

HP LaserJet P4010 and P4510 Series Printers

Service Manual



HP LaserJet P4010 and P4510 Series Printers

Service Manual



Copyright and License

© 2008 Copyright Hewlett-Packard Development Company, L.P.

Reproduction, adaptation, or translation without prior written permission is prohibited, except as allowed under the copyright laws.

The information contained herein is subject to change without notice.

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Part number: CB506-91004

Edition 1, 8/2008

Trademark Credits

Adobe®, Acrobat®, and PostScript® are trademarks of Adobe Systems Incorporated.

Microsoft®, Windows®, and Windows®XP are U.S. registered trademarks of Microsoft Corporation.

Windows Vista® is either a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries.

UNIX® is a registered trademark of The Open Group.

ENERGY STAR and the ENERGY STAR mark are registered U.S. marks.

Table of contents

1 Product basics

Quick access to product information	2
Product comparison	3
HP LaserJet P4014 models	3
HP LaserJet P4015 models	4
HP LaserJet P4515 models	5
Product features	6
Product walkaround	8
Front view	8
Rear view	8
Interface ports	10
Model and serial-number label location	11
Supported operating systems	12
Supported product software	13
Software included with the product	13
Software for Windows	13
HP Web Jetadmin	13
Embedded Web server	13
HP Easy Printer Care	14
Software for Macintosh	14
HP Printer Utility	14
Supported printer drivers	16
Supported printer drivers for Windows	16
Supported printer drivers for Macintosh	16
Software for other operating systems	17
Connectivity	18
Supported network protocols	18

2 Control panel

Control-panel layout	20
Use the control-panel menus	22
Show Me How menu	23
Retrieve Job menu	24
Information menu	25

Paper Handling menu	26
Configure Device menu	27
Printing submenu	27
Print Quality submenu	30
System Setup submenu	33
Stapler Stacker submenu	37
MBM-5 (multi-bin mailbox) submenu	37
I/O submenu	38
Resets submenu	44
Diagnostics menu	45
Service menu	46

3 Paper and print media

Supported paper and print media sizes	48
Supported paper and print media types	50
Supported paper types for input options	50
Supported paper types for output options	51
Tray and bin capacity	52
Special paper or print media guidelines	53
Load trays	54
Paper orientation for loading trays	54
Load letterhead, preprinted, or prepunched paper	54
Load envelopes	55
Load Tray 1	56
Load Tray 2 or an optional 500-sheet tray	57
Load an optional 1,500-sheet tray	59
Configure trays	61
Configure a tray when loading paper	61
Configure a tray to match print job settings	61
Configure a tray by using the Paper Handling menu	62
Select the paper by source, type, or size	62
Source	62
Type and size	62
Use paper output options	63
Print to the top (standard) output bin	63
Print to the rear output bin	63
Print to the optional stacker or stapler/stacker	64
Print to the 5-bin mailbox	64

4 Manage and maintain the product

Print the information and show-me-how pages	66
Use the HP Easy Printer Care software	68
Open the HP Easy Printer Care software	68

HP Easy Printer Care software sections	68
Use the embedded Web server	71
Open the embedded Web server by using a network connection	71
Embedded Web server sections	72
Use HP Web Jetadmin software	74
Use security features	75
IP Security	75
Secure the embedded Web server	75
Secure stored jobs	75
Lock the control panel menus	76
Lock the formatter cage	77
Manage supplies	78
Supplies life	78
Approximate print-cartridge replacement intervals	78
Manage the print cartridge	78
Print-cartridge storage	78
Use genuine HP print cartridges	78
HP policy on non-HP print cartridges	78
Print-cartridge authentication	79
HP fraud hotline and Web site	79
Replace supplies and parts	79
Supply replacement guidelines	79
Change the print cartridge	80
Load staples	82
Perform preventive maintenance	83
Reset the maintenance-kit counter	83
Install memory, internal USB devices, and external print server cards	84
Overview	84
Install memory	84
Install product memory	84
Check DIMM installation	88
Save resources (permanent resources)	88
Enable memory for Windows	89
Install internal USB devices	90
Install HP Jetdirect print server cards	93
Install an HP Jetdirect print server card	93
Remove an HP Jetdirect print server card	94
Clean the product	95
Clean the exterior	95
Clean the paper path	95
Clean the paper path automatically	95
Upgrade the firmware	96
Determine the current firmware version	96
Download new firmware from the HP Web site	96

Transfer the new firmware to the product	96
Use FTP to upload the firmware through a browser	96
Use FTP to upgrade the firmware on a network connection	97
Use HP Web Jetadmin to upgrade the firmware	98
Use Microsoft Windows commands to upgrade the firmware	98
Upgrade the HP Jetdirect firmware	98

5 Theory of operation

Basic operation	102
Major print systems	102
Internal components	103
Operating sequence	106
Engine-control system	107
DC controller PCA	107
Motors and fans	108
Failure detection	109
Motor failure	109
Fan motor failure	109
Engine power supply	109
Fuser-control circuit	109
Low-voltage power supply	111
High-voltage power supply	111
Overcurrent/overvoltage protection	112
Laser/scanner system	113
Laser failure detection	114
Image-formation system	115
Image-formation process	115
Block 1: Latent image formation	116
Step 1: Primary charging	116
Step 2: Laser-beam exposure	117
Block 2: Developing	117
Step 3: Developing	117
Block 3: Transfer	117
Step 4: Transfer	118
Step 5: Separation	118
Block 4: Fusing	118
Step 6: Fusing	119
Block 5: Drum cleaning	119
Step 7: Drum cleaning	119
Step 8: Drum charge elimination	119
Pickup, feed, and delivery system	121
Pickup-and-feed block	122
Fuser/delivery block	123

Paper trays	123
Printing from Tray 1	123
Printing from Tray 2	123
Formatter system	123
Sleep mode	124
Resolution Enhancement technology	124
EconoMode	124
Input/output	125
USB	125
Embedded print server	125
Expanded I/O	125
Hard-disk accessory	125
CPU	125
Product memory	125
Read-only memory	125
Random-access memory	125
DIMM slot	125
Nonvolatile memory	126
Memory Enhancement technology	126
PJL overview	126
PML	126
Control panel	126

6 Removal and replacement

Removal and replacement strategy	128
Warnings, cautions, notes, and tips	128
Electrostatic discharge	128
Required tools	129
Service approach	130
Before performing service	130
After performing service	130
Post-service tests	131
Test 1 (print-quality test)	131
Types of screws	132
Parts removal order	133
Product input trays and cabinet wheel locks	134
DC controller diagram	135
User-replaceable parts	137
Print cartridge	137
Memory DIMM	139
Tray 2	140
Tray 2 separation, pickup, and feed rollers	141
Transfer roller	143

Top-accessory cover	144
Envelope feed accessory covers	145
Duplex accessory or cover	146
Tray 2 extension door	147
Rear output bin	148
Fuser	149
Formatter cover, formatter cage, and formatter PCA	150
Reinstallation notes, formatter	151
Installing a new formatter and a new DC controller	151
Service replaceable parts	152
Tray 1 pickup and feed rollers	152
Tray 1 separation roller	155
Registration assembly	157
Top cover	159
Right-side cover	161
Reinstall the right cover	162
Left-side cover	164
Right-front cover	166
Rear-upper cover	169
Control-panel assembly	170
Front cover	172
Fan FN102	174
Fan FN103	176
Pickup-motor assembly (M101)	178
Drum-motor assembly (M102)	180
Lifter-motor assembly (M103)	183
DC controller PCA	186
Reinstallation tip	189
Installing a new formatter and a new DC controller	189
Pickup-drive assembly	190
Reinstall the pickup-drive assembly	194
Fuser-motor assembly (M299)	195
Drum-drive assembly	197
Reinstall the drum-drive assembly	199
Fan FN101	200
Fan FN301	202
Environmental sensor (TH3)	204
High voltage power supply	206
Feed-guide assembly	211
Reinstall the feed-guide assembly	212
Tray 1 paper-pickup assembly	214
Feed-roller assembly	216
Laser/scanner assembly	217
Paper-delivery assembly	219

Reinstall the paper-delivery assembly	222
1,500-sheet feeder assembly	223
1,500-sheet feeder feed rollers	223
1,500-sheet feeder separation roller	224
1,500-sheet feeder rear cover	225
1,500-sheet feeder right-side cover	226
1,500-sheet feeder left-side cover	227
1,500-sheet feeder door	230
1,500-sheet feeder motor	232
1,500-sheet feeder driver PCA	233
1,500-sheet feeder lift-drive assembly	234

7 Solve problems

Troubleshooting checklist	238
Menu map	239
Troubleshooting process	240
Power-on checks	240
Overview	240
Troubleshooting tools	243
Individual component diagnostics	243
LED diagnostics	243
Understand lights on the formatter	243
Formatter test	244
Engine diagnostics	244
Engine test	244
Half self test	245
Drum rotation test	245
Paper path sensors test	246
Paper path test	248
Sensor test (interactive)	248
Manual sensor test (special mode test)	248
Manual sensor test 2 (special mode test)	256
Print/stop test	257
Component tests	259
Diagrams	260
Block diagrams	260
Main assemblies	260
Main parts	261
Motors and fans	262
PCAs	263
500-sheet feeder	263
1,500-sheet feeder	264
Connectors	266

DC controller PCA connectors	266
Product base connectors	268
500-sheet paper tray connectors	268
1,500-sheet paper tray connectors	269
Duplexer connectors	270
Envelope feeder connectors	270
General timing chart	271
Circuit diagrams	271
Print quality troubleshooting tools	278
Repetitive image defect ruler	278
Cleaning page	278
Control-panel messages	280
Event log messages	300
Print an event log	300
Show an event log	300
Sample event log	301
Paper-handling problems	302
Jams	302
Common causes of jams	302
Jam locations	304
Clear jams	305
Clear jams from the top-cover and print-cartridge areas	305
Clear jams from the optional envelope feeder	307
Clear jams from the trays	309
Clear jams from the optional duplexer	312
Clear jams from the fuser area	313
Clear jams from the output areas	318
Jam recovery	323
Product feeds incorrect page size	324
Output is curled or wrinkled	325
Product will not duplex or duplexes incorrectly	326
Solve image quality problems	327
Image defects	327
Solve performance problems	332
Solve connectivity problems	333
Solve direct-connect problems	333
Solve network connectivity problems	333
Solve network printing problems	333
Ping test	334
Service mode functions	335
Service menu	335
Product resets	336
Restore factory-set defaults	336
Hard disk initialization	336

NVRAM initialization	336
Cold reset	337
Service ID	337
Restore the service ID	337
Convert the service ID to an actual date	337
Reset page counts	338
Cold reset paper	338

8 Parts

Order parts, accessories, and supplies	340
Order directly from HP	340
Order through service or support providers	340
Order directly through the HP Easy Printer Care software	340
Order replacement parts	340
Paper-handling accessories	341
Print cartridges	342
Maintenance kits	342
Memory	343
Cables and interfaces	343
Paper	344
How to use the parts lists and diagrams	347
Customer/field-replaceable units	348
Assembly locations	350
Covers	354
Internal components	356
PCAs	384
Input devices	390
Output devices	414
Alphabetical parts list	423
Numerical parts list	458

Appendix A Service and support

Hewlett-Packard limited warranty statement	493
Print cartridge limited warranty statement	494
Customer self-repair warranty service	495
Customer support	496
HP maintenance agreements	497
On-site service agreements	497
Next-day on-site service	497
Weekly (volume) on-site service	497
Repacking the device	497
Extended warranty	498

Appendix B Specifications

Physical specifications 500

Electrical specifications 500

Acoustic specifications 502

Operating environment 502

Appendix C Regulatory information

FCC regulations 504

Declaration of conformity 505

 Declaration of conformity 505

Safety statements 506

 Laser safety 506

 Canadian DOC regulations 506

 VCCI statement (Japan) 506

 Power cord statement (Japan) 506

 EMI statement (Korea) 506

 Laser statement for Finland 507

 Substances table (China) 508

Index 509

1 Product basics

- [Quick access to product information](#)
- [Product comparison](#)
- [Product features](#)
- [Product walkaround](#)
- [Supported operating systems](#)
- [Supported product software](#)
- [Connectivity](#)

Quick access to product information

Use the following Web site to find information about the product.

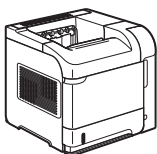
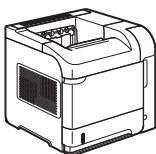
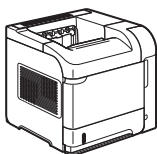
- www.hp.com/support/hpljp4010series or www.hp.com/support/hpljp4510series

Table 1-1 Product guides

Guide	Description
<i>HP LaserJet P4010 and P4510 Series Getting Started Guide</i>	Provides step-by-step instructions for installing and setting up the product.
<i>HP LaserJet P4010 and P4510 Series Series User Guide</i>	Provides detailed information for using the product and problem-solving. Available on the product CD or in the Windows Program Group if the software is installed on a computer.
HP Easy Printer Care	To check the product status and settings, and to view problem-solving information and online documentation, use the HP Easy Printer Care. You must have performed a complete software installation in order to use the HP Easy Printer Care. See the user guide for more information about software installation.
Online Help	Provides information about options that are available in the printer drivers. To view a Help file, open the online Help through the printer driver.

Product comparison

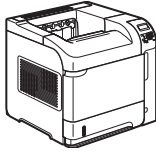
HP LaserJet P4014 models

HP LaserJet P4014 printer CB506A	HP LaserJet P4014n printer CB507A	HP LaserJet P4014dn CB512A
		
<ul style="list-style-type: none">• Prints up to 45 pages per minute (ppm) on Letter size paper and 43 ppm on A4 size paper• Contains 96 megabytes (MB) of random access memory (RAM). Expandable to 640 MB.• HP print cartridge, rated for up to 10,000 pages• Tray 1 holds up to 100 sheets• Tray 2 holds up to 500 sheets• 500-sheet face-down output bin• 100-sheet face-up output bin• 4-line graphical control-panel display• Hi-speed USB 2.0 port• Enhanced input/output (EIO) slot• One open dual inline memory module (DIMM) slot	<p>Has the same features as the HP LaserJet P4014 printer, plus the following:</p> <ul style="list-style-type: none">• Embedded HP Jetdirect networking• Contains 128 MB RAM. Expandable to 640 MB.	<p>Has the same features as the HP LaserJet P4014n printer, plus the following:</p> <ul style="list-style-type: none">• Duplex-printing accessory for automatic printing on both sides.

HP LaserJet P4015 models

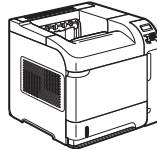
HP LaserJet P4015n printer

CB509A



HP LaserJet P4015dn printer

CB526A



HP LaserJet P4015tn printer

CB510A



HP LaserJet P4015x printer

CB511A



- Prints up to 52 pages per minute (ppm) on Letter size paper and 50 ppm on A4 size paper
- Embedded HP Jetdirect networking
- Contains 128 megabytes (MB) of random access memory (RAM). Expandable to 640 MB.
- HP print cartridge, rated for up to 10,000 pages
- Tray 1 holds up to 100 sheets
- Tray 2 holds up to 500 sheets
- 500-sheet face-down output bin
- 100-sheet face-up output bin
- 4-line graphical control-panel display
- Numeric keypad
- Hi-speed USB 2.0 port
- Enhanced input/output (EIO) slot
- One open dual inline memory module (DIMM) slot

Has the same features as the HP LaserJet P4015n printer, plus the following:

- Duplex-printing accessory for automatic printing on both sides

Has the same features as the HP LaserJet P4015n printer, plus the following:

- One additional 500-sheet input tray (Tray 3)

Has the same features as the HP LaserJet P4015n printer, plus the following:

- One additional 500-sheet input tray (Tray 3)
- Duplex-printing accessory for automatic printing on both sides

HP LaserJet P4515 models

HP LaserJet P4515n printer

CB514A



HP LaserJet P4515tn printer

CB515A



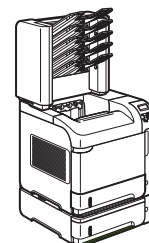
HP LaserJet P4515x printer

CB516A



HP LaserJet P4515xm printer

CB517A



- Prints up to 62 pages per minute (ppm) on Letter size paper and 60 ppm on A4 size paper

- Embedded HP Jetdirect networking

- Contains 128 megabytes (MB) of random access memory (RAM). Expandable to 640 MB.

- HP print cartridge, rated for up to 10,000 pages

- Tray 1 holds up to 100 sheets

- Tray 2 holds up to 500 sheets

- 500-sheet face-down output bin

- 100-sheet face-up output bin

- 4-line graphical control-panel display

- Numeric keypad

- Hi-speed USB 2.0 port

- Enhanced input/output (EIO) slot

- One open dual inline memory module (DIMM) slot

Has the same features as the HP LaserJet P4515n printer, plus the following:

- One additional 500-sheet input tray (Tray 3)

Has the same features as the HP LaserJet P4515n printer, plus the following:

- One additional 500-sheet input tray (Tray 3)
- Duplex-printing accessory for automatic printing on both sides

Has the same features as the HP LaserJet P4515n printer, plus the following:

- One additional 500-sheet input tray (Tray 3)
- Duplex-printing accessory for automatic printing on both sides
- One 500-sheet, 5-bin mailbox for sorting jobs

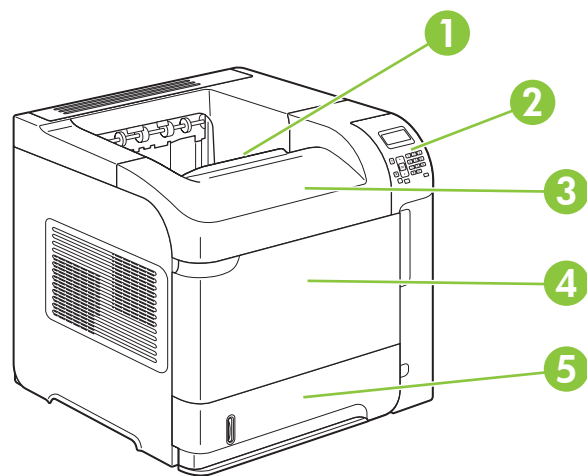
Product features

Feature	Description
Performance	<ul style="list-style-type: none"> 540 MHz processor
User interface	<ul style="list-style-type: none"> Control-panel help Four-line graphical display with numeric keypad. (The keypad is not included for the HP LaserJet P4014 models.) HP Easy Printer Care software (a Web-based status and problem-solving tool) Windows® and Macintosh printer drivers Embedded Web server to access support and order supplies (for network-connected models only)
Printer drivers	<ul style="list-style-type: none"> HP PCL 5 Universal Print Driver for Windows (HP UPD PCL 5) HP PCL 6 HP postscript emulation Universal Print Driver for Windows (HP UPD PS)
Resolution	<ul style="list-style-type: none"> FastRes 1200—produces 1200-dots-per-inch (dpi) print quality for fast, high-quality printing of business text and graphics ProRes 1200—produces 1200-dpi printing for the best quality in line art and graphic images 600 dpi—provides the fastest printing
Storage features	<ul style="list-style-type: none"> Fonts, forms, and other macros Job retention
Fonts	<ul style="list-style-type: none"> 103 internal scalable fonts available for PCL and 93 for HP UPD postscript emulation 80 device-matching screen fonts in TrueType format available with the software solution Additional fonts can be added through USB
Accessories	<ul style="list-style-type: none"> HP 500-sheet input tray (up to four additional trays) HP 1,500-sheet high-capacity input tray HP LaserJet 75-sheet envelope feeder HP LaserJet printer stand HP LaserJet automatic duplexer for two-sided printing HP LaserJet 500-sheet stacker HP LaserJet 500-sheet stapler/stacker HP LaserJet 500-sheet 5-bin mailbox <p>NOTE: Each model can accept up to four optional 500-sheet input trays or up to three 500-sheet input trays and one 1,500-sheet high-capacity input tray. If a 1,500-sheet high-capacity input tray is installed, it must always be below the other trays.</p>
Connectivity	<ul style="list-style-type: none"> Hi-Speed USB 2.0 connection HP Jetdirect full-featured embedded print server (optional for the HP LaserJet P4014 printer) with IPv4, IPv6, and IP Security.

Feature	Description
	<ul style="list-style-type: none"> • HP Web Jetadmin software • Enhanced input/output (EIO) slot
Supplies	<ul style="list-style-type: none"> • The supplies status page contains information about toner level, page count, and estimated pages remaining. • The product checks for an authentic HP print cartridge at installation. • Internet-enabled supply-ordering capabilities (using HP Easy Printer Care)
Supported operating systems	<ul style="list-style-type: none"> • Microsoft® Windows® 2000, Windows® XP, and Windows Vista™ • Macintosh OS X, V10.2.8 , V10.3, V10.4, V10.5, and later • Novell NetWare • Unix® • Linux
Accessibility	<ul style="list-style-type: none"> • The online user guide is compatible with text screen-readers. • The print cartridge can be installed and removed by using one hand. • All doors and covers can be opened by using one hand. • Paper can be loaded in Tray 1 by using one hand.

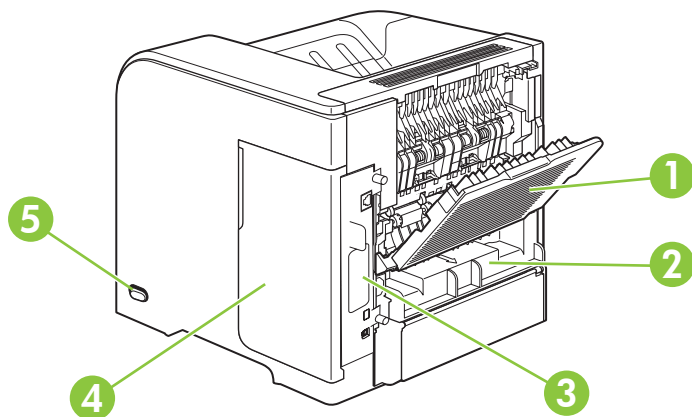
Product walkaround

Front view



1	Top output bin
2	Control panel
3	Top cover (provides access to the print cartridge)
4	Tray 1 (pull to open)
5	Tray 2

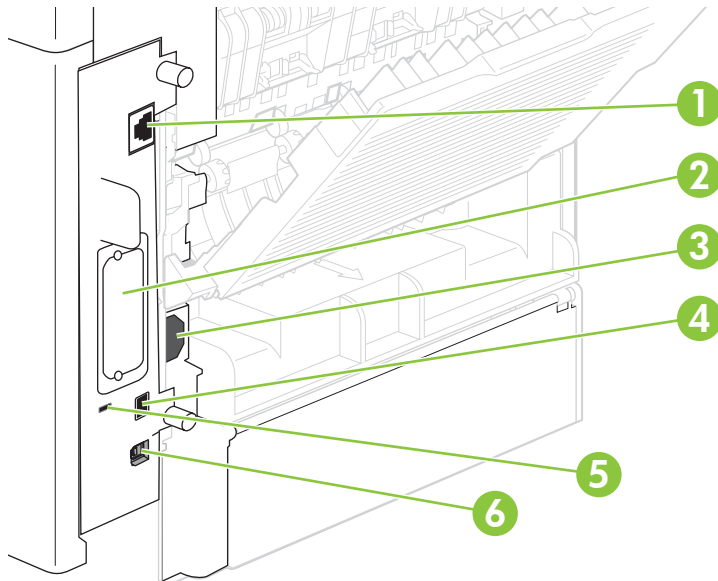
Rear view



1	Rear output bin (pull to open)
---	--------------------------------

2	Duplex accessory cover (remove this to install the duplex printing accessory)
3	Interface ports
4	Right cover (provides access to the DIMM slot)
5	On/off switch

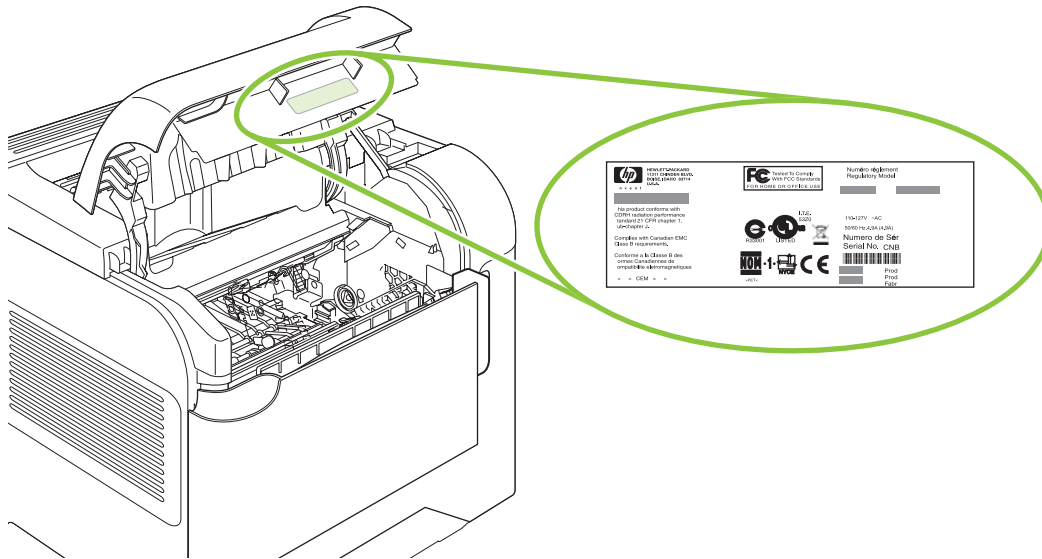
Interface ports



1	RJ.45 Network connection (not available for the HP LaserJet P4014 printer)
2	EIO slot
3	Power connection
4	Host USB connection, for adding fonts and other third-party solutions (this connection might have a removable cover)
5	Slot for a cable-type security lock
6	Hi-speed USB 2.0 connection, for connecting directly to a computer

Model and serial-number label location

The label that contains the model and serial numbers is on the inside of the top cover.



Supported operating systems

The product supports the following operating systems:

- Windows XP (32-bit and 64-bit)
- Windows Server 2003 (32-bit and 64-bit)
- Windows 2000
- Windows Vista (32-bit and 64-bit)
- Mac OS X V10.2.8, V10.3, V10.4, V10.5, and later



NOTE: For Mac OS X V10.4 and later, PPC and Intel Core Processor Macs are supported.

Supported product software

Software included with the product

Software for Windows

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 network administrator's computer.

To download a current version of HP Web Jetadmin and for the latest list of supported host systems, visit www.hp.com/go/webjetadmin.

When installed on a host server, a Windows 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

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 and show-me-how pages on page 66](#).)

For a complete explanation of the features and functionality of the embedded Web server, see [Use the embedded Web server on page 71](#).

HP Easy Printer Care

HP Easy Printer Care software is a program that you can use for the following tasks:

- Check the product status
- Check the supplies status and use HP SureSupply to shop online for supplies
- Set up alerts
- View product usage reports
- View product documentation
- Gain access to troubleshooting and maintenance tools
- Use HP Proactive Support to routinely scan your printing system and to prevent potential problems. HP Proactive Support can update software, firmware, and HP printer drivers.

You can view HP Easy Printer Care software when the product is directly connected to your computer or when it is connected to a network.

Supported operating systems	<ul style="list-style-type: none">• Microsoft® Windows 2000• Microsoft Windows XP, Service Pack 2 (Home and Professional editions)• Microsoft Windows Server 2003• Microsoft Windows Vista™
Supported browsers	<ul style="list-style-type: none">• Microsoft Internet Explorer 6.0 or 7.0

To download HP Easy Printer Care software, go to www.hp.com/go/easyprintercare. This Web site also provides updated information about supported browsers and a list of HP products that support HP Easy Printer Care software.

For more information about using HP Easy Printer Care software, see [Open the HP Easy Printer Care software on page 68](#).

Software for Macintosh

HP Printer Utility

Use the HP Printer Utility to set up product features that are not available in the printer driver.

You can use the HP Printer Utility when the product uses a universal serial bus (USB) cable or is connected to a TCP/IP-based network.

Open the HP Printer Utility

Open the HP Printer Utility in Mac OS X V10.2.8

1. Open the Finder, and then click **Applications**.
2. Click **Library**, and then click **Printers**.
3. Click **hp**, and then click **Utilities**.

4. Double-click **HP Printer Selector** to open the HP Printer Selector.
5. Select the product that you want to configure, and then click **Utility**.

Open the HP Printer Utility in Mac OS X V10.3 and V10.4

1. Open the Finder, click **Applications**, click **Utilities**, and then double-click **Printer Setup Utility**.
2. Select the product that you want to configure, and then click **Utility**.

Open the HP Printer Utility in Mac OS X V10.5

- ▲ From the **Printer** menu, click **Printer Utility**.

-or-

From the **Print Queue**, click the **Utility** icon.

HP Printer Utility features

The HP Printer Utility consists of pages that you open by clicking in the **Configuration Settings** list. The following table describes the tasks that you can perform from these pages.

Item	Description
Configuration Page	Prints a configuration page.
Supplies Status	Shows the device supplies status and provides links for online supplies-ordering.
HP Support	Provides access to technical assistance, online supplies ordering, online registration, and recycling and return information.
File Upload	Transfers files from the computer to the device.
Upload Fonts	Transfers font files from the computer to the device.
Firmware Update	Transfers updated firmware files from the computer to the device.
Duplex Mode	Turns on the automatic two-sided printing mode.
Economode & Toner Density	Turns on the Economode setting to conserve toner, or adjusts toner density.
Resolution	Changes the resolution settings, including the REt setting.
Lock Resources	Locks or unlocks storage products, such as a hard disk.
Stored Jobs	Manages print jobs that are stored on the device hard disk.
Trays Configuration	Changes the default tray settings.
IP Settings	Changes the device network settings and provides access to the embedded Web server.
Bonjour Settings	Provides the ability to turn on or off Bonjour support or change the device service name that is listed on a network.
Additional Settings	Provides access to the embedded Web server.
E-mail Alerts	Configures the device to send e-mail notices for certain events.

Supported printer drivers

Supported printer drivers for Windows

- HP PCL 5 Universal Print Driver (HP UPD PCL 5)
- HP PCL 6
- HP postscript emulation Universal Print Driver (HP UPD PS)

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.

Supported printer drivers for Macintosh

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.

Software for other operating systems

OS	Software
UNIX	For HP-UX and Solaris networks, go to www.hp.com/support/net_printing to download the HP Jetdirect printer installer for UNIX.
Linux	For information, go to www.hp.com/go/linuxprinting .

Connectivity

Supported network protocols

The product supports the TCP/IP network protocol, the most widely used and accepted networking protocol. Many networking services utilize this protocol. The following tables list the supported networking services and protocols.

Table 1-2 Printing

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

Table 1-3 Network device discovery

Service name	Description
SLP (Service Location Protocol)	Device-discovery protocol, used to help find and configure network devices. Used primarily by Microsoft-based programs.
Bonjour	Device-discovery protocol, used to help find and configure network devices. Used primarily by Apple Macintosh-based programs.

Table 1-4 Messaging and management

Service name	Description
HTTP (Hyper Text Transfer Protocol)	Allows Web browsers to communicate with embedded Web server.
EWS (embedded Web server)	Allows you to manage the product through a Web browser.
SNMP (Simple Network Management Protocol)	Used by network applications for product management. SNMP v1 and standard MIB-II (Management Information Base) objects are supported.

Table 1-5 IP addressing

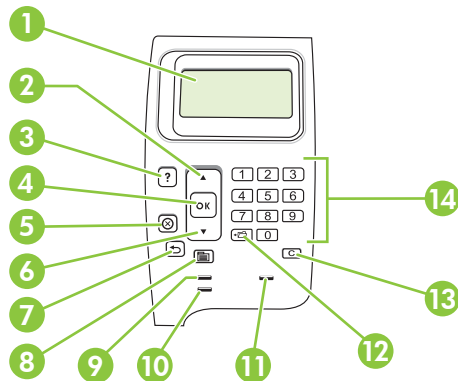
Service name	Description
DHCP (Dynamic Host Configuration Protocol)	For automatic IP address assignment. The DHCP server provides the product with an IP address. Generally, no user intervention is required for the product to obtain an IP address from a DHCP server.
BOOTP (Bootstrap Protocol)	For automatic IP address assignment. The BOOTP server provides the product with an IP address. Requires the administrator to input a product's MAC hardware address on the BOOTP server 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, the product uses this service to generate a unique IP address.

2 Control panel

- [Control-panel layout](#)
- [Use the control-panel menus](#)
- [Show Me How menu](#)
- [Retrieve Job menu](#)
- [Information menu](#)
- [Paper Handling menu](#)
- [Configure Device menu](#)
- [Diagnostics menu](#)
- [Service menu](#)

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 previous item in the list, or increases the value of numeric items
3	? Help button	Provides information about the message on the control-panel display
4	OK button	<ul style="list-style-type: none"> Saves the selected value for an item Performs the action that is associated with the item that is highlighted on the control-panel display Clears an error condition when the condition is clearable
5	⊗ Stop button	Cancels the current print job and clears the pages from the product
6	▼ Down arrow	Navigates to the next item in the list, or decreases the value of numeric items
7	↶ Back arrow	Backs up one level in the menu tree or backs up one numeric entry
8	☰ Menu button	<ul style="list-style-type: none"> Opens and closes the menus.
9	Ready light	<ul style="list-style-type: none"> On: The product is online and ready to accept data to print. Off: The product cannot accept data because it is offline (paused) or has experienced an error. Blinking: The product is going offline. The product stops processing the current job and expels all of the active pages from the paper path.
10	Data light	<ul style="list-style-type: none"> On: The product has data to print, but is waiting to receive all of the data. Off: The product has no data to print. Blinking: The product is processing or printing the data.
11	Attention light	<ul style="list-style-type: none"> On: The product has experienced a problem. See the control-panel display. Off: The product is functioning without error. Blinking: Action is required. See the control-panel display.
12	☞ Folder or STAR (Secure Transaction Access Retrieval) button	Provides quick access to the RETRIEVE JOB menu

Number	Button or light	Function
	NOTE: This item is not included for the HP LaserJet P4014 models.	
13	C Clear button NOTE: This item is not included for the HP LaserJet P4014 models.	Returns values to their defaults and exits the help screen
14	Numeric keypad NOTE: This item is not included for the HP LaserJet P4014 models.	Enter numeric values

Use the control-panel menus

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

1. Press **Menu** .
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 arrow ↶ to return to the previous level.
5. Press **Menu**  to exit the menu.
6. Press the help button ? to see additional information about an item.

The following are the main menus.

Main menus	SHOW ME HOW
	RETRIEVE JOB
	INFORMATION
	PAPER HANDLING
	CONFIGURE DEVICE
	DIAGNOSTICS
	SERVICE


Show Me How menu


Each choice in the **SHOW ME HOW** menu prints a page that provides more information.

Item	Explanation
CLEAR JAMS	Prints a page that shows how to clear paper jams.
LOAD TRAYS	Prints a page that shows how to load the input trays.
LOAD SPECIAL MEDIA	Prints a page that shows how to load special paper, such as envelopes and letterhead.
PRINT ON BOTH SIDES	Prints a page that shows how to use the two-sided (duplex) printing function. NOTE: Duplex menu item only appears for duplexing bundles.
SUPPORTED PAPER	Prints a page that shows supported paper types and sizes for the product.
PRINT HELP GUIDE	Prints a page that shows links to additional help on the Web.

Retrieve Job menu

This menu provides a list of the stored jobs in the product and access to all the job-storage features. You can print or delete these jobs at the product control panel. This menu appears when the product has a minimum of 80 MB of base memory.

 **NOTE:** If you turn the product off, all stored jobs are deleted unless an optional hard disk is installed.

NOTE: Press the folder button  to go directly to this menu.

Item	Sub-item	Values	Explanation
USER NAME	ALL JOBS (WITH PIN)	PRINT DELETE	USER NAME: The name of the person who sent the job. <ul style="list-style-type: none">● PRINT: Prints the selected job, after you enter the PIN. COPIES: Select the number of copies to print (1 to 32000). <ul style="list-style-type: none">● DELETE: Deletes the selected job from the product, after you enter the PIN.
	ALL JOBS (NO PINS)	PRINT DELETE ALL JOBS	<ul style="list-style-type: none">● PRINT: Prints the selected job.● DELETE: Deletes all the jobs from the product. The product prompts you to confirm the action before it deletes the jobs.

Information menu

The **INFORMATION** menu contains product information pages that give details about the product and its configuration. Scroll to the information page that you want, and then press **OK**.

Item	Explanation
PRINT MENU MAP	Prints the control-panel menu map that shows the layout and current settings for the control-panel menu items.
PRINT CONFIGURATION	Prints the current product configuration. If an HP Jetdirect print server is installed, an HP Jetdirect configuration page will print out as well.
PRINT SUPPLIES STATUS PAGE	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. This page is available only if you are using genuine HP supplies.
PRINT 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.
PRINT FILE DIRECTORY	Prints a file directory that shows information for all installed mass-storage devices. This item appears only if a mass-storage device that contains a recognized file system is installed in the product.
PRINT PCL FONT LIST	Prints a PCL font list that shows all the PCL fonts that are currently available to the product.
PRINT PS FONT LIST	Prints a PS font list that shows all the PS fonts that are currently available to the product.

Paper Handling menu

Use this menu to set the paper size and type for each tray. The product uses this information to produce pages with best possible print quality. For more information, see [Configure trays on page 61](#).

Some items on this menu are also available in the software program or the printer driver. Program and printer-driver settings override control-panel settings.

Item	Values	Explanation
ENVELOPE FEEDER SIZE	List of available paper sizes for the envelope feeder	Use this item to set the value to correspond with the paper size that is currently loaded in the envelope feeder.
ENVELOPE FEEDER TYPE	List of available paper types for the envelope feeder	Use this item to set the value to correspond with the type of paper that is currently loaded in the envelope feeder.
TRAY1 SIZE	List of available paper sizes for Tray 1	<p>Use this item to set the value to correspond with the paper size that is currently loaded in Tray 1. The default setting is ANY SIZE.</p> <p>ANY SIZE: If both the type and size for Tray 1 are set to ANY, the product will pull paper from Tray 1 first if paper is loaded in the tray.</p> <p>A size other than ANY SIZE: The product does not pull from this tray unless the type or size of the print job matches the type and size that is loaded in this tray.</p>
TRAY1 TYPE	List of available paper types for Tray 1	<p>Use this item to set the value to correspond with the type of paper that is currently loaded in Tray 1. The default setting is ANY TYPE.</p> <p>ANY TYPE: If both the type and size for Tray 1 are set to ANY, the product will pull paper from Tray 1 first if the paper is loaded in the tray.</p> <p>A type other than ANY TYPE: The product does not pull from this tray.</p>
TRAY[N] SIZE	List of available paper sizes for Tray 2 or the optional trays	The tray automatically detects the paper size based on the position of the guides in the tray. The default setting is either LTR (letter) for 110 V engines or A4 for 220 V engines.
TRAY[N] TYPE	List of available paper types for Tray 2 or the optional trays	Sets the value to correspond with the paper type that is currently loaded in Tray 2 or the optional trays. The default setting is ANY TYPE .

Configure Device menu

Use this menu to change the default printing settings, adjust the print quality, and change the system configuration and I/O options.

Printing submenu

Some items on this menu are available in the program or printer driver. Program and printer-driver settings override control-panel settings. In general, it is better to change these settings in the printer driver, if applicable.

Item	Values	Explanation
COPIES	1 to 32000	<p>Set the default number of copies by selecting any number from 1 to 32000. Use the numeric keypad to enter the number of copies. For products that do not have a numeric keypad, press the up arrow ▲ or the down arrow ▼ to select the number of copies. This setting applies only to print jobs that do not have the number of copies specified in the program or printer driver, such as a UNIX or Linux program.</p> <p>The default setting is 1.</p> <p>NOTE: It is best to set the number of copies in the program or printer driver. (Program and printer-driver settings override control-panel settings.)</p>
DEFAULT PAPER SIZE	Displays a list of available paper sizes.	Set the default image size for paper and envelopes. This setting applies to the print jobs that do not have a paper size specified in the program or printer driver. The default setting is LETTER .
DEFAULT CUSTOM PAPER SIZE	UNIT OF MEASURE XDIMENSION YDIMENSION	<p>Set the default custom paper size for Tray 1 or any 500-sheet tray.</p> <p>UNIT OF MEASURE: Use this option to select the unit of measure (INCHES or MILLIMETERS) to use when you set custom paper sizes.</p> <p>XDIMENSION: Use this item to set the measurement of the width of the paper (measurement from side to side in the tray). The range is 76 to 216 mm (3.0 to 8.50 inches).</p> <p>YDIMENSION: Use this item to set the measurement of the length of the paper (measurement from front to back in the tray). The range is 127 to 356 mm (5.0 to 14.0 inches).</p>
PAPER DESTINATION	Displays a list of possible paper destinations.	Configure the output paper bin destination. The list varies according to which output accessory is attached. The default is STANDARD TOP BIN .
DUPLEX	OFF ON	<p>This item appears only when an optional duplexer is installed. Set the value to ON to print on both sides (duplex) or OFF to print on one side (simplex) of a sheet of paper.</p> <p>The default setting is OFF.</p>
DUPLEX BINDING	LONG EDGE SHORT EDGE	<p>Change the binding edge for duplex printing. This item appears only when an optional duplexer is installed and DUPLEX is set to ON.</p> <p>The default setting is LONG EDGE.</p>
OVERRIDE A4/LETTER	NO	Select YES to print an A4-size job on Letter-size paper if A4-size paper is not loaded in the product (or vice versa).

Item	Values	Explanation
	YES	The default setting is YES .
MANUAL FEED	OFF	Feeds the paper manually from Tray 1, rather than automatically from another tray. If MANUAL FEED=ON and Tray 1 is empty, the product goes offline when it receives a print job. MANUALLY FEED [PAPER SIZE] appears on the control-panel display.
	ON	
		The default setting is OFF .
COURIER FONT	REGULAR	Selects the version of Courier font to use: REGULAR: The internal Courier font that is available on the HP LaserJet 4 series products. DARK: The internal Courier font that is available on the HP LaserJet III series products.
	DARK	
		The default setting is REGULAR .
WIDE A4	NO	Changes the number of characters that can be printed on a single line of A4-size paper. NO: Up to 78 10-pitch characters can be printed on one line. YES: Up to 80 10-pitch characters can be printed on one line.
	YES	
		The default setting is NO .
PRINT PS ERRORS	OFF	Determines whether a PS error page prints. OFF: PS error page never prints. ON: PS error page prints when PS errors occur.
	ON	
		The default setting is OFF .
PRINT PDF ERRORS	OFF	Determines whether a PDF error page prints. OFF: PDF error page never prints. ON: PDF error page prints when PDF errors occur.
	ON	
		The default setting is OFF .

Item	Values	Explanation
PCL SUBMENU	FORM LENGTH	Sets vertical spacing from 5 to 128 lines for default paper size.
	ORIENTATION	Sets the default page orientation as LANDSCAPE or PORTRAIT . NOTE: It is best to set the page orientation in the program or printer driver. (Program and printer-driver settings override control-panel settings.)
	FONT SOURCE	Select the font source as INTERNAL , or EIO DISK .
	FONT NUMBER	The product assigns a number to each font and lists the numbers on the PCL Font List. The font number appears in the Font # column of the list. The range is 0 to 102.
	FONT PITCH	Select the font pitch. This item might not appear, depending on the font selected. The range is 0.44 to 99.99.
	FONT POINT SIZE	Select the font point size. The range is 4.00 to 999.75. The default is 12.00.
	SYMBOL SET	Select any one of several available symbol sets at the product control panel. A symbol set is a unique grouping of all the characters in a font. PC-8 or PC-850 is recommended for line-draw characters.
	APPEND CR TO LF	Select YES to append a carriage return to each line feed that the product encountered in backward-compatible PCL jobs (pure text, no job control). Some environments, such as UNIX, indicate a new line using only the line feed control code. Use this option to append the required carriage return to each line feed.
	SUPPRESS BLANK PAGES	When generating your own PCL, extra form feeds are included that would cause one or more blank pages to be printed. Select YES for form feeds to be ignored if the page is blank.
	MEDIA SOURCE MAPPING	Select and maintain trays by number when you are not using the printer driver or when the software program has no option for tray selection. CLASSIC: Tray numbering is based on HP LaserJet 4 and older models. STANDARD: Tray numbering is based on newer HP LaserJet models.

Print Quality submenu

Some items on this menu are available in the program or printer driver. Program and printer-driver settings override control-panel settings. In general, it is best to change these settings in the printer driver, if applicable.

Item	Values	Explanation
SET REGISTRATION	PRINT TEST PAGE	Shifts the margin alignment to center the image on the page from top to bottom, and left to right. You can also align the image that is printed on the front with the image that is printed on the back. Allows for one-sided and two-sided printing alignment.
	SOURCE	PRINT TEST PAGE: Prints a test page that shows the current registration settings.
	ADJUST TRAY [N]	SOURCE: Selects the tray for which you want to print the test page.
		ADJUST TRAY [N]: Sets the registration for the specified tray, where [N] is the number of the tray. A selection appears for each tray that is installed, and registration must be set for each tray.
		<ul style="list-style-type: none"> ● X1 SHIFT: Registration of the image on the paper from side to side, as the paper lies in the tray. For duplexing, this side is the second side (back) of the paper. ● X2 SHIFT: Registration of the image on the paper from side to side, as the paper lies in the tray, for the first side (front) of a duplexed page. This item appears only if the product includes a built-in duplexer and DUPLEX is ON. Set the X1 SHIFT first. ● Y SHIFT: Registration of the image on the paper from top to bottom as the paper lies in the tray. <p>The default setting for SOURCE is TRAY 2. The default setting for ADJUST TRAY 1 and ADJUST TRAY 2 is 0.</p>
FUSER MODES	List of available paper types	<p>Configures the fuser mode associated with each paper type.</p> <p>Change the fuser mode only if you are experiencing problems printing on certain paper types. After you select a type of paper, you can select a fuser mode that is available for that type. The product supports the following modes:</p> <p>NORMAL: Used for most types of paper.</p> <p>LIGHT1: Used for most types of paper.</p> <p>LIGHT2: Use this mode if you are experiencing wrinkled media.</p> <p>HEAVY: Used for rough paper.</p> <p>The default fuser mode is LIGHT1 for all print media types except transparencies (LIGHT2) and rough paper (HEAVY).</p>

Item	Values	Explanation
		<p>CAUTION: Do not change the fuser mode for transparencies. Failure to use the LIGHT2 setting while printing transparencies can result in permanent damage to the product and fuser. Always select Transparencies as the type in the print driver and set the tray type at the product control panel to TRANSPARENCY.</p> <p>When selected, RESTORE MODES resets the fuser mode for each paper type back to its default setting.</p>
OPTIMIZE Optimizes certain parameters for all jobs rather than (or in addition to) optimizing by paper type.	LINE DETAIL	Turn this setting on if you are having problems with blurred print or scattered lines.
	RESTORE OPTIMIZE	Use this item to return all the OPTIMIZE settings to OFF .
RESOLUTION	300	Select the resolution. All values print at the same speed.
	600	300: Produces draft print quality and can be used for compatibility with the HP LaserJet III family of products.
	FASTRES 1200	600: Produces high print quality for text and can be used for compatibility with the HP LaserJet 4 family of products.
	PRORES 1200	<p>FASTRES 1200: Produces 1200-dpi print quality for fast, high-quality printing of business text and graphics.</p> <p>PRORES 1200: Produces 1200-dpi print quality for fast, high-quality printing of line art and graphic images.</p> <p>NOTE: It is best to change the resolution in the program or print driver. (Program and printer-driver settings override control-panel settings.)</p> <p>The default setting is FASTRES 1200.</p>
RET	OFF	Use the Resolution Enhancement technology (REt) setting to produce print with smooth angles, curves, and edges.
	LIGHT	REt does not affect print quality if the print resolution is set to FastRes 1200 or ProRes 1200. All other print resolutions benefit from REt.
	MEDIUM	
	DARK	
		<p>NOTE: It is best to change the REt setting in the program or print driver. (Program and printer-driver settings override control-panel settings.)</p> <p>The default setting is MEDIUM.</p>
ECONOMODE	ON	<p>EconoMode is a feature that allows the product to use less toner per page. Selecting this option will extend the life of the toner supply and may reduce cost per page. However, it will also reduce print quality. The printed page is lighter, but it is adequate for printing drafts or proofs.</p> <p>HP does not recommend full-time use of EconoMode. If EconoMode is used full-time, the toner supply might outlast the mechanical parts in the print cartridge. If print quality begins to degrade under these circumstances, you will need to install a new print cartridge, even if there is toner supply remaining in the cartridge.</p>
	OFF	

Item	Values	Explanation
		<p>NOTE: It is best to turn EconoMode on or off in the program or printer driver. (Program and printer-driver settings override control-panel settings.)</p> <p>The default setting is OFF.</p>
TONER DENSITY	1 to 5	Lighten or darken the print on the page by setting the toner density. Select a setting ranging from 1 (light) to 5 (dark). The default setting of 3 usually produces the best results.
AUTO CLEANING	OFF ON	<p>Use this feature to automatically clean the paper path after the product has printed a specific number of pages. Use the CLEANING INTERVAL item to set the number of pages.</p> <p>The default is OFF.</p>
CLEANING INTERVAL	1000 2000 5000 10000 20000	<p>This item appears only if AUTO CLEANING is on.</p> <p>Select the number of pages at which the product should perform the cleaning process.</p>
AUTO CLEANING SIZE	LETTER A4	<p>This item appears only if AUTO CLEANING is on.</p> <p>Use to set the size for the automatically generated cleaning page.</p>
CREATE CLEANING PAGE	There is no value to select.	Press OK to print a cleaning page (for cleaning toner from the fuser). Follow the instructions on the cleaning page. For more information, see Clean the paper path on page 95 .
PROCESS CLEANING PAGE	There is no value to select.	This item is available only after a cleaning page has been created. Follow the instructions that are printed on the cleaning page. The cleaning process might take up to 2.5 minutes.

System Setup submenu

Items on this menu affect product behavior. Configure the product according to your printing needs.

Item	Values	Explanation
DATE/TIME	DATE	Sets the date and time settings.
	DATE FORMAT	
	TIME	
	TIME FORMAT	
JOB STORAGE LIMIT	1 to 100	Specifies the number of quick copy jobs that can be stored on the product.
		The default setting is 32 .
JOB HELD TIMEOUT	OFF	Sets the amount of time that held jobs are kept before being automatically deleted from the queue.
	1 HOUR	
	4 HOURS	The default setting is OFF .
	1 DAY	
	1 WEEK	
SHOW ADDRESS	AUTO	Defines whether the IP address IS shown on the display if the product is connected to a network. If AUTO is selected the IP Address of the product appears with the Ready message.
	OFF	
		The default setting is OFF .

Item	Values	Explanation
TRAY BEHAVIOR	USE REQUESTED TRAY	<p>Select whether the product tries to pull paper from a different tray than the one that you selected in the print driver.</p> <ul style="list-style-type: none"> ● EXCLUSIVELY: Sets the product to pull from the tray that you selected and not pull from another tray, even if the tray that you selected is empty. ● FIRST: Sets the product to pull from the tray that you selected first, but allows the product to pull from another tray automatically if the tray that you selected is empty.
	MANUALLY FEED PROMPT	<p>Select when the product shows a prompt regarding pulling from Tray 1 if your print job does not match the type or size that is loaded in any other tray.</p> <ul style="list-style-type: none"> ● ALWAYS: Select this option if you always want to be prompted before the product pulls from Tray 1. ● UNLESS LOADED: Prompts you only if Tray 1 is empty.
	PS DEFER MEDIA	<p>Control whether the PostScript (PS) or HP paper-handling model is used to print jobs. ENABLE causes PS to defer to the HP paper-handling model. DISABLE uses the PS paper-handling model.</p>
	SIZE/TYPE PROMPT	<p>Control whether the tray configuration message and its prompts are shown whenever a tray is opened and closed. These prompts instruct you to set the type or size if the tray is configured for a type or size other than the type or size that is loaded in the tray.</p>
	USE ANOTHER TRAY	<p>Enable or disable the prompt to select another tray.</p>
	DUPLEX BLANK PAGES	<p>Configure the way the product treats blank pages when using the optional duplexer. Select AUTO for the fastest performance. Select YES to always pass the sheet through the duplexer, even if it is printed on only one side.</p>
	TRAY 2 MODEL	<p>Specify whether Tray 2 is the STANDARD TRAY or the CUSTOM TRAY.</p>
SLEEP DELAY	IMAGE ROTATION	<p>Sets how the product arranges the image on the page when an output accessory is installed.</p> <ul style="list-style-type: none"> ● STANDARD: The product automatically rotates the image, so you can always load paper the same way, even if an output accessory is attached. ● ALTERNATE: The product does not automatically rotate the image, so you might need to load paper differently for certain types of output.
	1 MINUTE	<p>Sets how long the product remains idle before it enters Sleep mode.</p> <p>Sleep mode does the following:</p> <ul style="list-style-type: none"> ● Minimizes the amount of power that the product consumes when it is idle. ● Reduces wear on electronic components in the product (turns off the display backlight, but the display is still readable).
	15 MINUTES	
	30 MINUTES	
	45 MINUTES	
	60 MINUTES	
	90 MINUTES	
	2 HOURS	

Item	Values	Explanation
	4 HOURS	<p>The product automatically comes out of Sleep mode when you send a print job, press a product control-panel button, open a tray, or open the top cover.</p> <p>The default setting is 30 MINUTES.</p>
WAKE TIME	MONDAY TUESDAY WEDNESDAY THURSDAY FRIDAY SATURDAY SUNDAY	<p>Sets a “wake-up” time for the product to warm up each day. The default for each day is OFF. If you set a wake time, HP recommends setting an extended sleep delay time period, so that the product will not return to sleep mode soon after waking.</p>
DISPLAY BRIGHTNESS	A value from 1 to 10	Controls the brightness of the control panel display. The default is 5 .
PERSONALITY	AUTO PS PDF PCL SUBMENU	<p>Selects the default product language (personality). The possible values are determined by which valid languages are installed in the product.</p> <p>Normally, you should not change the product language. If you change it to a specific product language, the product will not switch automatically from one language to another unless specific software commands are sent to the product.</p> <p>The default setting is AUTO.</p>
CLEARABLE WARNINGS	JOB ON	<p>Sets the amount of time that a clearable warning appears on the product control-panel display.</p> <p>JOB: The clearable warning message appears until the end of the job that generated the message.</p> <p>ON: The clearable warning message appears until you press OK.</p> <p>The default setting is JOB.</p>
AUTO CONTINUE	OFF ON	<p>Determines how the product reacts to errors. If the product is on a network, you probably want to turn AUTO CONTINUE to ON.</p> <p>ON: If an error occurs that prevents printing, the message appears on the product control-panel display, and the product goes offline for 10 seconds before returning online.</p> <p>OFF: If an error occurs that prevents printing, the message remains on the product control-panel display, and the product remains offline until you press OK.</p> <p>The default setting is ON.</p>
REPLACE BLACK CARTRIDGE	STOP AT LOW STOP AT OUT OVERRIDE AT OUT	<p>Determines how the product behaves when the print cartridge is low or out.</p> <p>STOP AT LOW: The product stops printing when the print cartridge reaches the low threshold. Press OK to continue printing.</p>

Item	Values	Explanation
		<p>STOP AT OUT: The product stops printing when the print cartridge is depleted. You must replace the print cartridge before printing can continue.</p> <p>OVERRIDE AT OUT: Select this option to override the message and continue printing after the print cartridge is depleted. HP does not guarantee print quality after you select this option.</p> <p>The default value is OVERRIDE AT OUT.</p>
ORDER AT	1 TO 100	Set the threshold at which the ORDER BLACK CARTRIDGE message appears. The value is the percent of overall cartridge life that remains. The default is 23%.
JAM RECOVERY	AUTO OFF ON	<p>Determines how the product behaves if a jam occurs.</p> <p>AUTO: The product automatically selects the best mode for jam recovery. This is the default setting.</p> <p>OFF: The product does not reprint pages following a jam. Printing performance might be increased with this setting.</p> <p>ON: The product automatically reprints pages after a jam is cleared.</p>
RAM DISK	AUTO OFF	<p>Determines how the RAM disk is configured.</p> <p>AUTO: Allows the product to determine the optimal RAM-disk size based on the amount of available memory.</p> <p>OFF: The RAM is disabled.</p> <p>NOTE: If you change the setting from OFF to AUTO, the product automatically reinitializes when it becomes idle.</p> <p>The default setting is AUTO.</p>
LANGUAGE	(DEFAULT) Several	<p>Selects the language for the messages that appear on the control-panel display.</p> <p>The default setting is determined by the country/region in which the product is purchased.</p>

Stapler Stacker submenu

This menu appears only when an optional stapler/stacker is attached.

Item	Values	Explanation
STAPLES	NONE	Select whether all jobs should be stapled. If you select ONE-LEFT-ANGLED , all jobs are stapled. The default is NONE .
	ONE-LEFT-ANGLED	
STAPLES OUT	STOP	Select the option to stop or continue printing when the stapler is out of staples. The default is STOP .
	CONTINUE	

MBM-5 (multi-bin mailbox) submenu

This menu appears only when an optional 5-bin mailbox is attached.

Item	Values	Explanation
OPERATION MODE	MAILBOX	Select how the 5-bin mailbox sorts jobs.
	STACKER	MAILBOX: Each bin is assigned to a user or group of users. This is the default setting.
	JOB SEPARATOR	STACKER: The product uses all bins to stack copies of a job. Jobs are sent to the bottom bin first, and then to the next highest bin, and so forth. When all bins are full, the product stops.
	COLLATOR	JOB SEPARATOR: Each job is placed in a separate bin. Jobs are placed into an empty bin, starting with the top bin. COLLATOR: The product sorts copies of jobs into separate bins.

I/O submenu

Items on the I/O (input/output) menu affect the communication between the product and the computer. If the product contains an HP Jetdirect print server, you can configure basic networking parameters by using this submenu. You can also configure these and other parameters through HP Web Jetadmin or the embedded Web server.

Item	Values	Explanation
I/O TIMEOUT	5 to 300	<p>Select the I/O timeout period in seconds.</p> <p>Use this setting to adjust timeout for the best performance. If data from other ports appears in the middle of your print job, increase the timeout value.</p> <p>The default setting is 15.</p>
EMBEDDED JETDIRECT MENU	See the next table for a list of options.	
EIO <X> JETDIRECT MENU		



NOTE: In the following table, items that are marked with an asterisk (*) are the default setting.

Table 2-1 Embedded Jetdirect and EIO <X> Jetdirect menus

Menu item	Sub-menu item	Sub-menu item	Values and Description
TCP/IP	ENABLE		<p>OFF: Disable the TCP/IP protocol.</p> <p>ON*: Enable the TCP/IP protocol.</p>
	HOST NAME		An alphanumeric string, up to 32 characters, used to identify the product. This name is listed on the HP Jetdirect configuration page. The default host name is NPIxxxxxx, where xxxxxx is the last six digits of the LAN hardware (MAC) address.
	IPV4 SETTINGS	CONFIG METHOD	<p>Specifies the method that TCP/IPv4 parameters will be configured on the HP Jetdirect print server.</p> <p>BOOTP: Use BootP (Bootstrap Protocol) for automatic configuration from a BootP server.</p> <p>DHCP*: Use DHCP (Dynamic Host Configuration Protocol) for automatic configuration from a DHCPv4 server.</p> <p>AUTO IP: Use automatic link-local IPv4 addressing. An address in the form 169.254.x.x is assigned automatically.</p> <p>MANUAL: Use the MANUAL SETTINGS menu to configure TCP/IPv4 parameters.</p>
		MANUAL SETTINGS	<p>(Available only if CONFIG METHOD is set to MANUAL) Configure parameters directly from the printer control panel:</p> <p>IP ADDRESS: The unique IP address of the printer, where n is a value from 0 to 255.</p>

Table 2-1 Embedded Jetdirect and EIO <X> Jetdirect menus (continued)

Menu item	Sub-menu item	Sub-menu item	Values and Description
			<p>SUBNET MASK: The subnet mask for the printer, where m is a value from 0 to 255.</p> <p>DEFAULT GATEWAY: The IP address of the gateway or router used for communications with other networks.</p>
		DEFAULT IP	<p>Specify the IP address to default to when the print server is unable to obtain an IP address from the network during a forced TCP/IP reconfiguration (for example, when manually configured to use BootP or DHCP).</p> <p>AUTO IP: A link-local IP address 169.254.x.x is set.</p> <p>LEGACY: The address 192.0.0.192 is set, consistent with older HP Jetdirect products.</p>
		PRIMARY DNS	Specify the IP address (n.n.n.n) of a Primary DNS Server.
		SECONDARY DNS	Specify the IP address (n.n.n.n) of a Secondary Domain Name System (DNS) Server.
	IPv6 SETTINGS	ENABLE	<p>Use this item to enable or disable IPv6 operation on the print server.</p> <p>OFF*: IPv6 is disabled.</p> <p>ON: IPv6 is enabled.</p>
		ADDRESS	<p>Use this item to manually configure an IPv6 address.</p> <p>MANUAL SETTINGS: Use the MANUAL SETTINGS menu to enable and manually configure a TCP/ IPv6 address.</p> <p>ENABLE: Select this item and choose ON to enable manual configuration, or OFF to disable manual configuration.</p> <p>ADDRESS: Use this item to type a 32 hexadecimal digit IPv6 node address that uses the colon hexadecimal syntax.</p>
		DHCPv6 POLICY	<p>ROUTE SPECIFIED: The stateful auto-configuration method to be used by the print server is determined by a router. The router specifies whether the print server obtains its address, its configuration information, or both from a DHCPv6 server.</p> <p>ROUTER UNAVAILABLE: If a router is not available, the print server should attempt to obtain its stateful configuration from a DHCPv6 server.</p> <p>ALWAYS: Whether or not a router is available, the print server always attempts to obtain its stateful configuration from a DHCPv6 server.</p>
		PRIMARY DNS	Use this item to specify an IPv6 address for a primary DNS server that the print server should use.
		SECONDARY DNS	Use this item to specify an IPv6 address for a secondary DNS server that the print server should use.

Table 2-1 Embedded Jetdirect and EIO <X> Jetdirect menus (continued)

Menu item	Sub-menu item	Sub-menu item	Values and Description
	PROXY SERVER		<p>Specifies the proxy server to be used by embedded applications in the product. A proxy server is typically used by network clients for Internet access. It caches Web pages, and provides a degree of Internet security, for those clients.</p> <p>To specify a proxy server, enter its IPv4 address or fully-qualified domain name. The name can be up to 255 octets.</p> <p>For some networks, you might need to contact your Internet Service Provider (ISP) for the proxy server address.</p>
	PROXY PORT		Type the port number used by the proxy server for client support. The port number identifies the port reserved for proxy activity on your network, and can be a value from 0 to 65535.
	IDLE TIMEOUT		IDLE TIMEOUT: The time period, in seconds, after which an idle TCP print data connection is closed (default is 270 seconds, 0 disables the timeout).
IPX/SPX	ENABLE		<p>OFF: Disable the IPX/SPX protocol.</p> <p>ON*: Enable the IPX/SPX protocol.</p>
	FRAME TYPE		<p>Selects the frame-type setting for your network.</p> <p>AUTO: Automatically sets and limits the frame type to the first one detected.</p> <p>EN_8023, EN_II, EN_8022, and EN_SNAP: Frame-type selections for Ethernet networks</p>
APPLETALK	ENABLE		<p>OFF: Disable the AppleTalk protocol.</p> <p>ON*: Enable the AppleTalk protocol.</p>
DLC/LLC	ENABLE		<p>OFF: Disable the DLC/LLC protocol.</p> <p>ON*: Enable the DLC/LLC protocol.</p>

Table 2-1 Embedded Jetdirect and EIO <X> Jetdirect menus (continued)

Menu item	Sub-menu item	Sub-menu item	Values and Description
SECURITY	PRINT SEC PAGE		<p>YES: Prints a page that contains the current security settings on the HP Jetdirect print server.</p> <p>NO*: A security settings page is not printed.</p>
	SECURE WEB		<p>For configuration management, specify whether the embedded Web server will accept communications using HTTPS (Secure HTTP) only, or both HTTP and HTTPS.</p> <p>HTTPS Required: For secure, encrypted communications, only HTTPS access is accepted. The print server will appear as a secure site.</p> <p>HTTP/HTTPS optional: Access using either HTTP or HTTPS is permitted.</p>
	IPSEC		<p>Specify the IPsec or Firewall status on the print server.</p> <p>KEEP: IPsec/Firewall status remains the same as currently configured.</p> <p>DISABLE: IPsec/Firewall operation on the print server is disabled.</p>
	RESET SECURITY		<p>Specify whether the current security settings on the print server will be saved or reset to factory defaults.</p> <p>NO*: The current security settings are maintained.</p> <p>YES: Security settings are reset to factory defaults.</p>
DIAGNOSTICS	EMBEDDED TESTS		<p>This menu provides tests to help diagnose network hardware or TCP/IP network connection problems.</p> <p>Embedded tests help to identify whether a network fault is internal or external to the product. Use an embedded test to check hardware and communication paths on the print server. After you select and enable a test and set the execution time, you must select EXECUTE to initiate the test.</p> <p>Depending on the execution time, a selected test runs continuously until either the product is turned off, or an error occurs and a diagnostic page is printed.</p>
		LAN HW TEST	<p>CAUTION: Running this embedded test will erase your TCP/IP configuration.</p> <p>This test performs an internal loopback test. An internal loopback test will send and receive packets only on the internal network hardware. There are no external transmissions on your network.</p> <p>Select YES to choose this test, or NO to not choose it.</p>
		HTTP TEST	<p>This test checks operation of HTTP by retrieving predefined pages from the product, and tests the embedded Web server.</p> <p>Select YES to choose this test, or NO to not choose it.</p>
		SNMP TEST	<p>This test checks operation of SNMP communications by accessing predefined SNMP objects on the product.</p>

Table 2-1 Embedded Jetdirect and EIO <X> Jetdirect menus (continued)

Menu item	Sub-menu item	Sub-menu item	Values and Description
			Select YES to choose this test, or NO to not choose it.
		DATA PATH TEST	This test helps to identify data path and corruption problems on an HP postscript level 3 emulation product. It sends a predefined PS file to the product. However, the test is paperless, so the file does not print.
			Select YES to choose this test, or NO to not choose it.
		SELECT ALL TESTS	Select this item to run all the embedded tests. Select YES to run all tests, or select NO to not run all tests.
		EXECUTION TIME [H]	Use this item to specify the length of time (in hours) that an embedded test will be run. You can select a value from 1 to 60 hours. If you select zero (0), the test runs indefinitely until an error occurs or the product is turned off.
			Data gathered from the HTTP, SNMP, and Data Path tests is printed after the tests have completed.
		EXECUTE	NO* : Do not initiate the selected tests. YES : Initiate the selected tests.
	PING TEST		This test is used to check network communications. This test sends link-level packets to a remote network host, then waits for an appropriate response.
		DEST TYPE	Specify whether the target device is an IPv4 or IPv6 node.
		DEST IPV4	Type the IPv4 address.
		DEST IPV6	Type the IPv6 address.
		PACKET SIZE	Specify the size of each packet, in bytes, to be sent to the remote host. The minimum is 64 (default) and the maximum is 2048.
		TIMEOUT	Specify the length of time, in seconds, to wait for a response from the remote host. The default is 1 and the maximum is 100.
		COUNT	Specify the number of ping test packets to send for this test. Select a value from 1 to 100. To configure the test to run continuously, select 0.
		PRINT RESULTS	If the ping test was not set for continuous operation, you can choose to print the test results. Select YES to print results. If you select NO (default), results are not printed.
		EXECUTE	Specify whether to initiate the ping test. Select YES to initiate the test, or NO to not run the test.
	PING RESULTS		Use this item to view the ping test status and results using the control panel display.
		PACKETS SENT	Shows the number of packets (0 - 65535) sent to the remote host since the most recent test was initiated or completed.

Table 2-1 Embedded Jetdirect and EIO <X> Jetdirect menus (continued)

Menu item	Sub-menu item	Sub-menu item	Values and Description
		PACKETS RECEIVED	Shows the number of packets (0 - 65535) received from the remote host since the most recent test was initiated or completed.
		PERCENT LOST	Shows the percent of ping test packets that were sent with no response from the remote host since the most recent test was initiated or completed.
		RTT MIN	Shows the minimum detected roundtrip- time (RTT), from 0 to 4096 milliseconds, for packet transmission and response.
		RTT MAX	Shows the maximum detected roundtrip- time (RTT), from 0 to 4096 milliseconds, for packet transmission and response.
		RTT AVERAGE	Shows the average round-trip-time (RTT), from 0 to 4096 milliseconds, for packet transmission and response.
		PING IN PROGRESS	Shows whether a ping test is in progress. YES indicates a test in progress, and NO indicates that a test completed or was not run.
		REFRESH	When viewing the ping test results, this item updates the ping test data with current results. Select YES to update the data, or NO to maintain the existing data. However, a refresh automatically occurs when the menu times out or you manually return to the main menu.
LINK SPEED			<p>The link speed and communication mode of the print server must match the network. The available settings depend on the product and installed print server. Select one of the following link configuration settings:</p> <p>CAUTION: If you change the link setting, network communications with the print server and network device might be lost.</p> <p>AUTO*: The print server uses auto-negotiation to configure itself with 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.)</p> <p>10T HALF: 10 Mbps, half-duplex operation.</p> <p>10T FULL: 10 Mbps, full-duplex operation.</p> <p>100TX HALF: 100 Mbps, half-duplex operation.</p> <p>100TX FULL: 100 Mbps, full-duplex operation.</p> <p>100TX AUTO: Limits auto-negotiation to a maximum link speed of 100 Mbps.</p> <p>1000TX FULL: 1000 Mbps, full-duplex operation.</p>
PRINT PROTOCOLS			Use this item to print a page that lists the configuration of the following protocols: IPX/SPX, Novell NetWare, AppleTalk, DLC/LLC.

Resets submenu

Use this submenu to return settings to the defaults and change settings such as Sleep mode.

Item	Values	Explanation
RESTORE FACTORY SETTINGS	There is no value to select.	<p>Performs a simple reset and restores most of the factory (default) and network settings. This item also clears the input buffer for the active I/O.</p> <p>CAUTION: Restoring factory settings during a print job cancels the print job.</p>
SLEEP MODE	ON OFF	<p>Turns Sleep mode on or off. Using Sleep mode offers the following advantages:</p> <ul style="list-style-type: none">• Minimizes the amount of power that the product consumes when it is idle.• Reduces wear on electronic components in the product (turns off the display backlight, but the display is still readable). <p>The product automatically comes out of Sleep mode when you send a print job, press a control-panel button, open a tray, or open the top cover.</p> <p>You can set how long the product remains idle before it enters Sleep mode.</p> <p>The default setting is ON.</p>

Diagnostics menu

Administrators can use this submenu to isolate parts and to troubleshoot jam and print-quality issues.

Item	Values	Explanation
PRINT EVENT LOG	There is no value to select.	Press OK to generate a list of the 50 most recent entries in the event log. The printed event log shows error number, page count, error code, and description or personality.
SHOW EVENT LOG	There is no value to select.	Press OK to scroll through the contents of the event log at the control panel, which lists up to the 50 most recent events. Press the up arrow ▲ or the down arrow ▼ to scroll through the event log contents.
PAPER PATH SENSORS	There is no value to select.	Use this item to test each of the sensors in the paper path. Press OK to initiate the test, and then use the menus to print an internal page, such as a configuration page.
PAPER PATH TEST	PRINT TEST PAGE	Generates a test page that is useful for testing the paper-handling features of the product. NOTE: Set the other items before selecting PRINT TEST PAGE . Press OK to start the paper-path test using the source (tray), destination (output bin), duplex, and number of copies settings that you set in the other items on the Paper Path Test menu.
	SOURCE	Select the tray that uses the paper path that you want to test. You can select any tray that is installed. Select ALL TRAYS to test all paper paths. (Paper must be loaded in the selected trays.)
	DESTINATION	Select which output bin to include in the test. You can select all bins.
	DUPLEX	Determine whether the paper goes through the duplexer during the paper-path test. The menu item appears only if the device includes a built-in duplexer.
	COPIES	Set how many sheets of paper are used from each tray during the paper-path test.
MANUAL SENSOR TEST 1	There is no value to select.	HP service personnel can use this item to manually test a sensor. Locate the sensor inside the product and manually activate it. If the value changes from 0 to another number, the sensor is working.
MANUAL SENSOR TEST 2	There is no value to select.	This item lists additional sensors to test.
COMPONENT TEST	A list of available components appears.	HP service personnel can use this item to test various internal components to isolate the source of a problem, such as noise. Before beginning a test, set the value for the REPEAT frequency: ONCE or CONTINUOUS . Then, select the component that you want to test. To identify noise problems, listen carefully as you perform each test.
PRINT/STOP TEST	STOP TIME	Specify a length of time, in milliseconds, at which the product should stop while performing a test.

Service menu

The **SERVICE** menu contains items that allow you to test, configure, and reset the product. The menu is locked and requires one of the following PINs for access:

- **HP LaserJet P4014:** 05401408
- **HP LaserJet P4015:** 05401508
- **HP LaserJet P4515:** 05451508

Item	Values	Explanation
CLEAR EVENT LOG		Erases all event log entries.
CLEAR BOOTLOADER PASSWORD		Clears the bootloader password in order to prevent unauthorized product resets.
TOTAL PAGE COUNT		Allows a service representative to restore the page count after a new DC controller PCA has been installed.
REFURBISH CYCLE COUNT		Allows a service representative to set the page count when the product is refurbished.
MAINTENANCE COUNT		Allows a service representative to reset the count to a given number if maintenance items were replaced at a different page count than the normal maintenance interval.
MAINTENANCE INTERVAL		Allows a service representative to set the maintenance interval to a different count. This is generally used if the product is in a difficult environment that would require maintenance items to be replaced more frequently to maintain proper product operation and print quality.
SERIAL NUMBER		Allows a service representative to restore the serial number after a new formatter PCA has been installed.
SERVICE ID		Allows the date of the product's first activity to be shown from the control panel.
COLD RESET PAPER	LETTER A4	Allows a service representative to set the default paper size after a cold reset

3 Paper and print media

- [Supported paper and print media sizes](#)
- [Supported paper and print media types](#)
- [Tray and bin capacity](#)
- [Special paper or print media guidelines](#)
- [Load trays](#)
- [Configure trays](#)
- [Use paper output options](#)

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 and the optional 500-sheet trays	Optional 1,500-sheet tray	Optional envelope feeder	Optional duplexer	Stacker and Stapler/Stacker	Optional 5-bin mailbox
Letter 216 x 279 mm (8.5 x 11 inches)	✓	✓	✓	✓	✓	✓	✓
A4 210 x 297 mm (8.27 x 11.69 inches)	✓	✓	✓	✓	✓	✓	✓
Legal 216 x 356 mm (8.5 x 14 inches)	✓	✓	✓	✓	✓	✓	✓
Executive 184 x 267 mm (7.24 x 10.51 inches)	✓	✓	✓		✓	✓	✓
A5 148 x 210 mm (5.83 x 8.27 inches)	✓	✓	✓		✓	✓	✓
8.5 x 13 216 x 330 mm (8.5 x 13 inches)	✓	✓	✓			✓	✓
B5 (JIS) 182 x 257 mm (7.17 x 10.12 inches)	✓	✓	✓		✓	✓	✓
Executive (JIS) 216 x 330 mm (8.5 x 13 inches)	✓	✓	✓		✓	✓	✓
Double Postcard (JIS) 148 x 200 mm (5.8 x 7.9 inches)	✓						
Statement 140 x 216 mm (5.5 x 8.5 inches)	✓	✓				✓	✓
16K 197 x 273 mm (7.8 x 10.8 inches)	✓	✓			✓	✓	✓
Custom 76 x 127 mm to 216 x 356 mm	✓						

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

Size and dimensions	Tray 1	Tray 2 and the optional 500-sheet trays	Optional 1,500-sheet tray	Optional envelope feeder	Optional duplexer	Stacker and Stapler/Stacker	Optional 5-bin mailbox
(3.0 x 5.0 inches to 8.5 x 14 inches)							
Custom	✓	✓			✓	✓	✓
148 x 210 mm to 216 x 356 mm							
(5.83 x 8.27 inches to 8.5 x 14 inches)							
Envelope Commercial #10	✓			✓			
105 x 241 mm (4.13 x 9.49 inches)							
Envelope DL ISO	✓			✓			
110 x 220 mm (4.33 x 8.66 inches)							
Envelope C5 ISO	✓			✓			
162 x 229 mm (6.93 x 9.84 inches)							
Envelope B5 ISO	✓			✓			
176 x 250 mm (6.7 x 9.8 inches)							
Envelope Monarch #7-3/4	✓			✓			
98 x 191 mm (3.9 x 7.5 inches)							

¹ Custom sizes cannot be stapled, but they can be stacked in the output bins.

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/hpljp4010series or www.hp.com/support/hpljp4510series.

Supported paper types for input options

Paper type (control panel)	Paper type (printer driver)	Tray 1	Tray 2	Optional 500-sheet trays	Optional 1,500-sheet tray	Optional envelope feeder
ANY TYPE	Unspecified	✓	✓	✓	✓	✓
PLAIN	Plain	✓	✓	✓	✓	
LIGHT 60-75 G/M2	Light 60-75g	✓	✓	✓	✓	
CARDSTOCK>163 G/M2	Cardstock 176-220g	✓	✓	✓		
TRANSPARENCY	Monochrome Laser Transparency	✓	✓	✓		
LABELS	Labels	✓	✓	✓		
LETTERHEAD	Letterhead	✓	✓	✓	✓	
PREPRINTED	Preprinted	✓	✓	✓	✓	
PREPUNCHED	Prepunched	✓	✓	✓	✓	
COLOR	Colored	✓	✓	✓	✓	
ROUGH	Rough	✓	✓	✓	✓	
BOND	Bond	✓	✓	✓	✓	
RECYCLED	Recycled	✓	✓	✓	✓	
ENVELOPE	Envelope	✓				✓

Supported paper types for output options

Paper type (control panel)	Paper type (printer driver)	Standard top bin (face-down)	Rear bin (face-up)	Optional duplexer	Optional stacker or stapler/stacker	Optional 5-bin mailbox
ANY TYPE	Unspecified	✓	✓	✓	✓	✓
PLAIN	Plain	✓	✓	✓	✓	✓
LIGHT 60-75 G/M2	Light 60-75g	✓	✓	✓	✓	✓
CARDSTOCK>163 G/M2	Cardstock 176-220g	✓	✓			
TRANSPARENCY	Monochrome Laser Transparency	✓	✓			
LABELS	Labels	✓	✓			
LETTERHEAD	Letterhead	✓	✓	✓	✓	✓
PREPRINTED	Preprinted	✓	✓	✓	✓	✓
PREPUNCHED	Prepunched	✓	✓	✓	✓	✓
COLOR	Colored	✓	✓	✓	✓	✓
ROUGH	Rough	✓	✓	✓	✓	✓
BOND	Bond	✓	✓	✓	✓	✓
RECYCLED	Recycled	✓	✓	✓	✓	✓
ENVELOPE	Envelope	✓	✓			

Tray and bin capacity

Tray or bin	Paper type	Specifications	Quantity
Tray 1	Paper and cardstock	Range: 60 g/m ² (16 lb) bond to 200 g/m ² (54 lb) bond	Maximum stack height: 10 mm (0.6 inch) Equivalent to 100 sheets of 75 g/m ² (20 lb) bond
	Envelopes	Less than 60 g/m ² (16 lb) bond to 90 g/m ² (24 lb) bond	Up to 10 envelopes
	Labels	Maximum 0.23 mm (0.009 inch) thick	Maximum stack height: 10 mm (0.6 inch)
	Transparencies	Minimum 0.13 mm (0.005 inch) thick	Maximum stack height: 10 mm (0.6 inch)
Tray 2 and the optional 500-sheet trays	Paper and cardstock	Range: 60 g/m ² (16 lb) bond to 135 g/m ² (36 lb) bond	Equivalent to 500 sheets of 75 g/m ² (20 lb) bond
	Labels	Maximum 0.13 mm (0.005 inch) thick	Maximum stack height: 54 mm (2.1 inch)
	Transparencies	Minimum 0.13 mm (0.005 inch) thick	Maximum stack height: 54 mm (2.1 inch)
Optional 1,500-sheet tray	Paper	Range: 60 g/m ² (16 lb) bond to 135 g/m ² (36 lb) bond	Equivalent to 1,500 sheets of 75 g/m ² (20 lb) bond
Optional envelope feeder	Envelopes	Less than 60 g/m ² (16 lb) bond to 90 g/m ² (24 lb) bond	Up to 75 envelopes
Standard top bin	Paper		Up to 500 sheets of 75 g/m ² (20 lb) bond
Rear bin	Paper		Up to 100 sheets of 75 g/m ² (20 lb) bond
Optional duplexer	Paper	Range: 60 g/m ² (16 lb) bond to 120 g/m ² (32 lb) bond	
Optional stacker	Paper		Up to 500 sheets of 75 g/m ² (20 lb) bond
Optional stapler/stacker	Paper		Stapling: Up to 20 print jobs of up to 15 pages each
			Stacking: Up to 500 sheets of 75 g/m ² (20 lb) bond
Optional 5-bin mailbox	Paper		Up to 500 sheets of 75 g/m ² (20 lb) bond

Special paper or print media guidelines

This product supports printing on special media. Use the following guidelines to obtain satisfactory results. When using special paper or print media, be sure to set the type and size in your print driver to obtain the best print results.

- △ **CAUTION:** HP LaserJet printers use fusers to bond dry toner particles to the paper in very precise dots. HP laser paper is designed to withstand this extreme heat. Using inkjet paper not designed for this technology could damage your printer.

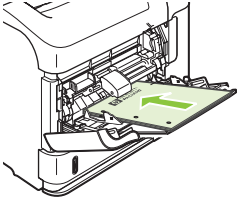
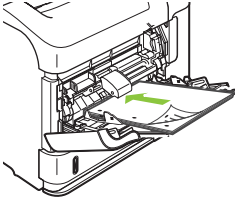
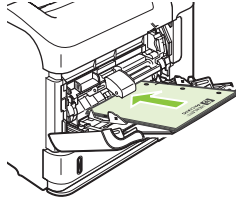
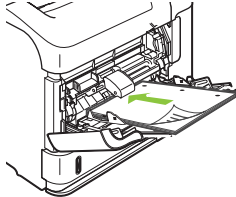
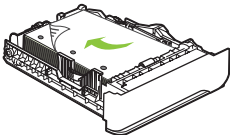
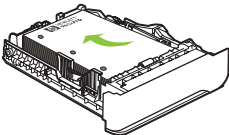
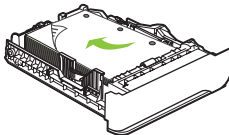
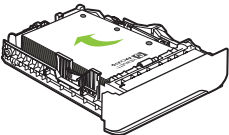
Media type	Do	Do not
Envelopes	<ul style="list-style-type: none">• Store envelopes flat.• Use envelopes where the seam extends all the way to the corner of the envelope.• Use peel-off adhesive strips that are approved for use in laser printers.	<ul style="list-style-type: none">• Do not use envelopes that are wrinkled, nicked, stuck together, or otherwise damaged.• Do not use envelopes that have clasps, snaps, windows, or coated linings.• Do not use self-stick adhesives or other synthetic materials.
Labels	<ul style="list-style-type: none">• Use only labels that have no exposed backing between them.• Use Labels that lie flat.• Use only full sheets of labels.	<ul style="list-style-type: none">• Do not use labels that have wrinkles or bubbles, or are damaged.• Do not print partial sheets of labels.
Transparencies	<ul style="list-style-type: none">• Use only transparencies that are approved for use in laser printers.• Place transparencies on a flat surface after removing them from the product.	<ul style="list-style-type: none">• Do not use transparent print media not approved for laser printers.
Letterhead or preprinted forms	<ul style="list-style-type: none">• Use only letterhead or forms approved for use in laser printers.	<ul style="list-style-type: none">• Do not use raised or metallic letterhead.
Heavy paper	<ul style="list-style-type: none">• Use only heavy paper that is approved for use in laser printers and meets the weight specifications for this product.	<ul style="list-style-type: none">• Do not use paper that is heavier than the recommended media specification for this product unless it is HP paper that has been approved for use in this product.
Glossy or coated paper	<ul style="list-style-type: none">• Use only glossy or coated paper that is approved for use in laser printers.	<ul style="list-style-type: none">• Do not use glossy or coated paper designed for use in inkjet products.

Load trays

Paper orientation for loading trays

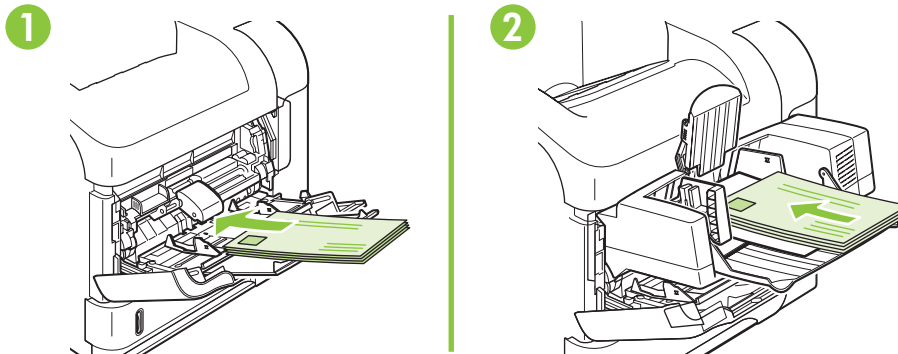
Load letterhead, preprinted, or prepunched paper

If a duplexer is installed, or if a stapler/stacker is installed, the product alters the way the images for each page are arranged. If you are using paper that requires a specific orientation, load it according to the information in the following table.


Tray	Single-sided printing, no stapler/stacker	Duplex printing, no stapler/stacker	Single-sided printing with the stapler/stacker	Duplex printing with the stapler/stacker
Tray 1	Face-up Top edge leading into the product 	Face-down Bottom edge leading into the product 	Face-up Bottom edge leading into the product 	Face-down Top edge leading into the product 
All other trays	Face-down Top edge at the front of the tray 	Face-up Bottom edge at the front of the tray 	Face-down Bottom edge at the front of the tray 	Face-up Top edge at the front of the tray 


Load envelopes

Load envelopes into Tray 1 or the optional envelope feeder with the front of the envelope facing up, and the short, postage-edge leading into the product.

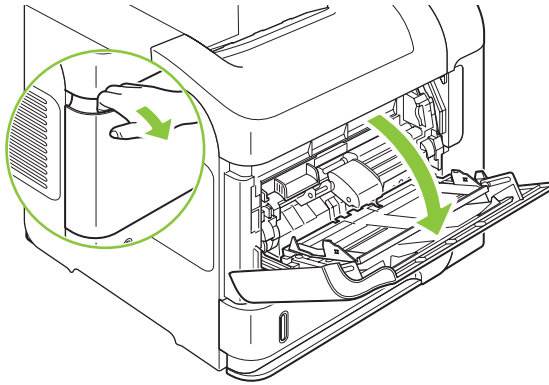


Load Tray 1

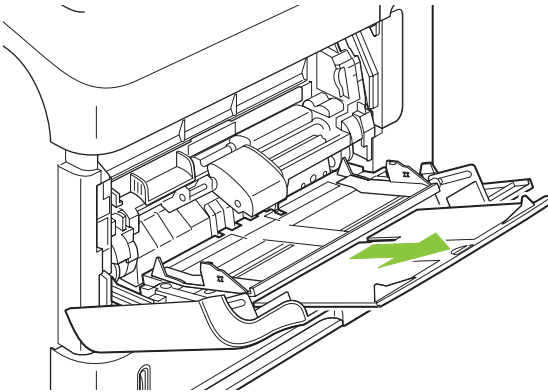
 **NOTE:** The product might print at a slower speed when using Tray 1.

 **CAUTION:** To avoid jams, do not load trays while the product is printing. Do not fan the paper. Fanning can cause misfeeds.


1. Open Tray 1.

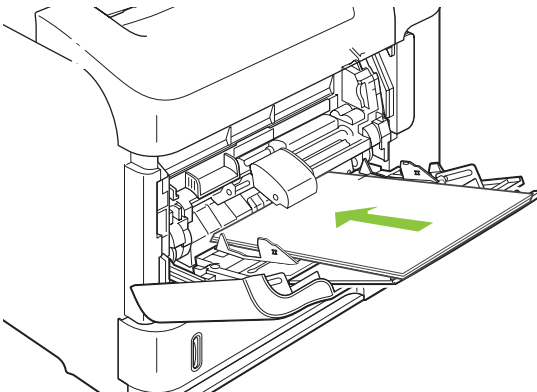


2. Pull out the tray extension.

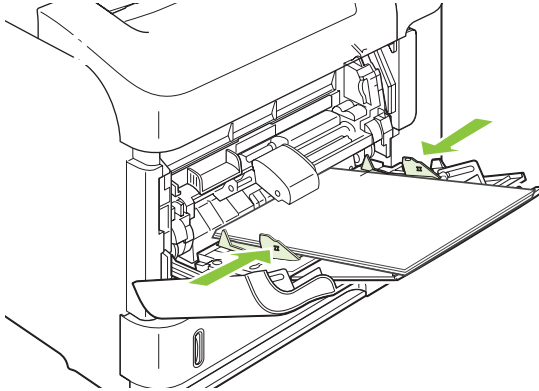


3. Load the paper into the tray. Make sure that the paper fits under the tabs and below the maximum-height indicators.

 **NOTE:** For information about loading paper that requires a specific orientation, see [Paper orientation for loading trays on page 54](#).



4. Adjust the side guides so that they lightly touch the paper stack but do not bend the paper.

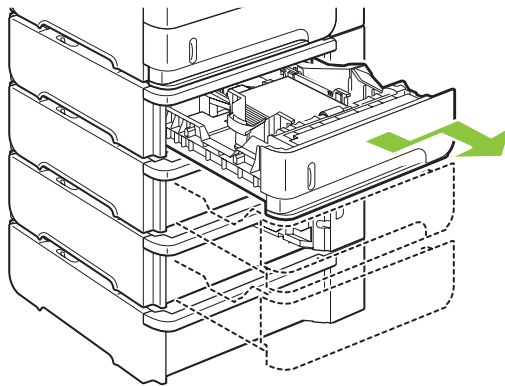


Load Tray 2 or an optional 500-sheet tray

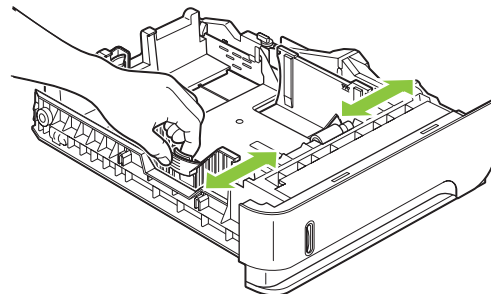
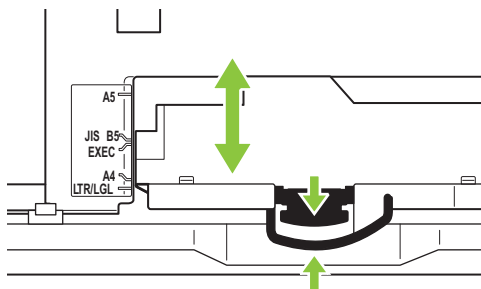
△ **CAUTION:** To avoid jams, do not load trays while the product is printing.

CAUTION: Do not fan the paper. Fanning can cause misfeeds.

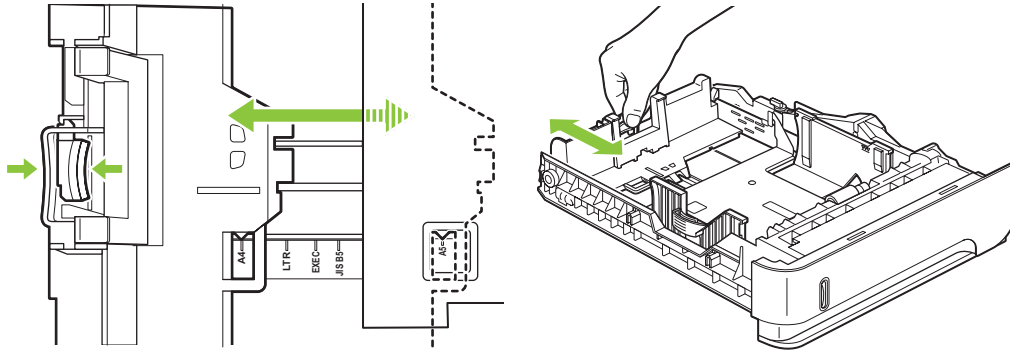
1. Pull the tray out and lift up slightly to remove it from the product.



2. Pinch the release that is located on the left guide and slide the side guides to the correct paper size.



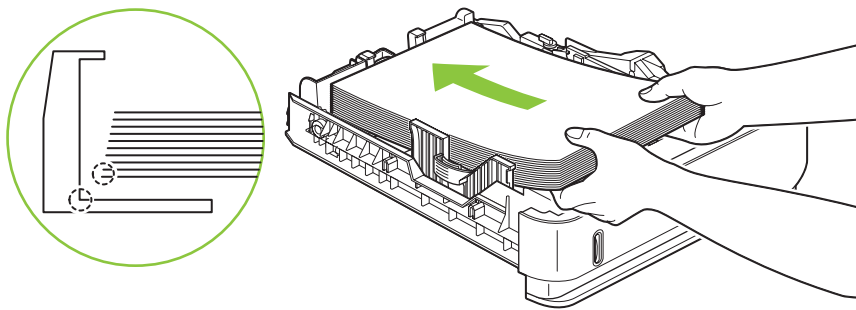
3. Pinch the release that is located on the rear paper guide and slide it to the correct paper size.



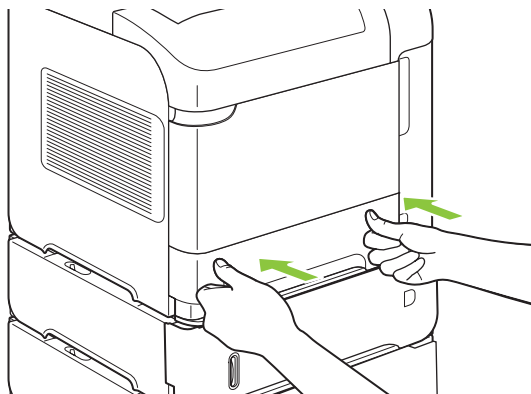
4. Load the paper into the tray. Make sure that the stack is flat at all four corners and that the top of the stack is below the maximum-height indicators.



NOTE: For information about loading paper that requires a specific orientation, see [Paper orientation for loading trays on page 54](#).



5. Slide the tray completely into the product.



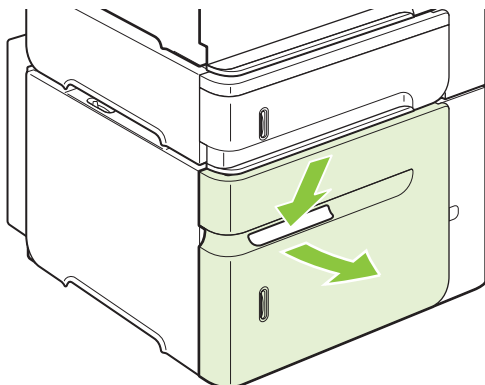
Load an optional 1,500-sheet tray

The optional 1,500 sheet tray adjusts for Letter, A4, and Legal sizes. The product automatically senses which size is loaded if the tray guides are correctly adjusted.

