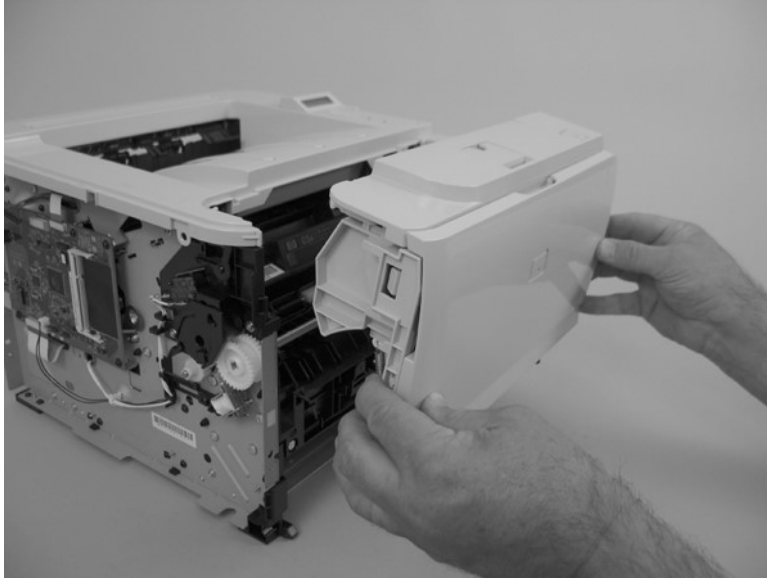
3. Remove two screws (callout 2).

**Figure 6-44** Remove the cartridge door assembly and front cover (2 of 4)



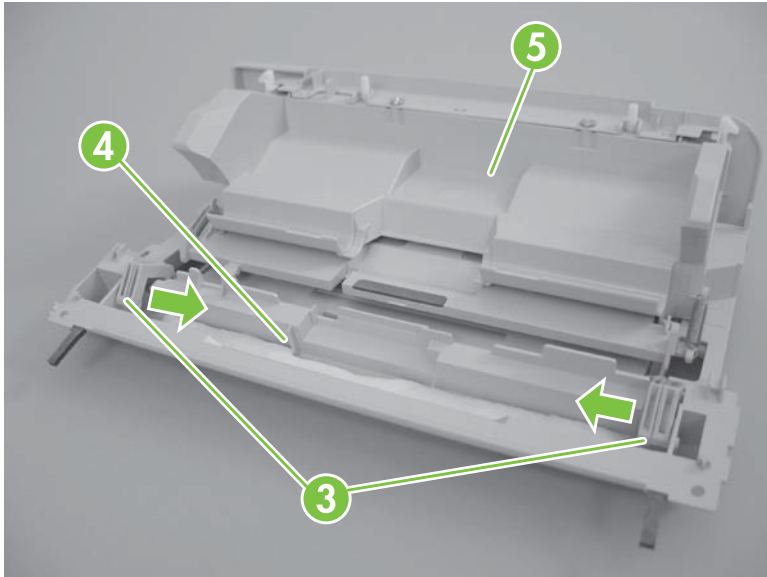
4. Carefully remove the cartridge-door assembly.

**Figure 6-45** Remove the cartridge door assembly and front cover (3 of 4)



5. Disengage two hinge pins (callout 3), and then carefully separate the front cover (callout 4) from the cartridge door assembly (callout 5).

**Figure 6-46** Remove the cartridge door assembly and front cover (4 of 4)



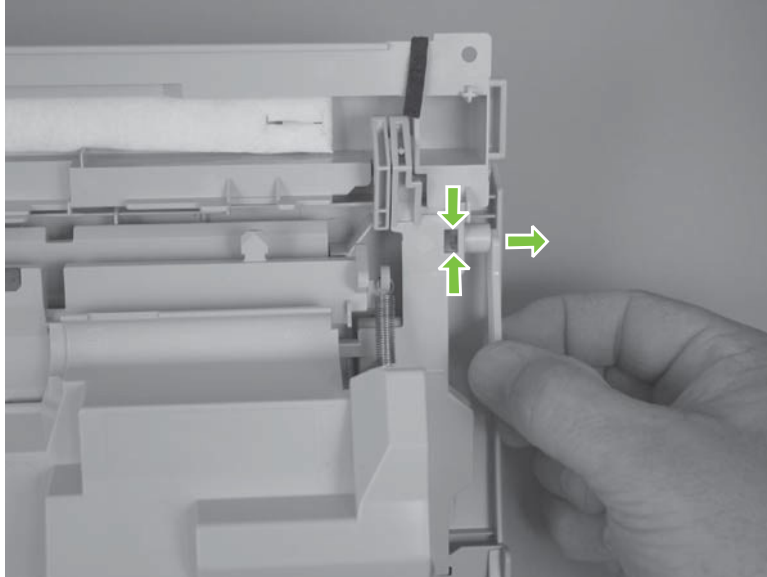


## Reinstall the cartridge-door assembly and front cover

Use this procedure if you are installing a *replacement* cartridge-door assembly.

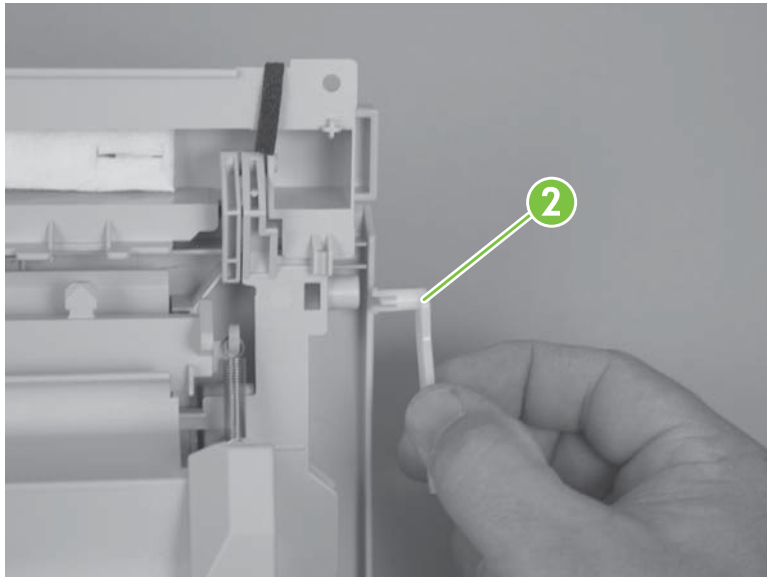
1. Release two tabs (callout 1).