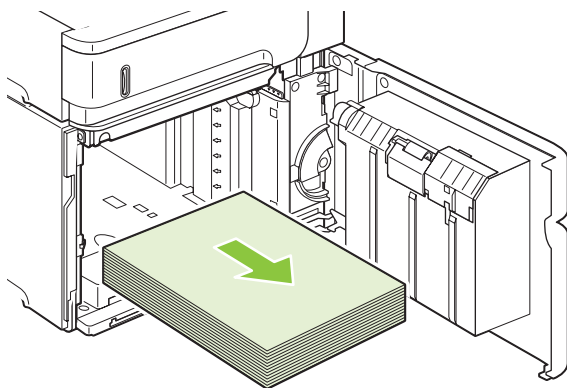
△ **CAUTION:** To avoid jams, do not load trays while the product is printing.

CAUTION: Do not fan the paper. Fanning can cause misfeeds.

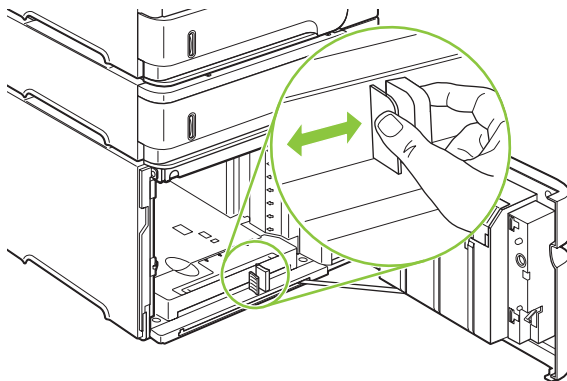
1. Press the release and open the door of the 1,500-sheet tray.




2. If paper is in the tray, remove it. When paper is in the tray, the guides cannot be adjusted.

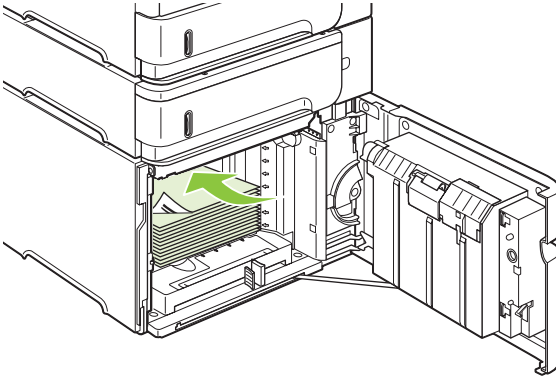


3. Pinch the guides at the front of the tray and slide them to the correct paper size.

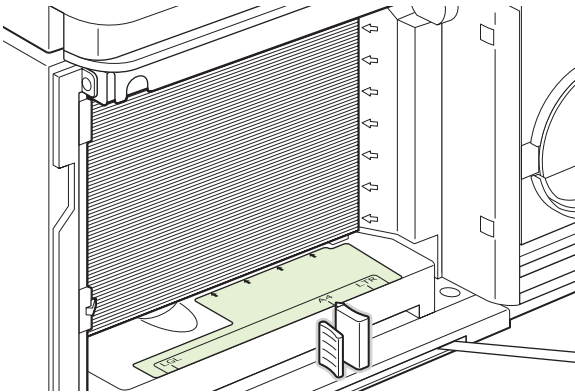


4. Load the paper into the tray. Load complete reams at one time. Do not divide reams into smaller sections.

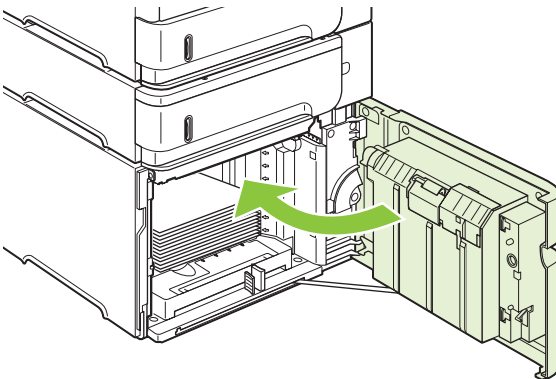
 **NOTE:** For information about loading paper that requires a specific orientation, see [Paper orientation for loading trays on page 54](#).



5. Make sure that the height of the stack does not exceed the maximum-height indicators on the guides and that the front edge of the stack is aligned with the arrows.



6. Close the door on the tray.



Configure trays

The product automatically prompts you to configure a tray for type and size in the following situations:

- When you load paper into the tray
- When you specify a particular tray or paper type for a print job through the printer driver or a software program and the tray is not configured to match the print-job's settings



NOTE: The prompt does not appear if you are printing from Tray 1 and Tray 1 is configured for **ANY SIZE** and **ANY TYPE**.


NOTE: If you have used other HP LaserJet product models, you might be accustomed to configuring Tray 1 to **First** mode or **Cassette** mode. On this product, setting Tray 1 size to **ANY SIZE** is equivalent to **First** mode. Setting Tray 1 size to a setting other than **ANY SIZE** is equivalent to **Cassette** mode.

Configure a tray when loading paper

1. Load paper in the tray. Close the tray if you are using a tray other than Tray 1.
2. The tray configuration message appears.
3. Press **OK** to accept the detected size.

-or-

Press the back arrow  to choose a different configuration, and continue with the following steps.

4. To modify the tray configuration, press the down arrow  to highlight the correct size, and then press **OK**.





NOTE: The product automatically detects most paper sizes in trays other than Tray 1.




5. Press the down arrow  to highlight the correct type, and then press **OK**.



Configure a tray to match print job settings

1. In the software program, specify the source tray, the paper size, and the paper type.
2. Send the job to the product.

If the tray needs to be configured, a prompt appears on the control-panel display.



3. If the displayed size is not correct, press the back arrow . Press the down arrow  to highlight the correct size, or highlight **CUSTOM**.

To specify a custom size, first press the down arrow  to highlight the correct unit of measure. Then set the X and Y dimensions by using the numeric keypad or by pressing the up arrow  or the down arrow .

4. If the displayed paper type is not correct, press the back arrow , and then press the down arrow  to highlight the paper type.

Configure a tray by using the Paper Handling menu

You can also configure the trays for type and size without a prompt from the product.

1. Press **Menu** .
2. Press the down arrow ▼ to highlight **PAPER HANDLING**, and then press **OK**.
3. Press the down arrow ▼ to highlight the size or type setting for the desired tray, and then press **OK**.
4. Press the down arrow ▼ to highlight the size or type. To specify a custom size, first press the down arrow ▼ to highlight the correct unit of measure. Then set the X and Y dimensions by using the numeric keypad or by pressing the up arrow ▲ or the down arrow ▼.
5. Press **OK** to save the settings.
6. Press **Menu** .

Select the paper by source, type, or size

In the Microsoft Windows operating system, three settings affect how the printer driver tries to pull paper when you send a print job. *Source*, *Type*, and *Size* settings appear in the **Page Setup**, **Print**, or **Print Properties** dialog boxes in most software programs. Unless you change these settings, the product automatically selects a tray using the default settings.

Source

To print by *source* select a specific tray for the product to pull from. If you select a tray that is configured for a type or size that does not match your print job, the product prompts you to load the tray with the type or size of paper for your job before printing it. When you load the tray, the product begins printing.

Type and size

Printing by *type* or *size* means that you want the product to pull from the tray that is loaded with the correct type and size of paper. Selecting paper by type rather than source is similar to locking out trays and helps protect special paper from accidental use. For example, if a tray is configured for letterhead and you select plain paper, the product will not pull the letterhead from that tray. Instead, it will pull from a tray that is loaded with plain paper and is configured for plain paper on the product control panel.

Selecting paper by type and size results in significantly better print quality for most paper types. Using the wrong setting might result in unsatisfactory print quality. Always print by type for special print media, such as labels or transparencies. Print by size for envelopes, if possible.

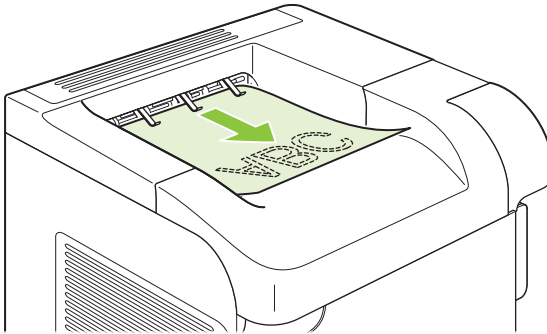
- To print by type or size, select the type or size from the **Page Setup** dialog box, the **Print** dialog box, or the **Print Properties** dialog box, depending on the software program.
- If you often print on a certain type or size of paper, configure a tray for that type or size. Then, when you select that type or size as you print a job, the product automatically pulls paper from the tray that is configured for that type or size.

Use paper output options

The product has four output locations: the top (standard) output bin, the rear output bin, the optional stacker or stapler/stacker, and the optional 5-bin mailbox.

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 bin is closed. To avoid jams, do not open or close the rear output bin while the product is printing.



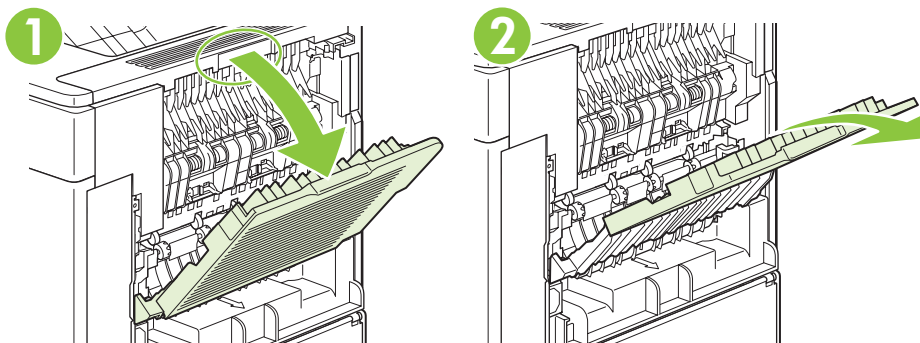
Print to the rear output bin

The product always prints to the rear output bin if it is open. Paper that is printed to this bin will exit face-up, with the last page on top (reverse order).

Printing from Tray 1 to the rear output bin provides the straightest path. Opening the rear output bin might improve performance with the following items:

- Envelopes
- Labels
- Small custom-size paper
- Postcards
- Paper heavier than 120 g/m² (32 lb)

To open the rear output bin, grasp the handle at the top of the bin. Pull the bin down, and slide out the extension.



Opening the rear output bin makes the duplexer (if installed) and the top output bin unavailable. To avoid jams, do not open or close the rear output bin while the product is printing.

Print to the optional stacker or stapler/stacker

The optional stacker or optional stapler/stacker can hold up to 500 sheets of paper (20-lb paper). The stacker accepts standard and custom paper sizes. The stapler/stacker accepts standard and custom paper sizes, but only Letter, Legal, and A4 sizes can be stapled. Do not try to send other types of print media, such as labels or envelopes.


When a stapler/stacker is installed, the product automatically rotates the printed images 180° on all paper sizes, regardless of whether the job is stapled. Paper types that must be printed in the correct orientation, such as letterhead or prepunched paper, need to be loaded in a different direction. See [Paper orientation for loading trays on page 54](#).

To print to the optional stacker or optional stapler/stacker, select the option in the program, in the printer driver, or at the printer control panel.

Before you use the optional stacker or optional stapler/stacker, ensure that the printer driver is set to recognize it. You need to set this setting only once. See the printer driver online Help for details.

Print to the 5-bin mailbox

The optional 5-bin mailbox provides five output bins that can be configured from the control panel to sort print jobs in a variety of ways.

1. Press **Menu** .
2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press **OK**.
3. Press the down arrow ▼ to highlight **MBM-5 CONFIGURATION**, and then press **OK**.
4. Press **OK** to select **OPERATION MODE**.
5. Press the down arrow ▼ to highlight how the 5-bin mailbox sorts jobs:

MAILBOX	Each bin is assigned to a user or group of users. This is the default setting.
STACKER	The product uses all of the bins to stack copies of a job. Jobs are sent to the bottom bin first, and then to the next highest bin, and so forth. When all bins are full, the product stops.
JOB SEPARATOR	Each print job is sent to a different bin. Jobs are sent to an empty bin, starting with the top bin and continuing to the bottom bin.
COLLATOR	The product sorts copies of a single print job into separate bins.

6. Press **OK** to select the option.

4 Manage and maintain the product


- [Print the information and show-me-how pages](#)
- [Use the HP Easy Printer Care software](#)
- [Use the embedded Web server](#)
- [Use HP Web Jetadmin software](#)
- [Use security features](#)
- [Manage supplies](#)

Print the information and show-me-how pages


From the product control panel, you can print information pages that give details about the product and its current configuration. You can also print several show-me-how pages that illustrate common procedures related to using the product.

Type of page	Name of page	Description
Information pages	PRINT MENU MAP	Prints the control-panel menu map that shows the layout and current settings for the control-panel menu items.
	PRINT CONFIGURATION	Prints the current product configuration. If an HP Jetdirect print server is installed, an HP Jetdirect configuration page also prints.
	PRINT SUPPLIES STATUS PAGE	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. This page is available only if you are using genuine HP supplies.
	PRINT 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.
	PRINT FILE DIRECTORY	Prints a file directory that shows information for all installed mass-storage devices. This item appears only if a mass-storage device that contains a recognized file system is installed in the product.
	PRINT PCL FONT LIST	Prints a PCL font list that shows all the PCL fonts that are currently available to the product.
	PRINT PS FONT LIST	Prints a PS font list that shows all the PS fonts that are currently available to the product.
Show-me-how pages	CLEAR JAMS	Prints a page that shows how to clear paper jams.
	LOAD TRAYS	Prints a page that shows how to load the input trays.
	LOAD SPECIAL MEDIA	Prints a page that shows how to load special paper, such as envelopes and letterhead.
	PRINT ON BOTH SIDES	Prints a page that shows how to use the two-sided (duplex) printing function.
	SUPPORTED PAPER	Prints a page that shows supported paper types and sizes for the product.
	PRINT HELP GUIDE	Prints a page that shows links to additional help on the Web.

Print the information pages

1. Press **Menu** .
2. Press the down arrow ▼ to highlight **INFORMATION**, and then press **OK**.
3. Press the down arrow ▼ to highlight the required page, and then press **OK** to print.

Print the show-me-how pages

1. Press **Menu** .
2. Make sure **SHOW ME HOW** is highlighted and then press **OK**.
3. Press the down arrow ▼ to highlight the required page, and then press **OK** to print.

Use the HP Easy Printer Care software

Open the HP Easy Printer Care software


Use one of the following methods to open the HP Easy Printer Care software:


- On the **Start** menu, select **Programs**, select **Hewlett-Packard**, select **HP Easy Printer Care**, and then click **Start HP Easy Printer Care**.
- In the Windows system tray (in the lower-right corner of the desktop), double-click the HP Easy Printer Care icon.
- Double-click the desktop icon.

HP Easy Printer Care software sections

HP Easy Printer Care software can provide information about multiple HP products that are on your network as well as any products that are directly connected to your computer. Some of the items that are in the following table might not be available for every product.

The Help button (?) in the upper-right corner of each page provides more detailed information about the options on that page.


Section	Options
Device List tab When you open the software, this is the first page that appears. NOTE: To return to this page from any tab, click My HP Printers in the left side of the window.	<ul style="list-style-type: none">● Devices list: Shows the products that you can select. NOTE: The product information appears either in list form or as icons, depending on the setting for the View as option. <ul style="list-style-type: none">● The information on this tab includes current alerts for the product.● If you click a product in the list, the HP Easy Printer Care opens the Overview tab for that product.
Compatible Printers	Provides a list of all the HP products that support HP Easy Printer Care software.
Find Other Printers window Add more products to the My HP Printers list	Click the Find Other Printers link in the Devices list to open the Find Other Printers window. The Find Other Printers window provides a utility that detects other network printers so that you can add them to the My HP Printers list and then monitor those products from your computer.
Overview tab Contains basic status information for the device	<ul style="list-style-type: none">● Device Status section: This section shows product-identification information and the product status. It indicates product-alert conditions, such as an empty print cartridge. After you correct a problem with the product, click the refresh button  in the upper-right corner of the window to update the status.● Supplies Status section: Shows detailed supplies status, such as the percentage of toner remaining in the print cartridge and the status of the paper that is loaded in each tray.● Supplies Details link: Opens the supplies status page to view more detailed information about product supplies, ordering information, and recycling information.

Section	Options
Support tab Provides links to support information	<ul style="list-style-type: none"> • Device Status section: This section shows product-identification information and the product status. It indicates product-alert conditions, such as an empty print cartridge. After you correct a problem with the product, click the refresh button  in the upper-right corner of the window to update the status. • Device Management section: Provides links to information about HP Easy Printer Care, to advanced product settings, and to product usage reports. • Troubleshooting and Help: Provides links to tools that you can use to resolve problems, to online product support information, and to online HP experts.
Settings tab Configure product settings, adjust print-quality settings, and find information about specific product features NOTE: This tab is not available for some products.	<ul style="list-style-type: none"> • About: Provides general information about this tab. • General: Provides information about the product, such as the model number, serial number, and the settings for date and time, if they are available. • Information Pages: Provides links to print the information pages that are available for the product. • Capabilities: Provides information about product features, such as duplexing, the available memory, and the available printing personalities. Click Change to adjust the settings. • Print Quality: Provides information about print-quality settings. Click Change to adjust the settings. • Trays / Paper: Provides information about the trays and how they are configured. Click Change to adjust the settings. • Restore Defaults: Provides a way to restore the product settings to the factory defaults. Click Restore to restore the settings to the defaults.
HP Proactive Support NOTE: This item is available from the Overview and Support tabs.	When enabled, HP Proactive Support routinely scans your printing system to identify potential problems. Click the more info link to configure how frequently the scans occur. This page also provides information about available updates for product software, firmware, and HP printer drivers. You can accept or decline each recommended update.
Supplies Ordering button Click the Supplies Ordering button on any tab to open the Supplies Ordering window, which provides access to online supplies ordering. NOTE: This item is available from the Overview and Support tabs.	<ul style="list-style-type: none"> • Ordering list: Shows the supplies that you can order for each product. To order a certain item, click the Order check box for that item in the supplies list. You can sort the list by product, or by the supplies that need to be ordered the soonest. The list contains supplies information for every product that is in the My HP Printers list. • Shop Online for Supplies button: Opens the HP SureSupply Web site in a new browser window. If you have checked the Order check box for any items, the information about those items can be transferred to the Web site, where you will receive information on options for purchasing your selected supplies. • Print Shopping List button: Prints the information for the supplies that have the Order check box selected.
Alert Settings link NOTE: This item is available from the Overview and Support tabs.	Click Alert Settings to open the Alert Settings window, in which you can configure alerts for each product. <ul style="list-style-type: none"> • Alerting is on or off: Activates or deactivates the alerts feature. • Printer Alerts: Select the option to receive alerts for critical errors only, or for any error. • Job Alerts: For products that support it, you can receive alerts for specific print jobs.
Color Access Control	Use this feature to permit or restrict color printing.

Section	Options
<p>NOTE: This item is available only for HP color products that support Color Access Control.</p> <p>NOTE: This item is available from the Overview and Support tabs.</p>	

Use the embedded Web server

Use the embedded Web server to view product and network status and to manage printing functions from your computer instead of from the product control panel. The following are examples of what you can do using the embedded Web server:

 **NOTE:** When the product is directly connected to a computer, use the HP Easy Printer Care software to view the product status.


- View product control-panel status information
- Determine the remaining life on all supplies and order new ones
- View and change tray configurations
- View and change the product control-panel menu configuration
- View and print internal pages
- Receive notification of product and supplies events
- View and change network configuration
- View support content that is specific to the current state of the product

To use the embedded Web server, you must have Microsoft Internet Explorer 5.01 or later or Netscape 6.2 or later for Windows, Mac OS, or Linux (Netscape only). Netscape Navigator 4.7 is required for HP-UX 10 and HP-UX 11. The embedded Web server works when the product is connected to an IP-based network. The embedded Web server does not support IPX-based product connections. You do not have to have Internet access to open and use the embedded Web server.

When the product is connected to the network, the embedded Web server is automatically available.

Open the embedded Web server by using a network connection

- ▲ In a supported Web browser on your computer, type the product IP address or host name in the address/URL field. To find the IP address or host name, print a configuration page. See [Print the information and show-me-how pages on page 66](#).

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

Embedded Web server sections

Tab or section	Options
Information tab Provides product, status, and configuration information	<ul style="list-style-type: none"> • Device Status: Shows the product status and shows the life remaining of HP supplies, with 0% indicating that a supply is empty. The page also shows the type and size of print paper set for each tray. To change the default settings, click Change Settings. • Configuration Page: Shows the information found on the configuration page. • Supplies Status: Shows the life remaining of HP supplies, with 0 percent indicating that a supply is empty. This page also provides supplies part numbers. To order new supplies, click Shop for Supplies in the Other Links area on the left side of the window. • Event log: Shows a list of all product events and errors. • Usage page: Shows a summary of the number of pages the product has printed, grouped by size and type. • Diagnostics page: Shows information about the product that can be useful when resolving problems. An HP-authorized support person might ask for this information. • Device Information: Shows the product network name, address, and model information. To change these entries, click Device Information on the Settings tab. • Control Panel: Shows messages from the control panel, such as Ready or Sleep mode on. • Print: Allows you to send print jobs to the product.
Settings tab Provides the ability to configure the product from your computer NOTE: The Settings tab can be password-protected. If this product is on a network, always consult with the system administrator before changing settings on this tab.	<ul style="list-style-type: none"> • Configure Device: Allows you to configure product settings. This page contains the traditional menus found on the control-panel display. • E-mail Server: Network only. Used in conjunction with the Alerts page to set up e-mail alerts. • Alerts: Network only. Allows you to set up to receive e-mail alerts for various product and supplies events. • AutoSend: Allows you to configure the product to send automated e-mails regarding product configuration and supplies to specific e-mail addresses. • Security: Allows you to set a password that must be entered to gain access to the Settings and Networking tabs. Enable and disable certain features of the embedded Web server. • Edit Other Links: Allows you to add or customize a link to another Web site. This link is displayed in the Other Links area on all embedded Web server pages. • Device Information: Allows you to name the product and assign an asset number to it. Enter the name and e-mail address for the primary contact who will receive information about the product. • Language: Allows you to determine the language in which to display the embedded Web server information. • Date & Time: Allows time synchronization with a network time server. • Wake Time: Allows you to set or edit a wake time for the product.
Networking tab	Network administrators can use this tab to control network-related settings for the product when it is connected to an IP-based network. This tab does not appear if the product is directly connected to a computer, or if the product is connected to a network using anything other than an HP Jetdirect print server.

Tab or section	Options
Provides the ability to change network settings from your computer	<p>NOTE: The Networking tab can be password-protected.</p>
<p>Other links</p> <p>Contains links that connect you to the Internet</p>	<ul style="list-style-type: none"> ● HP Instant Support™: Connects you to the HP Web site to help you find solutions. This service analyzes the product error log and configuration information to provide diagnostic and support information specific to your product. ● Shop for Supplies: Connects to the HP SureSupply Web site, where you will receive information on options for purchasing original HP supplies, such as print cartridges and paper. ● Product Support: Connects to the support site for the product, from which you can search for help regarding general topics. ● Show Me How: Connects to information that demonstrates specific tasks for the product. <p>NOTE: 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.</p>

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 network administrators the ability to resolve issues before users are affected. Download this free, enhanced-management software at 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 PC 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. The site provides links to white papers and FAQ documents about security features.

IP Security

IP Security (IPsec) is a set of protocols that control IP-based network traffic to and from the product. IPsec provides host-to-host authentication, data integrity, and encryption of network communications.

For products that are connected to the network and have an HP Jetdirect print server, you can configure IPsec by using the **Networking** tab in the embedded Web server.

Secure the embedded Web server

You can configure the embedded Web server so that access to the **Settings** and **Networking** tabs requires a password.

1. Open the embedded Web server by entering the product IP address into the address line of a Web browser.
2. Select the **Settings** tab, and then select **Security** from the menu on the left side of the screen.
3. In the **Device Password** area, type the new password in the boxes labeled **New Password** and **Verify Password**. If you have already set up a password, type the old password in the **Old Password** box.
4. Click **Apply**.

Secure stored jobs

You can protect jobs that are stored on the product by assigning a PIN to them. Anyone who tries to print these protected jobs must first enter the PIN at the product control panel.

For more information, see the user guide.

Lock the control panel menus

You can lock various menus on the control panel by using the embedded Web server.

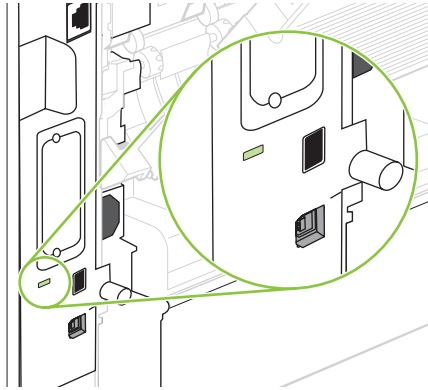
1. Open the embedded Web server by entering the product IP address into the address line of a Web browser.
2. Click **Settings**, and then click **Security**.
3. Click **Configure Security Settings**.
4. In the area for **Control Panel Access Lock**, select the level of security that you want.

Security level	Locked menus
Minimum	<ul style="list-style-type: none">• The RETRIEVE JOB menu requires a PIN for access.• The CONFIGURE DEVICE menu, SYSTEM SETUP submenu is locked.• The CONFIGURE DEVICE menu, I/O submenu is locked.• The CONFIGURE DEVICE menu, RESETS submenu is locked.
Moderate	<ul style="list-style-type: none">• The RETRIEVE JOB menu requires a PIN for access.• The CONFIGURE DEVICE menu is locked (all submenus).• The DIAGNOSTICS menu is locked.
Intermediate	<ul style="list-style-type: none">• The RETRIEVE JOB menu requires a PIN for access.• The PAPER HANDLING menu is locked.• The CONFIGURE DEVICE menu is locked (all submenus).• The DIAGNOSTICS menu is locked.
Maximum	<ul style="list-style-type: none">• The RETRIEVE JOB menu requires a PIN for access.• The INFORMATION menu is locked.• The PAPER HANDLING menu is locked.• The CONFIGURE DEVICE menu is locked (all submenus).• The DIAGNOSTICS menu is locked.

5. Click **Apply**.

Lock the formatter cage

The formatter cage, on the back of the product, has a slot that you can use to attach a security cable. Locking the formatter cage prevents someone from removing DIMMs and internal USB devices from the formatter.



Manage supplies

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

Supplies life

The average cartridge yield is 10,000 pages (for the CC364A cartridge) or 24,000 pages (for the CC364X cartridge), in accordance with ISO/IEC 19752. Actual cartridge yield depends on specific use.

- △ **CAUTION:** EconoMode is a feature that allows the product to use less toner per page. Selecting this option can extend the life of the toner supply and can reduce cost per page. However, it also 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 will outlast the mechanical parts in the print cartridge. If print quality begins to degrade under these circumstances, you will need to install a new print cartridge, even if toner remains in the cartridge.

Approximate print-cartridge replacement intervals

Print cartridge	Page count	Approximate time period ¹
Black (CC364A)	10,000 pages	5 months
Black (CC364X)	24,000 pages	12 months

¹ Approximate life is based on 2,000 pages per month.

To order supplies, see [Order replacement parts on page 340](#).

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. Because they are not HP products, HP cannot influence their design or control their quality.

-  **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 80](#). 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 79](#).

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 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.

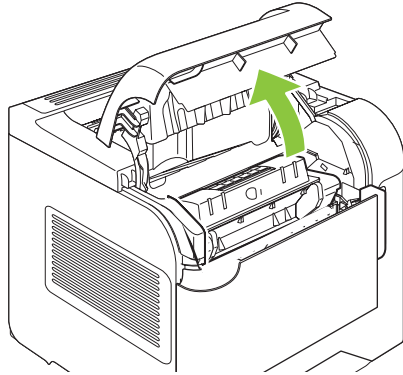
- Sufficient space is required above and in the front of the product for removing supplies.
- The product should be located on a flat, sturdy surface.

 **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.

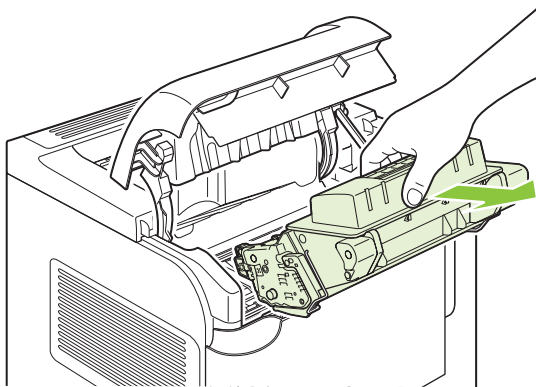
Change the print cartridge

When a print cartridge approaches the end of useful life, a message appears on the control panel recommending that you order a replacement. The product can continue to print using the current print cartridge until a message appears instructing you to replace the cartridge.

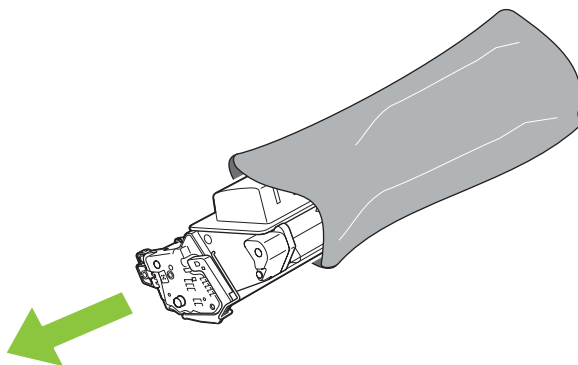
1. Open the top cover.



2. Remove the used print cartridge from the product.

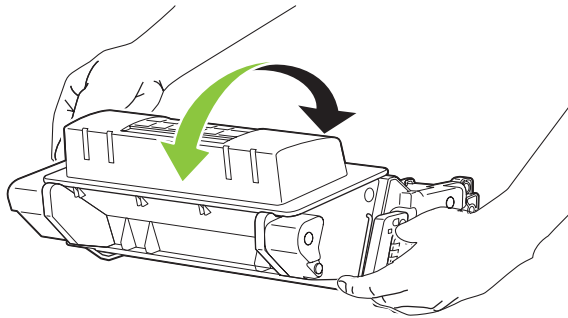


3. Remove the new print cartridge from the bag. Place the used print cartridge in the bag for recycling.

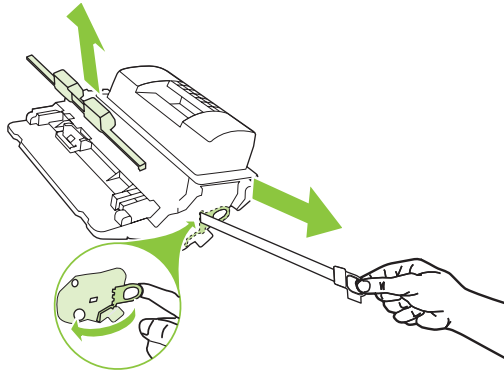


4. Grasp both sides of the print cartridge and distribute the toner by gently rocking the print cartridge.

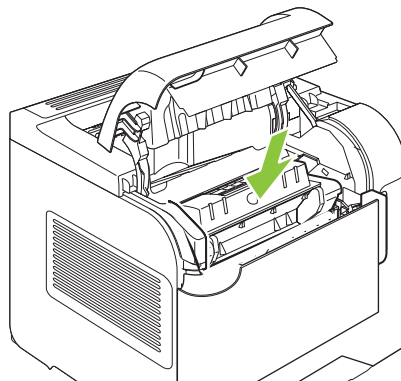
△ **CAUTION:** Do not touch the shutter or the surface of the roller.



5. Remove the shipping lock and the shipping tape from the new print cartridge. Discard the lock and tape according to local regulations.



6. Align the print cartridge with the tracks inside the product, insert the print cartridge until it is firmly seated, and then close the top cover.



After a short time, the control panel should display **Ready**.

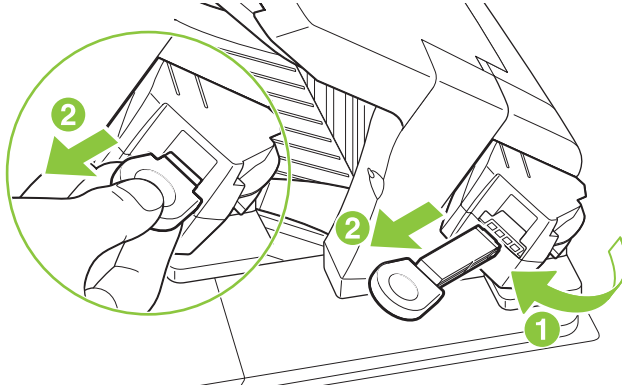
7. Installation is complete. Place the used print cartridge in the box in which the new cartridge arrived. See the enclosed recycling guide for recycling instructions.
8. If you are using a non-HP print cartridge, check the product control panel for further instructions.

For additional help, go to www.hp.com/support/hpljp4010series or www.hp.com/support/hpljp4510series.

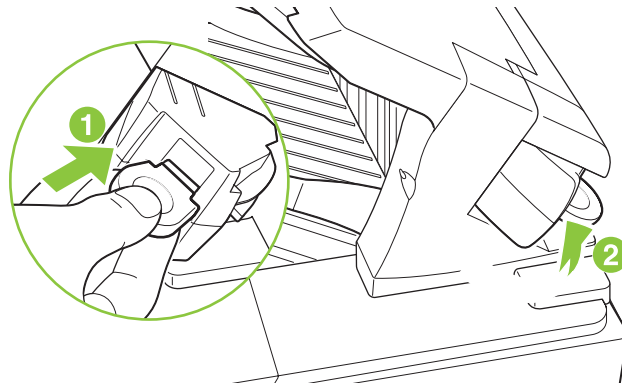
Load staples

Load staples if the product control-panel display prompts you with a message. If the stapler runs out of staples, jobs continue to print to the stapler/stacker, but they are not stapled.

1. On the right side of the stapler/stacker, turn the stapler unit toward the front of the product until the unit clicks into the open position. Grasp the blue staple-cartridge handle and pull the cartridge out of the stapler unit.



2. Insert the new staple cartridge into the stapler unit and rotate the stapler unit toward the rear of the product until the unit snaps into place.




Perform preventive maintenance

To ensure optimum performance from the product, replace certain parts when the **PERFORM PRINTER MAINTENANCE** message appears on the control-panel display.

The maintenance message appears after printing 225,000 pages. The message can be temporarily cleared for approximately 10,000 pages by using the **CLEAR MAINTENANCE MESSAGE** item on the **RESETS** submenu. To check the number of pages printed since new maintenance-kit components were installed, print either a configuration page or a supplies status page.

To order the complete preventative maintenance kit or an individual maintenance kit, see [Maintenance kits on page 342](#). The complete preventative maintenance kit includes the following items:

- Fuser
- Transfer roller
- Plastic tool for removing the old transfer roller
- Pair of gloves for handling the new transfer roller
- Eight feed rollers for the other trays
- Installation instructions

 **NOTE:** A maintenance kit is a consumable item and is not covered under the original product warranty or under most extended warranties. Installing a maintenance kit is the customer's responsibility.

The following individual maintenance kits are also available.

- Multipurpose tray kit
- Printer roller kit
- Transfer roller kit
- Fuser kit (110 V or 220 V)

After a maintenance kit is installed, the maintenance-kit counter must be reset.

Reset the maintenance-kit counter

1. Turn the product power off and then on.
2. When **XXX MB** appears on the control-panel display, press and hold down the **OK** button until all three control-panel lights flash once, and then stay on. This might take up to 10 seconds.
3. Release the **OK** button and press the up arrow **▲** to scroll to **NEW MAINTENANCE KIT**.
4. Press **OK** to reset the maintenance-kit counter.

 **NOTE:** Perform this procedure only after a maintenance kit has been installed. Do not use this procedure to temporarily clear the **PERFORM PRINTER MAINTENANCE** message.

Install memory, internal USB devices, and external print server cards

Overview

The formatter has the following open slots and ports for expanding the product's capabilities:

- One dual inline memory module (DIMM) slot for upgrading the product with more memory
- Two internal USB ports for adding fonts, languages, and other third-party solutions
- One external I/O (EIO) slot for adding an external print server, an external hard disk, or a parallel port

If the product already has an embedded HP Jetdirect print server installed, you can add an additional networking device in the EIO slot.

For information about specific components that are available and information about ordering them, see [Order replacement parts on page 340](#).

To find out how much memory is installed in the product or to find out what is installed in the USB ports or the EIO slot, print a configuration page.

Install memory

You might want to add more memory to the product if you often print complex graphics, print PostScript (PS) documents, or use many downloaded fonts. Added memory also gives you more flexibility in supporting job-storage features, such as quick copying.

This product supports printing PDF files when 128 MB of memory is installed. However, for the best performance, upgrade the memory to at least 192 MB.



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

Install product memory

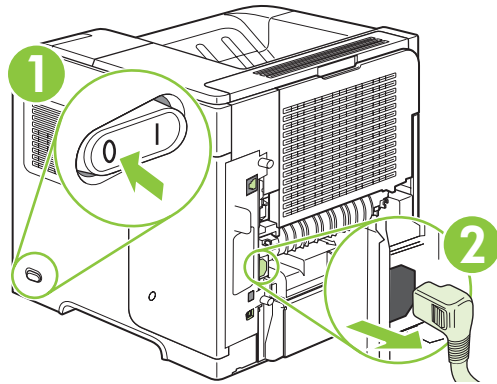
This product has one DIMM slot.



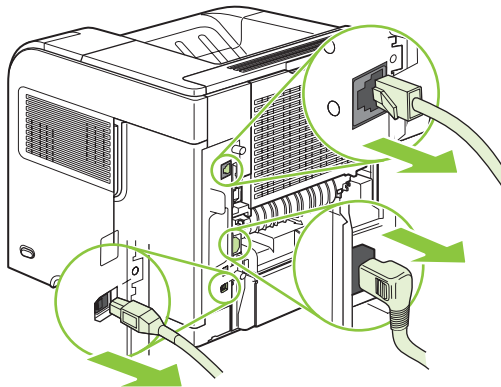
CAUTION: Static electricity can damage DIMMs. When handling DIMMs, either wear an antistatic wrist strap or frequently touch the surface of the DIMM antistatic package, then touch bare metal on the product.

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 and show-me-how pages on page 66](#).

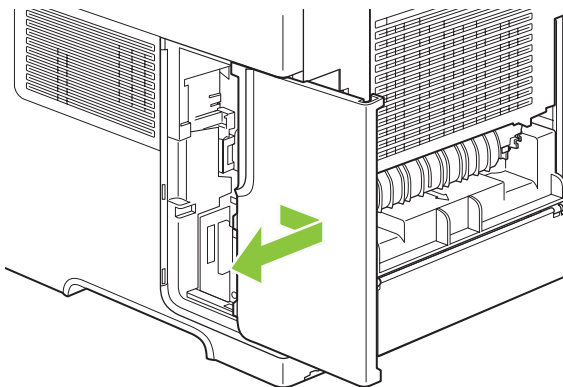
1. After the configuration page has printed, turn the product off and disconnect the power cord.



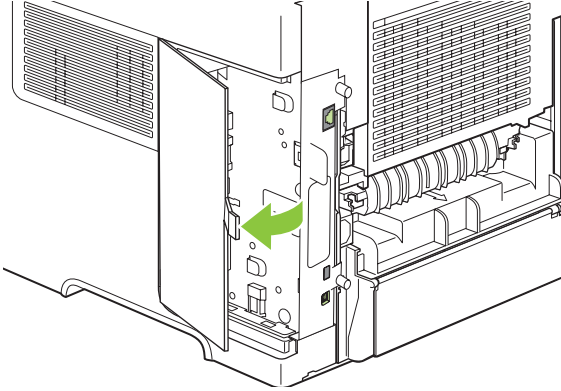
2. Disconnect all interface cables.



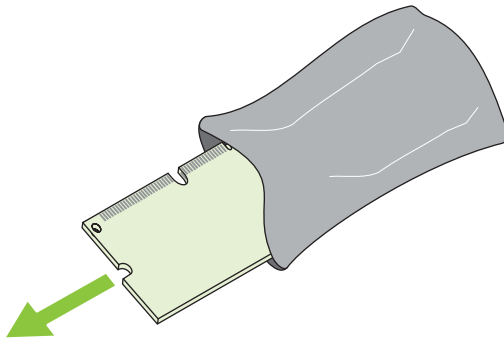
3. Remove the right-side panel by sliding it towards the rear of the product to unlatch it.



4. Open the access door by pulling on the metal tab.

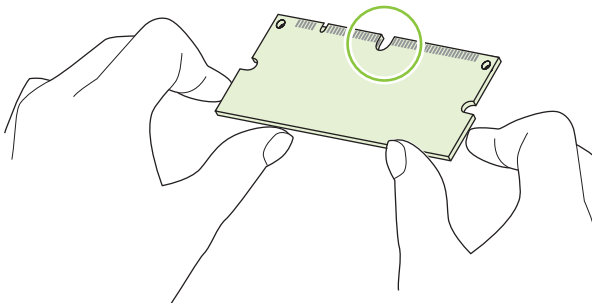


5. Remove the DIMM from the antistatic package.

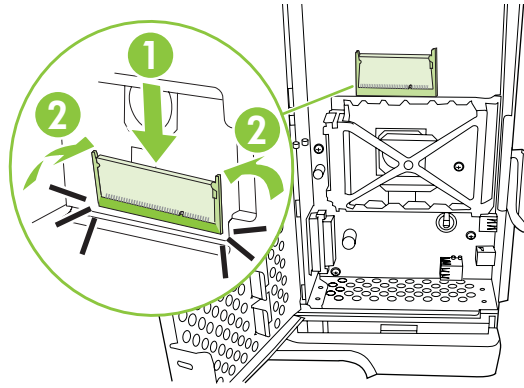


△ **CAUTION:** To reduce the possibility of damage caused by static electricity, always wear an electrostatic discharge (ESD) wrist strap or touch the surface of the antistatic package before handling DIMMs.

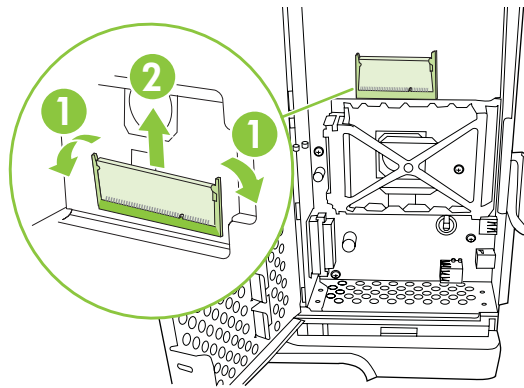
6. Hold the DIMM by the edges, and align the notches on the DIMM with the DIMM slot. (Check that the locks on each side of the DIMM slot are open.)



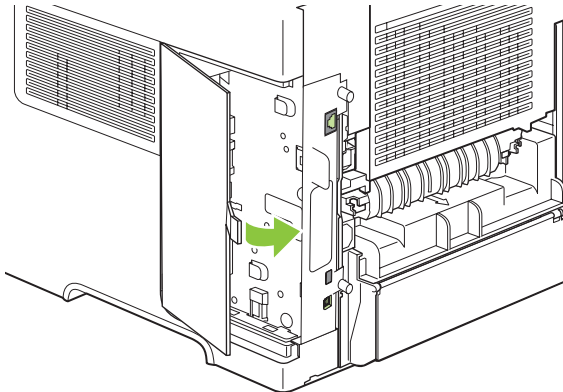
7. Press the DIMM straight into the slot, and press firmly. Make sure the locks on each side of the DIMM snap into place.



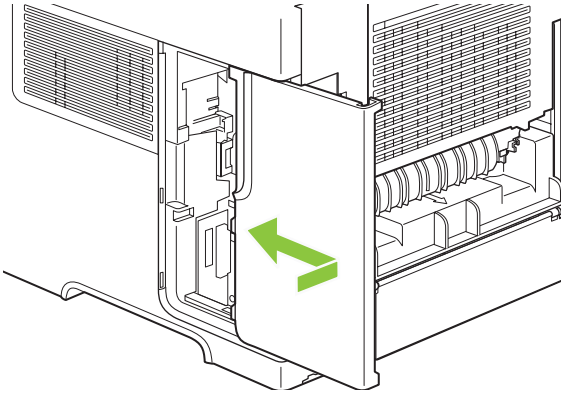
 **NOTE:** To remove a DIMM, first release the locks.



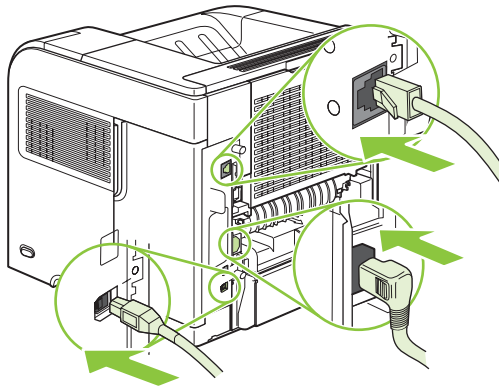
8. Close the access door, and press firmly until it snaps into place.



9. Reinstall the right-side panel. Align the tabs on the panel with the slots in the product, and push the panel toward the front of the product until it latches into place.



10. Reconnect the interface cables and the power cord.




11. 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 [Control-panel messages on page 280](#).
2. Print a configuration page (see [Print the information and show-me-how pages on page 66](#)).
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-

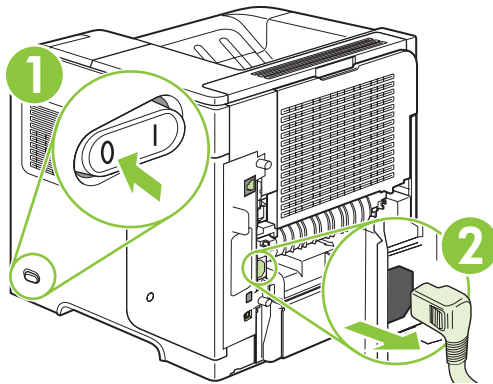
Windows Vista: Click **Start**, click **Control Panel**, and then in the category for **Hardware and Sound** click **Printer**.

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**.

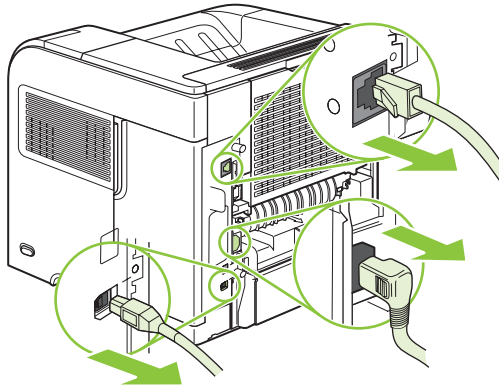
Install internal USB devices

The product has two internal USB ports.

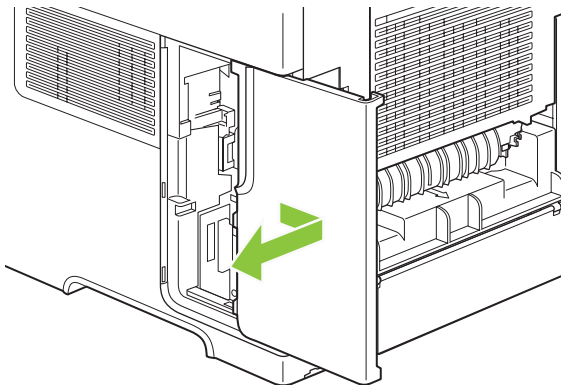
1. Turn the product off and disconnect the power cord.



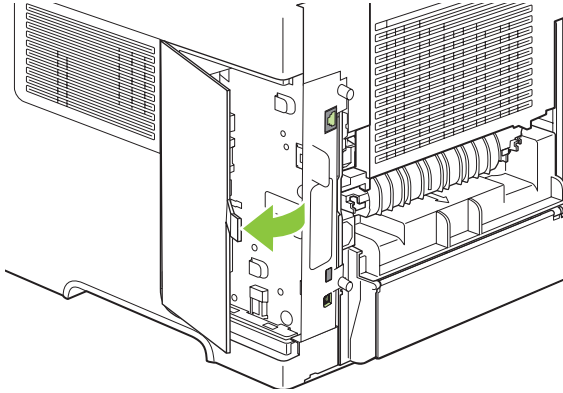
2. Disconnect all interface cables.



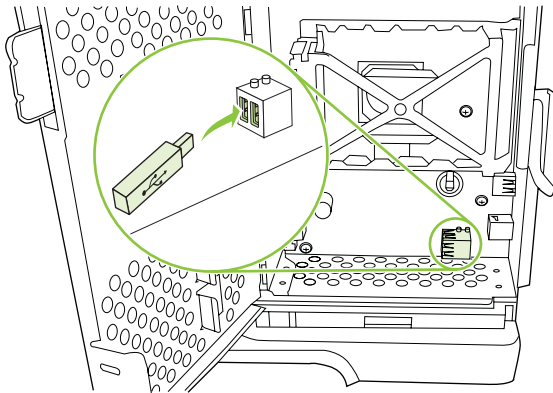
3. Remove the right-side panel by sliding it towards the rear of the product to unlatch it.



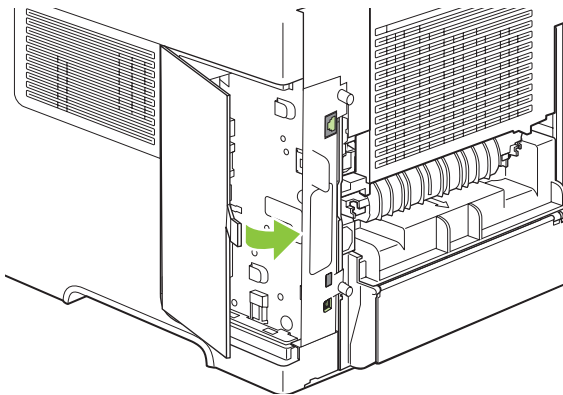
4. Open the access door by pulling on the metal tab.



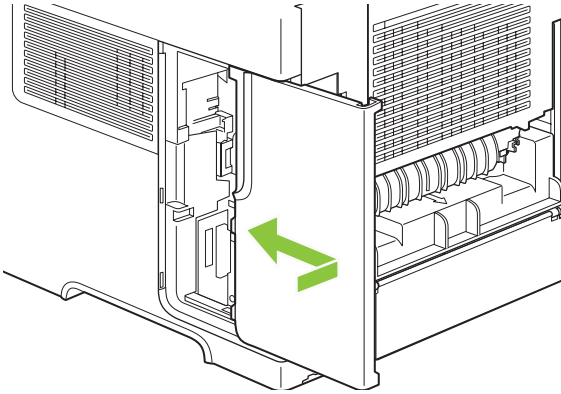
5. Locate the USB ports near the bottom of the formatter board. Insert the USB device into one of the ports.



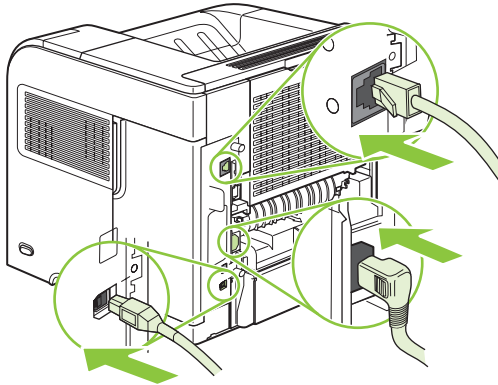
6. Close the access door, and press firmly until it snaps into place.



7. Reinstall the right-side panel. Align the tabs on the panel with the slots in the product, and push the panel toward the front of the product until it latches into place.



8. Reconnect the interface cables and the power cord.



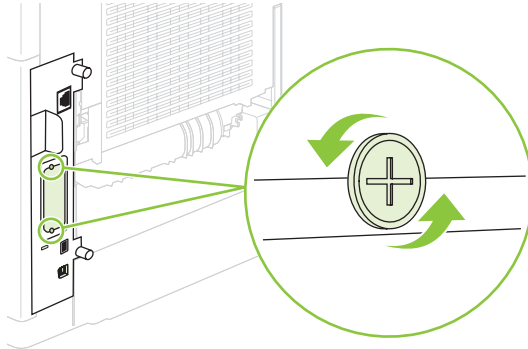
9. Turn the product on.


Install HP Jetdirect print server cards

Follow these procedures to install or remove an EIO card.

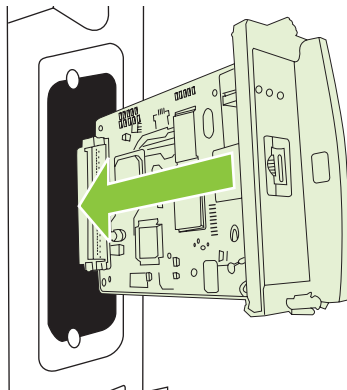
Install an HP Jetdirect print server card

1. Turn off the product.
2. Remove the two screws and cover plate from the EIO slot on the back of the product.

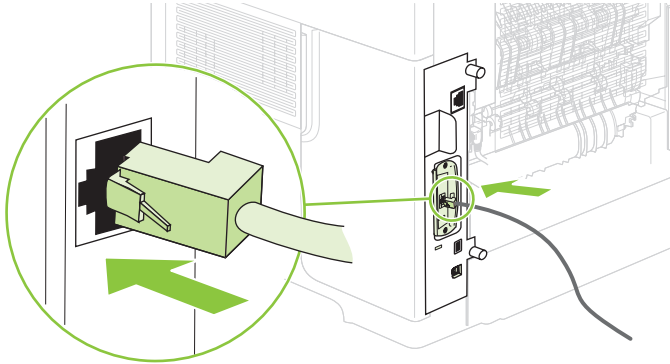


 **NOTE:** Do not discard the screws or the cover plate. Save them for future use if you remove the EIO card.


3. Install the EIO card in the EIO slot and tighten the screws.



4. Connect the network cable to the EIO card.



5. Turn on the product, and then print a configuration page to verify that the new EIO device is recognized. See [Print the information and show-me-how pages on page 66](#).

 **NOTE:** When you print a configuration page, an HP Jetdirect configuration page that contains network configuration and status information also prints.

Remove an HP Jetdirect print server card

1. Turn off the product.
2. Disconnect the network cable from the EIO card.
3. Loosen the two screws from the EIO card, and then remove the EIO card from the EIO slot.
4. Place the cover plate from the EIO slot onto the back of the product. Insert and tighten the two screws.
5. Turn on the product.


Clean the product

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.

Clean the exterior

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

Clean the paper path

1. Press **Menu** .
 2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press **OK**.
 3. Press the down arrow ▼ to highlight **PRINT QUALITY**, and then press **OK**.
-
4. Press the down arrow ▼ to highlight **CREATE CLEANING PAGE**, and then press **OK**.
 5. Remove all paper from Tray 1.
 6. Remove the cleaning page from the output bin, and load it face-down in Tray 1.




NOTE: If your product has an automatic duplexer, go to step 7.

-
7. At the product control panel, press the down arrow ▼ to highlight **PROCESS CLEANING PAGE**, and then press **OK**.

Clean the paper path automatically

You can set the product to clean the paper path automatically after the product has printed a certain number of pages. Products in dirtier environments can be cleaned more frequently by choosing one of the lower page count settings.

1. Press **Menu** .
 2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press **OK**.
 3. Press the down arrow ▼ to highlight **PRINT QUALITY**, and then press **OK**.
 4. Press the down arrow ▼ to highlight **AUTO CLEANING**, and then press **OK**.
 5. Press the down arrow ▼ to highlight **ON**, and then press **OK**.
 6. Press the down arrow ▼ to highlight **CLEANING INTERVAL**, and then press **OK**.
-
7. Press the down arrow ▼ to highlight the correct page count interval, and then press **OK**.




NOTE: If you are not in the menus, navigate to **PRINT QUALITY** by using the previous instructions.

Upgrade the firmware

This product has remote firmware update (RFU) capability. Use this information to upgrade the product firmware.

Determine the current firmware version

1. Press Menu .
2. Press the down arrow ▼ to highlight **INFORMATION**, and then press **OK**.
3. Press the down arrow ▼ to highlight **PRINT CONFIGURATION**, and then press **OK** to print.

The firmware datecode is listed on the Configuration page in the section called **Device Information**. The firmware datecode has this format: YYYYMMDD XX.XXX.X. The first string of numbers is the date, where YYYY represents the year, MM represents the month, and DD represents the date. For example, a firmware datecode of that begins with 20061125 represents November 25, 2006.

Download new firmware from the HP Web site


To find the most recent firmware upgrade for the product, go to www.hp.com/go/ljp4010series_software or www.hp.com/go/ljp4510series_software. This page provides instructions for downloading the new firmware version.

Transfer the new firmware to the product

 **NOTE:** The product can receive an .RFU file update when it is in a "ready" state.


The elapsed time for an update depends on the I/O transfer time, as well as the time that it takes for the product to re-initialize. The I/O transfer time depends on a number of things, including the speed of the host computer that is sending the update. If the remote firmware update process is interrupted before the firmware is downloaded (while **Receiving upgrade** appears on the control-panel display), the firmware file must be sent again. If power is lost during the flash DIMM update (while the **Performing upgrade** message appears on the control-panel display), the update is interrupted and the message **Resend upgrade** appears (in English only) on the control-panel display. In this case, you must send the upgrade by using the parallel port. Finally, any jobs that are ahead of the RFU job in the queue are completed before the update is processed.

Use FTP to upload the firmware through a browser


 **NOTE:** The firmware update involves a change in the format of nonvolatile random-access memory (NVRAM). Any menu settings that are changed from the default settings might return to default settings and must be changed again if you want settings that are different from the defaults.

1. Make sure the Internet browser you are using is configured for viewing folders from FTP sites. These instructions are for Microsoft Internet Explorer.
 - a. Open the browser and click **Tools**, and then click **Internet Options**.
 - b. Click the **Advanced** tab.
 - c. Select the box labeled **Enable folder view for FTP sites**.
 - d. Click **OK**.
2. Print a configuration page and note the TCP/IP address shown on the EIO Jetdirect page.


3. Open a browser window.
4. In the address line of the browser, type `ftp://<ADDRESS>`, where <ADDRESS> is the address of the product. For example, if the TCP/IP address is 192.168.0.90, type `ftp://192.168.0.90`.
5. Locate the downloaded .RFU file for the product.
6. Drag and drop the .RFU file onto the **PORT1** icon in the browser window.

 **NOTE:** The product turns off and then on automatically to activate the update. When the update process is complete, a **Ready** message displays on the product control panel.


Use FTP to upgrade the firmware on a network connection

 **NOTE:** The firmware update involves a change in the format of nonvolatile random-access memory (NVRAM). Any menu settings that are changed from the default settings might return to default settings and must be changed again if you want settings that are different from the defaults.

1. Take note of the IP address on the HP Jetdirect page. The HP Jetdirect page is the second page that prints when you print the configuration page.

 **NOTE:** Before upgrading the firmware, make sure that the product is not in Sleep mode. Also make sure that any error messages are cleared from the control-panel display.

2. Open an MS-DOS command prompt on your computer.
3. Type: `ftp TCP/IP ADDRESS>`. For example, if the TCP/IP address is 192.168.0.90, type `ftp 192.168.0.90`.
4. Go to the folder where the firmware file is stored.
5. Press **Enter** on the keyboard.
6. When prompted for the user name, press **Enter**.
7. When prompted for the password, press **Enter**.
8. Type `bin` at the command prompt.
9. Press **Enter**. The message **200 Types set to I, Using binary mode to transfer files** appears in the command window.
10. Type `put` and then the file name. For example, if the file name is LJP4015.RFU, type `put LJP4015.RFU`.
11. The download process begins and the firmware is updated on the product. This can take approximately five minutes. Let the process finish without further interaction with the product or computer.

 **NOTE:** The product automatically turns off and then on again after processing the upgrade.

12. At the command prompt, type: `bye` to exit the ftp command.
13. At the command prompt, type: `exit` to return to the Windows interface.

Use HP Web Jetadmin to upgrade the firmware

This procedure requires that you install HP Web Jetadmin Version 7.0 or later on your computer. See [Use HP Web Jetadmin software on page 74](#). Complete the following steps to update a single product through HP Web Jetadmin after downloading the .RFU file from the HP Web site.

1. Start HP Web Jetadmin.
2. Open the **Device Management** folder in the drop-down list in the **Navigation** panel. Navigate to the **Device Lists** folder.
3. Expand the **Device Lists** folder and select **All Devices**. Locate the product in the list of devices, and then click to select it.


If you need to upgrade the firmware for products, select all of them by pressing the **Ctrl** key as you click the name of each product.

4. Locate the drop-down box for **Device Tools** in the upper-right corner of the window. Select **Update Printer Firmware** from the action list.
5. If the name of the .RFU file is not listed in the **All Available Images** box, click **Browse** in the **Upload New Firmware Image** dialog box and navigate to the location of the .RFU file that you downloaded from the Web at the start of this procedure. If the filename is listed, select it.
6. Click **Upload** to move the .RFU file from your hard drive to the HP Web Jetadmin server. After the upload is complete, the browser window refreshes.
7. Select the .RFU file from the **Printer Firmware Update** drop-down menu.
8. Click **Update Firmware**. HP Web Jetadmin sends the selected .RFU file to the product. The control panel shows messages that indicate the progress of the upgrade. At the end of the upgrade process, the control panel shows the **Ready** message.

Use Microsoft Windows commands to upgrade the firmware

To update the firmware by using a network connection, follow these instructions.

1. Click **Start**, click **Run**, and then type `cmd` to open the command window.
2. Type the following: `copy /B FILENAME> \\COMPUTERNAME>\SHARENAME>`, where `<FILENAME>` is the name of the .RFU file (including the path), `<COMPUTERNAME>` is the name of the computer from which the product is being shared, and `<SHARENAME>` is the product share name. For example: `C:\>copy /b C:\LJP4015.RFU \\YOUR_SERVER\YOUR_COMPUTER.`

 **NOTE:** If the file name or path includes a space, you must enclose the file name or path in quotation marks. For example, type: `C:\>copy /b "C:\MY DOCUMENTS\LJP4015.RFU" \\YOUR_SERVER\YOUR_COMPUTER.`

3. Press **Enter** on the keyboard. The control panel shows a message that indicates the progress of the firmware upgrade. At the end of the upgrade process, the control panel shows the **Ready** message. The message **One File Copied** appears on the computer screen.

Upgrade the HP Jetdirect firmware

The HP Jetdirect network interface in the product has firmware that can be upgraded separately from the product firmware. This procedure requires that you install HP Web Jetadmin Version 7.0 or later on

your computer. See [Use HP Web Jetadmin software on page 74](#). Complete the following steps to update the HP Jetdirect firmware by using HP Web Jetadmin.

1. Open the HP Web Jetadmin program.
2. Open the **Device Management** folder in the drop-down list in the **Navigation** panel. Navigate to the **Device Lists** folder.
3. Select the product that you want to update.
4. In the **Device Tools** drop-down list, select **Jetdirect Firmware Update**.
5. Under **Jetdirect firmware version** the HP Jetdirect model number and current firmware version are listed. Make a note of these.
6. Go to http://www.hp.com/go/wja_firmware.
7. Scroll down to the list of HP Jetdirect model numbers and find the model number you wrote down.
8. Look at the current firmware version for the model, and see if it is later than the version you wrote down. If it is, right-click on the firmware link, and follow the instructions on the Web page to download the new firmware file. The file must be saved into the <drive>:\PROGRAM FILES\HP WEB JETADMIN\DOC\PLUGINS\HPWJA\FIRMWARE\JETDIRECT folder on the computer that is running the HP Web Jetadmin software.
9. In HP Web Jetadmin, return to the main product list and select the digital sender again.
10. In the **Device Tools** drop-down list, select **Jetdirect Firmware Update** again.
11. On the HP Jetdirect firmware page, the new firmware version is listed under **Jetdirect Firmware Available on HP Web Jetadmin**. Click the **Update Firmware Now** button to update the Jetdirect firmware.

5 Theory of operation

- [Basic operation](#)
- [Engine-control system](#)
- [Laser/scanner system](#)
- [Image-formation system](#)
- [Pickup, feed, and delivery system](#)

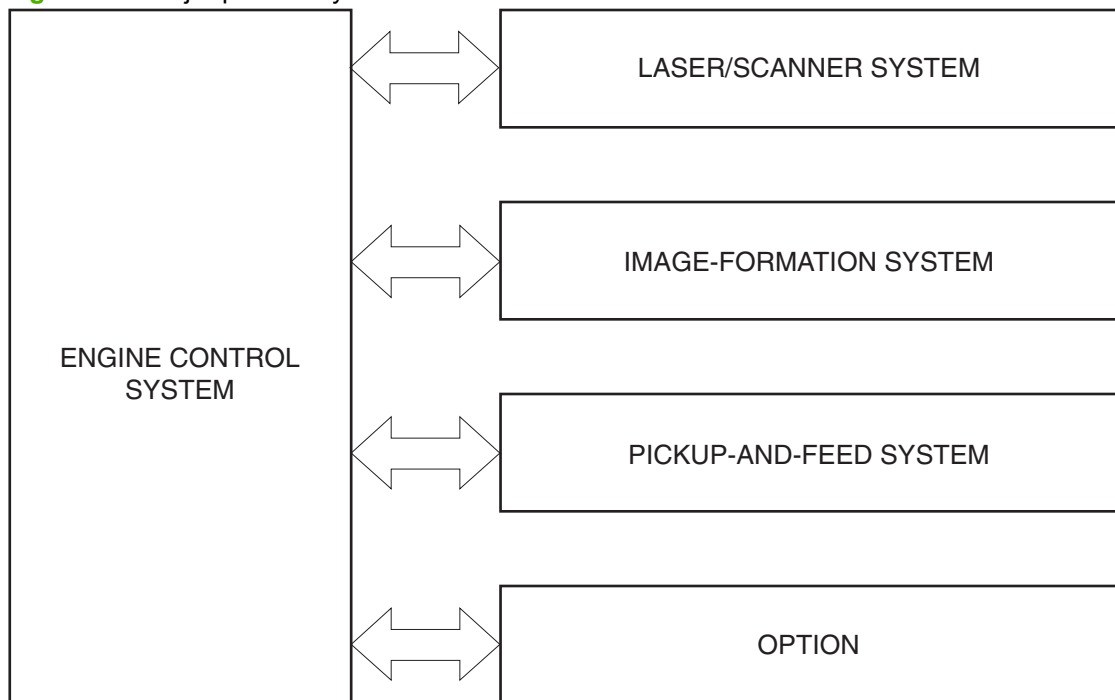
Basic operation

Major print systems

Operation can be divided into the following systems:

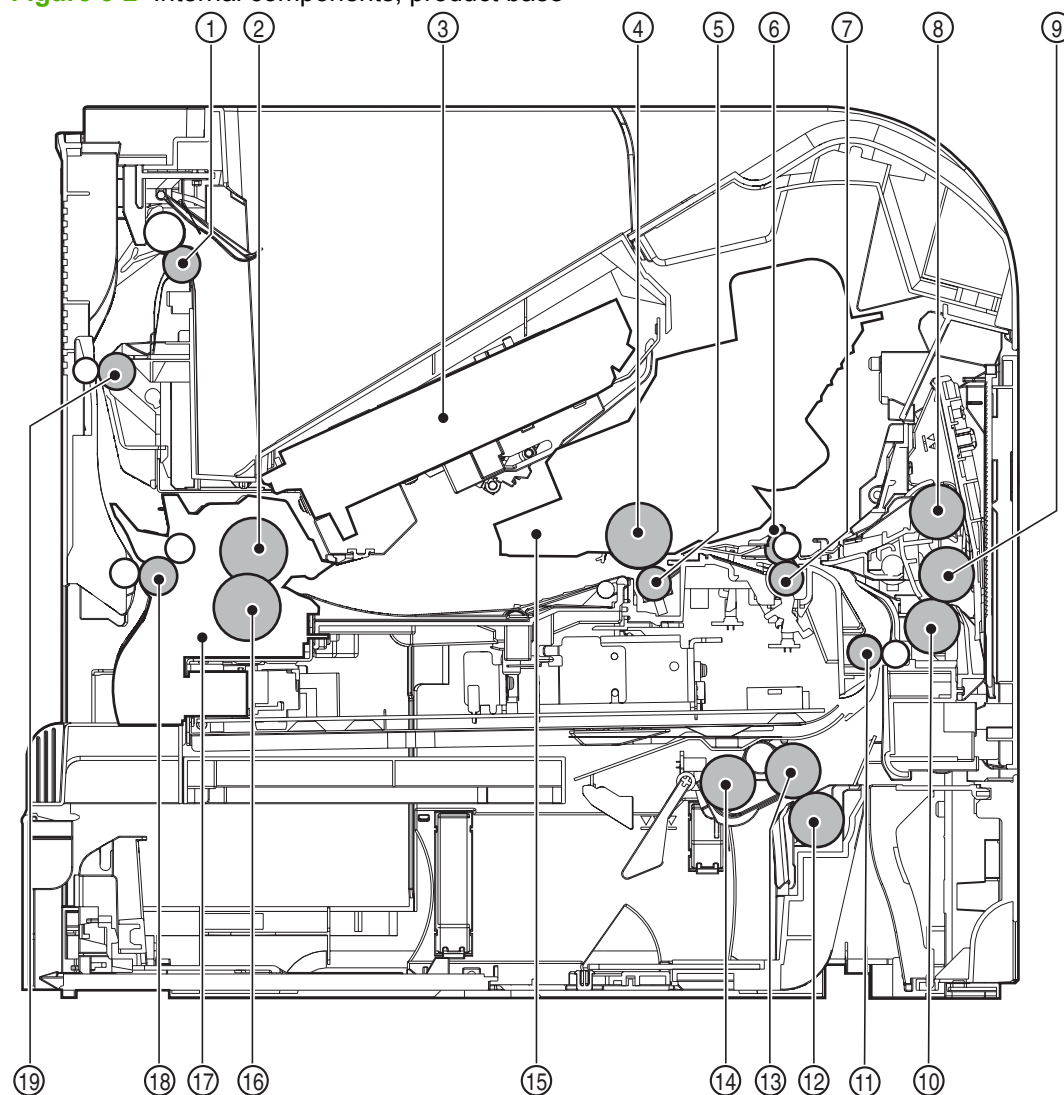
- Engine-control system (which includes the power supply and DC controller PCA)
- Laser/scanner system (which forms the latent image on a photosensitive drum)
- Image-formation system (which transfers a toner image onto the print media)
- Pickup, feed, and delivery system (which consists of various rollers and transports the media through the product)
- Options

Figure 5-1 Major product systems



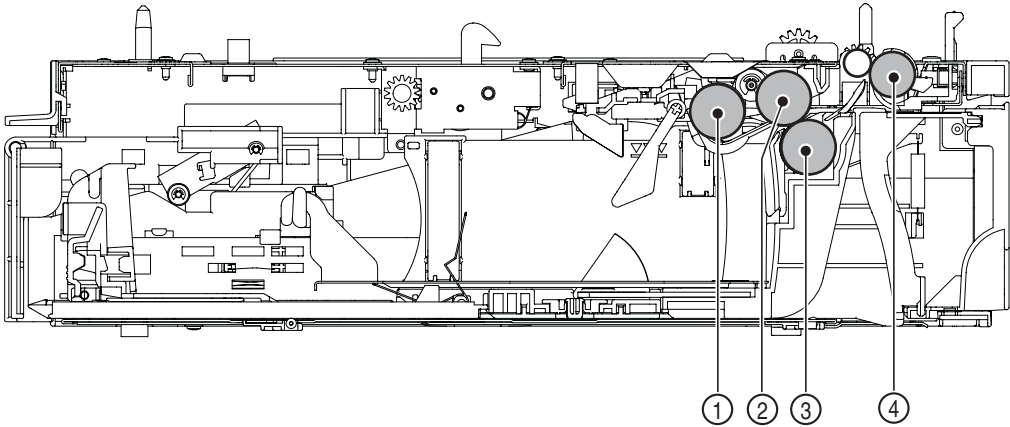
Internal components

Figure 5-2 Internal components, product base



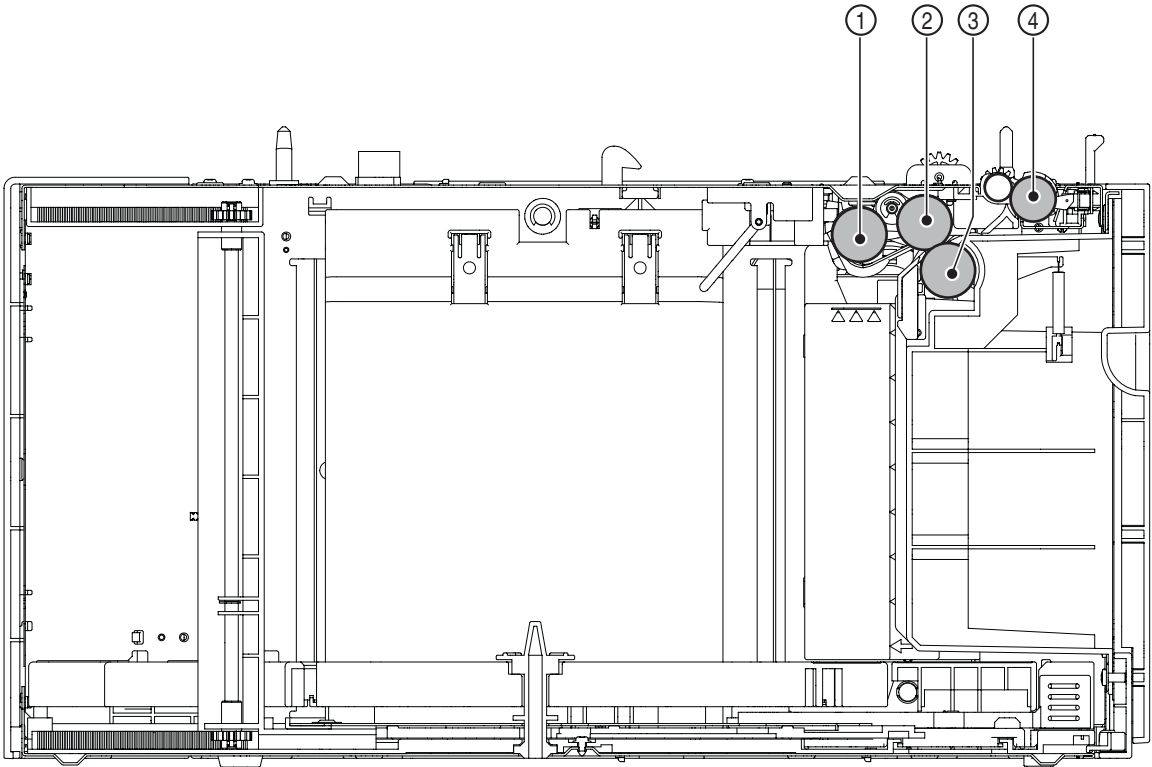
1	Face-down delivery roller	11	Feed roller
2	Fuser sleeve unit	12	Tray 2 separation roller
3	Laser/scanner unit	13	Tray 2 feed roller
4	Photosensitive drum	14	Tray 2 pickup roller
5	Transfer roller	15	Print cartridge
6	Registration shutter	16	Pressure roller
7	Pre-transfer roller	17	Fuser
8	Tray 1 pickup roller	18	Fuser delivery roller
9	Tray 1 feed roller	19	Intermediate delivery roller
10	Tray 1 separation roller		

Figure 5-3 Internal components, 500-sheet paper tray



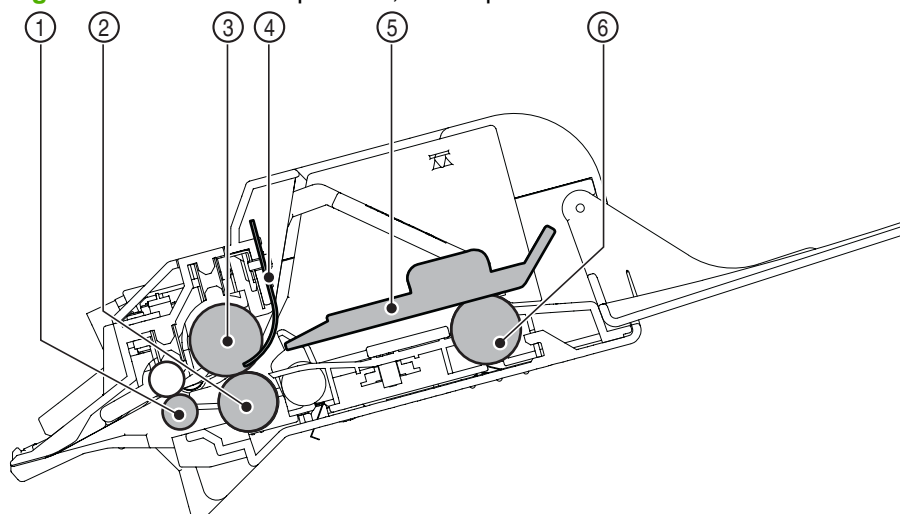
1	Pickup roller
2	Feed roller
3	Separation roller
4	Feed roller

Figure 5-4 Internal components, 1,500-sheet paper tray



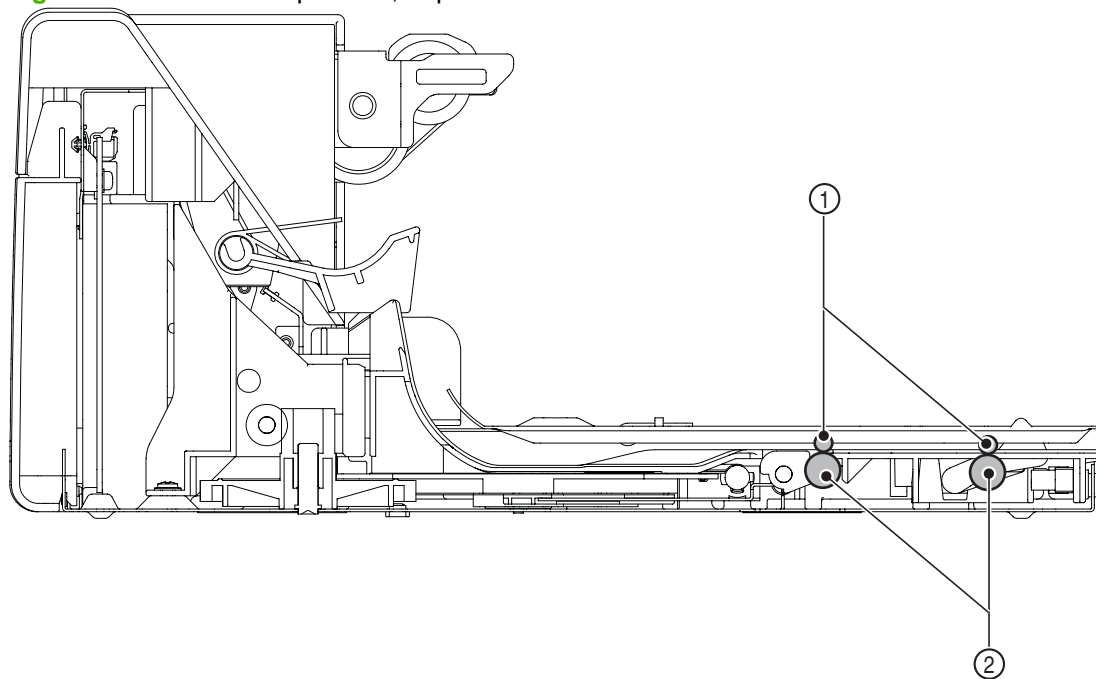
1	Pickup roller
2	Feed roller
3	Separation roller
4	Feed roller

Figure 5-5 Internal components, envelope feeder



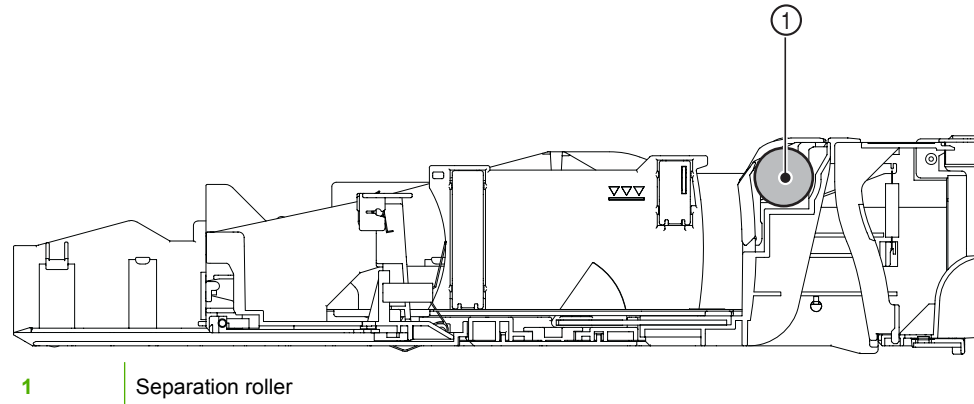
1	Feed roller
2	Upper separation roller
3	Lower separation roller
4	Separation guide
5	Weight
6	Pickup roller

Figure 5-6 Internal components, duplexer



1	Oblique rollers
2	Re-pickup rollers

Figure 5-7 Internal components, custom media cassette



1 Separation roller

Operating sequence

A microprocessor on the DC controller PCA controls the product operating sequence. The following table describes the basic operating sequence from when the product power is turned on until the final printed page is delivered to an output bin.

Table 5-1 Product operating sequence

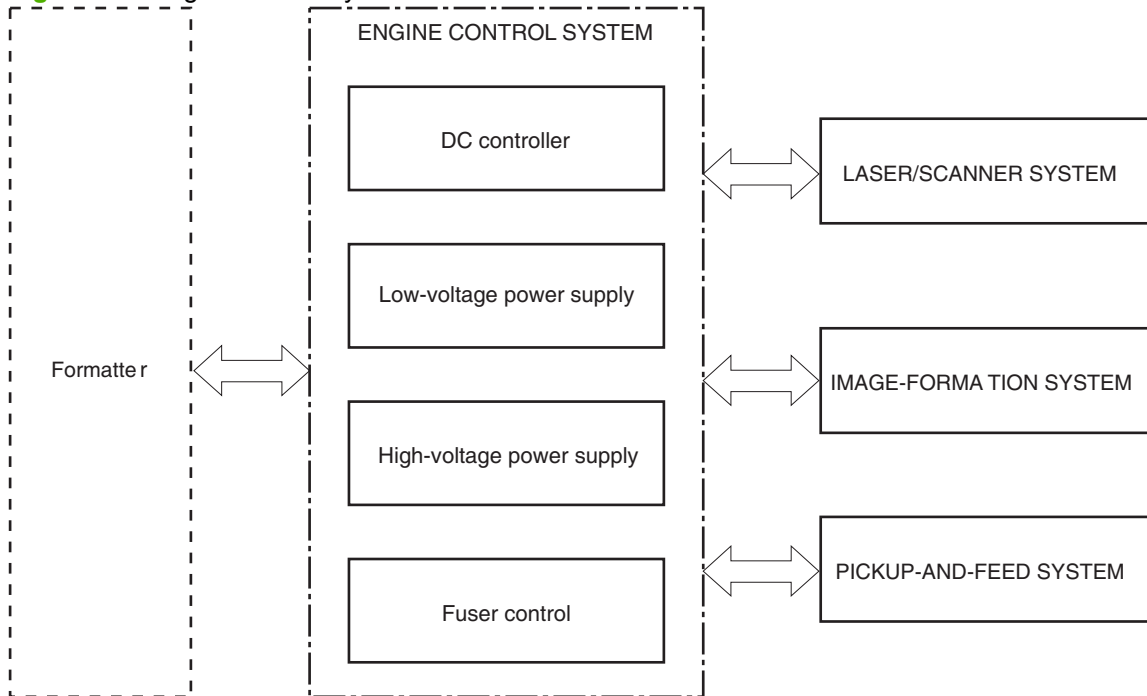
Period	Duration	Operation
WAIT	From the time the power is turned on, the door is closed or Sleep mode is released until the product gets ready for a print operation.	<ul style="list-style-type: none"> Brings the product to standby condition. Pressurizes the fuser pressure roller. Detects the print cartridge.
STBY (Standby)	From the end of WAIT or LSTR period until either the print command is received from the formatter or the power switch is turned off.	<ul style="list-style-type: none"> Maintains the product in printable condition. Puts the product in Sleep mode when the formatter sends a sleep command.
INTR (Initial rotation period)	From the time the print command is received from the formatter until the media is picked up.	Starts up each high-voltage bias, laser/scanner unit, and fuser for printing.
PRINT	From the end of INTR period until the last paper completes the fixing operation.	<ul style="list-style-type: none"> Forms the image on the photosensitive drum based on the signals from the formatter. Transfers and fuses the toner image to the print media.
LSTR (Last rotation period)	From the end of PRINT period until the motors stop rotating.	<ul style="list-style-type: none"> Moves the last printed sheet out of the product. Stops the laser/scanner unit operation and high-voltage biases. <p>The product enters the INTR period as soon as the LSTR period is completed, if the formatter sends another print command.</p>

Engine-control system

The engine control system coordinates all product functions and controls all the other systems according to commands from the formatter. The engine control system contains the following components:

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

Figure 5-8 Engine-control system

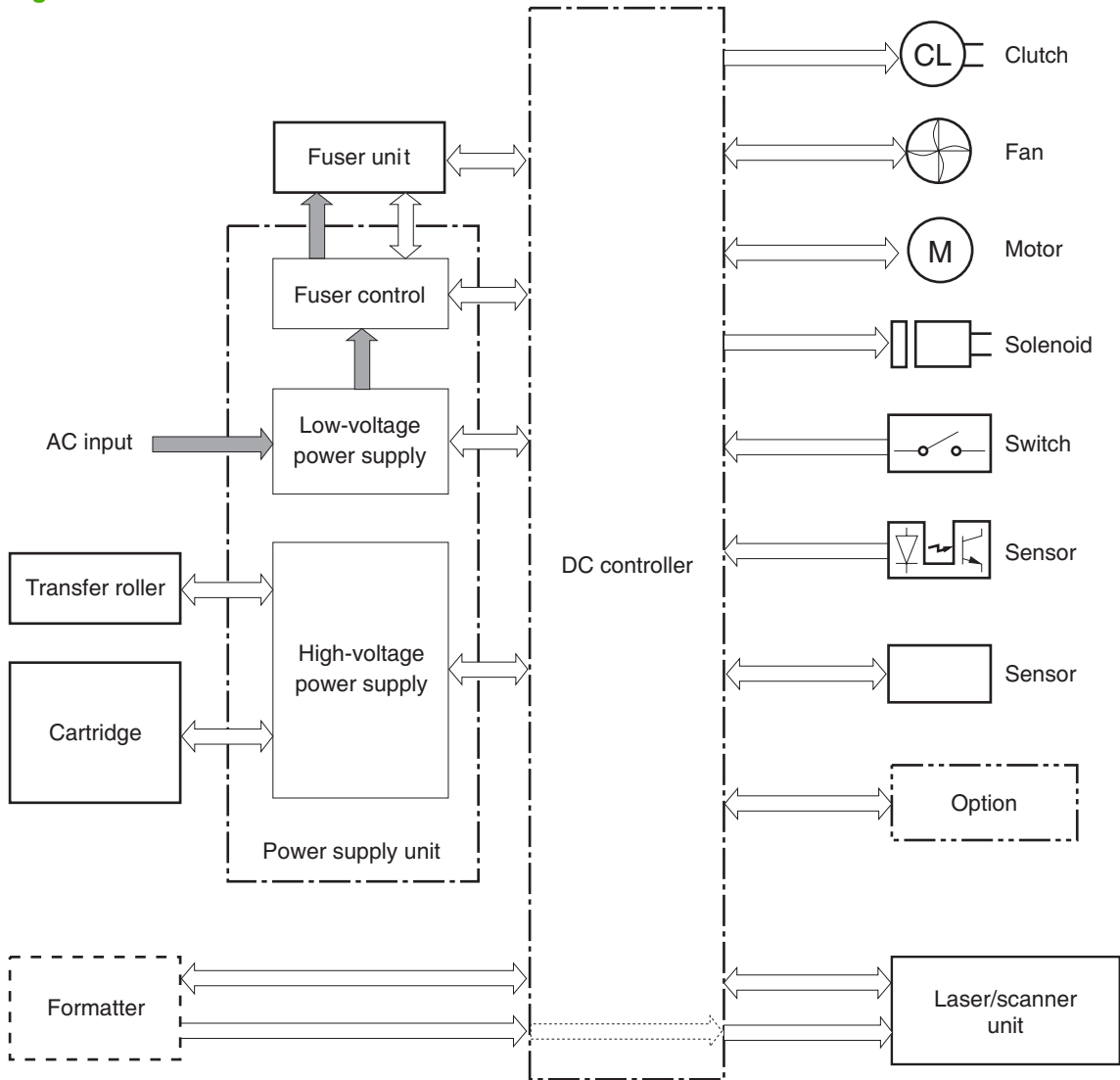


DC controller PCA

The DC controller PCA controls the operation of the product and its components. The DC controller PCA starts product operation when the power is turned on and the power supply sends DC voltage to the DC controller PCA. After the product enters the standby sequence, the DC controller PCA sends out various

signals to operate motors, solenoids, and other components based on the print command and image data that the host computer sends.

Figure 5-9 DC controller PCA



Motors and fans

The product has four motors and four fan motors. The motors are used for the media feeding and image formation. The fan motors are used for preventing a temperature rise inside the product.

Table 5-2 Fans

Description	Cooling area	Type	Speed
Cooling fan FN101	Cartridge area and power supply area	Intake	Full/Half ¹
Cooling fan FN102	Cartridge area	Intake	Full ²
Cooling fan FN103	Cartridge area	Intake	Full ²

Table 5-2 Fans (continued)

Description	Cooling area	Type	Speed
Cooling fan FN301	Cartridge area and laser/scanner	Intake	Full ²

¹ Cooling fan FN101 rotates at full speed for eight seconds when the product is turned on, and then decreases to half-speed for approximately 10 minutes. After that time period, if there is no print job in the print queue, the fan will stop completely. The fan rotates at full speed during a print job.

² This fan operates at full speed only during a print job. Otherwise, it does not rotate.

Table 5-3 Motors

Description	Driving parts	Type	Failure detection
Feed motor (M101)	Drives the Tray 1 pickup roller, Tray 2 pickup roller, and feed roller	DC	Yes
Drum motor (M102)	Drives the photosensitive drum, primary charging roller, and transfer roller	DC	Yes
Fuser motor (M103)	Drives the pressure roller and feed roller—when rotated counterclockwise it releases the fusing pressure for easier jam removal	DC	Yes
Lifter motor (M299)	Drives the lifting plate of the tray	DC	No

Failure detection

Motor failure

The DC controller determines a motor failure and notifies the formatter when it encounters the following conditions:

- **Motor start-up failure:** The motor does not reach a specified speed within a specified period from when each motor starts up.
- **Motor rotational failure:** The rotational speed of the motor is out of a specified range for a specified period from when it once reaches a specified speed.

Fan motor failure

The DC controller determines a fan motor failure and notifies the formatter when the fan locks for a specified period from when each fan starts up.

Engine power supply

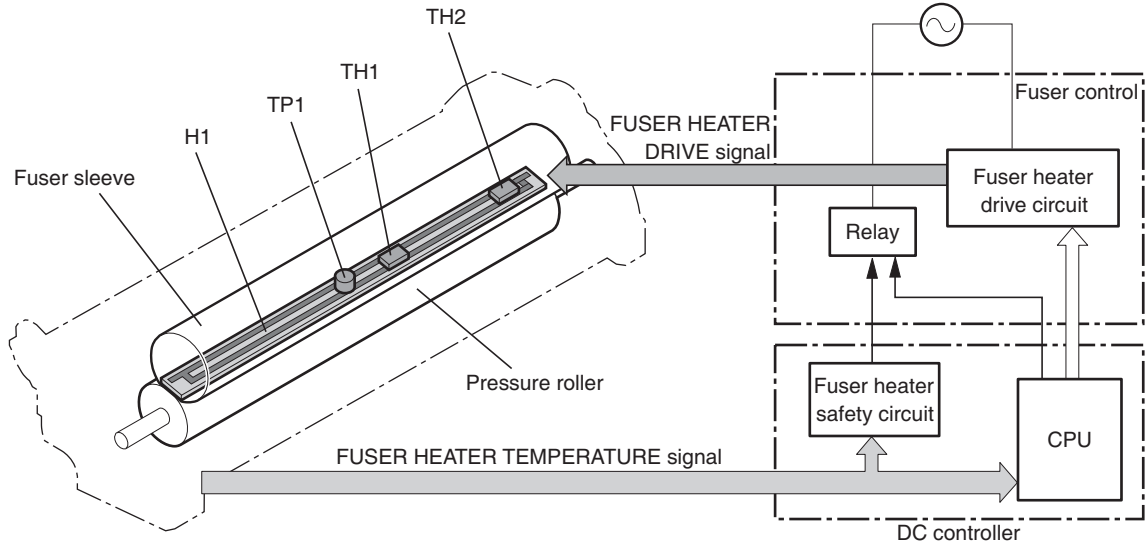
The power supply consists of the fuser-control circuit, the high-voltage circuit, and the low-voltage circuit. The fuser-control and high-voltage circuits control the temperature of the fuser and generate high-voltage according to signals from the DC controller PCA. The low-voltage circuit generates the DC voltages that other components in the product use (for example the DC controller PCA, the motors, and fans).

Fuser-control circuit

The fuser-control circuit controls the fuser components. The two fuser heaters provide the high temperatures that cause the toner to permanently bond to the media. The fuser thermistor monitors the

fuser temperatures. The thermal switch detects abnormally high fuser temperatures and interrupts the supply of voltage to the fuser if the temperature is too high.

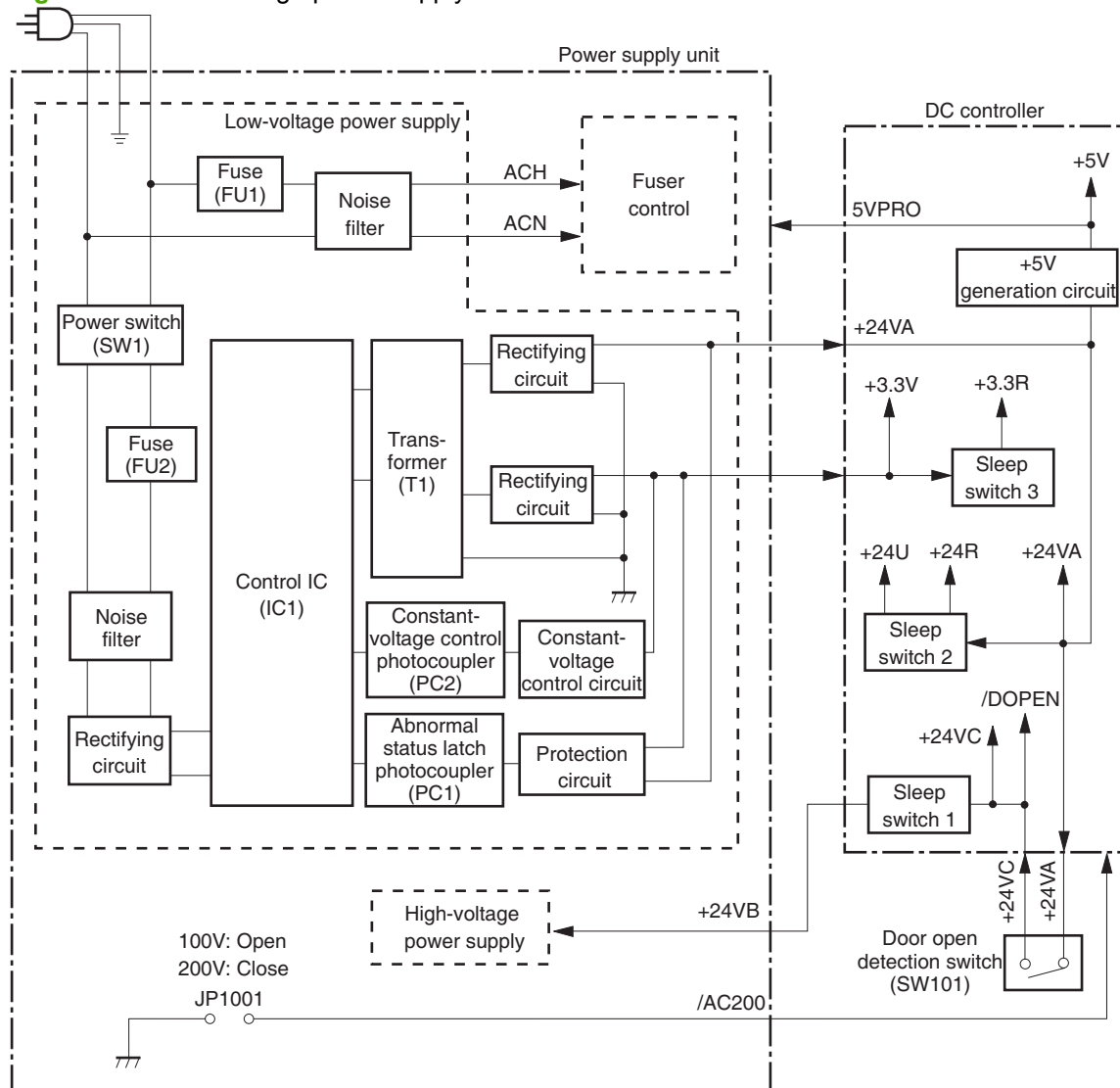
Figure 5-10 Fuser control



Low-voltage power supply

The low-voltage power supply converts AC power from the power receptacle into DC power to cover the DC loads.

Figure 5-11 Low-voltage power supply



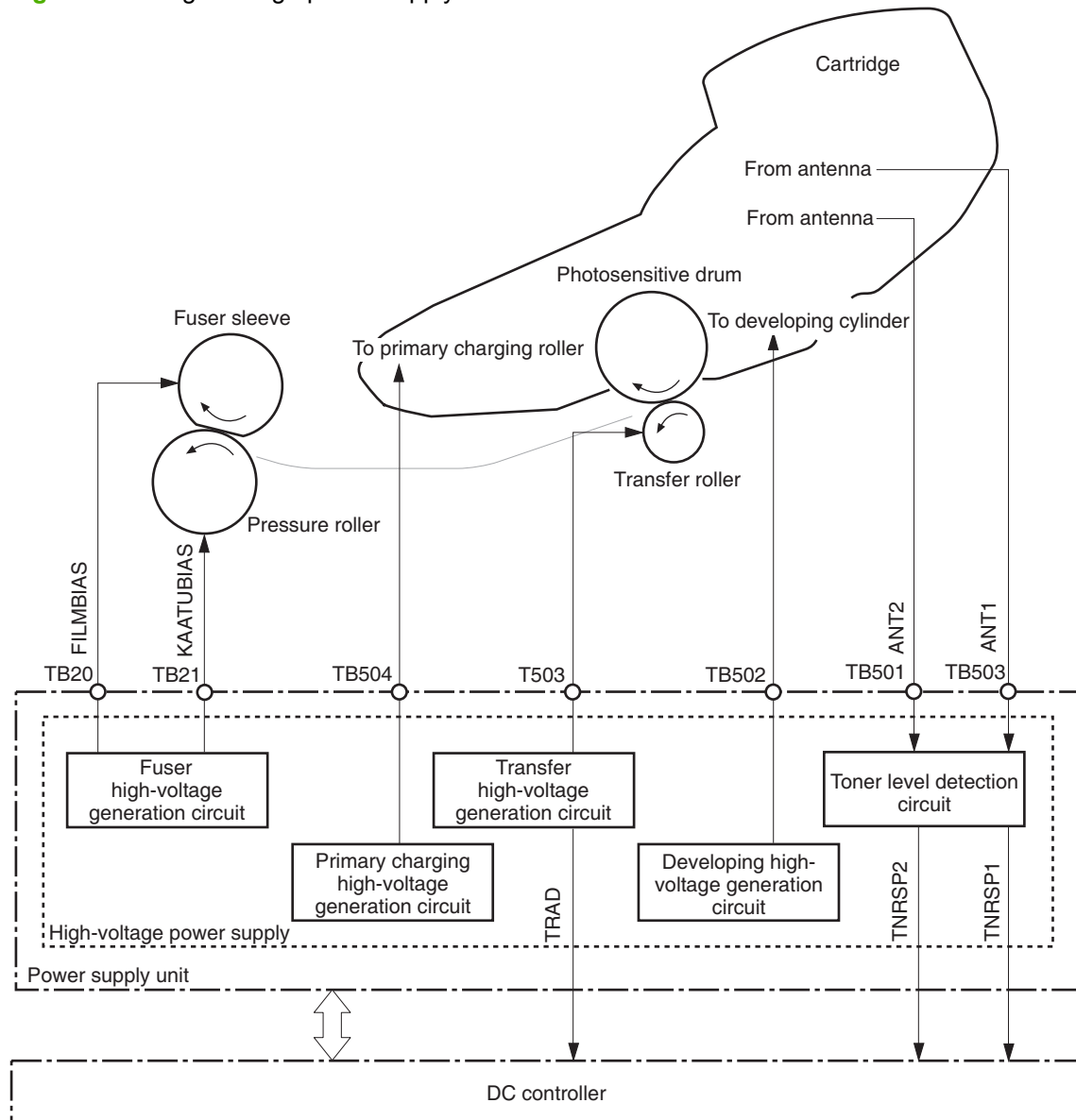
High-voltage power supply

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

- Primary charging roller
- Developing roller
- Transfer roller

- Fuser sleeve
- Pressure roller

Figure 5-12 High-voltage power supply



Overcurrent/overvoltage protection

If a short-circuit or other problem on the load side causes an excessive current flow or generates abnormal voltage, the overcurrent/overvoltage protection systems automatically cut off the output voltage to protect the power-supply circuit.

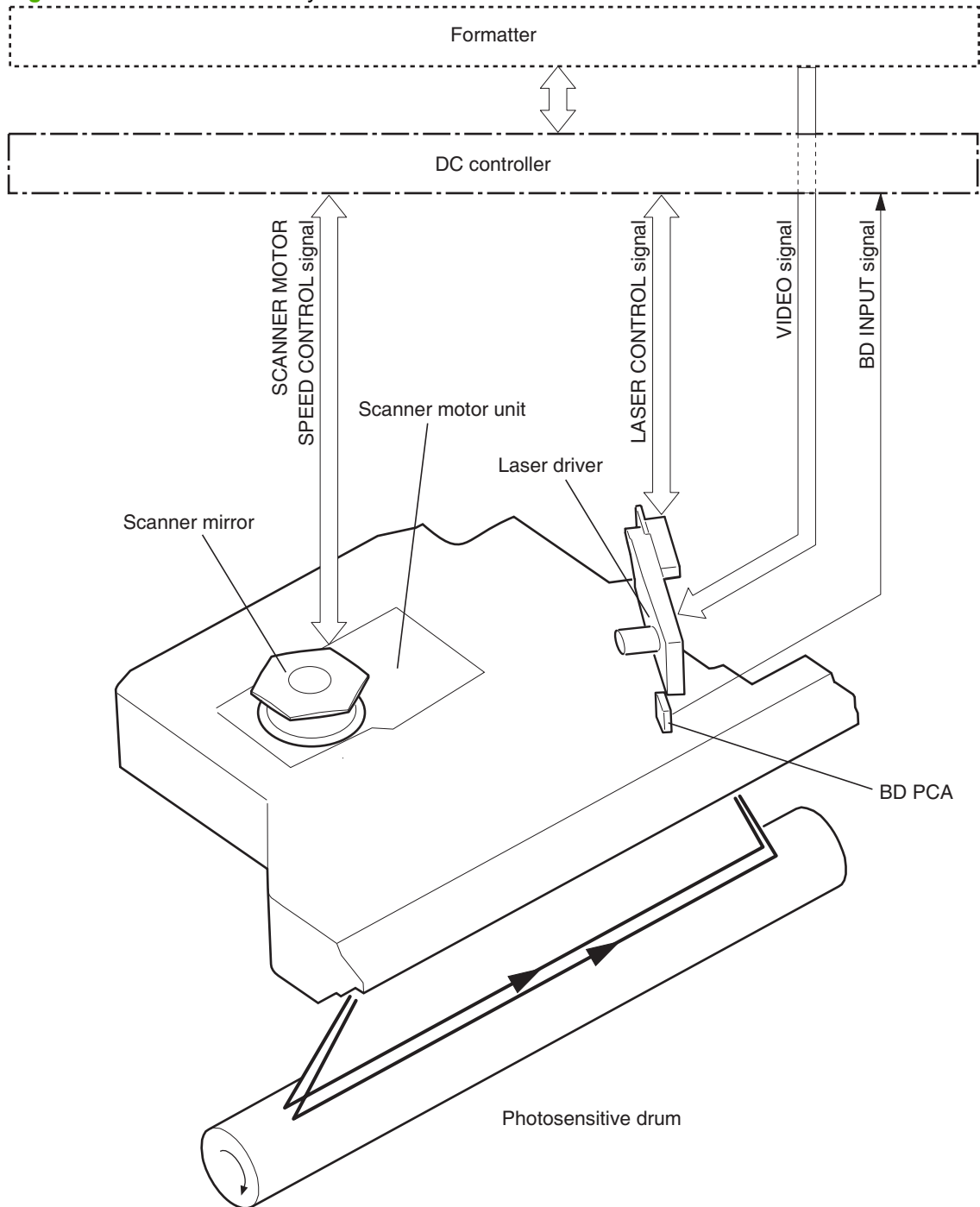
If the overcurrent or overvoltage protection system are activated and the power-supply circuit does not generate DC voltage, turn the power off, correct the problem, and then turn the product on again.

The circuit has two fuses (FU1, FU2), which break and cut off the output voltage if overcurrent flows through the alternating current (AC) line.

Laser/scanner system

The laser/scanner system forms a latent image on the photosensitive drum according to the VIDEO signals sent from the formatter. The main components, such as the laser driver and scanner motor, are assembled as a laser/scanner unit and controlled by the DC controller. The DC controller allows the laser to emit light according to the VIDEO signals. The laser beam passes through the lenses and enters the scanner mirror that is rotating at constant speed. The laser beam is reflected by the scanner mirror, passes through the lenses, and scans on the photosensitive drum.

Figure 5-13 Laser/scanner system



The laser scanner uses two laser diodes to scan two lines simultaneously, producing high-speed laser scanning. After receiving the print command from the host computer, the DC controller PCA activates the scanner motor, which rotates the six-sided scanner mirror. The laser-driver PCA emits light from the two laser diodes according to signals from the DC controller PCA. The two laser beams strike the six-sided scanning mirror and are directed through the focusing lenses and onto the photosensitive drum. The modulated laser beams generate the latent electrostatic image on the photosensitive drum according to the image data signals that the DC controller PCA sends.

1. As it receives a print command from the formatter, the dc controller outputs the SCANNER MOTOR SPEED CONTROL signal (/ACC) and rotates the scanner motor in order to rotate the six-sided mirror.
2. As the scanner motor starts rotating, the dc controller uses a LASER CONTROL signal (CNT0, CNT1, CNT2) to receive the /BD INPUT signal (/BDI) and force the laser to emit light . The dc controller detects the rotational speed of the scanner motor based on the timing the /BD1 signal is input and controls the speed to keep it constant.
3. While the scanner motor rotates at a constant speed, the dc controller passes the VIDEO signals from the formatter on to the laser driver PCA. The laser driver PCA emits light from the two laser diodes according to these signals: VDO1, /VDO1, VDO2, /VDO2.
4. The two laser beams pass through the collimator lens and cylindrical lens and strike the six-sided mirror that is rotating at a constant speed.
5. The laser beams, that are reflected off of the six-sided mirror pass through the focus lens and reflective mirror and focus on the photosensitive drum. The laser beams scan the drum surface at a constant speed.
6. As the six-sided mirror rotates and the laser beam scans the drum surface at a constant speed, a latent image forms on the drum surface.

Laser failure detection

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

- **Laser failure:** The laser intensity is not detected for a specified value when the laser is turned on for a specified period during the scanner unit start-up period.
- **BD failure:** The BD interval is out of a specified value during a print operation.
- **Scanner motor start-up failure:** The scanner motor does not reach a specified rotation within a specified period from when the scanner motor starts rotation.

Image-formation system

The image-formation system is the central hub of the product. It forms the toner image on the media. The following are the main components of the image-formation system:

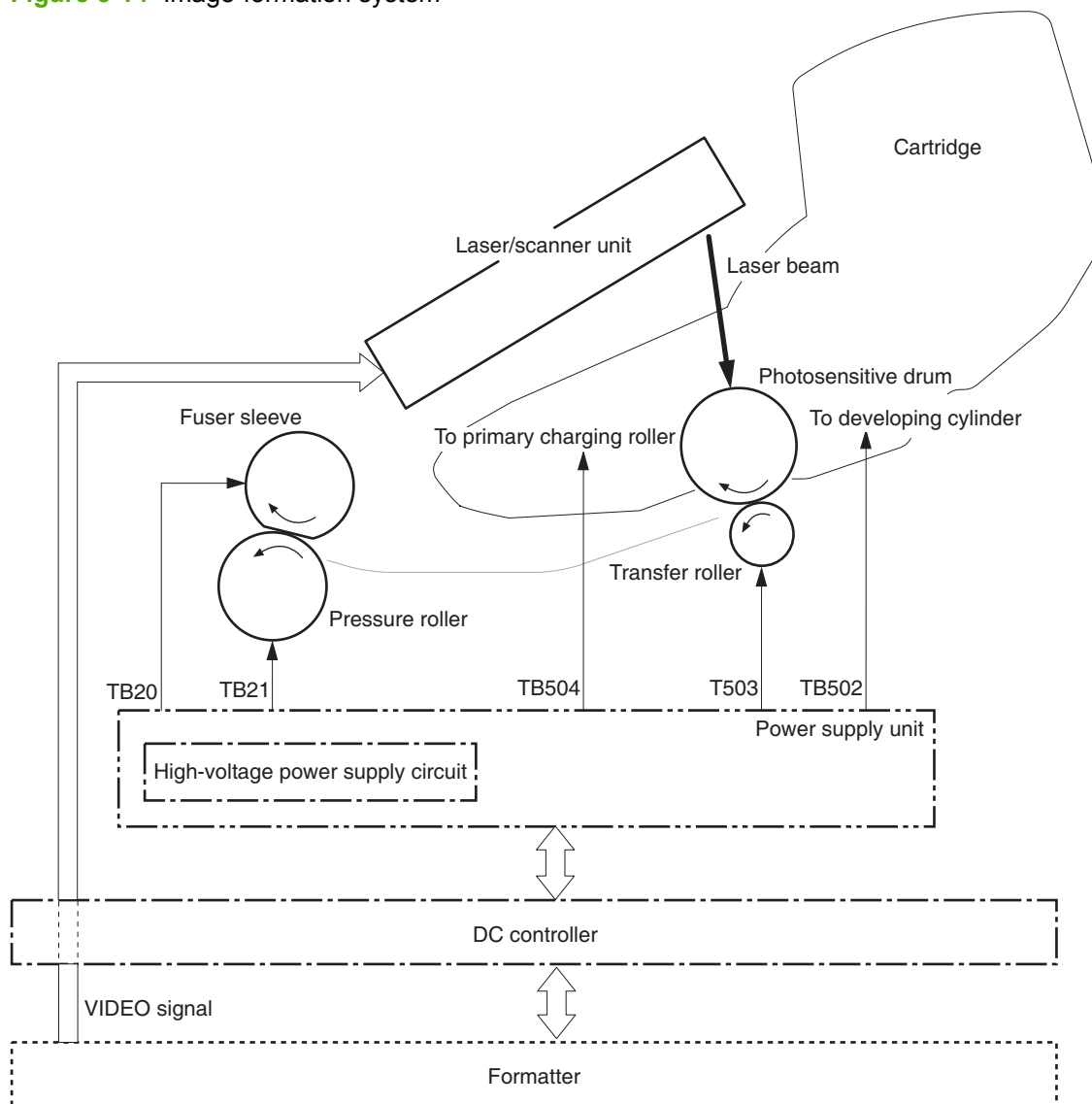
- Cartridge
- Transfer roller
- Fuser

The DC controller controls the laser/scanner unit and high-voltage power supply to form an image on the media according to the VIDEO signals.

Image-formation process

The image formation system is the central hub of the product. It also forms the toner image on the media.

Figure 5-14 Image-formation system



The image-formation process contains eight steps divided among five functional blocks:

- Block 1: Latent image formation
 - Step 1: Primary charging
 - Step 2: Laser-beam exposure
- Block 2: Developing
 - Step 3: Developing
- Block 3: Transfer
 - Step 4: Transfer
 - Step 5: Separation
- Block 4: Fusing
 - Step 6: Fusing
- Block 5: Drum cleaning
 - Step 7: Drum cleaning
 - Step 8: Drum charge elimination

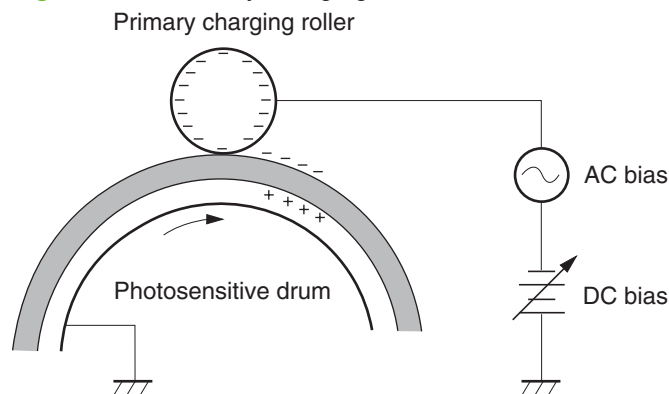
Block 1: Latent image formation

During the two steps that comprise this block, an invisible latent image is formed on the photosensitive drum.

Step 1: Primary charging

To prepare for latent image formation, the surface of the photosensitive drum is charged with a uniform negative potential. The product charges the photosensitive drum surface directly from the primary charging roller. The DC bias and AC bias are applied to the primary charging roller to maintain a constant charge on the drum surface.

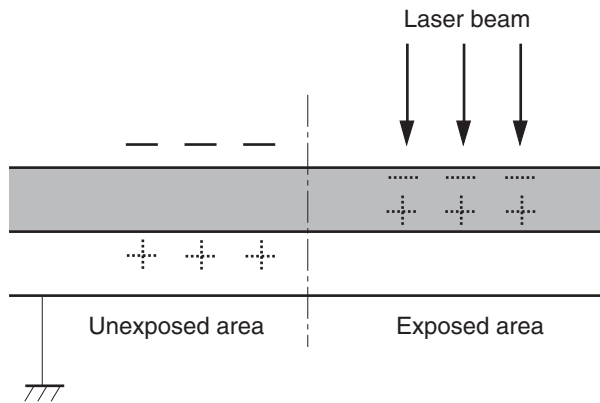
Figure 5-15 Primary charging



Step 2: Laser-beam exposure

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

Figure 5-16 Laser-beam exposure



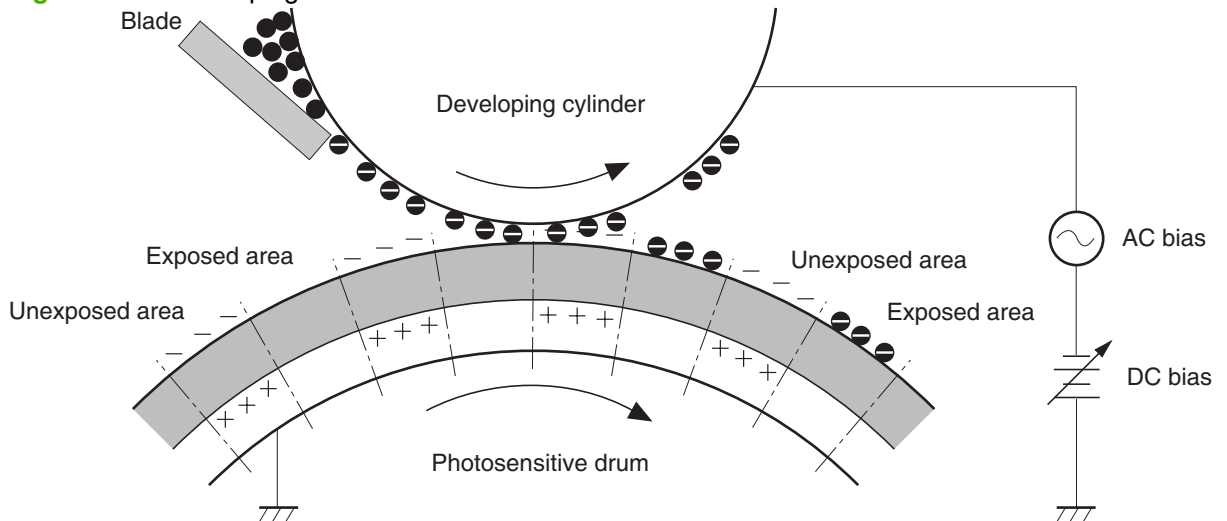
Block 2: Developing

Toner adheres to the electrostatic latent image on the photosensitive drum.

Step 3: Developing

Toner acquires a negative charge from the friction that occurs when the developing cylinder rotates against the developing blade. The negatively charged toner is attracted to the latent image on the photosensitive drum surface because the drum surface has a higher potential. The AC bias that is superimposed with the developing negative DC bias is applied to the developing cylinder.

Figure 5-17 Developing



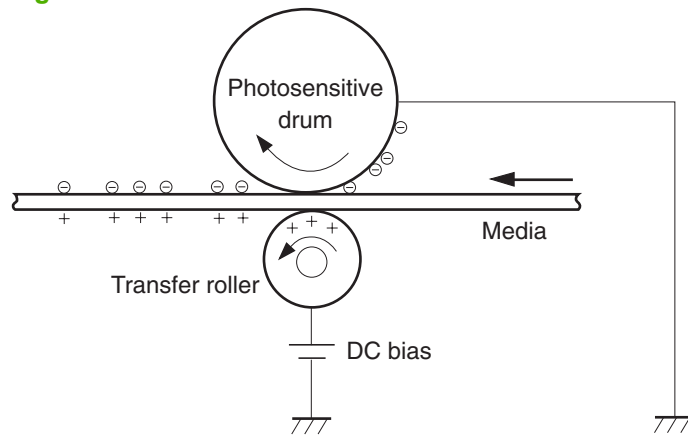
Block 3: Transfer

During the steps that comprise this block, a toner image on the photosensitive drum is transferred to the print media.

Step 4: Transfer

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

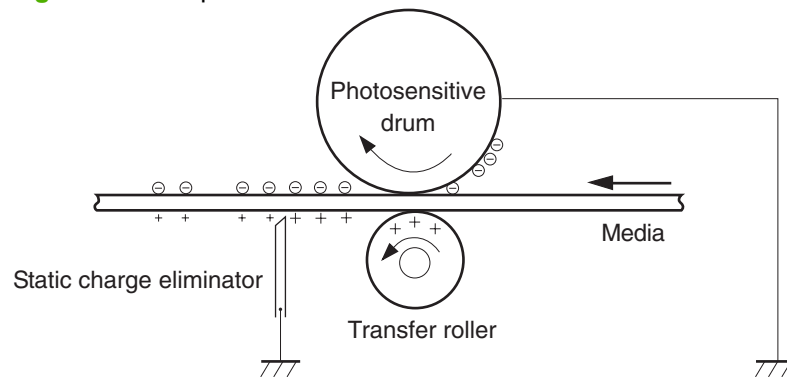
Figure 5-18 Transfer



Step 5: Separation

The curvature elasticity of the print media causes it to separate from the photosensitive drum surface. The static charge eliminator reduces back side static discharge of the media for stable media feed and image quality.

Figure 5-19 Separation



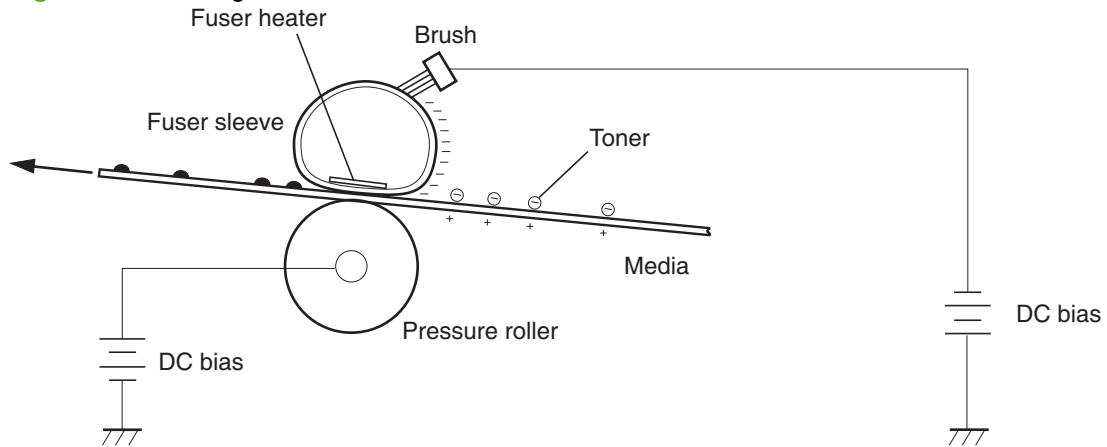
Block 4: Fusing

The toner image is fixed onto the print media.

Step 6: Fusing

The product uses the on-demand fixing method to fix the toner image onto the media. The image is permanently affixed to the print media by the heat and pressure.

Figure 5-20 Fusing



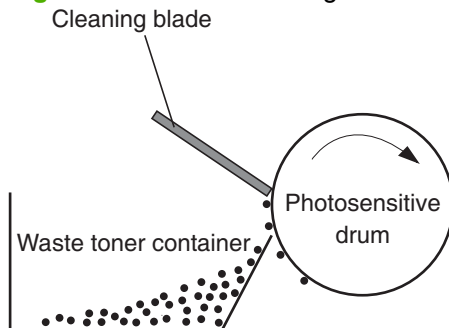
Block 5: Drum cleaning

The residual (waste) toner is cleared from the photosensitive drum surface to prepare for the next latent image formation.

Step 7: Drum cleaning

The cleaning blade scrapes the residual toner off the surface of the photosensitive drum and deposits it in the waste toner container.

Figure 5-21 Drum cleaning

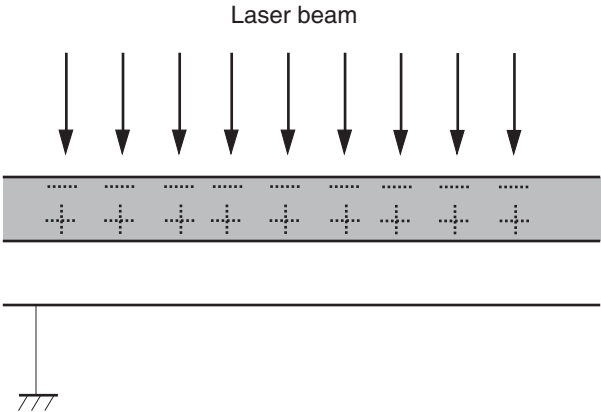


Step 8: Drum charge elimination

The residual charge on the photosensitive drum surface is eliminated to avoid uneven image. The residual charge of the previous image is left on the drum surface after the transfer operation and this

affects the following image formation. The product eliminates this residual charge by emitting a laser beam to the drum surface. The drum charge elimination is operated only during the last rotation period.

Figure 5-22 Drum charge elimination



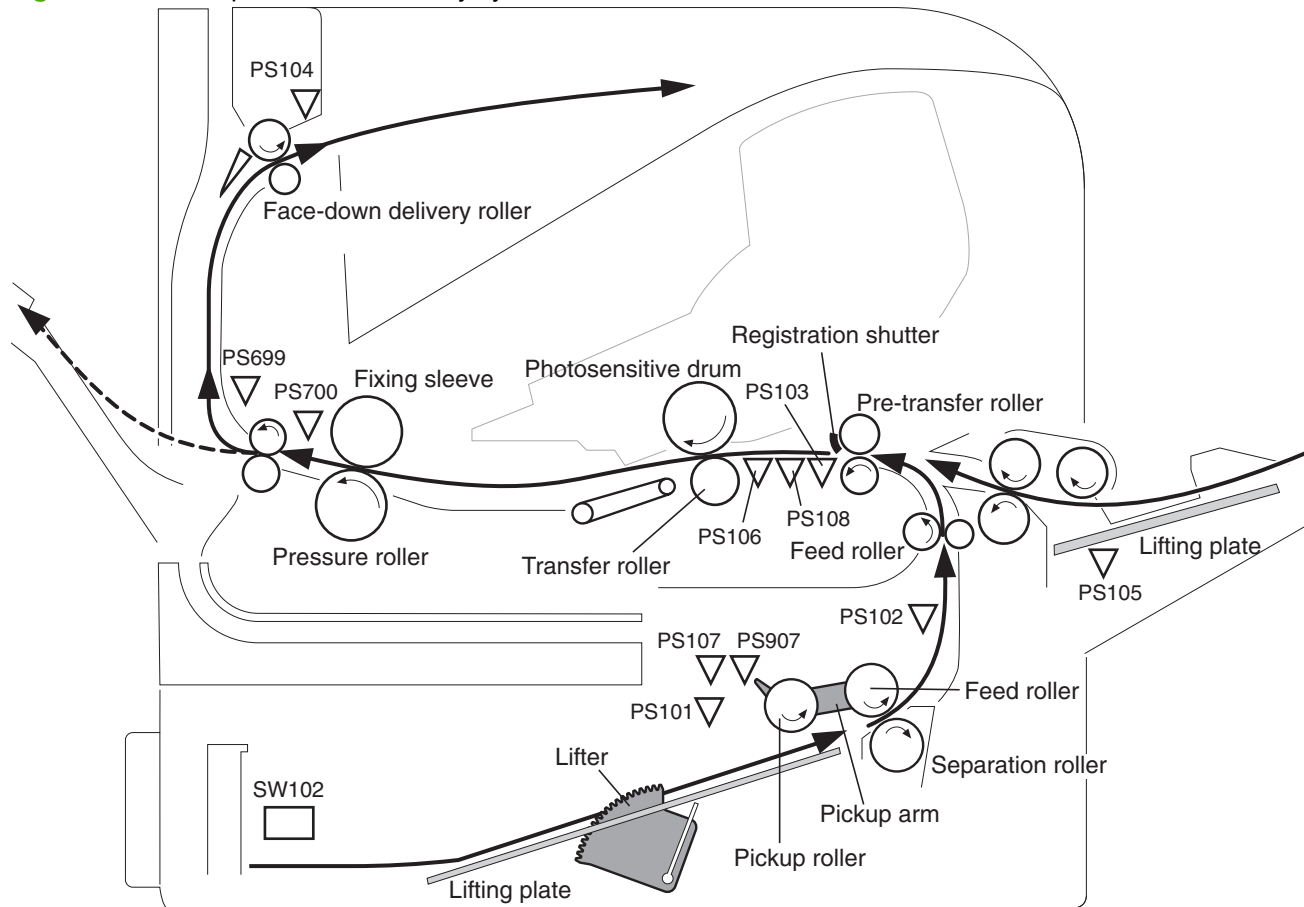
Pickup, feed, and delivery system

The pickup, feed, and delivery system consists of various rollers that the product motors drive. The product uses Tray 1 (the manual feeding tray) and a cassette in Tray 2 as media sources. The printed media is delivered to either the rear output bin (straight-through printing) or the top output bin (the default destination). A number of 500-sheet feeders and one 1,500-sheet feeder can be added to certain models. These accessories are discussed later in this chapter. The Tray 1 paper sensor (on the Tray 1 pickup assembly; PS105) detects media in Tray 1. The Tray 2 paper sensor (PS101) detects media in Tray 2. The paper-size switch (SW102) detects the media size that is loaded in Tray 2.

Two motors, a clutch, and a solenoid that are controlled by the DC controller PCA drive all of the rollers in the product.

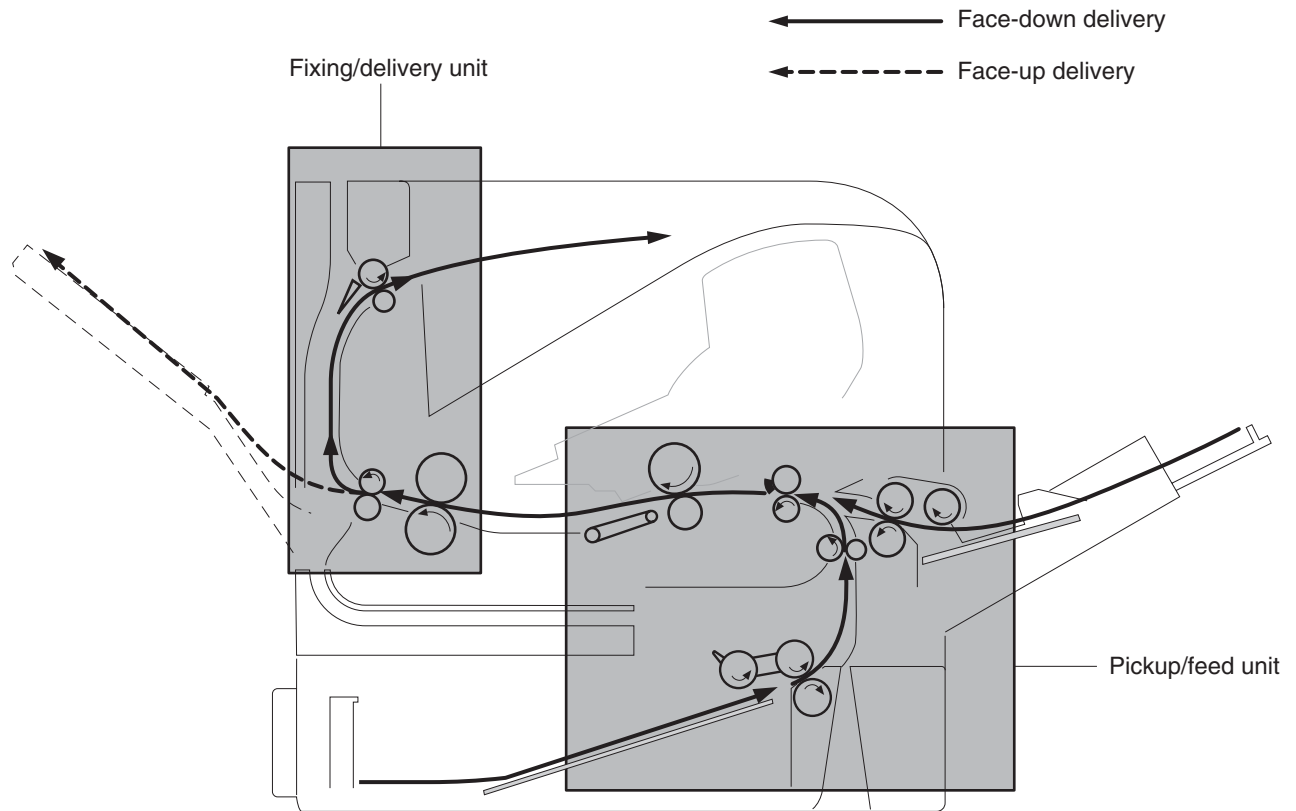
The pre-feed, top-of-page, and fuser-assembly delivery sensors (PS102, PS103, PS700) detect media arriving and passing along the paper path. If the media does not reach or pass these sensors within a specific amount of time, the microprocessor on the DC controller PCA halts the product functions and a jam error message appears on the control-panel display.

Figure 5-23 Pickup, feed, and delivery system



The pickup-and-feed system is divided into two blocks: The pickup-and-feed block and the fuser/delivery block.

Figure 5-24 Pickup, feed, and delivery blocks



Pickup-and-feed block

The following functions take place in the pickup-and-feed block:

- Detection of media
- Detection of media-size
- Detection of media entering the paper path from Tray 1 or Tray 2
- Lifting of the Tray 2 paper plate
- Prevention of multiple-feeds
- Correction of page skew

When it receives a print command from the host computer, the DC controller PCA turns on the feed motor (M101) power. The motor drives the Tray 2 pickup, feed, and separation rollers. The drum motor power also turns on. The laser/ scanner motor power turns on.

The DC controller PCA then activates the feed clutch (CL101) to rotate the feed roller. The Tray 2 pickup solenoid is activated (SL101) and the pickup arm descends. The pickup roller touches the media and a sheet is fed into the product. The separation roller prevents multiple sheets of media from being fed at one time.

As the pre-feed sensor (PS102) detects the media, the dc controller PCA turns off the clutch, which stops the media. When the DC controller PCA detects that the laser/scanner is ready it activates the feed clutch again. The feed roller moves the media farther into the product. The registration shutter corrects page skew and the media is transported to the fuser/delivery block.

Fuser/delivery block

The fuser/delivery block consists of rollers, sensors, the fuser, and the output delivery assembly. The rollers transport the media through the fuser/delivery block paper path. The fuser applies heat and pressure to the media to permanently bond the toner image to the media. The output delivery assembly sends the printed media either to the rear output bin (if the rear output door is open) or to the top output bin (the default output delivery bin). Sensors along the paper path detect media movement, jams, and the top output-bin capacity.

Paper trays

Printing from Tray 1

The Tray 1 paper sensor (PS105) detects the presence of media in Tray 1. When the DC controller PCA receives the print command, the product starts the initial rotation phase, which consists of feed motor warm-up, scanner motor warm-up, high-voltage control sequence, and fuser warm-up. When the initial rotation phase ends, the Tray 1 pickup solenoid (SL102) is activated.

The cam rotates, the paper-tray lifter rises, and the media comes in contact with the Tray 1 pickup roller. At the same time, the Tray 1 pickup roller rotates twice and picks up a sheet of media from Tray 1. The separation pad prevents additional sheets from feeding with the first sheet.

The sheet then reaches the registration assembly, where its skew is corrected. The sheet then passes through the transfer, separation, and fusing stages; through the delivery unit; and is to the output bin.



NOTE: If media is removed from Tray 1 after the initial rotation phase, but before the pickup roller pulls the media from the tray, the Tray 1 pickup roller might continue to rotate up to six times, after which a jam detected.

Printing from Tray 2

When the DC controller PCA receives the print command, the feed motor (M101) and scanner motor start their rotation. When the feed motor reaches its prescribed speed, the feed roller clutch (CL101) and Tray 2 pickup solenoid (SL101) are activated. (The feed motor rotation drives the Tray 2 pickup roller, Tray 2 feed roller, Tray 2 separation roller, and paper-feed rollers.)

The Tray 2 pickup roller, which the pickup solenoid activates, rotates once and picks up the media in the tray. The separation roller prevents additional sheets from feeding with the first sheet, and the media is fed to the pre-feed sensor (PS102).

The sheet then reaches the registration assembly, where its skew is corrected. The sheet then passes through the transfer, separation, and fusing stages; through the delivery unit; and to the output bin.

Formatter system

The formatter is involved in the following procedures.

- Controlling the Sleep mode
- Receiving and processing print data from the various product inputs
- Monitoring control-panel functions and relaying product status information (through the control panel and the bidirectional input/output)
- Developing and coordinating data placement and timing with the DC controller PCA

- Storing font information
- Communicating with the host computer through the bidirectional interface

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


The formatter also provides the electrical interface and mounting locations for an EIO card, additional memory DIMMs, and the hard-disk accessory.

Sleep mode

period of time. When the product is in Sleep mode, the control-panel backlight is turned off, but the product retains all product settings, downloaded fonts, and macros. The default setting is **SLEEP MODE=ON**, with a 30-minute idle time. Sleep mode also can be turned off from the **RESETS** menu on the control panel.


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

- A print job, valid data, or a PML or PJP command is received at the serial port or EIO card.
- A control panel key is pressed.
- The top cover is opened.
- A tray is opened.
- The engine-test button is pressed.

 **NOTE:** Error messages override the Sleep message. The product enters Sleep mode at the appropriate time, but the error message continues to appear.

Resolution Enhancement technology


The formatter contains circuitry for Resolution Enhancement technology (REt), which modifies the standard video dot data on its way to the dc controller PCA to produce "smoothed" line edges. The REt can be turned on or off from the control panel or from some software programs. The default setting is medium.

 **NOTE:** The REt settings that are sent from software programs or printer drivers override the control-panel settings.

EconoMode

The EconoMode setting uses up to 50% less toner than standard mode printing by reducing the dot density. However, EconoMode does not extend the life of print-cartridge components. EconoMode, which can be thought of as "draft mode," can be selected from the control panel (**PRINT QUALITY** menu) and through some software programs and printer drivers. The default setting is **OFF**.

△ **CAUTION:** HP does not recommend full-time use of EconoMode. If EconoMode is used full-time, it is possible that the toner supply will outlast the mechanical parts in the print cartridge.

 **NOTE:** EconoMode does not affect print speed or memory usage, or extend the life of the print cartridge.

Input/output

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

USB

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

Embedded print server

For all models except the HP LaserJet 4014 base model, the product includes an HP Jetdirect embedded print server for connecting to a 10/100Base-TX network.

Expanded I/O

An optional expanded I/O (EIO) card can be installed in the designated slot on the formatter. It provides automatic I/O switching between multiple computers or networks that are connected to the product.

Hard-disk accessory

The optional hard-disk accessory can be mounted in one of the EIO slots on the rear of the formatter. The optional EIO-based hard disk is used for creating multiple original prints (mopies) and storing forms, fonts, and signatures.

CPU

The product formatter incorporates a 540 MHz RISC processor.

Product memory

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

Some product messages are affected by the auto-continue and clearable warning settings on the control-panel **SYSTEM SETUP** menu. If **CLEARABLE WARNING=JOB** is set on the control panel, warning messages appear on the control panel until the end of the job from which they were generated. If **CLEARABLE WARNING=ON** is set, warning messages appear on the control panel until **OK** is pressed. If an error occurs that prevents printing and **AUTO CONTINUE=ON** is set, the product goes offline for 10 seconds before it returns online. If **AUTO CONTINUE=OFF** is set, the message appears until **OK** is pressed.

Read-only memory

Besides storing microprocessor control programs, the read-only memory (ROM) stores dot patterns of internal character sets (fonts).

Random-access memory

The random-access memory (RAM) contains the page, I/O buffers, and the font storage area. It stores printing and font information received from the host system, and can also serve to temporarily store a full page of print-image data before the data is sent to the print engine. Memory capacity can be increased by adding DIMMs to the formatter. Note that adding memory (DIMMs) might also increase the print speed for complex graphics.

DIMM slot

The DIMM slot can be used to add product memory.

Nonvolatile memory

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

Memory Enhancement technology

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



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

PJL overview

Printer job language (PJL) is an integral part of configuration, in addition to the standard printer command language (PCL). With standard cabling, use PJL to perform a variety of functions.

- Two-way communication with the host computer through a bidirectional parallel connection. The product can send the host computer information about such things as the control panel settings, and the control panel settings can be changed from the host through two-way communication.
- Dynamic I/O switching. The product can be configured with a host on each I/O by using dynamic I/O switching. Even when the product is offline, it can receive data from more than one I/O simultaneously, until the I/O buffer is full.
- Context-sensitive switching. The product can automatically recognize the personality (PS or PCL) of each job and configure itself in that personality.
- Isolation of print environment settings from one print job to the next. For example, if a print job is sent to the product in landscape mode, the subsequent print jobs are printed in landscape mode only if they are formatted for it.

PML

The printer management language (PML) allows remote configuration and status monitoring through the I/O ports.

Control panel

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

6 Removal and replacement

- [Removal and replacement strategy](#)
- [Service approach](#)
- [User-replaceable parts](#)
- [Service replaceable parts](#)
- [1,500-sheet feeder assembly](#)

Removal and replacement strategy

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

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

HP does *not* support repairing individual subassemblies or problem-solving at the component level.

Note the length, diameter, color, type, and location 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 locate. When replacing wire harnesses, always use the provided wire loops, lance points, or wire-harness guides.

Warnings, cautions, notes, and tips

- ⚠ **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, as well as 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.

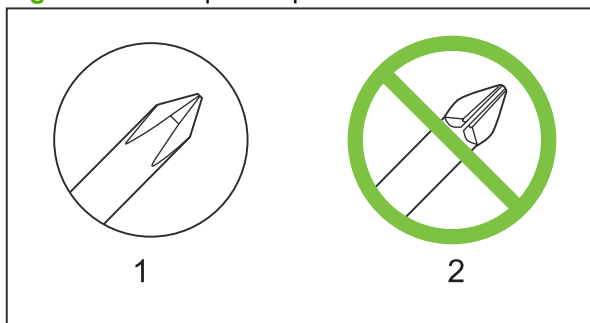
Required tools

- #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)
- Penlight
- Tape (optional)
- Transfer-roller removal hook

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

CAUTION: Do *not* pull directly on the wires to disconnect them. *Always* pull on the plastic body of a connector to avoid damaging the connector wires.

Figure 6-1 Phillips and pozidrive screwdriver comparison



Service approach

Before performing service

- Remove all media from the product.
- Turn off the power using the power switch.
- Unplug the power cable and interface cable(s).
- Place the product on an ESD mat (if one is available). If an ESD workstation or mat 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 137](#).
- Remove the trays and output bins.

After performing service

- Return media to the input tray.
- Plug in the power cable.
- Reinstall the print cartridge.
- Reinstall the trays and output bins.
- Perform printer tests.

Post-service tests

After service has been completed, the following tests can be used to verify that the repair or replacement was successful.

Test 1 (print-quality test)

1. Verify that you have completed the necessary reassembly steps.
2. Ensure that the input tray contains clean, unmarked paper.
3. Attach the power cord, and then turn on the product.
4. Verify that the expected start-up sounds occur.
5. Print a configuration page (see [Print the information and show-me-how pages on page 66](#)), and then verify that the expected printing sounds occur.
6. If necessary, restore any customer-specified settings.
7. Clean the outside of the product with a damp cloth.

Types of screws

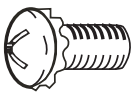
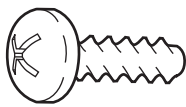


This table describes the screws that are used in the product and provides guidelines to help determine where each type of screw is used. The screws can vary in length depending on the thickness of the material that is being fastened.

Always note where each type of screw is located and replace each one in its original location.

⚠ WARNING! Make sure that components are replaced with the correct screw type. Using the incorrect screw (for example, substituting a long screw for the correct shorter screw) can cause damage to the product or interfere with product operation. Do not intermix screws that are removed with one component with the screws that are removed from another component.

💡 TIP: When you are disassembling the product, place the screws into the chassis holes from which they were removed. This prevents their loss, and ensures that the proper type and length of screw for each location is used when the product is reassembled.

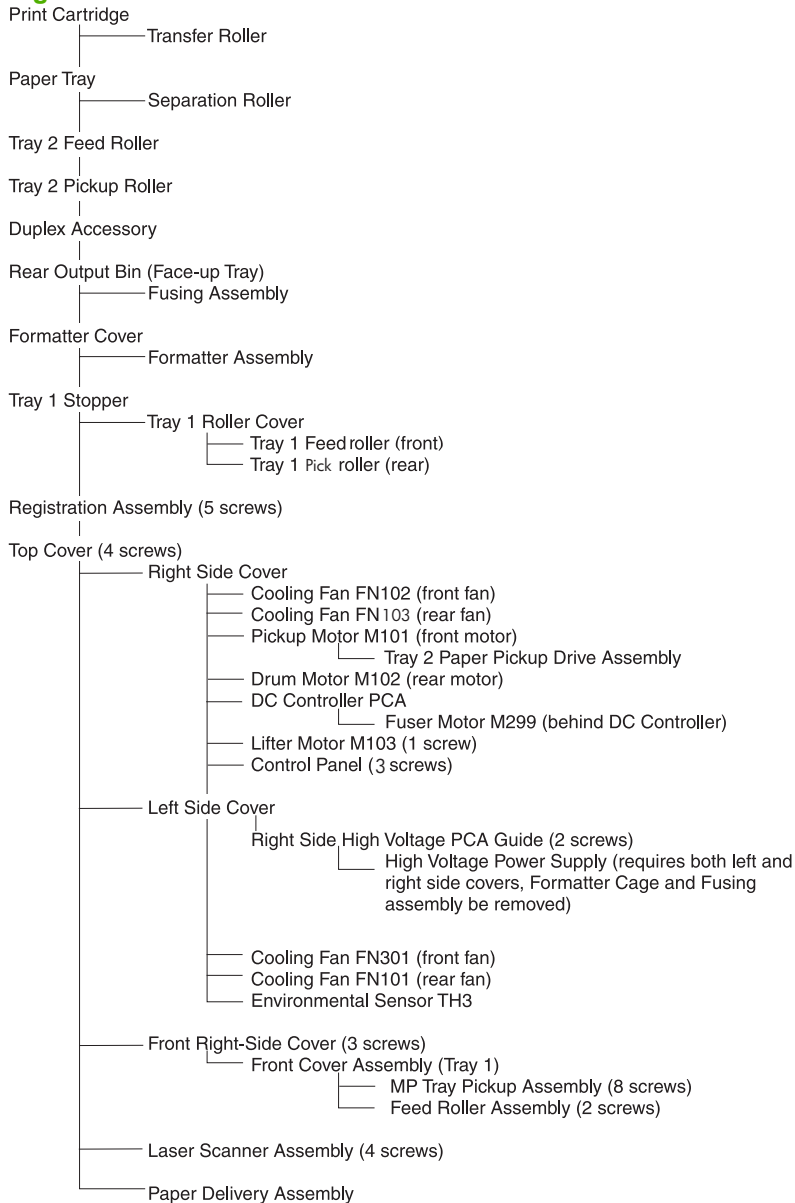
Table 6-1 Common fasteners used in this product

Screw type	Purpose
	This screw is used to fasten metal to metal when good electrical contact is needed. This screw also provides high resistance to loosening.
Phillips-head machine screw with captive star washer	
	This screw is used to fasten sheet metal or plastic to plastic frames (the deep, coarsely spaced threads provide an increased holding capability while decreasing the possibility of stripping the target hole).
Phillips-head screw with self-tapping threads	
Reinstallation 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 it. You will feel resistance and hear the screw click when it engages the existing threads in the hole. Do not overtighten the screw. If a self-tapping screw-hole becomes stripped, repair the screw-hole or replace the affected assembly.	
	This screw is used to fasten sheet metal parts to the sheet-metal chassis. It spans large clearance holes and distributes the load by increasing the bearing surface.
Phillips washer-head machine screw with a broad, flat washer attached to the screw head	
<div><div>6 mm</div><div>8 mm</div><div>10 mm</div><div>12 mm</div><div>M 3</div><div>M 4</div></div> <div>Screw measurement guide</div>	

Parts removal order

Use the following diagrams to determine the order in which parts must be removed.

Figure 6-2 Parts-removal tree

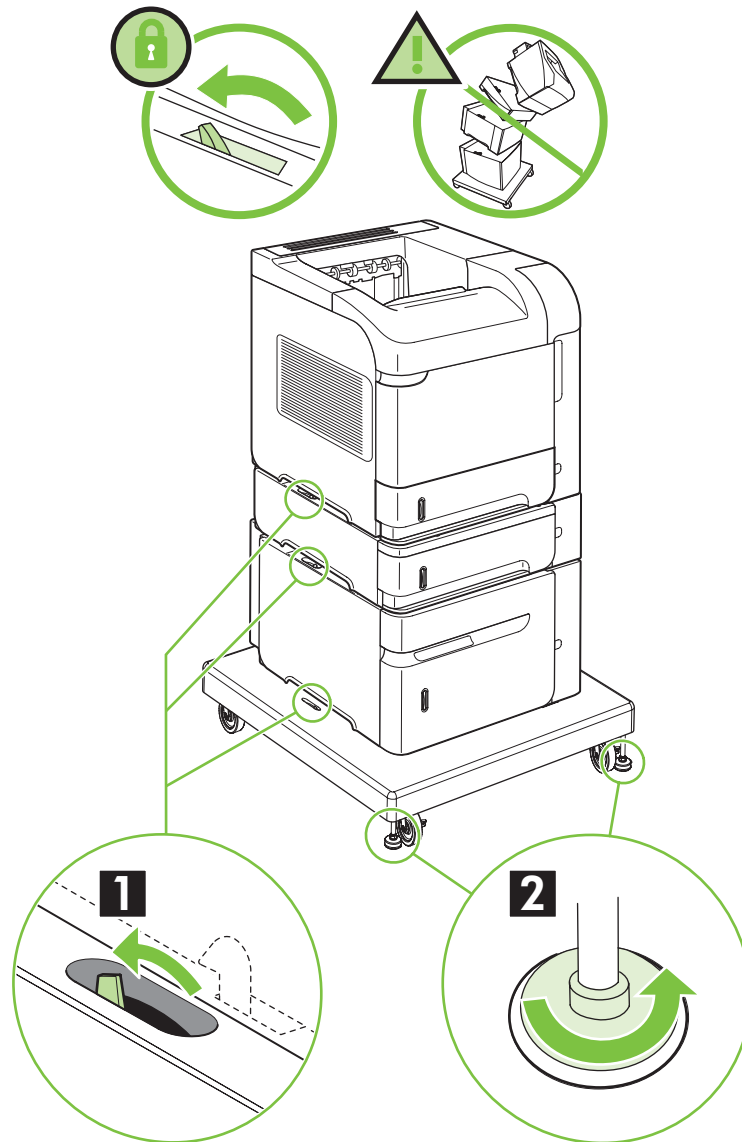


Product input trays and cabinet wheel locks

When the product and input trays are placed on the cabinet stand, the product and trays must be locked together to prevent them from tipping over. This is not necessary (but it is recommended) if the product and trays are placed on a level work surface. When servicing the product and accessories, unlatch the locking mechanism and separate the product and its accessory components.

The cabinet stand includes locks for the wheels at its base. Make sure that the wheels are locked when the product is in place. The wheels should be unlocked only when the product is being moved.

Figure 6-3 Product input trays and cabinet wheel locks



DC controller diagram

You must disconnect wires harnesses or cables from the DC controller PCA before you can remove or replace many of the product components. Use the following diagram to assist with disconnecting the cables and wire harnesses from the DC controller PCA.

Figure 6-4 DC controller diagram

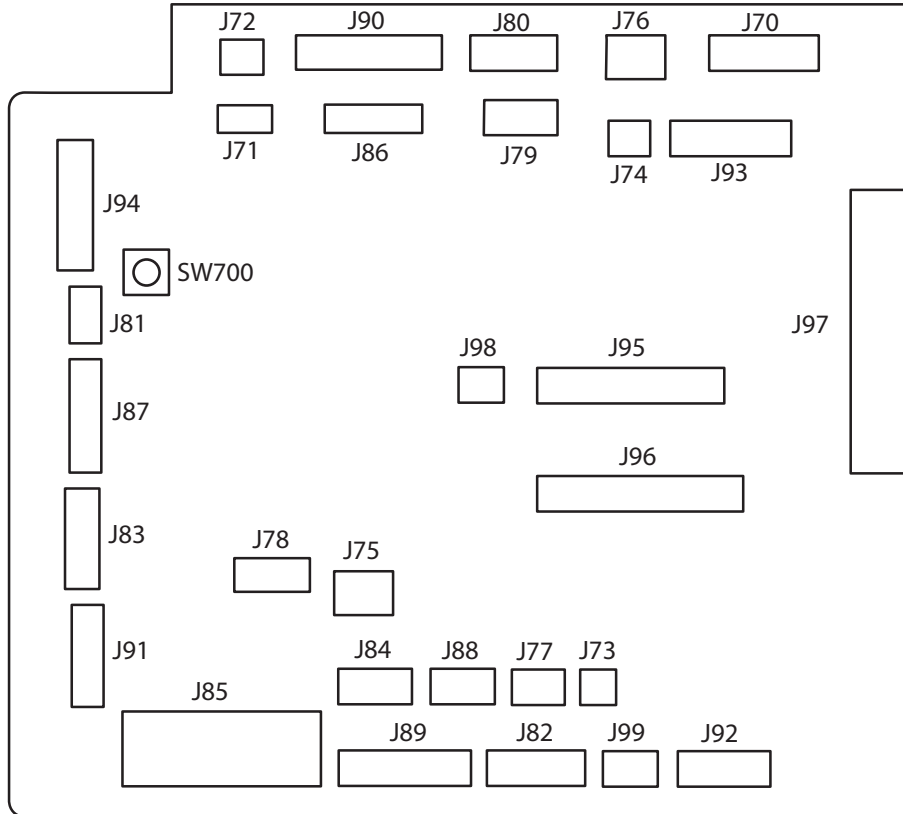



Table 6-2 DC controller connectors

Connector	Functionality	Pin Configuration
J70	Control Panel connector	8-pin
J71	SL102 Tray 1 Pickup Solenoid	2-pin
J72	SL101 Tray 2 Pickup Solenoid	2-pin
J73	M103 Tray 2 Lift Motor	2-pin
J74	TG101 Memory Tag I/O	2-pin
J75	FN102 Cooling Fan	3-wire
J76	PS104 Face Down Output Full Sensor	3-pin
J77	CL101 Feed Clutch	3-pin (2-wire)
J78	SW101 Door Open Switch	3-pin
J79	FN103 Cooling Fan	4-pin (3-wire)
J80	Not used	6-pin
J81	PS105 Tray 1 Media Present Sensor	3-pin

Table 6-2 DC controller connectors (continued)

Connector	Functionality	Pin Configuration
J82	Fusing Assembly	7-wire
J83	Envelope Feeder Accessory	5-pin
J84	Duplex Accessory	6-pin
J85	Power Supply PCA (+24Vdc/3.3Vdc)	6-wire
J86	Scanner Motor/Beam Detect	7-pin
J87	M102 Drum Motor	8-pin (7-wire)
J88	Paper Deck Accessory	5-pin
J89	M299 Fusing Motor	10-pin
J90	Stacker/Stacker-Stapler/Mailbox	8-pin
J91	M101 Feed Motor	7-pin
J92	PS101 Tray 2 Media present PS107 Tray 2 Media Stack Sensor #1 PS907 Tray 2 Media Stack Sensor #2	8-pin
J93	Laser/Driver PCA	11-pin
J94	PS102 Pre-feed Sensor PS108 Media Width Sensor #2 PS103 Top of Page Sensor PS106 Media Width Sensor #1	12-pin
J95	Power Supply PCA	18-pin
J96	Power Supply PCA	20-pin
J97	Intermediate PCA to Formatter PCA	32-pin Ribbon
J98	Not used	
J99	SW102 Tray 2 Media Size Switches	4-pin
TB700	3.3 volts dc	
TB701	GRN	

User-replaceable parts

 **NOTE:** Your product might not appear exactly as the one shown in the photos in this chapter. Although details such as the color of the external panels and covers might be different than your product, the procedures in this chapter are appropriate for your product.

Print cartridge

1. Open the print-cartridge door.

Figure 6-5 Remove the print cartridge (1 of 2)



2. Firmly grasp the print cartridge and pull it up and out of the product.

△ **CAUTION:** Do not expose the print cartridge to bright light or direct sunlight for long periods of time. This can damage the cartridge, which will result in print-quality defects. If the cartridge must be removed from the product for an extended amount of time, cover it and keep it out of bright light or direct sunlight.

Figure 6-6 Remove the print cartridge (2 of 2)



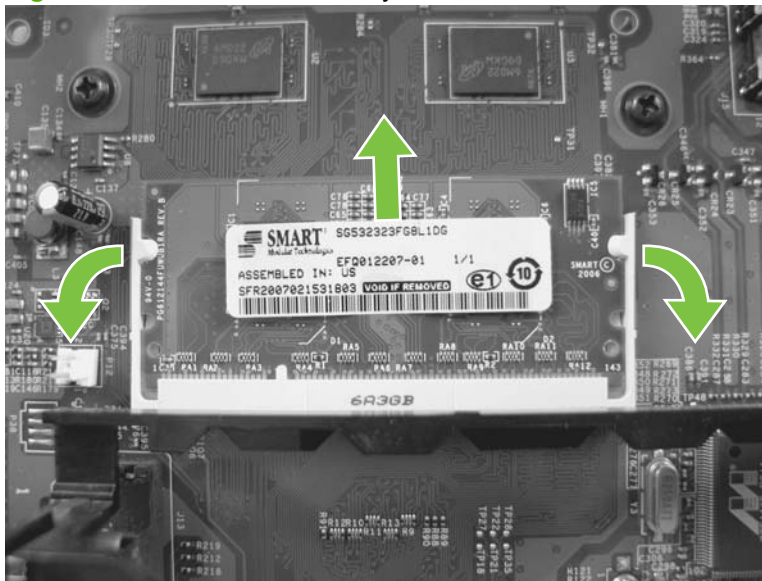
Memory DIMM



CAUTION: The product contains components that are sensitive to electrostatic discharge (ESD). Always perform service work at an ESD-protected workstation. If an ESD-protected workstation is not available, discharge body static by grasping the product chassis before touching an ESD-sensitive component. Ground the product chassis before servicing the product.

1. Remove the formatter cover. See [Formatter cover, formatter cage, and formatter PCA on page 150](#).
2. Open the formatter cage door.
3. Push the DIMM-locking arms away from the DIMM to release it, and then pull the DIMM out of the DIMM slot.

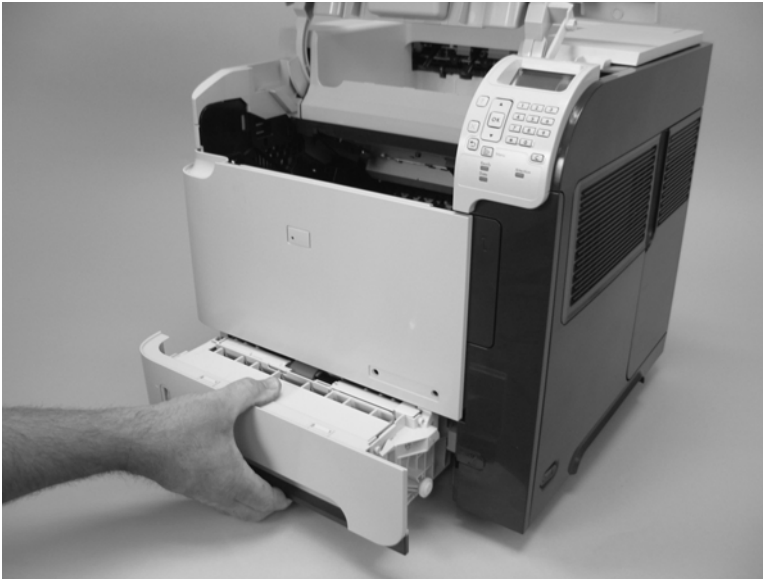
Figure 6-7 Remove the memory DIMM



Tray 2

Pull the tray out of the product to remove it.

Figure 6-8 Remove Tray 2



Tray 2 separation, pickup, and feed rollers

△ **CAUTION:** When handling the rollers, avoid touching the roller surfaces. Skin oils and fingerprints on a roller surface can cause print-quality problems.

1. Remove Tray 2 and place it on a level work surface. Locate and open the spring-loaded cover that is next to the roller in Tray 2.

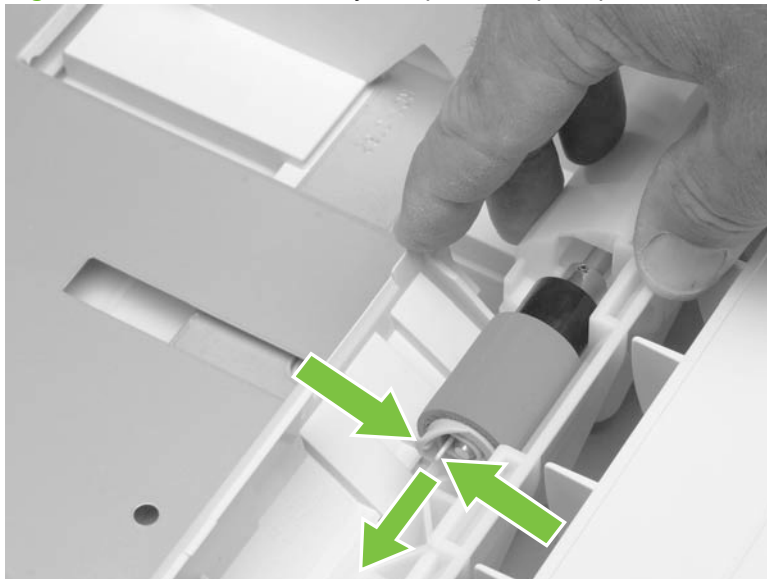
△ **CAUTION:** When you install this roller, make sure that it locks into place. Verify that the roller is correctly oriented, and that the torque limiter next to the roller is correctly positioned against the locking pin on the shaft.

Figure 6-9 Remove the Tray 2 separation, pickup, and feed rollers (1 of 4)



2. Pinch the blue latch that is on the left side of the roller. Slide the roller off of the shaft.

Figure 6-10 Remove the Tray 2 separation, pickup, and feed rollers (2 of 4)



3. Move the front of the product to the edge of the work surface for better access to the remaining pickup and feed rollers. To find the rollers, look up into the opening that was created when you removed Tray 2.

⚠ **WARNING!** Do not allow the front of the product to extend beyond the edge of the work surface. The product can become unbalanced and fall, which can cause damage to the product or personal injury to the service technician.

Figure 6-11 Remove the Tray 2 separation, pickup, and feed rollers (3 of 4)

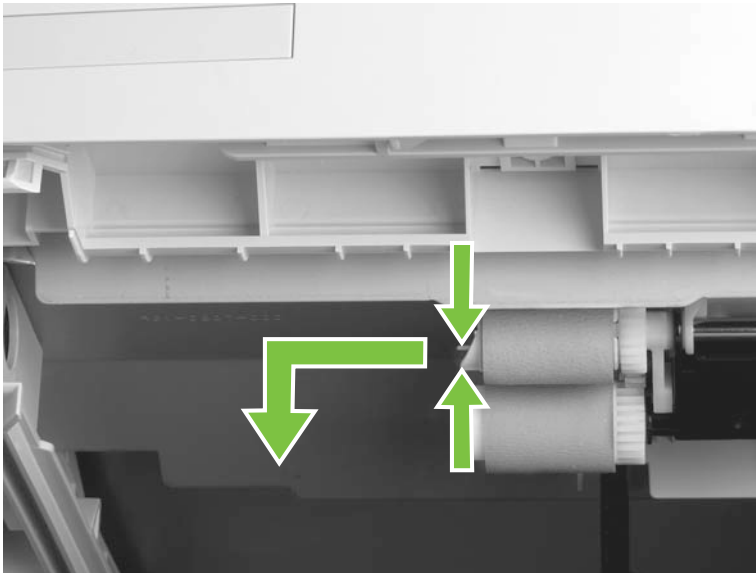


4. Pinch the locking lever on the left side of the feed roller (the front top roller below). Slide the roller off of the shaft. Repeat this step for the pickup roller (the bottom roller below).

💡 **Reinstallation tip** You might have to rotate the roller to gain access to the locking lever.

📝 **NOTE:** When you install these rollers, make sure that the rollers lock into place on the tabs that are on the drive gears.

Figure 6-12 Remove the Tray 2 separation, pickup, and feed rollers (4 of 4)



Transfer roller

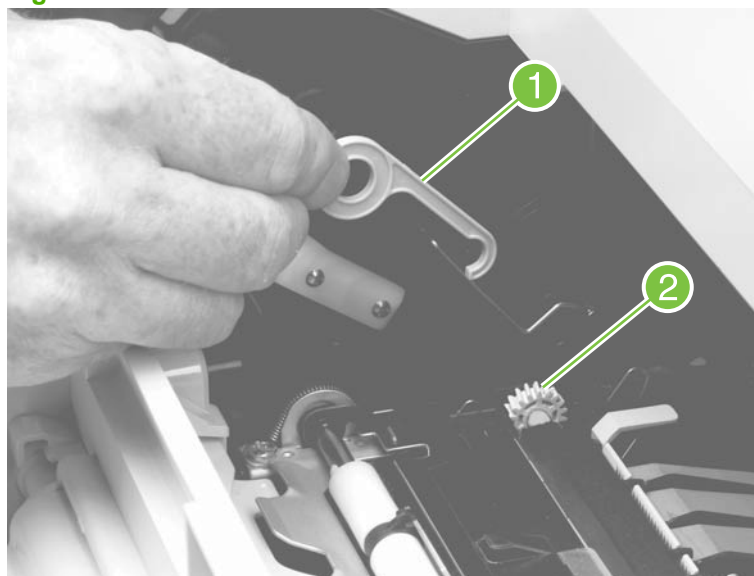
△ **CAUTION:** Do not touch the black rubber on the roller. Skin oils on the roller can cause print-quality problems. The use of disposable gloves is recommended when you remove the transfer roller.

1. Open the front cover.
2. Use a transfer-roller removal hook (callout 1) to lift the left end of the metal shaft out of place near the blue gear (callout 2). If a removal hook is not available use a flatblade screwdriver. Slide the transfer roller to the left to remove it.

△ **CAUTION:** Be careful to release and lift the left side of the roller *first*, and then slide the roller out.

📝 **NOTE:** The transfer-roller removal hook is included with a transfer-roller replacement kit.

Figure 6-13 Remove the transfer roller

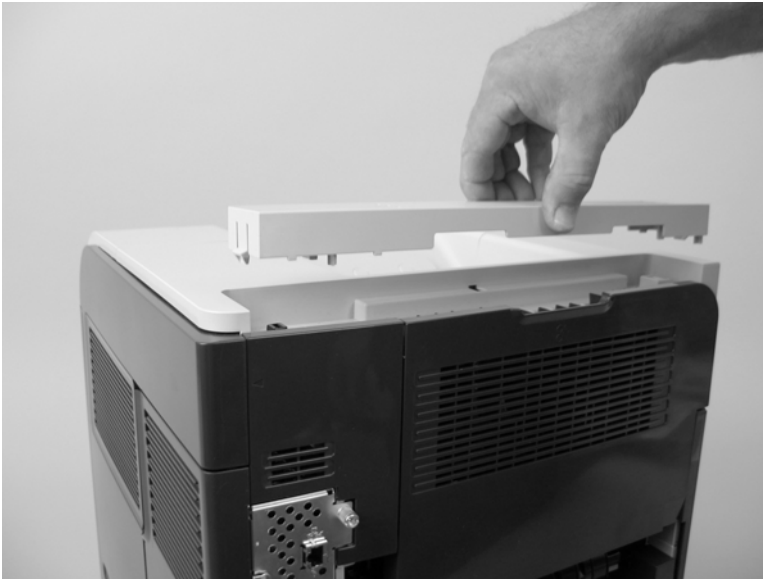


💡 **Reinstallation tip** When you install the transfer roller, make sure that the black collar on the left side is oriented correctly, with the open end face-down (the solid end is face-up).

Top-accessory cover

Lift the top-accessory cover up and off the product.

Figure 6-14 Remove the top-accessory cover



Envelope feed accessory covers

1. Open the front cover. Grasp the inner front accessory cover, and then pull it straight out of the product.

Figure 6-15 Remove the front accessory covers (1 of 2)



2. Rotate the top of the front accessory receptacle cover away from the product, and then pull it straight away from the product to remove it.

Figure 6-16 Remove the front accessory covers (2 of 2)



Duplex accessory or cover

Pull the duplex accessory or cover out of the product to remove it.

Figure 6-17 Remove the duplex accessory cover

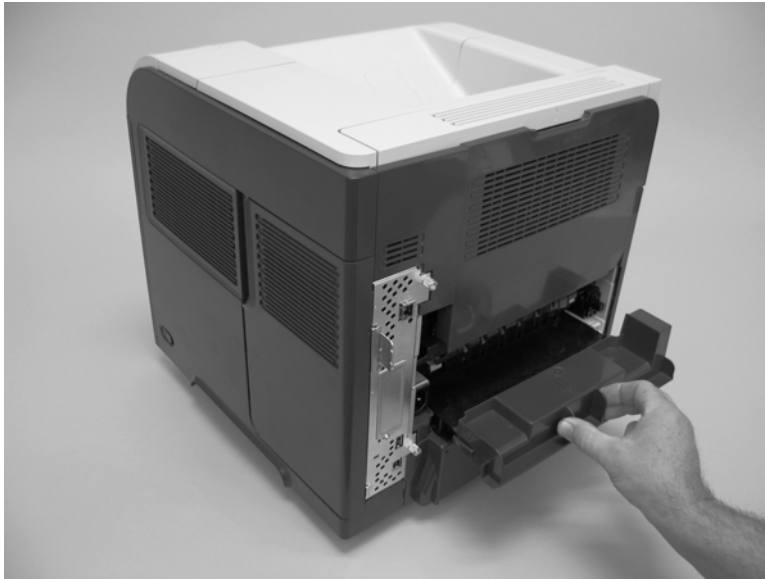
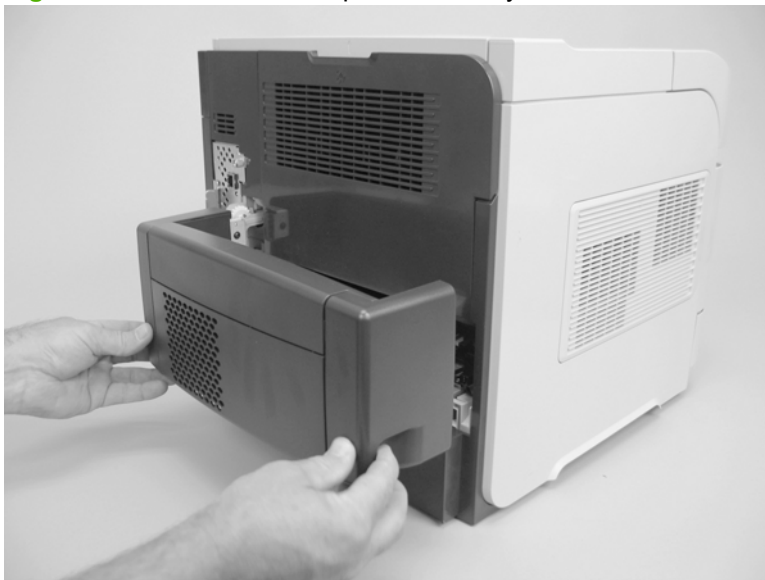


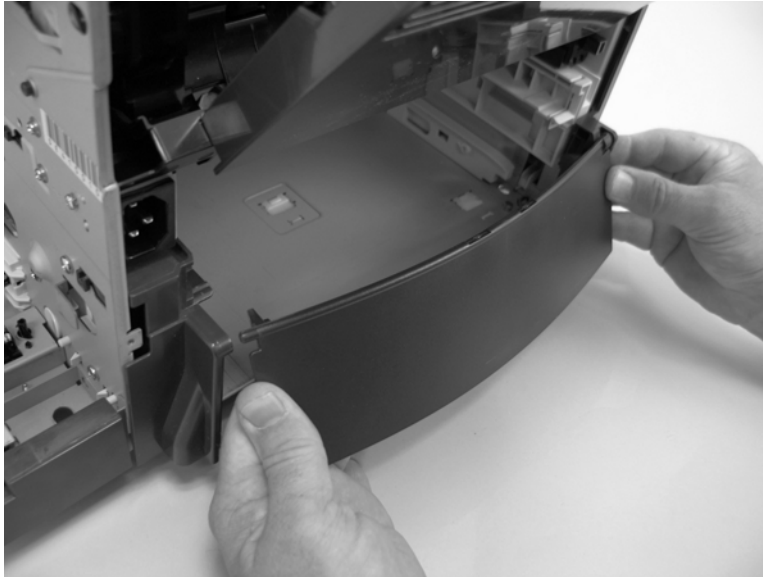
Figure 6-18 Remove the duplex accessory



Tray 2 extension door

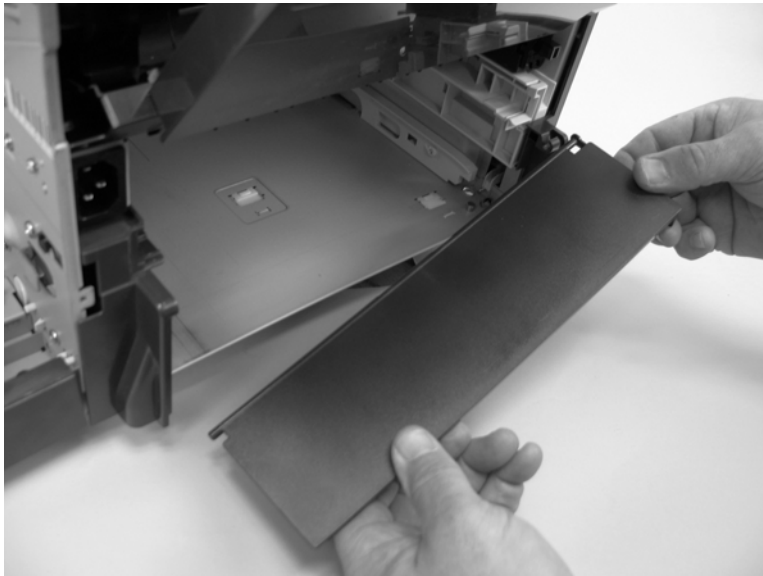
1. Remove the duplex accessory, or the duplex accessory cover. See [Duplex accessory or cover on page 146](#).
2. Carefully flex the Tray 2 extension door to release the hinge pin near the power cord side of the product.

Figure 6-19 Remove the Tray 2 extension door (1 of 2)



3. Rotate the Tray 2 extension door to the horizontal position, and then pull up on the keyed hinge pin to release the door. Remove the Tray 2 extension door

Figure 6-20 Remove the Tray 2 extension door (2 of 2)

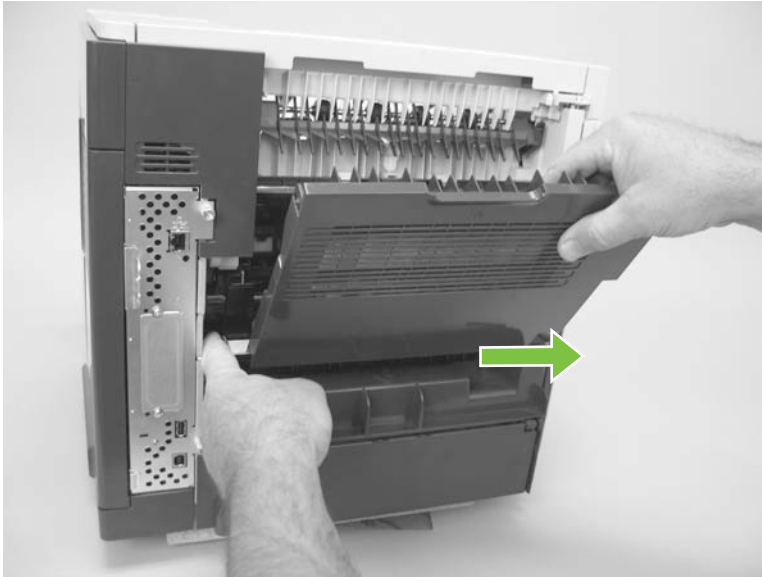


Rear output bin

 **NOTE:** If the duplexer is installed, lift it up slightly and pull it away from the product to remove it.

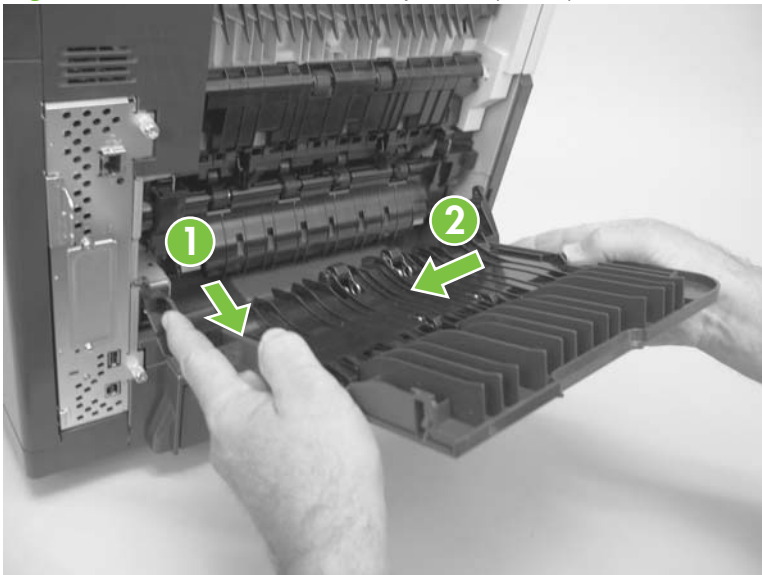
1. Open the rear output bin.
2. Squeeze the hinge pin out of its mounting hole.

Figure 6-21 Remove the rear output bin (1 of 2)



3. Rotate the output bin away from the product until the right hinge pin is released, and then remove the output bin.

Figure 6-22 Remove the rear output bin (2 of 2)

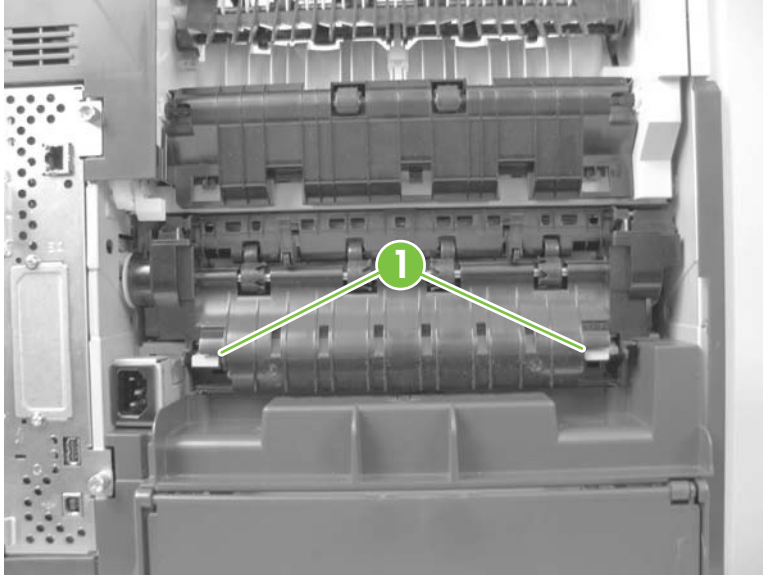


Fuser

⚠ **WARNING!** The fuser might be very hot. After turning off the product power, allow the fuser to cool for at least 5 minutes before removing it.

1. Remove the rear output bin. See [Rear output bin on page 148](#).
2. Squeeze the blue fuser-release tabs (callout 1).

Figure 6-23 Remove the fuser (1 of 2)



3. Pull the fuser straight back and out of the product.

⚠ **CAUTION:** Do not drop or jar the fuser. It can easily be damaged if it is mishandled.

💡 **TIP:** When you replace the fuser, make sure that it is fully seated into the product. You should hear both sides snap into place.

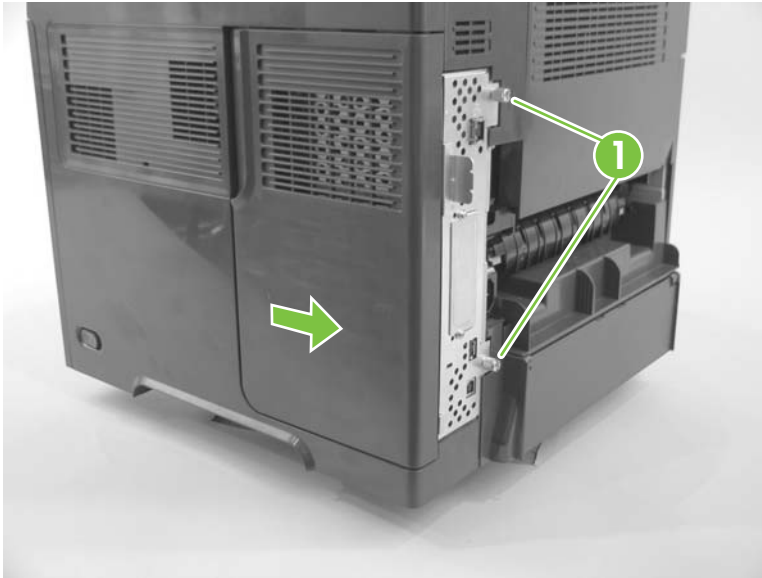
Figure 6-24 Remove the fuser (2 of 2)



Formatter cover, formatter cage, and formatter PCA

1. Grasp the formatter cover.
2. Pull the cover straight back and away from the product, and then remove two thumb screws (callout 1).

Figure 6-25 Remove the formatter cover and formatter cage (1 of 2)



3. Grasp the formatter cage by the finger holes, and then slide it away from the product to remove it.


 **NOTE:** When you reinstall the formatter cage, open the formatter-cage door before you fully seat the formatter cage, and verify that the formatter PCA connector is aligned with the connector on the product chassis.

Figure 6-26 Remove the formatter cover and formatter cage (2 of 2)




Reinstallation notes, formatter

If you install a *replacement* formatter, complete the following steps:

1. Use the control-panel display to open the service menu and specify the total page count, the maintenance count, the service ID, the cold reset paper size, and the serial number.
2. Reset the product display language to the customer's choice (see the Operation chapter).

After installing a *new* formatter, complete the following steps:

1. Remove the memory DIMM from the discarded formatter , and then install the DIMM on the replacement formatter.
2. Turn the product on and then wait for five minutes after the product reaches the Ready state.

 **NOTE:** Five minutes is required to allow for NVRAM settings to be written.

3. Turn the product off.
4. Turn the product on again, and then wait five minutes after the product reaches the **Ready** state.
5. Print a configuration page to verify against original settings.

Installing a new formatter and a new DC controller


△ **CAUTION:** If you are installing a *new formatter and a new DC controller*, follow the instructions in this section.

1. Turn the product off.
2. Remove the formatter and cage, and then replace it with the replacement formatter and cage.
3. Turn the product on and then wait for five minutes after the product reaches the **Ready** state.


 **NOTE:** Five minutes is required to allow for NVRAM settings to be written. The same five-minute wait is required several times during this procedure.

4. Turn the product off.
5. Turn the product on again, and then wait five minutes after the product reaches the Ready state.
6. Turn the product off.
7. Remove the DC controller (see [DC controller PCA on page 186](#)) and replace it with the new DC controller.
8. Turn the product on and wait for five minutes after the product reaches the **Ready** state.
9. Turn the product off.
10. Turn the product on again, and then wait five minutes after the product reaches the Ready state.
11. Print a configuration page to verify against original settings.

Service replaceable parts

 **NOTE:** Your product might not appear exactly as the one shown in the photos in this chapter. Although details such as the color of the external panels and covers might be different than your product, the procedures in this chapter are appropriate for your product.

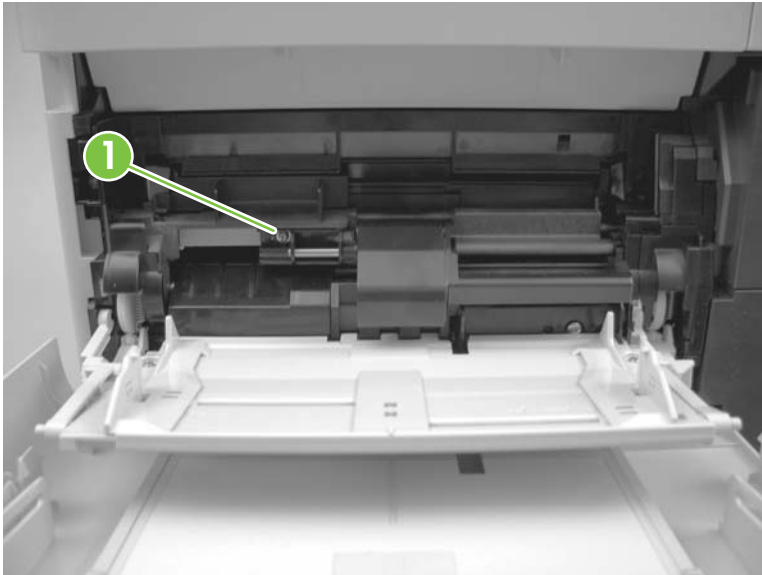
Tray 1 pickup and feed rollers

 **CAUTION:** When handling the rollers, avoid touching the roller surfaces. Skin oils and fingerprints on a roller surface can cause print-quality problems.

The Tray 1 pickup and feed rollers are also user-replaceable components.

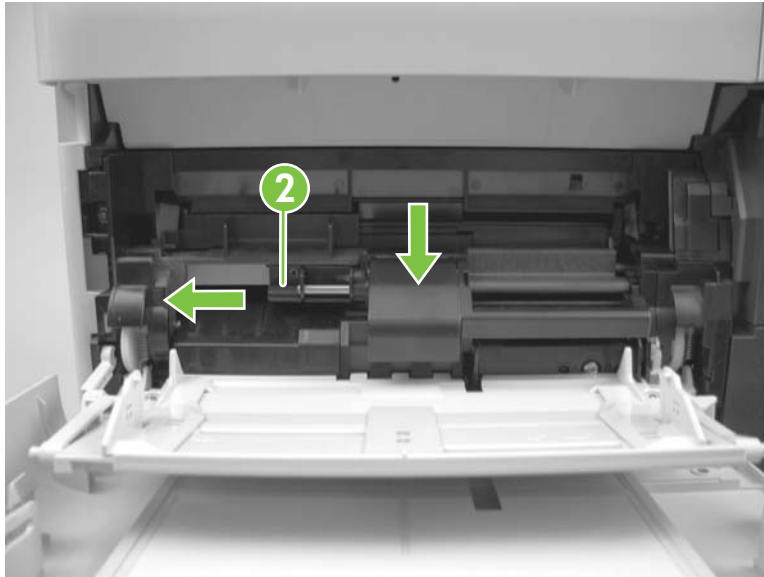
1. Open the front cover.
2. Remove one screw (callout 1) with a short screwdriver.

Figure 6-27 Remove the Tray 1 pickup and feed rollers (1 of 4)



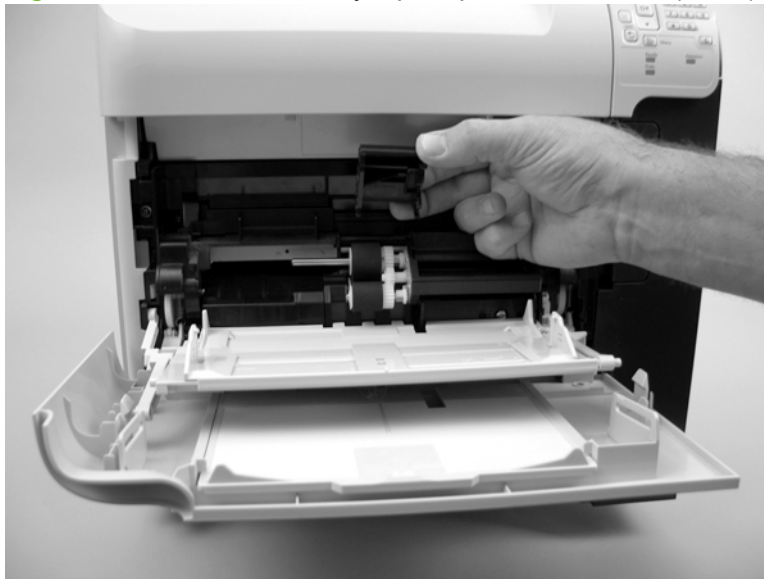
3. Push down on the roller-shaft bushing (callout 2) to release two alignment pins, and then slide the bushing to the left and off of the shaft to remove it.

Figure 6-28 Remove the Tray 1 pickup and feed rollers (2 of 4)



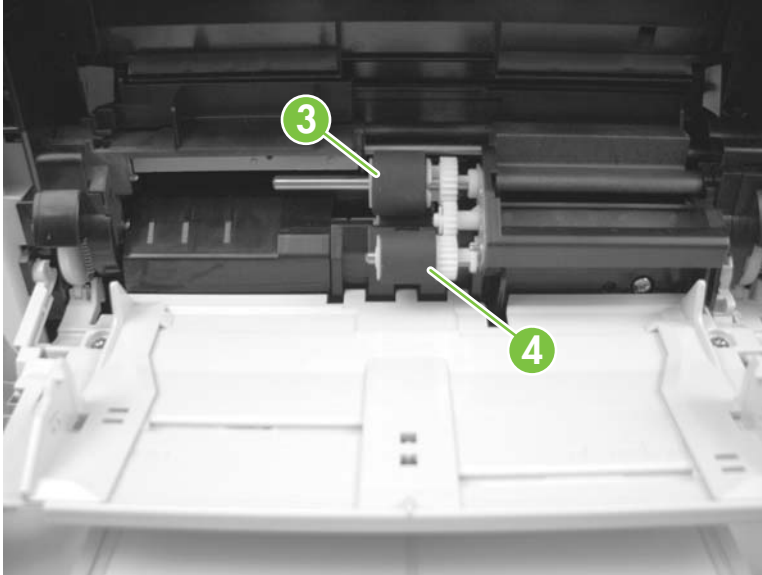
4. Slide the Tray 1 pickup and feed rollers cover slightly to the left to release it, and then lift the cover up to remove it.


Figure 6-29 Remove the Tray 1 pickup and feed rollers (3 of 4)

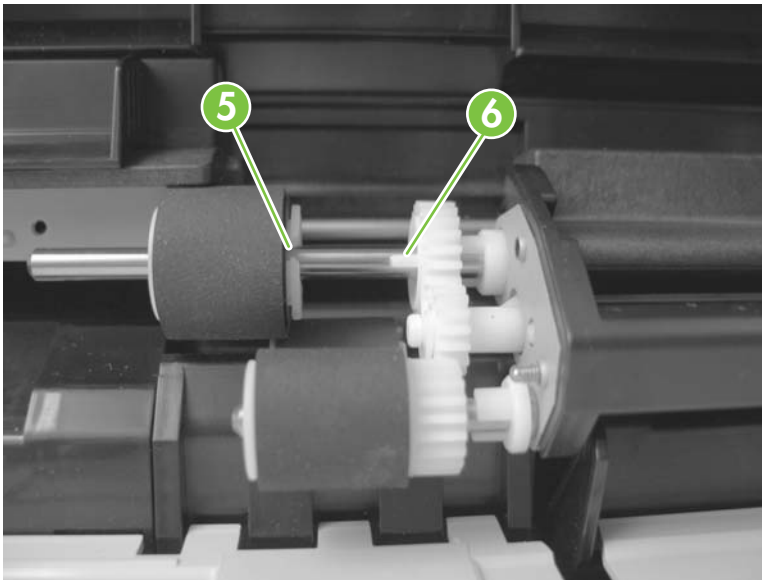


5. Slide the Tray 1 pickup roller (callout 3) and the feed roller (callout 4) to the left and off of the shafts to remove them.

Figure 6-30 Remove the Tray 1 pickup and feed rollers (4 of 4)



 **TIP:** The pickup roller must fit over the drive tabs (callout 5) on the roller-drive gear (callout 6).



Tray 1 separation roller

△ **CAUTION:** When handling the roller, avoid touching the roller surface. Skin oils and fingerprints on a roller surface can cause print-quality problems.