**Figure 6-47** Reinstall the cartridge-door assembly and front cover (1 of 2)



2. Remove the cartridge-door link (callout 2), and then install it on the replacement assembly.

**Figure 6-48** Reinstall the cartridge-door assembly and front cover (2 of 2)



## Internal assemblies

- ⚠ **WARNING!** Turn the product off, wait 5 seconds, and then remove the power cord before attempting to service the product. If this warning is not followed, severe injury can result, in addition to damage to the product. The power must be on for certain functional checks during problem solving. However, the power supply should be disconnected during parts removal.

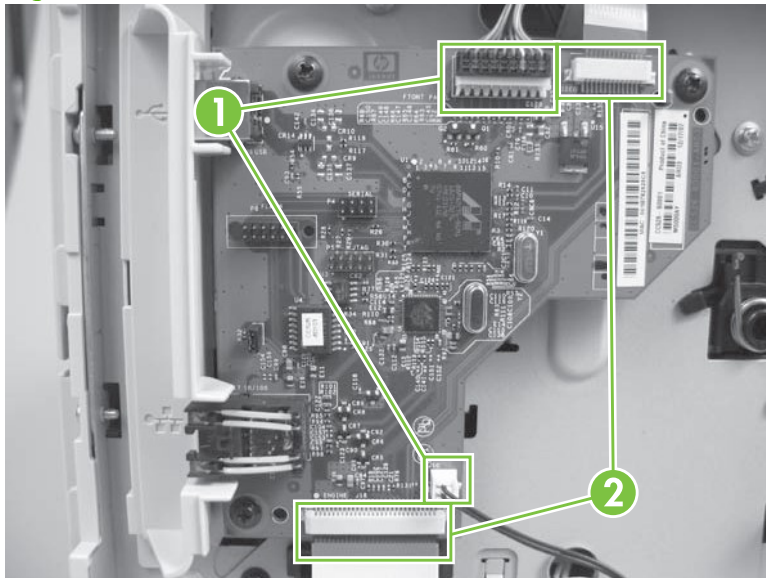
### Formatter PCA; HP LaserJet P2030 Series

- ⚠ **WARNING!**  ESD sensitive component.

1. Remove the left cover. See [Left cover on page 118](#).
2. Disconnect two connectors (callout 1) and two FFCs (callout 2).

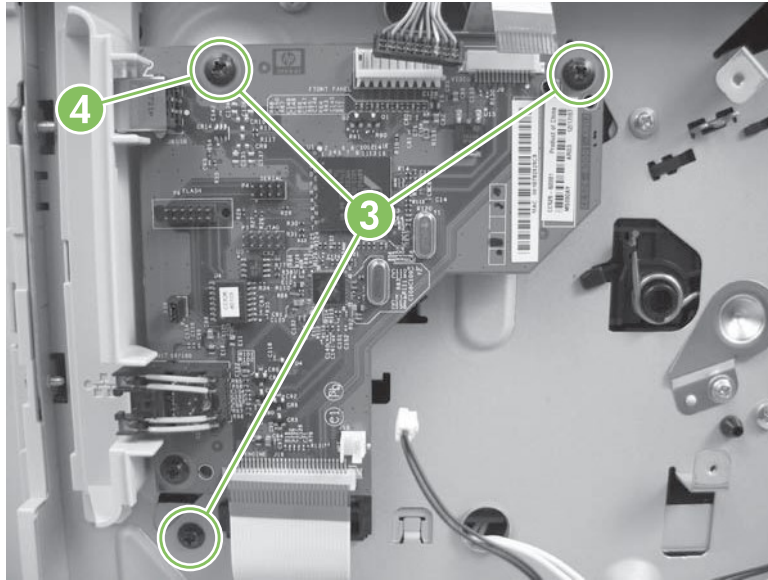
- ⚠ **CAUTION:** Do not bend or fold the flat flexible cables (FFCs) during removal or installation. Also, do not straighten pre-folds in the FFCs. You *must* make sure that all FFCs are fully seated in their connectors. Failure to fully seat an FFC into a connector can cause a short circuit in a PCA.


**Figure 6-49** Remove the formatter PCA; HP LaserJet P2030 Series (1 of 2)



3. Remove three screws (callout 3), and then remove the formatter PCA.

**Figure 6-50** Remove the formatter PCA; HP LaserJet P2030 Series (2 of 2)



 **Reinstallation tip** To correctly position the PCA during reinstallation, install the top screw first (callout 4).

## Formatter PCA; HP LaserJet P2050 Series

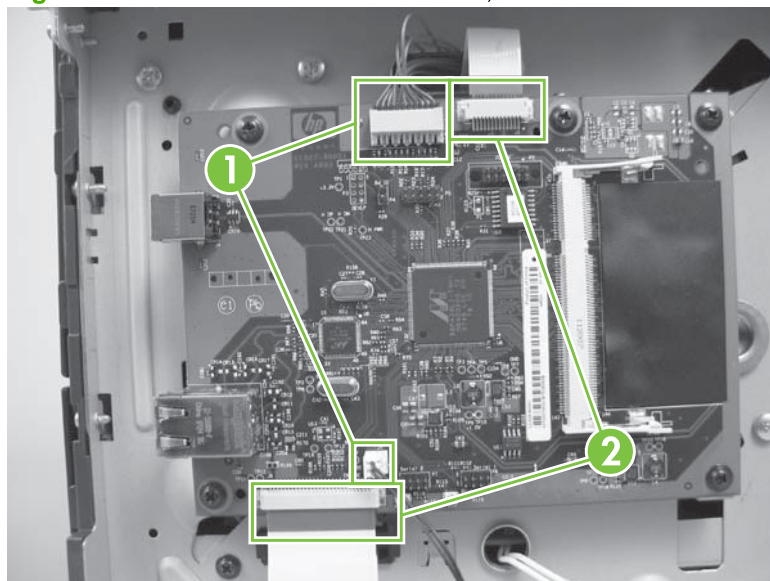


**WARNING!** ESD sensitive component.

1. Remove the left cover. See [Left cover on page 118](#).
2. Disconnect two connectors (callout 1) and two FFCs (callout 2).