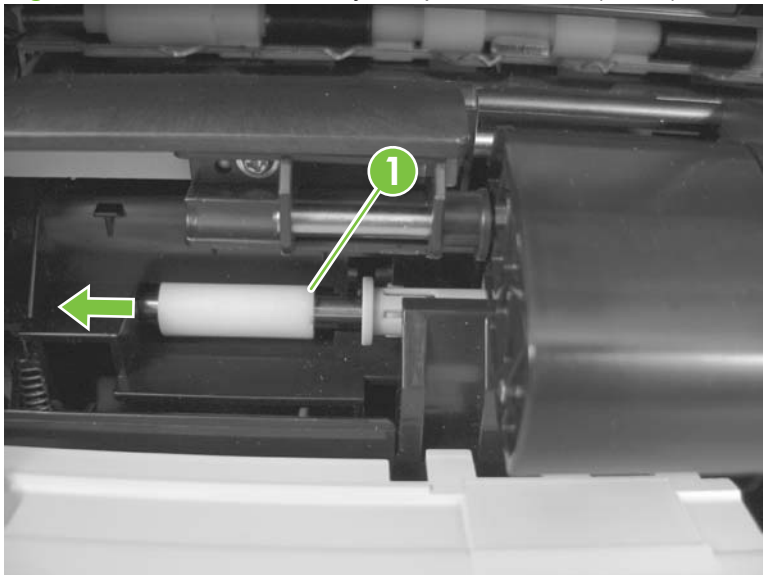
1. Open the front cover.
2. Rotate the spring-loaded cover downward to gain access to the roller.

Figure 6-31 Remove the Tray 1 separation roller (1 of 3)



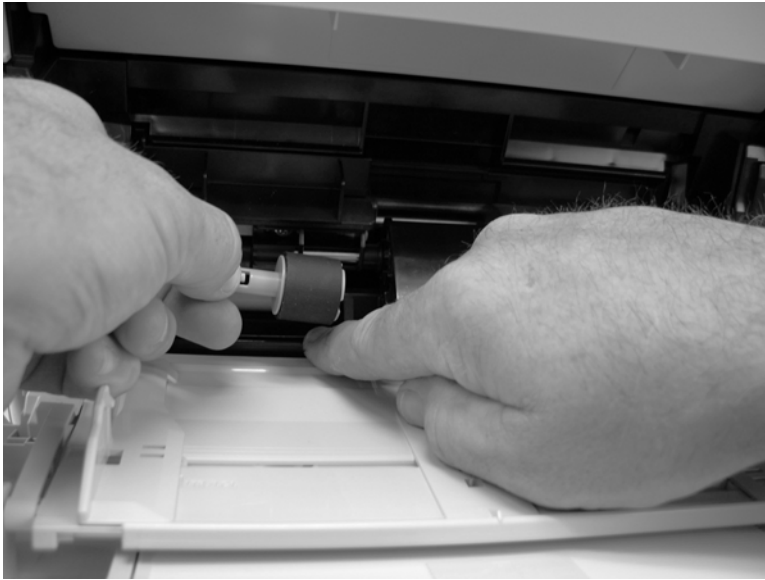
3. Slide the separation roller (callout 1) to the left to remove it.

Figure 6-32 Remove the Tray 1 separation roller (2 of 3)



4. Remove the roller.

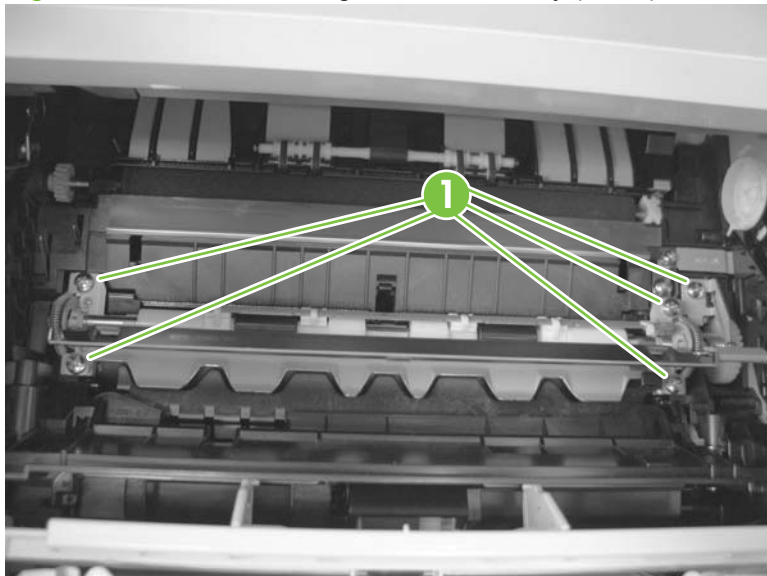
Figure 6-33 Remove the Tray 1 separation roller (3 of 3)



Registration assembly

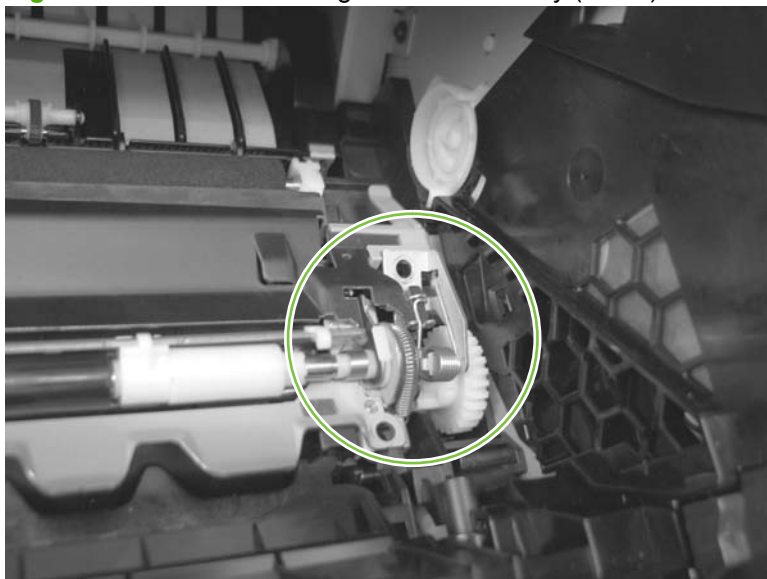
1. Open the print-cartridge door, and then remove the print cartridge.
2. Use the green handle (located at the right edge of the registration plate) to raise the registration-roller plate, and then remove five screws (callout 1).

Figure 6-34 Remove the registration assembly (1 of 4)



3. Locate the grounding plate at the right side of the registration assembly. The plate is not captive when you remove the assembly. Do not lose the grounding plate.

Figure 6-35 Remove the registration assembly (2 of 4)



4. Lift the registration assembly out of the product.

Figure 6-36 Remove the registration assembly (3 of 4)




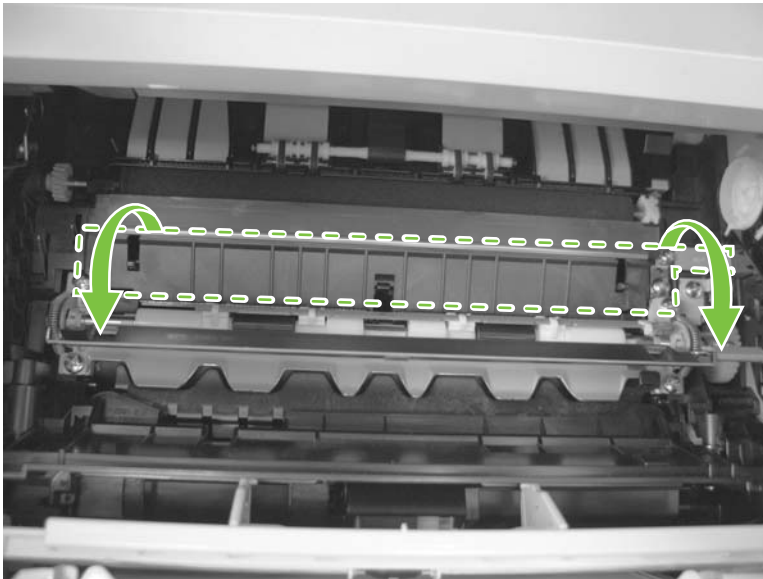

 **TIP:** To reinstall the registration assembly, you must open the registration-roller plate to gain access to the mounting holes.

Figure 6-37 Remove the registration assembly (4 of 4)



Top cover

 **NOTE:** If the optional stapler/stacker or stacker accessory is installed, lift it straight up and off of the product to remove it. Then proceed to step 2.

1. Remove the top accessory cover. See [Top-accessory cover on page 144](#).
2. Open the rear-output bin, the print-cartridge door, and the front cover.
3. Use needle-nose pliers to release the print-cartridge drive-arm tab (callout 1).


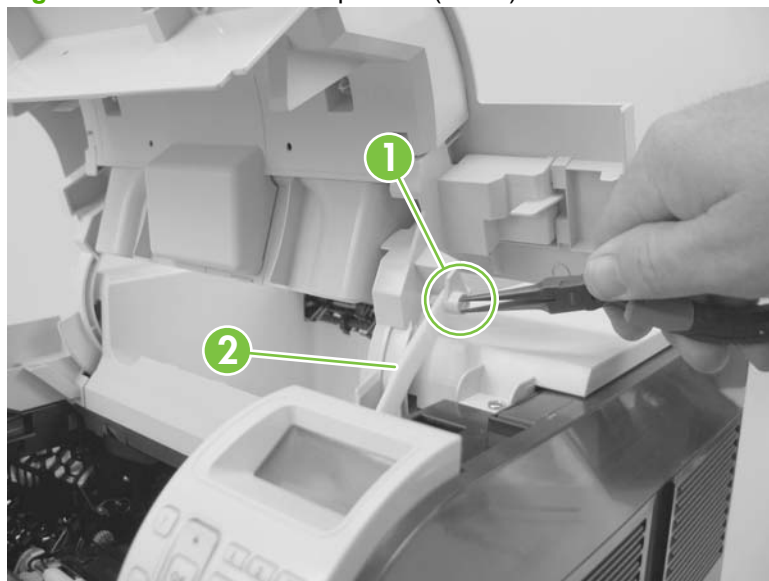
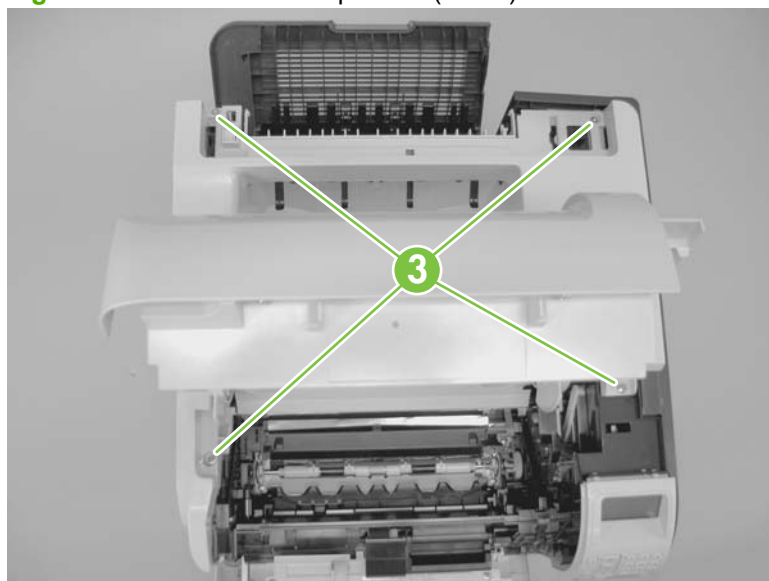
 **TIP:** Push the print-cartridge drive-arm (callout 2) back into the product to avoid damaging it when you remove the top cover.

Figure 6-38 Remove the top cover (1 of 4)



4. Remove four screws (callout 3).

Figure 6-39 Remove the top cover (2 of 4)



5. Partially close the print-cartridge door, and then use a small flat blade screwdriver to release two tabs (callout 4).


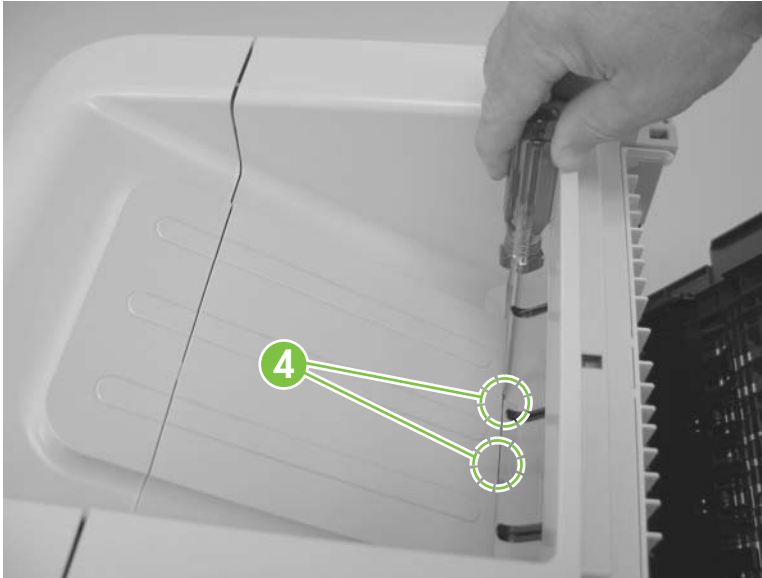
 **NOTE:** Make sure that these tabs are fully seated when the top cover is reinstalled.

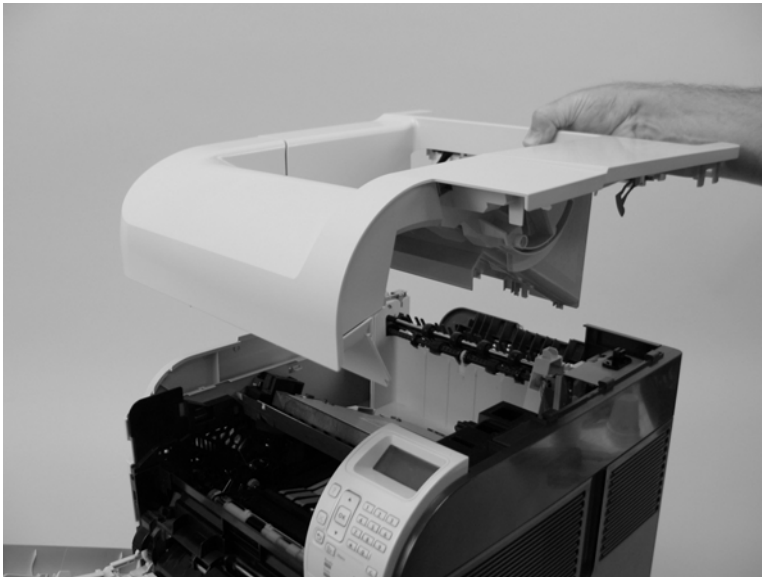
Figure 6-40 Remove the top cover (3 of 4)



6. Lift the top cover up and off of the product to remove it.

△ **CAUTION:** The accessory pin (located in the left-rear corner of the cover) is not captive. Do not lose the pin.

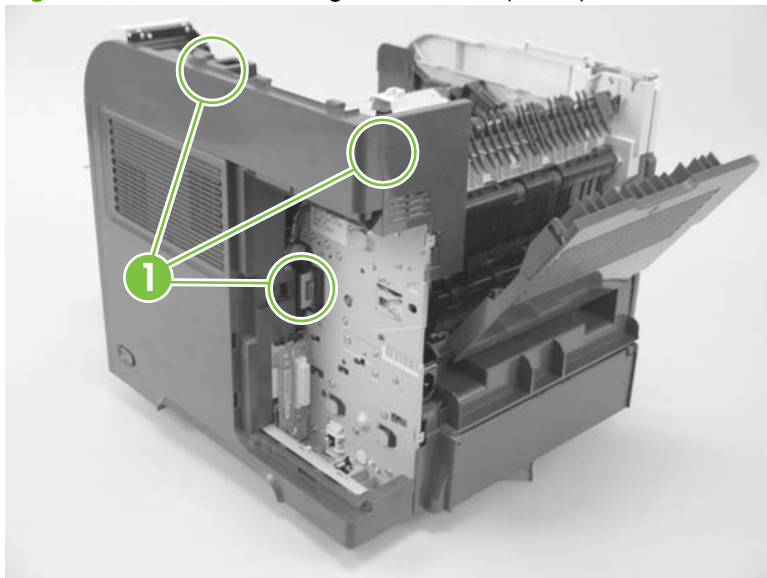
Figure 6-41 Remove the top cover (4 of 4)



Right-side cover

1. Remove the following components:
 - Top accessory cover. See [Top-accessory cover on page 144.](#)
 - Formatter cover and formatter cage. See [Formatter cover, formatter cage, and formatter PCA on page 150.](#)
 - Top cover. See [Top cover on page 159.](#)
2. Release three tabs (callout 1).

Figure 6-42 Remove the right-side cover (1 of 3)



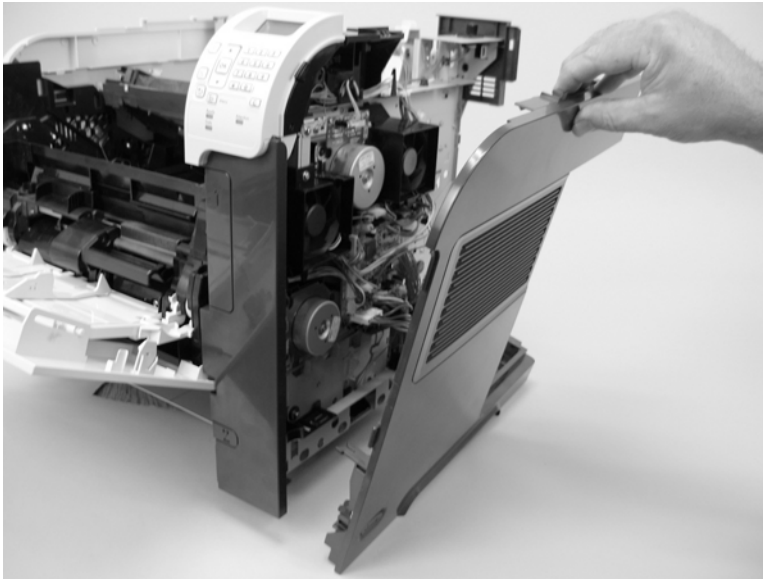
3. Carefully separate the cover from the product near the control panel.

Figure 6-43 Remove the right-side cover (2 of 3)



4. Rotate the top of the cover away from the product, and then lift the cover up to remove it.

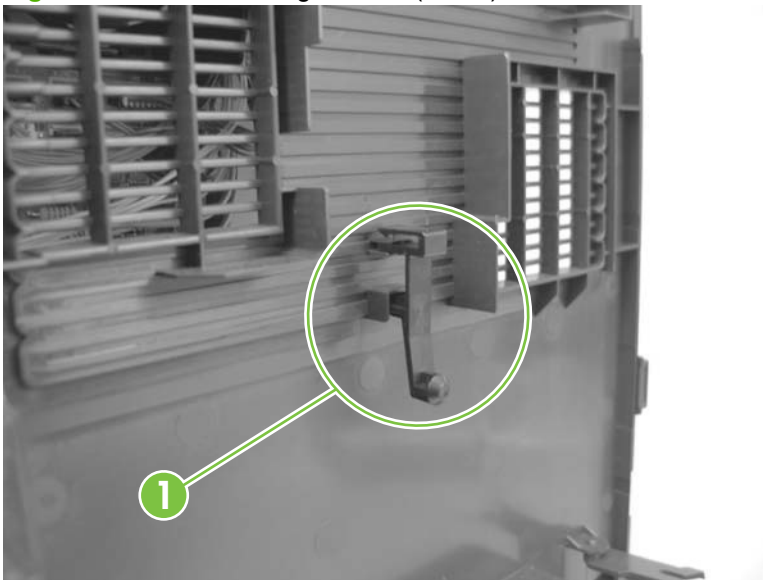
Figure 6-44 Remove the right-side cover (3 of 3)



Reinstall the right cover

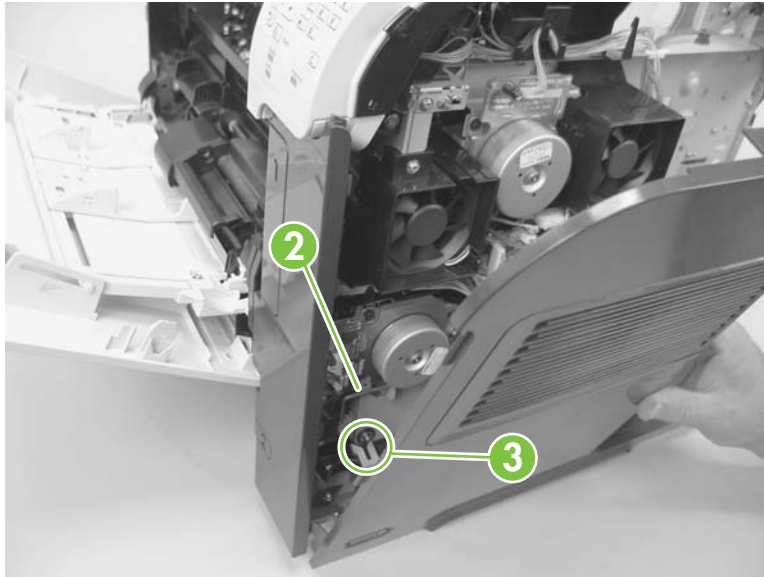
1. If you are installing a replacement cover, remove the engine-test button (callout 1) from the discarded cover and then install it on the replacement cover.

Figure 6-45 Install the right cover (1 of 2)



2. When the cover is installed, make sure that the switch-connecting rod (callout 2) snaps into the power-switch arm (callout 3).

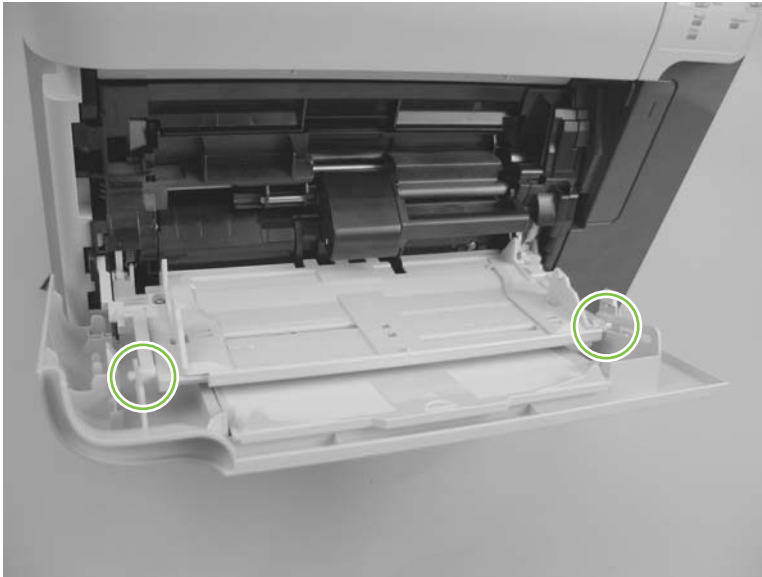
Figure 6-46 Install the right cover (2 of 2)



Left-side cover

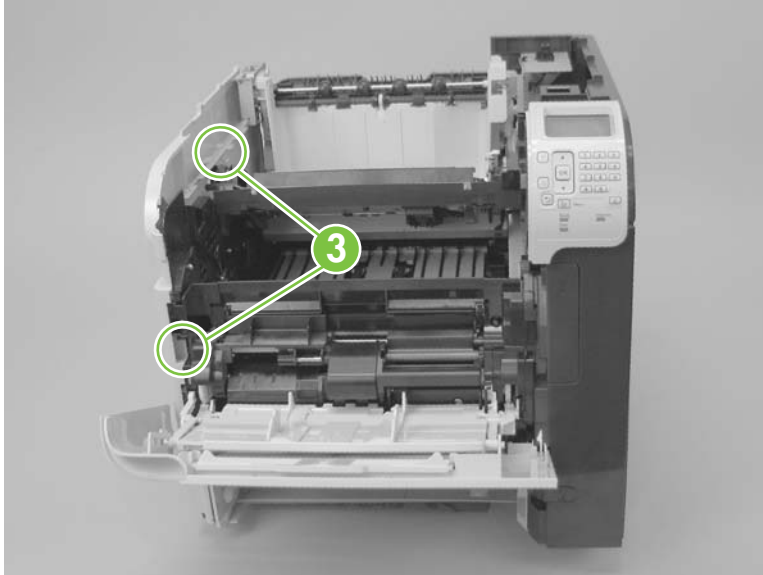
1. Remove the following components:
 - Top accessory cover. See [Top-accessory cover on page 144](#).
 - Duplex accessory cover and Tray 2 extension door. See [Envelope feed accessory covers on page 145](#).
 - Formatter cover and formatter cage. See [Formatter cover, formatter cage, and formatter PCA on page 150](#).
 - Top cover. See [Top cover on page 159](#).
2. Gently pry the front-cover retainers off of the Tray 1 arms.

Figure 6-47 Remove the left-side cover (1 of 3)



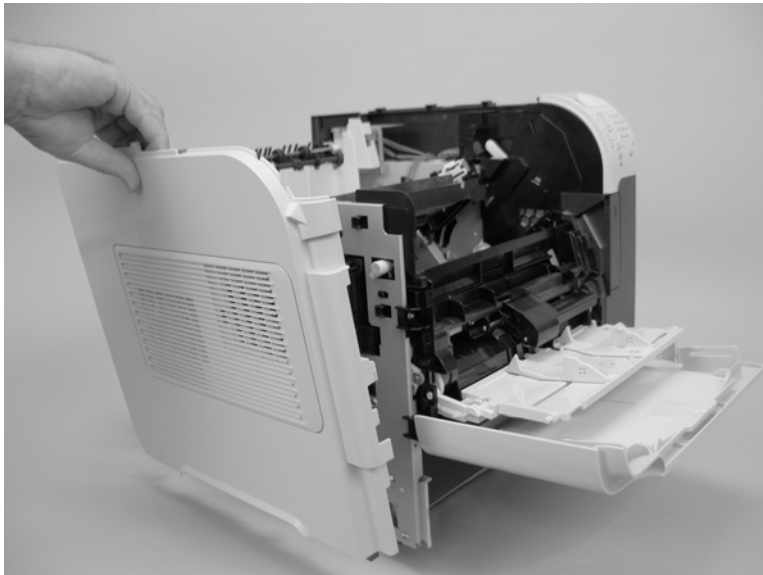
3. Release two tabs (callout 3), and then rotate the top of the cover away from the product and lift the cover up to remove it.

Figure 6-48 Remove the left-side cover (2 of 3)



4. Rotate the top of the cover away from the product and lift the cover up to remove it.

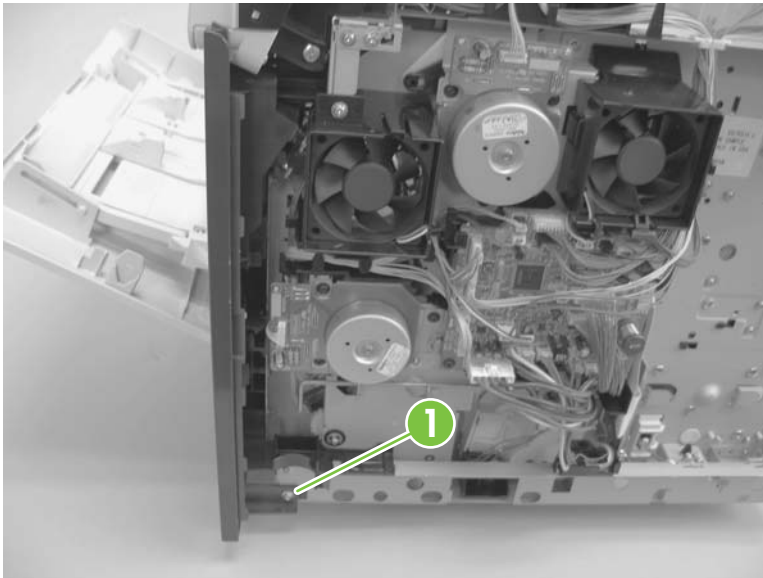
Figure 6-49 Remove the left-side cover (3 of 3)



Right-front cover

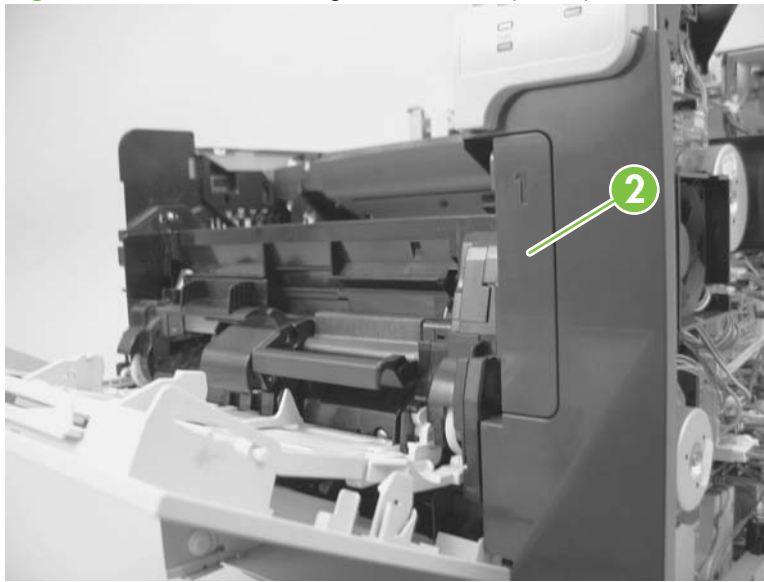
1. Remove the following components:
 - Top accessory cover. See [Top-accessory cover on page 144](#).
 - Formatter cover and formatter cage. See [Formatter cover, formatter cage, and formatter PCA on page 150](#).
 - Top cover. See [Top cover on page 159](#).
 - Right-side cover. See [Right-side cover on page 161](#).
2. Open the front cover.
3. Remove one screw (callout 1).

Figure 6-50 Remove the right-front cover (1 of 4)



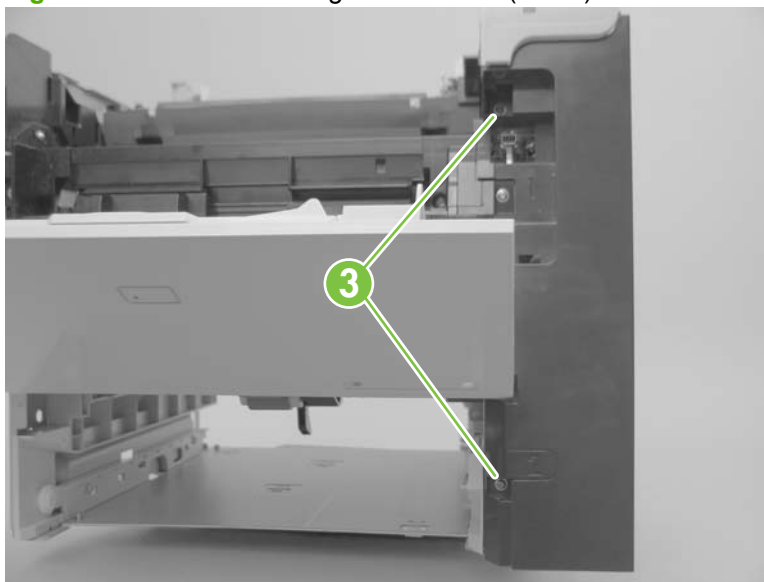
4. Gently pull the envelope-feeder connector cover (callout 2) off of the product to remove it.

Figure 6-51 Remove the right-front cover (2 of 4)



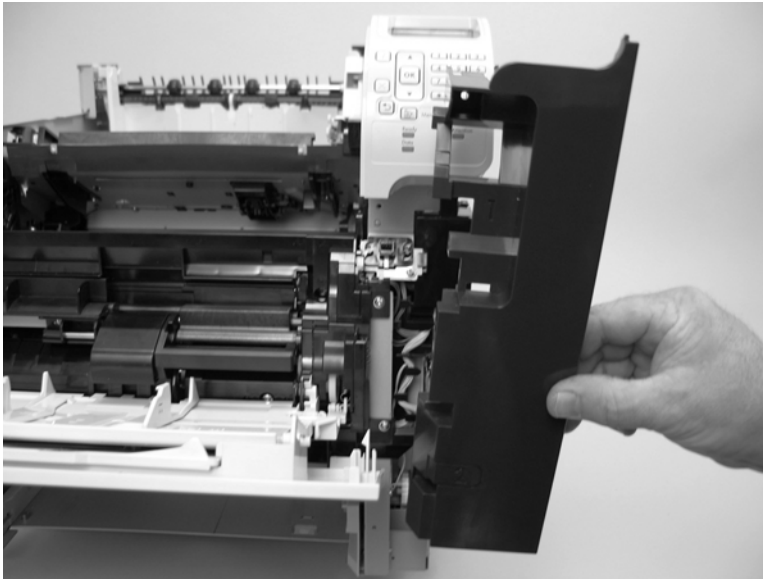
5. Remove two screws (callout 3).

Figure 6-52 Remove the right-front cover (3 of 4)



6. Remove the right front cover.

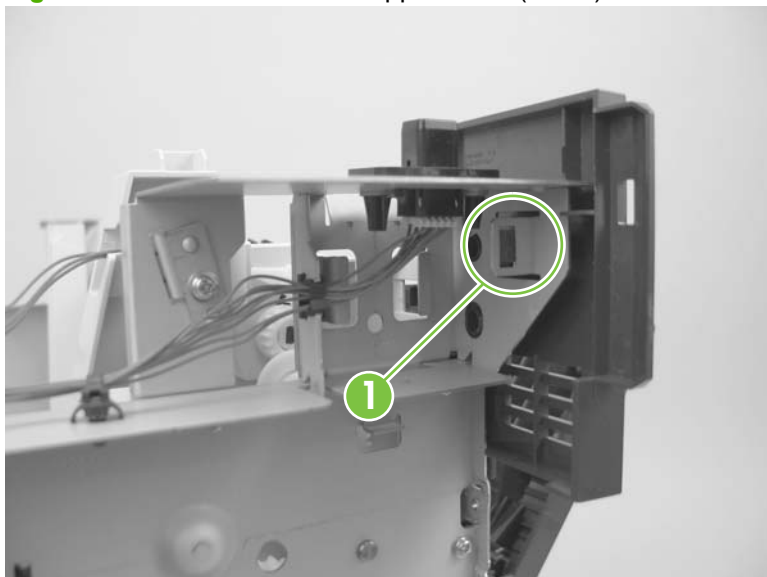
Figure 6-53 Remove the right-front cover (4 of 4)



Rear-upper cover

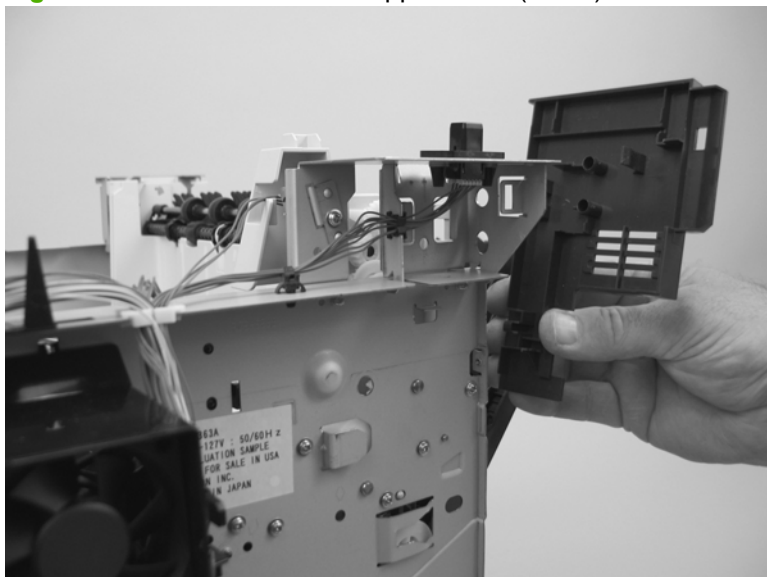
1. Remove the following components:
 - Top accessory cover. See [Top-accessory cover on page 144](#).
 - Formatter cover and formatter cage. See [Formatter cover, formatter cage, and formatter PCA on page 150](#).
 - Top cover. See [Top cover on page 159](#).
 - Right-side cover. See [Right-side cover on page 161](#).
2. Release one tab (callout 1).

Figure 6-54 Remove the rear-upper cover (1 of 2)



3. Remove the rear-upper cover

Figure 6-55 Remove the rear-upper cover (2 of 2)



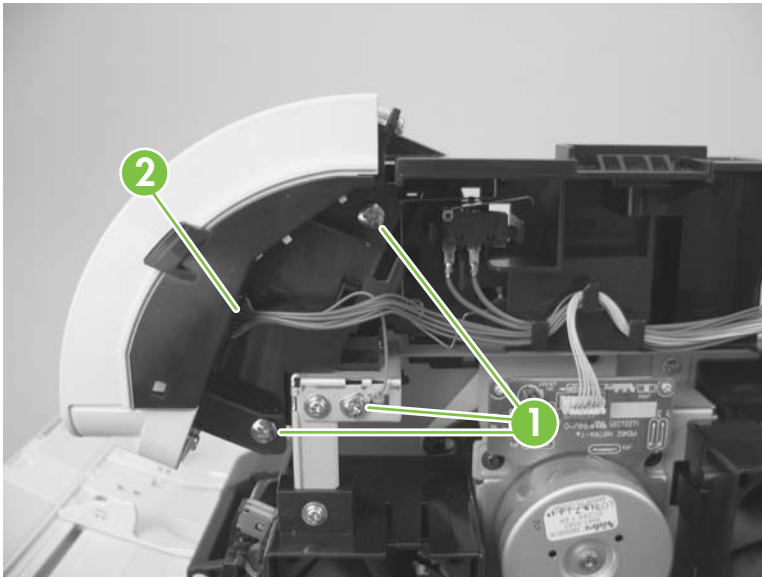
Control-panel assembly



CAUTION: The product contains components that are sensitive to electrostatic discharge (ESD). Always perform service work at an ESD-protected workstation. If an ESD-protected workstation is not available, discharge body static by grasping the product chassis before touching an ESD-sensitive component. Ground the product chassis before servicing the product.

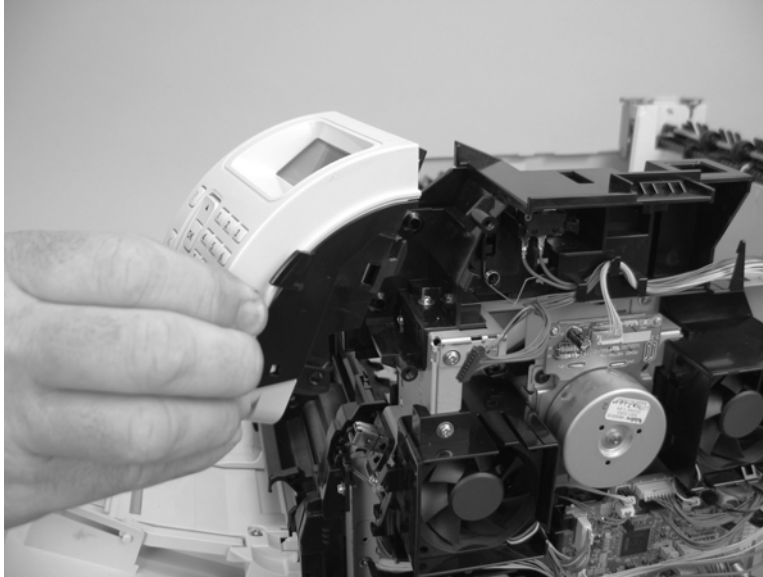
1. Remove the following components:
 - Top accessory cover. See [Top-accessory cover on page 144](#).
 - Formatter cover and formatter cage. See [Formatter cover, formatter cage, and formatter PCA on page 150](#).
 - Top cover. See [Top cover on page 159](#).
 - Right-side cover. See [Right-side cover on page 161](#).
2. Remove three screws (callout 1), and then disconnect one wire-harness connector (callout 2).

Figure 6-56 Remove the control-panel assembly (1 of 2)



3. Slightly move the control-panel assembly toward the right side of the product to release it, and then remove the assembly.

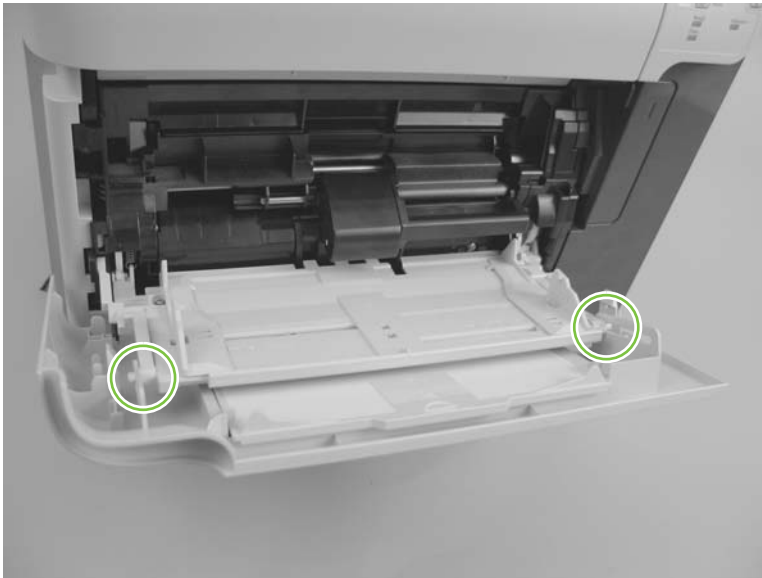
Figure 6-57 Remove the control-panel assembly (2 of 2)



Front cover

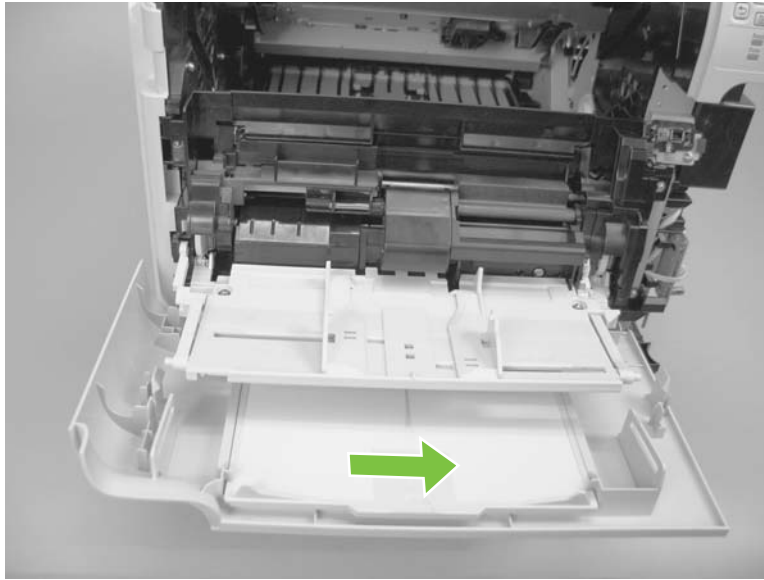
1. Remove the following components:
 - Top accessory cover. See [Top-accessory cover on page 144](#).
 - Formatter cover and formatter cage. See [Formatter cover, formatter cage, and formatter PCA on page 150](#).
 - Top cover. See [Top cover on page 159](#).
 - Right-side cover. See [Right-side cover on page 161](#).
 - Right-front cover. See [Right-front cover on page 166](#).
2. Gently pry the front-cover retainers off of the Tray 1 arms.

Figure 6-58 Remove the front cover (1 of 2)



3. Slide the front cover toward the right side of the product to remove it.

Figure 6-59 Remove the front cover (2 of 2)



Fan FN102


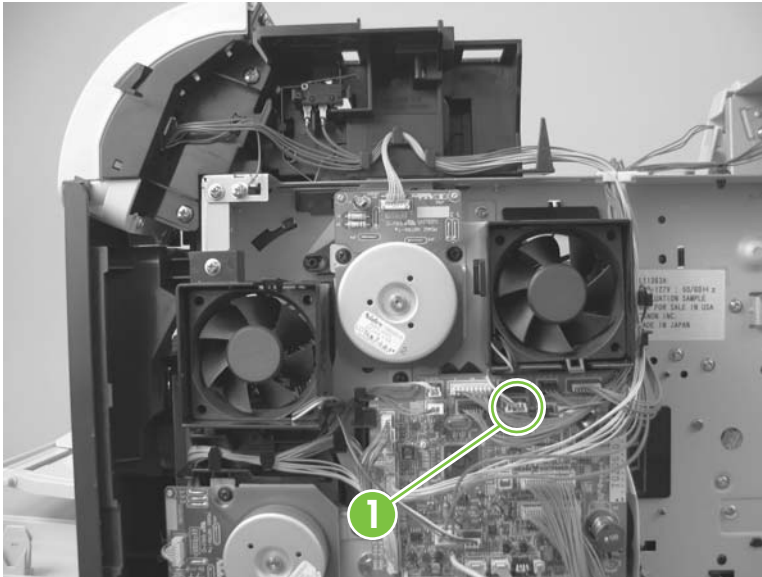

1. Remove the following components:
 - Top accessory cover. See [Top-accessory cover on page 144](#).
 - Formatter cover and cage. See [Formatter cover, formatter cage, and formatter PCA on page 150](#).
 - Top cover. See [Top cover on page 159](#).
 - Right-side cover. See [Right-side cover on page 161](#).
 2. Disconnect one connector (callout 1; J79), and then release the wire harness from the retainer on the fan duct.
-
-  **TIP:** It might be easier to release this wire harness if you partially release the fan duct from the chassis (release one tab near the motor).

Figure 6-60 Remove fan FN102 (1 of 2)

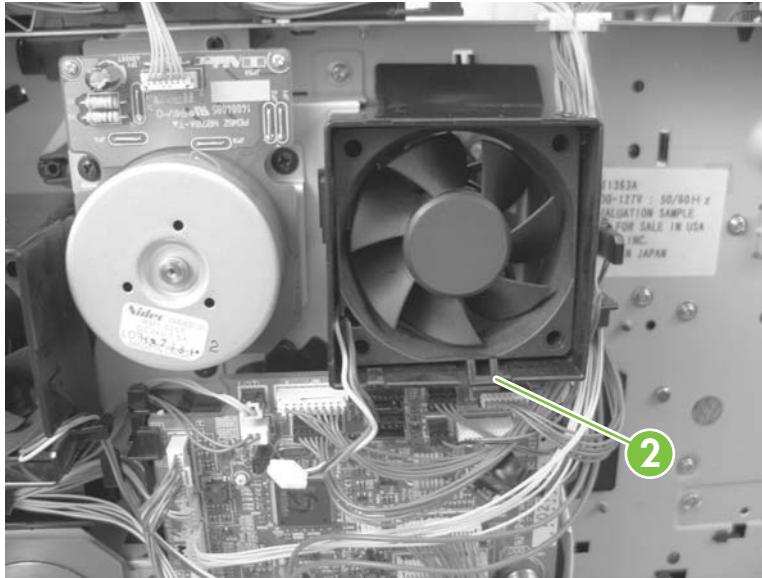


3. Release one tab (callout 2), and then remove the fan.

 **TIP:** When you reinstall the fan, the air must flow into the product. Verify that the airflow arrows that are embossed on the fan body point *into* the product.

Connect the wire-harness connector to the DC controller before reinstalling the fan into the duct.

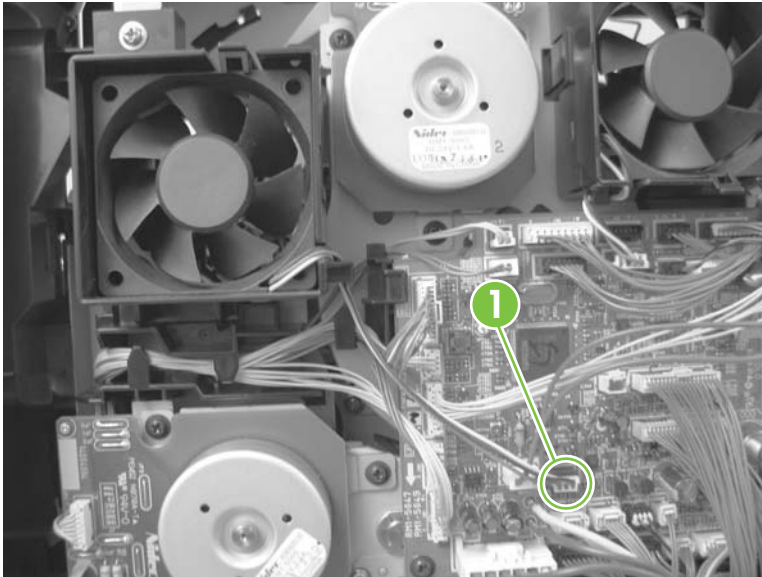
Figure 6-61 Remove fan FN102 (2 of 2)



Fan FN103

1. Remove the following components:
 - Top accessory cover. See [Top-accessory cover on page 144](#).
 - Formatter cover and cage. See [Formatter cover, formatter cage, and formatter PCA on page 150](#).
 - Top cover. See [Top cover on page 159](#).
 - Right-side cover. See [Right-side cover on page 161](#).
2. Disconnect one connector (callout 1; J75), and then release the wire harness from the retainer on the fan duct.

Figure 6-62 Remove fan FN103 (1 of 2)



3. Release one tab (callout 2), and then remove the fan.


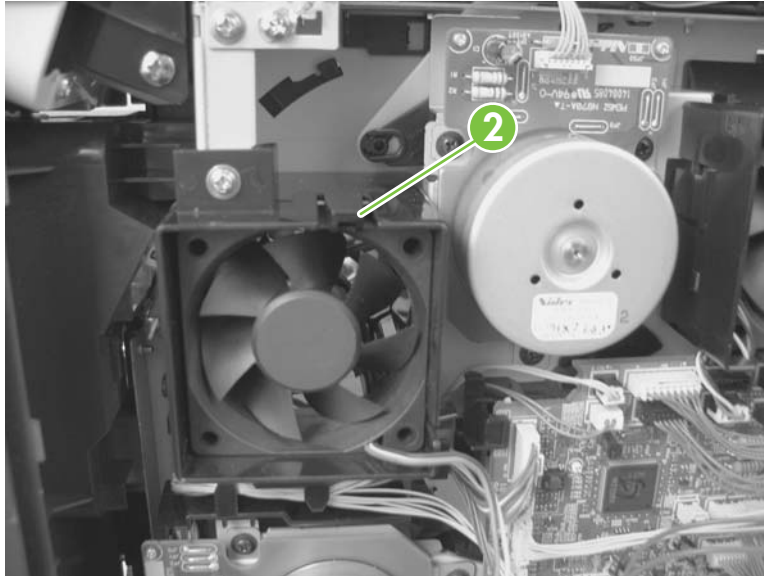
 **TIP:** When you reinstall the fan, the air must flow into the product. Verify that the airflow arrows that are embossed on the fan body point *into* the product.

Figure 6-63 Remove fan FN103 (2 of 2)



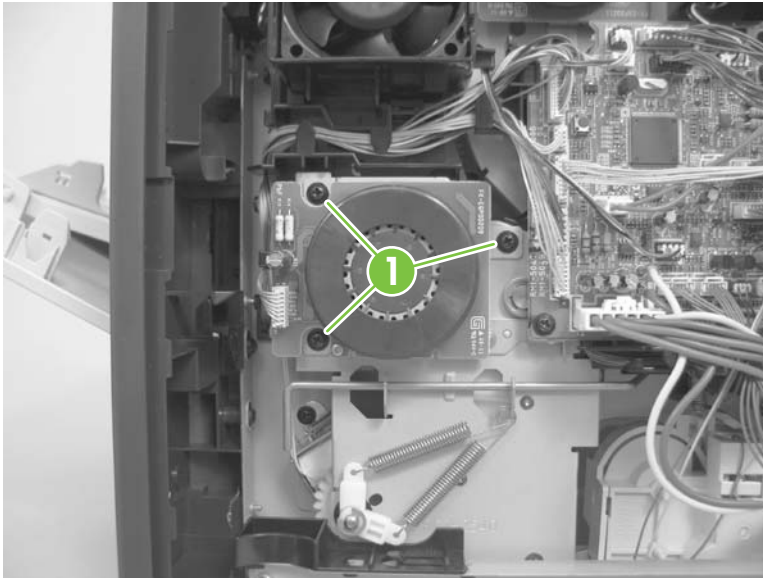
Pickup-motor assembly (M101)

1. Remove the following components:
 - Top accessory cover. See [Top-accessory cover on page 144](#).
 - Formatter cover and cage. See [Formatter cover, formatter cage, and formatter PCA on page 150](#).
 - Top cover. See [Top cover on page 159](#).
 - Right-side cover. See [Right-side cover on page 161](#).

2. Remove three screws (callout 1), and then separate the pickup motor from the chassis.

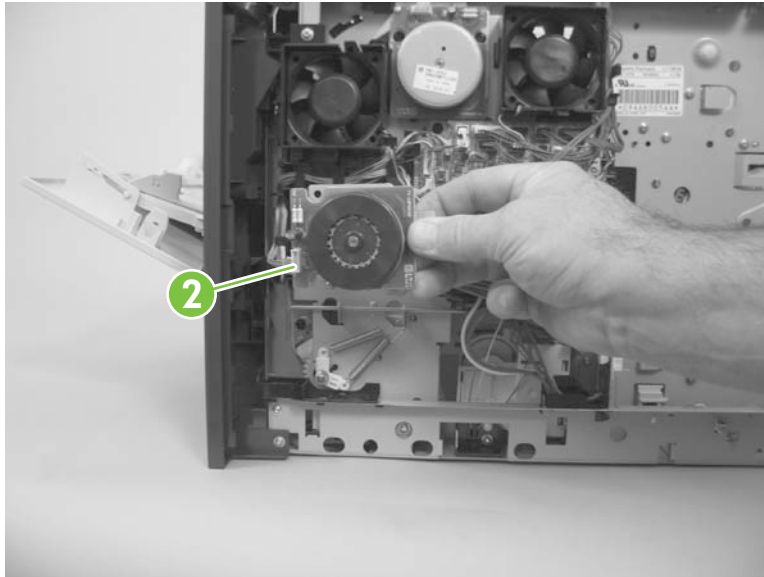
△ **CAUTION:** The pickup-motor assembly is still attached to the product by the wire harness. Do not drop the motor assembly.

Figure 6-64 Remove the pickup-motor assembly (1 of 2)



3. Support the pickup-motor assembly, and disconnect one wire-harness connector (callout 2). Remove the pickup-motor assembly.

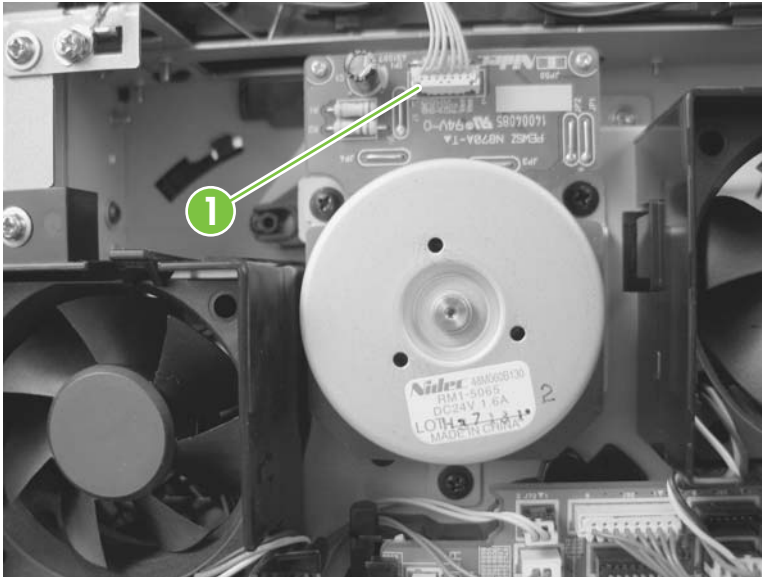
Figure 6-65 Remove the pickup-motor assembly (2 of 2)



Drum-motor assembly (M102)

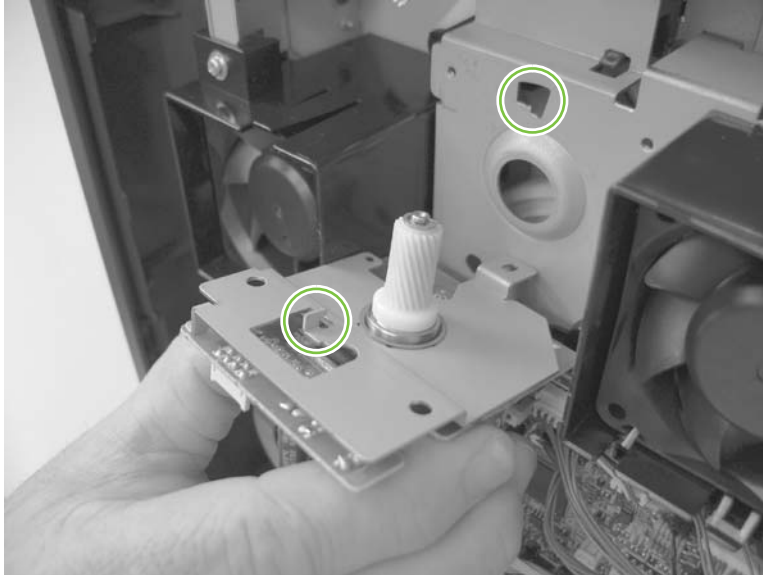
1. Remove the following components:
 - Top accessory cover. See [Top-accessory cover on page 144](#).
 - Formatter cover and cage. See [Formatter cover, formatter cage, and formatter PCA on page 150](#).
 - Top cover. See [Top cover on page 159](#).
 - Right-side cover. See [Right-side cover on page 161](#).
2. Disconnect one wire-harness connector (callout 1).

Figure 6-66 Remove the drum motor (1 of 4)



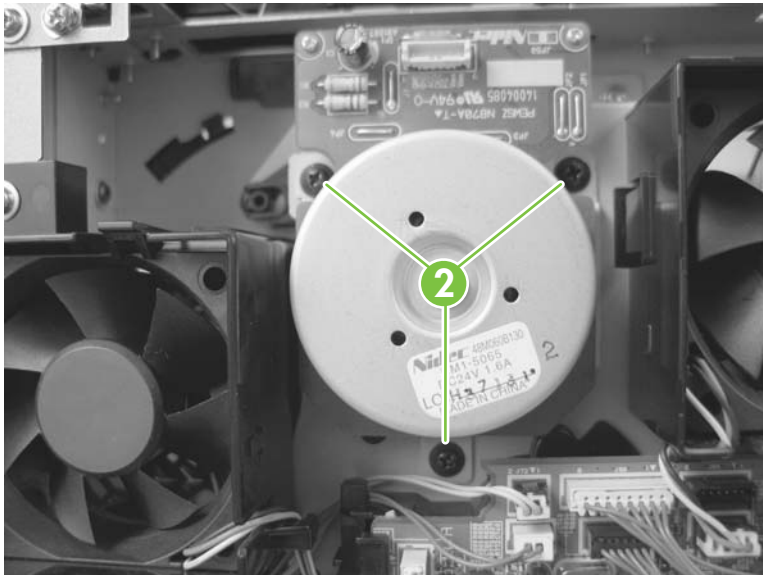
3. Before proceeding, take note of the mounting tab on the back side of the motor assembly and the slot in the chassis.

Figure 6-67 Remove the drum motor (2 of 4)



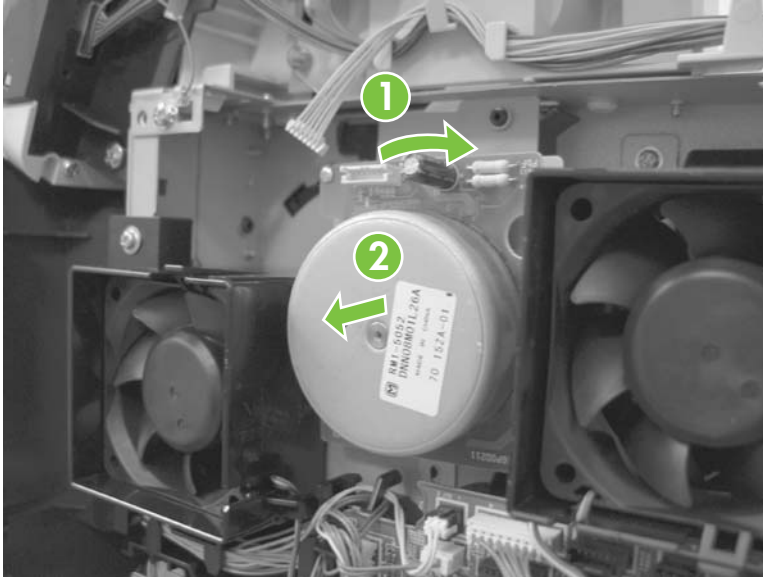
4. Remove three screws (callout 2).

Figure 6-68 Remove the drum motor (3 of 4)



5. Rotate the motor assembly to release the mounting tab on the back side of the assembly, and then pull the assembly straight away from the product to remove it.

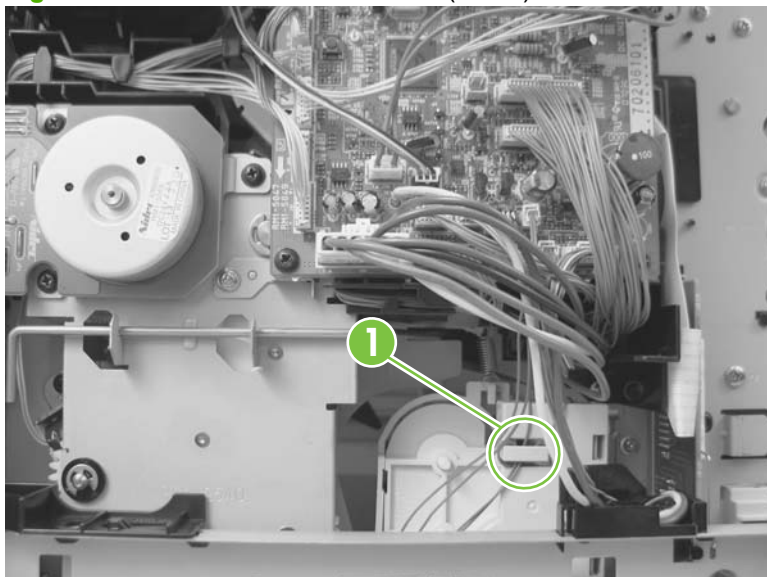
Figure 6-69 Remove the drum motor (4 of 4)



Lifter-motor assembly (M103)

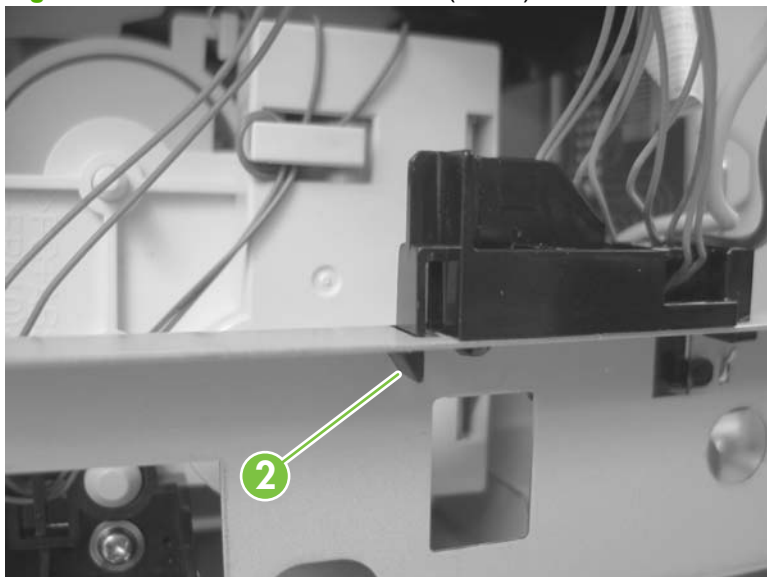
1. Remove the following components:
 - Top accessory cover. See [Top-accessory cover on page 144](#).
 - Formatter cover and cage. See [Formatter cover, formatter cage, and formatter PCA on page 150](#).
 - Top cover. See [Top cover on page 159](#).
 - Right-side cover. See [Right-side cover on page 161](#).
2. Release the wire harness from the retainer (callout 1).

Figure 6-70 Remove the lifter motor (1 of 6)



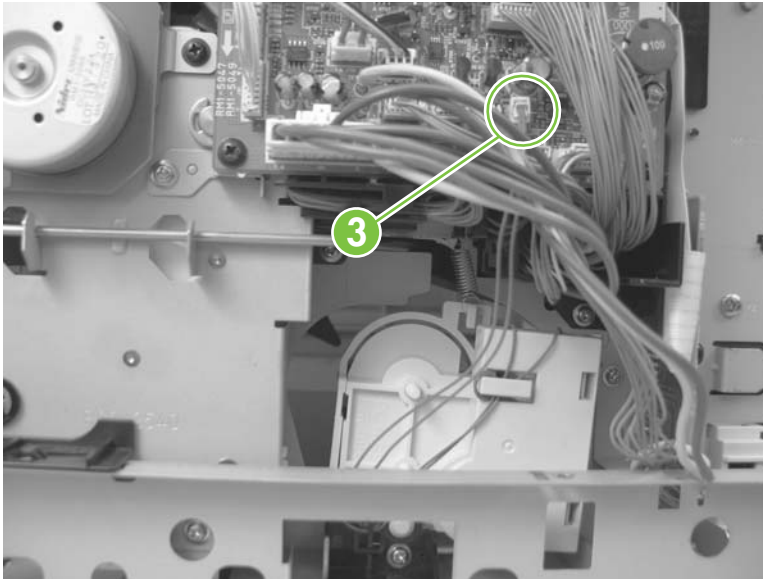
3. Release one tab (callout 2), and then remove the guide.

Figure 6-71 Remove the lifter motor (2 of 6)



4. Disconnect one wire-harness connector (callout 3; J73).

Figure 6-72 Remove the lifter motor (3 of 6)



5. Release one spring (callout 4).


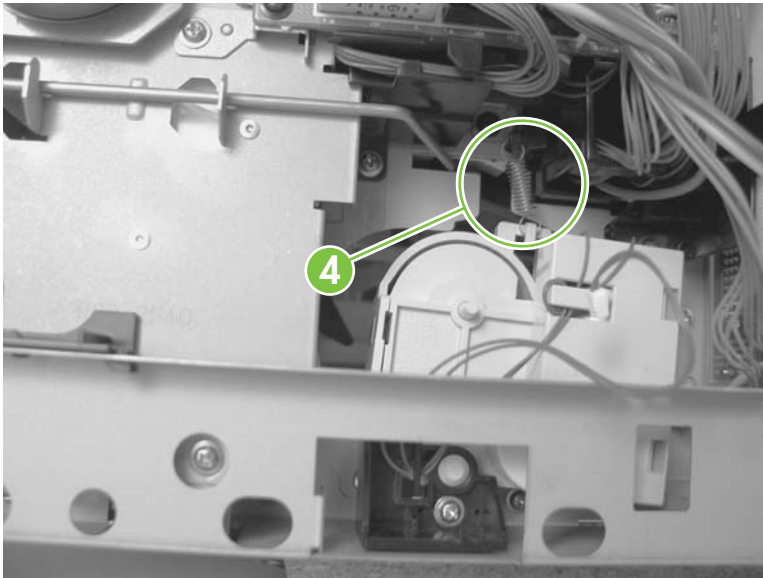
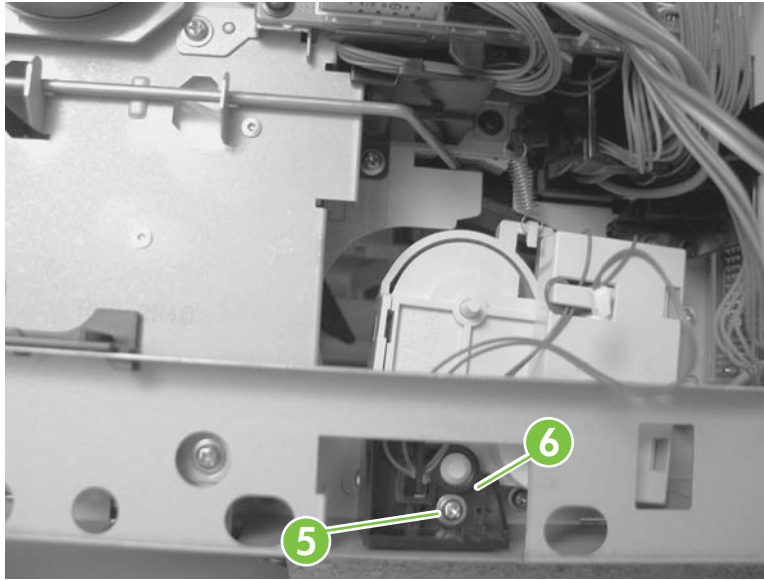
 **NOTE:** The spring is not captive. Do not lose the spring.

Figure 6-73 Remove the lifter motor (4 of 6)



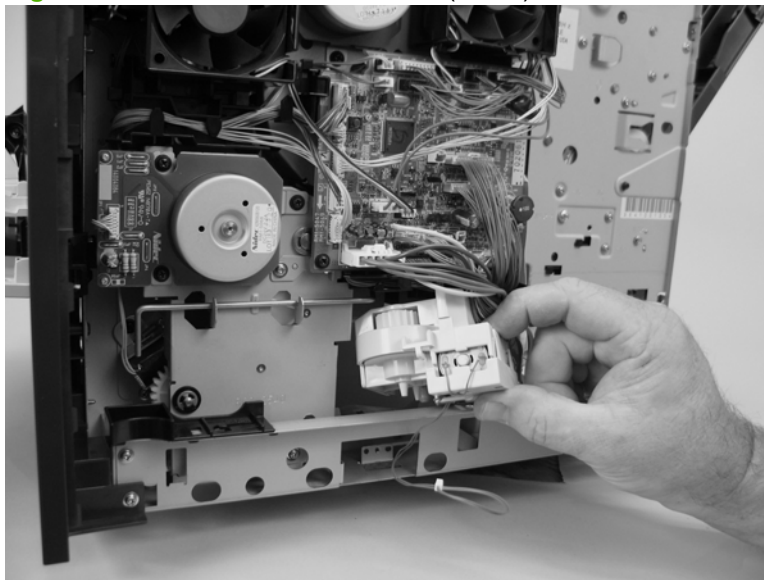
6. Remove one screw (callout 5), and then remove the lifter-motor retainer.

Figure 6-74 Remove the lifter motor (5 of 6)



7. Remove the lifter-motor assembly.

Figure 6-75 Remove the lifter motor (6 of 6)



DC controller PCA

1. Remove the following components

- Top accessory cover. See [Top-accessory cover on page 144](#).
- Formatter cover and cage. See [Formatter cover, formatter cage, and formatter PCA on page 150](#).
- Top cover. See [Top cover on page 159](#).
- Right-side cover. See [Right-side cover on page 161](#).



CAUTION: The product contains components that are sensitive to electrostatic discharge (ESD). Always perform service work at an ESD-protected workstation. If an ESD-protected workstation is not available, discharge body static by grasping the product chassis before touching an ESD-sensitive component. Ground the product chassis before servicing the product.

CAUTION: The yellow and blue heavy-gauge wires that are connected to DC controller PCA locations TB700 and TB701 are *not* terminal lug connectors. These terminals are soldered to the DC controller PCA. Do *not* attempt to unplug these connectors.

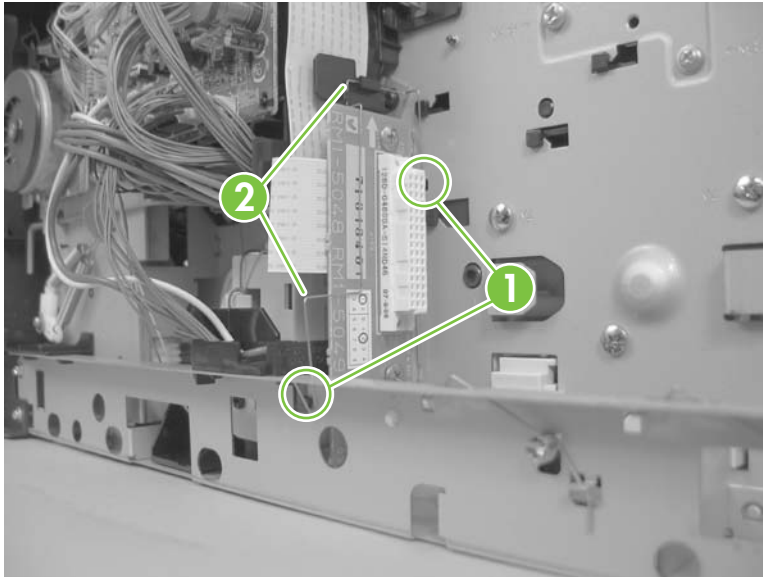
2. Unplug all of the wire and cable connectors from the DC controller PCA. Refer to [DC controller diagram on page 135](#) for details on the DC controller PCA.

Figure 6-76 Remove the DC controller PCA (1 of 4)



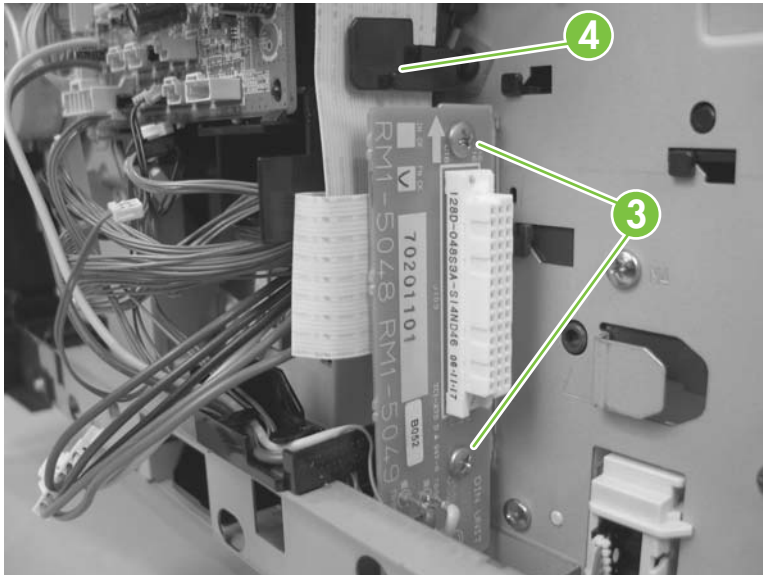
3. Release both ends (callout 1) of the formatted-conductor ground clip, and then remove the clip (callout 2).

Figure 6-77 Remove the DC controller PCA (2 of 4)



4. Remove two screws (callout 3) and release the FFC from the retainer (callout 4).

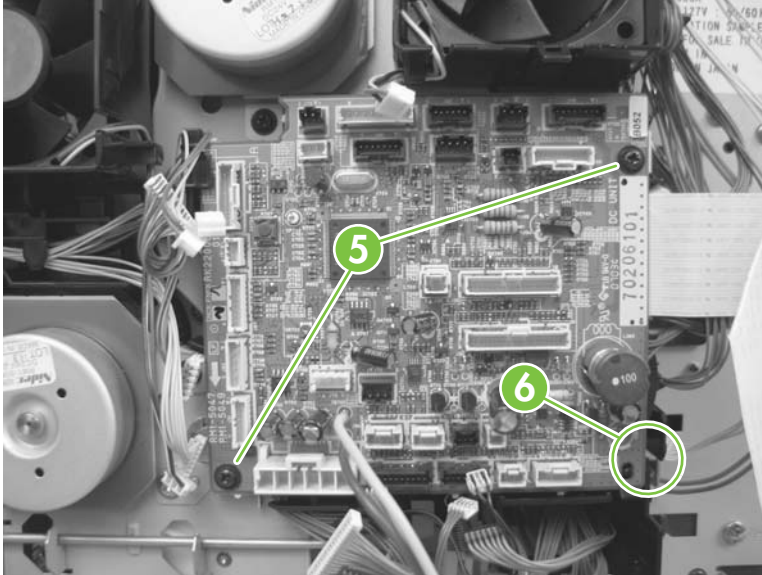
Figure 6-78 Remove the DC controller PCA (3 of 4)




5. Remove two screws (callout 5) and release one tab (callout 6). Carefully remove the DC controller PCA.

△ **CAUTION:** Correct reinstallation of the DC controller is critical to correct operation of the product. If you are installing a *new* DC controller, follow the instructions in the reinstallation tips. If you are installing a *new formatter and a new DC controller*, see the special section that follows this DC controller section—[Installing a new formatter and a new DC controller on page 189](#).


Figure 6-79 Remove the DC controller PCA (4 of 4)



Reinstallation tip

 **TIP:** DC controller PCA connector locations J80 and J98 are not used. There will not be connectors for these locations when the DC controller PCA is reinstalled.


1. After installing a *new* DC controller, turn the product on and wait for five minutes after the product reaches the **Ready** state.

 **NOTE:** Five minutes is required to allow for NVRAM settings to be written.

2. Turn the product off.
3. Turn the product on again, and then wait five minutes after the product reaches the Ready state.
4. Print a configuration page to verify against original settings.

Installing a new formatter and a new DC controller

1. Turn the product off.
2. Remove the formatter (see [Formatter cover, formatter cage, and formatter PCA on page 150](#)) and replace it with the new formatter.
3. Turn the product on and then wait for five minutes after the product reaches the **Ready** state.

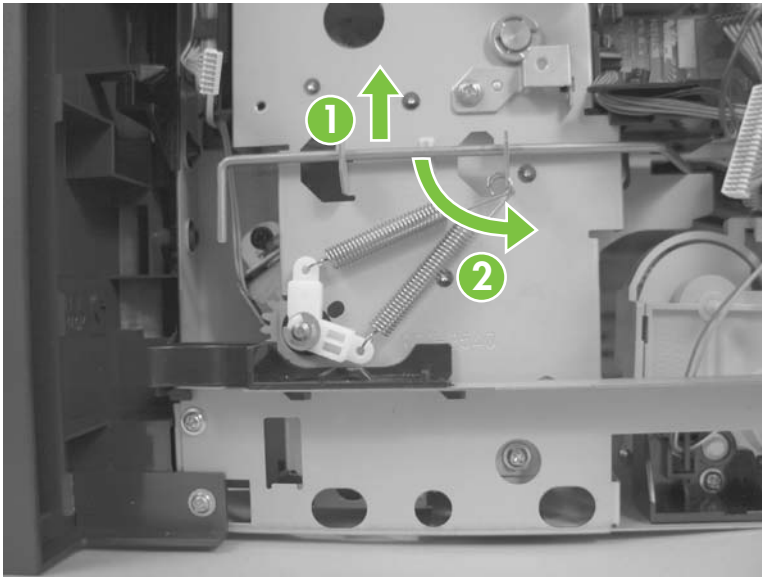
 **NOTE:** Five minutes is required to allow for NVRAM settings to be written. The same five-minute wait is required several times during this procedure.

4. Turn the product off.
5. Turn the product on again, and then wait five minutes after the product reaches the Ready state.
6. Turn the product off.
7. Remove the DC controller (see [DC controller PCA on page 186](#)) and replace it with the new DC controller.
8. Turn the product on and wait for five minutes after the product reaches the **Ready** state.
9. Turn the product off.
10. Turn the product on again, and then wait five minutes after the product reaches the Ready state.
11. Print a configuration page to verify against original settings.

Pickup-drive assembly

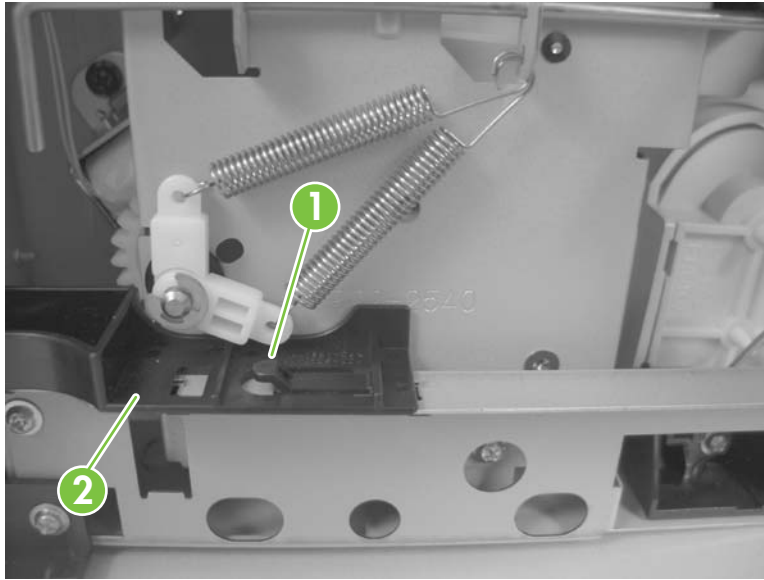
1. Remove the following components:
 - Top accessory cover. See [Top-accessory cover on page 144](#).
 - Top cover. See [Top cover on page 159](#).
 - Right-side cover. See [Right-side cover on page 161](#).
 - Pickup-motor assembly. See [Pickup-motor assembly \(M101\) on page 178](#).
 - DC controller PCA. See [DC controller PCA on page 186](#).
2. Lift up on the power-switch rod, and move it out and away from the pickup-drive assembly.

Figure 6-80 Remove the pickup-drive assembly (1 of 7)



3. Release one tab (callout 1) and remove the guide (callout 2).

Figure 6-81 Remove the pickup-drive assembly (2 of 7)



4. Remove the wire harnesses from the guide (callout 3 and callout 4).


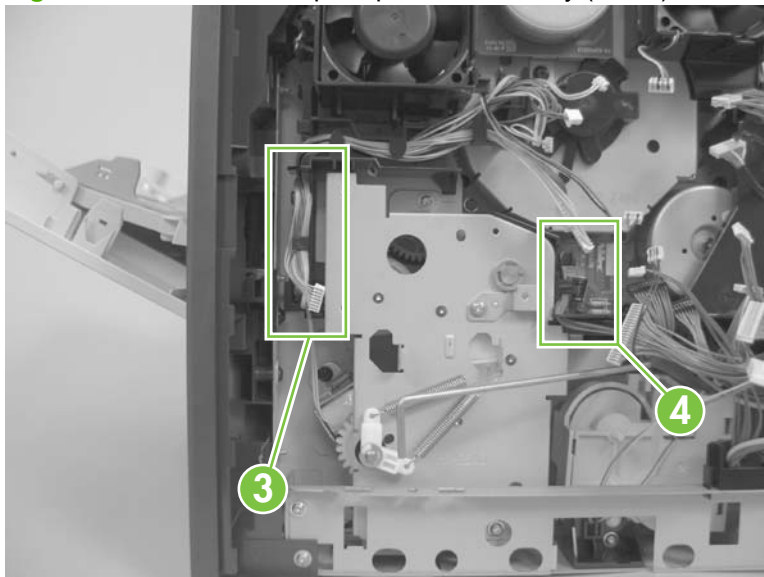
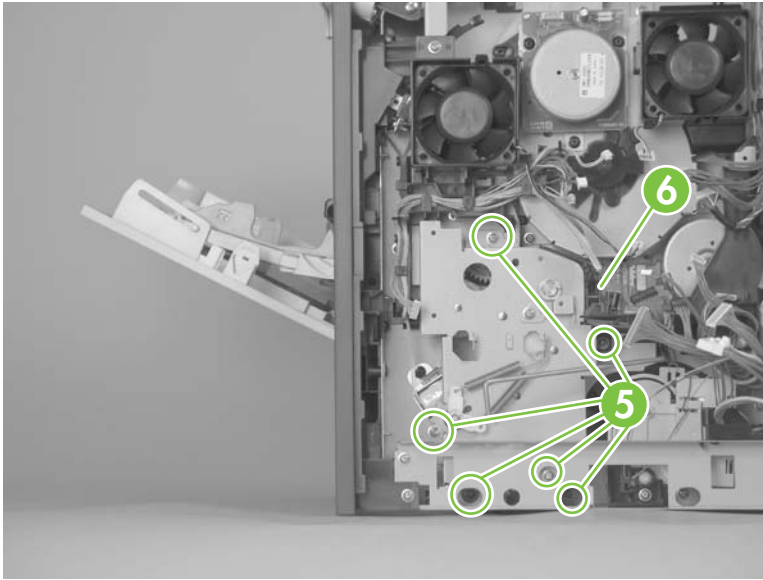
 **NOTE:** In this step, the wire harness for the pickup motor has been disconnected at the motor assembly and the DC controller. Connect the wire harness to the removed motor assembly so you do not lose it.

Figure 6-82 Remove the pickup-drive assembly (3 of 7)



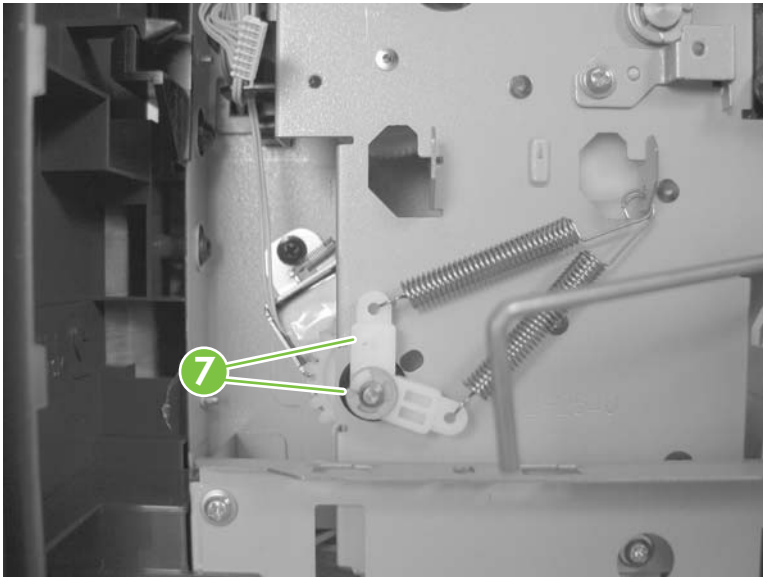
5. Remove six screws (callout 5) and the wire guide (callout 6).

Figure 6-83 Remove the pickup-drive assembly (4 of 7)



6. Remove one e-clip, the spring arm clip, and the shaft collar (callout 7; behind the spring arm clip), and then push the tray drive-gear/shaft into the Tray 2 cavity.

Figure 6-84 Remove the pickup-drive assembly (5 of 7)



7. Push the tray drive-gear/shaft into the Tray 2 cavity.


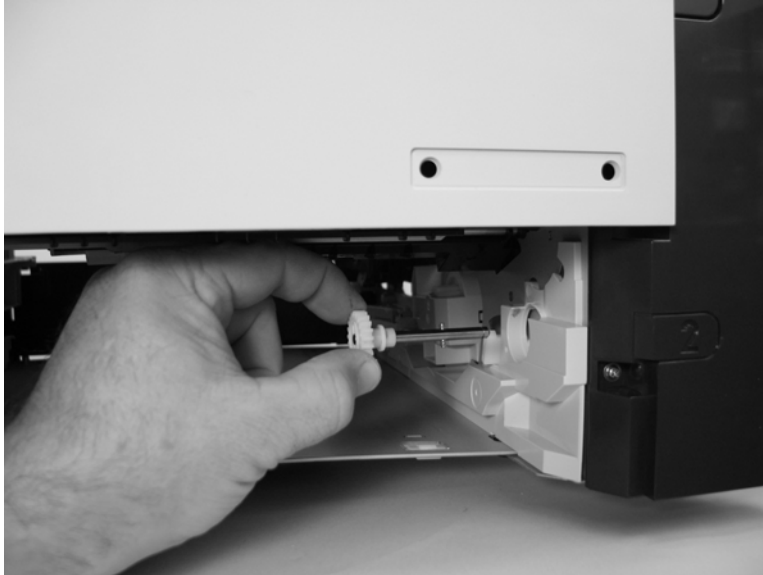
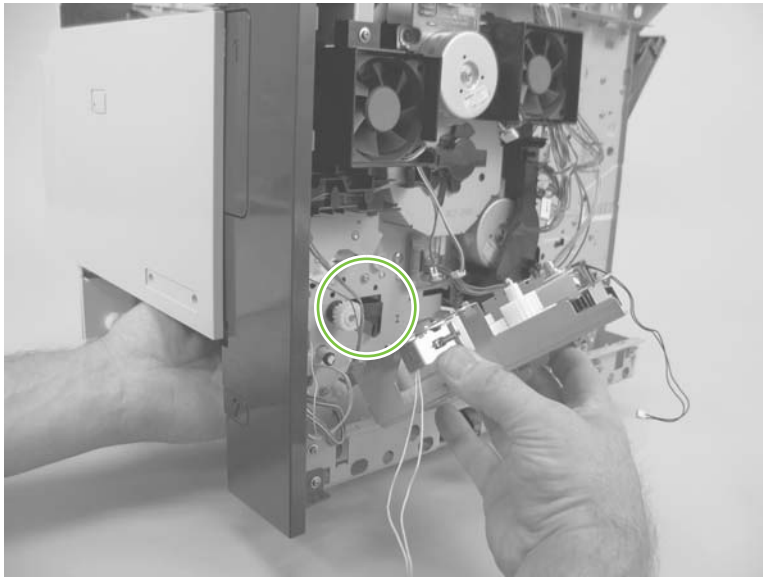
 **NOTE:** The large gear inside of the paper-delivery drive assembly is not captive and will slide off of the shaft and be loose inside the paper-delivery drive assembly (see [Reinstall the pickup-drive assembly on page 194](#)).

Figure 6-85 Remove the pickup-drive assembly (6 of 7)



8. Reach inside the product and push the rear Tray 2 feed roller up into its raised position (This disengages the roller-lifting arm from the clutch gear), and then remove the pickup-drive assembly.

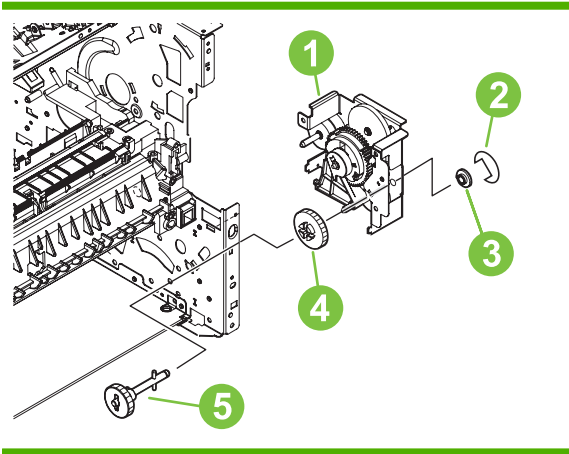
Figure 6-86 Remove the pickup-drive assembly (7 of 7)



Reinstall the pickup-drive assembly

When you reinstall the paper-delivery drive assembly gears and shaft, verify that the gears are seated on the shaft-locking bars and that the shaft collars are correctly positioned in the paper-pickup drive-gear assembly mounting bracket and product chassis.

Table 6-3 Pickup-drive assembly

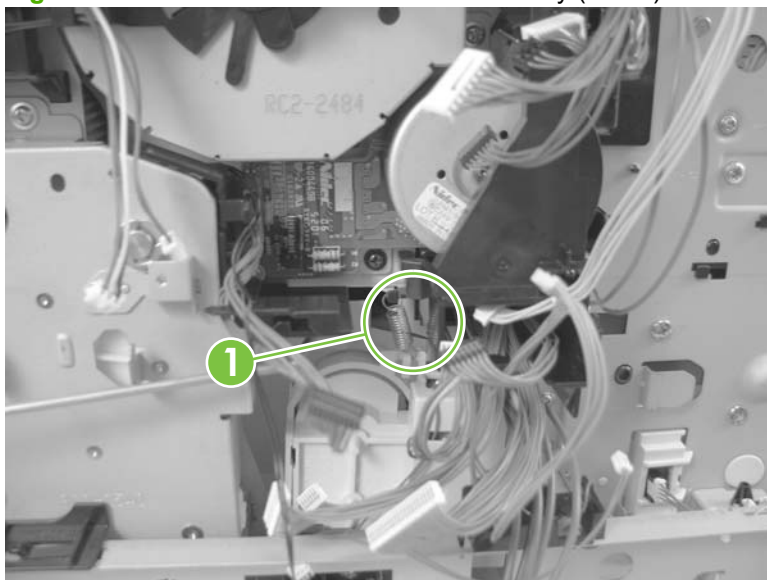
	1	Pickup drive unit
	2	E-ring
	3	Bushing
	4	23T gear
	5	Retard roller drive shaft

Fuser-motor assembly (M299)

1. Remove the following components:
 - Top accessory cover. See [Top-accessory cover on page 144](#).
 - Formatter cover and cage. See [Formatter cover, formatter cage, and formatter PCA on page 150](#).
 - Top cover. See [Top cover on page 159](#).
 - Right-side cover. See [Right-side cover on page 161](#).
 - DC controller. See [DC controller PCA on page 186](#).
2. Release one spring (callout 1).

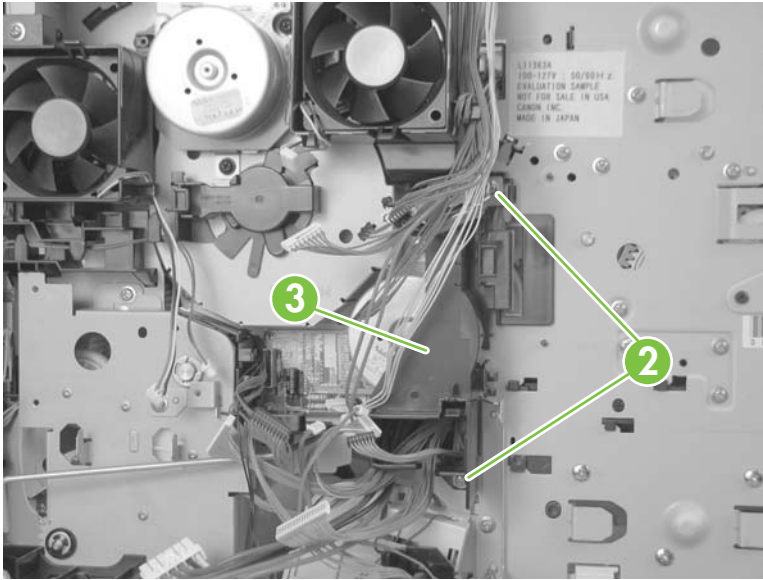
△ **CAUTION:** The spring is not captive. Do not lose the spring.

Figure 6-87 Remove the fuser-motor assembly (1 of 3)



3. Remove two screws (callout 2) and then remove the guide (callout 3).

Figure 6-88 Remove the fuser-motor assembly (2 of 3)



4. Disconnect one wire-harness connector (callout 4), and then remove three screws (callout 5). Remove the fuser-motor assembly.


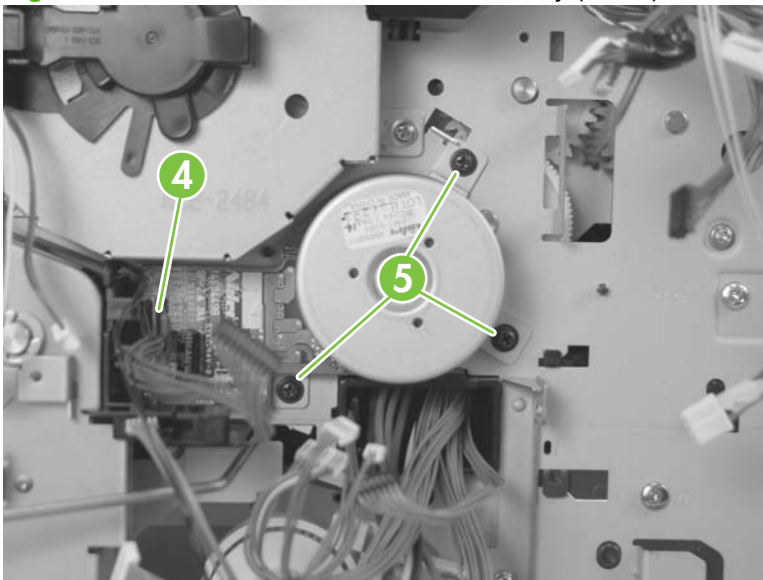
 **NOTE:** You must install the fuser-motor wire harness on the replacement fuser-motor assembly.

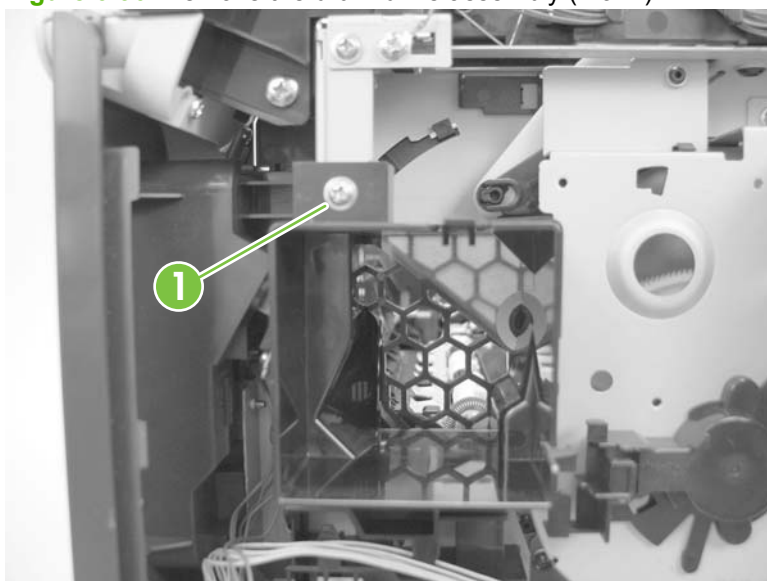
Figure 6-89 Remove the fuser-motor assembly (3 of 3)



Drum-drive assembly

1. Remove the following components:
 - Top accessory cover. See [Top-accessory cover on page 144](#).
 - Formatter cover and cage. See [Formatter cover, formatter cage, and formatter PCA on page 150](#).
 - Top cover. See [Top cover on page 159](#).
 - Right-side cover. See [Right-side cover on page 161](#).
 - Fan FN102. See [Fan FN102 on page 174](#).
 - Fan FN103. See [Fan FN103 on page 176](#).
 - Drum-motor assembly. See [Drum-motor assembly \(M102\) on page 180](#).
 - DC controller PCA. See [DC controller PCA on page 186](#).
2. Remove one screw (callout 1) and the fan FN103 duct.

Figure 6-90 Remove the drum-drive assembly (1 of 4)



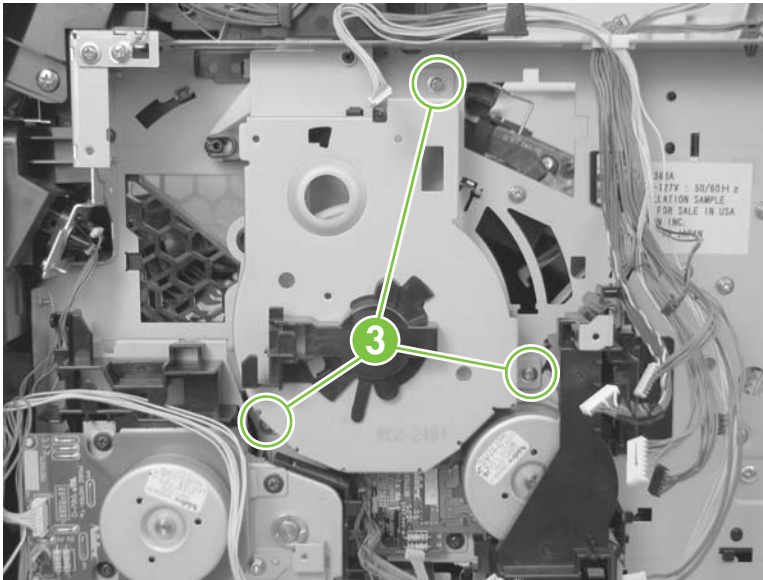
3. Release the wire-harnesses from the retainer on the fan FN102 duct (callout 2) .

Figure 6-91 Remove the drum-drive assembly (2 of 4)



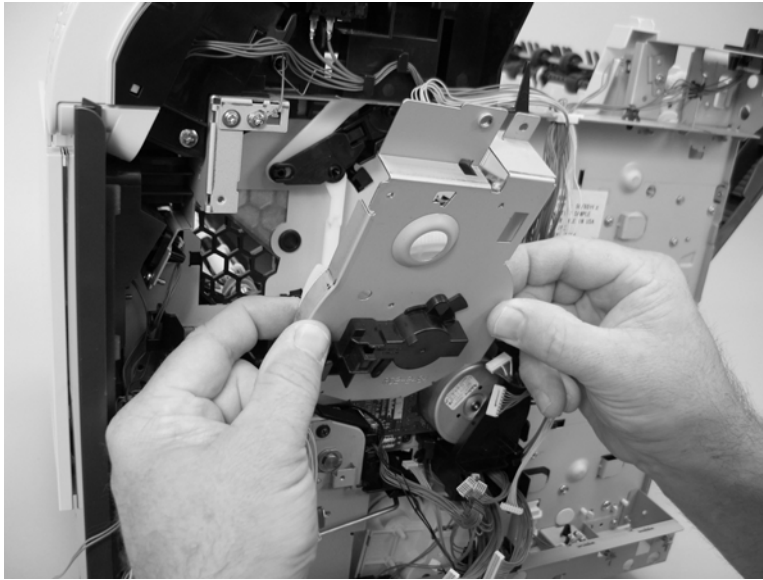
4. Remove three screws (callout 3).

Figure 6-92 Remove the drum-drive assembly (3 of 4)



5. Carefully remove the drum-drive assembly.

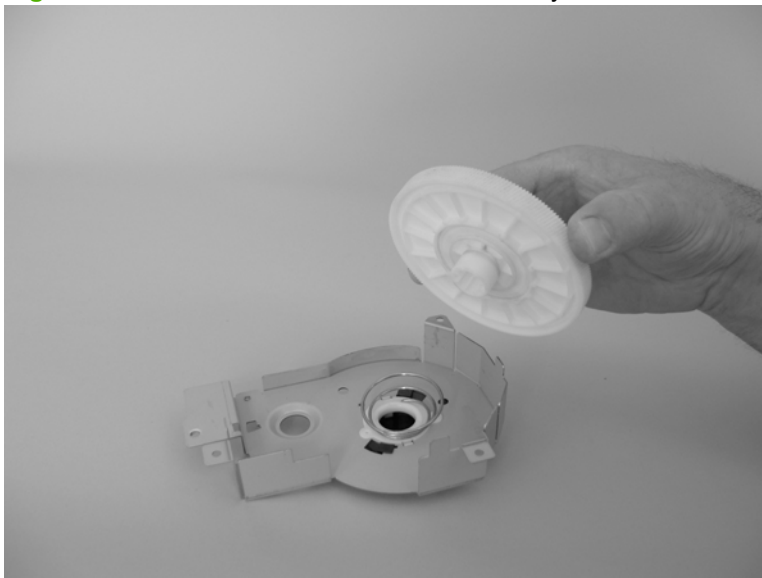
Figure 6-93 Remove the drum-drive assembly (4 of 4)



Reinstall the drum-drive assembly

When the drum-drive assembly is reinstalled, make sure that the spring is correctly positioned in the assembly.

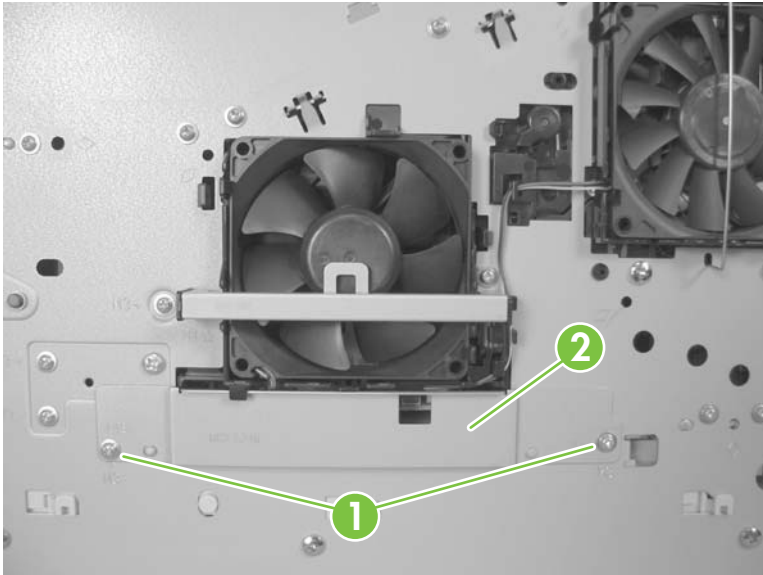
Figure 6-94 Reinstall the drum-drive assembly



Fan FN101

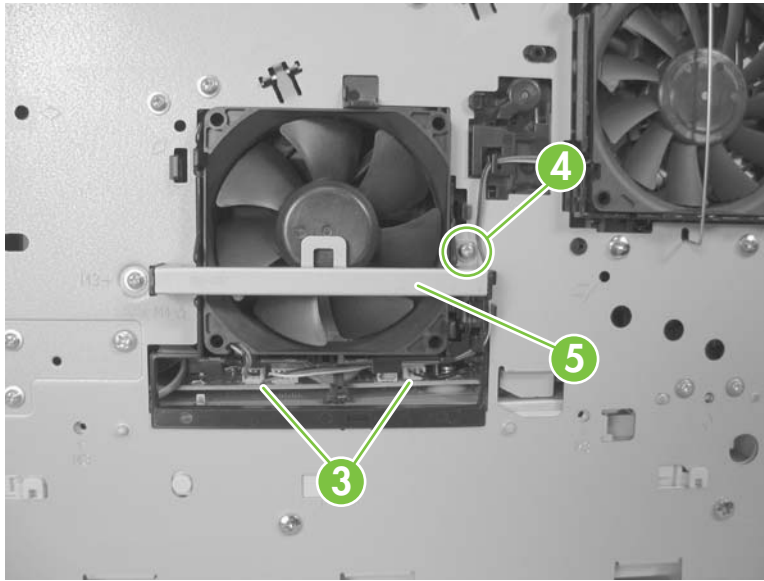
1. Remove the following components:
 - Top accessory cover. See [Top-accessory cover on page 144](#).
 - Formatter cover and cage. See [Formatter cover, formatter cage, and formatter PCA on page 150](#).
 - Top cover. See [Top cover on page 159](#).
 - Left-side cover. See [Left-side cover on page 164](#).
2. Remove two screws (callout 1), and then remove the sheet-metal plate (callout 2).

Figure 6-95 Remove fan FN101 (1 of 3)



3. Disconnect two connectors (callout 3), and then remove one screw (callout 4). Slide the thermistor sensor bar (callout 5) to the right to release it, and then lift the thermistor sensor bar away from the product.

Figure 6-96 Remove fan FN101 (2 of 3)

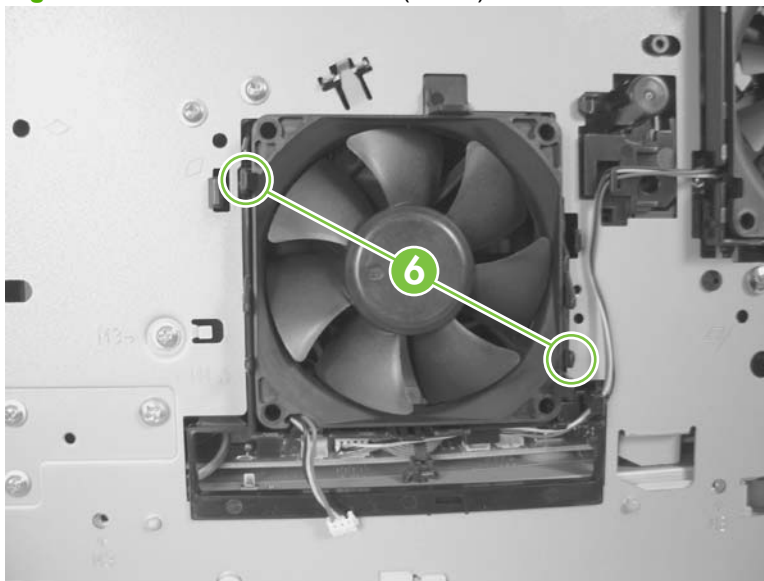


4. Release the two fan-locking tabs (callout 6), and then remove the fan.

△ **CAUTION:** When you reinstall the fan, do not apply too much pressure to the wire-harness connectors when they are connected to the power supply. Applying too much pressure might snap off the soldered connectors on the power supply.

💡 **Reinstallation tip** When you reinstall the fan, the air must flow into the product. Verify that the airflow arrows that are embossed on the fan body point *into* the product.

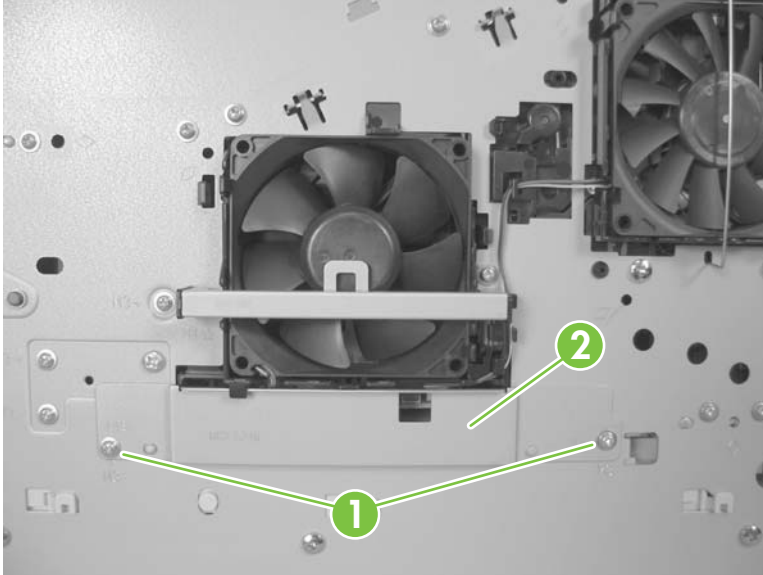
Figure 6-97 Remove fan FN101 (3 of 3)



Fan FN301

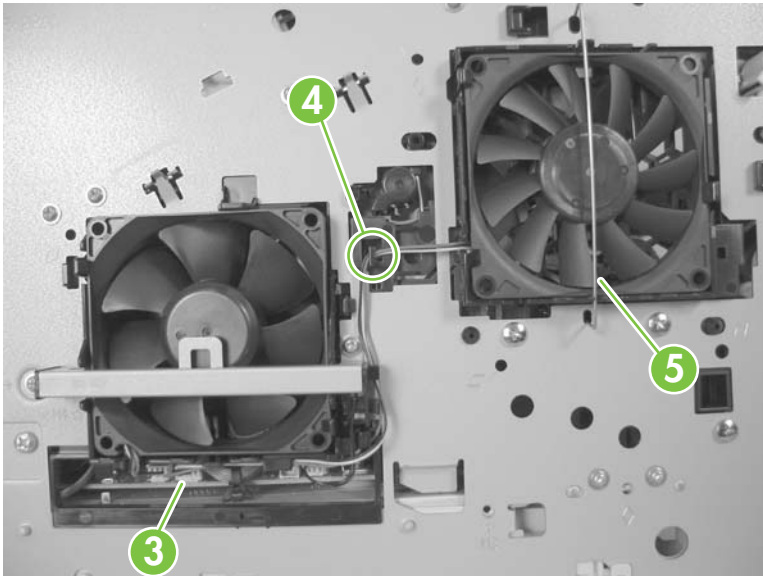
1. Remove the following components:
 - Top accessory cover. See [Top-accessory cover on page 144](#).
 - Top cover. See [Top cover on page 159](#).
 - Left-side cover. See [Left-side cover on page 164](#).
2. Remove two screws (callout 1), and then remove the fan-cover plate (callout 2).

Figure 6-98 Remove fan FN301 (1 of 3)



3. Disconnect one connector (callout 3), and then release the wire harness from the retainer (callout 4). Unhook and remove the fan clip (callout 5).

Figure 6-99 Remove fan FN301 (2 of 3)



4. Release two tabs (callout 6), and then remove the fan.


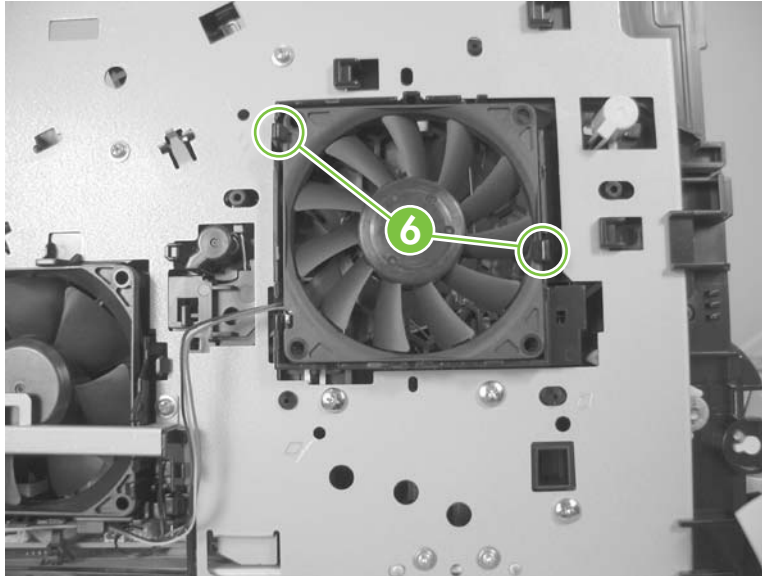
 **TIP:** When you reinstall the fan, the air must flow into the product. Verify that the airflow arrows that are embossed on the fan body point *into* the product.

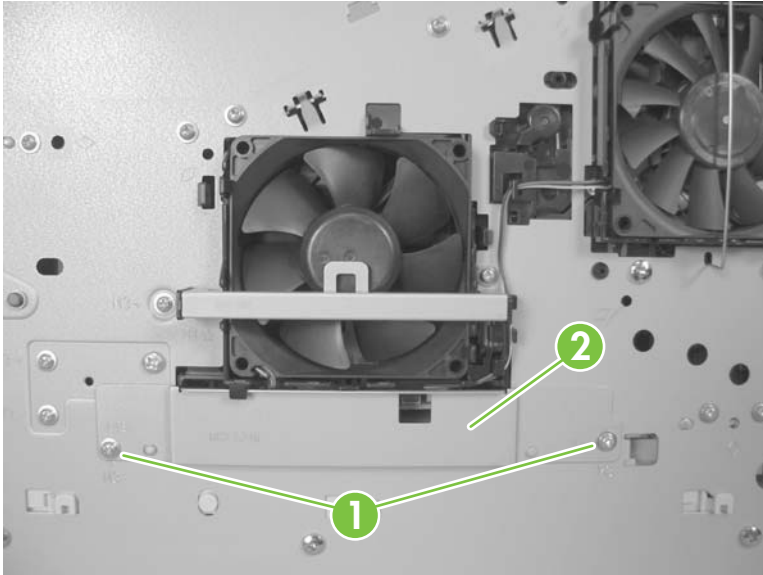
Figure 6-100 Remove fan FN301 (3 of 3)



Environmental sensor (TH3)

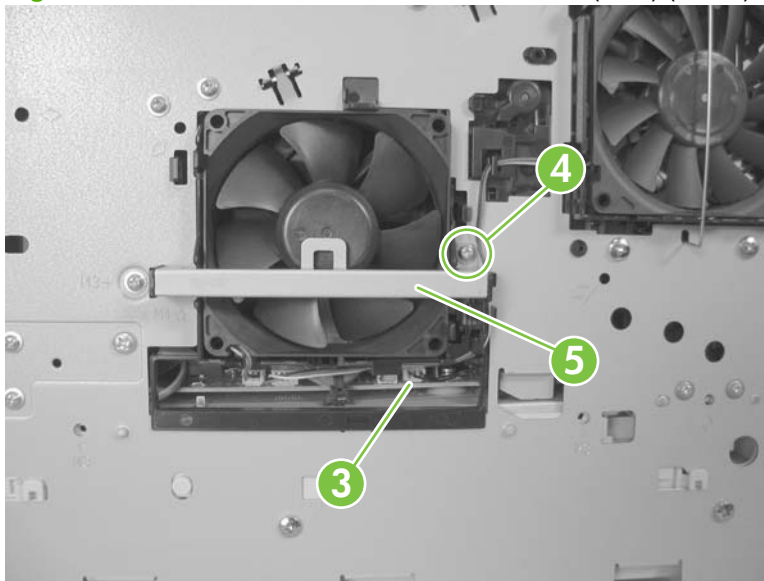
1. Remove the following components:
 - Top accessory cover. See [Top-accessory cover on page 144](#).
 - Duplex accessory or cover. See [Duplex accessory or cover on page 146](#).
 - Tray 2 extension door. See [Tray 2 extension door on page 147](#).
 - Top cover. See [Top cover on page 159](#).
 - Left-side cover. See [Left-side cover on page 164](#).
2. Remove two screws (callout 1), and then remove the fan-cover plate (callout 2).

Figure 6-101 Remove the environmental sensor (TH3) (1 of 2)



3. Disconnect one connector (callout 3), and then remove one screw (callout 4). Slide the thermistor sensor bar (callout 5) to the right to release it, and then lift the thermistor sensor bar away from the product.

Figure 6-102 Remove the environmental sensor (TH3) (2 of 2)



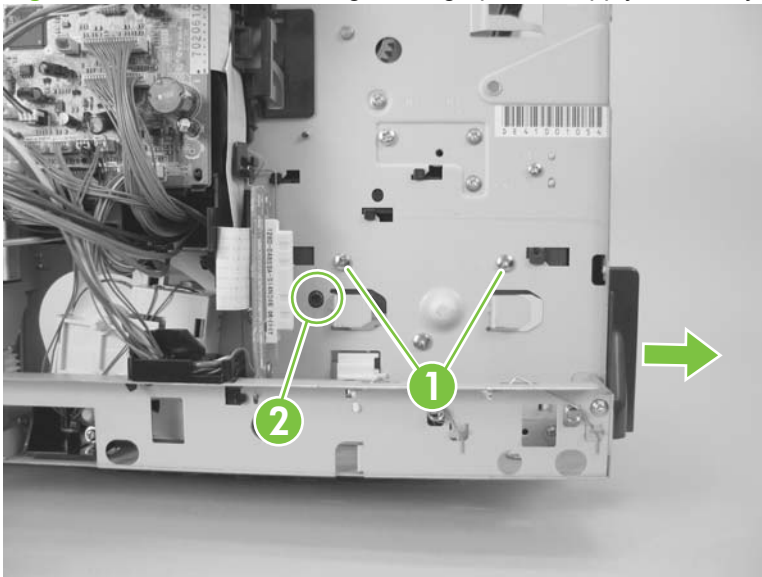
High voltage power supply



CAUTION: The product contains components that are sensitive to electrostatic discharge (ESD). Always perform service work at an ESD-protected workstation. If an ESD-protected workstation is not available, discharge body static by grasping the product chassis before touching an ESD-sensitive component. Ground the product chassis before servicing the product.

1. Remove the following components:
 - Top accessory cover. See [Top-accessory cover on page 144](#).
 - Duplex accessory or cover. See [Duplex accessory or cover on page 146](#).
 - Tray 2 extension door. See [Tray 2 extension door on page 147](#).
 - Rear output bin. See [Rear output bin on page 148](#).
 - Fuser. See [Fuser on page 149](#).
 - Formatter cover and cage. See [Formatter cover, formatter cage, and formatter PCA on page 150](#).
 - Top cover. See [Top cover on page 159](#).
 - Right-side cover. See [Right-side cover on page 161](#).
 - Left-side cover. See [Left-side cover on page 164](#).
2. Remove two screws (callout 1), release one tab (callout 2) and slide the power-supply PCA guide towards the rear of the product to remove it.

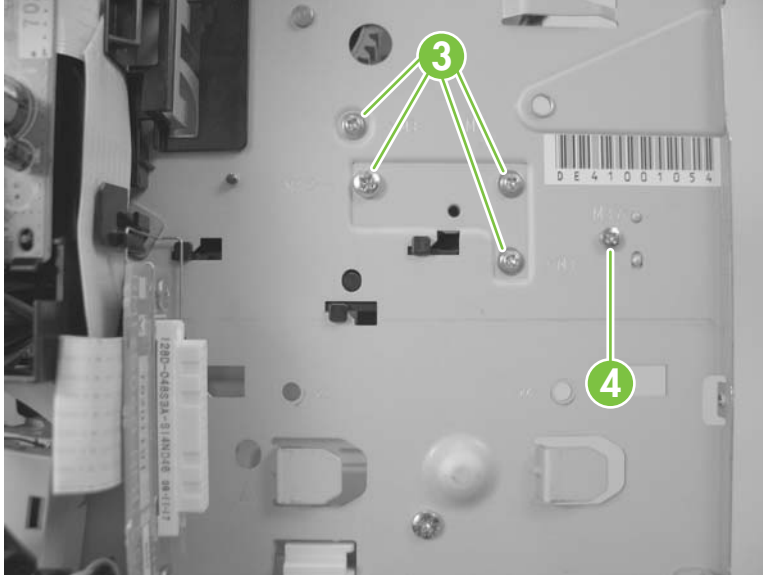
Figure 6-103 Remove the high-voltage power-supply assembly (1 of 8)



3. Remove four screws (callout 3) and one grounding screw (callout 4).

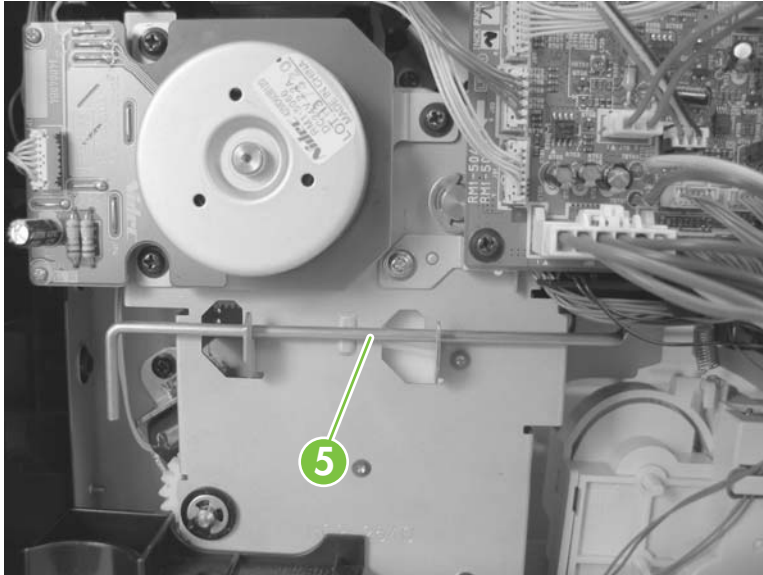
⚠ **WARNING!** When reinstalling the power supply, you must use a grounding screw to secure the AC outlet to the product chassis.

Figure 6-104 Remove the high-voltage power-supply assembly (2 of 8)



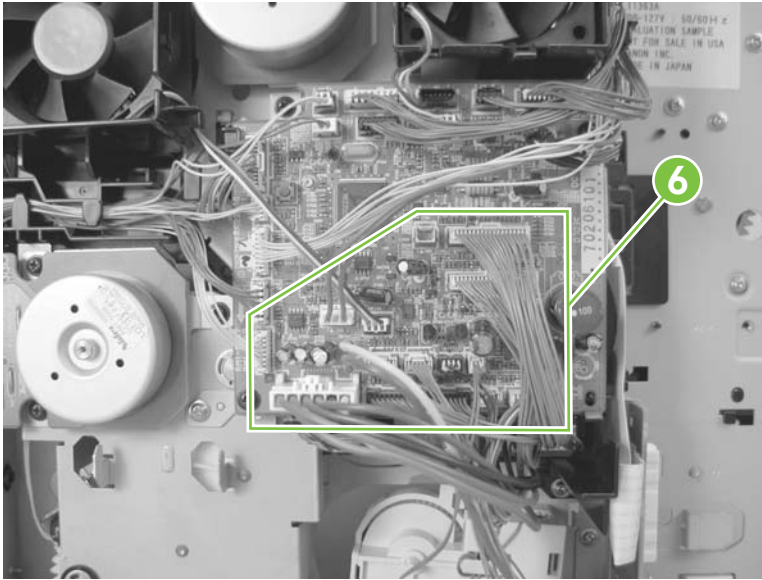
4. Unhook the power-switch arm (callout 5) from the chassis (the switch arm will still be attached to the power supply).

Figure 6-105 Remove the high-voltage power-supply assembly (3 of 8)



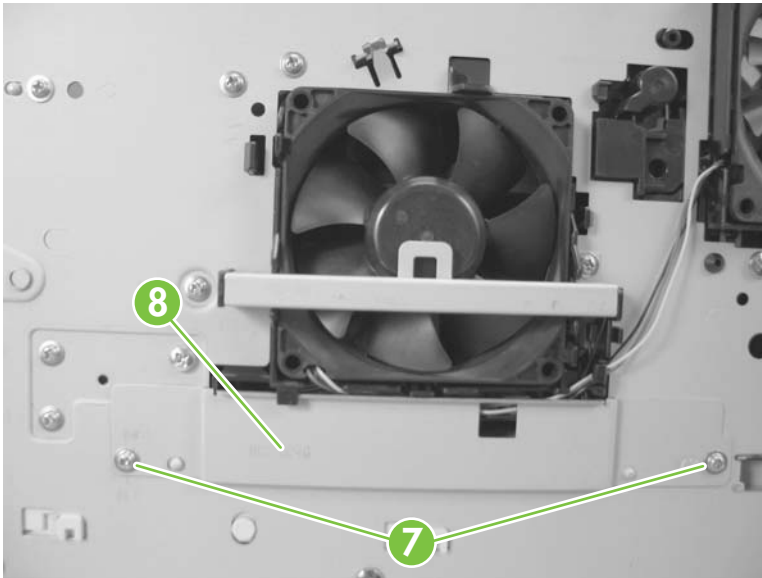
5. Disconnect five wire-harness connectors (callout 6; J82, J84, J85, J95, and J96).

Figure 6-106 Remove the high-voltage power-supply assembly (4 of 8)



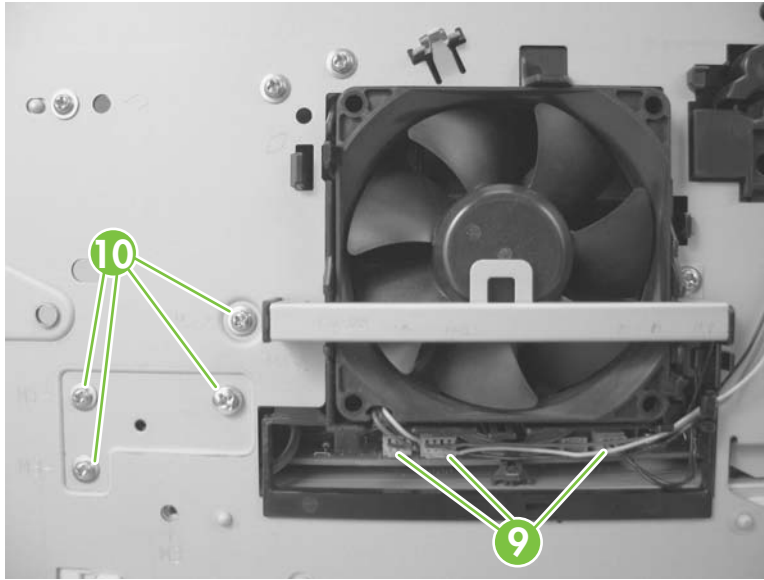
6. Remove two screws (callout 7) and then remove the fan-cover plate (callout 8).

Figure 6-107 Remove the high-voltage power-supply assembly (5 of 8)



7. Disconnect three wire-harness connectors (callout 9) and then remove four screws (callout 10).

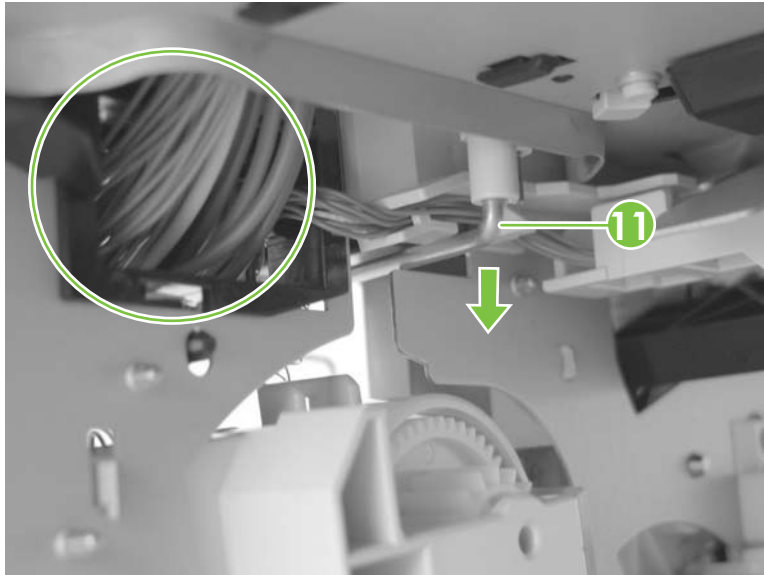
Figure 6-108 Remove the high-voltage power-supply assembly (6 of 8)



8. Feed the cables that were disconnected earlier through the hole in the right side of the chassis under the power-supply assembly. Pull down on the power-switch connector bar (callout 11) to slide it out of its mounting bracket, and remove it.

△ **CAUTION:** Make sure that the four rubber belts and plastic rollers on the feed-guide assembly (mounted to the top of the power supply) remain in place. These belts and rollers can easily become dislodged and you might lose them.

Figure 6-109 Remove the high-voltage power-supply assembly (7 of 8)



9. Grasp the power-supply assembly and lift it up slightly. Pull it straight out of the chassis.


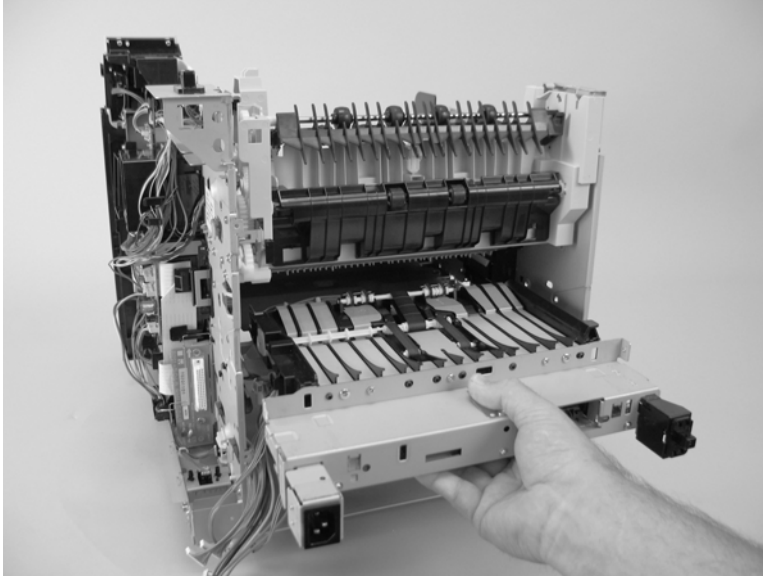
 **Reinstallation tip** When you reinstall the power supply, thread the heavy-gauge wire-harness through the hole in the chassis first, and then thread the two ribbon cables through the hole. This prevents the harness and cables from crossing over each other when they are placed in the wire guide. Make sure that you install the power-switch connector bar when you install the power supply.

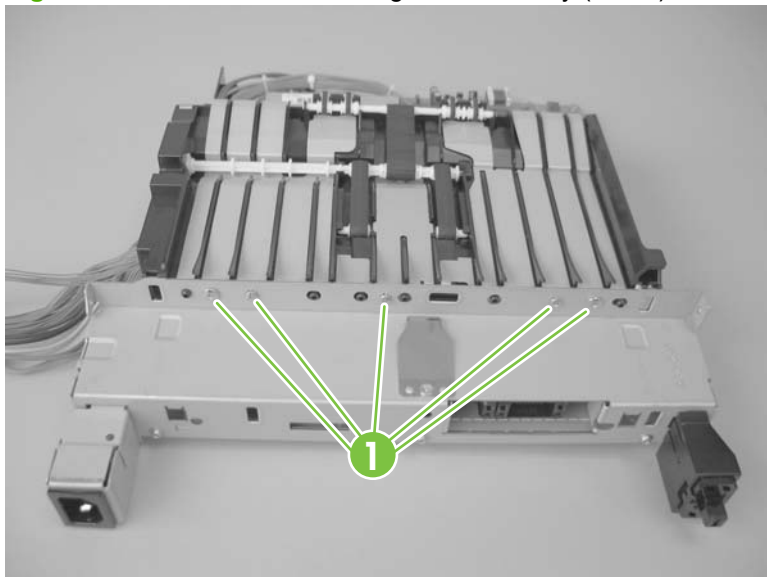
Figure 6-110 Remove the high-voltage power-supply assembly (8 of 8)



Feed-guide assembly

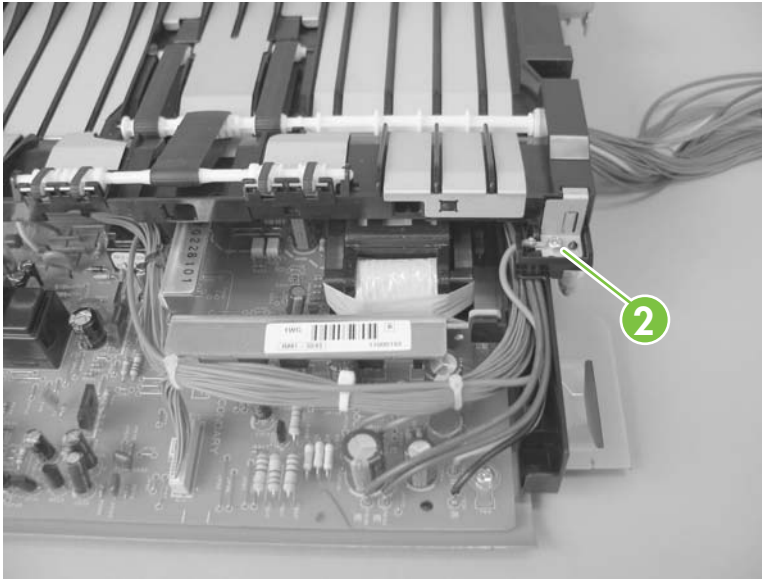
1. Remove the following components:
 - Top accessory cover. See [Top-accessory cover on page 144](#).
 - Duplex accessory or cover. See [Duplex accessory or cover on page 146](#).
 - Tray 2 extension door. See [Tray 2 extension door on page 147](#).
 - Fuser. See [Fuser on page 149](#).
 - Formatter cover and cage. See [Formatter cover, formatter cage, and formatter PCA on page 150](#).
 - Top cover. See [Top cover on page 159](#).
 - Right-side cover. See [Right-side cover on page 161](#).
 - Left-side cover. See [Left-side cover on page 164](#).
 - High-voltage power supply. See [High voltage power supply on page 206](#).
2. Remove five screws (callout 1).

Figure 6-111 Remove the feed-guide assembly (1 of 3)



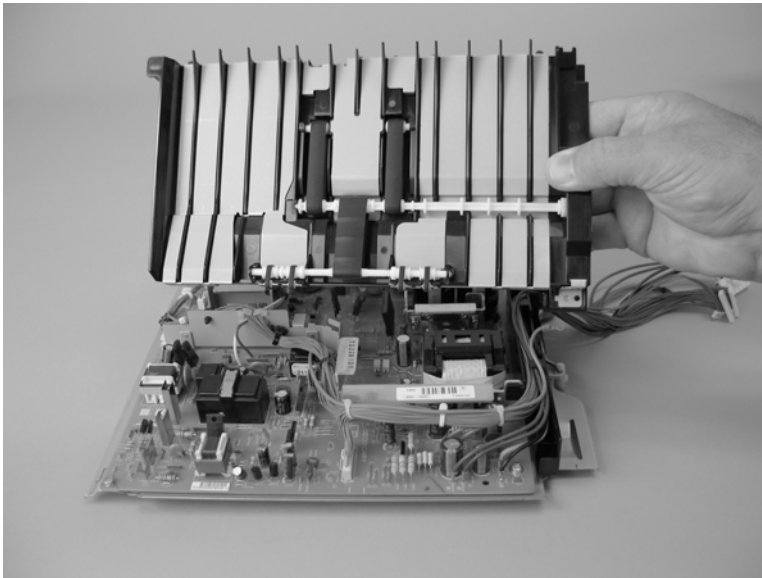
3. Remove one screw (callout 2).

Figure 6-112 Remove the feed-guide assembly (2 of 3)



4. Remove the feed-guide assembly.

Figure 6-113 Remove the feed-guide assembly (3 of 3)

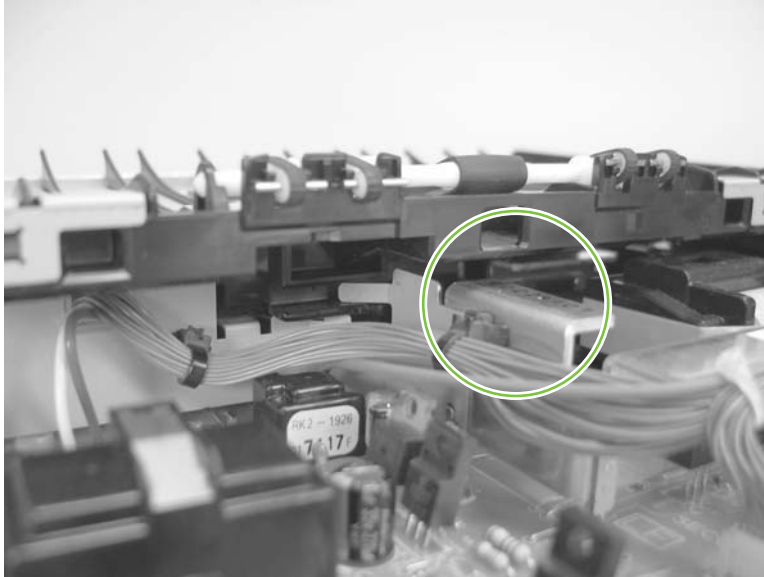


Reinstall the feed-guide assembly

When you reinstall the feed-guide assembly, make sure that the support foot is correctly positioned on the power supply.

-
- △ **CAUTION:** Make sure that the four rubber belts and plastic rollers on the feed-guide assembly (mounted to the top of the power supply) remain in place. These belts and rollers can easily become dislodged and you might lose them.
-

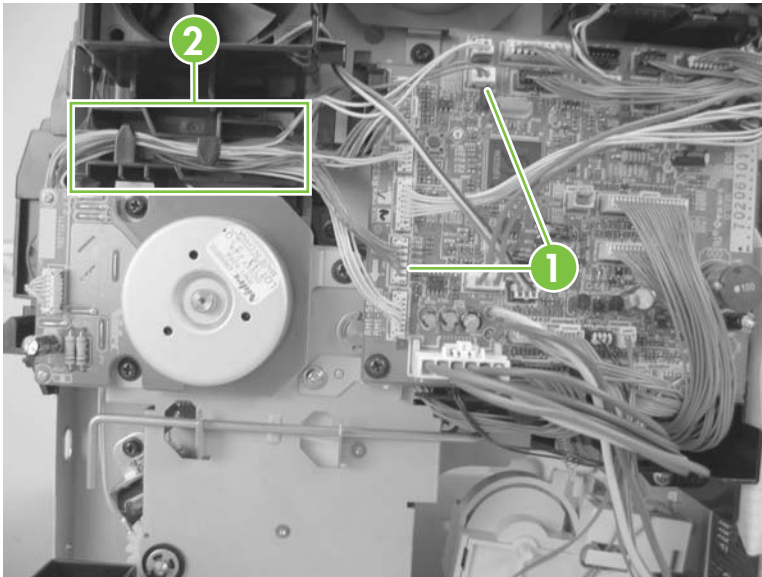
Figure 6-114 Reinstall the feed-guide assembly



Tray 1 paper-pickup assembly

1. Remove the following assemblies:
 - Top accessory cover. See [Top-accessory cover on page 144](#).
 - Duplex accessory or cover. See [Duplex accessory or cover on page 146](#).
 - Tray 2 extension door. See [Tray 2 extension door on page 147](#).
 - Formatter cover and cage. See [Formatter cover, formatter cage, and formatter PCA on page 150](#).
 - Top cover. See [Top cover on page 159](#).
 - Right-side cover. See [Right-side cover on page 161](#).
 - Left-side cover. See [Left-side cover on page 164](#).
 - Right front cover. See [Right-front cover on page 166](#).
 - Front cover. See [Front cover on page 172](#).
2. Disconnect two wire-harness connectors (callout 1; J71, and J81), and then release the wire harnesses from the guide (callout 2).

Figure 6-115 Remove the Tray 1 paper-pickup assembly (1 of 3)



3. Remove eight screws (callout 3).


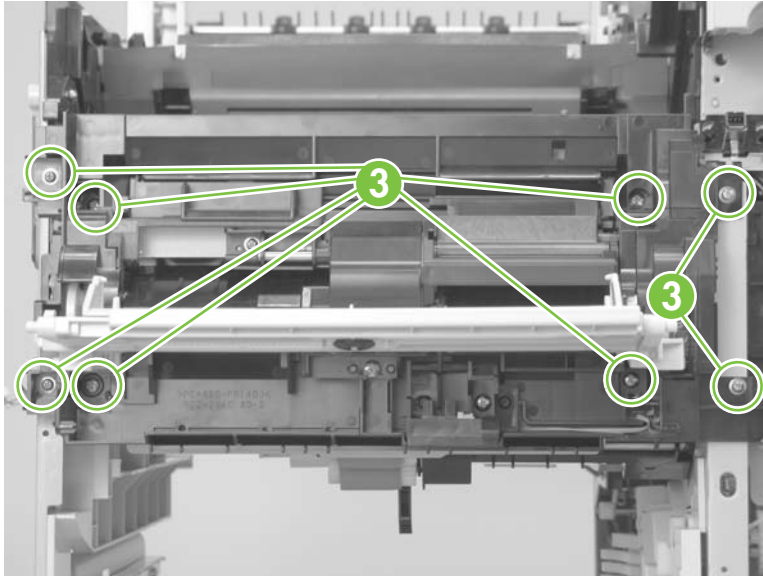
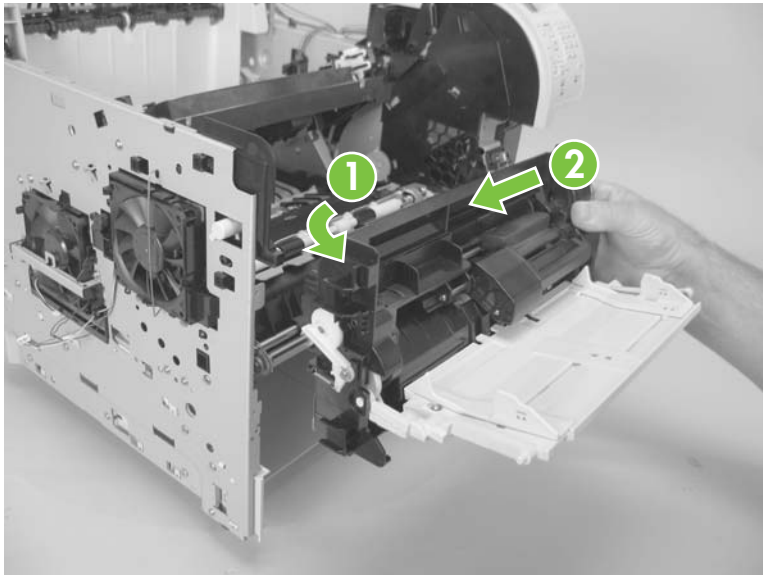
 **NOTE:** The four outside screws on the assembly are a different type than the others. Make sure that you replace the screws in the same position that they are removed from.

Figure 6-116 Remove the Tray 1 paper-pickup assembly (2 of 3)



4. Rotate the left side of the assembly away from the chassis, and then slide the assembly to the left to remove it.

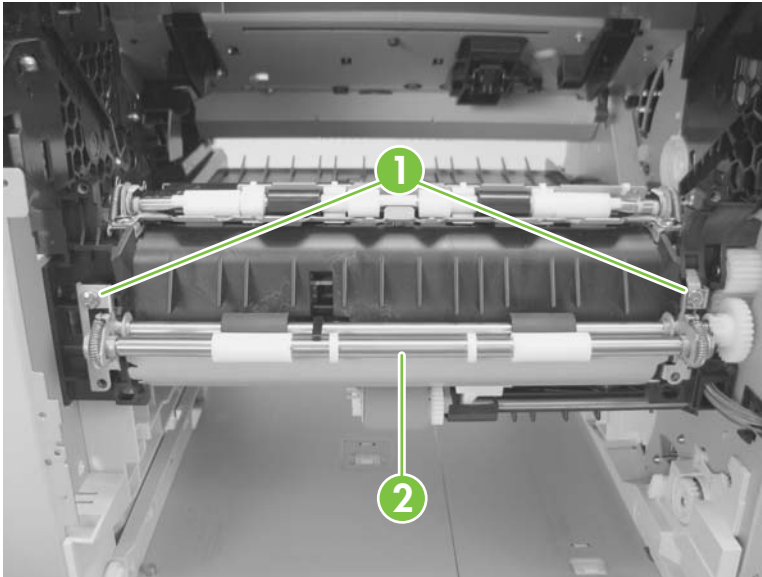
Figure 6-117 Remove the Tray 1 pickup assembly (3 of 3)



Feed-roller assembly

1. Remove the following components:
 - Top accessory cover. See [Top-accessory cover on page 144](#).
 - Duplex accessory or cover. See [Duplex accessory or cover on page 146](#).
 - Tray 2 extension door. See [Tray 2 extension door on page 147](#).
 - Formatter cover and cage. See [Formatter cover, formatter cage, and formatter PCA on page 150](#).
 - Top cover. See [Top cover on page 159](#).
 - Right-side cover. See [Right-side cover on page 161](#).
 - Left-side cover. See [Left-side cover on page 164](#).
 - Right front cover. See [Right-front cover on page 166](#).
 - Front cover. See [Front cover on page 172](#).
 - Tray 1 paper-pickup assembly. See [Tray 1 paper-pickup assembly on page 214](#).
2. Remove two screws (callout 1), and then remove the feed-roller assembly (callout 2).

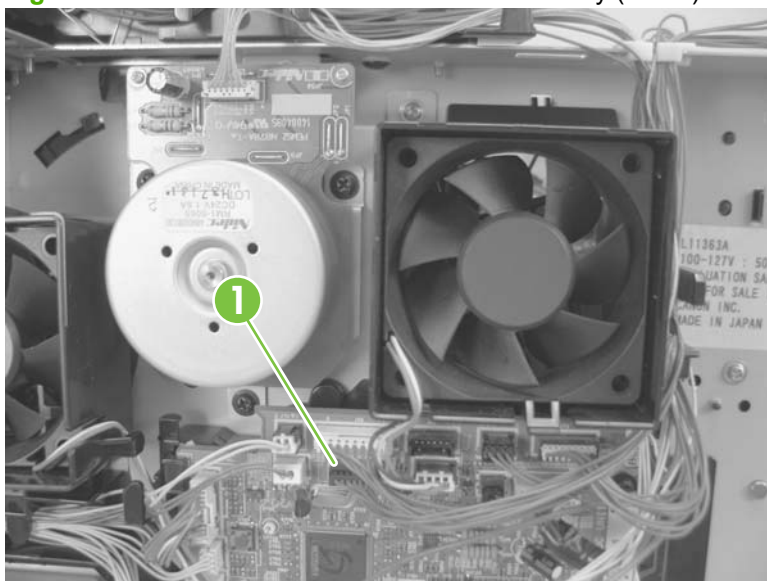
Figure 6-118 Remove the feed-roller assembly



Laser/scanner assembly

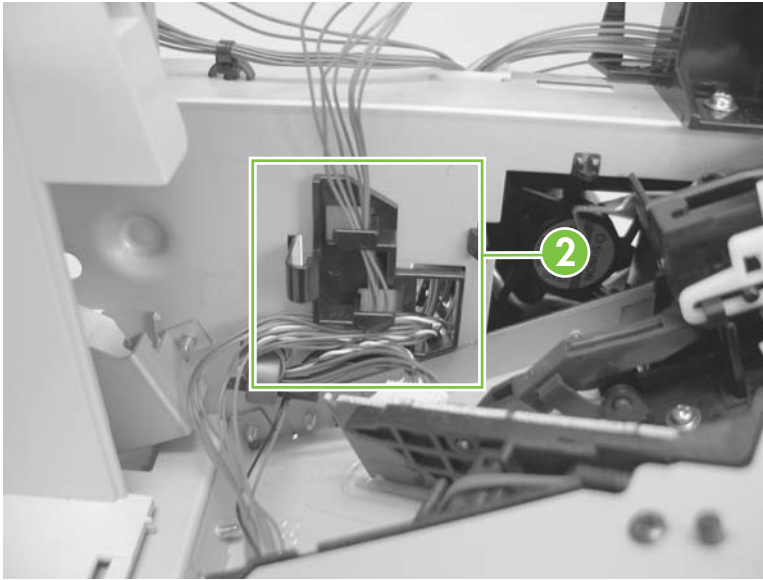
1. Remove the following components:
 - Top accessory cover. See [Top-accessory cover on page 144](#).
 - Duplex accessory or cover. See [Duplex accessory or cover on page 146](#).
 - Formatter cover and cage. See [Formatter cover, formatter cage, and formatter PCA on page 150](#)
 - Top cover. See [Top cover on page 159](#).
 - Right-side cover. See [Right-side cover on page 161](#).
2. Unplug the laser/scanner wire-harness connector from the DC controller PCA (callout 1; J86).

Figure 6-119 Remove the laser/scanner assembly (1 of 4)



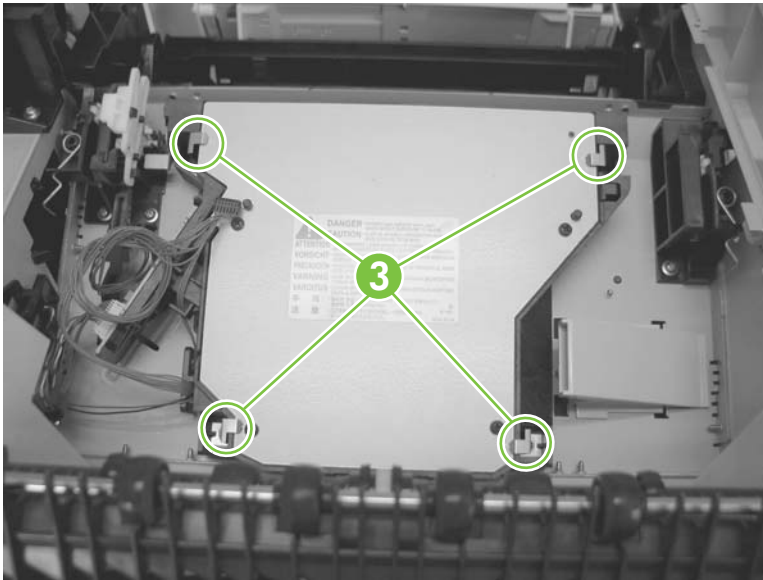
3. Remove the laser/scanner wire-harness from the wire guide (callout 2).

Figure 6-120 Remove the laser/scanner assembly (2 of 4)



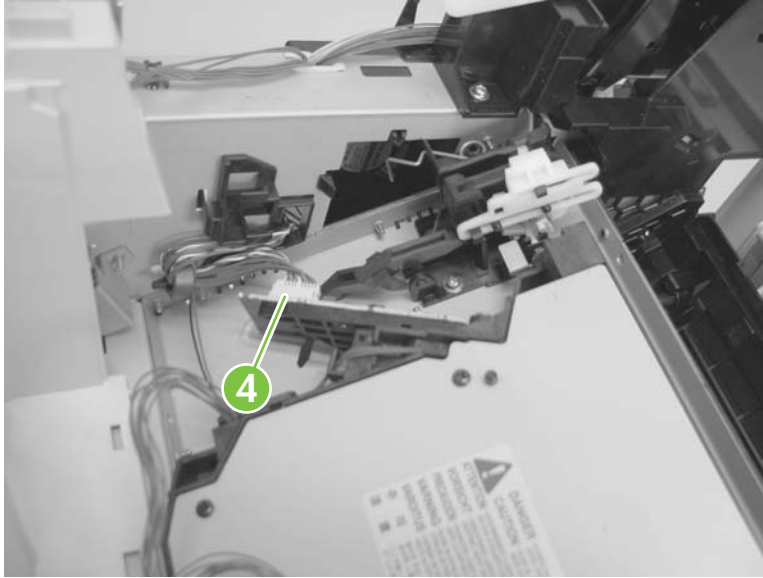
4. Remove four screws (callout 3) and the grounding clips.

Figure 6-121 Remove the laser/scanner assembly (3 of 4)



5. Disconnect the laser/scanner wire-harness (callout 4) from the laser/scanner PCA.

Figure 6-122 Remove the laser/scanner assembly (4 of 4)



6. Carefully lift the laser/scanner up and out of the product. Make sure that the laser/scanner assembly does not catch or snag the wires along the bottom of the assembly when you remove the assembly.

△ **CAUTION:** When you reinstall the laser/scanner assembly, make sure that the wire-harnesses are correctly routed through the cable guides. If the wire-harnesses are not correctly routed, they can be damaged when the top cover is installed.

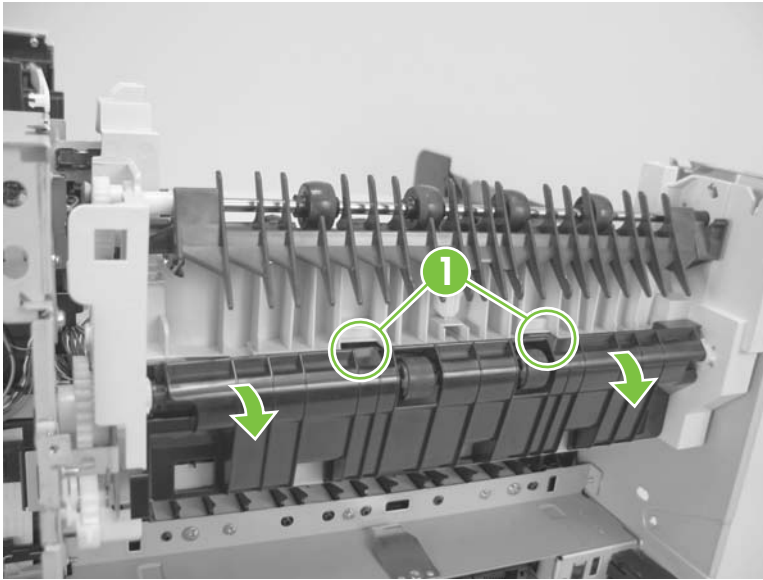
📝 **NOTE:** Make sure that the air duct is correctly positioned and that the laser/scanner shutter properly functions.

Paper-delivery assembly

1. Remove the following components:
 - Top accessory cover. See [Top-accessory cover on page 144](#).
 - Rear output bin. See [Rear output bin on page 148](#).
 - Formatter cover and cage. See [Formatter cover, formatter cage, and formatter PCA on page 150](#).
 - Top cover. See [Top cover on page 159](#).
 - Right-side cover. See [Right-side cover on page 161](#).
 - Rear upper cover. See [Rear-upper cover on page 169](#).

2. Release two tabs (callout 1), and then slightly rotate the top of the guide away from the product.

Figure 6-123 Remove the paper-delivery assembly (1 of 4)



3. Push up on the guide to release it, and then remove the guide.


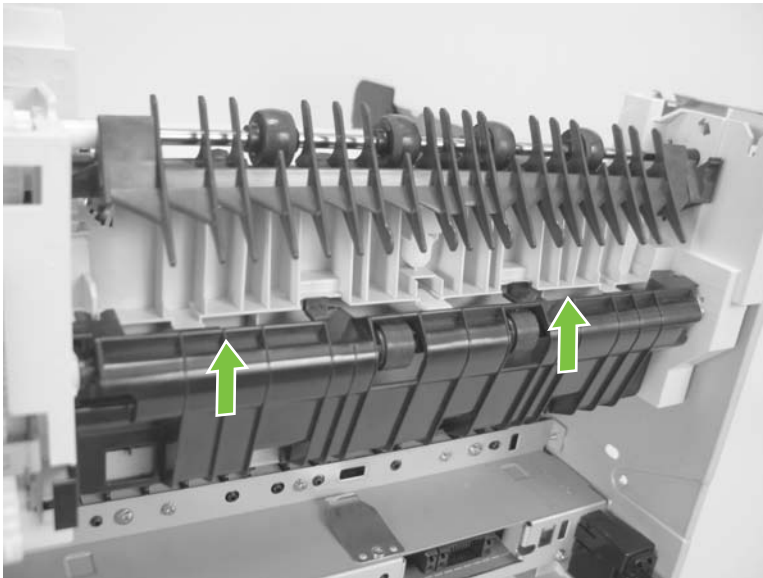
 **TIP:** To reinstall the guide, first install the top of the guide, and then push down to seat the bottom of the guide onto the product.

Figure 6-124 Remove the paper-delivery assembly (2 of 4)



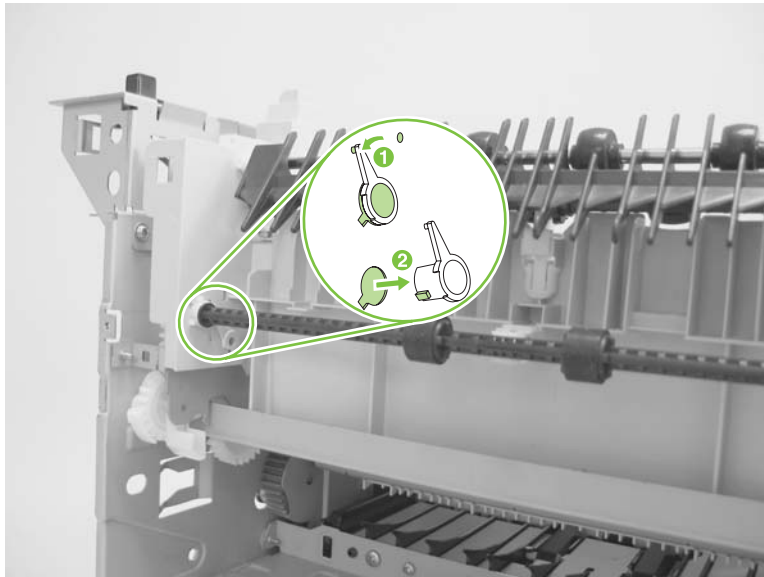
4. Use a small flatblade screwdriver to release the locking pin on the shaft lock, and then rotate the lock counter clockwise until the inner retaining tab (gear side) aligns with the hole in the paper-delivery assembly frame.

Slide the shaft lock to the right and remove it to release the gear shaft from the paper-delivery assembly.

△ **CAUTION:** Do not break the shaft lock. A replacement is not provided with a new paper-delivery assembly.

💡 **TIP:** Snap the shaft lock back into place on the assembly so that you will not lose it. Remove the shaft lock when you reinstall the output-delivery assembly. When the paper-delivery assembly is installed, verify that the locking pin on the shaft lock is fully seated in the hole on the paper-delivery assembly.

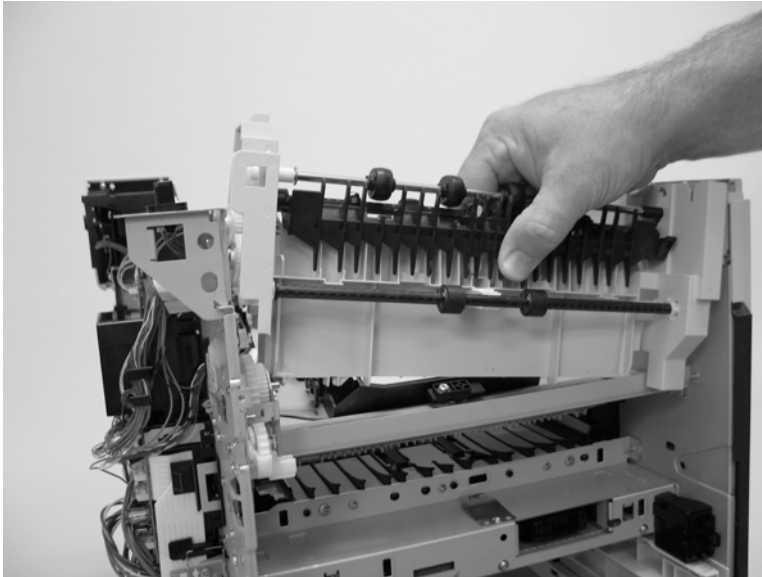
Figure 6-125 Remove the paper-delivery assembly (3 of 4)



5. Lift up the gear end of the output-delivery assembly slightly and slide the assembly toward the formatter assembly to remove it.

△ **CAUTION:** The rear face-down output-bin-sensor cable is routed through a notch on the paper-delivery assembly at the gear end of the assembly. When you remove the assembly, carefully remove the cable from the notch to avoid damage to the cable. See [Figure 6-127 Reinstall the paper-delivery assembly on page 222](#).

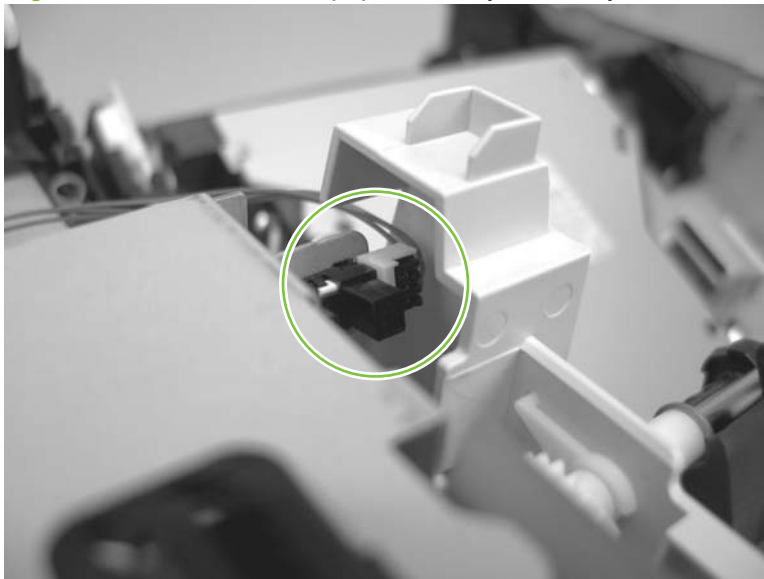
Figure 6-126 Remove the paper-delivery assembly (4 of 4)




Reinstall the paper-delivery assembly

Make sure that the output-bin sensor is not dislodged when the paper-deliver assembly is reinstalled.


Figure 6-127 Reinstall the paper-delivery assembly



1,500-sheet feeder assembly

 **NOTE:** Your product might not appear exactly as the one shown in the photos in this chapter. Although details such as the color of the external panels and covers might be different than your product, the procedures in this chapter are appropriate for your product.

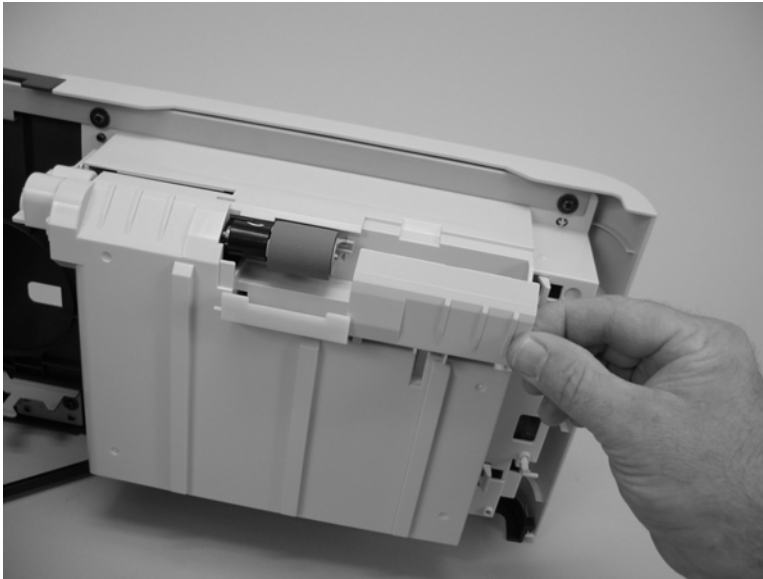
1,500-sheet feeder feed rollers

 **NOTE:** The removal procedure for the pickup and feed rollers in the 1,500-sheet feeder is the same as the procedure for the Tray 2 rollers. See [Figure 6-11 Remove the Tray 2 separation, pickup, and feed rollers \(3 of 4\) on page 142](#) and [Figure 6-12 Remove the Tray 2 separation, pickup, and feed rollers \(4 of 4\) on page 142](#) in [Tray 2 separation, pickup, and feed rollers on page 141](#).

1,500-sheet feeder separation roller

1. Open the 1,500-sheet feeder door. Open the separation-roller cover.

Figure 6-128 Remove the 1,500-sheet separation roller (1 of 2)



2. Pinch the blue latch that is on the side of the feed roller and slide the roller off of the shaft.


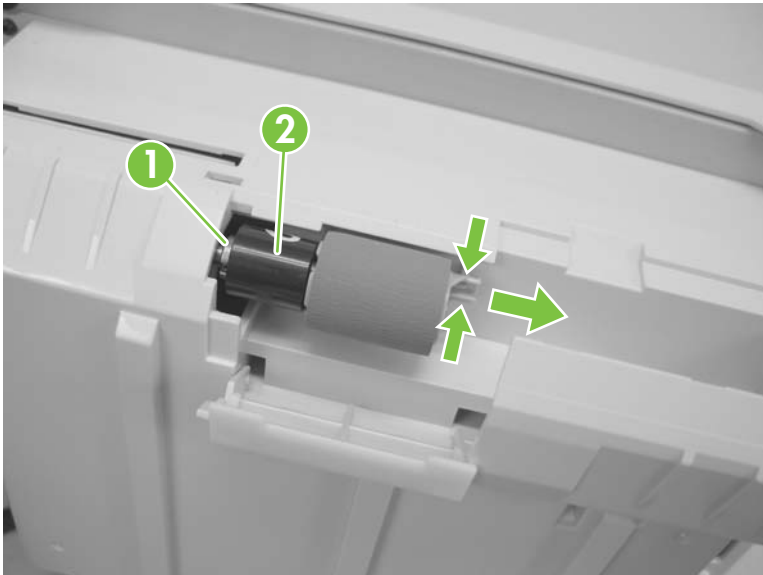
 **Reinstallation tip** When this roller is reinstalled, it must lock into place. Verify that the roller is seated on the locking bars that are located on the round black spacer and that the spacer is seated on the shaft-locking pin (callout 1 and callout 2).

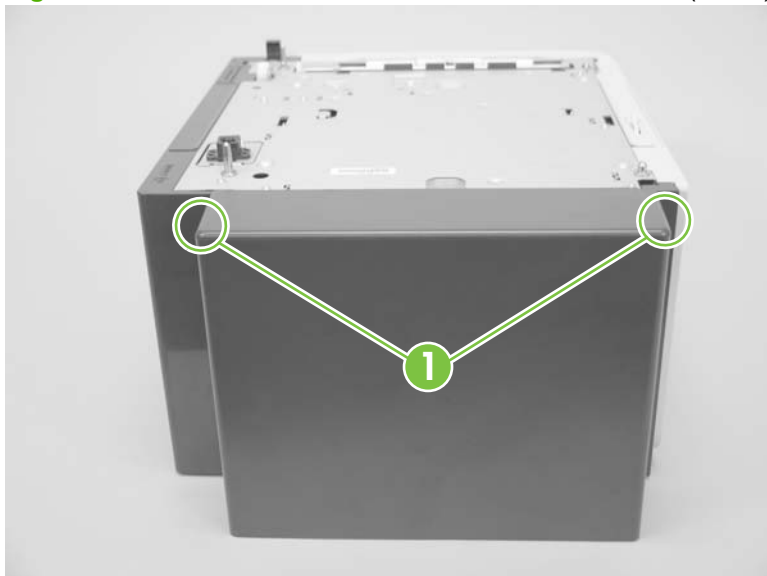
Figure 6-129 Remove the 1,500-sheet separation roller (2 of 2)



1,500-sheet feeder rear cover

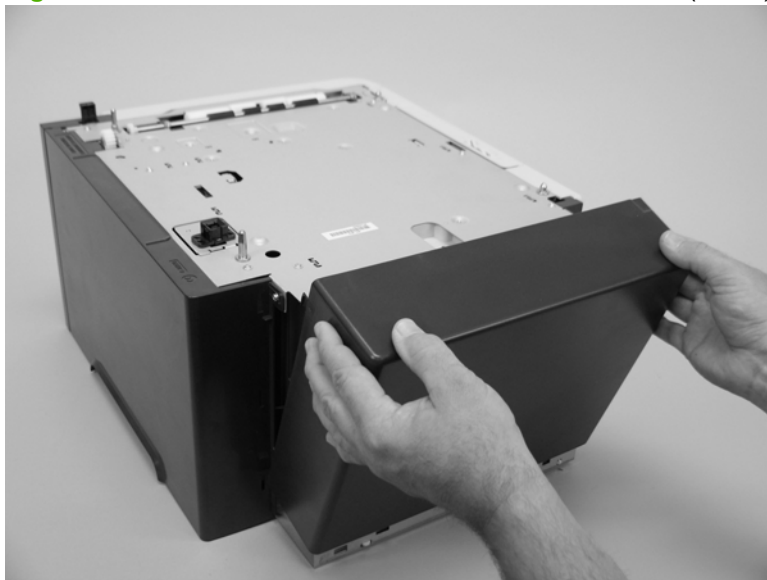
1. Release two tabs (callout 1).

Figure 6-130 Remove the 1,500-sheet feeder rear cover (1 of 2)



2. Rotate the top of the cover away from the feeder, and then lift up on the cover to release it. Remove the cover.

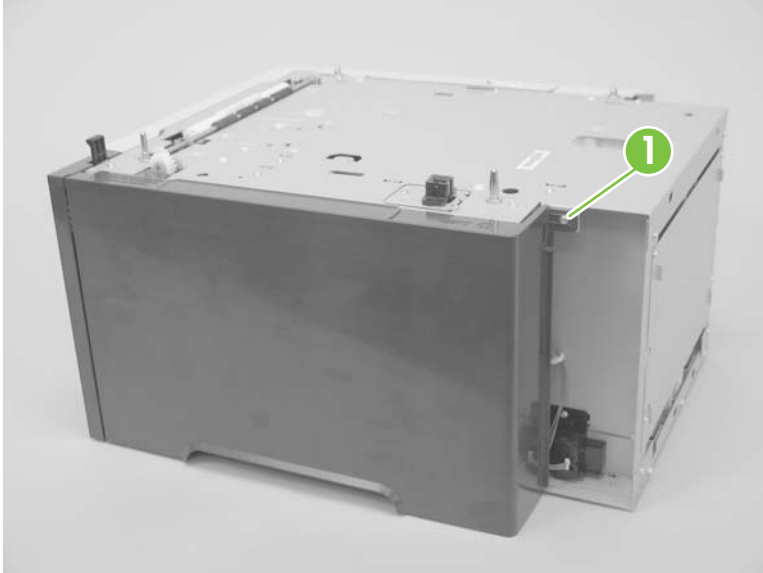
Figure 6-131 Remove the 1,500-sheet feeder rear cover (2 of 2)



1,500-sheet feeder right-side cover

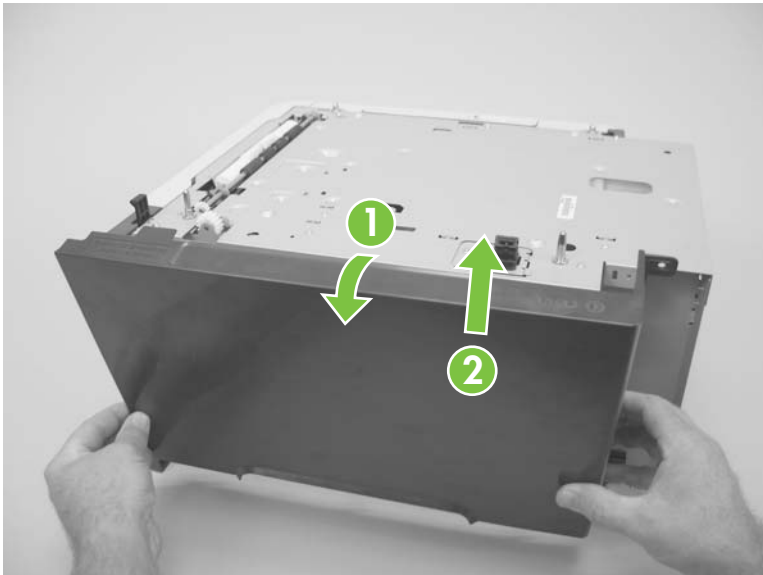
1. Remove the 1,500-sheet feeder rear cover. See [1,500-sheet feeder rear cover on page 225](#).
2. Remove one screw (callout 1).

Figure 6-132 Remove the 1,500-sheet feeder right-side cover (1 of 2)



3. Rotate the top of the cover away from the chassis and then lift it up and remove it.

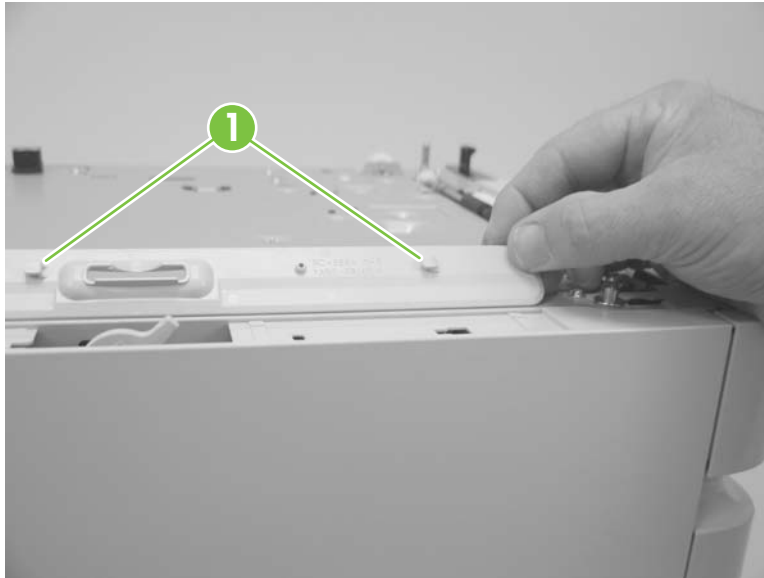
Figure 6-133 Remove the 1,500-sheet feeder right-side cover (2 of 2)



1,500-sheet feeder left-side cover

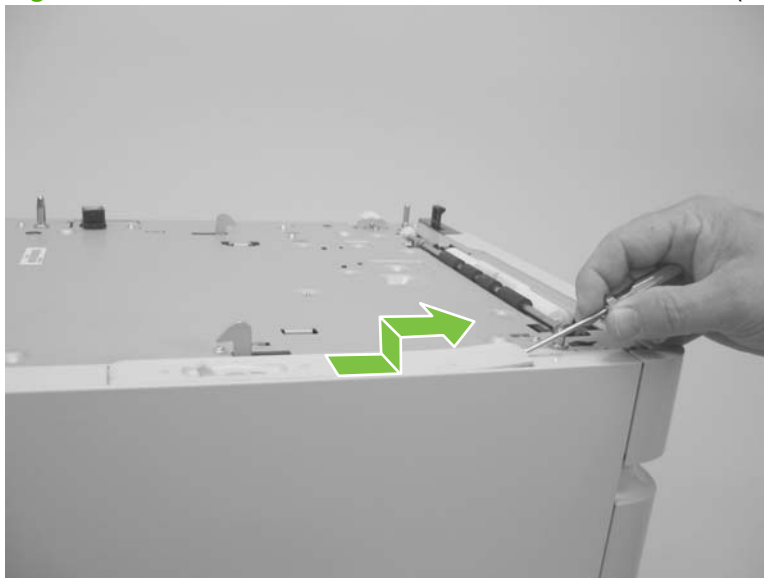
1. Remove the 1,500-sheet feeder rear cover. See [1,500-sheet feeder rear cover on page 225](#).
2. Before removing the lock-mechanism cover, take note of the location of the retainer tabs (callout 1). The retaining tabs on this cover can be easily broken.

Figure 6-134 Remove the 1,500-sheet feeder left-side cover (1 of 5)



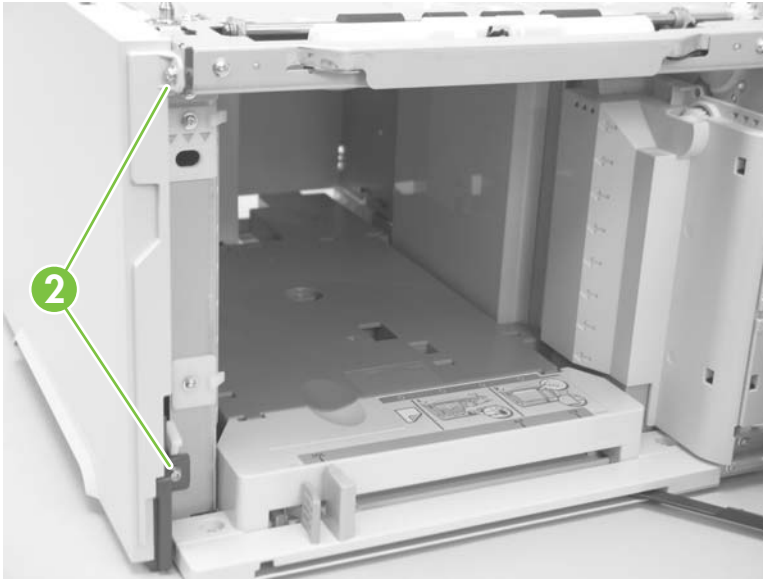
3. *Slightly* pry up on the lock-mechanism cover, and then slide it toward the front of the feeder to release it. Remove the cover.
- △ **CAUTION:** Do not pry this cover up more than is necessary for clearance when sliding it forward. The retaining tabs on this cover can be easily broken.

Figure 6-135 Remove the 1,500-sheet feeder left-side cover (2 of 5)



4. Open the 1,500-sheet feeder door, and then remove two screws (callout 2).

Figure 6-136 Remove the 1,500-sheet feeder left-side cover (3 of 5)



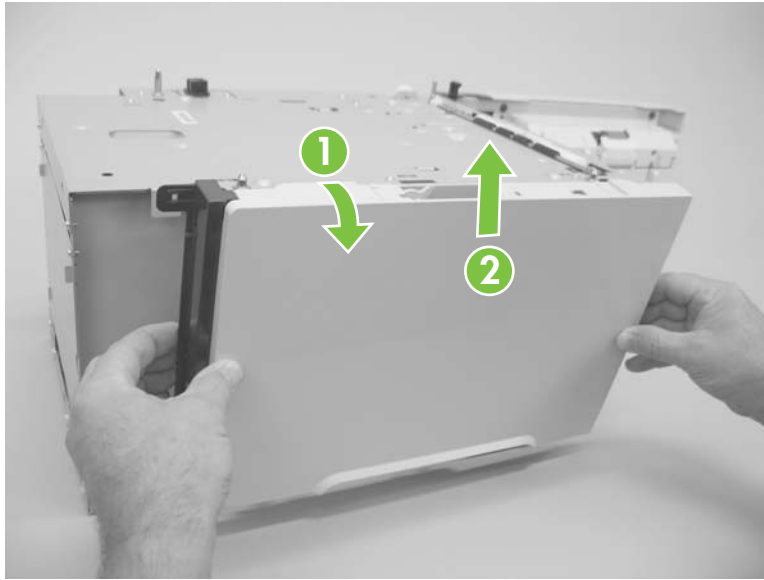
5. Remove one screw (callout 3).

Figure 6-137 Remove the 1,500-sheet feeder left-side cover (4 of 5)



6. Rotate the top of the cover away from the chassis and then lift it up and remove it.

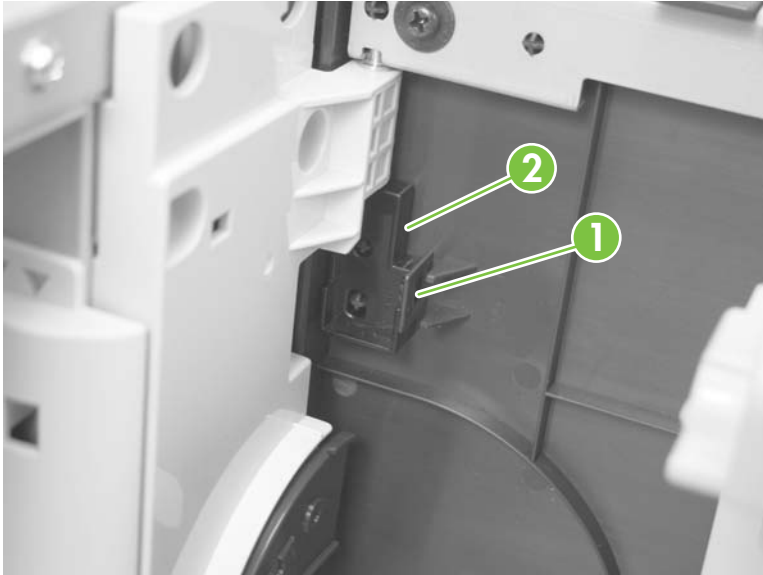
Figure 6-138 Remove the 1,500-sheet feeder left-side cover (5 of 5)



1,500-sheet feeder door

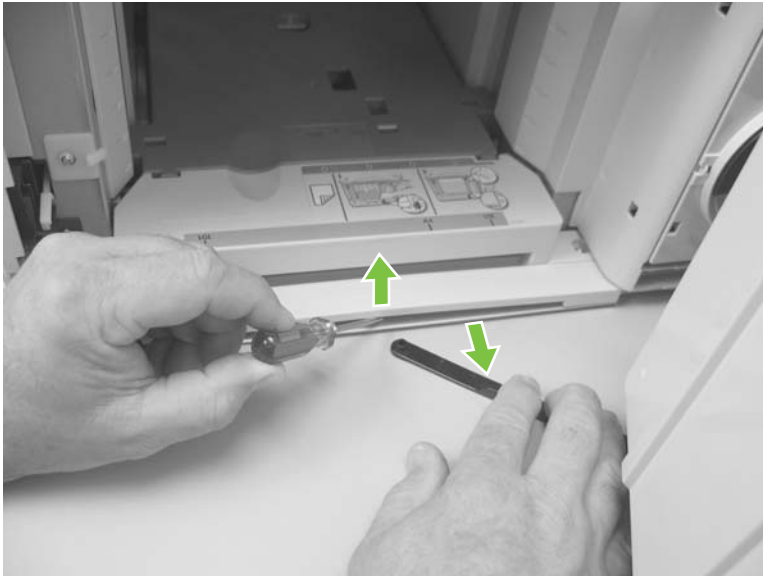
1. Open the 1,500-sheet feeder door.
2. Release one tab (callout 1), and then remove the door-stop plate (callout 2).

Figure 6-139 Remove the 1,500-sheet feeder door (1 of 3)



3. With the door open about halfway, gently pry open the door slide-bar slot and disengage the door slide-bar from the feeder.

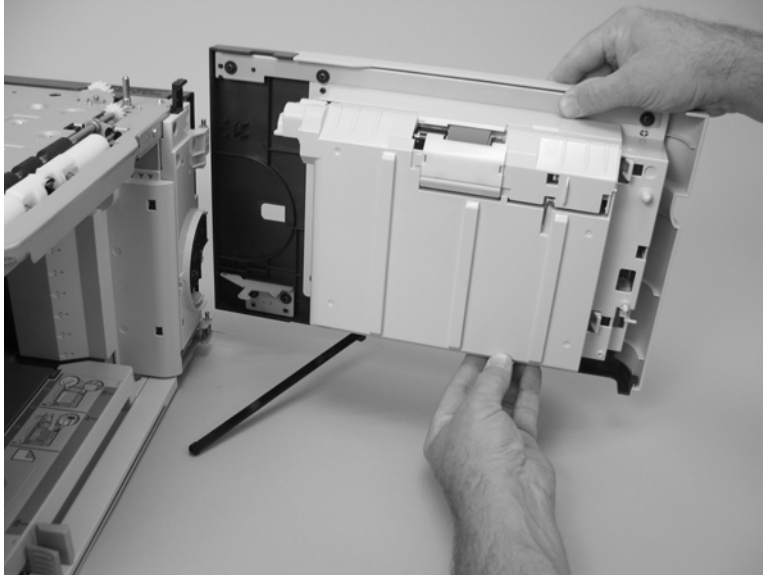
Figure 6-140 Remove the 1,500-sheet feeder door (2 of 3)



4. Lift the door straight up and off of the door hinge pins to remove it.

△ **CAUTION:** The door hinge pins are not captive. If the feeder must be turned on its side or placed upside down, remove the hinge pins and the door spring (on the lower hinge pin). Place the pins and the spring where you will not lose them.

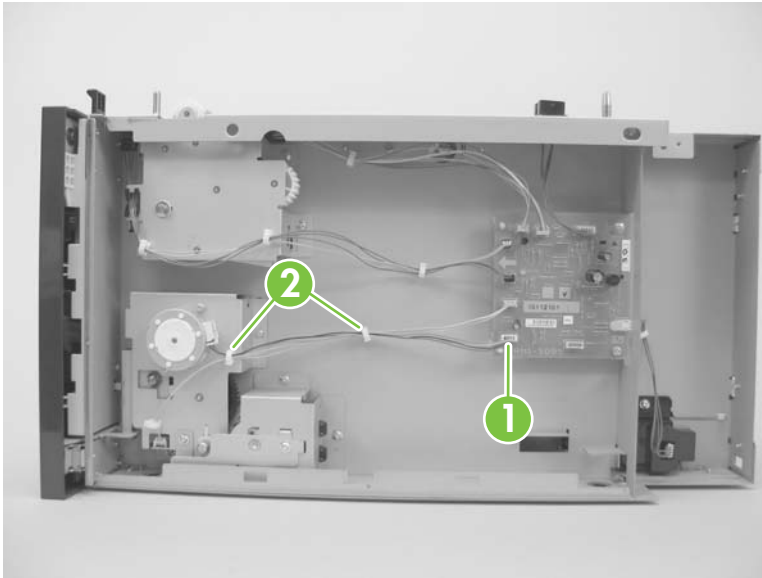
Figure 6-141 Remove the 1,500-sheet feeder door (3 of 3)



1,500-sheet feeder motor

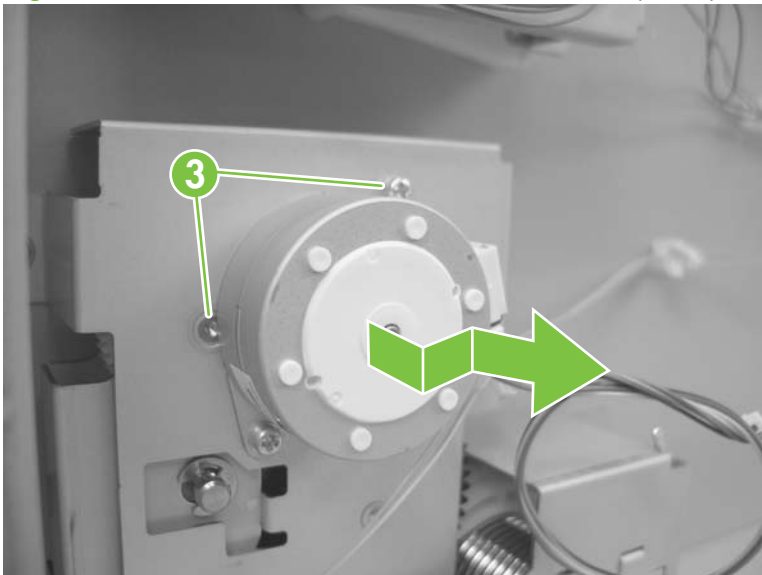
1. Remove the following components:
 - 1,500-sheet feeder rear cover. See [1,500-sheet feeder rear cover on page 225](#).
 - 1,500-sheet feeder right-side cover. See [1,500-sheet feeder right-side cover on page 226](#).
2. Disconnect one wire-harness connector (callout 1; J1703), and then release the wire harness from two retainers (callout 2).

Figure 6-142 Remove the 1,500-sheet feeder motor (1 of 2)



3. Remove two screws (callout 3). Slightly separate the motor from the feeder chassis, and then slide the motor toward the back of the feeder to remove the motor.