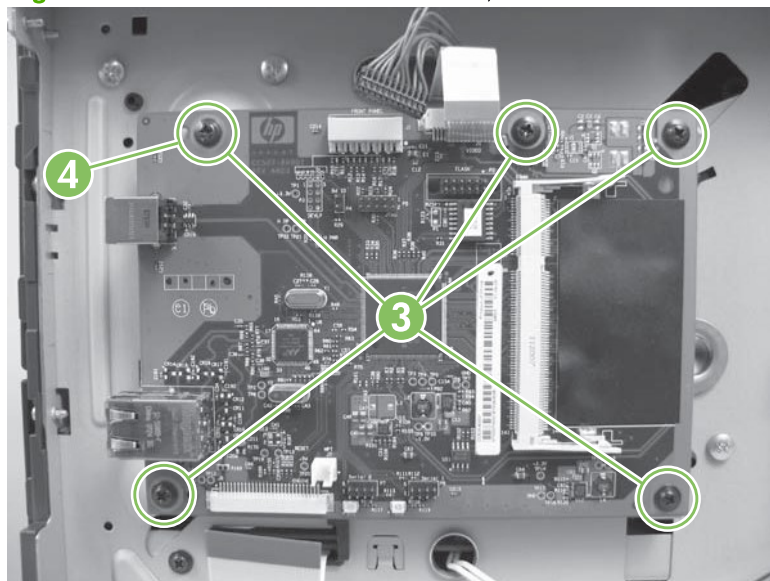
△ **CAUTION:** Do not bend or fold the flat flexible cables (FFCs) during removal or installation. Also, do not straighten pre-folds in the FFCs. You *must* make sure that all FFCs are fully seated in their connectors. Failure to fully seat an FFC into a connector can cause a short circuit in a PCA.


**Figure 6-51** Remove the formatter PCA; HP LaserJet P2050 Series (1 of 2)



3. Remove five screws (callout 3), and then remove the formatter PCA.

**Figure 6-52** Remove the formatter PCA; HP LaserJet P2050 Series (2 of 2)



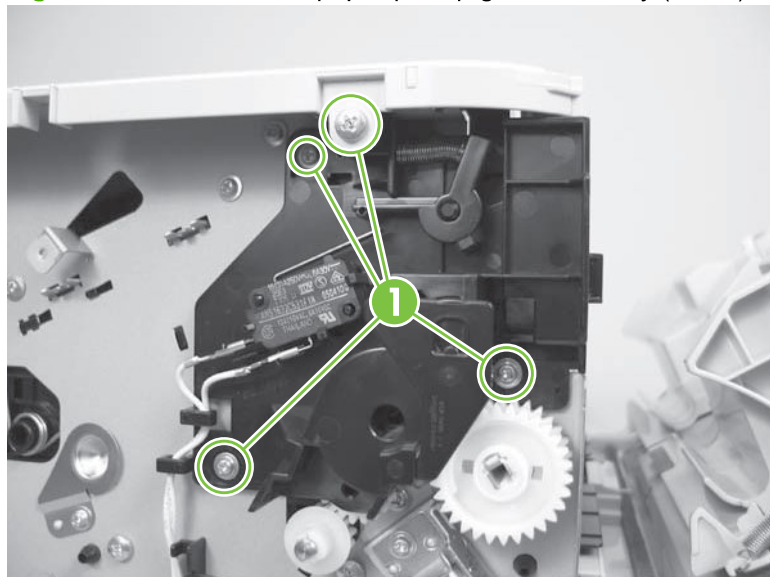
 **Reinstallation tip** To correctly position the PCA during reinstallation, install the top screw first (callout 4).

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## Paper-pickup-gear assembly

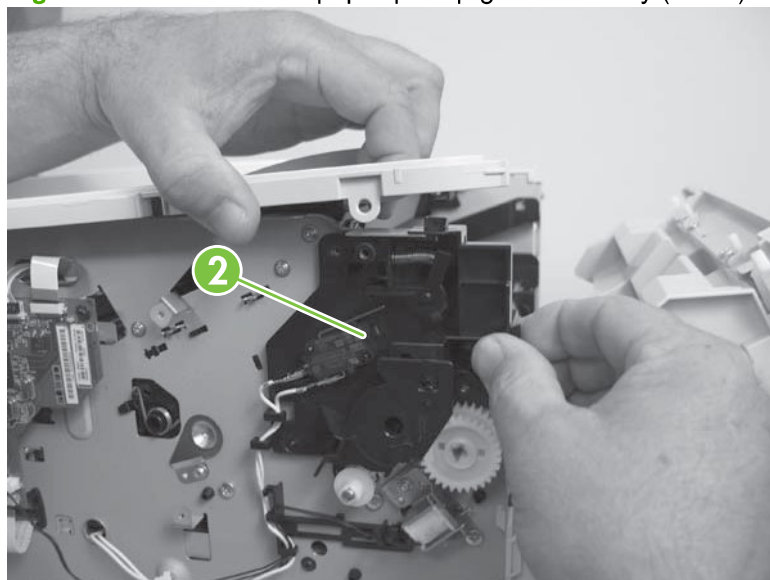
1. Remove the left cover. See [Left cover on page 118](#).
2. Remove four screws (callout 1).

**Figure 6-53** Remove the paper-pickup-gear assembly (1 of 3)



3. Slightly separate the top-cover assembly from the chassis, and then remove the black-plastic bracket (callout 2).

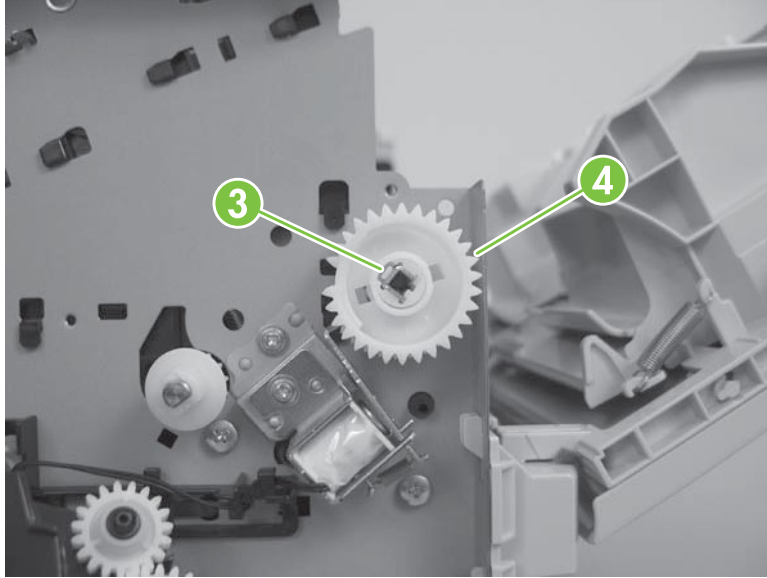
**Figure 6-54** Remove the paper-pickup-gear assembly (2 of 3)