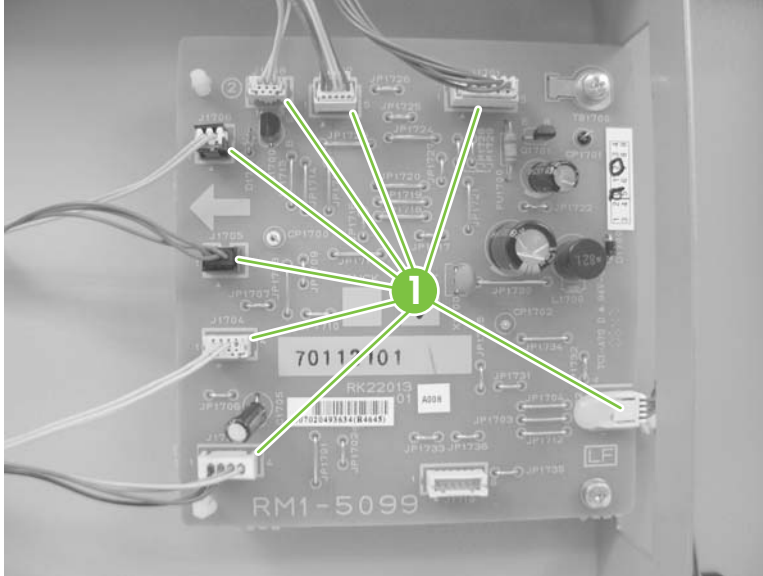
Figure 6-143 Remove the 1,500-sheet feeder motor (2 of 2)



1,500-sheet feeder driver PCA

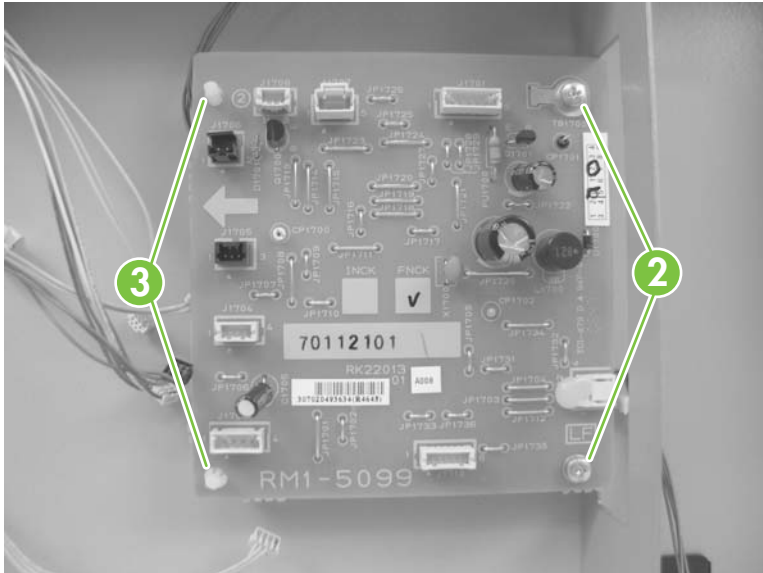
1. Remove the following components:
 - 1,500-sheet feeder rear cover. See [1,500-sheet feeder rear cover on page 225](#).
 - 1,500-sheet feeder right-side cover. See [1,500-sheet feeder right-side cover on page 226](#).
2. Disconnect eight wire-harness connectors (callout 1).

Figure 6-144 Remove the 1,500-sheet feeder driver PCA (1 of 2)



3. Remove two screws (callout 2). Use needle-nose pliers to squeeze the top of one of the nylon PCA standoff (callout 3). Gently pop the PCA off of the tab. Repeat the procedure on the remaining standoff. Remove the PCA.

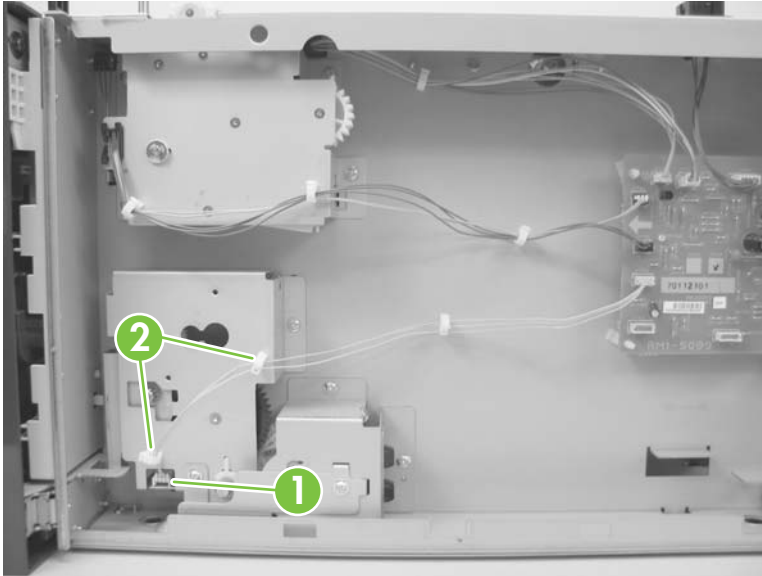
Figure 6-145 Remove the 1,500-sheet feeder driver PCA (2 of 2)



1,500-sheet feeder lift-drive assembly

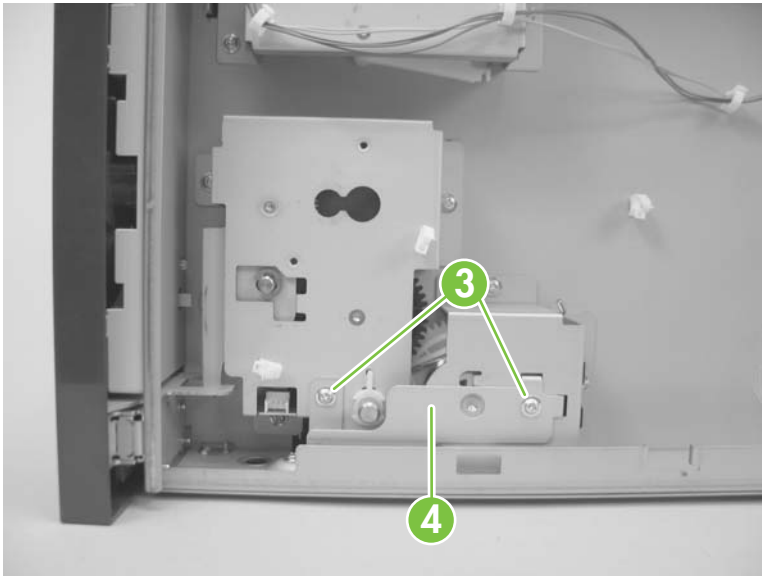
1. Remove the following components:
 - 1,500-sheet feeder rear cover. See [1,500-sheet feeder rear cover on page 225](#).
 - 1,500-sheet feeder right-side cover. See [1,500-sheet feeder right-side cover on page 226](#).
 - 1,500-sheet feeder motor. See [1,500-sheet feeder motor on page 232](#).
2. Disconnect one wire-harness connector (callout 1), and then release the wire harnesses from two retainers (callout 2).

Figure 6-146 Remove the 1,500-sheet feeder lift-drive assembly (1 of 3)



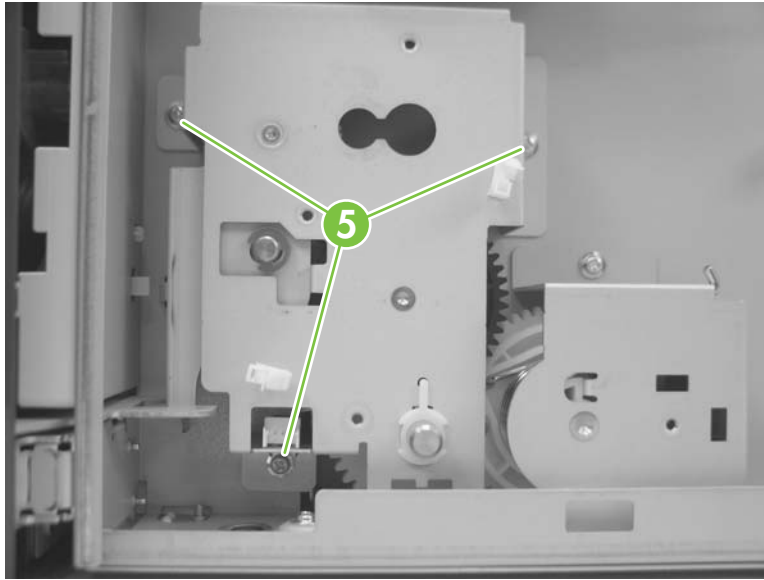
3. Remove two screws (callout 3) and then remove the sheet-metal plate (callout 4).

Figure 6-147 Remove the 1,500-sheet feeder lift-drive assembly (2 of 3)



4. Remove three screws (callout 5), and then carefully remove the lift-drive assembly.

Figure 6-148 Remove the 1,500-sheet feeder lift-drive assembly (3 of 3)



7 Solve problems

- [Troubleshooting checklist](#)
- [Menu map](#)
- [Troubleshooting process](#)
- [Troubleshooting tools](#)
- [Control-panel messages](#)
- [Event log messages](#)
- [Paper-handling problems](#)
- [Solve image quality problems](#)
- [Solve performance problems](#)
- [Solve connectivity problems](#)
- [Service mode functions](#)

Troubleshooting checklist


The following checklist contains basic questions that you can ask the customer in order to help define the problem(s) quickly. For more information about product and media specifications, see [Paper and print media on page 47](#).

Table 7-1 Initial troubleshooting checklist

Environment	<ul style="list-style-type: none"> Is the product installed in a suitable environment? See Operating environment on page 502. Is the product installed on a solid, level surface? Is the supply voltage (from the wall receptacle) within $\pm 10\%$ of the product's rated voltage (see Electrical specifications on page 500)? Is the power cord fully seated into both the product and the electrical receptacle in the wall? Is the product exposed to ammonia gas, such as that produced by diazo copiers or office-cleaning materials? Is the product exposed to direct sunlight?
Media	<ul style="list-style-type: none"> Is suitable media being used in the product? See Supported paper and print media sizes on page 48 and Supported paper and print media types on page 50. Does the customer use only supported print media? Is the media in good condition (no curl, folds, or other flaws)? Is the media stored correctly and within environmental limits? Is the correct side of the page printed on first? Is long-grain paper being used?
Input trays	<ul style="list-style-type: none"> Is the correct amount of media loaded in the tray (not stacked above the arrows embossed in the tray)? Is the media placed in the tray correctly? Are the paper guides aligned with the stack? Is the tray cassette installed correctly in the product?
Print cartridge	<ul style="list-style-type: none"> Is the print cartridge installed correctly?
Fuser	<ul style="list-style-type: none"> Is the fuser installed correctly?
Covers	<ul style="list-style-type: none"> Is the top cover closed?
Condensation	<ul style="list-style-type: none"> Does condensation occur following a temperature change (particularly in winter following cold storage)? If so, wipe off the affected parts or leave the product on for 10 to 20 minutes and then attempt to resume printing. Was a print cartridge opened soon after it was moved from a cold room to a warm one? If so, allow the print cartridge and the product to acclimate to room temperature for one to two hours.
Miscellaneous	<ul style="list-style-type: none"> Are any non-HP components installed? Check for any non-HP components (print cartridges, memory modules, and EIO cards) installed in the product and remove them. Hewlett-Packard recommends the use of HP components in its products. Remove the product from the network, and make sure that the failure is associated with the product before beginning troubleshooting.

Menu map

The menu map can be an important troubleshooting tool. It shows each control-panel menu and submenu in order to aid navigation through the menu system. Print the menu map from the control panel by completing the following steps.

1. Press **Menu** .
2. Press the down arrow ▼ to highlight **INFORMATION**, and then press **OK**.
3. Press the down arrow ▼ to highlight **PRINT MENU MAP**, and then press **OK** to print.

Troubleshooting process

When the product malfunctions or encounters an unexpected situation, information on the control panel alerts you to the situation. This section contains an initial troubleshooting checklist that helps to eliminate many possible causes of the problem. The subsequent troubleshooting flowchart helps you to diagnose the cause of the problem. The remainder of the chapter provides steps for correcting the problems that have been identified.

- Use the initial troubleshooting checklist to evaluate the source of the problem and to reduce the number of steps that are required to fix the problem.
- Use the troubleshooting flowchart to pinpoint the cause of malfunctions. The flowchart lists the section within this chapter that provides steps for correcting the malfunction.

Before beginning any troubleshooting procedure, check the following issues.

- Are supply items (for example, the print cartridge, fuser, and rollers) within their rated life?
- Does the configuration page reveal any configuration problems? See [Print the information and show-me-how pages on page 66](#).



NOTE: The customer is responsible for checking and maintaining supplies, and for using supplies that are in good condition. The customer is responsible for media and print-cartridge supplies. The customer is also responsible for replacing the fuser, transfer roller, and all paper pickup, feed, and separation rollers that are at or near the end of their 225,000-page rated life.

Power-on checks

The basic product functions should start up as soon as the product is plugged into an electrical receptacle and the power switch is pushed to the *on* position.

Overview

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

During normal product operation, the left rear cooling fan begins to spin briefly after the product power is turned on. Place your hand over the holes in the left-side cover. If the fan is operating, you will feel a slight vibration and feel air passing into the product. You can also lean close to the product and hear the fan operating. When this fan is operational, the dc side of the power supply is functioning correctly.


After the fan is operating, the main motor turns on (unless the top cover is open, a jam condition is sensed, or the paper path sensor is blocked). You should be able to visually and audibly determine if the main motor is turned on.

If the fan and main motor are operating correctly, the next troubleshooting step is to separate print engine, formatter, and control-panel problems. Perform an engine test (see [Engine test on page 244](#)). If the formatter is damaged, it might interfere with the engine test. If the engine test page does not print, try removing the formatter and then performing the engine test again. If the engine test is then successful, the problem is almost certainly with the formatter, the control panel, or the cable that connects them.


If the control panel is blank when you turn on the product, check the following items.

1. Make sure that the product is plugged into an active electrical outlet receptacle that delivers the correct voltage.
2. Make sure that the on/off switch is in the *on* position.

3. Make sure that the fan runs briefly, which indicates that the power supply is operational.
4. Make sure that the control-panel display wire-harness is connected to connector J70 of the DC controller PCA.
5. Make sure that the formatter is seated and operating correctly.
6. Remove any HP Jetdirect or other EIO cards, and then try to turn the product on again.

 **NOTE:** If the control-panel display is blank, but the main cooling fan runs briefly after the product power is turned on, try printing an engine test page to determine whether the problem is with the control-panel display, formatter, or other components. See [Engine test on page 244](#).

If the main cooling fan is not operating, replace the power-supply assembly. See [High voltage power supply on page 206](#).

 **NOTE:** It is important to have the control panel functional as soon as possible in the troubleshooting process so that the control-panel display can be used to help locate errors.

If problems with the power-on check persist, refer to table [Table 7-2 Power-on defect or blank display on page 241](#).

Table 7-2 Power-on defect or blank display

Problem	Action
The power cord is not plugged into the wall receptacle and connected to the product.	Make sure that the power cord is firmly plugged into the wall receptacle and connected to the product.
The correct voltage (power) is not available.	Measure the voltage at the outlet. If necessary, plug the power cord into another circuit outlet.
The power switch is off.	<p>Set the switch to the <i>on</i> position. You should hear the switch toggle. If the front right-side cover has been removed recently, make sure that the rod connecting the power-supply switch moves as you toggle the switch. See the reinstall note in Reinstall the right cover on page 162.</p> <p>If the product still does not turn on, the power switch might be defective.</p> <ol style="list-style-type: none"> 1. Remove the power supply. 2. Measure the resistance between the two terminals of the power switch (SW1) by applying the tester probes to the terminals. The resistance must be low (under 1 K/ohm) when the power is turned on, and high (over 6 K/ohm) when the switch is turned off. 3. Replace the power-supply assembly, if necessary.
The overcurrent/overvoltage detection circuit is activated.	Wait for more than two minutes before turning the product back on.
A fuse is blown.	<ol style="list-style-type: none"> 1. Check the fuses (FU1 and FU2) on the power supply. 2. Replace the power-supply assembly if necessary.
The main cooling fan (located on the left side near the rear of the product) does not turn on when the product is started.	<p>An operational fan indicates the following conditions:</p> <ul style="list-style-type: none"> • The AC power is present in the product. • The DC power supply is functional (24 V, 5 V, and 3.3 V are being generated). • The DC controller microprocessor is functional.

Table 7-2 Power-on defect or blank display (continued)

Problem	Action
	If the fan is not working: <ol style="list-style-type: none">1. Turn the product off and remove the formatter. Disconnect the optional accessories.2. Turn the product on and check the fan again. If the fan is still not working: <ol style="list-style-type: none">1. Verify that the fan is connected to the power supply (connector J64).2. Replace the fan. See Fan FN101 on page 200.3. Replace the power-supply assembly. See High voltage power supply on page 206.4. Replace the DC controller. See DC controller PCA on page 186. Note: <p>The fan only operates during the initial startup and while printing, and when the temperature inside the product is too high. If the temperature is too high, the fan turns on to cool the inside of the product.</p>
The fan works, but the control-panel display is blank.	<ol style="list-style-type: none">1. Print an engine test. Engine test on page 244.2. If the engine test is successful, perform the following steps, in order.<ul style="list-style-type: none">◦ Reseat the control panel and formatter connector. See Control-panel assembly on page 170 and Formatter cover, formatter cage, and formatter PCA on page 150.◦ Replace the control-panel cable. See Control-panel assembly on page 170.◦ Replace the control-panel assembly. See Control-panel assembly on page 170.◦ Replace the formatter. See Formatter cover, formatter cage, and formatter PCA on page 150.3. If the engine test is not successful, remove the formatter and attempt to perform the engine test again. If the engine test is successful with the formatter removed, replace the formatter. See Formatter cover, formatter cage, and formatter PCA on page 150. If the test is not successful with the formatter removed, replace the DC controller PCA. See DC controller PCA on page 186.

Troubleshooting tools

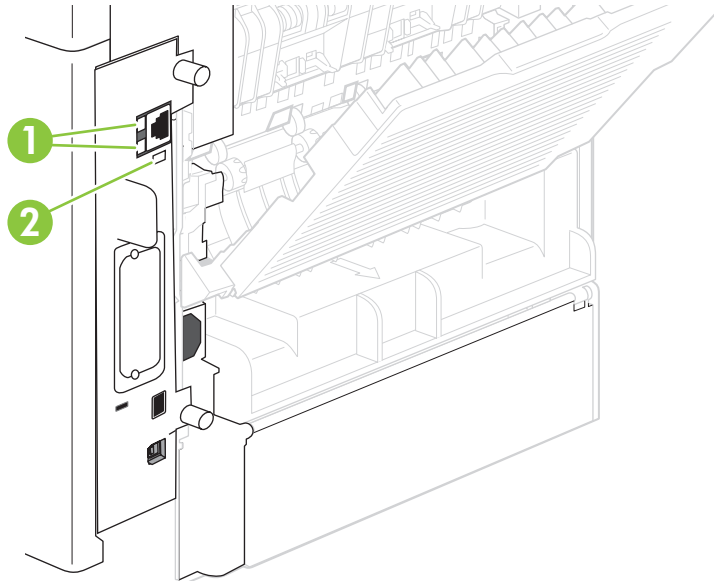
Individual component diagnostics

LED diagnostics

LED, engine, and individual diagnostics can help identify and troubleshoot product problems.

Understand lights on the formatter

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



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

HP Jetdirect LEDs

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

For link failures, check all of the network cable connections.

For non-link errors, print a configuration page. The second page is the HP Jetdirect configuration page. Examine this page for any inconsistencies among the network settings.

Heartbeat LED


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

The heartbeat LED will perform the following sequences:

1. The LED blinks every four seconds with the power on.
2. If the light is not blinking, check the following:
 - Reseat the formatter cage.
 - Replace the memory.
 - Replace the formatter.
3. If the control panel display does not illuminate, perform an engine test to check the engine (see [Engine test on page 244](#)). You must have paper loaded in Tray 2 for the engine test.

Formatter test

To check that the formatter is working, print a configuration page.

1. Press **Menu** .
2. Press the down arrow ▼ to highlight **INFORMATION**, and then press **OK**.
3. Press the down arrow ▼ to highlight **PRINT CONFIGURATION**, and then press **OK**.

Engine diagnostics


Engine test

To verify that the product engine (all product components *except* the formatter, formatter DIMMs, EIO products, and the stacker or stapler/stacker) is functioning, print an engine-test page. Use a small, non-metallic, pointed object to depress the test-page switch, which is accessible through a slot in the right-side cover.

Figure 7-1 Engine-test-page switch



The test page should have a series of horizontal lines. The test page prints from the last tray that you printed from. However, if the product has been turned off and then on again since the most recent print job, the page will print from Tray 2. The product will not print a test page if it is in PowerSave or Sleep mode.

 **NOTE:** A damaged formatter might interfere with the engine test. If the engine-test page does not print, try removing the formatter and performing the engine test again. If the engine test is then successful, the problem is almost certainly with the formatter, the control panel, or the cable that connects them.

Half self test

Perform a half self test to determine which image-formation process might be malfunctioning.



NOTE: It might be easier to perform the print/stop test to stop the product during the printing process. See [Print/stop test on page 257](#).

1. Print a configuration page from the control panel.
2. Open the top cover after the paper advances half-way through the product, which is about 3 to 5 seconds after the main motor begins to rotate. The leading edge of the paper should have advanced past the print cartridge.
3. Remove the print cartridge.
4. Open the print cartridge drum shield to view the drum surface.

If a dark and distinct toner image is present on the drum surface, assume that the cleaning, conditioning, writing, and developing functions of the electrophotographic process are functioning correctly. Troubleshoot the failure as a transfer or fusing problem. If no image is present on the drum, perform the drum-rotation test.

Drum rotation test

The photosensitive drum, which is located in the print cartridge, must rotate in order for the print process to work. The photosensitive drum receives its drive from the main gear assembly. Use this procedure to determine whether the drum is rotating.


1. Open the top cover.
2. Remove the print cartridge.
3. Mark the cartridge drive gear with a felt-tipped marker. Note the position of the mark.
4. Install the print cartridge, and then close the top cover. The start-up sequence should rotate the drum enough to move the mark on the gear.
5. Open the product and inspect the mark on the cartridge drive gear. Verify that the mark moved. If there was no movement, inspect the main gear assembly to make sure that it connects with the print-cartridge gears. If the drive gears function but the drum does not move, replace the print cartridge.



NOTE: This test is especially important if refilled print cartridges are in use.

If a dark and distinct toner image is present on the drum surface, assume that the cleaning, conditioning, writing, and developing functions of the electrophotographic process are functioning correctly. Troubleshoot the failure as a transfer or fusing problem. If no image is present on the drum, perform the drum-rotation test.

Paper path sensors test

 **NOTE:** To view the function of each sensor and how to toggle them manually, see [Manual sensor test \(special mode test\) on page 248](#).

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


1. Press **Menu** .
2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press **OK**.
3. Press the down arrow ▼ to highlight **PAPER PATH SENSORS**, and then press **OK**.
4. Select the paper path test options for the test you want to run.
5. Press **OK** to start the test, and then observe the control panel designators (see figure and table below). The sensors should display a **1** status as paper passes by the sensors.

Figure 7-2 Paper sensors

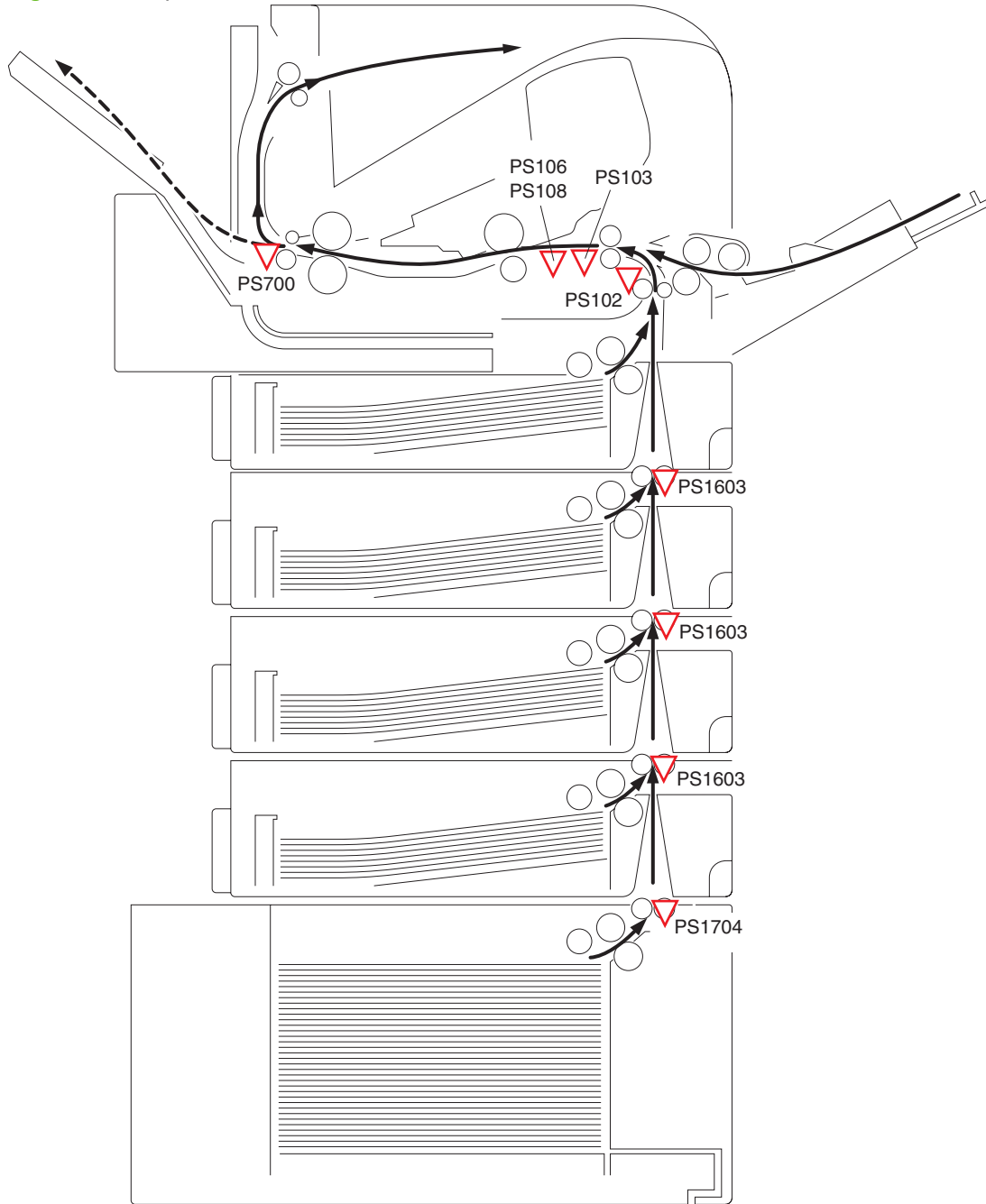


Table 7-3 Paper sensor test designators

Designator	Sensor
A	Top of page sensor (PS103)
B	Pre-feed sensor (PS102)
C	Fuser delivery sensor (PS700)
D	Duplex sensor (PS1502)
E	Left-side paper width sensor (PS106)

Table 7-3 Paper sensor test designators (continued)


Designator	Sensor
F	Right-side paper width sensor (PS108)
G	Tray 3 media path sensor (PS1603) ¹
H	Tray 4 media path sensor (PS1603) ¹
I	Tray 5 media path sensor (PS1603) ¹
J	Tray 6 media path sensor (PS1704) ¹

¹ This sensor is present only if the accessory is installed.

Paper path test

This diagnostic test generates one or more test pages that you can use to isolate the cause of jams.

To isolate a problem, you can specify which input tray to use, specify whether to use the duplex path, and specify the number of copies to print. Multiple copies can be printed to help isolate intermittent problems. The following options become available after you start the diagnostic feature:

- **PRINT TEST PAGE:** Run the paper path test from the default settings: Tray 2, no duplex, and one copy. To specify other settings, scroll down the menu and select the setting, and then scroll back up and select **PRINT TEST PAGE** to start the test.
 - **SOURCE:** Select Tray 1, Tray 2, one of the optional trays, or the envelope feeder.
 - **DESTINATION:** Select the standard bin or an optional output destination, such as a stacker. This menu item appears only if optional output bins are attached to the product.
 - **DUPLEX:** Enable or disable 2-sided printing.
 - **COPIES:** Set the numbers of copies to be printed; the choices are 1, 10, 50, 100, or 500.
1. Press **Menu** .
 2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press **OK**.
 3. Press the down arrow ▼ to highlight **PAPER PATH TEST**, and then press **OK**.
 4. Select the paper path test options for the test you want to run.

Sensor test (interactive)

Manual sensor test (special mode test)

Use this diagnostic test to manually test the product sensors and switches. Each sensor is represented by a letter and number on the control panel display. See [Table 7-4 Manual sensor diagnostic tests on page 249](#) for a definition of the sensor letter codes. A 1 below the letter indicates that paper is present. For the paper size sensor, the range of values is from 0 to 7.

1. Press **Menu** .
2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press **OK**.

3. Press the down arrow ▼ to highlight **MANUAL SENSOR TEST 1**, and then press **OK**.
4. Use the arrow buttons to highlight the sensor letter code that you want to test, and then press **OK**.

To exit this diagnostic, press the stop button ⊗, and then select **EXIT DIAGNOSTICS**.

Menus cannot be opened during this test, so the **OK** button serves the same function as the stop button ⊗.

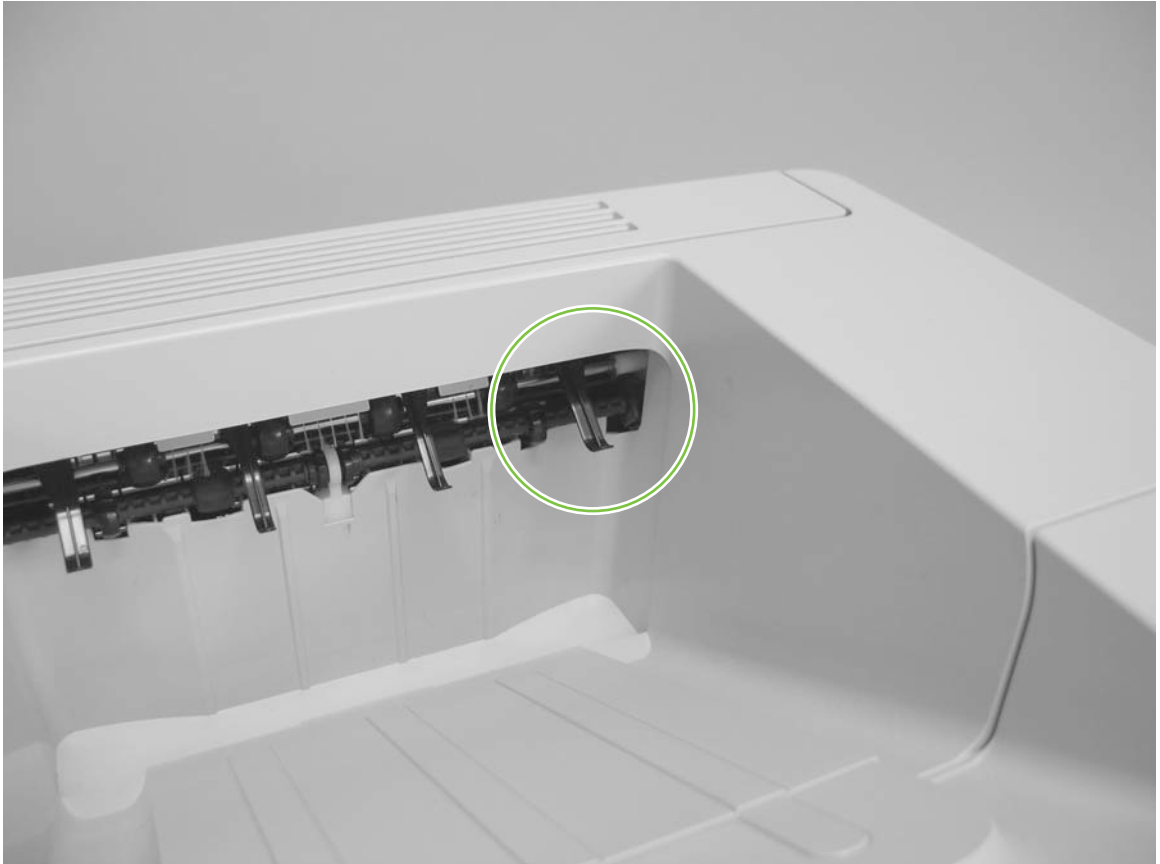
Table 7-4 Manual sensor diagnostic tests

Manual sensor test designator	Sensor or switch
A	Top of page sensor (PS103) (see Figure 7-8 Checking sensors in the print-cartridge area on page 255)
B	Tray 2 pre-feed sensor (PS102) (see Figure 7-6 Checking the Tray 2 pre-feed sensor on page 253)
C	Fuser delivery sensor (PS700) (see Figure 7-5 Checking the fuser delivery sensor on page 252)
D	Duplex sensor (PS1502)
E	Left-side paper width sensor (PS106) (see Figure 7-8 Checking sensors in the print-cartridge area on page 255)
F	Right-side paper width sensor (PS108) (see Figure 7-8 Checking sensors in the print-cartridge area on page 255)
G	Tray 3 media path sensor (PS1603) (see Figure 7-7 Checking media path sensors on page 254)
H	Tray 4 media path sensor (PS1603) (see Figure 7-7 Checking media path sensors on page 254)
I	Tray 5 media path sensor (PS1603) (see Figure 7-7 Checking media path sensors on page 254)
J	Tray 6 media path sensor (PS1704) (see Figure 7-7 Checking media path sensors on page 254)
K	Output bin full sensor (PS104) (see Figure 7-3 Checking the output bin full sensor on page 250)
L	Top cover open switch (SW101) (open and close the top cover)
M	Tray 1 paper present sensor (PS105) (see Figure 7-4 Checking the Tray 1 paper present sensor on page 251)
N	Tray 2 paper present sensor (PS101) (see Figure 7-9 Checking sensors in the Tray 2 area on page 256)
O	Tray 2 top of stack sensor (PS107) (see Figure 7-9 Checking sensors in the Tray 2 area on page 256)
P	Tray 2 paper size switches (SW102) (see Figure 7-9 Checking sensors in the Tray 2 area on page 256)

The following illustrations show the location of several of the product sensors and switches.

- Check the output bin full sensor (PS104) by running manual sensor test 1 and checking the status of designator K while moving the arm.

Figure 7-3 Checking the output bin full sensor



- Check the Tray 1 paper present sensor (PS105) by running manual sensor test 1 and checking the status of designator M.

Figure 7-4 Checking the Tray 1 paper present sensor



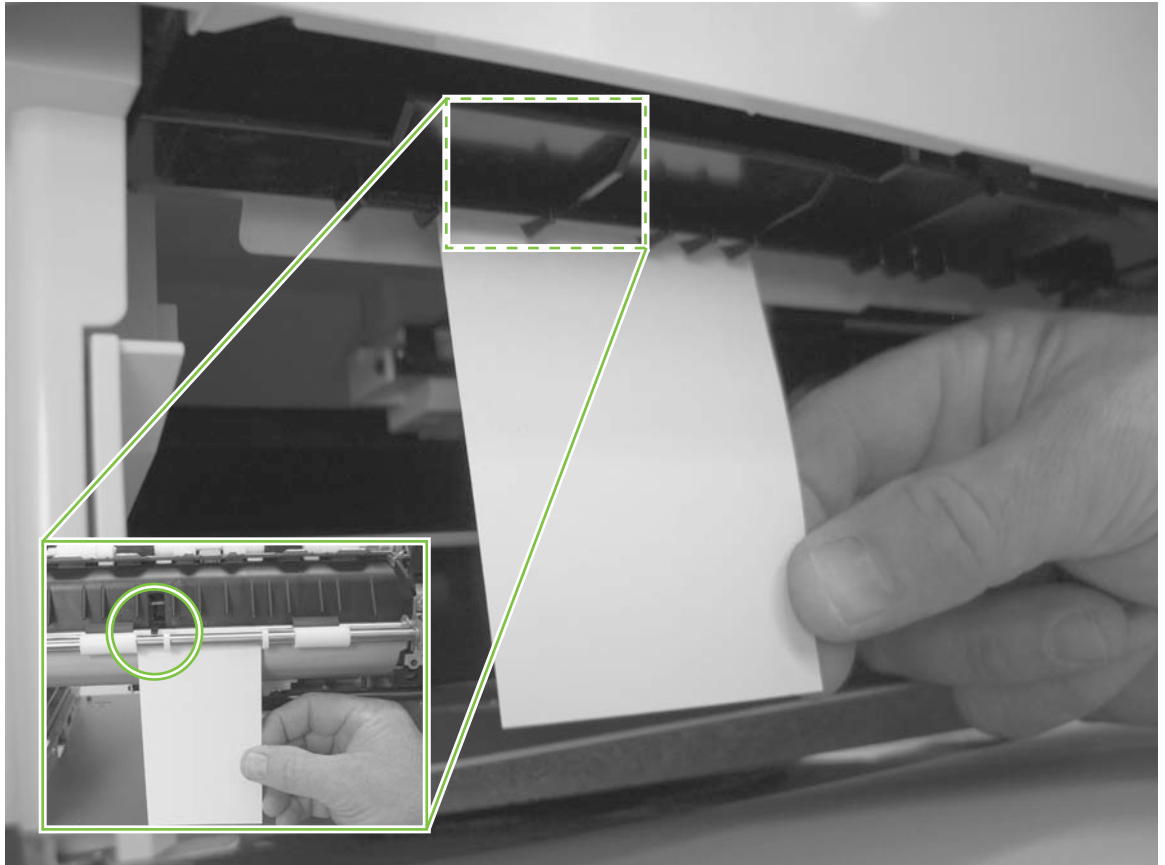
- Check the fuser delivery sensor (PS700) by running manual sensor test 1 and checking the status of designator C while toggling the sensor.

Figure 7-5 Checking the fuser delivery sensor



- Check the Tray 2 pre-feed sensor (PS102) by running manual sensor test 1 and checking the status of designator C while using a piece of stiff paper to toggle the sensor.

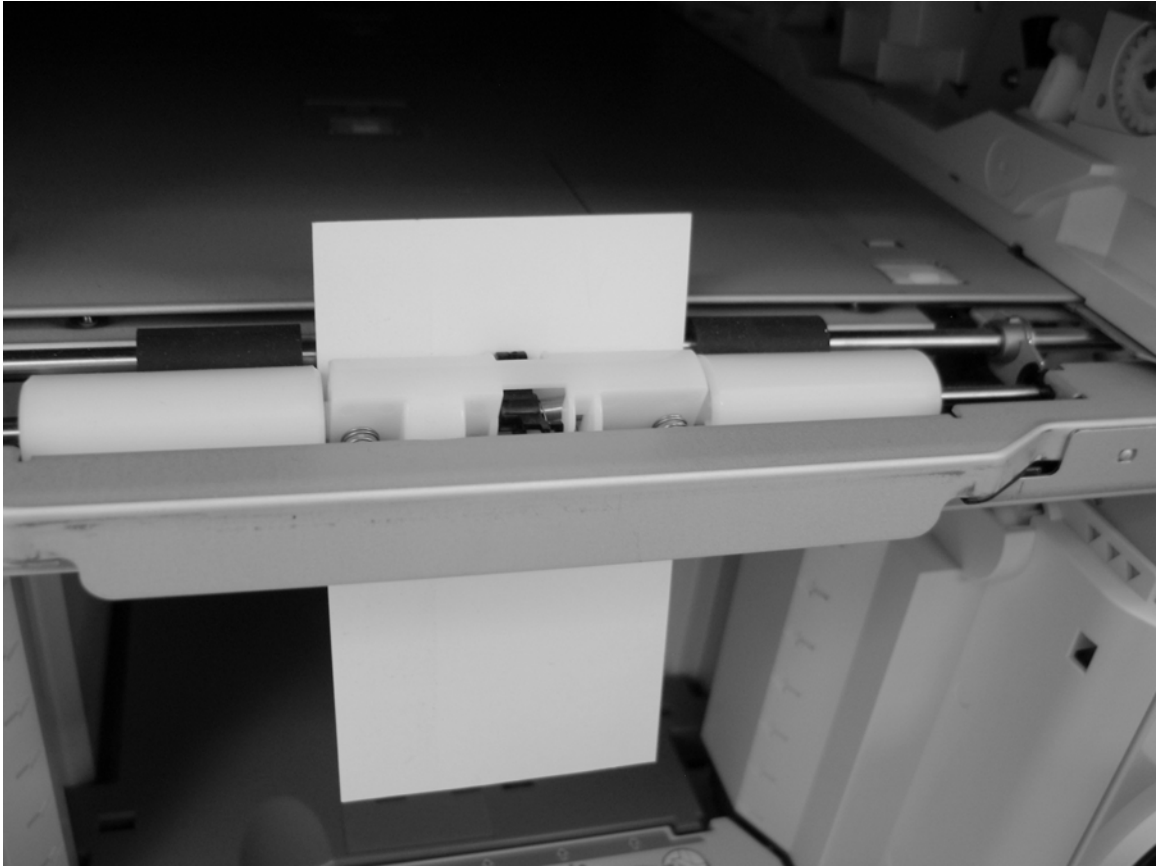
Figure 7-6 Checking the Tray 2 pre-feed sensor



- Check the media path sensors in trays 3, 4, 5, or 6 by running manual sensor test 1 and checking the status of the following designators while using a piece of stiff paper to toggle the sensor.
 - Tray 3 media path sensor (PS 1603): Check designator G.
 - Tray 4 media path sensor (PS 1603): Check designator H.

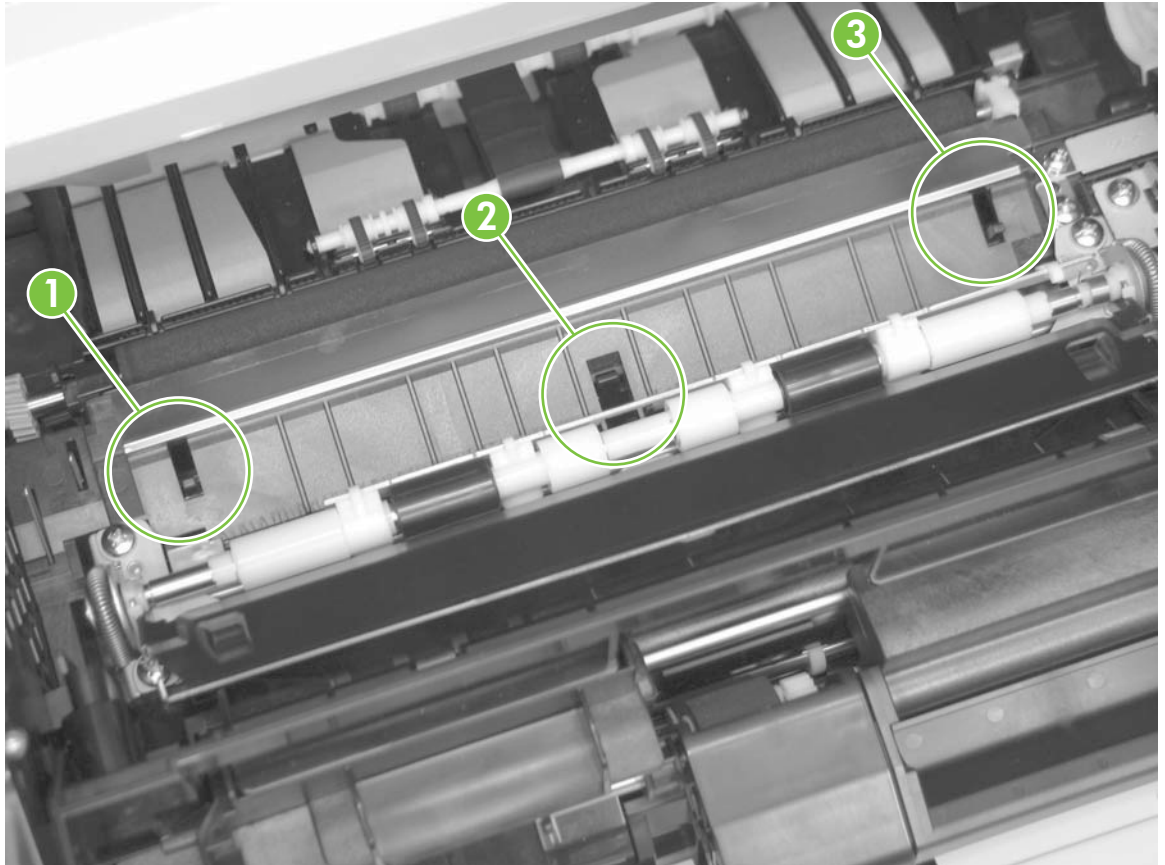
- Tray 5 media path sensor (PS 1603): Check designator I.
- Tray 6 media path sensor (PS 1704): Check designator J.

Figure 7-7 Checking media path sensors



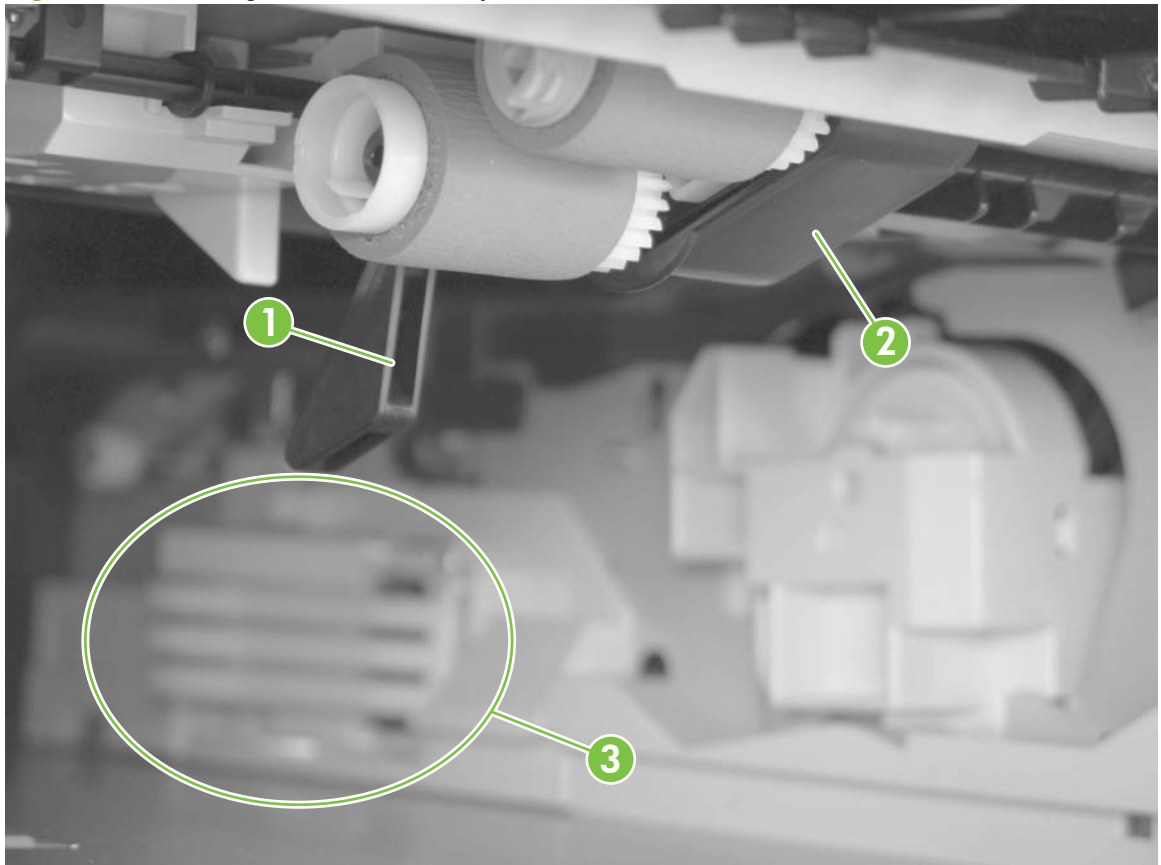
- Check the following sensors in the print-cartridge area.
 - **(1):** Check the left-side paper width sensor (PS106) by running manual sensor test 1 and checking the status of designator E.
 - **(2):** Check the top of page sensor (PS103) by running manual sensor test 1 and checking the status of designator A.
 - **(3):** Check the right-side paper width sensor (PS108) by running manual sensor test 1 and checking the status of designator F.


Figure 7-8 Checking sensors in the print-cartridge area



- Check the following sensors in the Tray 2 area with the tray, loaded with paper, in the product.
 - **(1):** Check the Tray 2 paper present sensor (PS101) by running manual sensor test 1 and checking the status of designator N.
 - **(2):** Check the Tray 2 top of stack sensor (PS107) by running manual sensor test 1 and checking the status of designator O.
 - **(3):** Check the Tray 2 paper size switches (SW102) by running manual sensor test 1 and checking the status of designator P.

Figure 7-9 Checking sensors in the Tray 2 area



 **NOTE:** The sensors for trays 3, 4, 5, and 6 can be checked in the same manner with manual sensor test 2.

Manual sensor test 2 (special mode test)

Use this test to test paper path sensors and the paper-size switches manually.


1. Press **Menu** .
2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press **OK**.
3. Press the down arrow ▼ to highlight **MANUAL SENSOR TEST 2**, and then press **OK**.
4. Use the arrow buttons to highlight the sensor letter code that you want to test, and then press **OK**.

Table 7-5 Manual sensor test 2 diagnostic tests

Manual sensor test 2 designator	Sensor or switch	
Q	Tray 3 paper present sensor (PS1600)	NOTE: The locations of these switches and sensors are the same as those in Figure 7-9 Checking sensors in the Tray 2 area on page 256 with respect to the optional paper input accessory.
R	Tray 3 top of stack sensor (PS1601)	
S	Tray 3 paper size switches (SW1600)	
T	Tray 4 paper present sensor (PS1600)	
U	Tray 4 top of stack sensor (PS1601)	
V	Tray 4 paper size switches (SW1600)	
W	Tray 5 paper present sensor (PS1600)	
X	Tray 5 top of stack sensor (PS1601)	
Y	Tray 5 paper size switches (SW1600)	
Z	Tray 6 paper present sensor (PS1700)	
a	Tray 6 top of stack sensor (PS1701)	
b	Tray 6 paper size switches (SW1700)	
c	Envelope feeder—envelope present sensor (PS1800)	

Print/stop test

Use this diagnostic test to isolate the cause of problems such as image formation defects and jams within the engine. The test can be programmed to stop from 0 to 60,000 ms.


1. Press **Menu** .
2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press **OK**.
3. Press the down arrow ▼ to highlight **PRINT/STOP TEST**, and then press **OK**.
4. Use the arrow buttons to set a stop time, when the print job should be interrupted, and then press **OK**.

Table 7-6 Print/Stop settings

Duration	Description
0 msecs	The leading edge of the paper stops approximately 28 mm beyond the “black” paper guide of the registration assembly.
100 msecs	The leading edge of the paper stops approximately 63 mm beyond the “black” paper guide of the registration assembly.
500 msecs	The leading edge of the paper stops just prior to the paper entering the “nip” of the fuser assembly; the nip is the gap between the pressure roller and the hot fusing roller.
600 msecs	The leading edge of the paper stops approximately 5 mm prior to the paper encountering the fuser assembly delivery photo sensor flag.

Table 7-6 Print/Stop settings (continued)

Duration	Description
1,200 msecs	(Simplex print operation) The leading edge of the paper stops 35 mm past the face-down delivery stacker rollers. The trailing edge of the paper is approximately 30 mm from the "nip" of the fusing rollers.
2,250 msecs	(Duplex print operation) The leading edge of the paper has passed through the fuser assembly and into the output stacker rollers. The paper has now reversed direction and entered the duplex accessory. The leading edge of the paper stops approximately 15 mm before encountering the duplex assembly re-pick photosensor (PS1502).


If the timer is set to a value that is greater than the job-print time, you can recover the product in one of two ways.

- After the print job is completed press the stop button ⊗ to return to the **DIAGNOSTICS** menu before the timer times out.
- After the timer times out, press the stop button ⊗. Activate the door switch to restart the engine and return it to a normal state.

When the timer trips, the control panel display shows the message **PRINTING STOPPED To continue press OK**. Pressing **OK** will print the previously selected job. If you do not want the previous job to print, press the stop button ⊗ first, and then press **OK**.

Component tests

These tests activate the selected component.

1. Press **Menu** .
2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press **OK**.
3. Press the down arrow ▼ to highlight **COMPONENT TEST**, and then press **OK**.
4. Press the down arrow ▼ to highlight the particular component test that you want to perform, and then press **OK**.

The following table describes the component tests.

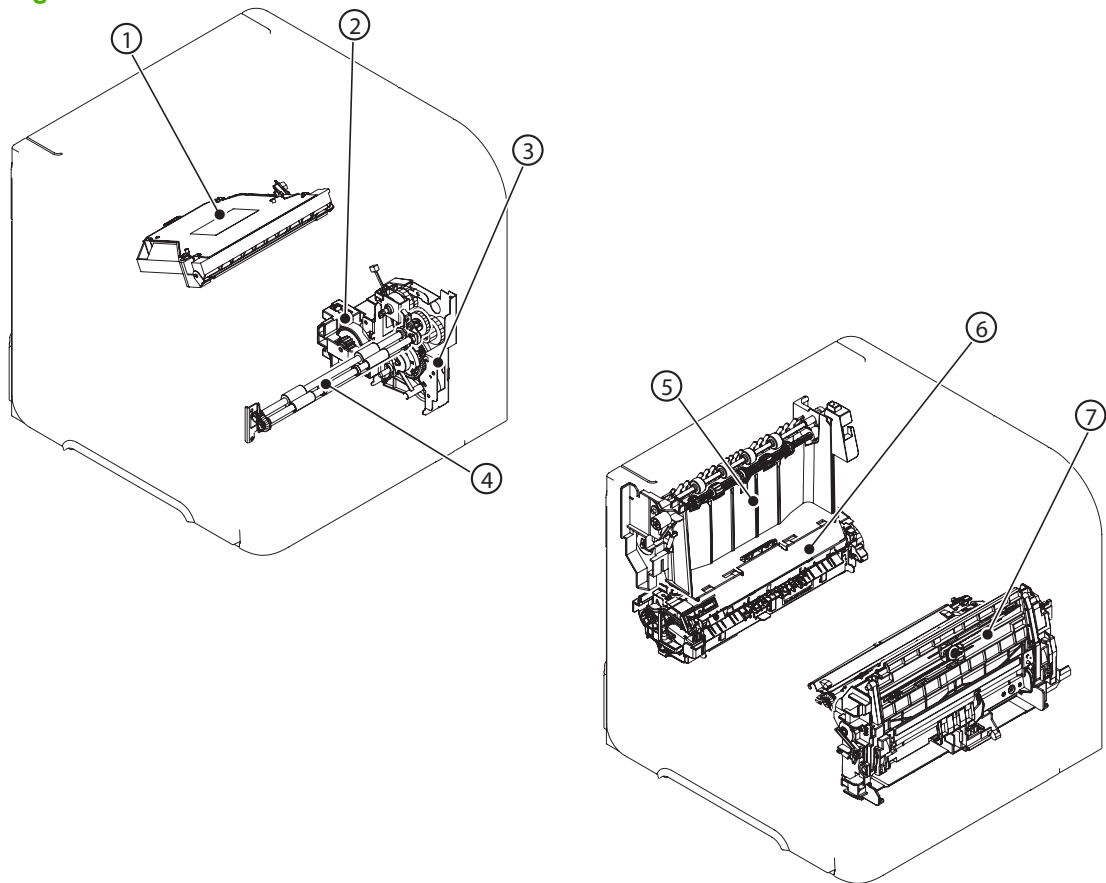
Component test	Description
DRUM MOTOR	This test activates the drum motor.
LASER SCANNER MOTOR	This test activates the laser scanner motor.
FUSER MOTOR	This test activates the fuser motor and drive gears.
TRAY PICKUP MOTOR	This test activates the tray pickup motor.
FEED ROLLER CLUTCH	This test activates the paper feed roller clutch.
MP TRAY SOLENOID	These tests activate the pickup solenoid for the selected input tray.
TRAY 2 PICKUP SOLENOID	
TRAY 3 PICKUP SOLENOID	
TRAY 4 PICKUP SOLENOID	
TRAY 5 PICKUP SOLENOID	
TRAY 6 PICKUP SOLENOID	
DUPLEXER REVERSE MOTOR	This test activates the duplexing reverse motor.
DUPLEX FEED MOTOR	This test activates the duplexing feed motor.

Diagrams

Block diagrams

Main assemblies

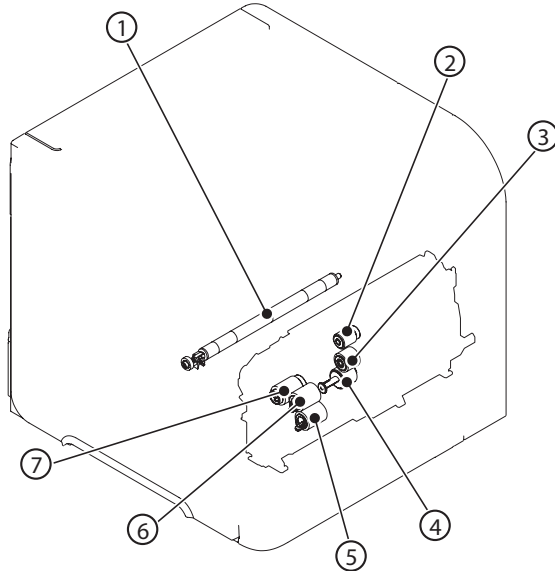
Figure 7-10 Main assemblies



1	Laser/scanner unit
2	Lifter drive unit
3	Tray 2 pickup drive unit
4	Feed roller unit
5	Delivery unit
6	Fuser
7	Multipurpose tray pickup unit

Main parts

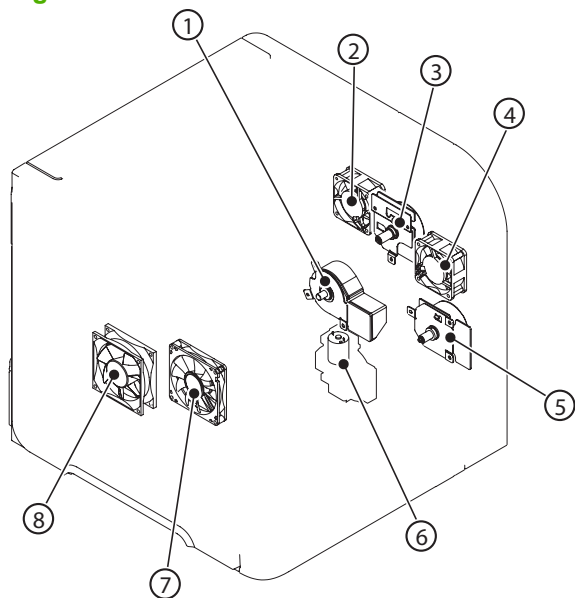
Figure 7-11 Main parts



1	Transfer roller
2	Multipurpose tray pickup roller
3	Multipurpose tray feed roller
4	Multipurpose tray separation roller
5	Input tray separation roller (resides in input tray)
6	Input tray feed roller
7	Input tray pickup roller

Motors and fans

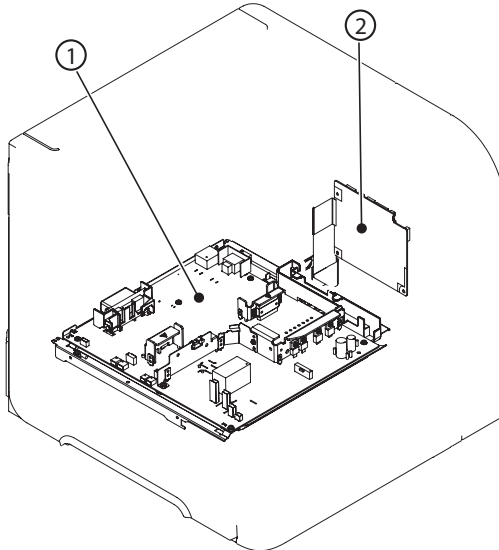
Figure 7-12 Motors and fans



1	Fuser motor (M299)
2	Fan (FN102)
3	Drum motor (M102)
4	Fan (FN103)
5	Feed motor (M101)
6	Lifter motor (M103)
7	Fan (FN301)
8	Fan (FN101)

PCAs

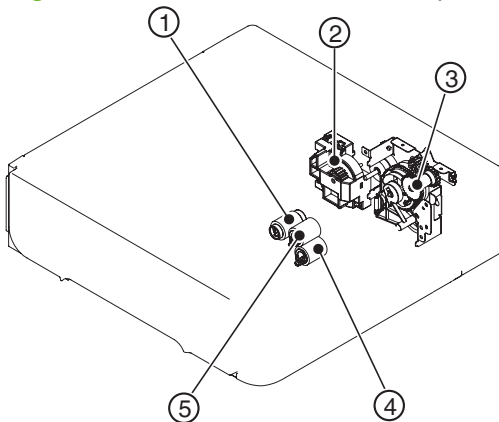
Figure 7-13 PCAs



1	Power supply PCA
2	DC controller PCA

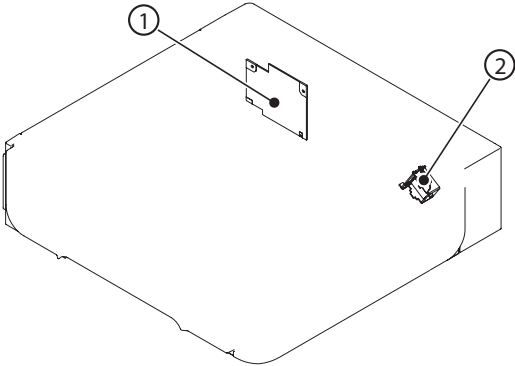
500-sheet feeder

Figure 7-14 500-sheet feeder main parts



1	Paper feeder pickup roller
2	Paper feeder lifter driver unit
3	Paper feeder pickup drive unit
4	Paper feeder separation roller
5	Paper feed roller

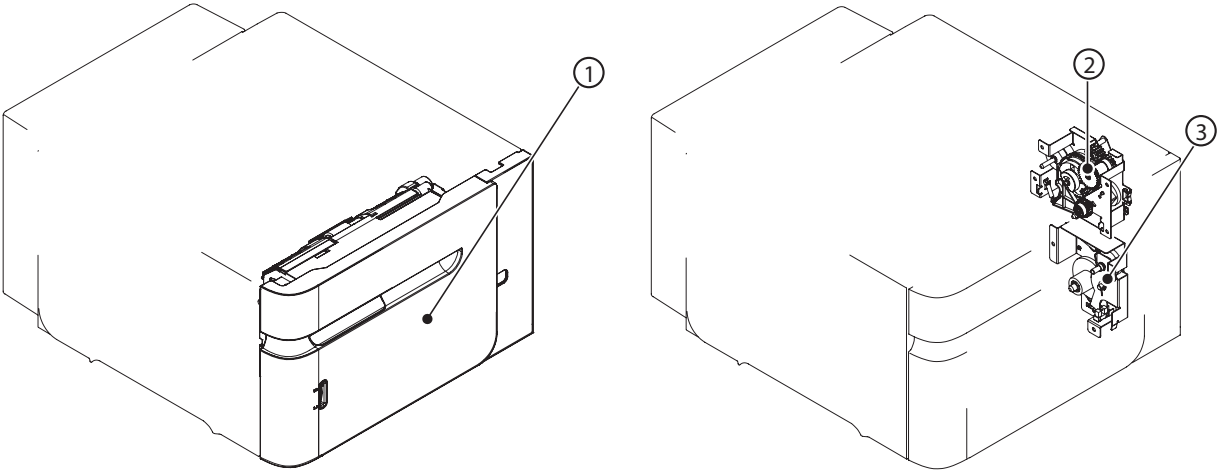
Figure 7-15 500-sheet feeder solenoid and PCA



1	Driver PCA
2	Pickup solenoid

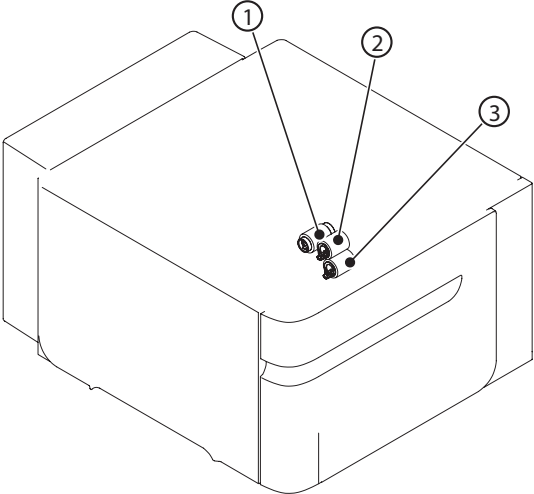
1,500-sheet feeder

Figure 7-16 1,500-sheet feeder main units



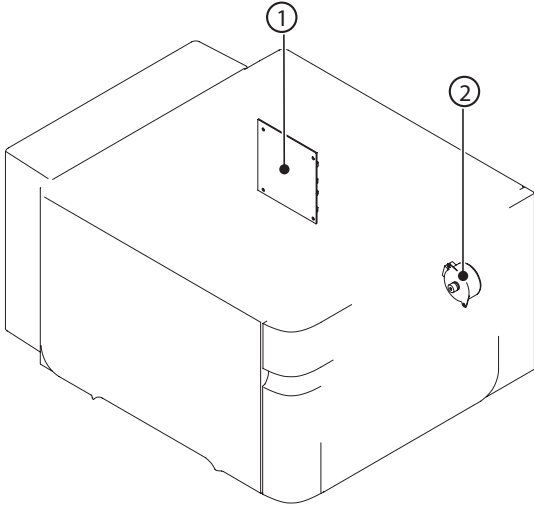
1	Front door unit
2	Pickup drive unit
3	Lifter drive unit

Figure 7-17 1,500-sheet feeder main parts



1	Pickup roller
2	Feed roller
3	Separation roller

Figure 7-18 1,500-sheet feeder motor and PCA



1	Driver PCA
2	Lifter motor

Connectors

DC controller PCA connectors

Figure 7-19 DC controller PCA connectors

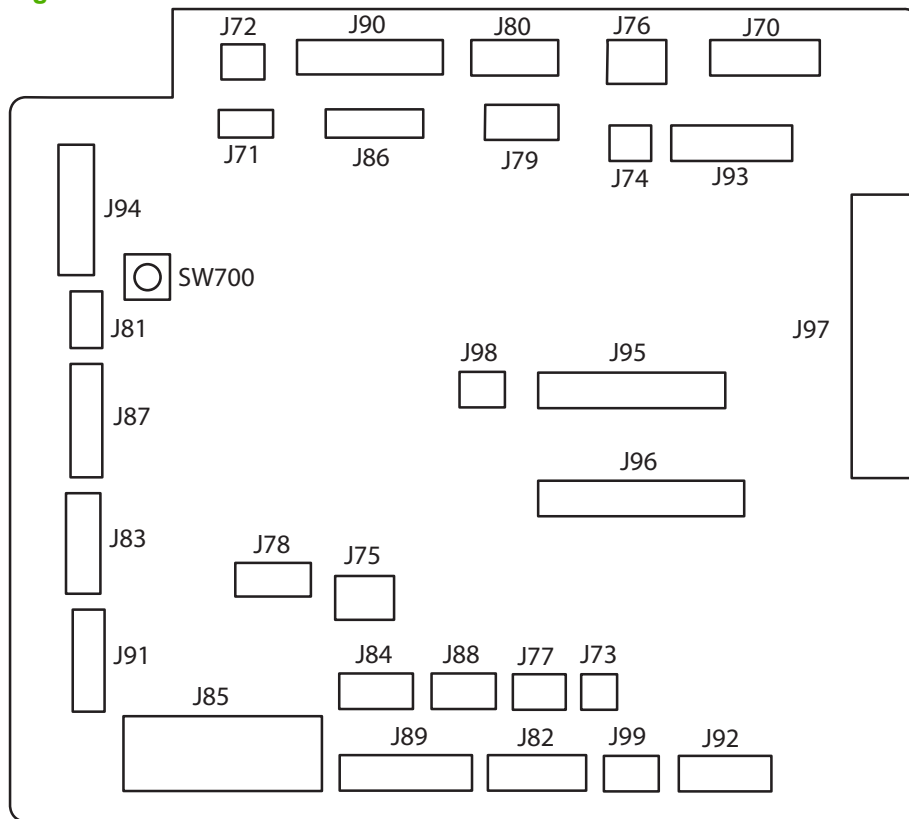


Table 7-7 DC controller connectors

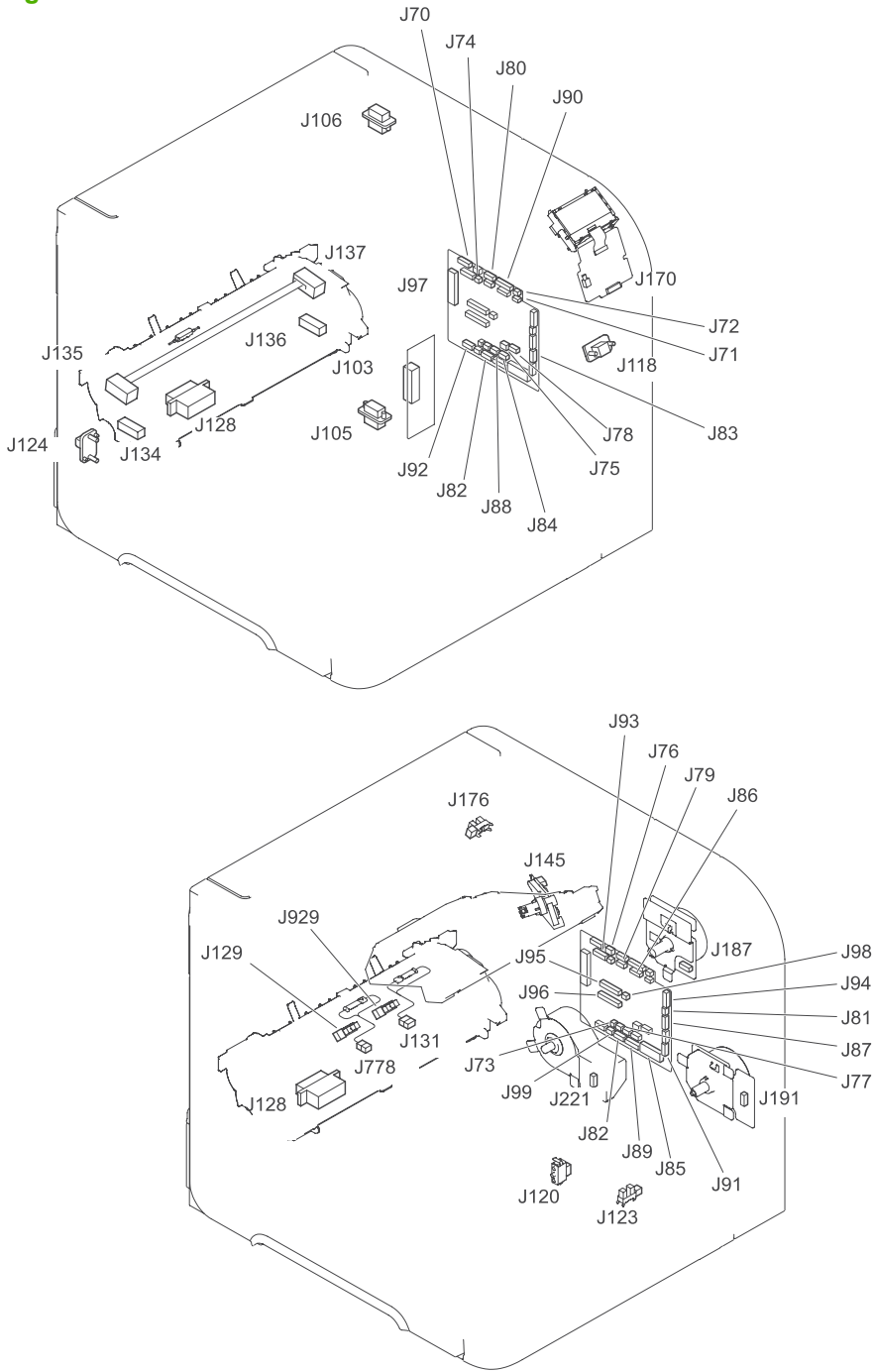
Connector	Functionality	Pin configuration
J70	Control panel connector	8-pin
J71	SL102 Tray 1 pickup solenoid	2-pin
J72	SL101 Tray 2 pickup solenoid	2-pin
J73	M103 Tray 2 lift motor	2-pin
J74	TG101 memory tag I/O	2-pin
J75	FN102 cooling fan	3-wire
J76	PS104 face-down output full sensor	3-pin
J77	CL101 feed clutch	3-pin (2-wire)
J78	SW101 door open switch	3-pin
J79	FN103 cooling fan	4-pin (3-wire)
J80	Not used	6-pin
J81	PS105 Tray 1 media present sensor	3-pin
J82	Fusing assembly	7-wire
J83	Envelope feeder accessory	5-pin

Table 7-7 DC controller connectors (continued)

Connector	Functionality	Pin configuration
J84	Duplex accessory	6-pin
J85	Power supply PCA (+24Vdc/3.3Vdc)	6-wire
J86	Scanner motor/beam detect	7-pin
J87	M102 drum motor	8-pin (7-wire)
J88	Paper deck accessory	5-pin
J89	M299 fusing motor	10-pin
J90	Stacker/stacker-stapler/mailbox	8-pin
J91	M101 feed motor	7-pin
J92	PS101 Tray 2 media present sensor PS107 Tray 2 media stack sensor 1 PS907 Tray 2 media stack sensor 2	8-pin
J93	Laser/driver PCA	11-pin
J94	PS102 pre-feed sensor PS108 media width sensor 2 PS103 top of page sensor PS106 media width sensor 1	12-pin
J95	Power supply PCA	18-pin
J96	Power supply PCA	20-pin
J97	Intermediate PCA to formatter PCA	32-pin ribbon
J98	Not used	
J99	SW102 Tray 2 media size switches	4-pin
TB700	3.3 volts DC	
TB701	GRN	

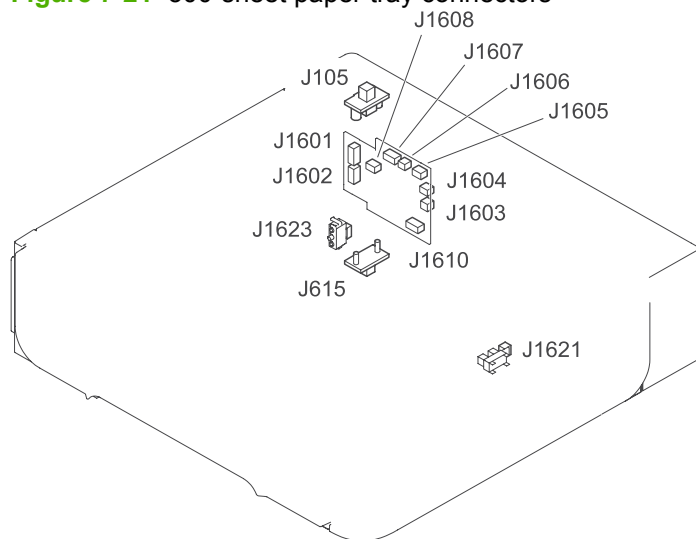
Product base connectors

Figure 7-20 Product base connectors



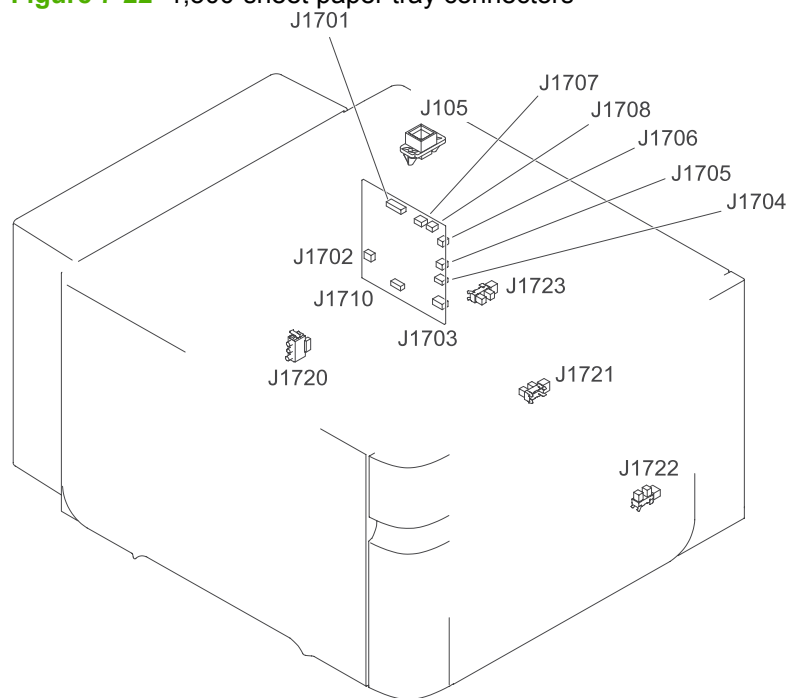
500-sheet paper tray connectors

Figure 7-21 500-sheet paper tray connectors



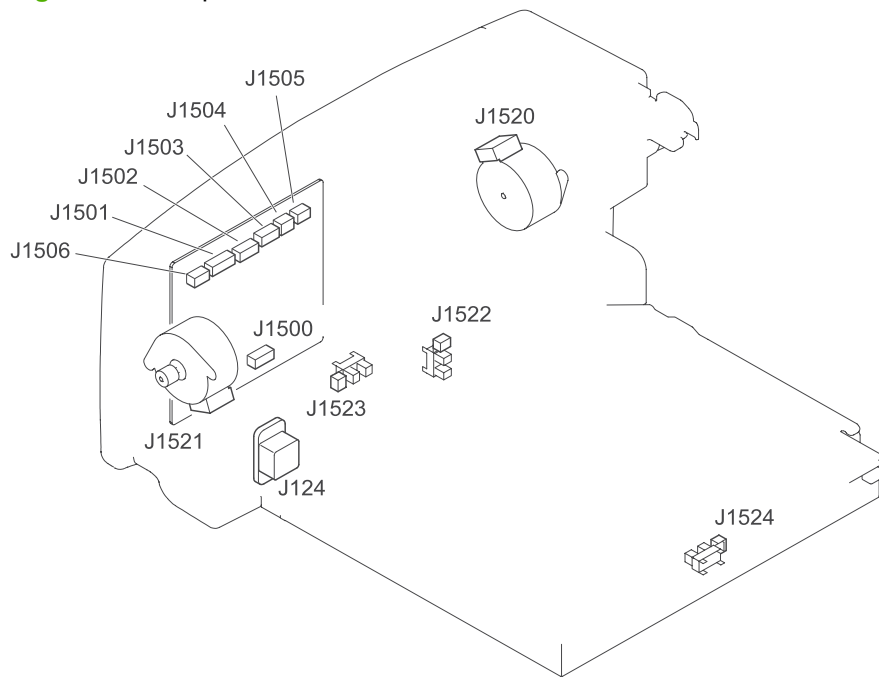
1,500-sheet paper tray connectors

Figure 7-22 1,500-sheet paper tray connectors



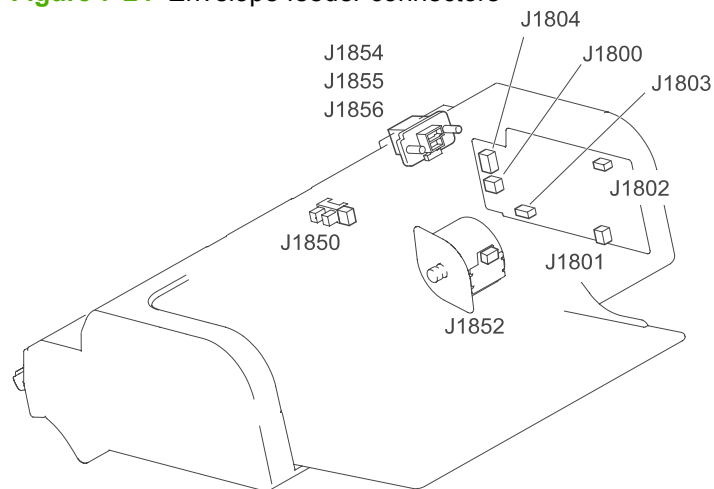
Duplexer connectors

Figure 7-23 Duplexer connectors



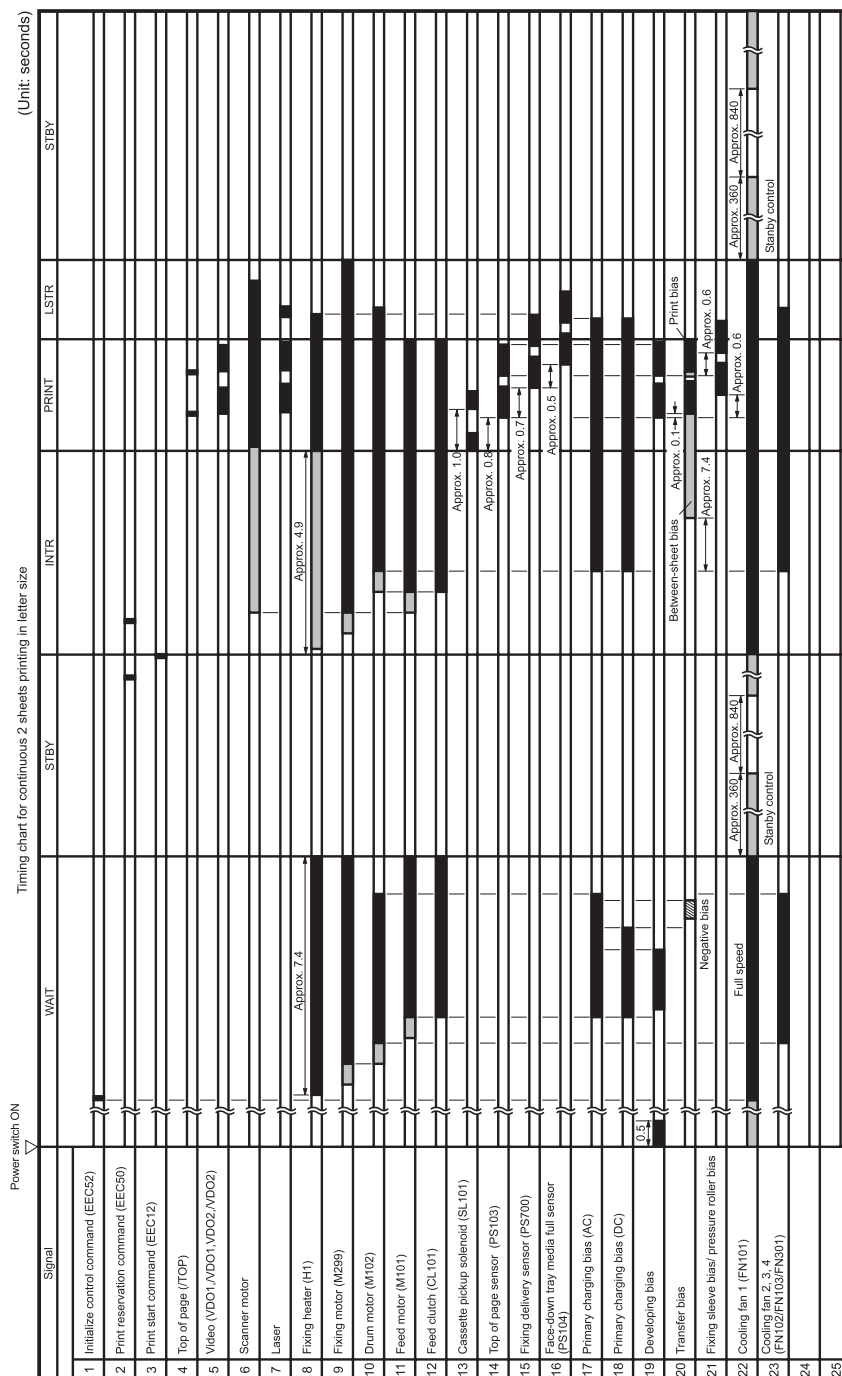
Envelope feeder connectors

Figure 7-24 Envelope feeder connectors



General timing chart

Figure 7-25 General timing chart



Circuit diagrams

Figure 7-26 General circuit diagram (1 of 2)

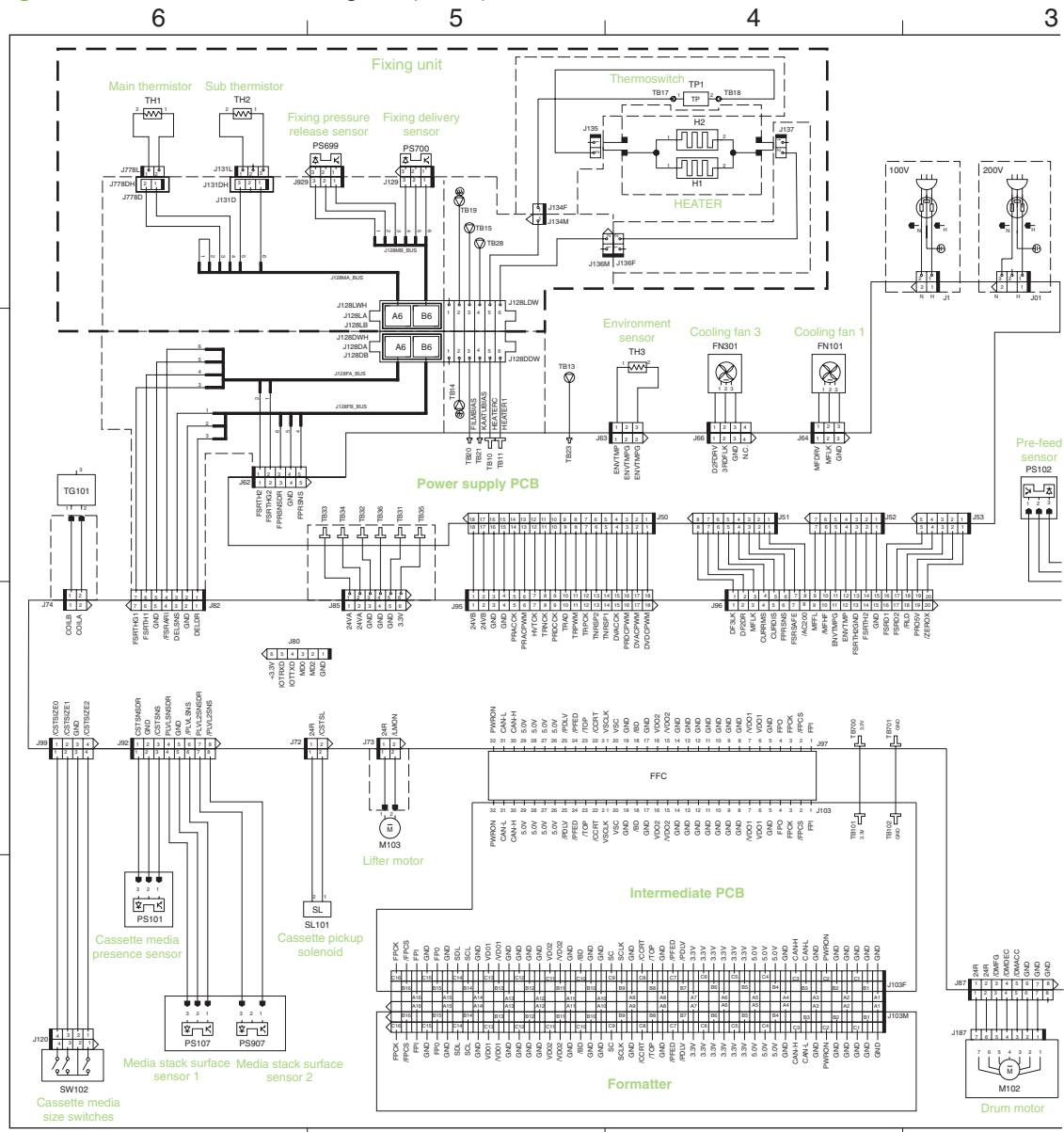


Figure 7-27 General circuit diagram (2 of 2)

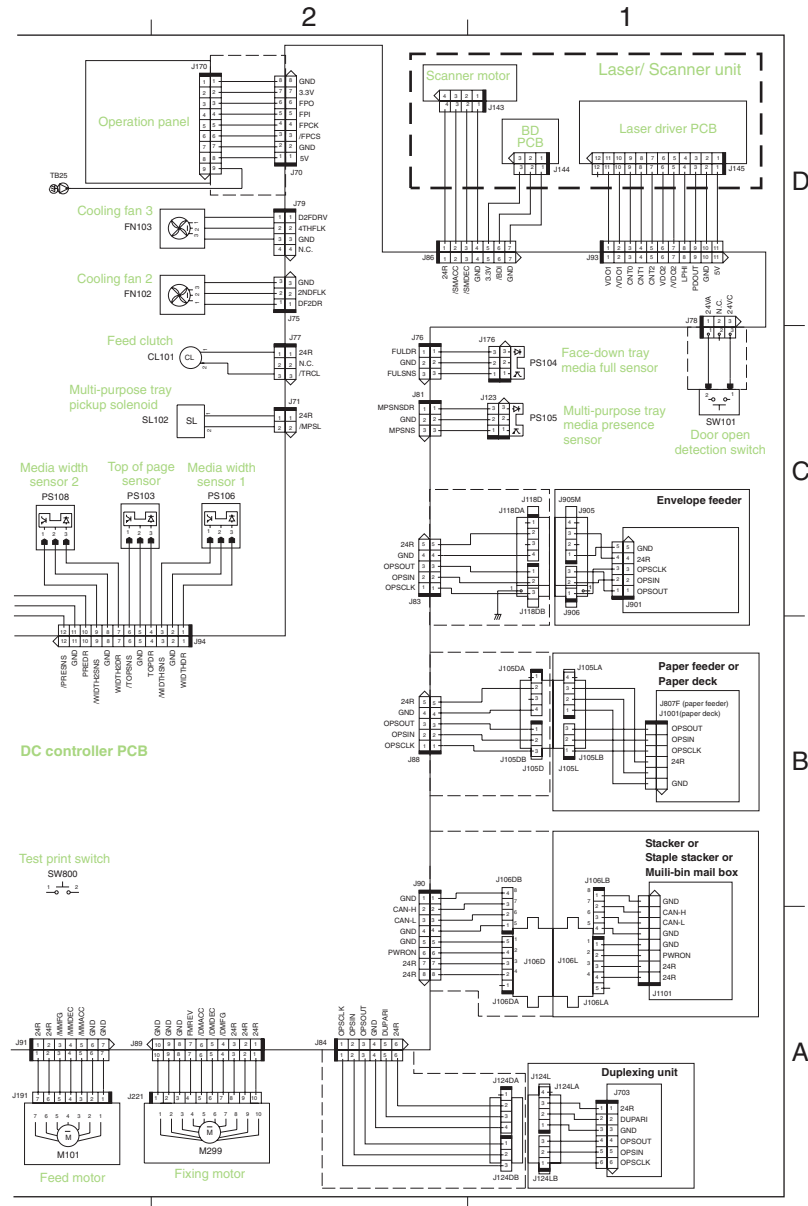
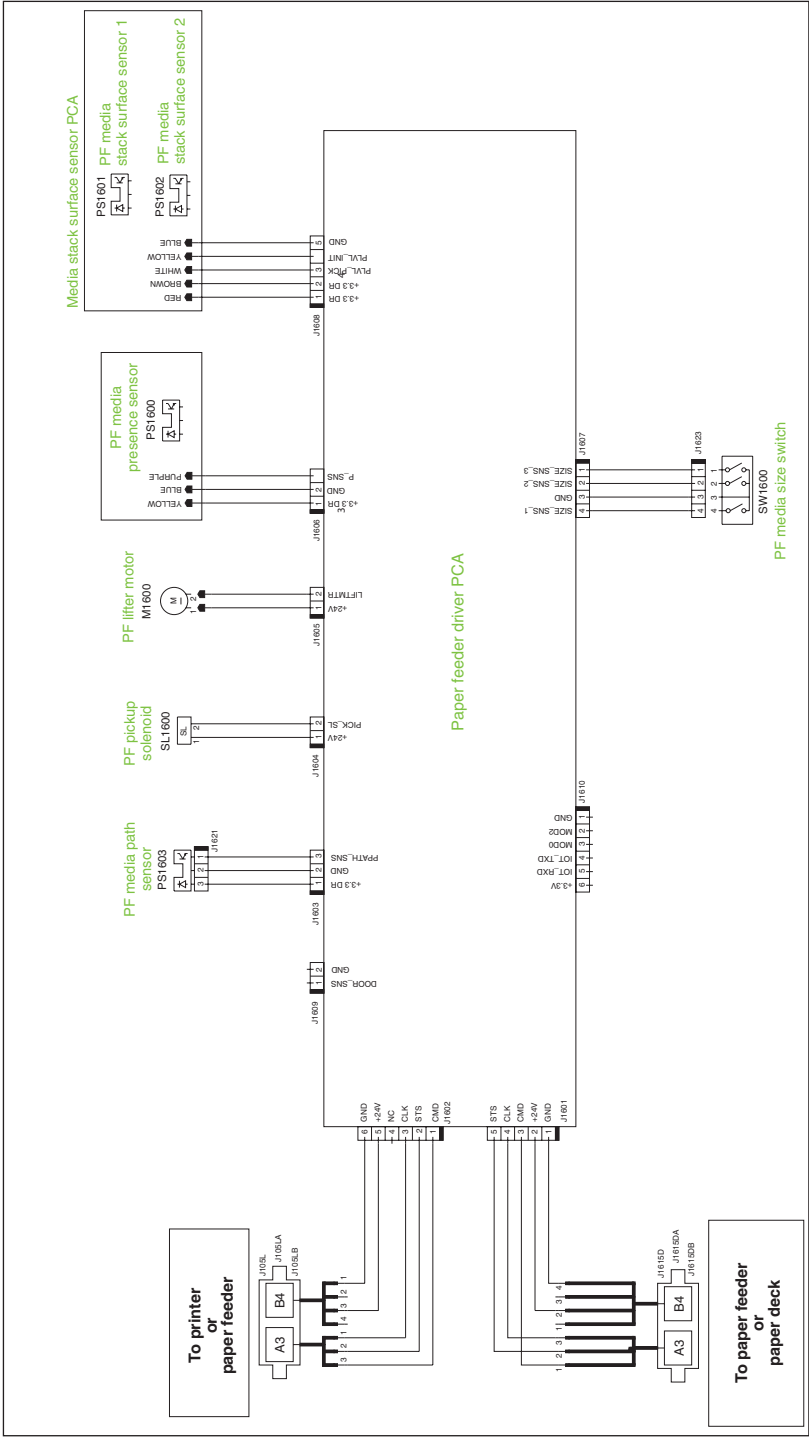


Figure 7-28 500-sheet paper tray circuit diagram



The diagram illustrates the electrical connections for the Paper Deck Driver PCA. Key components and their connections include:

- Printer/Paper Feeder:** Connected to the PCA via J105L, J105LA, and J105LB. The printer/paper feeder has pins A3, B4, and a 3-pin connector (1, 2, 3).
- PD Media Size Switch (SW1700):** A 4-pin switch connected to the PCA at J1720 (pins 1, 2, 3, 4).
- PD Lifter Motor (M1700):** A 4-pin motor connected to the PCA at J1703 (pins 1, 2, 3, 4).
- Paper Deck Driver PCA:** The central component with multiple connectors:
 - J1710:** GND, MOD2, IOT_TXD, IOT_RXD, +3.3V.
 - J1701:** GND, +24V, CLK, STS, OMD.
 - J1702:** SIZE_SNS_1, GND, SIZE_SNS_2, SIZE_SNS_3.
 - J1703:** LIFT_A, LIFT_B, LIFT_CN, LIFT_DR.
 - J1704:** GND, PVL_PICK, PVL_INIT, PVL_DR.
 - J1705:** GND, PPATH_SNS, PPATH_DR.
 - J1706:** +24V, PICK_SL.
 - J1707:** GND, PVL_PICK, PVL_INIT, PVL_DR.
 - J1708:** GND, P_SNS, P_DR.
 - J1709:** GND, P_SNS, P_DR.
 - J1710:** GND, MOD2, IOT_TXD, IOT_RXD, +3.3V.
- Media Stack Surface Sensor PCA:** Contains PS1701 (PD media stack surface sensor 1) and PS1702 (PD media stack surface sensor 2). PS1701 has pins RED, BROWN, WHITE, YELLOW, BLUE. PS1702 has pins RED, BROWN, WHITE, YELLOW, BLUE.
- PD Media Path Sensor (PS1700):** A 3-pin sensor connected to the PCA at J1721 (pins 1, 2, 3).
- PD Pickup Solenoid (SL1700):** A 2-pin solenoid connected to the PCA at J1706 (pins 1, 2).
- PD Media Presence Sensor (PS1700):** A 3-pin sensor connected to the PCA at J1708 (pins 1, 2, 3).
- PD Door Open Sensor (PS1703):** A 3-pin sensor connected to the PCA at J1722 (pins 1, 2, 3).
- PD Media Size Sensor (PS1704):** A 3-pin sensor connected to the PCA at J1705 (pins 1, 2, 3).