4. Release one tab (callout 3), and then remove the paper-pickup-gear assembly (callout 4).

△ **CAUTION:** Be careful when you remove this assembly. The outer gear and spring can easily become separated from the inner gear. If the gears become separated, make sure that you do not lose the spring. See [Reinstall the paper-pickup-gear assembly on page 135](#).

**Figure 6-55** Remove the paper-pickup-gear assembly (3 of 3)



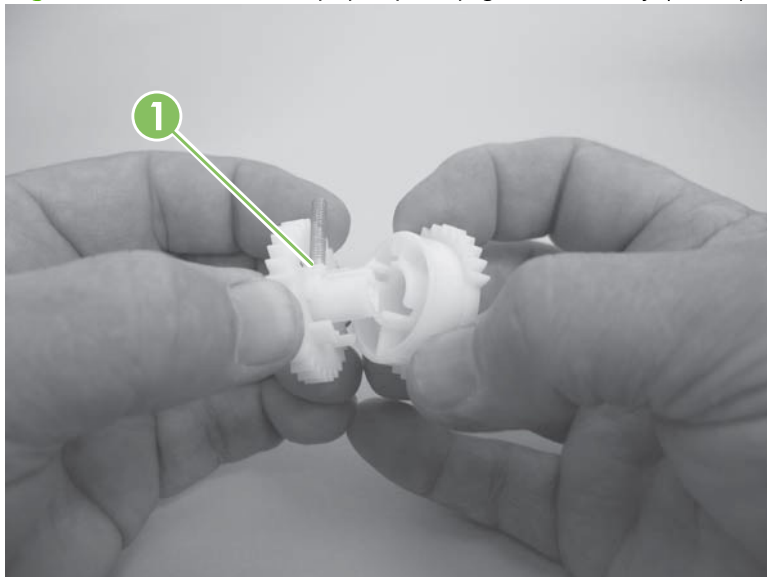
### Reinstall the paper-pickup-gear assembly

Use the following procedure to reassemble the outer gear, inner gear, and spring if they become separated.

1. Make sure the spring (callout 1) is positioned on the pedestal portion of the outer gear.

📋 **NOTE:** When the outer and inner gears are assembled, the spring rests inside a cavity (callout 2) in the inner gear.

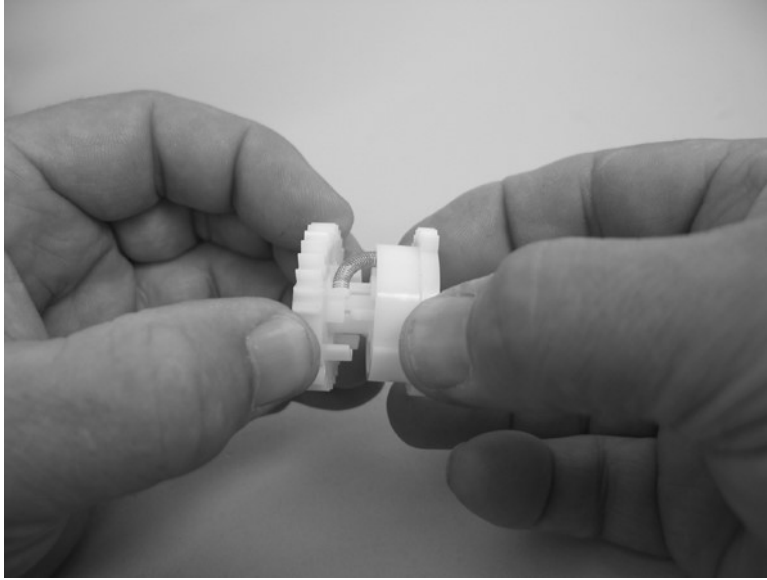
**Figure 6-56** Reinstall the paper-pickup-gear assembly (1 of 3)





2. Slip the loose end of the spring into the cavity in the inner gear.

**Figure 6-57** Reinstall the paper-pickup-gear assembly (2 of 3)



3. Press the two gears together until the gears snap together.

---

💡 **TIP:** To test the assembly, hold the inner gear and rotate the outer gear away from you until it stops (slightly less than one-third of a full rotation). Release the outer gear. The spring should return the outer gear to its starting position.

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**Figure 6-58** Reinstall the paper-pickup-gear assembly (3 of 3)

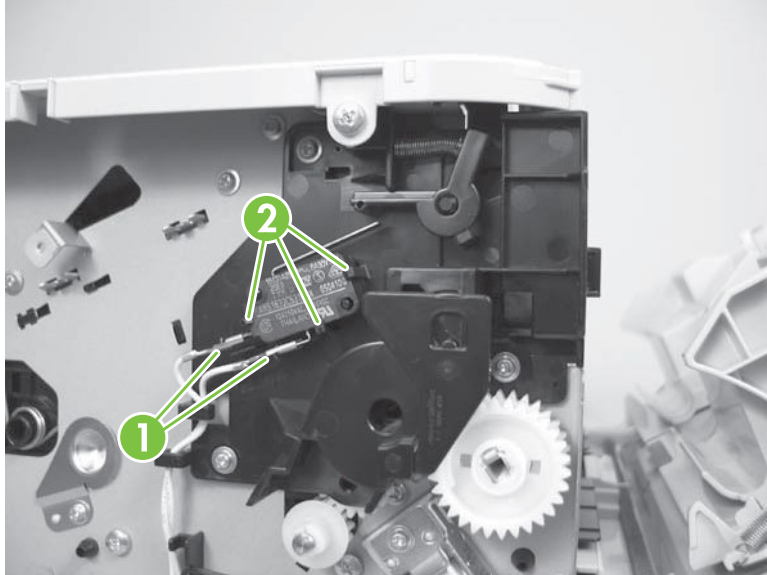




## Cartridge-door switch

1. Remove the left cover. See [Left cover on page 118](#).
2. Disconnect one connector (callout 1), release three tabs (callout 2), and then remove the switch.

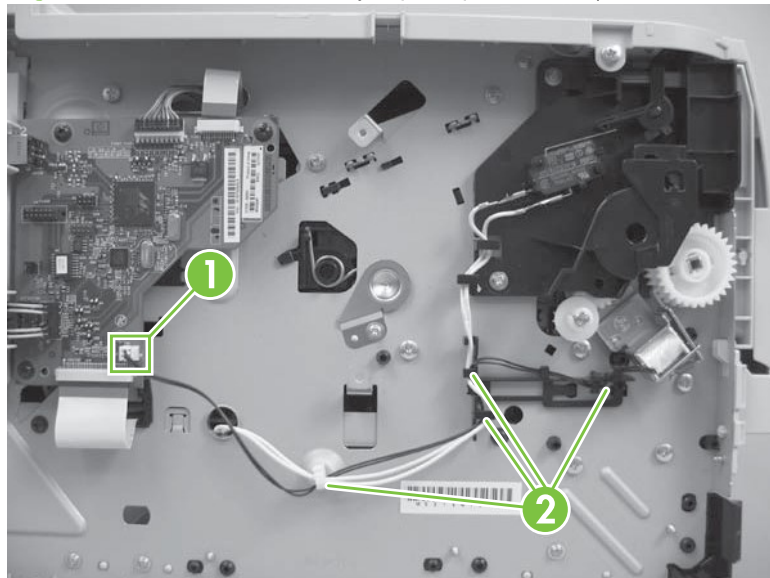
**Figure 6-59** Remove the cartridge-door switch



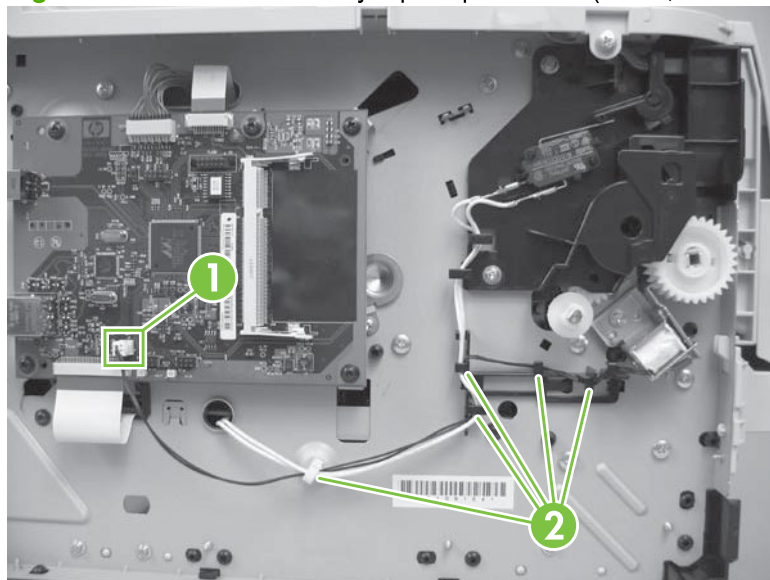
## Tray 1 pickup solenoid

1. Remove the left cover. See [Left cover on page 118](#).
2. Disconnect one connector (callout 1), and then release the wire harness from the retainers (callout 2).

**Figure 6-60** Remove the Tray 1 pickup solenoid (1 of 2; HP LaserJet P2030 Series)

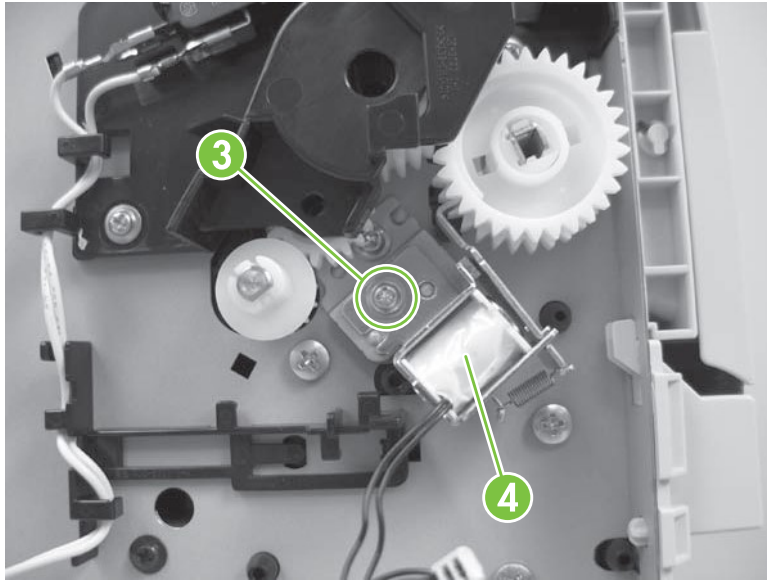


**Figure 6-61** Remove the Tray 1 pickup solenoid (2 of 3; HP LaserJet P2050 Series)



3. Remove one screw (callout 3), and then remove the Tray 1 pickup solenoid.

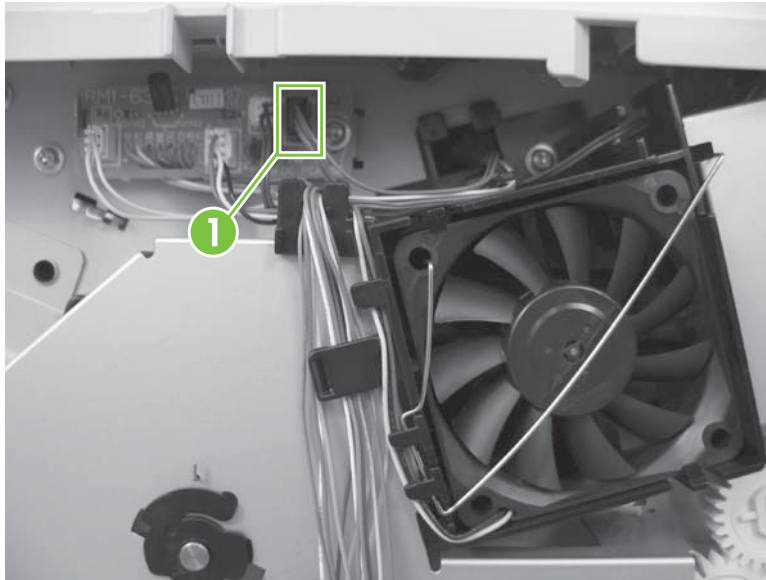
**Figure 6-62** Remove the Tray 1 pickup solenoid (3 of 3)