Figure 7-30 Envelope feeder circuit diagram

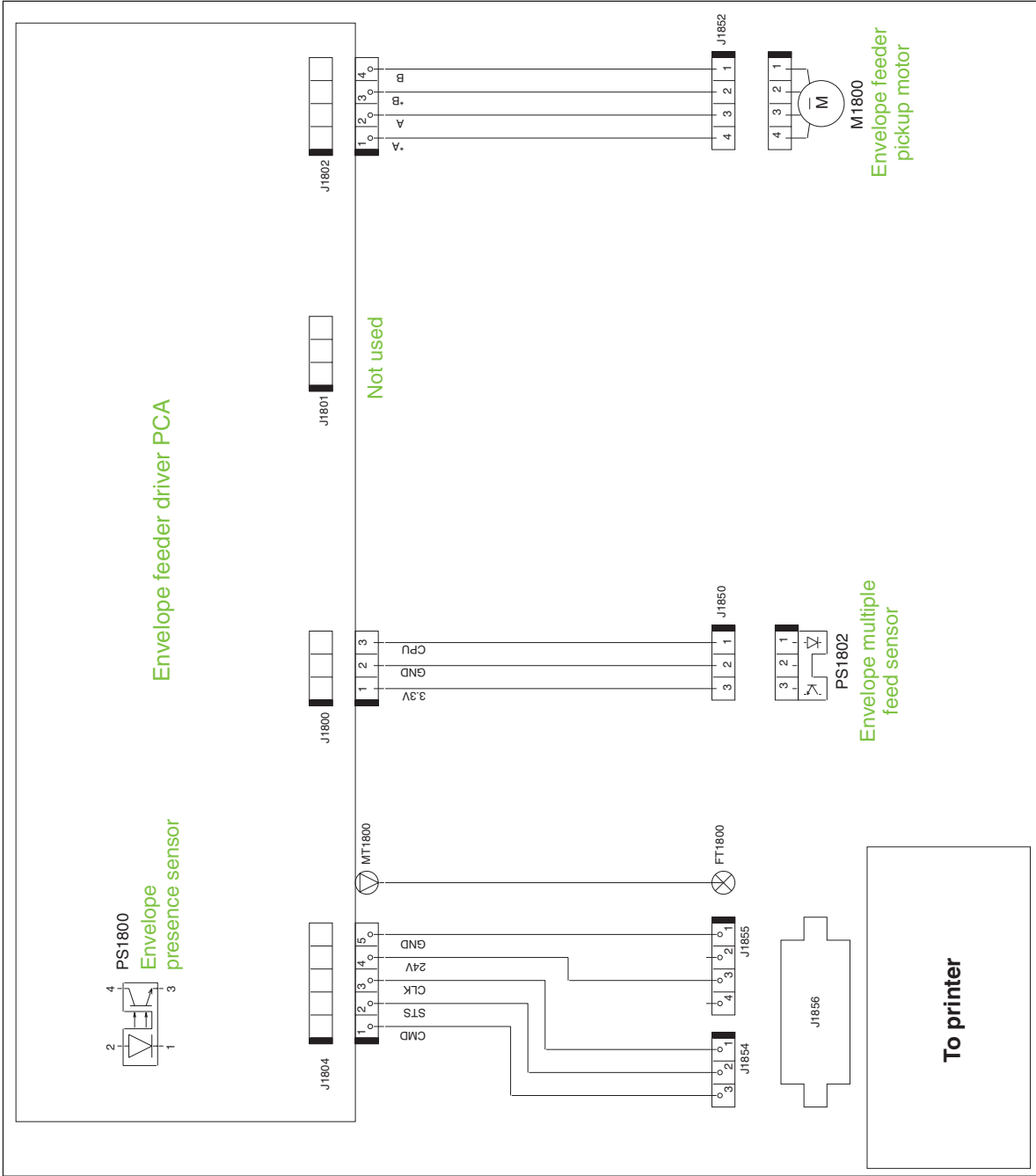
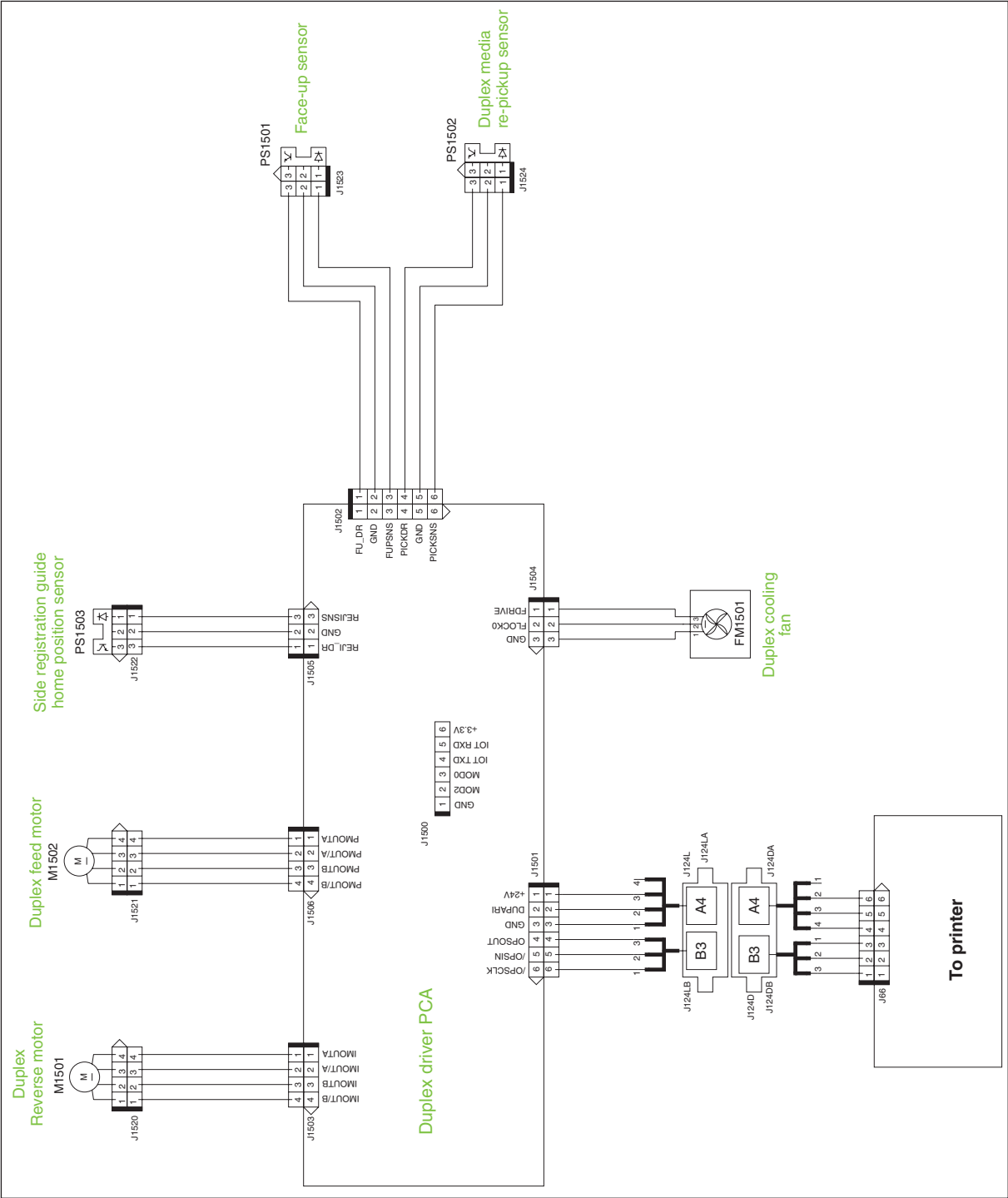


Figure 7-31 Duplexer circuit diagram



Print quality troubleshooting tools

Repetitive image defect ruler

Defects on product rollers can cause image defects to appear at regular intervals on the page, corresponding to the circumference of the roller that is causing the defect. Measure the distance between defects that recur on a page. Use the following table or the repetitive-defect ruler to determine which roller is causing the defect. To resolve the problem, try cleaning the roller first. If the roller remains dirty after cleaning or if it is damaged, replace the part that is indicated in [Table 7-8 Repetitive defects on page 278](#).

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

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

Table 7-8 Repetitive defects

Component	Distance between defects
Primary charging roller	37.7 mm (1.5 inches)
Transfer roller	47 mm (1.85 inches)
Developer roller	63 mm (2.5 inches)
Tray 1 pickup roller	63 mm (2.5 inches)
Tray 1 feed roller	79 mm (3.1 inches)
Tray 1 separation roller	
Tray 2 feed roller	79 mm (3.1 inches)
Tray 2 pickup roller	
Tray 2 separation roller	
Fuser sleeve unit or pressure roller	94 mm (3.75 inches)
Photosensitive drum	94 mm (3.75 inches)

📝 **NOTE:** Defects on the tray pickup rollers or the Tray 1 pickup roller do not cause a repetitive defect. Defects on these rollers cause a defect to appear only on the leading edge of the image.

Cleaning page


Use the cleaning page to keep the fuser free of toner and paper particles that can sometimes accumulate. Accumulation of toner and particles can cause specks to appear on the front or back side of print jobs.


HP recommends that you use the cleaning page when there is a print quality issue.


A **CLEANING** message appears on the product control panel display while the cleaning is taking place.

In order for the cleaning page to work correctly, print the page on copier-grade paper (not bond, heavy, or rough paper). A blank page will be printed when the task is complete. Discard the page.

Create and process a cleaning page

1. Press **Menu** .
 2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press **OK**.
 3. Press the down arrow ▼ to highlight **PRINT QUALITY**, and then press **OK**.
-
4. Press the down arrow ▼ to highlight **CREATE CLEANING PAGE**, and then press **OK**.
 5. Remove all paper from Tray 1.
 6. Remove the cleaning page from the output bin, and load it face-down in Tray 1.



 **NOTE:** If your product has an automatic duplexer, go to step 7.

 **NOTE:** If you are not in the menus, navigate to **PRINT QUALITY** by using the previous instructions.

7. At the product control panel, press the down arrow ▼ to highlight **PROCESS CLEANING PAGE**, and then press **OK**.

You can set the product to clean the paper path automatically after the product has printed a certain number of pages. Products in dirtier environments can be cleaned more frequently by choosing one of the lower page count settings.

Clean the paper path automatically

1. Press **Menu** .
 2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press **OK**.
 3. Press the down arrow ▼ to highlight **PRINT QUALITY**, and then press **OK**.
 4. Press the down arrow ▼ to highlight **AUTO CLEANING**, and then press **OK**.
 5. Press the down arrow ▼ to highlight **ON**, and then press **OK**.
 6. Press the down arrow ▼ to highlight **CLEANING INTERVAL**, and then press **OK**.
-
-  **NOTE:** If you are not in the menus, navigate to **PRINT QUALITY** by using the previous instructions.
-

7. Press the down arrow ▼ to highlight the correct page count interval, and then press **OK**.

Control-panel messages

Table 7-9 Control-panel messages

Control panel message	Description	Recommended action
10.10.00 SUPPLY MEMORY ERROR	The product has experienced a print cartridge error.	<ol style="list-style-type: none"> 1. Ensure that the cartridge is a genuine HP print cartridge. 2. Verify the connector at J74 on the DC controller PCA is securely connected. 3. Replace the print cartridge.
10.94.YY REMOVE SHIPPING LOCKS FROM CARTRIDGE <AREA> For help press ?	At least one shipping lock is installed.	<ol style="list-style-type: none"> 1. Open the top cover. 2. Pull the tape and then remove the print cartridge. 3. Remove the orange tabs from the print cartridge. 4. Remove the plastic insert and foam from the print cartridge area. 5. Reinsert the print cartridge and then close the top cover.
10.XX.YY SUPPLY MEMORY ERROR For help press ?	<p>An error has occurred in one or more of the product's supplies. Values of XX and YY are listed below:</p> <p>XX00 = memory is defective</p> <p>XX01 = memory is missing</p> <p>YY00 = cartridge</p>	<ul style="list-style-type: none"> • Turn the product off and then on to clear the message. • Replace the print cartridge.
11.XX INTERNAL CLOCK ERROR To continue press OK	The real time clock has experienced an error.	<ol style="list-style-type: none"> 1. Power cycle the product to see if the message clears. 2. If possible, print a configuration page to record product information, and then perform an NVRAM initialization routine. If the initialization routine is successful, you will need to re-enter several configuration parameters (such as the page count and the serial number). 3. If the error persists, replace the formatter PCA.
13.01.00 Jam in Tray 1	The Tray 1 pickup roller or solenoid might not be working correctly.	<ol style="list-style-type: none"> 1. Load paper in Tray 1, and then use the paper path test to pull paper. Verify that the roller rotates. 2. If someone has performed maintenance on the product recently, verify that the Tray 1 pickup roller, feed roller, and separation roller have been installed correctly. 3. From the DIAGNOSTICS menu, run the multipurpose tray (Tray 1) solenoid component test to verify that the solenoid moves when energized. Listen

Table 7-9 Control-panel messages (continued)

Control panel message	Description	Recommended action
		<p>for an audible “click” when the test is initiated. If the solenoid is not being energized, verify that the solenoid connector is attached to connector J71 on the DC controller PCA.</p> <p>4. If the error persists, replace the Tray 1 solenoid (SL102).</p>
13.03.00 Jam in Tray 2	The paper path might have an obstruction, or the Tray 2 solenoid might not be working correctly.	<p>1. Inspect the paper path and ensure no obstacles are blocking the paper path.</p> <p>2. If maintenance has recently be performed, verify that the pickup, feed, and separation rollers have been reinstalled correctly.</p> <p>3. From the DIAGNOSTICS menu, run the Tray 2 pickup solenoid component test to verify that the solenoid moves when energized. Listen for an audible “click” when the test is initiated. If the solenoid is not being energized, verify that the solenoid connector is attached to connector J72 on the DC controller PCA.</p> <p>4. If the error persists, replace the Tray 2 pickup solenoid (SL101).</p>
13.03.00 JAM IN TRAY X	A jam has occurred in the specified location. This jam occurs when the product cannot move paper from the specified tray into the paper path.	<p>1. Inspect the paper path and remove any obstructions.</p> <p>2. Verify that the tray is not loaded incorrectly or overfilled.</p> <p>3. For Trays 3, 4, 5, or 6, verify that the trays are stacked correctly.</p> <p>4. Verify that the media meets HP media specifications.</p> <p>5. If maintenance has recently be performed, verify that the pickup, feed, and separation rollers have been reinstalled correctly.</p> <p>6. Verify that connector J77 on the DC controller PCA is firmly seated.</p> <p>7. From the DIAGNOSTICS menu, run the feed roller clutch (CL101) component test.</p> <p>8. If the tray pickup motor rotates, yet the drive gears directly below the motor (on the Tray 2 pickup assembly) do not rotate, the clutch is not functioning properly. Replace the feed roller assembly.</p>

Table 7-9 Control-panel messages (continued)

Control panel message	Description	Recommended action
13.20.00 JAM INSIDE <LOCATION>	<p>Paper has not moved past a certain paper sensor. <LOCATION> can be one of the following locations.</p> <ul style="list-style-type: none"> • TRAY 2 • TOP COVER • REAR DOOR • DUPLEXER 	<ul style="list-style-type: none"> • TRAY 2 <p>Remove the tray, and then check the paper path for obstructions. Perform a manual sensor test and observe the pre-feed sensor (PS102) status (B). Toggle the sensor flag to determine if the status changes.</p> • TOP COVER <p>Remove the print cartridge, and then check the paper path for obstructions. Verify that the top-of-page sensor (PS103) and the media width sensors (PS106 and PS108) are unblocked. Perform a manual sensor test and observe the status of these sensors. Toggle the sensor flags to determine if their status changes.</p> • REAR DOOR <p>Open or remove the rear face-up bin, and then check the paper path on each side of the fusing assembly for obstructions. Remove the fuser, if necessary. Perform a manual sensor test and observe the fuser delivery sensor (PS700) status (C). Toggle the sensor flag to determine if the status changes.</p> • DUPLEXER <p>Remove the duplexer, and then check the paper path for obstructions. If the message persists, replace the duplexer.</p>
13.JJ.NT DEVICE WARNING	The external device sent a warning.	No action is necessary.
13.JJ.NT JAM IN <LOCATION>	A jam has occurred in the specified location.	<p>Remove jammed paper from the specified location.</p> <p>If the message persists after all jams have been cleared, a sensor might be stuck or broken. Contact an HP-authorized service or support provider.</p>
13.JJ.NT JAM INSIDE <LOCATION>	A jam has occurred in the specified location.	<p>Remove jammed paper from the specified location.</p> <p>If the message persists after all jams have been cleared, a sensor might be stuck or broken. Contact an HP-authorized service or support provider.</p>
13.JJ.NT PAPER JAM OPEN INPUT TRAYS alternates with Open all trays	A jam has occurred in an input tray.	<ol style="list-style-type: none"> 1. Open the top cover. 2. Remove the print cartridge and any paper.

Table 7-9 Control-panel messages (continued)

Control panel message	Description	Recommended action
		<ol style="list-style-type: none"> 3. Reinstall the print cartridge and close the top cover. 4. Close all trays.
21 PAGE TOO COMPLEX For help press ? alternates with 21 PAGE TOO COMPLEX To continue press OK	The data (dense text, rules, raster or vector graphics) sent to the product was too complex. Note: EIO 0 is reserved for the HP Jetdirect embedded print server.	<ul style="list-style-type: none"> • Press OK to print the transferred data (some data might be lost). • If this message appears often, simplify the print job or install additional memory.
22 EIO X BUFFER OVERFLOW To continue press OK	Too much data was sent to the EIO card in the specified slot [X]. An improper communications protocol might be in use. Note: EIO 0 is reserved for the HP Jetdirect embedded print server.	<ul style="list-style-type: none"> • Press OK to clear the message. (The job will not be printed.) • Check the host configuration. If the message persists, contact an HP-authorized service or support provider.
22 EMBEDDED I/O BUFFER OVERFLOW To continue press OK	Too much data was sent to the product's internal HP Jetdirect.	Press OK to continue printing. Some data may be lost.
22 USB I/O BUFFER OVERFLOW To continue press OK	Too much data was sent to the USB port.	Press OK to clear the error message. (The job will not be printed.)
40 EIO X BAD TRANSMISSION To continue press OK	The connection has been broken between the product and the EIO card in the specified slot [X]. Note: EIO 0 is reserved for the HP Jetdirect embedded print server.	Press OK to clear the error message and continue printing.
40 EMBEDDED I/O BAD TRANSMISSION To continue press OK	The connection has been broken between the product and HP Jetdirect print server.	<ol style="list-style-type: none"> 1. Print the configuration and Embedded Jetdirect pages to verify that the card status is "Ready," and that the protocol reads "Ready." 2. Verify that all the configuration parameters (IP address, configuration method, and domain) are correct. 3. Verify that you are using a working network cable. 4. Verify you can "ping" a network address from the product. 5. Verify that the HP Jetdirect print server has the latest firmware. HP Jetdirect firmware is part of the product firmware. Find the latest product firmware at www.hp.com.

Table 7-9 Control-panel messages (continued)

Control panel message	Description	Recommended action
41.X ERROR For help press ? alternates with 41.X ERROR To continue press OK	A temporary printing error occurred.	<ol style="list-style-type: none"> 1. Press OK to see if the page will print. If necessary, turn the product off and then on. 2. Verify that the loaded paper meets HP specifications. If pages stick together, the paper detect sensors will detect a sheet of paper longer than what is expected in the product. 3. Verify that all paper size settings on the control panel, in the print driver settings, and in the software program match. 4. Verify that the correct size paper is loaded in the input tray.
49.XXXX ERROR To continue turn off then on	A critical firmware error has occurred that caused the processor on the formatter to cease operation. This error can be caused by invalid print commands, corrupt data, or invalid operations. In some cases, electrical "noise" in the cable can corrupt data during transmission to the product. Other causes can be poor-quality cables, poor connections, or home-grown programs. On rare occasions, the formatter is at fault.	<ol style="list-style-type: none"> 1. Turn off the product, and then turn it on. 2. Press Stop to clear the print job from the product memory. 3. Turn off the product, and then turn it on. 4. Print a document from a different software program. If the job prints, return to the first program and try to print a different file. If the message appears only with a certain software program or print job, contact the software program vendor for assistance. 5. If the message persists with different software programs and print jobs, disconnect all of the cables to the product that connect it to the network or computer. 6. Turn off the product. 7. Remove all EIO devices from the product. 8. Turn on the product. 9. If the error no longer exists, replace each EIO device one at a time, making sure to turn the product off and on again as you install each device. 10. Replace an EIO device if you determine that it causes the error.
50.X FUSER ERROR For help press ?	A fuser error has occurred. The values for X are listed below. <ul style="list-style-type: none"> • 50.1: Low fuser temperature • 50.2: Fuser warm-up service • 50.3: High fuser temperature • 50.4: Faulty fuser 	<ol style="list-style-type: none"> 1. Power cycle the product to determine if the error is persistent. 2. Verify that the correct fuser model is installed in the product. 3. Verify that the correct voltage fuser is installed in the product. 4. Verify that the fusing assembly is firmly seated in the product chassis. Reseat

Table 7-9 Control-panel messages (continued)

Control panel message	Description	Recommended action
	<ul style="list-style-type: none"> ● 50.5: Inconsistent fuser (verify voltage model) ● 50.6: Open fuser ● 50.7: Pressure release mechanism failure ● 50.8: Lower fuser temperature ● 50.9: High fuser temperature 	<p>the fusing the assembly, and listen for a “click” at the end of the assembly when you insert it into the product.</p> <ol style="list-style-type: none"> 5. Verify that the connection to connector J82 on the DC controller PCA is firmly seated. 6. Inspect the fusing assembly connectors, at the front of the assembly, and the connectors on the high-voltage power supply PCA. Look for bent pins or debris. Clean or straighten the pins if necessary. 7. If the error persists, replace the fusing assembly. 8. If the error still persists, replace the high-voltage power supply.
51.XY ERROR To continue turn off then on	<p>A laser/scanner error has occurred.</p>	<ol style="list-style-type: none"> 1. From the DIAGNOSTICS menu, run the laser/scanner motor component test. Verify that you can hear motor rotate. 2. If you cannot hear the motor rotate, verify that the connections to connector J86 and connector J93 on the DC controller PCA are firmly seated. 3. Verify that the wiring harness at the laser/scanner assembly is securely attached. 4. If the error persists, replace the laser/scanner assembly.
53.XY.ZZ CHECK RAM DIMM SLOT <X>	<p>There is a problem with the product memory. The DIMM that caused the error will not be used.</p> <p>Values of X and Y are as follows:</p> <ul style="list-style-type: none"> ● X = DIMM type, 0 = ROM, 1 = RAM ● Y = DIMM location, 0 = Internal memory (ROM or RAM), 1 = DIMM slot 1 	<p>Press OK to continue if you are prompted.</p> <p>If the message continues, you might need to replace the specified DIMM. Turn the product off, and then replace the DIMM that caused the error.</p>
54.XX ERROR To continue turn off then on	<p>This message is typically related to a sensor issue.</p>	<p>Turn the product off and then on.</p> <p>Follow the instructions displayed on the product control panel.</p>
55.XX.YY DC CONTROLLER ERROR For help press ? alternates with 55.XX.YY DC CONTROLLER ERROR To continue turn off then on	<p>A temporary printing error occurred.</p>	<ol style="list-style-type: none"> 1. Turn the product off and then on. 2. Remove any third-party memory or USB device, and then turn the product off and then on. 3. Remove and then reinstall the formatter. 4. If the error persists, remove the formatter and perform an engine test. If the engine test page fails to print,

Table 7-9 Control-panel messages (continued)

Control panel message	Description	Recommended action
		replace the DC controller. If the engine test page prints, replace the formatter.
56.XX ERROR For help press ? alternates with 56.XX ERROR To continue turn off then on	A temporary printing error occurred as a result of an incorrect input or output request.	<ul style="list-style-type: none"> Turn the product off and then on. If the message persists, contact an HP-authorized service or support provider.
57.01 ERROR To continue turn off then on	Fan FN103 has experienced an error.	<ol style="list-style-type: none"> Inspect fan FN103 to determine if its rotational movement is being obstructed. Verify that the fan connection at connector J79 on the DC controller PCA is securely seated. If the error persists, replace the fan.
57.03 ERROR To continue turn off then on	Fan FN102 has experienced an error.	<ol style="list-style-type: none"> Inspect fan FN102 to determine if its rotational movement is being obstructed. Verify that the fan connection at connector J75 on the DC controller PCA is securely seated. If the error persists, replace the fan.
57.04 ERROR To continue turn off then on	Fan FN101 has experienced an error.	<ol style="list-style-type: none"> Inspect fan FN101 to determine if its rotational movement is being obstructed. Verify that the fan connection at connector J64 on the power supply PCA is securely seated. If the error persists, replace the fan.
57.05 ERROR To continue turn off then on	The duplexer fan has experienced an error.	<ol style="list-style-type: none"> Inspect the fan to determine if its rotational movement is being obstructed. If the error persists, replace the duplexer.
57.07 ERROR To continue turn off then on	Fan FN301 has experienced an error.	<ol style="list-style-type: none"> Inspect fan FN301 to determine if its rotational movement is being obstructed. Verify that the fan connection at connector J65 on the power supply PCA is securely seated. If the error persists, replace the fan.

Table 7-9 Control-panel messages (continued)

Control panel message	Description	Recommended action
58.XX ERROR To continue turn off then on	The environmental sensor (TH3) has experienced an error.	<ol style="list-style-type: none"> 1. Verify that the environmental sensor connection at connector J63 on the high-voltage power supply PCA is securely seated. 2. If the error persists, replace the environmental sensor (TH3).
59.XY ERROR For help press ? alternates with 59.XY ERROR To continue turn off then on	A temporary printing error occurred.	<ol style="list-style-type: none"> 1. Inspect the DC controller PCA and verify that the following connectors are firmly seated: <ul style="list-style-type: none"> ◦ Drum motor (M102) to connector J87 ◦ Feed motor (M101) to connector J91 ◦ Fusing motor (M299) to connector J89 <p>NOTE: There is a cable between the drum motor and the DC controller. Both ends of the cable need to be firmly seated.</p> 2. If the error persists, from the DIAGNOSTICS menu, run the component tests for each motor to verify that they are operating. If any of the motors is not operating, replace the motor.
60.XX ERROR	An error has occurred while the product was attempting to lift the tray designated by XX .	<ol style="list-style-type: none"> 1. Open the tray, and then remove the paper. 2. Open the guides and look for any torn pieces of paper or foreign objects inside the tray. 3. Replace the paper, and then close the tray. 4. Turn the product off and then on. 5. Remove most of the paper from the tray except for a few sheets, and insert the tray into the product. Listen for the sound of the lift motor lifting the paper stack. Also, observe if the paper level indicator moves at the front of the tray. 6. Tray 2 only: If the paper stack in the tray is not being lifted, verify that the lift motor connector is firmly seated in connector J73 on the DC controller PCA. 7. If the error persists, replace the lift motor.
62 NO SYSTEM To continue turn off then on	This message indicates that no system was found. The product software system is corrupt.	<ul style="list-style-type: none"> • Turn the product off and then on. • If the message persists, contact an HP-authorized service or support provider.

Table 7-9 Control-panel messages (continued)

Control panel message	Description	Recommended action
65.XY.ZZ OUTPUT DEVICE DISCONNECTED For help press ?	An output device was removed while the product was turned on.	<p>To continue printing, you must do one of the following:</p> <ul style="list-style-type: none"> Reconnect the output device. Turn the product off and then on. <p>If the message persists, replace the output device.</p>
66.XY.ZZ INPUT DEVICE FAILURE 66.XY.ZZ OUTPUT DEVICE FAILURE	The product has detected a problem with an input or output device, depending on the specific error message.	<ol style="list-style-type: none"> Turn the product off and then on. Reconnect the device. If possible, print the configuration page to determine if the product is recognizing the device. Verify that the following DC controller connections are seated firmly in the connectors. <ul style="list-style-type: none"> J83: envelope feeder J88: 500-sheet tray feeder or 1,500-sheet tray feeder J90: stacker, stapler-stacker, or mailbox J84: duplexer If the message persists, replace the input or output device.
66.XY.ZZ SERVICE ERROR For help press ? alternates with 66.XY.ZZ SERVICE ERROR Check cables and turn off then on	The external paper-handling controller has detected a problem.	Check the cables, and then turn the product off and then on.
68.X PERMANENT STORAGE FULL For help press ? alternates with 68.X PERMANENT STORAGE FULL To continue press OK	The permanent storage is full. Some settings might have been reset to the factory defaults.	<ul style="list-style-type: none"> If the error does not clear, turn the product off and then on. Print a configuration page and check the product settings to determine which values have changed.
68.X PERMANENT STORAGE WRITE FAIL To continue press OK	The storage device is failing to write. Printing can continue, but there might be some unexpected behaviors because an error occurred in permanent storage.	<p>Press OK to continue.</p> <p>If the error does not clear, turn the product off then on. If the message persists, contact an HP-authorized service or support provider.</p>
68.X STORAGE ERROR SETTINGS CHANGED For help press ?	An error occurred in the product permanent storage and one or more product settings has been reset to its factory default.	Press OK to resume printing.

Table 7-9 Control-panel messages (continued)


Control panel message	Description	Recommended action
<p>alternates with</p> <p>68.X STORAGE ERROR SETTINGS CHANGED</p> <p>To continue press OK</p>		<p>Print a configuration page and check the product settings to determine which values have changed.</p> <p>If the error does not clear, turn the product off and then on. If the message persists, contact an HP-authorized service or support provider.</p>
<p>69.X ERROR</p> <p>For help press ?</p> <p>alternates with</p> <p>69.X ERROR</p> <p>To continue press OK</p>	<p>A printing error occurred.</p>	<ul style="list-style-type: none"> • Turn the product off and then on. • If the message persists, contact an HP-authorized service or support provider.
<p>79.XXXX ERROR</p> <p>To continue turn off then on</p>	<p>The product detected a critical hardware error.</p>	<ul style="list-style-type: none"> • Press the stop button  to clear the print job from the product memory. Turn the product off and then on. • Try printing a job from a different program. If the job prints, go back to the first program and try printing a different file. If the message appears only with a certain program or print job, contact the software vendor for assistance. <p>If the message persists with different programs and print jobs, try these steps.</p> <ul style="list-style-type: none"> • Turn the product off. • Disconnect all cables to the product that connect it to the network or computer. • Remove all the memory DIMMs or third-party DIMMs from the product. Then reinstall the memory DIMM. • Remove the EIO device from the product. • Turn the product on. <p>If the error no longer exists, follow these steps.</p> <ul style="list-style-type: none"> • Install the DIMM and EIO device one at a time, making sure to turn the product off and then on as you install each device. • Replace the DIMM or EIO device if you determine that it causes the error. • Reconnect all cables that connect the product to the network or computer.

Table 7-9 Control-panel messages (continued)

Control panel message	Description	Recommended action
8X.YYYY EIO ERROR	The EIO accessory card in slot [X] has encountered a critical error.	<ul style="list-style-type: none"> • Turn the product off and then on. • Turn the product off, reseal the EIO accessory in slot [X], and then turn the product on. • Turn the product off, remove the EIO accessory from slot [X], install it in a different EIO slot, and then turn the product on. • Replace the EIO accessory in slot [X].
8X.YYYY EMBEDDED JETDIRECT ERROR	The embedded HP Jetdirect print server has encountered a critical error.	<ul style="list-style-type: none"> • Turn the product off and then on. • If the message persists, contact an HP-authorized service or support provider.
Access denied MENUS LOCKED	The product control-panel function you are trying to use has been locked to prevent unauthorized access.	See your network administrator.
ACTION NOT CURRENTLY AVAILABLE FOR TRAY X Tray size cannot be ANY SIZE/ANY CUSTOM	Duplexing is not available when the tray size is set to ANY SIZE or ANY CUSTOM .	Change tray settings. <ol style="list-style-type: none"> 1. Press Menu . 2. Press the down arrow ▼ to highlight PAPER HANDLING, and then press OK. 3. Press the down arrow ▼ to highlight the specified tray, and then press OK. 4. Change the selected tray's size and type settings.
BAD DUPLEXER CONNECTION For help press ?	The optional duplexer is not properly connected to the product.	<ul style="list-style-type: none"> • Make sure that you are using the right-angle power cord that came with the product. • Try removing and reinstalling the optional duplexer. Then turn the product off and then on.
BAD ENVELOPE FEEDER CONNECTION	The optional envelope feeder is not connected properly to the product.	Try removing and reinstalling the optional envelope feeder. Then, turn the product off and then on.
BAD OPTIONAL TRAY CONNECTION	An optional tray is not connected correctly.	Remove the product from the tray, and reinstall it. Then, turn the product off and then on.
Canceling...	The product is canceling a job. The message continues while the job is stopped, the paper path is cleared, and any remaining incoming data on the active data channel is received and discarded.	No action is necessary.
CANNOT DUPLEX CLOSE REAR DOOR For help press ?	The rear door must be closed to duplex.	Close the rear door.
Checking paper path	The product is checking for possible jams or paper that was not cleared from the product.	No action is necessary.

Table 7-9 Control-panel messages (continued)

Control panel message	Description	Recommended action
Checking printer	The product is checking for possible jams or paper that was not cleared from the product.	No action is necessary.
CHOSEN PERSONALITY NOT AVAILABLE To continue press OK	The product received a request for a personality (product language) that does not exist. The print job is canceled.	Print the job using a printer driver for a different product language, or add the requested language to the product (if available). To see a list of available personalities, print a configuration page.
CLEANING DISK <X> % COMPLETE Do not power off alternates with CLEANING DISK <X> % COMPLETE For help press ?	The storage device is being sanitized or cleaned. Do not turn off. Product functions are unavailable. The product automatically turns off then on when finished.	No action is necessary.
CLEANING PAGE ERROR Open rear bin	You have attempted to create or process a cleaning page when a duplexer is present and the rear door is closed.	Open the rear output bin to begin creating or processing the cleaning page.
Cleaning...	The product is performing an automatic cleaning.	No action is necessary.
Clearing event log	The product is clearing the event log.	No action is necessary.
Clearing paper path	The product jammed or was turned on and paper was detected in a wrong location. The product is automatically attempting to eject the pages.	Wait for the product to finish trying to clear the pages. If it cannot, a jam message will appear on the control panel display.
CLOSE TOP COVER	The top cover open switch is signaling that the cover is open.	<ol style="list-style-type: none"> 1. Inspect the top cover open switch (SW101) to determine if the switch is correctly installed. 2. Verify that the connection to connector J78 on the DC controller PCA is firmly seated. 3. From the DIAGNOSTICS menu, run the manual sensor test and see if the component "L" status changes when the top cover is opened and closed. 4. If the status does not change, replace the switch (SW101).
CODE CRC ERROR SEND FULL RFU ON <X> PORT	An error occurred during a firmware upgrade.	Contact an HP-authorized service or support provider.
CORRUPT FIRMWARE IN EXTERNAL ACCESSORY For help press ?	The product detected corrupt firmware in an input or output accessory.	Printing can continue, but jams might occur. To view instructions for upgrading the firmware and to download the firmware upgrade, see Upgrade the firmware on page 96 .
DATA RECEIVED To print last page press OK alternates with	The product is waiting for the command to print (such as waiting for a form feed, or when the print job is paused).	Press OK to continue.

Table 7-9 Control-panel messages (continued)

Control panel message	Description	Recommended action
<current status message>		
DATE/TIME=YYYY/MMMM/DD HH:MM Press OK to continue To skip press ⊗.	The current date and time.	Set the date and time or press the stop button ⊗ to skip.
Deleting...	Product is deleting a stored job.	No action is necessary.
DUPLEXER ERROR REMOVE DUPLEXER Install duplexer with power off	The optional duplexer has an error.	Turn off the product and reattach the optional duplexer. (Any print jobs at the product might be lost.)
EIO <X> DISK NOT FUNCTIONAL For help press ?	The EIO disk in slot X is not working correctly.	<ul style="list-style-type: none"> Turn the product off. Make sure the EIO disk is inserted correctly and securely fastened. If the control panel message continues to appear, the optional hard disk needs to be replaced.
EIO <X> DISK SPINNING UP alternates with <Current status message>	The disk accessory in EIO slot [X] is initializing.	No action is necessary.
EIO DEVICE FAILURE To clear press OK	The specified device has failed.	Press OK to continue.
EIO FILE OPERATION FAILED To clear press OK	A command attempted an illogical operation.	Press OK to continue.
EIO FILE SYSTEM IS FULL To clear press OK	The specified file system is full and cannot be written to.	Press OK to continue.
EIO IS WRITE PROTECTED To clear press OK	The file system cannot be written to.	Press OK to continue.
Envelope Feeder [Type] [Size] To change size or type press OK alternates with TRAY <XX> [TYPE] [SIZE] For help press ?	Current size and type of tray.	To accept the size and type, press the back arrow ↩. To change settings, press OK .
ENVELOPE FEEDER EMPTY alternates with <Current status message>	The envelope feeder is empty.	Load envelopes in the envelope feeder.
Event log empty	You are attempting to view an empty event log by selecting SHOW EVENT LOG from the control panel.	No action is necessary.
Incorrect	The wrong PIN number was entered.	Reenter PIN number.

Table 7-9 Control-panel messages (continued)

Control panel message	Description	Recommended action
INFLATE FAILURE SEND FULL RFU ON <X> PORT	An error occurred during a firmware upgrade.	Contact an HP-authorized service or support provider.
Initializing	Individual tasks are being initialized.	No action is necessary.
INSERT OR CLOSE TRAY <XX> For help press ?	The specified tray is open or missing.	Insert or close the tray for printing to continue.
INSTALL BLACK CARTRIDGE For help press ?	The print cartridge is missing and must be reinstalled for printing to continue.	<ol style="list-style-type: none"> 1. Open the top cover. 2. Install the cartridge. 3. Close the top cover.
INSUFFICIENT MEMORY TO LOAD FONTS/DATA For help press ? alternates with <DEVICE> To continue press OK	The product received more data than can fit in its available memory. You might have tried to transfer too many macros, soft fonts, or complex graphics.	<p>Press OK to print the transferred data (some data might be lost).</p> <p>To solve this problem, simplify the print job or install additional memory.</p>
INTERNAL DISK CANNOT BE WRITTEN TO To clear press OK	The device cannot be written to.	Press OK to continue.
INTERNAL DISK DEVICE FAILURE To clear press OK	The specified device has failed.	Press OK to continue.
INTERNAL DISK FILE OPERATION FAILED To clear press OK	A command attempted an illogical operation.	Press OK to continue.
INTERNAL DISK FILE SYSTEM IS FULL To clear press OK	The specified file system is full and cannot be written to.	Press OK to continue.
INTERNAL DISK NOT FUNCTIONAL	The internal disk is not working correctly.	Contact an HP-authorized service or support provider.
INTERNAL DISK SPINNING UP alternates with <Current status message>	The internal disk is spinning up its platter. Jobs that require disk access must wait.	No action is necessary.
LOAD ENVELOPE FEEDER [TYPE] [SIZE] For help press ?	The envelope feeder is empty.	<p>Load the envelope feeder.</p> <p>If paper is already in the envelope feeder, press OK to print.</p> <p>To use another tray, remove paper from the envelope feeder, and then press OK to continue.</p>
LOAD ENVELOPE FEEDER [TYPE] [SIZE] To use another tray press OK	The envelope feeder is empty.	<p>Load the envelope feeder.</p> <p>If paper is already in the envelope feeder, press OK to print.</p>

Table 7-9 Control-panel messages (continued)

Control panel message	Description	Recommended action
alternates with LOAD ENVELOPE FEEDER [TYPE] [SIZE] For help press ?		To use another tray, remove paper from the envelope feeder, and then press OK to print.
LOAD TRAY 1 [TYPE] [SIZE] To continue press OK alternates with LOAD TRAY 1 [TYPE] [SIZE] For help press ?	Tray 1 is empty.	Load Tray 1 with the requested paper. If the paper is already in the Tray 1, press the help button ?, and then press OK to print.
LOAD TRAY 1 [TYPE] [SIZE] For help press ?		To use another tray, remove paper from Tray 1, and then press OK to continue.
LOAD TRAY 1 [TYPE] [SIZE] To use another tray press OK alternates with LOAD TRAY 1 [TYPE] [SIZE] For help press ?	Tray 1 is empty and other trays are available.	Press OK to use another tray. To use Tray 1, load it with the requested paper. If the paper is already in the Tray 1, press the help button ?, and then press OK to print.
LOAD TRAY <XX> [TYPE] [SIZE] For help press ?	The indicated tray is configured for a specific type and size of paper needed by a print job, but the tray is empty. All other trays are also empty.	To use another tray, remove paper from Tray 1, and then press OK to use another tray.
LOAD TRAY <XX> [TYPE] [SIZE] To use another tray press OK alternates with LOAD TRAY <XX> [TYPE] [SIZE] For help press ?	A job is sent that requires a specific type and size that is not available in the tray that is indicated.	Press OK to use a type and size that are available in another tray.
LOWER THE <BINNAME> For help press ?	The optional bin is in the up position.	Lower the bin.
MANUALLY FEED [TYPE] [SIZE] MANUALLY FEED [TYPE] [SIZE] To continue press OK alternates with MANUALLY FEED [TYPE] [SIZE] For help press ?	The product is waiting for paper to be loaded in Tray 1 for manual feed.	If paper is already in the Tray 1, press the help button ?, and then press OK to print. To use another tray, remove paper from Tray 1, and then press OK .
MANUALLY FEED [TYPE] [SIZE] To continue press OK alternates with MANUALLY FEED [TYPE] [SIZE] For help press ?	The product is waiting for paper to be loaded in Tray 1 for manual feed.	Load the requested paper into Tray 1 and press OK .
MANUALLY FEED [TYPE] [SIZE] To use another tray press OK	The product is waiting for paper to be loaded in Tray 1 for manual feed.	Press OK to use a type and size that are available in another tray.

Table 7-9 Control-panel messages (continued)

Control panel message	Description	Recommended action
alternates with MANUALLY FEED [TYPE] [SIZE] For help press ?		
MANUALLY FEED OUTPUT STACK Then press OK to print second sides	The first side of a manual duplex job has been printed and the product is waiting for you to insert the output stack to complete the second side.	<ul style="list-style-type: none"> Load the output stack into Tray 1, maintaining the same orientation with printed side down. To continue printing, press OK.
No job to cancel	<p>The stop button  was pressed, but there is no active job or buffered data to cancel.</p> <p>The message is displayed for approximately 2 seconds before the product returns to the ready state.</p>	No action is necessary.
NON HP SUPPLY INSTALLED Economode disabled	The product has detected that the print cartridge is not a genuine HP supply.	<p>If you believe you purchased a genuine HP supply, call the HP fraud hotline</p> <p>Any product repair required as a result of using non-HP supplies or unauthorized supplies is not covered under the product warranty.</p> <p>To continue printing, press OK.</p>
NON HP SUPPLY INSTALLED alternates with For help press ?	The product has detected that the print cartridge is not a genuine HP supply.	<p>If you believe you purchased a genuine HP supply, call the HP fraud hotline.</p> <p>Any product repair required as a result of using non-HP supplies or unauthorized supplies is not covered under the product warranty.</p> <p>To continue printing, press OK.</p>
Output bin FULL Remove all paper from bin	The output bin is full, and printing cannot continue.	Empty the bin so that the current print job can finish.
Output bin FULL Remove all paper from bin alternates with <Current status message>	The output bin is full, but it is not needed for the current print job.	Empty the bin before sending a job to that bin.
PAPER WRAPPED AROUND FUSER For help press ?	A jam has occurred because paper has wrapped around the fuser.	<p>CAUTION: The fuser can be hot while the product is in use. Wait for the fuser to cool before handling it.</p> <ol style="list-style-type: none"> Turn the product off. Remove the rear output bin. Press the blue tabs to remove the fuser. Remove the jammed paper.

Table 7-9 Control-panel messages (continued)

Control panel message	Description	Recommended action
		<p>5. Reinstall the fuser and the rear output bin.</p> <p>6. Turn the product on.</p>
PERFORM PRINTER MAINTENANCE For help press ? alternates with <Current status message>	The product is due for regular maintenance.	Contact your service representative to schedule maintenance. Continue printing until maintenance is performed.
Performing upgrade	Firmware is being upgraded.	No action is necessary.
Please wait	The product is going offline.	No action is necessary.
Printing...ENGINE TEST	The product is printing an engine test page.	No action is necessary.
RAM DISK DEVICE FAILURE To clear press OK	The specified device has failed.	Press OK to continue.
RAM DISK FILE SYSTEM IS FULL To clear press OK	The specified file system is full and cannot be written to.	Press OK to continue.
RAM DISK IS WRITE PROTECTED To clear press OK	The device cannot be written to.	Press OK to continue.
RAM DISK OPERATION FAILED To clear press OK	A command attempted an illogical operation.	Press OK to continue.
REINSERT DUPLEXER	The duplexer has been removed.	Reinsert the duplexer.
REPLACE BLACK CARTRIDGE For help press ?	The print cartridge has reached the end of life.	Replace the cartridge.
REPLACE BLACK CARTRIDGE For help press ? alternates with REPLACE BLACK CARTRIDGE To continue press OK	The cartridge has reached the low threshold.	Order a new cartridge. To continue printing press OK .
REPLACE STAPLE CARTRIDGE To continue press OK	The stapler is out of staples.	Press OK to continue without stapling.
REPLACE STAPLES To continue press OK	The stapler is out of staples.	Press OK to continue without stapling.
Request accepted please wait	The request to print an internal page is waiting to print.	Wait for the current job to finishing printing.
Restoring factory settings	Factory settings are being restored.	No action is necessary.
Restoring...	The specific settings are being restored.	No action is necessary.

Table 7-9 Control-panel messages (continued)

Control panel message	Description	Recommended action
RFU LOAD ERROR SEND FULL RFU ON <X> PORT	An error occurred during a firmware upgrade.	Contact an HP-authorized service or support provider.
ROM DISK DEVICE FAILURE To clear press OK	The specified device has failed.	Press OK to continue.
ROM DISK FILE OPERATION FAILED To clear press OK	A command attempted an illogical operation.	Press OK to continue.
ROM DISK FILE SYSTEM IS FULL To clear press OK	The specified file system is full and cannot be written to.	Press OK to continue.
ROM DISK IS WRITE PROTECTED To clear press OK	The device cannot be written to.	Press OK to continue.
SANITIZING DISK <X>% COMPLETE Do not power off alternates with CLEANING DISK <X>% COMPLETE For help press ?	A hard disk is being sanitized.	No action is necessary.
SIZE MISMATCH IN TRAY <XX> For help press ? alternates with Current status message	The tray indicated is loaded with a different size of paper than the size configured for the tray.	Load the tray with the size configured for the tray. Make sure that the guides are positioned correctly in the specified tray. Printing can continue from other trays.
Sleep mode on	The product is in Sleep mode.	No action is necessary.
STANDARD TOP BIN FULL	The output bin full sensor is signaling that the bin is full.	<ol style="list-style-type: none"> 1. The sensor flag is connected to the top cover assembly. Verify that the top cover is correctly installed. Verify that the flag is not hindered and moves freely. 2. From the DIAGNOSTICS menu, run the manual sensor test. Toggle the tray full flag and see if reference "K" changes. If the flag moves freely, but the flag status does not change during testing, verify that connector J76 on the DC controller PCA is firmly seated. 3. If the error persists, replace the sensor (PS104).
STAPLER LOW ON STAPLES For help press ? alternates with READY To enter menus, press OK	Fewer than 70 staples remain in the optional stapler/stacker cartridge. Printing continues until the cartridge runs out of staples.	Replace the staple cartridge. For information about replacing the staple cartridge, see Load staples on page 82 .

Table 7-9 Control-panel messages (continued)

Control panel message	Description	Recommended action
SUPPORTED HOST USB DEVICE DETECTED BUT INACCESSIBLE For help press ?	A USB device has been detected. The product does not support plug and play operation.	Turn the product off and then on, but do not unplug the USB device.
TOO MANY PAGES IN JOB TO FINISH For help press ?	The finishing device received too many pages to perform finishing. Pages will eject without finishing.	Reduce the number of pages.
TOO MANY PAGES IN JOB TO STAPLE For help press ?	The maximum number of sheets the stapler can staple is 15. The print job finishes printing but is not stapled.	For print jobs that have more than 15 pages, staple them manually.
TOO MANY PAGES TO BIND For help press ?	Too many pages were sent with the job. Binding cannot be completed.	Reduce the number of pages.
TOO MANY TRAYS INSTALLED	<p>You have installed more optional trays than the product supports.</p> <p>The product can accept up to four optional 500-sheet trays, or it can accept one optional 1,500-sheet tray and up to three optional 500-sheet trays, for a total of up to four optional trays.</p>	Remove one of the optional trays.
TRAY <XX> [TYPE] [SIZE] To change size or type press OK alternates with TRAY <XX> [TYPE] [SIZE] To accept settings press ↵	<p>This message states the current type and size configuration of the paper tray, and allows you to change the configuration.</p>	<p>To change the paper size or type press OK while the message is present. To clear the message, press the back arrow ↵ while the message is present.</p> <ul style="list-style-type: none"> Set size and type to ANY if the tray is used frequently for different sizes or types. Set size and type to a specific setting if printing with only one type of paper.
TRAY <XX> OPEN For help press ? alternates with <Current status message>	<p>The tray cannot feed paper to the product because tray [X] is open and must be closed for printing to continue.</p>	Check the trays and close any that are open.
Unable to mopy job alternates with Current status message	Memory or file system failures would not allow a mopy job to occur. Only one copy will be produced.	Correct the error and then try again to store the job.
Unable to store job alternates with <Current status message>	The print job named cannot be stored due to a memory, disk, or configuration problem.	Correct the error and then try again to store the job.
UNSUPPORTED HOST USB DEVICE DETECTED	An unsupported USB device has been inserted into a USB port.	The product cannot use the USB device. Remove the device.
USB HUBS NOT FULLY SUPPORTED For help press ?	The product does not meet the power requirement of the USB hub.	Some operations may not work properly.


Table 7-9 Control-panel messages (continued)


Control panel message	Description	Recommended action
USB STORAGE DEVICE FAILURE To clear press OK	The specified device has failed.	Press OK to continue.
USB STORAGE FILE OPERATION FAILED To clear press OK	A command attempted an illogical operation.	Press OK to continue.
USB STORAGE FILE SYSTEM IS FULL To clear press OK	The specified file system is full and cannot be written to.	Press OK to continue.
USB STORAGE IS WRITE PROTECTED To clear press OK	The device cannot be written to.	Press OK to continue.
USE TRAY <XX> [TYPE] [SIZE] To change press ▲/▼. To use press OK	The product did not detect the type and size of paper requested. The message shows the most likely type and size available and the tray in which they are available.	Press OK to accept the values in the message, or press the up or down arrow ▲/▼ to scroll through the available choices.
Wait for printer to reinitialize	This message can appear for a variety of reasons: <ul style="list-style-type: none"> • The RAM DISK settings changed before the product restarted. • The product is restarting after changing external device modes. • You have exited the DIAGNOSTICS menu. • A new formatter has been installed with an old product, or a new product has been installed with an old formatter. 	No action is necessary.
WAITING FOR TRAY <XX> TO LIFT alternates with <Current status message>	The specified tray is in the process of lifting the paper to the top of the tray for proper feeding.	No action is necessary.
WARMING UP alternates with <Current status message>	The product is coming out of sleep mode. Printing will continue as soon as it is done.	No action is necessary.

Event log messages

Print an event log


Use the event log to help diagnose and solve product problems.


1. Press **Menu** .
2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press **OK**.
3. Press the down arrow ▼ to highlight **PRINT EVENT LOG**, and then press **OK** to print the pages.

 **NOTE:** For information about clearing the event log, see [Service menu on page 335](#).

Show an event log

Use the control panel to view the event log.

1. Press **Menu** .
2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press **OK**.
3. Press the down arrow ▼ to highlight **SHOW EVENT LOG**, and then press **OK** to print the pages.

 **NOTE:** For information about clearing the event log, see [Service menu on page 335](#).

Sample event log

Figure 7-32 Sample event log

The diagram shows the 'Event Log Page' for HP LaserJet P4515 Printers. It features a dark header with the title 'Event Log Page' and the HP logo. Below the header, there are several sections of data represented by horizontal bars. Numbered callouts point to specific elements:

- 1**: Points to a single horizontal bar in the first section.
- 2**: Points to the first horizontal bar in the second section.
- 3**: Points to the first horizontal bar in the third section.
- 4**: Points to the first horizontal bar in the fourth section.
- 5**: Points to the first horizontal bar in the fifth section.
- 6**: Points to the first horizontal bar in the sixth section.
- 7**: Points to the first horizontal bar in the seventh section.

1	Product information
2	Event number
3	Date and time
4	Engine cycles
5	Event log code
6	Firmware version number
7	Description or personality

Paper-handling problems

Jams

The product closely monitors the paper path for jams. The product displays a jam error message when one of the following conditions occurs.

- Paper is detected at a paper path sensor when paper is not expected.
- Paper fails to clear a sensor within a specified time period.
- Paper fails to arrive at a sensor within a specified time period.

If the product is experiencing frequent jams, use the following steps to assist you in resolving the causes of the jam.

- Review the event log to determine a cause for the jams.
- Inspect each of the paper path sensors to determine if the sensor flags are free from obstructions and functioning correctly. See [Sensor test \(interactive\) on page 248](#).
- Use the manual sensor diagnostic test to determine if all paper path motors and solenoids are functioning correctly.
-

The sensors below monitor the product paper path.

- PS102, pre-feed sensor
- PS103, top-of-page sensor
- PS106, media-width sensor
- PS108, media-width sensor
- PS700, fusing delivery sensor
- PS1603, optional 500-sheet feeder media path sensors
- PS1502, duplex sensor
- PS1704, optional 1,500-sheet feeder media path sensors



NOTE: To locate the sensors listed above, see [Figure 7-2 Paper sensors on page 247](#).

Common causes of jams

Many jams are caused by using paper that does not meet HP specifications. For complete paper specifications for all HP LaserJet products, see the *HP LaserJet Printer Family Print Media Guide*. This guide is available at www.hp.com/support/ljpaperguide.

The product is jammed.¹

Cause	Solution
The paper does not meet specifications.	Use only paper that meets HP specifications. See Paper and print media on page 47 .

The product is jammed.¹

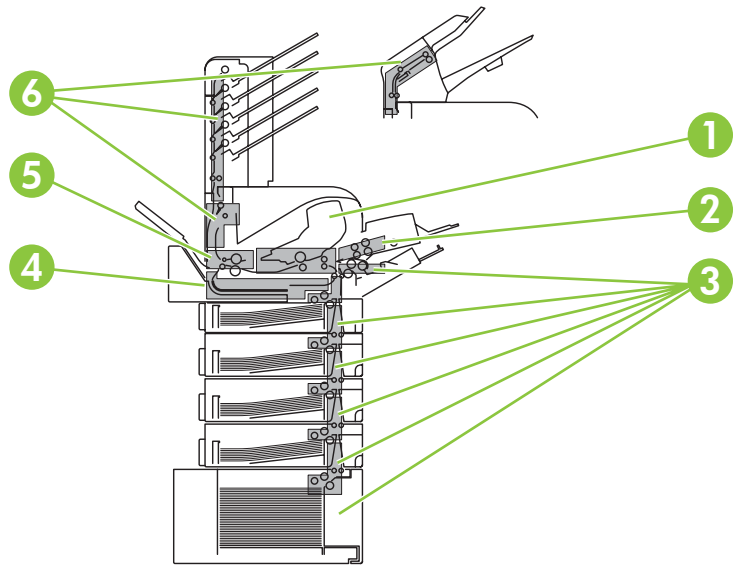
Cause	Solution
A component is installed incorrectly.	Verify that all print cartridges, the transfer unit, and the fuser are correctly installed.
You are using paper that has already passed through a product or copier.	Do not use paper that has been previously printed on or copied.
A tray is loaded incorrectly.	Remove any excess paper from the tray. Make sure that the stack is below the maximum stack height mark in the tray. See Load trays on page 54 .
The paper is skewed.	The tray guides are not adjusted correctly. Adjust them so they hold the stack firmly in place without bending it.
The paper is binding or sticking together.	Remove the paper, flex it, rotate it 180°, or flip it over. Reload the paper into the tray. NOTE: Do not fan paper. Fanning can create static electricity, which can cause paper to stick together.
The paper is removed before it settles into the output bin.	Reset the product. Wait until the page completely settles in the output bin before removing it.
During two-sided printing, you removed the paper before the second side of the document was printed.	Reset the product and print the document again. Wait until the page completely settles in the output bin before removing it.
The paper is in poor condition.	Replace the paper.
The internal rollers from the tray are not picking up the paper.	Remove the top sheet of paper. If the paper is too heavy, it might not be picked from the tray.
The paper has rough or jagged edges.	Replace the paper.
The paper is perforated or embossed.	Perforated or embossed paper does not separate easily. Feed single sheets from Tray 1.
Product supply items have reached the end of their useful life.	Check the product control panel for messages prompting you to replace supplies, or print a supplies status page to verify the remaining life of the supplies. See Print the information and show-me-how pages on page 66 .
Paper was not stored correctly.	Replace the paper in the trays. Paper should be stored in the original packaging in a controlled environment.

¹ If the product continues to jam, contact HP Customer Support or your authorized HP service provider.


Jam locations

If a jam message appears on the control-panel display, look for jammed paper or other print media in the locations that are indicated in the following illustration. Then follow the procedure for clearing the jam. You might need to look for paper in other locations than those that are indicated in the jam message. If the location of the jam is not obvious, look first in the top-cover area underneath the print cartridge.

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



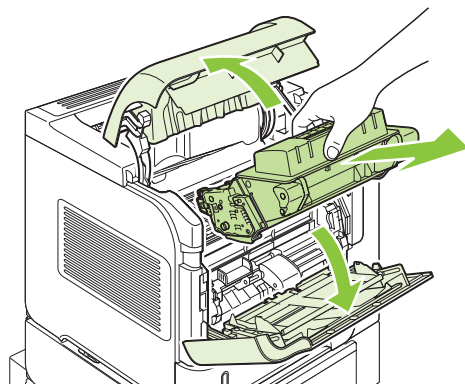
1	Top-cover and print-cartridge areas
2	Optional envelope feeder
3	Tray areas (Tray 1, Tray 2, and optional trays)
4	Optional duplexer
5	Fuser area
6	Output areas (top bin; rear bin; and optional stacker, stapler/stacker, or 5-bin mailbox)

 **NOTE:** Loose toner might remain in the product after a jam and cause temporary print-quality problems. These problems should clear up within a few pages.

Clear jams

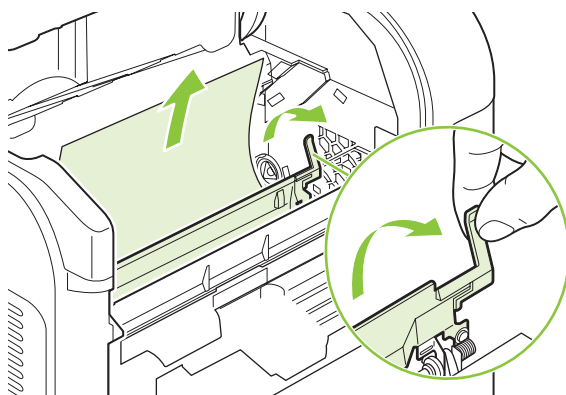
Clear jams from the top-cover and print-cartridge areas

1. Open the top cover and remove the print cartridge.

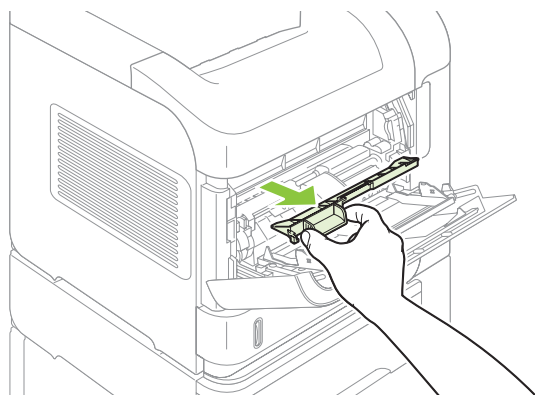


△ **CAUTION:** To prevent damage to the print cartridge, do not expose it to light for more than a few minutes. Cover the print cartridge with a sheet of paper while it is outside of the product.

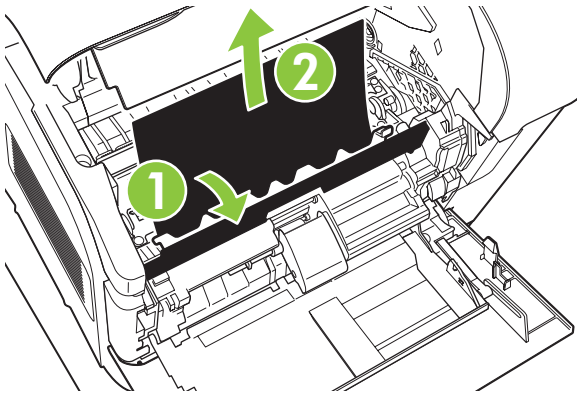
2. Use the green handle to lift the paper-access plate. Slowly pull the jammed paper out of the product. Do not tear the paper. If paper is difficult to remove, try clearing it from the tray area. See [Clear jams from the trays on page 309](#).



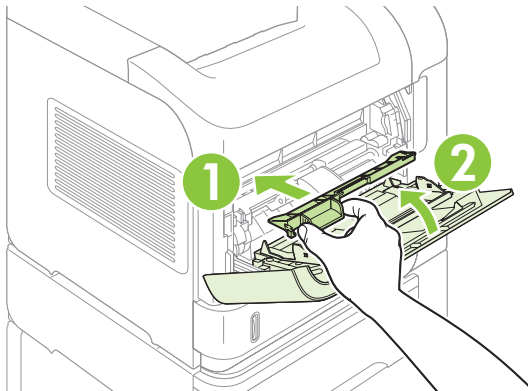
3. Open Tray 1 and remove the envelope accessory cover. If paper is present, remove it.



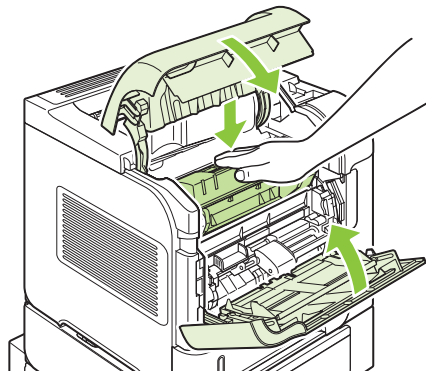
4. Rotate the paper guide to check for additional jammed paper underneath. If jammed paper is present, remove it.



5. Replace the envelope accessory cover and close Tray 1.



6. Reinstall the print cartridge and close the top cover.

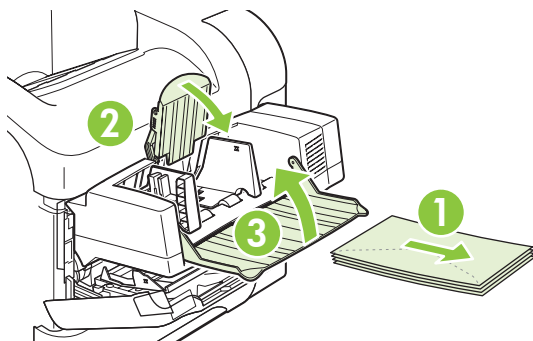


7. If a jam message persists, jammed paper is still in the product. Look for the jam in another location. See [Jam locations on page 304](#).

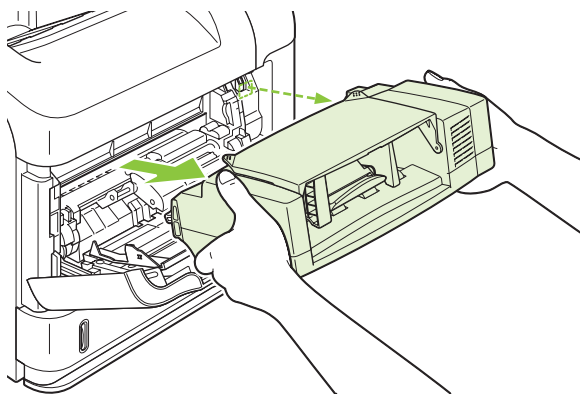
Clear jams from the optional envelope feeder

This procedure applies only to jams that occur when you are using an optional envelope feeder.

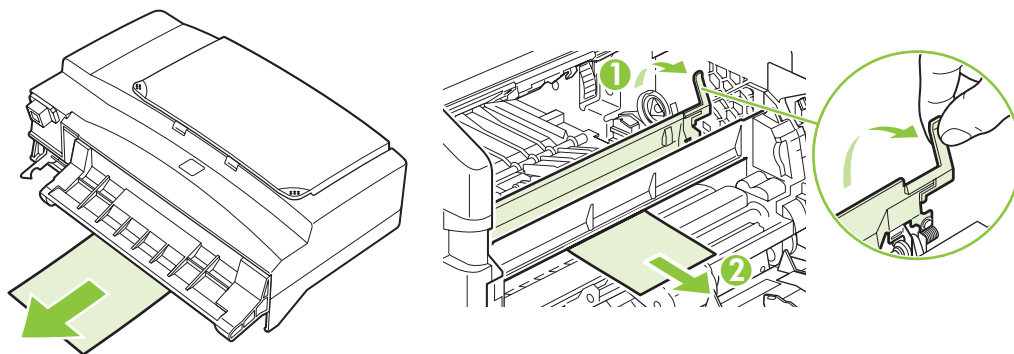
1. Remove any envelopes that are loaded in the optional envelope feeder. Lower the envelope weight and lift the tray extension up, to the closed position.



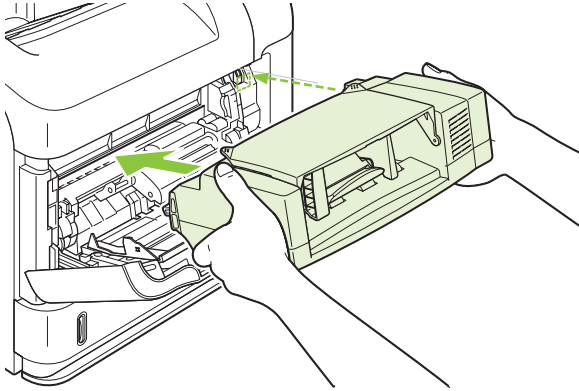
2. Grasp both sides of the optional envelope feeder and carefully pull it out of the product.



3. Slowly remove any jammed envelopes from the optional envelope feeder and the product.



4. Reinstall the envelope feeder.



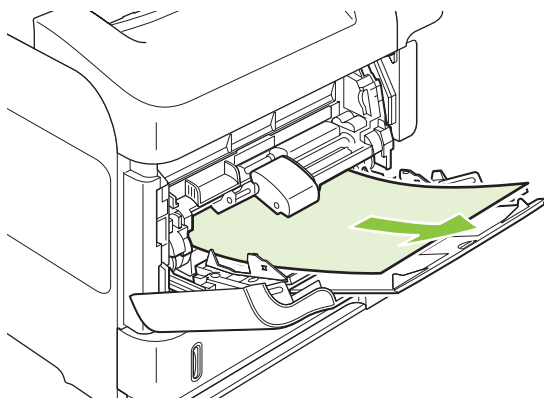
5. Press **OK** to clear the jam message.
6. If a jam message persists, an envelope is still jammed in the product. Look for the jam in another location. See [Jam locations on page 304](#).
7. Replace the envelopes, making sure that you push the bottom envelopes in slightly further than the top envelopes.

Clear jams from the trays

Use these procedures to clear jams from the trays. Also see [Clear jams from the optional envelope feeder on page 307](#).

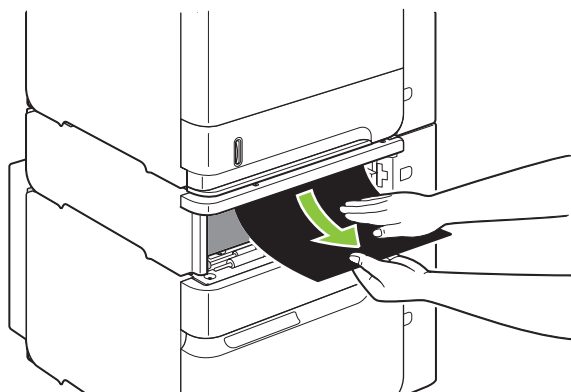
Clear jams from Tray 1

Slowly pull the jammed paper or other print media out of the product. If part of the paper has already been pulled into the product, see [Clear jams from the top-cover and print-cartridge areas on page 305](#).

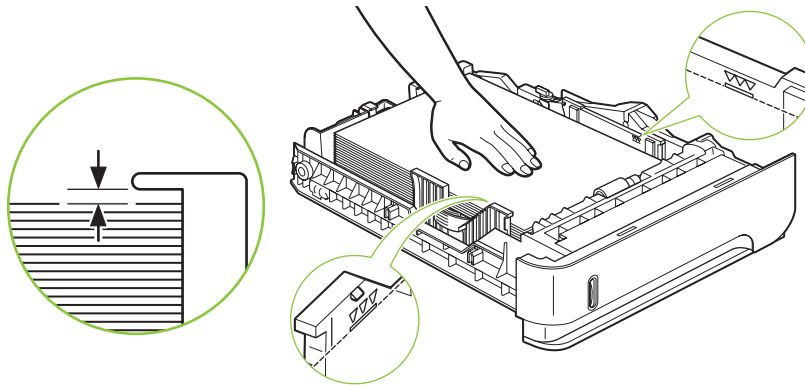


Clear jams from Tray 2 or an optional 500-sheet tray

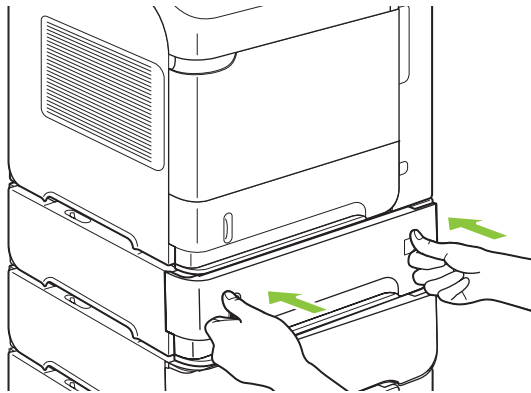
1. Slide the tray out of the product, lift it slightly, and remove any damaged paper from the tray.
2. If the edge of the jammed paper is visible in the feed area, slowly pull the paper down and out of the product. (Do not pull the paper straight out, or it will tear.) If the paper is not visible, look in the next tray or in the top-cover area. See [Clear jams from the top-cover and print-cartridge areas on page 305](#).



3. Make sure that the paper is flat in the tray at all four corners and below the maximum-height indicators.



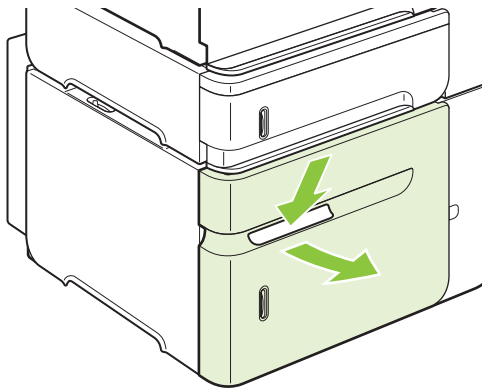
4. Slide the tray into the product.



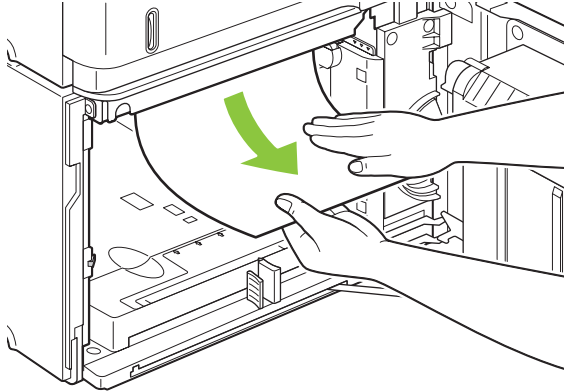
5. Press **OK** to clear the jam message.
6. If a jam message persists, a sheet is still jammed in the product. Look for the jam in another location. See [Jam locations on page 304](#).

Clear jams from the optional 1,500-sheet tray

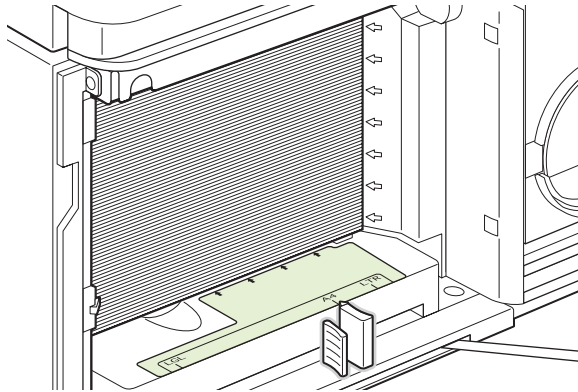
1. Open the front door of the tray.



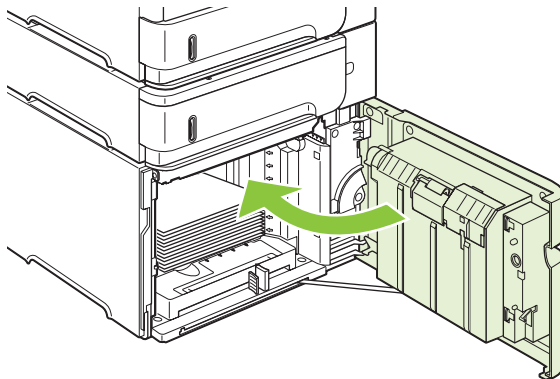
2. If the edge of the jammed paper is visible in the feed area, slowly pull the paper down and out of the product. (Do not pull the paper straight out, or it will tear.) If the paper is not visible, look in the top-cover area. See [Clear jams from the top-cover and print-cartridge areas on page 305](#).



3. Make sure that the paper does not exceed the fill marks on the paper guides, and that the front edge of the stack is aligned with the arrows.



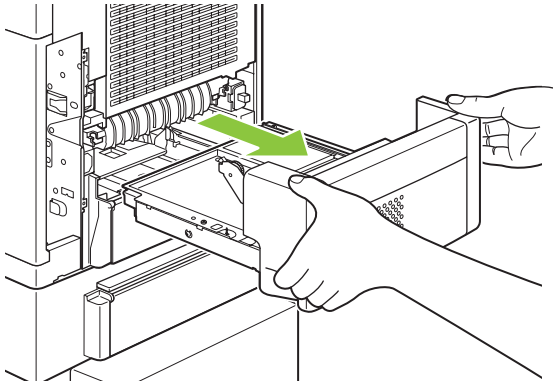
4. Close the front door of the tray.



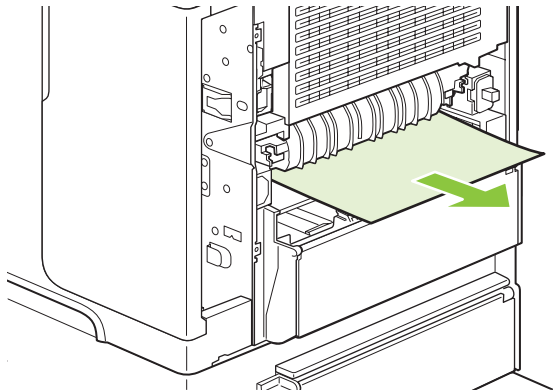
5. Press **OK** to clear the jam message.
6. If a jam message persists, a sheet is still jammed in the product. Look for the jam in another location. See [Jam locations on page 304](#).

Clear jams from the optional duplexer

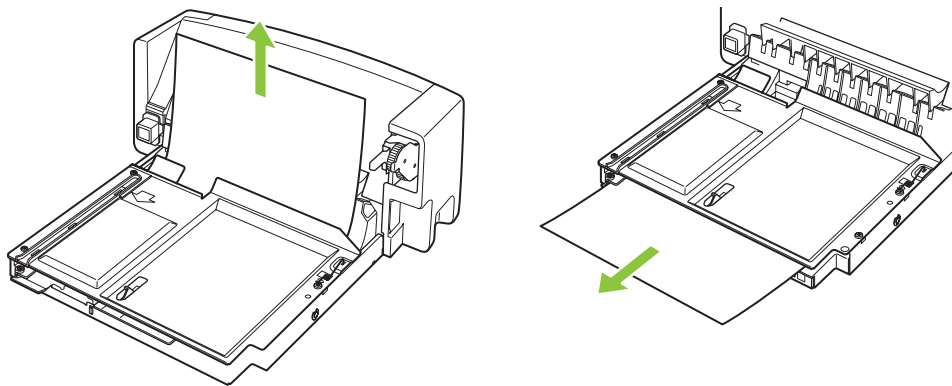
1. Lift the optional duplexer up and then pull it out to remove it.



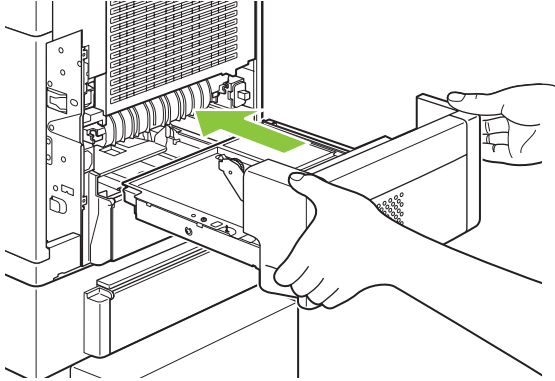
2. Remove any paper that is on top of Tray 2. (You might need to reach inside the product.)



3. Slowly pull any paper out of the optional duplexer.



4. Insert the optional duplexer into the product.

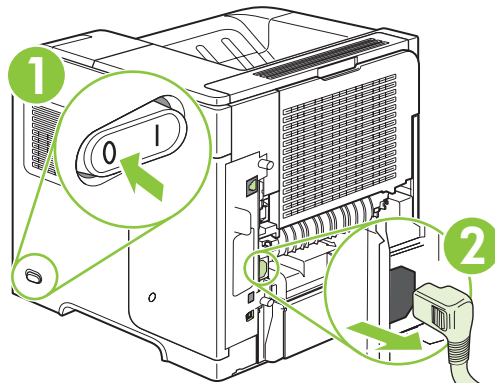


5. If a jam message persists, a sheet is still jammed in the product. Look for jam in another location. See [Jam locations on page 304](#).

Clear jams from the fuser area

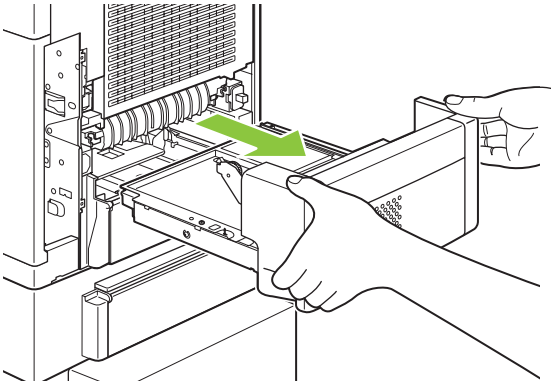
Use this procedure only in these situations:

- Paper has jammed inside the fuser and cannot be removed from the top-cover area or the rear-output area.
 - A sheet of paper has torn while you were trying to clear a jam from the fuser.
1. Turn the product off and unplug the power cord from the product.

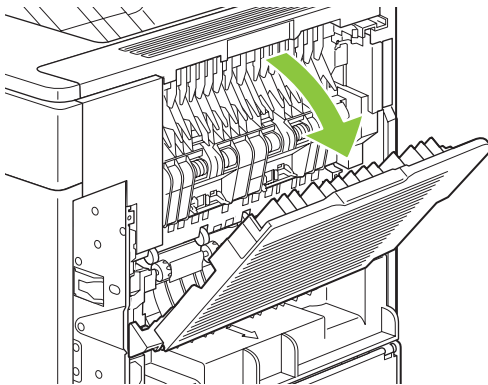


⚠ **WARNING!** The fuser is very hot. To avoid minor burns, wait 30 minutes for the fuser to cool before removing it from the product.

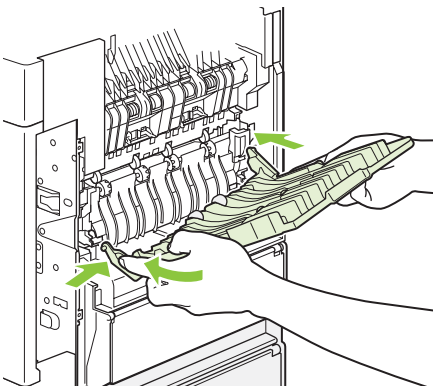
2. Rotate the product so the rear is facing you. If an optional duplexer is installed, lift it and pull it straight out. Set it aside.



3. Open the rear output bin.

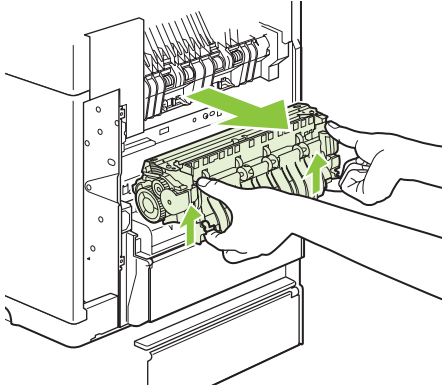


4. Remove the rear output bin. Place your finger near the left-side hinge, and push firmly to the right until the hinge-pin clears the hole inside the product. Rotate the output bin outward to remove it.

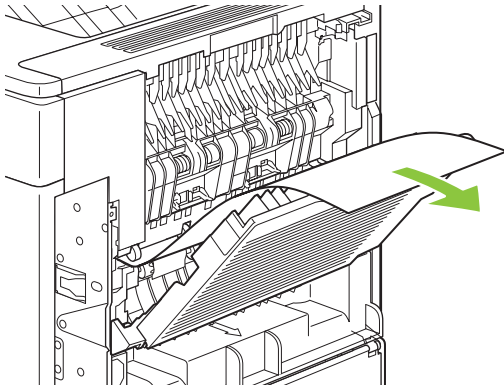


5. If paper is visible, remove it.

If paper is not visible, push up on the two blue levers on the sides of the fuser, and pull the fuser straight out.

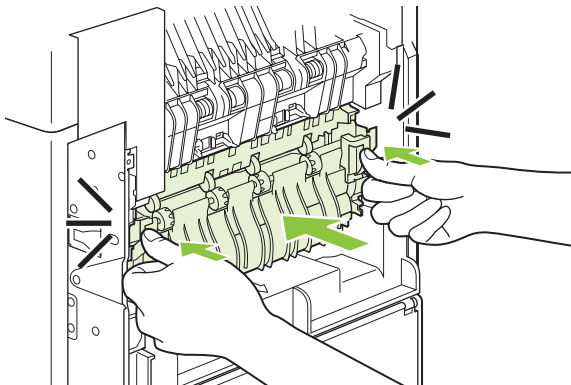


6. Remove the jammed paper. If necessary, lift the black plastic guide that is located on the top of the fuser to gain access to the jammed sheet.

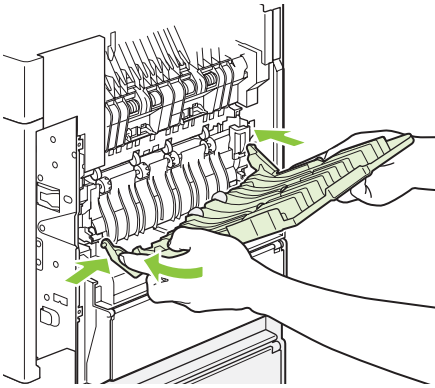


△ **CAUTION:** Do not use a sharp or metal object to clear paper from the fuser area. You might damage the fuser.

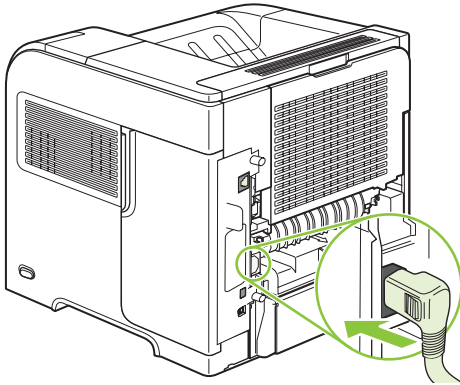
7. Push the fuser firmly into the product until the blue levers on both sides click into place.



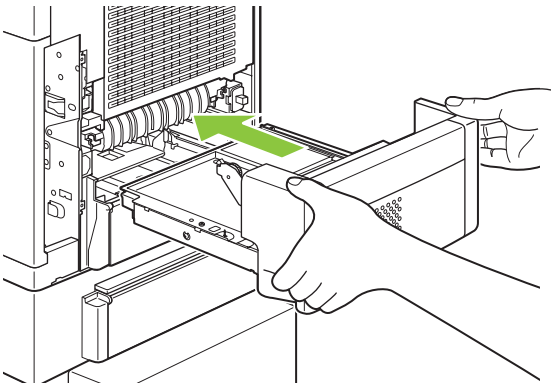
8. Reinstall the rear output bin. Insert the right hinge-pin into the hole inside the product. Push inward on the left hinge, and slide it into the hole inside the product. Close the rear output bin.



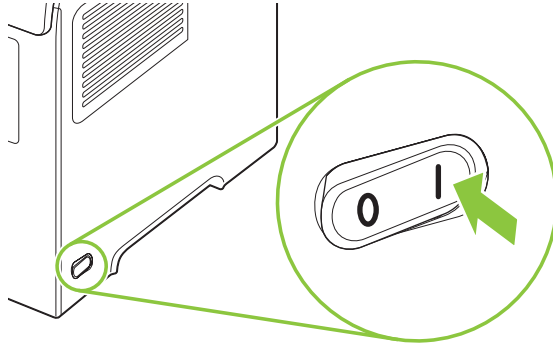
9. Plug the power cord into the product.



10. Replace the optional duplexer, if it was removed.



11. Turn the product on.



12. If a jam message persists, a sheet is still jammed in the product. Look for the jam in another location.
See [Jam locations on page 304](#).

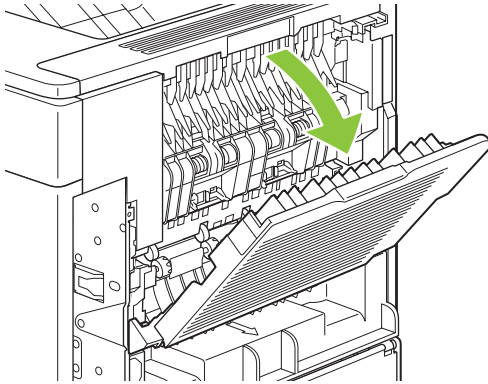
After clearing all jams, you need to send the print job again because the product power has been turned off.

Clear jams from the output areas

Use these procedures to clear jams that occur in the rear output bin or in the optional stacker, stapler/stacker, or 5-bin mailbox.

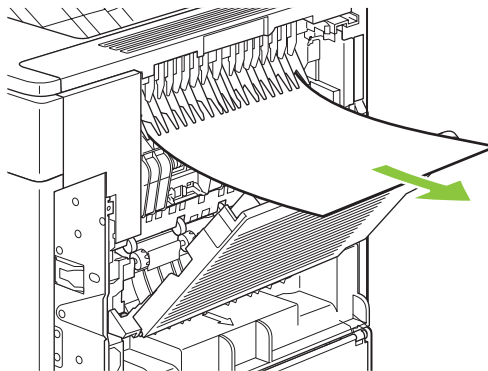
Clear jams from the rear output bin


1. Open the rear output bin.



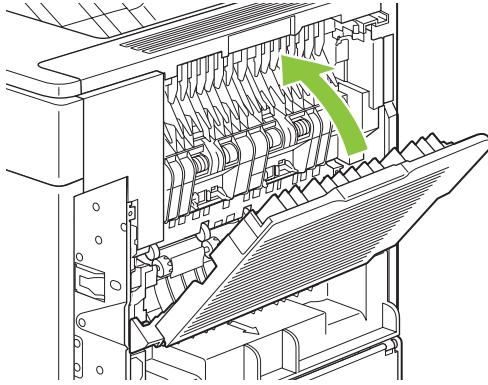
 **NOTE:** If most of the paper is still inside the product, it might be easier to remove it through the top-cover area. See [Clear jams from the top-cover and print-cartridge areas on page 305](#).

2. Grasp both sides of the paper, and slowly pull the paper out of the product. Loose toner might be on the sheet. Be careful not to spill it on yourself or into the product.



 **NOTE:** If the jammed paper is difficult to remove, try opening the top cover all the way to release pressure on the paper. If the sheet has torn, or if you still cannot remove it, see [Clear jams from the fuser area on page 313](#).

3. Close the rear output bin.



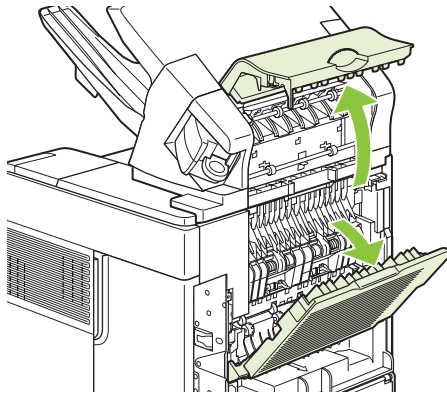
4. If a jam message persists, a sheet is still jammed in the product. Look for the jam in another location. See [Jam locations on page 304](#).

Clear jams from the optional stacker or stapler/stacker

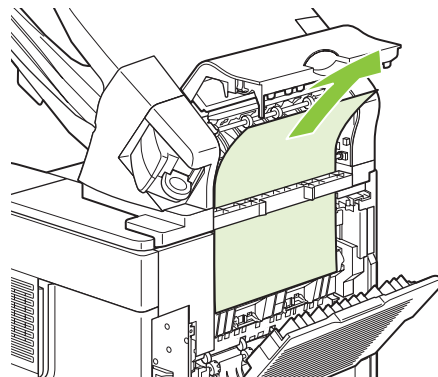
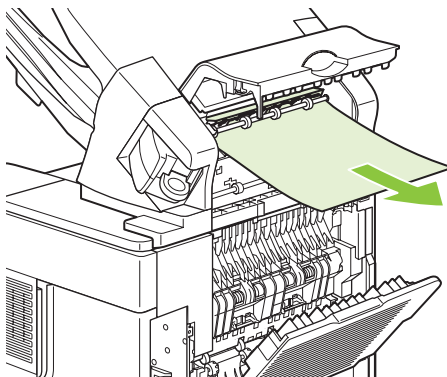
Paper jams can occur in the optional stacker or the optional stapler/stacker. Staple jams can occur only in the optional stapler/stacker.

Clear paper jams from the optional stacker or stapler/stacker

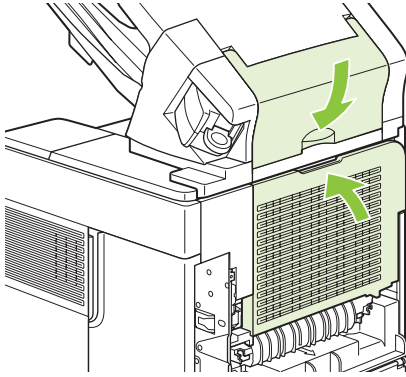
1. At the back of the product, open the door on the stacker or stapler/stacker, and open the rear output bin.



2. Carefully remove any jammed paper.



3. Close the door on the stacker or stapler/stacker, and close the rear output bin.



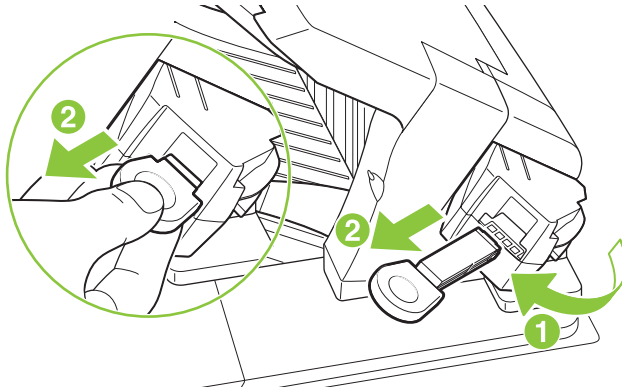
4. If a jam message persists, a sheet is still jammed. Look for it in another location. Check the front of the accessory and carefully remove any jammed paper. See [Jam locations on page 304](#).

 **NOTE:** The output bin must be pushed down into the lowest position for printing to continue.

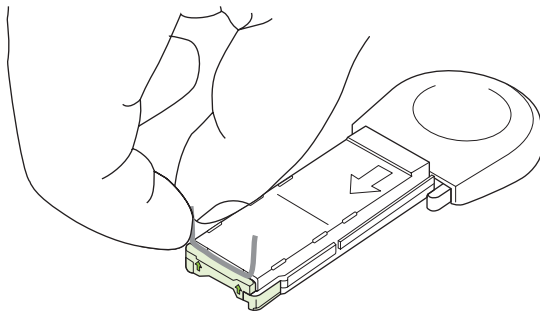
Clear staple jams from the optional stapler/stacker

 **NOTE:** Clear staple jams when the message **JAM IN STAPLER** appears on the product control-panel display.

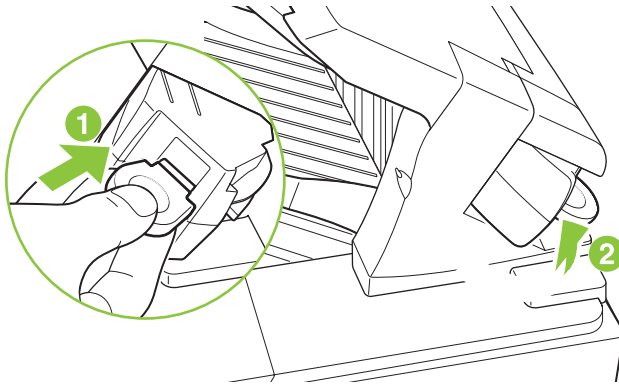
1. On the right side of the stapler/stacker, turn the stapler unit toward the front of the product until the unit clicks into the open position. Pull outward on the blue staple cartridge to remove it.



2. Rotate the green cover on the end of the staple cartridge upward, and remove the jammed staple.



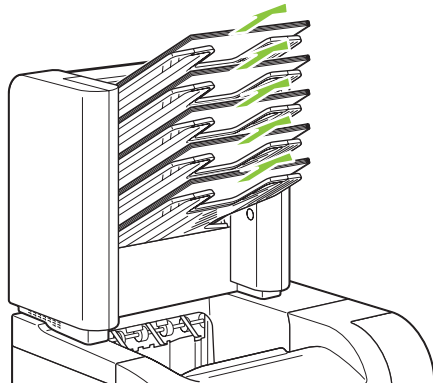
3. Insert the staple cartridge into the stapler unit, and rotate the stapler unit toward the rear of the product until the unit snaps into place.