## Fan

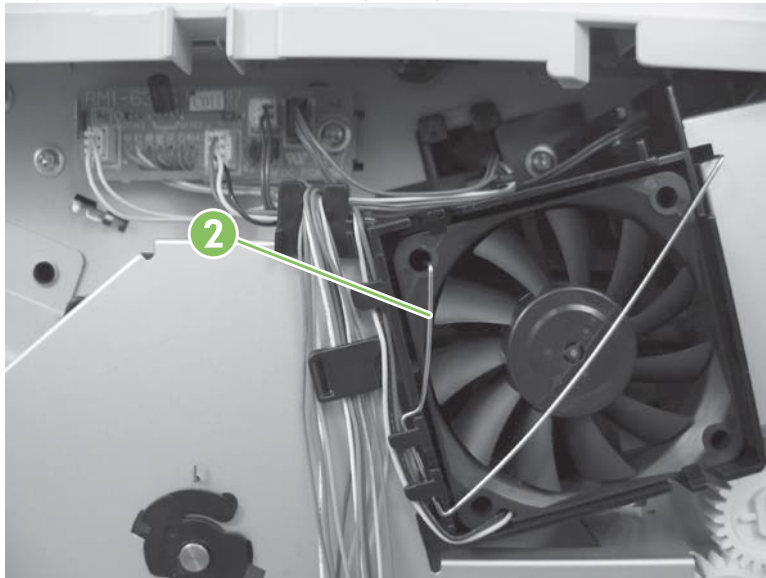
1. Remove the right cover. See [Right cover on page 115](#).
2. Disconnect one connector (callout 1), and then release the wire harness from the guide along the fan duct.

**Figure 6-63** Remove the fan (1 of 3)



3. Remove the fan static spring (callout 2).

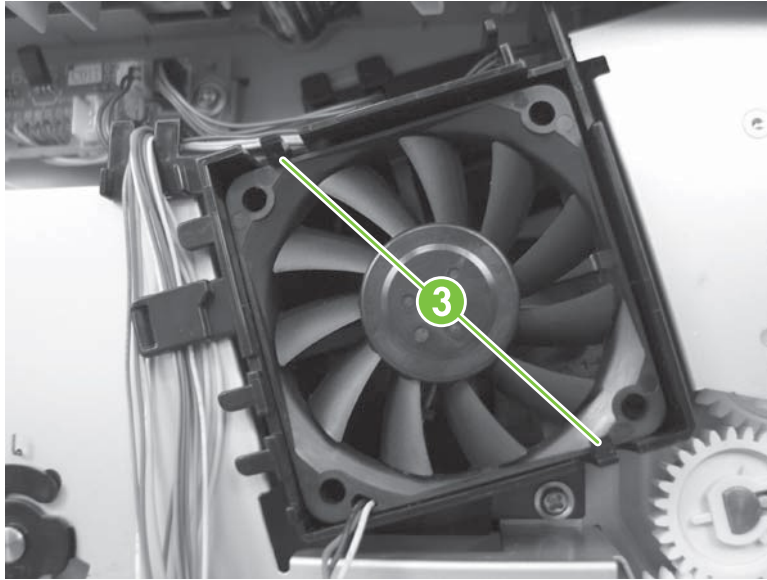
**Figure 6-64** Remove the fan (2 of 3)



4. Release two tabs (callout 3), and then remove the fan.

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


**Figure 6-65** Remove the fan (3 of 3)



## Reverse-sensor assembly; HP LaserJet P2050 Series

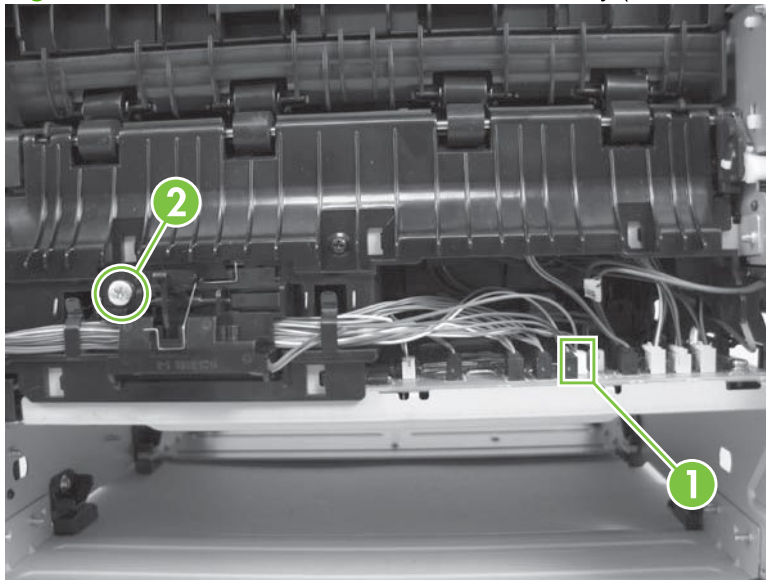
1. Remove the following components:

- Right cover. See [Right cover on page 115](#).
- Left cover. See [Left cover on page 118](#).
- Rear cover, rear door, and duplex-paper-feed assembly. See [Rear cover, rear door, and duplex-paper-feed assembly on page 120](#).

 **NOTE:** Only the HP LaserJet P2050 Series products have a duplex-paper-feed assembly installed.

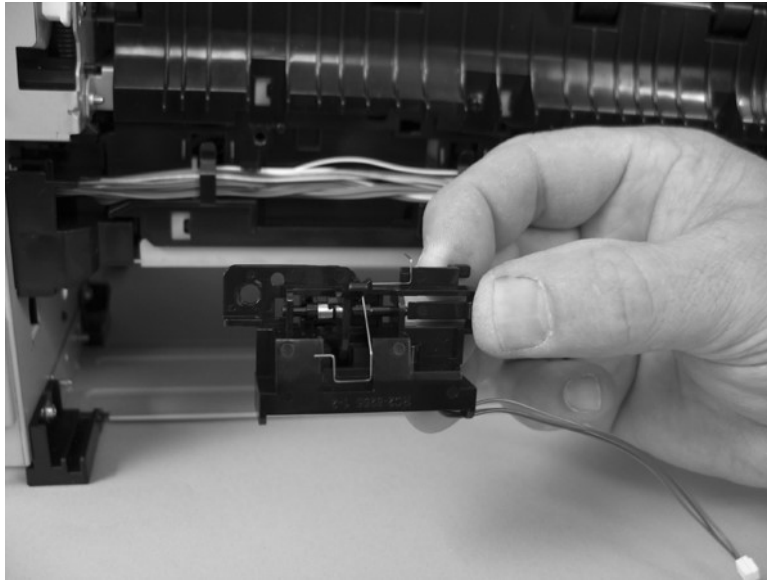
2. Disconnect one connector (callout 1), release the wire harness from the guide, and then remove one screw (callout 2).

**Figure 6-66** Remove the reverse-sensor assembly (1 of 2; HP LaserJet P2050 Series)



3. Remove the reverse-sensor assembly.

**Figure 6-67** Remove the reverse-sensor assembly (2 of 2; HP LaserJet P2050 Series)



## Power-switch assembly

1. Remove the following components:

- Right cover. See [Right cover on page 115](#).
- Left cover. See [Left cover on page 118](#).
- Rear cover, rear door, and duplex-paper-feed assembly. See [Rear cover, rear door, and duplex-paper-feed assembly on page 120](#).

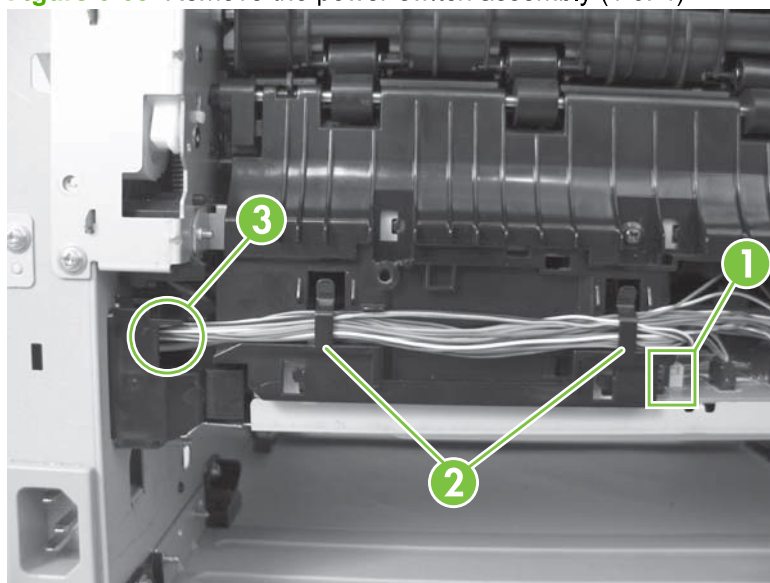
 **NOTE:** Only the HP LaserJet P2050 Series products have a duplex-paper-feed assembly installed.

- Reverse-sensor assembly. See [Reverse-sensor assembly; HP LaserJet P2050 Series on page 142](#).

 **NOTE:** Only the HP LaserJet P2050 Series products have a reverse-sensor assembly installed.

2. Disconnect one connector (callout 1), release the wire harness from the guide (callout 2), and then pass the wire harness through the hole in the chassis (callout 3).

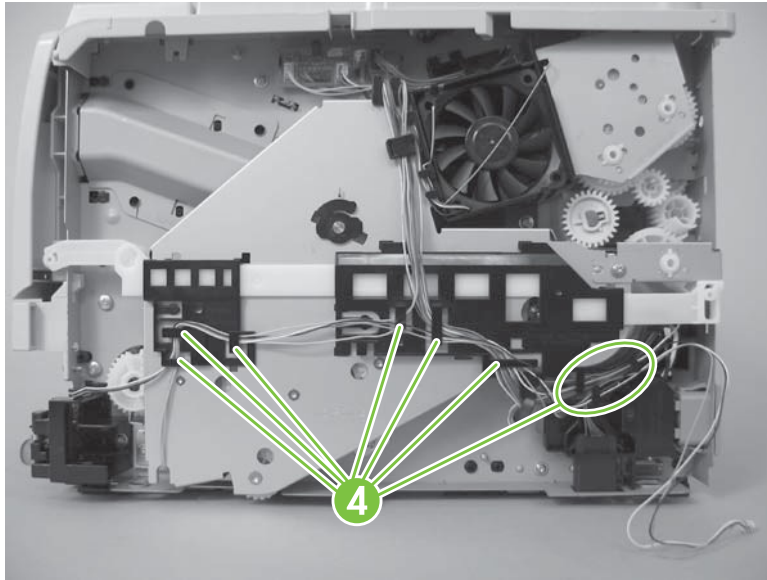
**Figure 6-68** Remove the power-switch assembly (1 of 4)





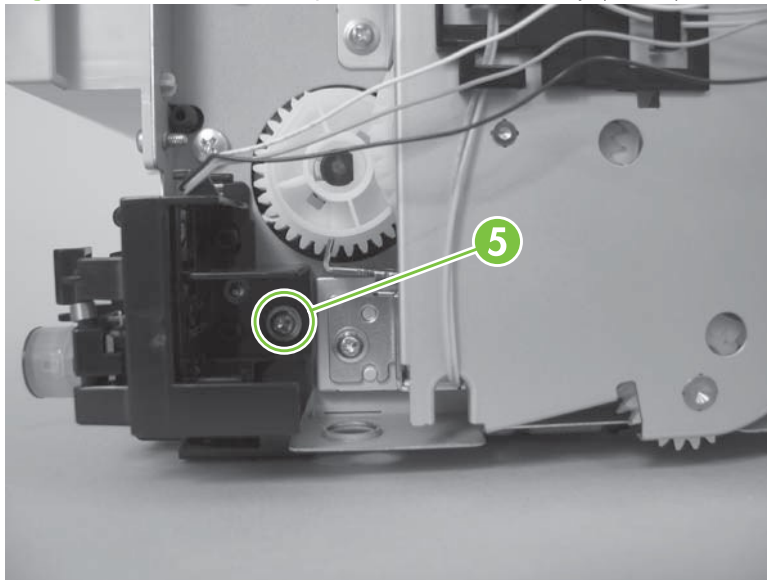
3. Release the wire harness from the guides (callout 4).

**Figure 6-69** Remove the power-switch assembly (2 of 4)



4. Remove one screw (callout 5).

**Figure 6-70** Remove the power-switch assembly (3 of 4)



5. Remove the power-switch assembly.


**Figure 6-71** Remove the power-switch assembly (4 of 4)




## Connecting PCA

1. Remove the following components:

- Right cover. See [Right cover on page 115](#).
- Left cover. See [Left cover on page 118](#).
- Rear cover, rear door, and duplex-paper-feed assembly. See [Rear cover, rear door, and duplex-paper-feed assembly on page 120](#).

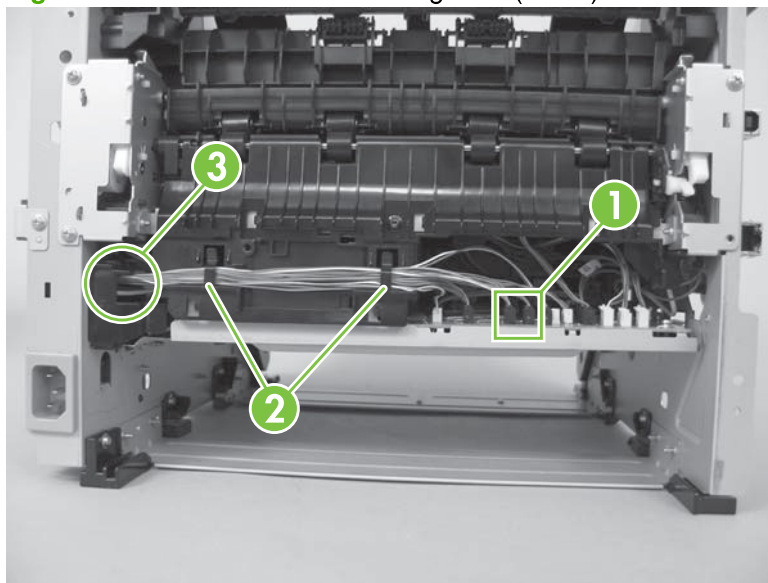
 **NOTE:** Only the HP LaserJet P2050 Series products have a duplex-paper-feed assembly installed.

- Reverse-sensor assembly. See [Reverse-sensor assembly; HP LaserJet P2050 Series on page 142](#).

 **NOTE:** Only the HP LaserJet P2050 Series products have a reverse-sensor assembly installed.

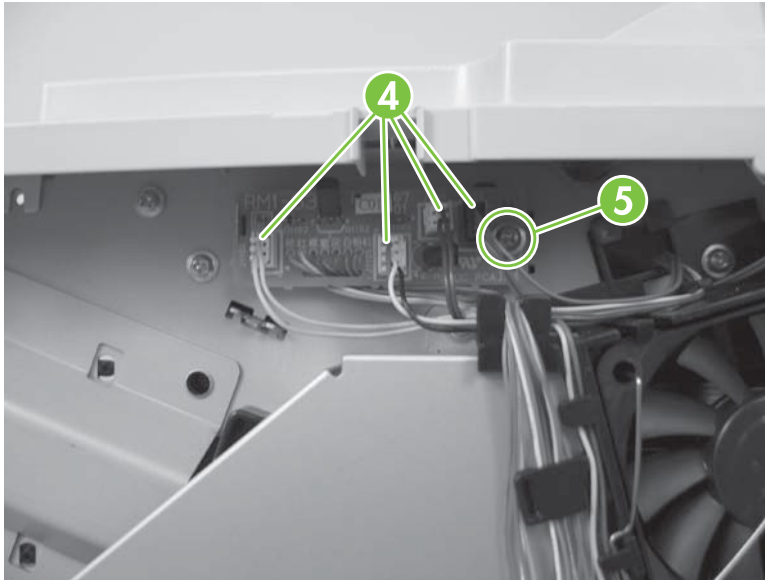
2. Disconnect one connector (callout 1), release the wire harness from the guide (callout 2), and then pass the wire harness through the hole in the chassis (callout 3).

**Figure 6-72** Remove the connecting PCA (1 of 4)



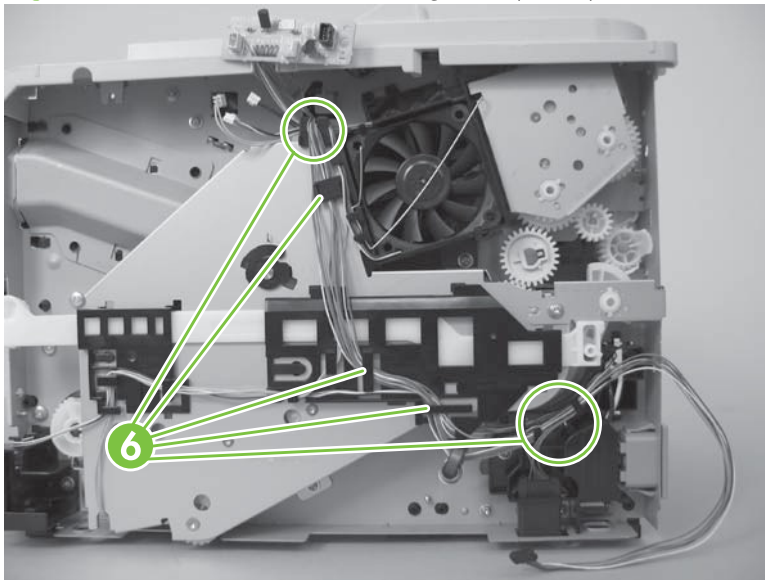
3. Disconnect four connectors (callout 4), and then remove one screw (callout 5).

**Figure 6-73** Remove the connecting PCA (2 of 4)



4. Release the wire harnesses from the guides and retainers (callout 6).

**Figure 6-74** Remove the connecting PCA (3 of 4)



5. Remove the connecting PCA.

**Figure 6-75** Remove the connecting PCA (4 of 4)