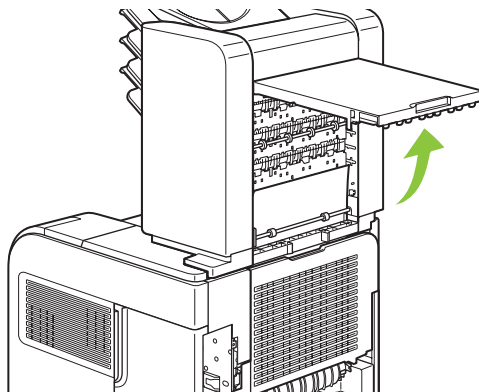
The stapler needs to reload after clearing a staple jam, so the first few documents might not be stapled. If a print job is sent and the stapler is jammed or is out of staples, the job will still print as long as the path to the stacker bin is not blocked.

Clear jams from the optional 5-bin mailbox

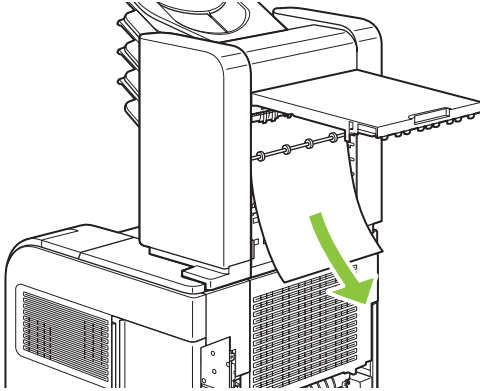
1. Remove any paper that is in the output bins.



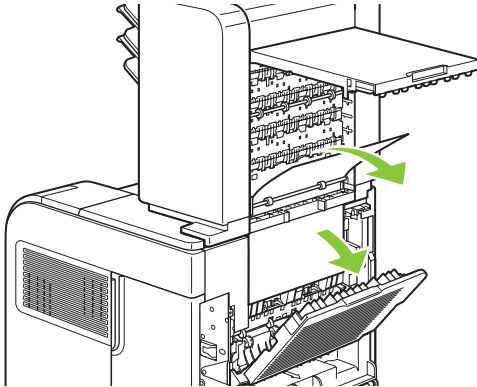
2. On the back of the 5-bin mailbox, open the jam-access door.



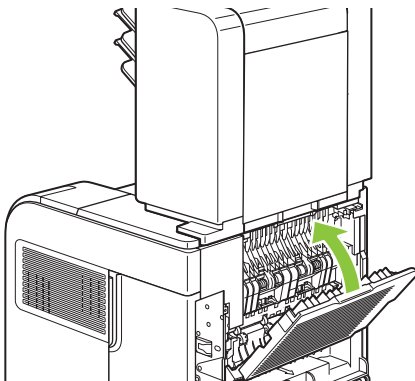
3. If the paper is jammed at the top of the 5-bin mailbox, pull it straight down to remove it.



4. If the paper is jammed at the bottom of the 5-bin mailbox, open the rear output bin, and then pull straight up on the paper to remove it.



5. Close the jam-access door and the rear output bin.



Jam recovery

This product provides jam recovery, a feature that you can use to reprint jammed pages. The following options are available:

- **AUTO** — The product attempts to reprint jammed pages when sufficient memory is available.
- **OFF** — The product does not attempt to reprint jammed pages. Because no memory is used to store the most recent pages, performance is optimal.



NOTE: When using this option, if the product runs out of paper and the job is being printed on both sides, some pages can be lost.

- **ON** — The product always reprints jammed pages. Additional memory is allocated to store the last few pages printed. This might cause overall performance to suffer.

Set the jam recovery feature

1. Press **Menu**
2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press **OK**.
3. Press the down arrow ▼ to highlight **SYSTEM SETUP**, and then press **OK**.
4. Press the down arrow ▼ to highlight **JAM RECOVERY**, and then press **OK**.
5. Press the down arrow ▼ or the up arrow ▲ to highlight the appropriate setting, and then press **OK**.

Product feeds incorrect page size

Product feeds incorrect page size

Cause	Solution
The correct size paper is not loaded in the input tray.	Load the correct size paper in the input tray.
The correct size paper is not selected in the software program or printer driver.	Confirm that the settings in the software program and printer driver are correct, because the software program settings override the printer driver and control panel settings, and the printer driver settings override the control panel settings. For more information, see user guide.
The correct size paper for the tray is not selected in the product control panel.	From the control panel, select the correct size paper for the tray.
The paper size is not configured correctly for the input tray.	Print a configuration page or use the control panel to determine the paper size for which the tray is configured.
The guides in the tray are not against the paper.	Verify that the paper guides are touching the paper.

Output is curled or wrinkled

Output is curled or wrinkled

Cause	Solution
Paper does not meet the specifications for this product.	Use only paper that meets the HP paper specifications for this product.
Paper is damaged or in poor condition.	Remove paper from the input tray and load paper that is in good condition.
Product is operating in an excessively humid environment.	Verify that the printing environment is within humidity specifications.
You are printing large, solid-filled areas.	Large, solid-filled areas can cause excessive curl. Try using a different pattern.
Paper used was not stored correctly and might have absorbed moisture.	Remove paper and replace it with paper from a fresh, unopened package.
Paper has poorly cut edges.	Remove paper, flex it, rotate it 180 degrees or turn it over, and then reload it into the input tray. Do not fan paper. If the problem persists, replace the paper.
The specific paper type was not configured for the tray or selected in the software.	Configure the software for the paper (see the software documentation). Configure the tray for the paper, see Load trays on page 54 .
The paper has previously been used for a print job.	Do not re-use paper.

Product will not duplex or duplexes incorrectly

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

Cause	Solution
You are trying to duplex on unsupported paper.	Verify that the paper is supported for duplex printing.
The printer driver is not set up for duplex printing.	Set up the printer driver to enable duplex printing.
The first page is printing on the back of preprinted forms or letterhead.	Load preprinted forms and letterhead in Tray 1 with the letterhead or printed side down, with the top of the page toward the back of the product. For Tray 2, 3, 4 and 5, load the paper printed side up with the top of the page toward the back of the product.
The product model does not support automatic 2-sided printing.	Print a configuration page to verify that a duplex accessory is installed and enabled.
The product configuration is not set for duplexing.	<p>In Windows, run the automatic configuration feature:</p> <ol style="list-style-type: none">1. Click the Start button, point to Settings, and then click Printers (for Windows 2000) or Printers and Faxes (for Windows XP).2. Right-click the HP product icon, and then click Properties or Printing Preferences.3. Click the Device Settings tab.4. Under Installable Options, click Update Now in the Automatic Configuration list.

Solve image quality problems

Image defects

These examples identify the most common print-quality problems. If you still have problems after trying the suggested solutions, contact HP Customer Support.

Table 7-10 Image defect examples

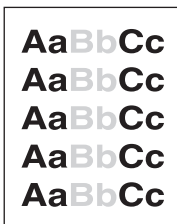

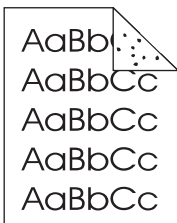

Problem	Image example	Solution
Light print (partial page)		<ol style="list-style-type: none"> 1. Make sure that the print cartridge is fully installed. 2. The toner level in the print cartridge might be low. Replace the print cartridge. 3. The paper might not meet HP specifications (for example, the paper is too moist or too rough). See Paper and print media on page 47.
Light print (entire page)		<ol style="list-style-type: none"> 1. Make sure that the print cartridge is fully installed. 2. Make sure that the ECONOMODE setting is turned off at the control panel and in the printer driver. 3. Open the CONFIGURE DEVICE menu at the product control panel. Open the PRINT QUALITY submenu and increase the TONER DENSITY setting. See Print Quality submenu on page 30. 4. Try using a different type of paper. 5. The print cartridge might be almost empty. Replace the print cartridge. 6. Clean the product paper path. 7. Replace the transfer roller.
Specks		<p>Specks might appear on a page after a jam has been cleared.</p> <ol style="list-style-type: none"> 1. Print a few more pages to see if the problem corrects itself. 2. Clean the inside of the product and run a cleaning page to clean the fuser. (See Clean the paper path on page 95.) 3. Try using a different type of paper. 4. Check the print cartridge for leaks. If the print cartridge is leaking, replace it. 5. Clean the product paper path several times.
Dropouts		<ol style="list-style-type: none"> 1. Make sure that the environmental specifications for the product are being met. (See Operating environment on page 502.) 2. If the paper is rough, and the toner easily rubs off, open the CONFIGURE DEVICE menu at the product control panel. Open the PRINT QUALITY submenu, select FUSER MODES, and then select the paper type you are using. Change the setting to HIGH1 or HIGH2, which helps the toner fuse more completely onto the paper. (See Print Quality submenu on page 30.) 3. Try using a smoother paper that you know will work in the product. 4. Replace the transfer roller.

Table 7-10 Image defect examples (continued)

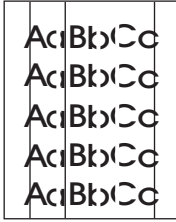


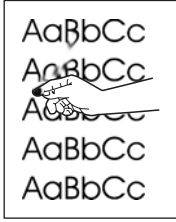
Problem	Image example	Solution
Lines		<ol style="list-style-type: none"> 1. Print a few more pages to see if the problem corrects itself. 2. Clean the inside of the product and run a cleaning page to clean the fuser. (See Clean the product on page 95.) 3. Replace the print cartridge.
Gray background		<ol style="list-style-type: none"> 1. Do not use paper that has already been run through the product. 2. Try using a different type of paper. 3. Print a few more pages to see if the problem corrects itself. 4. Turn over the paper in the tray. Also, try rotating the paper 180°. 5. Open the CONFIGURE DEVICE menu at the product control panel. On the PRINT QUALITY submenu, increase the TONER DENSITY setting. See Print Quality submenu on page 30. 6. Make sure that the environmental specifications for the product are being met. (See Operating environment on page 502.) 7. Clean the product paper path. 8. Replace the print cartridge.
Toner smear		<ol style="list-style-type: none"> 1. Print a few more pages to see if the problem corrects itself. 2. Try using a different type of paper. 3. Make sure that the environmental specifications for the product are being met. (See Operating environment on page 502.) 4. Clean the inside of the product and run a cleaning page to clean the fuser. (See Clean the product on page 95.) 5. Replace the print cartridge.
Loose toner		<p>Loose toner, in this context, is defined as toner that can be rubbed off the page.</p> <ol style="list-style-type: none"> 1. If paper is heavy or rough, open the CONFIGURE DEVICE menu at the product control panel. On the PRINT QUALITY submenu, select FUSER MODES, and then select the paper type you are using. Change the setting to HIGH1 or HIGH2, which helps the toner fuse more completely onto the paper. (See Print Quality submenu on page 30.) You must also set the type of paper for the tray you are using. (See Select the paper by source, type, or size on page 62.) 2. If you have observed a rougher texture on one side of your paper, try printing on the smoother side. 3. Make sure that the environmental specifications for the product are being met. (See Operating environment on page 502.) 4. Make sure that the type and quality of the paper you are using meet HP specifications. (See Paper and print media on page 47.)

Table 7-10 Image defect examples (continued)

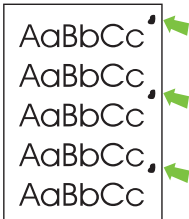
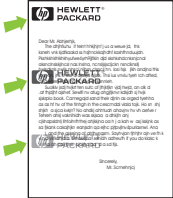
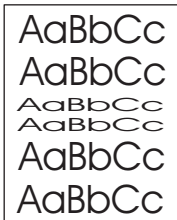
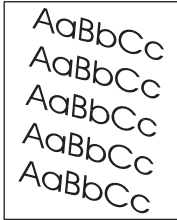
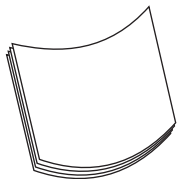
Problem	Image example	Solution
Repeat defects		<ol style="list-style-type: none"> 1. Print a few more pages to see if the problem corrects itself. 2. Clean the inside of the product and run a cleaning page to clean the fuser. (See Clean the product on page 95.) 3. The print cartridge might need to be replaced. <p>If the error persists, see Repetitive image defect ruler on page 278.</p>
Repeat image		<p>This type of defect might occur when using preprinted forms or a large quantity of narrow paper.</p> <ol style="list-style-type: none"> 1. Print a few more pages to see if the problem corrects itself. 2. Make sure that the type and quality of the paper you are using meet HP specifications. (See Paper and print media on page 47.) 3. The print cartridge might need to be replaced. <p>If the error persists, see Repetitive image defect ruler on page 278.</p>
Misformed characters		<ol style="list-style-type: none"> 1. Print a few more pages to see if the problem corrects itself. 2. Make sure that the environmental specifications for the product are being met. (See Operating environment on page 502.) 3. Make sure that the type and quality of the paper you are using meet HP specifications. (See Paper and print media on page 47.) 4. Try using another input tray.
Page skew		<ol style="list-style-type: none"> 1. Print a few more pages to see if the problem corrects itself. 2. Verify that no torn pieces of paper are inside the product. 3. Make sure that paper is loaded correctly and that all adjustments have been made. (See Load trays on page 54.) Make sure that the guides in the tray are not too tight or too loose against the paper. 4. Turn over the paper in the tray. Also, try rotating the paper 180°. 5. Make sure that the type and quality of the paper you are using meet HP specifications. (See Paper and print media on page 47.) 6. Make sure that the environmental specifications for the product are being met. (See Operating environment on page 502.) 7. If the error persists, replace the registration assembly.
Curl or wave		<ol style="list-style-type: none"> 1. Turn over the paper in the tray. Also, try rotating the paper 180°. 2. Make sure that the type and quality of the paper you are using meet HP specifications. (See Paper and print media on page 47.) 3. Make sure that the environmental specifications for the product are being met. (See Operating environment on page 502.) 4. Try printing to a different output bin. 5. If paper is lightweight and smooth, open the CONFIGURE DEVICE menu at the product control panel. On the PRINT QUALITY submenu, select FUSER MODES, and then select the paper type you are using. Change the setting to LOW, which helps reduce the heat in the fusing process. (See Print Quality

Table 7-10 Image defect examples (continued)

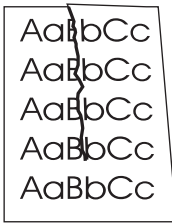

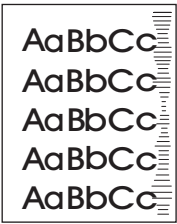
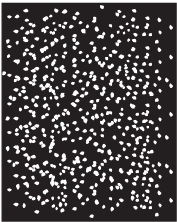
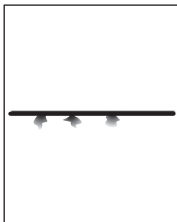
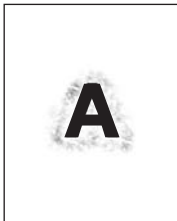


Problem	Image example	Solution
Wrinkles or creases		<p>submenu on page 30.) You must also set the type of paper for the tray you are using. (See Select the paper by source, type, or size on page 62.)</p> <ol style="list-style-type: none"> 1. Print a few more pages to see if the problem corrects itself. 2. Make sure that the environmental specifications for the product are being met. (See Operating environment on page 502.) 3. Turn over the paper in the tray. Also, try rotating the paper 180°. 4. Make sure that paper is loaded correctly and all adjustments have been made. (See Load trays on page 54.) 5. Make sure that the type and quality of the paper you are using meet HP specifications. (See Paper and print media on page 47.) 6. Try using another input tray. 7. If envelopes are creasing, try storing envelopes so that they lie flat. 8. If paper is lightweight and smooth, open the CONFIGURE DEVICE menu at the product control panel. On the PRINT QUALITY submenu, select FUSER MODES, and then select the paper type you are using. Change the setting to LOW, which helps reduce the heat in the fusing process. (See Print Quality submenu on page 30.) You must also set the type of paper for the tray you are using. (See Select the paper by source, type, or size on page 62.)
Vertical white lines		<ol style="list-style-type: none"> 1. Print a few more pages to see if the problem corrects itself. 2. Make sure that the type and quality of the paper you are using meet HP specifications. (See Paper and print media on page 47.) 3. Replace the print cartridge.
Tire tracks		<p>This defect typically occurs when the print cartridge has far exceeded its rated life. For example, if you are printing a very large quantity of pages with very little toner coverage.</p> <ol style="list-style-type: none"> 1. Replace the print cartridge. 2. Reduce the number of pages that you print with very low toner coverage.
White spots on black		<ol style="list-style-type: none"> 1. Print a few more pages to see if the problem corrects itself. 2. Make sure that the type and quality of the paper you are using meet HP specifications. (See Paper and print media on page 47.) 3. Make sure that the environmental specifications for the product are being met. (See Operating environment on page 502.) 4. Clean the product paper path. 5. Replace the print cartridge.

Table 7-10 Image defect examples (continued)

Problem	Image example	Solution
Scattered lines		<ol style="list-style-type: none"> 1. Make sure that the type and quality of the paper you are using meet HP specifications. (See Paper and print media on page 47.) 2. Make sure that the environmental specifications for the product are being met. (See Operating environment on page 502.) 3. Turn over the paper in the tray. Also, try rotating the paper 180°. 4. Open the CONFIGURE DEVICE menu at the product control panel. Open the PRINT QUALITY submenu and change the TONER DENSITY setting. (See Print Quality submenu on page 30.) 5. Open the CONFIGURE DEVICE menu at the product control panel. On the PRINT QUALITY submenu, open OPTIMIZE and set LINE DETAIL=ON.
Blurred print		<ol style="list-style-type: none"> 1. Make sure that the type and quality of the paper you are using meet HP specifications. (See Paper and print media on page 47.) 2. Make sure that the environmental specifications for the product are being met. (See Operating environment on page 502.) 3. Turn over the paper in the tray. Also, try rotating the paper 180°. 4. Do not use paper that already has been run through the product. 5. Decrease the toner density. Open the CONFIGURE DEVICE menu at the product control panel. Open the PRINT QUALITY submenu and change the TONER DENSITY setting. (See Print Quality submenu on page 30.) 6. Open the CONFIGURE DEVICE menu at the product control panel. On the PRINT QUALITY submenu, open OPTIMIZE and set HIGH TRANSFER=ON. (See Print Quality submenu on page 30.)
Random image repetition	 	<p>If an image that appears at the top of the page (in solid black) repeats further down the page (in a gray field), the toner might not have been completely erased from the last job. (The repeated image might be lighter or darker than the field it appears in.)</p> <ul style="list-style-type: none"> • Print the job several times to determine if the problem persists. • Change the tone (darkness) of the field that the repeated image appears in. • Change the order in which the images are printed. For example, have the lighter image at the top of the page, and the darker image farther down the page. • From your software program, rotate the whole page 180° to print the lighter image first. • If the defect occurs later in a print job, turn the product off for 10 minutes, and then turn it on to restart the print job.

Solve performance problems

Problem	Cause	Solution
Pages print but are totally blank.	The sealing tape might still be in the print cartridges.	Verify that the sealing tape has been completely removed from the print cartridges.
	The document might contain blank pages.	Check the document that you are printing to see if content appears on all of the pages.
	The product might be malfunctioning.	To check the product, print a configuration page.
Pages print very slowly.	Heavier media types can slow the print job.	Print on a different type of media.
	Complex pages can print slowly.	Proper fusing may require a slower print speed to ensure the best print quality.
	If printed in large batches, narrow paper can slow the print job.	Print on a different paper size or in smaller batches.
Pages did not print.	The product might not be pulling media correctly.	Make sure paper is loaded in the tray correctly. If the problem persists, you might need to replace the pickup rollers and the separation roller. See Removal and replacement on page 127 .
	The media is jamming in the product.	Clear the jam. See Jams on page 302 .
	The USB cable or network cable might be defective or incorrectly connected.	<ul style="list-style-type: none"> ● Disconnect the cable at both ends and reconnect it. ● Try printing a job that has printed in the past. ● Try using a different cable.
	Other devices are running on your computer.	The product might not share a USB port. If you have an external hard drive or network switchbox that is connected to the same port as the product, the other device might be interfering. To connect and use the product, you must disconnect the other device or you must use two USB ports on the computer.

Solve connectivity problems

Solve direct-connect problems


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

- Verify that the cable is connected to the computer and to the product.
- Verify that the cable is not longer than 2 meters (6 feet). Replace the cable if necessary.
- Verify that the cable is working correctly by connecting it to another product. Replace the cable if necessary.


Solve network connectivity problems

If the product is having problems communicating with the network, use the information in this section to resolve the problem.

Solve network printing problems

 **NOTE:** HP recommends that you use the product CD to install and set up the product on a network.

- Make sure that the network cable is securely seated into the product's RJ45 connector.
- Make sure that the Link LED on the formatter is lit. See [Understand lights on the formatter on page 243](#).
- Make sure that the I/O card is ready. Print a configuration page (see [Print the information and show-me-how pages on page 66](#)). If an HP Jetdirect print server is installed, printing a configuration page also prints a second page that shows the network settings and status.


 **NOTE:** The HP Jetdirect print server supports various network protocols (TCP/IP, IPX/SPX, Novell NetWare, AppleTalk, and DCL/LLC). Make sure that the correct protocols and network parameters are set correctly.

On the HP Jetdirect configuration page, verify the following items for your protocol:

- Under HP Jetdirect Configuration, the status is "I/O Card Ready."
- Protocol status is "Ready."
- An IP address is listed.
- The configuration method (Config by:) is listed correctly. See the network administrator if you are not sure which method is correct.
- The domain name is listed correctly.
- Try printing the job from another computer.
- To verify that a product works with a computer, use a USB cable to connect it directly to a computer. You will have to reinstall the printing software. Print a document from a program that has printed correctly in the past. If this works, a problem with the network might exist.
- Contact your network administrator for assistance.

Ping test

If the HP Jetdirect configuration page shows an IP address for the product, use this procedure to verify that you can communicate with the product over the network.


1. Press **Menu** .
2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press **OK**.
3. Press the down arrow ▼ to highlight **I/O**, and then press **OK**.
4. Press the down arrow ▼ to highlight **EMBEDDED JETDIRECT MENU**, and then press **OK**.
5. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press **OK**.
6. Press the down arrow ▼ to highlight **PING TEST**, and then press **OK**.
7. Set the appropriate options for each of the menu items:
 - **DEST TYPE**=IPv4 or IPv6
 - **DEST IP**=XXX.XXX.XXX.XXX
 - **PACKET SIZE**=64
 - **TIMEOUT**=1 second
 - **COUNT**=4
 - **PRINT RESULTS**=YES
 - **EXECUTE**=YES

After setting **EXECUTE**=YES, the ping test starts. If you selected to print the results, the product prints a page that lists the ping statistics. If the page prints, the test was successful.

Service mode functions

Service menu

The **SERVICE** menu is PIN-protected for added security. Only authorized service people have access to the **SERVICE** menu. When you select **SERVICE** from the list of menus, the product prompts you to enter an eight-digit PIN number.

- The PIN for the HP LaserJet P4014 models is 05401408.
 - The PIN for the HP LaserJet P4015 models is 05401508.
 - The PIN for the HP LaserJet P4515 models is 05451508.
1. Press **Menu** .
 2. Press the down arrow ▼ to highlight **SERVICE**, and then press **OK**.
 3. Enter the PIN using the alphanumeric keypad.
 4. Press **OK** to enter the PIN and open the **SERVICE** menu.


The following menu items appear in the **SERVICE** menu:

- **CLEAR EVENT LOG:** Use this item to clear the product event log.
- **CLEAR BOOTLOADER PASSWORD:** Use this item to clear the password that was set to prevent someone from performing an unauthorized cold reset on the product.
- **TOTAL PAGE COUNT:** After replacing the formatter, use this item to reset the page count so that the figure continues to represent the page count for the product engine. See [Reset page counts on page 338](#).
- **REFURBISH CYCLE COUNT:** Use this item to record the page count when the product was refurbished.
- **MAINTENANCE COUNT:** Use this item to set the number of pages that have been printed since the last maintenance kit was installed or the total number of pages that have been printed on the product if a maintenance kit has not yet been installed.
- **MAINTENANCE INTERVAL:** Use this item to specify the number of pages that can be printed before a maintenance kit message appears on the control panel to indicate that a maintenance kit is required.
- **SERIAL NUMBER:** After replacing the formatter, use this item to reset the product serial number.
- **SERVICE ID:** See [Service ID on page 337](#).
- **COLD RESET PAPER:** See [Cold reset paper on page 338](#).

Product resets


Restore factory-set defaults

Restoring the product to the factory-set defaults performs a simple reset and restores most of the factory (default) settings. This item also clears the input buffer for the active I/O.

1. Press **Menu** .
2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press **OK**.
3. Press the down arrow ▼ to highlight **RESETS**, and then press **OK**.
4. Press the down arrow ▼ to highlight **RESTORE FACTORY SETTINGS**, and then press **OK**.

Hard disk initialization


A hard disk initialization will erase and reformat the product's hard disk. Perform hard disk initialization only if an error code displays on the control panel indicating a disk error. Always try initializing the hard disk before replacing it.

1. Turn the product on.
2. As the product performs its power-on sequence, press and hold the **Menu** button  until all three lights on the control panel are lit.
3. Press the back arrow ↵. The message **INITIALIZE DISC** displays on the control panel.
4. Press **OK**. The product initializes the hard disk and continues the power-on sequence.

NVRAM initialization

- △ **CAUTION:** Initializing NVRAM resets the serial number, the event log, the page counts, the calibration settings, and the EIO card. Use the **SERVICE** menu to restore the serial number and page counts. You also need to reconfigure any computers that print to this product to recognize the product. Initialize NVRAM only when absolutely necessary. In most situations, use a cold reset to reset product variables but still retain the needed values in the **SERVICE** menu.

Before initializing NVRAM, print a configuration page and a supplies status page to gather the following information:

- Total page count
 - Serial number
1. Turn the product on and watch the control panel display.
 2. When the display shows the memory count, press and hold the down arrow ▼ until all three lights on the control panel are lit.
 3. Press the up arrow ▲.
 4. Press **Menu** . The message **SKIP DISK LOAD** displays on the control panel.
 5. Press the up arrow ▲ until **NVRAM INIT** is highlighted, and then press **OK**. The product initializes NVRAM and then continues its power-on sequence.

Cold reset

A cold reset unlocks menus that have been previously locked and returns all of the control panel menu items (including EIO settings) to the factory defaults. However, it *does not* clear the values in the **SERVICE** menu (such as the serial number and page counts).



NOTE: Before performing a cold reset, print a menu map and a configuration page (see [Print the information and show-me-how pages on page 66](#)). Use the information on the configuration page to reset any customer-set configuration values that the cold reset procedure changes.

To perform a cold reset

1. Turn the product power off.
2. **For HP P4010/4510 Series printers:** Turn the product power on, and then hold down **OK** when the memory count begins.
3. Continue holding down **OK** until all three control-panel lights flash once and then remain on. This might take up to 10 seconds.
4. After the **SELECT LANGUAGE** message appears on the display, press **▲** (**Up Arrow** button) or **▼** (**Down Arrow** button) until **COLD RESET** is highlighted.
5. Press **OK**. The product performs a cold reset and then continues its power-on sequence.
6. Check all I/O settings and reset any customer-set configuration values.

Service ID

Use this item to show the date that the product was first used on the control panel. This eliminates the need for users to keep paper receipts for proof of warranty.

Restore the service ID

If you replace the formatter, the date is lost. Use this menu item to reset the date to the original date that the product was first used. The date format is YYDDD. Use the following formula to calculate the dates:

1. To calculate YY, subtract 1990 from the calendar year. For instance, if the product was first used in 2002, calculate YY as follows: $2002 - 1990 = 12$. YY = 12.
2. Subtract 1 from 10 (October is the tenth month of the year): $10 - 1 = 9$.

Multiply 9 by 30: $9 \times 30 = 270$.

-or-

Add 17 to 270: $270 + 17 = 287$. Thus, DDD = 287.

Convert the service ID to an actual date

You can use the product Service ID number to determine whether the product is still under warranty. Use the following formula to convert the Service ID into the installation date as follows:

1. Add 1990 to YY to get the actual year that the product was installed.
2. Divide DDD by 30. If there is a remainder, add 1 to the result. This is the month.
3. The remainder from the calculation in step 2 is the date.

Using the Service ID 12287 as an example, the date conversion is as follows:

1. $12 + 1990 = 2002$, so the year is 2002.
2. 287 divided by $30 = 9$ with a remainder of 17 . Since there is a remainder, add 1 to 9 to get 10 , which represents October.
3. The remainder in step 2 is 17 , so that is the date.
4. The complete date is 17-October-2002.



NOTE: A six-day grace period is built into the date system.

Reset page counts

The page count that is stored in NVRAM and printed on the configuration page represents the number of pages that the formatter has formatted (not including engine-test prints). If you install a new formatter when repairing a product, use this menu item to reset the page count to the previous value. In this way, the page count reflects the number of pages that the engine has printed rather than restarting the count for the new formatter.

Cold reset paper

When you perform a cold reset, the paper size that is stored in NVRAM is reset to the default factory setting. If you replace a formatter board in a country/region that uses A4 as the standard paper size, use this menu to reset the default paper size to A4. LETTER and A4 are the only available values.

8 Parts

- [Order parts, accessories, and supplies](#)
- [Order replacement parts](#)
- [How to use the parts lists and diagrams](#)
- [Customer/field-replaceable units](#)
- [Assembly locations](#)
- [Covers](#)
- [Internal components](#)
- [PCAs](#)
- [Input devices](#)
- [Output devices](#)
- [Alphabetical parts list](#)
- [Numerical parts list](#)

Order parts, accessories, and supplies

Several methods are available for ordering parts, supplies, and accessories.

Order directly from HP

You can obtain the following items directly from HP:

- **Replacement parts:** To order replacement parts in the U.S., go to www.hp.com/go/hpparts. Outside the United States, order parts by contacting your local authorized HP service center.
- **Supplies and accessories:** To order supplies in the U.S., go to www.hp.com/go/ljsupplies. To order supplies worldwide, go to www.hp.com/ghp/buyonline.html. To order accessories, go to www.hp.com/support/hpljp4010series or www.hp.com/support/hpljp4510series.

Order through service or support providers

To order a part or accessory, contact an HP-authorized service or support provider.

Order directly through the HP Easy Printer Care software

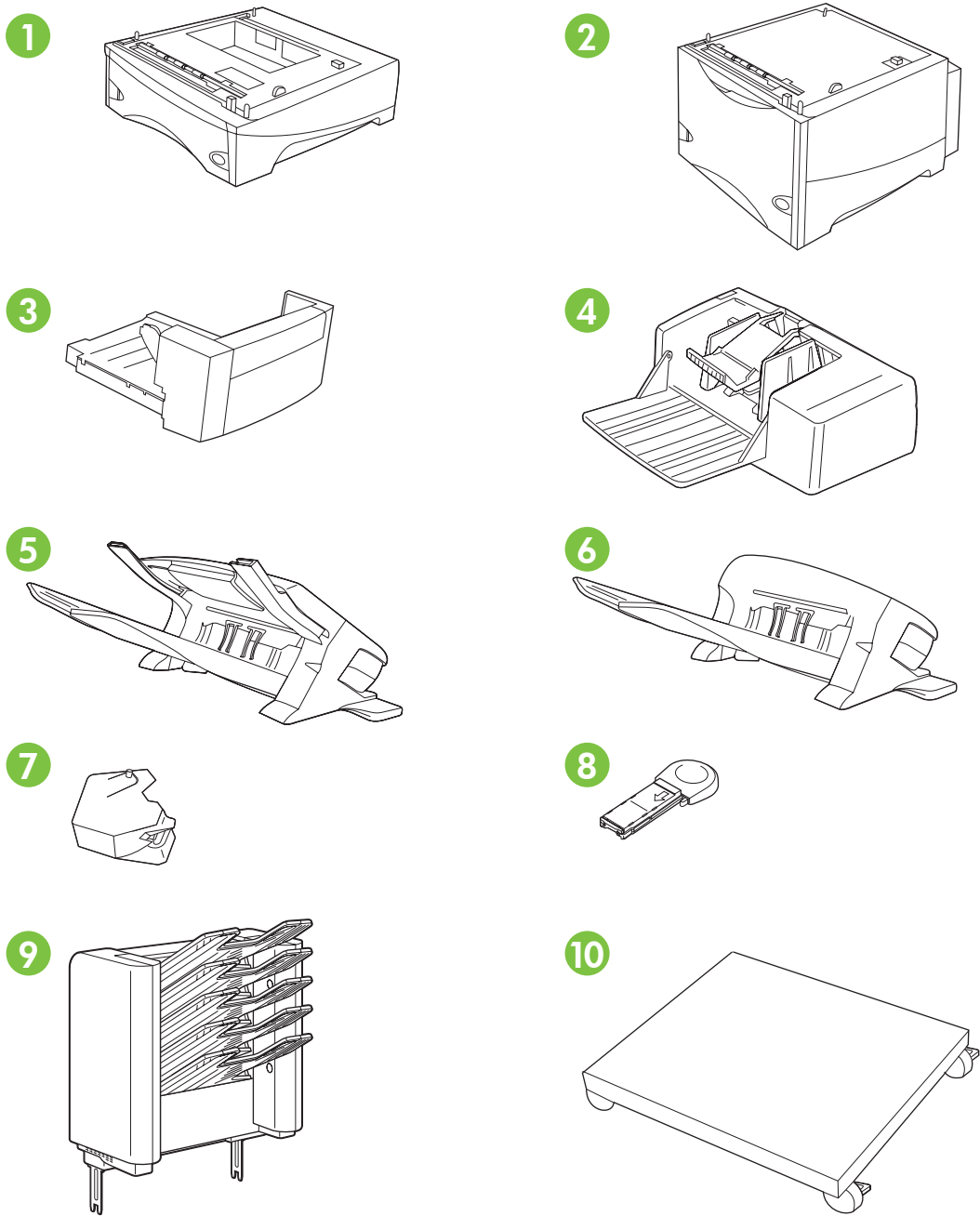
HP Easy Printer Care software is a product management tool designed to make product configuration, monitoring, supplies ordering, troubleshooting, and updating as simple and efficient as possible. For more information about HP Easy Printer Care software, see [Use the HP Easy Printer Care software on page 68](#).

Order replacement parts

The following list of accessories was current at the time of printing. Ordering information and availability of the accessories might change during the life of the product

Paper-handling accessories

Figure 8-1 Paper-handling accessories



Ref	Item	Description	Product number	Part number
1	Optional 500-sheet feeder	Optional tray to increase paper capacity. Holds Letter, A4, Legal, A5, B5 (JIS), Executive, and 8.5 x 13 inch paper sizes. The product can accommodate up to four optional 500-sheet feeders.	CB518A	CB518-67901

Ref	Item	Description	Product number	Part number
2	Optional 1,500-sheet feeder	Optional tray to increase paper capacity. Holds Letter, Legal, and A4 paper sizes.	CB523A	CB523-67901
3	Duplexer (duplex printing accessory)	Allows automatic printing on both sides of the paper.	CB519A	CB519-67901
4	Envelope feeder	Holds up to 75 envelopes.	CB524A	CB524-67901
5	500-sheet stapler/stacker	Allows for high-volume output with automatic job finishing. Staples up to 15 sheets of paper.	CB522A	CB522-67901
6	500-sheet stacker	Provides an additional output bin that holds 500 sheets.	CB521A	CB521-67901
7	Stapler unit	Holds the stapler cartridge and the stapler head. Order the stapler unit if you are experiencing stapler failure and an HP-authorized service or support provider advises you to replace the unit. NOTE: The staple cartridge is not included with the stapler unit and must be ordered separately, when it needs to be replaced.		Q3216-60501
8	1,000-staple cartridge	Provides three staple cartridges.	Q3216A	Q3216-60500
9	HP 5-bin mailbox	Provides five output bins that you can use to sort jobs.	CB520A	CB520-67901
10	Printer stand	Provides stability when multiple optional trays are installed. The stand has casters so you can easily move the product.	CB525A	

Print cartridges

Item	Description	Product number	Part number
HP LaserJet print cartridge	10,000-page cartridge	CC364A	CC364-67901
	24,000-page cartridge	CC364X	CC364-67902

Maintenance kits

Item	Description	Product number	Part number
Preventive maintenance kit	Contains a replacement fuser, a transfer roller, a transfer-roller tool, eight feed rollers, and one pair of disposable gloves. Includes instructions for installing each component.	CB388A (110 V)	
	The preventive maintenance kit is a consumable item, and its cost is not covered under the warranty or most extended warranty options.	CB389A (220 V)	
Multipurpose tray kit (Tray 1)	Contains a pickup roller, a feed roller, and a separation roller.		CB506-67905
Product roller kit (Trays 2, 3, 4, 5, 6)	Contains a pickup roller, a feed roller, and a separation roller.		CB506-67904

Item	Description	Product number	Part number
Transfer roller kit	Contains one transfer roller.		CB506-67903
Fusing kit	Contains one fuser assembly.		CB506-67901 (110 V) CB506-67902 (220 V)

Memory

Item	Description	Product number	Part number
44 x 32-pin DDR2 memory DIMM (dual inline memory module)	64 MB	CC413A	CC413-67901
	128 MB	CC414A	CC414-67901
Boosts the ability of the product to handle large or complex print jobs.	256 MB	CC415A	CC415-67901
	512 MB	CE483A	CE483-67901

Cables and interfaces

Item	Description	Product number	Part number
Enhanced I/O (EIO) cards	HP High Performance Serial ATA EIO Hard Disk	J6073G	CB506-67907
HP Jetdirect print server multi-protocol EIO network cards	1284B parallel adaptor	J7972G	J7972-61001
	HP Jetdirect EIO wireless 690n (IPv6/IPsec)	J8007G	
	HP Jetdirect en3700	J7942G	J7942-61031
	HP Jetdirect en1700	J7988G	J7988-61001
	HP Jetdirect ew2400 USB wireless print server	J7951G	J7951-61021
	HP Jetdirect 630n EIO networking card (IPv6/gigabit)	J7997G	J7997-61001
	HP Jetdirect 635n EIO networking card (IPv6/IPsec)	J7961G	J7961-69011
USB cable	2-meter A to B cable	C6518A	

Paper

For more information about paper, go to <http://www.hp.com/go/ljsupplies>.

Item	Description	Product number
HP Soft Gloss laser paper	Letter (220 x 280 mm), 50 sheets/box	C4179A/Asia-Pacific countries/regions
For use with HP LaserJet printers. Coated paper, good for business documents with high impact, such as brochures, sales material, and documents with graphics and photographic images.	A4 (210 x 297 mm), 50 sheets/box	C4179B/Asia-Pacific countries/regions and Europe
Specifications: 32 lb (120 g/m ²).		
HP LaserJet tough paper	Letter (8.5 x 11 inch), 50 sheets to a carton	Q1298A/North America
For use with HP LaserJet printers. This satin-finish paper is waterproof and tear-proof, yet doesn't compromise on print quality or performance. Use it for signs, maps, menus, and other business applications.	A4 (210 x 297 mm), 50 sheets to a carton	Q1298B/Asia-Pacific countries/regions and Europe
HP Premium Choice LaserJet paper	Letter (8.5 x 11 inch), 500 sheets/ream, 10-ream carton	HPU1132/North America
HP's brightest LaserJet paper. Expect spectacular color and crisp black from this paper that is extra smooth and brilliantly white. Ideal for presentations, business plans, external correspondence and other high-value documents	Letter (8.5 x 11 inch), 250 sheets/ream, 6-ream carton	HPU1732 North America
	A4 (210 x 297 mm), 5-ream carton	Q2397A/Asia-Pacific countries/regions
	A4 (210 x 297 mm), 250 sheet/ream, 5-ream carton	CHP412/Europe
Specifications: 98 bright, 32 lb. (75 g/m ²).	A4 (210 x 297 mm), 500 sheet/ream, 5-ream carton	CHP410/Europe
	A4 (210 x 297 mm), 160 g/m ² , 500 sheet/ream, 5-ream carton	CHP413/Europe
HP LaserJet paper	Letter (8.5 x 11 inch), 500 sheets/ream, 10-ream carton	HPJ1124/North America
For use with HP LaserJet printers. Good for letterhead, high-value memos, legal documents, direct mail, and correspondence.	Legal (8.5 x 14 inch), 500 sheets/ream, 10-ream carton	HPJ1424/North America
Specifications: 96 bright, 24 lb (90 g/m ²).	A Letter (220 x 280 mm), 500 sheets/ream, 5-ream carton	Q2398A/Asia-Pacific countries/regions
	A4 (210 x 297 mm), 500 sheets/ream, 5-ream carton	Q2400A/Asia-Pacific countries/regions
	A4 (210 x 297 mm), 500 sheets/ream	CHP310/Europe

Item	Description	Product number
<p>HP Printing paper</p> <p>For use with HP LaserJet and inkjet printers. Created especially for small and home offices. Heavier and brighter than copier paper.</p> <p>Specifications: 92 bright, 22 lb.</p>	Letter (8.5 x 11 inch), 500 sheets/ream, 10-ream carton	HPP1122/North America and Mexico
	Letter (8.5 x 11 inch), 500 sheets/ream, 3-ream carton	HPP113R/North America
	A4 (210 x 297 mm), 500 sheets/ream, 5-ream carton	CHP210/Europe
	A4 (210 x 297 mm), 300 sheets/ream, 5-ream carton	CHP213/Europe
<p>HP Multipurpose paper</p> <p>For use with all office equipment-laser and inkjet printers, copiers, and fax machines. Created for businesses that want one paper for all their office needs. Brighter and smoother than other office papers.</p> <p>Specifications: 90 bright, 20 lb (75 g/m²).</p>	Letter (8.5 x 11 inch), 500 sheets/ream, 10-ream carton	HPM1120/North America
	Letter (8.5 x 11 inch), 500 sheets/ream, 5-ream carton	HPM115R/North America
	Letter (8.5 x 11 inch), 250 sheets/ream, 12-ream carton	HP25011/North America
	Letter (8.5 x 11 inch), 3-hole, 500 sheets/ream, 10-ream carton	HPM113H/North America
	Legal (8.5 x 14 inch), 500 sheets/ream, 10-ream carton	HPM1420/North America
<p>HP Office paper</p> <p>For use with all office equipment-laser and inkjet printers, copiers, and fax machines. Good for high-volume printing.</p> <p>Specifications: 84 bright, 20 lb (75 g/m²).</p>	Letter (8.5 x 11 inch), 500 sheets/ream, 10-ream carton	HPC8511/North America and Mexico
	Letter (8.5 x 11 inch), 3-hole, 500 sheets/ream, 10-ream carton	HPC3HP/North America
	Legal (8.5 x 14 inch), 500 sheets/ream, 10-ream carton	HPC8514/North America
	Letter (8.5 x 11 inch), Quick Pack; 2,500-sheet carton	HP2500S/North America and Mexico
	Letter (8.5 x 11 inch), Quick Pack 3-hole; 2,500-sheet carton	HP2500P/North America
	A Letter (220 x 280 mm), 500 sheets/ream, 5-ream carton	Q2408A/Asia-Pacific countries/regions
	A4 (210 x 297 mm), 500 sheets/ream, 5-ream carton	Q2407A/Asia-Pacific countries/regions
	A4 (210 x 297 mm), 500 sheets/ream, 5-ream carton	CHP110/Europe
	A4 (210 x 297 mm), Quick Pack; 2500 sheets/ream, 5-ream carton	CHP113/Europe

Item	Description	Product number
HP Office recycled paper	Letter (8.5 x 11 inch), 500 sheets/ream, 10-ream carton	HPE1120/North America
For use with all office equipment-laser and inkjet printers, copiers, and fax machines. Good for high-volume printing.	Letter (8.5 x 11 inch), 3-hole, 500 sheets/ream, 10-ream carton	HPE113H/North America
Satisfies U.S. Executive Order 13101 for environmentally preferable products.	Legal (8.5 x 14 inch), 500 sheets/ream, 10-ream carton	HPE1420/North America
Specifications: 84 bright, 20 lb, 30% post-consumer content.		
HP LaserJet transparencies	Letter (8.5 x 11 inch), 50 sheets to a carton	92296T/North America, Asia-Pacific countries/regions, and Europe
For use only with HP LaserJet monochrome printers. For crisp, sharp text and graphics, rely on the only transparencies specifically designed and tested to work with monochrome HP LaserJet printers.	A4 (210 x 297 mm), 50 sheets to a carton	922296U/Asia-Pacific countries/regions and Europe
Specifications: 4.3-mil thickness.		

How to use the parts lists and diagrams

The figures in this chapter show the major subassemblies in the product and their component parts. A parts list table follows each exploded view assembly diagram. Each table lists the item number, the associated part number, and the description of each part. If a part is not listed in the table, then it is not a field replacement unit (FRU).

△ **CAUTION:** Be sure to order the correct part. When looking for part numbers for electrical components, pay careful attention to the voltage that is listed. Doing so will ensure that the part number selected is for the correct model.

📋 **NOTE:** In this manual, the abbreviation “PCA” stands for “printed circuit-board assembly.” Components described as a PCA might consist of a single circuit board or a circuit board plus other parts, such as cables and sensors.

Customer/field-replaceable units

Part	Part number
Fusing assembly (110 V)	CB506-67901
Fusing assembly (220 V)	CB506-67902
500-sheet paper cassette	RM1-4559-000CN
Transfer roller	CB506-67903
Formatter cover (P4015/P4515)	RC2-2468-000CN
Formatter cover (P4014)	RC2-5757-000CN
Formatter (P4014, base model)	CB437-69001
Formatter (network models)	CB438-69001
Option cover	RC2-2459-000CN
Face-up tray assembly (P4015/4515)	RMI-4531-000CN
Face-up tray assembly (P4014)	RMI-5448-000CN
Paper pickup roller	RM1-0036-000CN
Paper feed roller	RM1-0037-020CN
Feed roller (separation roller)	RMI-4571-000CN
Cassette torque limiter	RC2-5262-000CN
Duplexing outer cover (P4015/4515)	RC2-2510-000CN
Duplexing outer cover (P4014)	RC2-5760-000CN
Envelope cover	RL1-1667-000CN
Envelope connector cover (P4015/4515)	RC2-2476-000CN
Envelope connector cover (P4014)	RC2-5759-000CN
Optional 500-sheet feeder (plus tray)	CB518-67901
Optional envelope feeder	CB524-67901
Optional duplex accessory	CB519-67901
Optional 500-sheet stacker	CB521-67901
Optional 500-sheet stapler/stacker	CB522-67901
Optional 1,500-sheet feeder	CB523-67901
Optional 5-bin mailbox	CB520-67901
Optional printer stand	CB525A
Tray 1 feed roller	RL1-1663-000CN
Tray 1 pickup roller	RL1-1641-000CN
Tray 1 separation roller	RL1-1654-000CN
Legal tray cover (P4015/4515)	RC2-5239-000CN
Legal tray cover (P4014)	RC2-5761-000CN

Part	Part number
Control-panel overlay (P4015/4515)	CB509-60102 (French/Spanish)
	CB509-60103 (German/French/Italian)
	CB509-60104 (Norwegian/Swedish/Finnish/Estonian/Latvian/Lithuanian)
	CB509-60105 (German/French/Italian/Spanish/Portuguese/Dutch/Catalan)
	CB509-60106 (Czech/Hungarian/Polish/Slovak/Croatian/Romanian/Serbian)
	CB509-60107 (Russian/Ukrainian/Bulgarian/Kazakh/Turkish/Greek)
Control-panel overlay (P4014)	CB508-60102 (French/Spanish)
	CB508-60103 (German/French/Italian)
	CB508-60104 (Norwegian/Swedish/Finnish/Estonian/Latvian/Lithuanian)
	CB508-60105 (German/French/Italian/Spanish/Portuguese/Dutch/Catalan)
	CB508-60106 (Czech/Hungarian/Polish/Slovak/Croatian/Romanian/Serbian)
	CB508-60107 (Russian/Ukrainian/Bulgarian/Kazakh/Turkish/Greek)
Maintenance kit	CB388A (110 V)
	CB389A (220 V)
Memory	CC413-67901 (64 MB)
	CC414-67901 (128 MB)
	CC415-67901 (256 MB)
	CC483-67901 (512 MB)
EIO hard disk drive (20 GB)	CB506-67907
USB cable (2-meter, A to B)	C6518A
EIO card 1248B parallel adaptor	J7972G
JetDirect EIO wireless 690n (IPv6/IPsec)	J8007G
JetDirect EIO en3700	J7942G
JetDirect EIO en1700	J7988G
JetDirect EIO en2400 USB wireless	J7951G
JetDirect 630n EIO networking card (IPv6/IPsec)	J7997G
JetDirect 635n EIO networking card	J7961G
1,000-staple cartridge	Q3216-60500
Print cartridge	CC364-67901 (10,000 pages)
	CC364-67902 (24,000 pages)

Assembly locations

Figure 8-2 Assembly locations—base unit

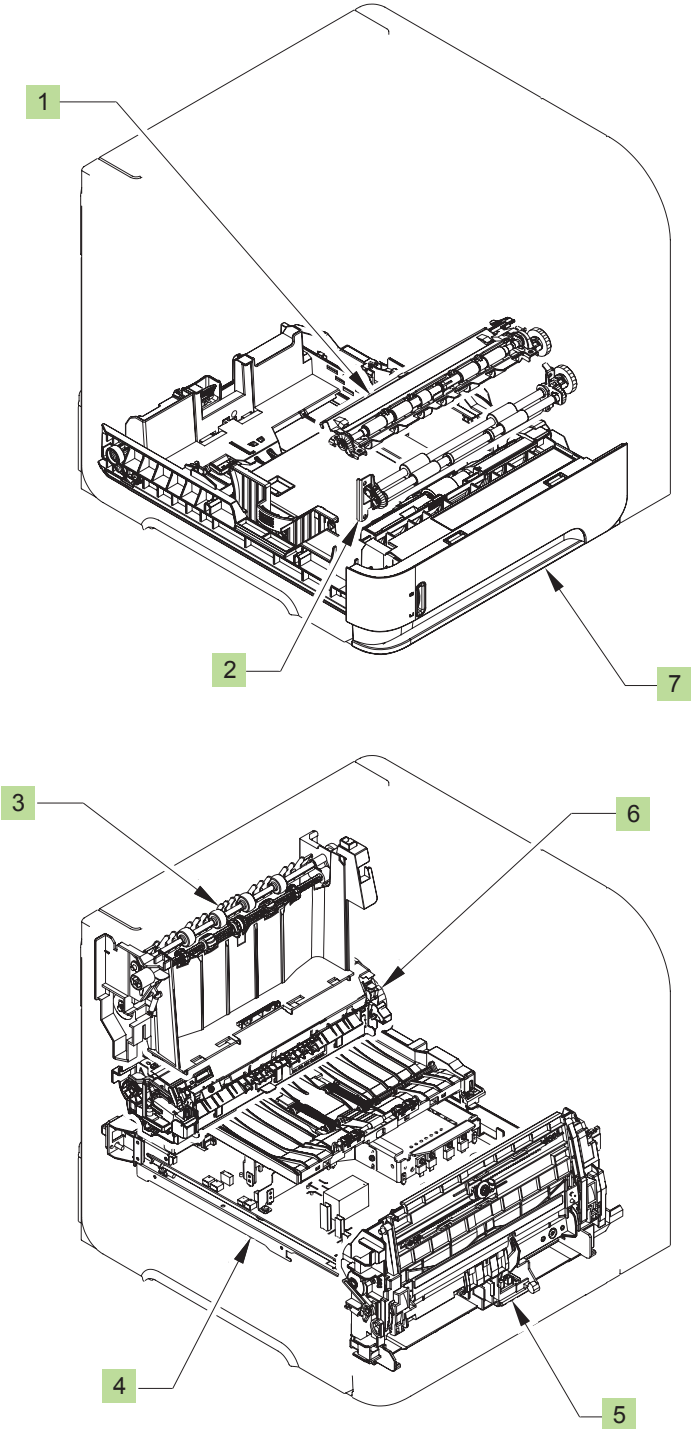
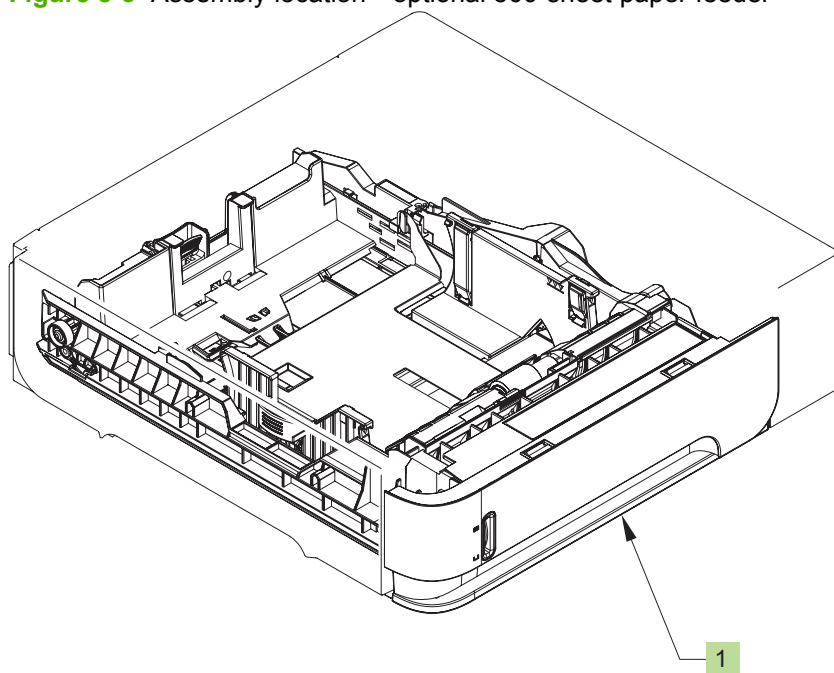


Table 8-1 Assembly locations—base unit

Ref.	Description	Details
1	Registration assembly	See Figure 8-6 Internal components (1 of 3) on page 356.
2	Paper feed roller assembly	See Figure 8-6 Internal components (1 of 3) on page 356.

Table 8-1 Assembly locations—base unit (continued)

Ref.	Description	Details
3	Paper delivery assembly	See Figure 8-12 Paper delivery assembly on page 378.
4	Power supply assembly	See Figure 8-9 Power supply assembly on page 368.
5	Multipurpose tray (Tray 1) pickup assembly	See Figure 8-11 Multipurpose pickup assembly on page 374.
6	Fuser assembly	See Figure 8-13 Fusing assembly on page 380.
7	500-sheet cassette (Tray 2)	See Figure 8-10 500-sheet cassette on page 370.

Figure 8-3 Assembly location—optional 500-sheet paper feeder**Table 8-2 Assembly location—optional 500-sheet paper feeder**

Ref.	Description	Details
1	Optional 500-sheet paper feeder	See Input devices on page 390.

Figure 8-4 Assembly locations—optional 1,500-sheet paper feeder

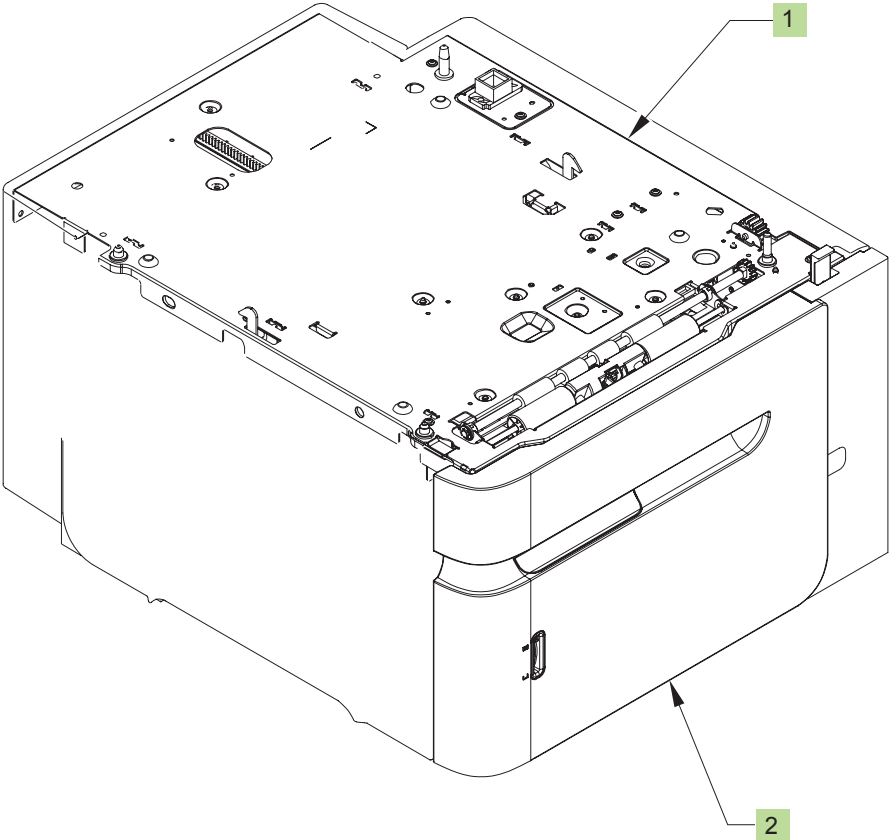


Table 8-3 Assembly locations—optional 1,500-sheet paper feeder

Ref.	Description	Details
1	Paper pickup assembly	See Figure 8-23 Optional 1,500-sheet feeder paper pickup assembly on page 410.
2	Front door assembly	See Figure 8-20 Optional 1,500-sheet feeder front door assembly on page 400.

Covers

Figure 8-5 Covers—base unit

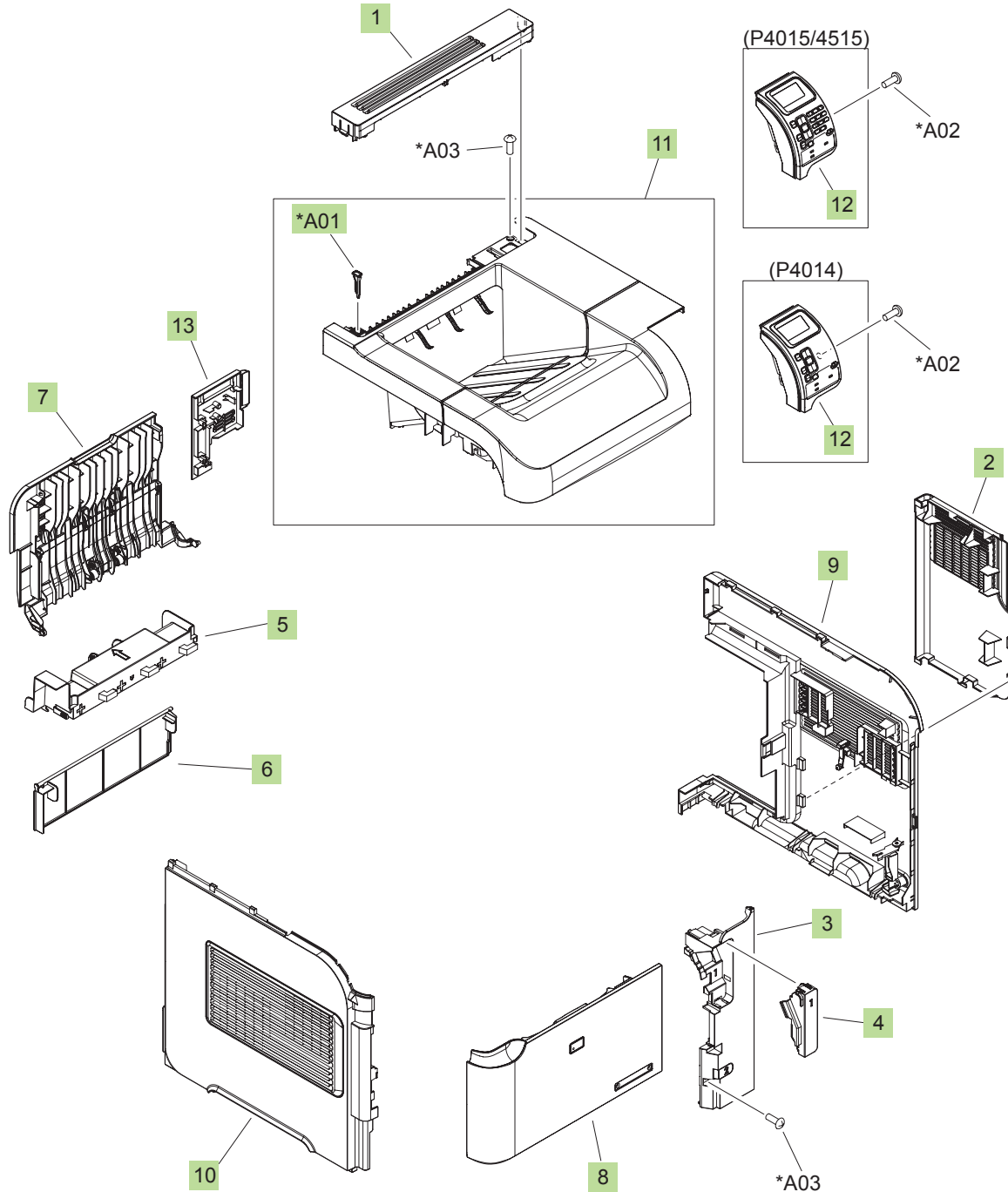


Table 8-4 Covers—base unit

Ref	Description	Part number	Qty
1	Cover, option	RC2-2459-000CN	1
2	Cover, formatter (P4015/P4515)	RC2-2468-000CN	1
2	Cover, formatter (P4014)	RC2-5757-000CN	1
3	Cover, right front (P4015/P4515)	RC2-2475-000CN	1
3	Cover, right front (P4014)	RC2-5758-000CN	1
4	Cover, envelope connector (P4015/P4515)	RC2-2476-000CN	1
4	Cover, envelope connector (P4014)	RC2-5759-000CN	1
5	Cover, duplexing outer (P4015/P4515)	RC2-2510-000CN	1
5	Cover, duplexing outer (P4014)	RC2-5760-000CN	1
6	Cover, legal (P4015/P4515)	RC2-5239-000CN	1
6	Cover, legal (P4014)	RC2-5761-000CN	1
7	Face-up tray assembly (P4015/P4515)	RM1-4531-000CN	1
7	Face-up tray assembly (P4014)	RM1-5448-000CN	1
8	Front cover assembly	RM1-4534-000CN	1
9	Right cover assembly (P4015/P4515)	RM1-4550-000CN	1
9	Right cover assembly (P4014)	RM1-5449-000CN	1
10	Left cover assembly (P4015/P4515)	RM1-4551-000CN	1
10	Left cover assembly (P4014)	RM1-5450-000CN	1
11	Top cover assembly (P4015/P4515)	RM1-4552-000CN	1
11	Top cover assembly (P4014)	RM1-5250-000CN	1
12	Control panel assembly (P4015/P4515)	RM1-5059-000CN	1
12	Control panel assembly (P4014)	RM1-5060-000CN	1
13	Cover, right rear (P4015/P4515)	RC2-2478-000CN	1
13	Cover, right rear (P4014)	RC2-5768-000CN	1
A01	Pin, option	RC1-0306-000CN	1
A02	Screw, tapping, pan head, M4x10		3
A03	Screw, D, M3x8		6

¹ Only orderable parts have part numbers.

Internal components

Figure 8-6 Internal components (1 of 3)

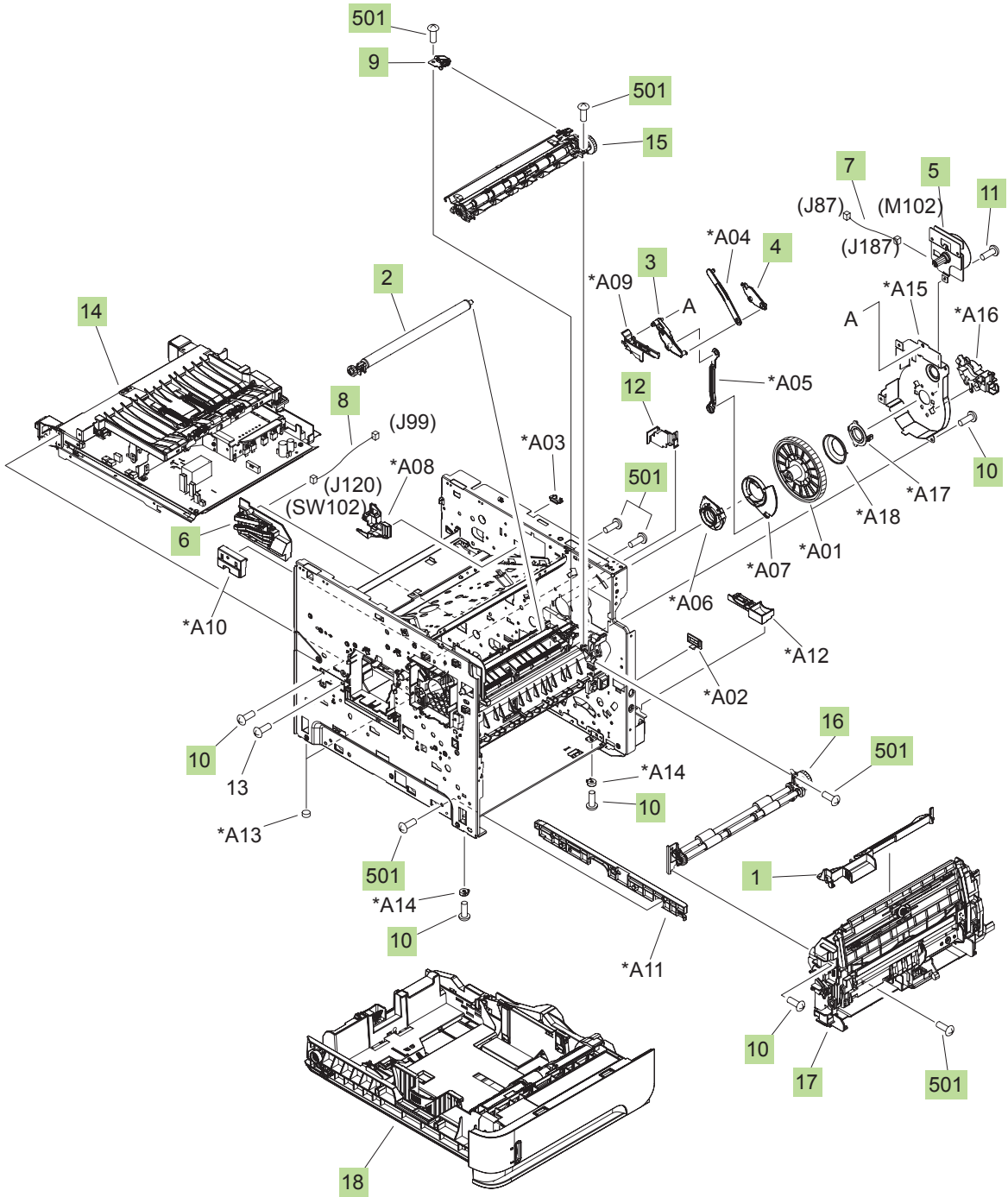


Table 8-5 Internal components (1 of 3)

Ref	Description	Part number	Qty
1	Cover, envelope	RL1-1667-000CN	1
2	Transfer roller assembly	CB506-67903	1
3	Arm, release, A	RC2-2480-000CN	1
4	Arm, release, B	RC2-2481-000CN	1
5	Motor, DC, 24 V, drum drive	RL1-1659-000CN	1
6	Size detect assembly	RM1-4525-000CN	1
7	Cable, drum motor	RM1-5090-000CN	1
8	Cable, size sensor	RM1-5091-000CN	1
9	Grounding plate assembly	RM1-5461-000CN	1
10	Screw, D, M3x8	XA9-1671-000CN	18
11	Screw, tap, M3x6	XA9-1503-000CN	3
12	Guide, connecting cable	RC1-0386-000CN	1
13	Screw, M4x5		2
14	Power-supply assembly, 110-127 V (see Figure 8-9 Power supply assembly on page 368)		1
14	Power-supply assembly, 220-240 V (see Figure 8-9 Power supply assembly on page 368)		1
15	Registration assembly	RM1-5460-000CN	1
16	Paper feed roller assembly	RM1-4527-000CN	1
17	Multipurpose tray pickup assembly	RM1-4563-000CN	1
18	500-sheet tray cassette	RM1-4559-000CN	1
501	Screw, tapping, pan head, M4x10	XB4-7401-007CN	24
A01	Gear, 193T		1
A02	Guard, edge		1
A03	Clamp, cord		1
A04	Rod, release, upper		1
A05	Rod, release, lower		1
A06	Guide, gear shift, A		1
A07	Guide, gear shift, B		1
A08	Guide, scanner cable		1
A09	Guide, gear		1
A10	Guide, cassette right, rear		1
A11	Guide, cassette left, rear		1
A12	Support, power supply switch		1
A13	Foot		2

Table 8-5 Internal components (1 of 3) (continued)

Ref	Description	Part number	Qty
A14	Spacer, frame		2
A15	Side plate, drum drive		1
A16	Cap, drum gear		1
A17	Bushing		1
A18	Spring, compression		1

¹ Only orderable parts have part numbers.

This exploded view diagram illustrates the assembly of a mechanical unit, likely a pump or motor. The central component is a rectangular housing (1) which contains internal parts like a rotor (2) and stator (3). Various screws (*A02, *A03, *A04, *A05, *A06, *A07, *A08, *A09, *A10, *A11, *A12, *A13, *A14, *A15, *A16, *A17, *A18, *A19, *A20, *A21, *A22, *A23, *A24, *A25, *A26, *A27, *A28, *A29) and pins are used to secure the assembly. Key components are labeled with part numbers in green boxes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, and 501. Specific sub-assemblies are identified by codes in parentheses: (J86), (J93), (J145), (J77), (CL101), (SL101), (M101), (J72), (J74), (PS107), (PS907), and (PS101). The diagram shows the spatial relationship and assembly sequence of these components.

Table 8-6 Internal components (2 of 3)

Ref	Description	Part number	Qty
1	Laser scanner assembly	RM1-5465-000CN	1
2	Motor, DC, 24 V, main drive	RL1-1657-000CN	1
3	Shaft, retard drive	RL1-1658-000CN	1
4	Solenoid	RK2-0270-000CN	1
5	Paper pickup roller assembly	RM1-0036-020CN	1
6	Paper feed roller assembly	RM1-0037-020CN	1
7	Paper pickup drive assembly	RM1-4532-000CN	1
8	Tag holder assembly	RM1-4539-000CN	1
9	Paper feed shaft Z assembly	RM1-4562-000CN	1
10	Feeder sensor cable assembly		1
11	Ring, E	XD9-0232-000CN	1
12	Cable, feed motor	RM1-5089-000CN	1
13	Right front guide assembly	RM1-4576-000CN	1
14	Cable, laser	RM1-5087-000CN	1
15	Rod, switch	RC2-2667-000CN	1
16	Bushing	RC1-0206-000CN	1
17	Bushing, feed shaft	RC1-0264-000CN	1
18	Gear, 18T	RU5-0045-020CN	1
19	Gear, 23T	RU6-0159-000CN	1
20	Bushing	RC2-5783-000CN	2
21	Spring, tension	RU6-2115-000CN	2
22	Spring, compression	RC1-0213-000CN	1
501	Screw, tap, binding head, M3x8	XB4-7300-809CN	2
A01	Screw, tap, pan head, M4x10		1
A02	Screw, D, M3x8		28
A03	Spacer, scanner, front		1
A04	Spacer, scanner, rear		1
A05	Screw, tap, M3x6		10
A06	Guide, front		1
A07	Support, DCU		1
A08	Bushing		1
A09	Guide, cable, right front		1
A10	Lever, height prevention		1
A11	Holder, sheet sensor		1

Table 8-6 Internal components (2 of 3) (continued)

Ref	Description	Part number	Qty
A12	Guide, EPU, rear		1
A13	Clip, cable		1
A14	Saddle, wire		1
A15	Guide, lower		1
A16	Duct, scanner protective, 1		1
A17	Flag, shutter		1
A18	Spring, torsion		1
A19	Plate, RW crossmember		1
A20	Lever, lens		1
A21	Stopper, C right (P4015/P4515)		1
A21	Stopper, C right (P4014)		1
A22	Stopper, C left (P4015/P4515)		1
A22	Stopper, C left (P4014)		1
A23	Mount, lever		1
A24	Right stopper assembly		1
A25	Side plate, paper feed drive		1
A26	Gear, 29T		1
A27	Gear, 35T		1
A28	Gear, 37T/18T		1
A29	Gear, 17T/25T		1
A30	Spring, torsion		1
A31	Flag, paper presence detect		1
A32	Lid, scanner protective duct		1
A33	Duct, scanner protective, 2		1

¹ Only orderable parts have part numbers.

Figure 8-8 Internal components (3 of 3)

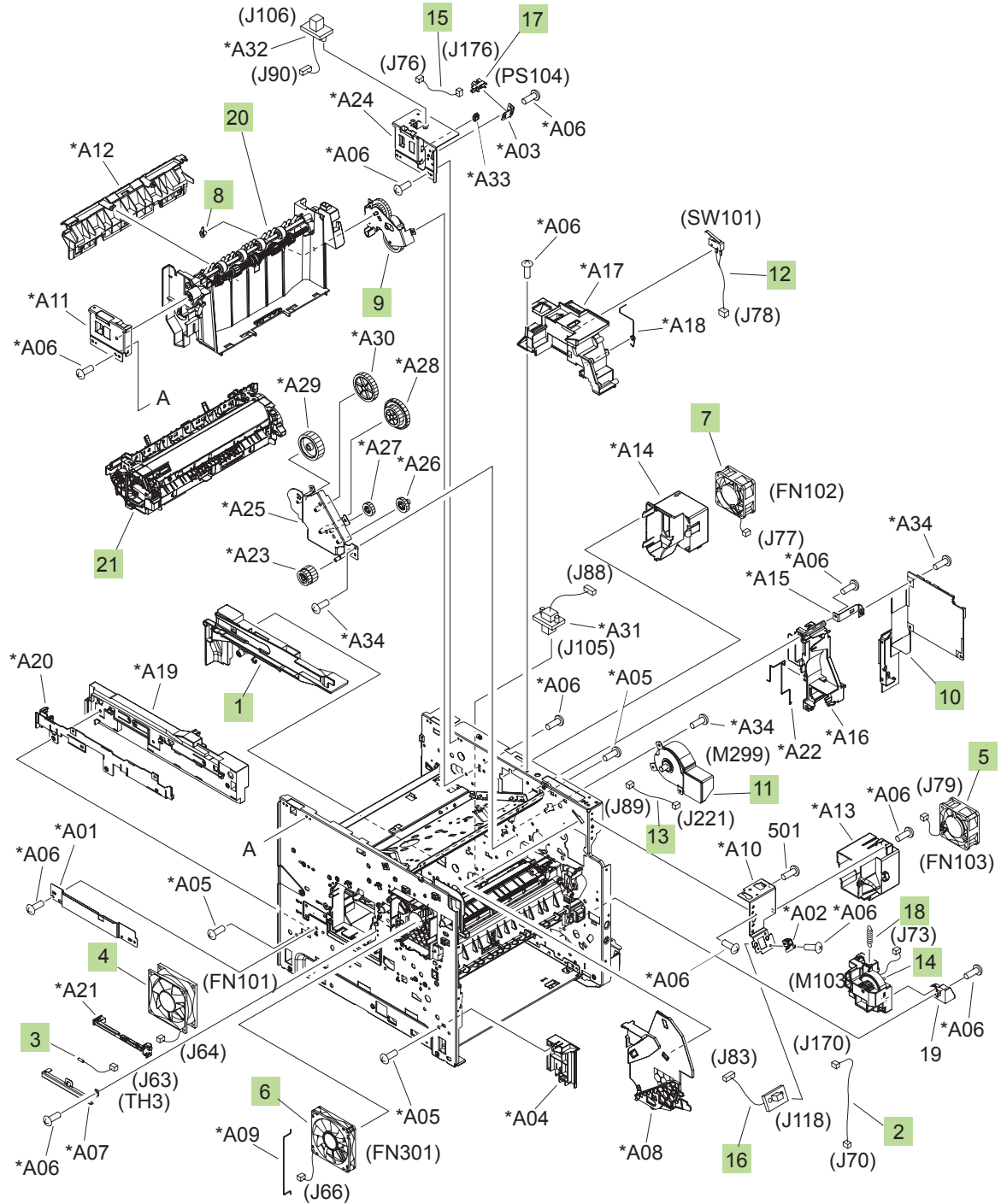


Table 8-7 Internal components (3 of 3)

Ref	Description	Part number	Qty
1	Right guide assembly (P4015/P4515)	RM1-4558-000CN	1
1	Right guide assembly (P4014)	RM1-5451-000CN	1
2	Cable, panel	RM1-5082-000CN	1
3	Thermistor unit	RK2-0359-000CN	1
4	Fan	RK2-1988-000CN	1
5	Fan	RK2-1989-000CN	1
6	Fan	RK2-1991-000CN	1
7	Fan	RK2-1992-000CN	1
8	Bushing, paper delivery	RC1-0136-000CN	1
9	Paper delivery drive assembly	RM1-4526-000CN	1
10	DC controller PCA	RM1-4582-000CN	1
11	Fuser motor assembly	RM1-5051-000CN	1
12	Cable, door switch	RM1-5080-000CN	1
13	Cable, fuser motor	RM1-5088-000CN	1
14	Lifter drive assembly	RM1-4585-000CN	1
15	Cable, full sensor	RM1-5081-000CN	1
16	Cable, envelope feeder	RM1-5085-000CN	1
17	IC, photo interrupter	WG8-5624-000CN	1
18	Spring, tension	RC1-0198-000CN	1
19	Support, lifter drive assembly		1
20	Paper delivery assembly (also see Figure 8-12 Paper delivery assembly on page 378)	RM1-4529-000CN	1
21	Fuser assembly (110-127 V) (also see Figure 8-13 Fusing assembly on page 380)	CB506-67901	1
21	Fuser assembly (220-240 V) (also see Figure 8-13 Fusing assembly on page 380)	CB506-67902	1
501	Screw, with washer, M3x6	XB2-7300-607CN	2
A01	Cover, connector		1
A02	Case, envelope		1
A03	Holder, sensor		1
A04	Front cassette LF guide assembly		1
A05	Screw, tap, pan head, M4x10		6
A06	Screw, D, M3x8		28
A07	Holder, sensor		1
A08	Guide, cartridge, right		1
A09	Rod, third fan		1

Table 8-7 Internal components (3 of 3) (continued)

Ref	Description	Part number	Qty
A10	Crossmember, front		1
A11	Crossmember, option, left		1
A12	Guide, rear		1
A13	Duct, second fan		1
A14	Duct, fourth fan		1
A15	Holder, DCU		1
A16	Guide, flat flexible cable		1
A17	Holder, check pin		1
A18	Spring, grounding		1
A19	Guide, left		1
A20	Guide, left, upper		1
A21	Holder, sensor		1
A22	Rod, din board		1
A23	Gear, 23T/19T		1
A24	Crossmember, option, right		1
A25	Side plate, fuser drive		1
A26	Gear, 17T		1
A27	Gear, 15T		1
A28	Gear, 25T/91T		1
A29	Gear, 33T		1
A30	Gear 35T		1
A31	Cable, option feeder		1
A32	Cable, OPT DEL		1
A33	Clamp, cable		1
A34	Screw, tap, M3x6		5

¹ Only orderable parts have part numbers.

Figure 8-9 Power supply assembly

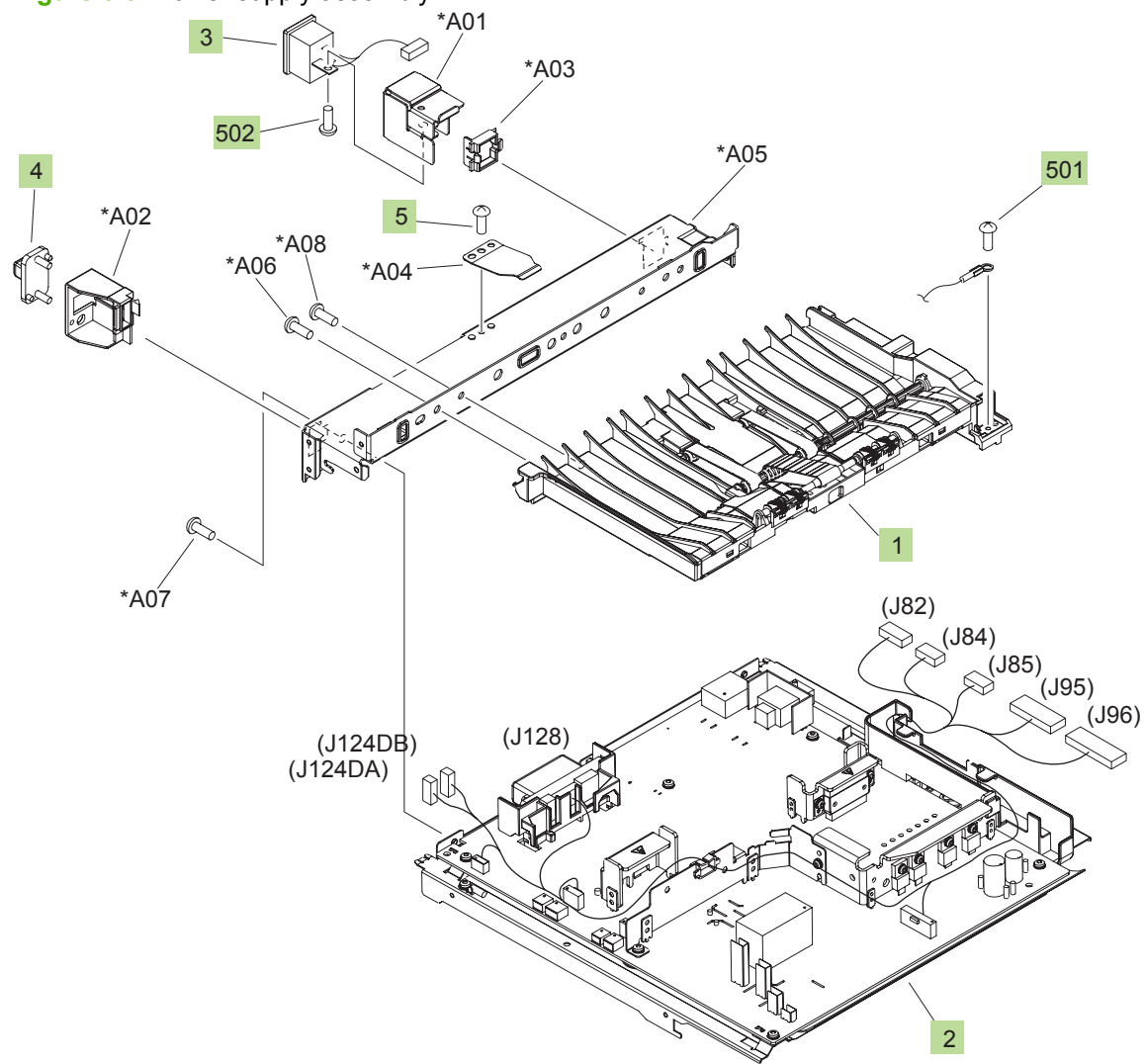


Table 8-8 Power supply assembly

Ref	Description	Part number	Qty
1	Paper feed assembly	RM1-4548-000CN	1
2	Electrical components assembly (110-127 V)	RM1-4549-000CN	1
2	Electrical components assembly (220-240 V)	RM1-4578-000CN	1
3	Cable, inlet (110-127 V)	RM1-5078-000CN	1
3	Cable, inlet (220-240 V)	RM1-5079-000CN	1
4	Connector, drawer, 6P	VS1-7514-006CN	1
5	Screw, flat head RS, M3x6	XA9-1464-000CN	1
501	Screw, machine, pan head, M3x6	XB1-1300-605CN	1
502	Screw, with washer, M4x6	XB2-7400-606CN	1
A01	Holder, inlet		1
A02	Holder, connector		1
A03	Guard, edge		1
A04	Spring, leaf		1
A05	Crossmember, fusing		1
A06	Screw, tap, pan head, M4x10		2
A07	Screw, D, M3x8		3
A08	Screw, with washer, M3x6		3

¹ Only orderable parts have part numbers.

Figure 8-10 500-sheet cassette

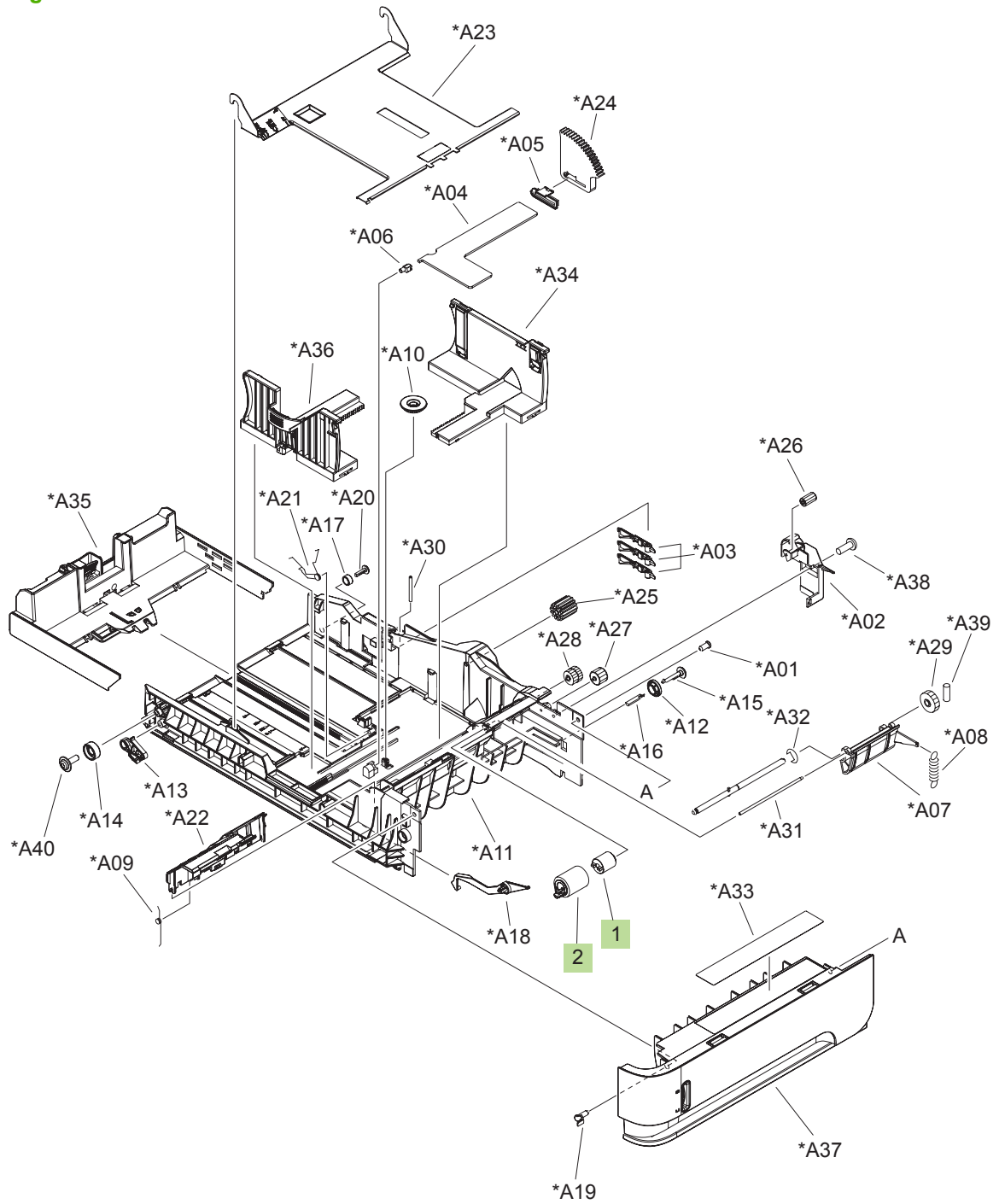


Table 8-9 500-sheet cassette

Ref	Description	Part number	Qty
	500-sheet cassette	RM1-4559-000CN	1
1	Limiter, cassette torque	RC2-5262-000CN	1
2	Paper feed roller assembly	RM1-0037-020CN	1
A01	Pin, front guide lock, right		1
A02	Cover, gear		1
A03	Flag, size sensing		1
A04	Arm, lifter		1
A05	Support, lifter arm		1
A6	Bushing, lift arm		1
A07	Holder, retard gear		1
A08	Spring, tension		1
A09	Spring, tension		1
A10	Gear, 20T		1
A11	Body, cassette		1
A12	Roller, positioning		1
A13	Claw, cassette		1
A14	Roller, LU		1
A15	Flange, positioning roller, right		1
A16	Shaft, positioning roller auxiliary		1
A17	Roller, RD		1
A18	Gauge, fuel		1
A19	Pin, cassette lock, left		1
A20	Shaft, RD roller		1
A21	Spring, torsion		1
A22	Guide, nip		1
A23	Plate, paper lifting		1
A24	Gear, 88T		1
A25	Gear, 14T		1
A26	Gear, 14T		1
A27	Gear, 14T		1
A28	Gear, 15T/25T		1
A29	Gear, 37T		1
A30	Shaft, size sensing		1
A31	Shaft, retard gear holder		1

Table 8-9 500-sheet cassette (continued)

Ref	Description	Part number	Qty
A32	Ring, E		1
A33	Label, cassette operation		1
A34	Right side end support assembly		1
A35	Cassette rear assembly		1
A36	Left side end support assembly		1
A37	Front cassette assembly		1
A38	Screw, tap, pan head, M4x10		1
A39	Pin, dowel		1
A40	Screw, tap, M4x12		1

¹ Only orderable parts have part numbers.

Figure 8-11 Multipurpose pickup assembly

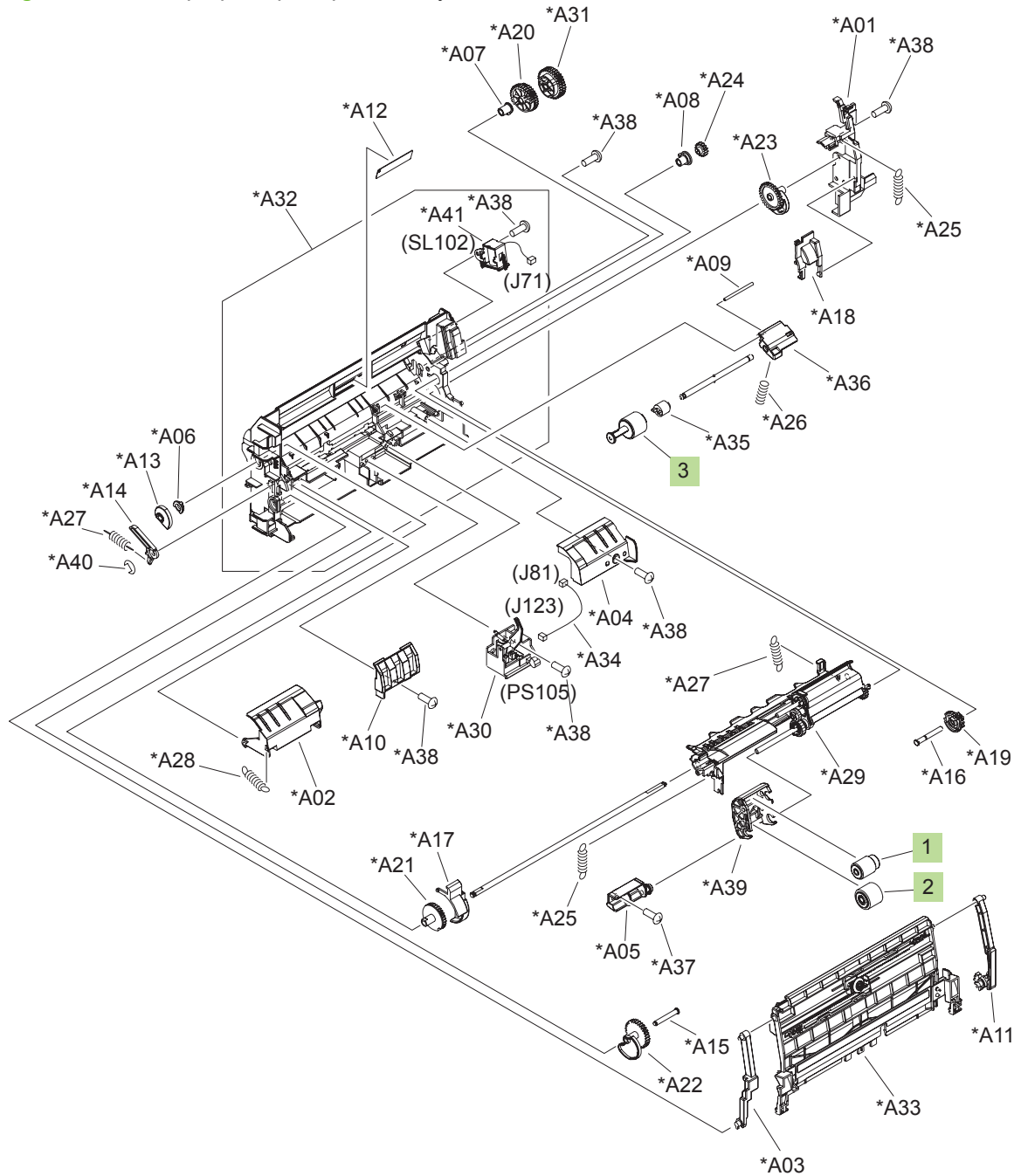


Table 8-10 Multipurpose pickup assembly

Ref	Description	Part number	Qty
	Multipurpose pickup assembly	RM1-4563-000CN	1
	Multipurpose tray kit (contains 1 pickup roller, 1 feed roller, 1 separation roller)	CB506-67905	1
1	Roller, pickup	RL1-1641-000CN	1
2	Roller, feed	RL1-1663-000CN	1
3	Roller, separation	RL1-1654-000CN	1
A01	Frame, multi, right		1
A02	Guide, nip, left		1
A03	Guide, nip, center		1
A04	Guide, nip, right		1
A05	Bushing		1
A6	Bushing		1
A07	Bushing		1
A08	Bushing		1
A09	Shaft, size sensing		1
A10	Hinge, multi, left		1
A11	Hinge, multi, right		1
A12	label, jam clear envelope		1
A13	Cam		1
A14	Lever		1
A15	Shaft, multipurpose cam, left		1
A16	Shaft, multipurpose cam, right		1
A17	Cover, multipurpose spring, left		1
A18	Cover, multipurpose spring, right		1
A19	Gear, 15T/21T		1
A20	Gear, 30T/34T		1
A21	Gear, 30T		1
A22	Cam/gear, 30T		1
A23	Cam/gear, 30T		1
A24	Gear, 14T		1
A25	Spring, tension		2
A26	Spring, compression		1
A27	Spring, tension		2
A28	Spring, tension		1
A29	Multipurpose guide assembly		1

Table 8-10 Multipurpose pickup assembly (continued)

Ref	Description	Part number	Qty
A30	Presence sensor holder assembly		1
A31	Multipurpose pickup gear assembly		1
A32	Multipurpose frame assembly		1
A33	Multipurpose tray assembly		1
A34	Cable, multipurpose sensor		1
A35	Limiter, multipurpose torque		1
A36	Holder, separation		1
A37	Screw, D, M3x8		1
A38	Screw, tap, pan head, M4x10		7
A39	Cover, roller		1
A40	Ring, E		1
A41	Multipurpose solenoid assembly		1

¹ Only orderable parts have part numbers.

Figure 8-12 Paper delivery assembly

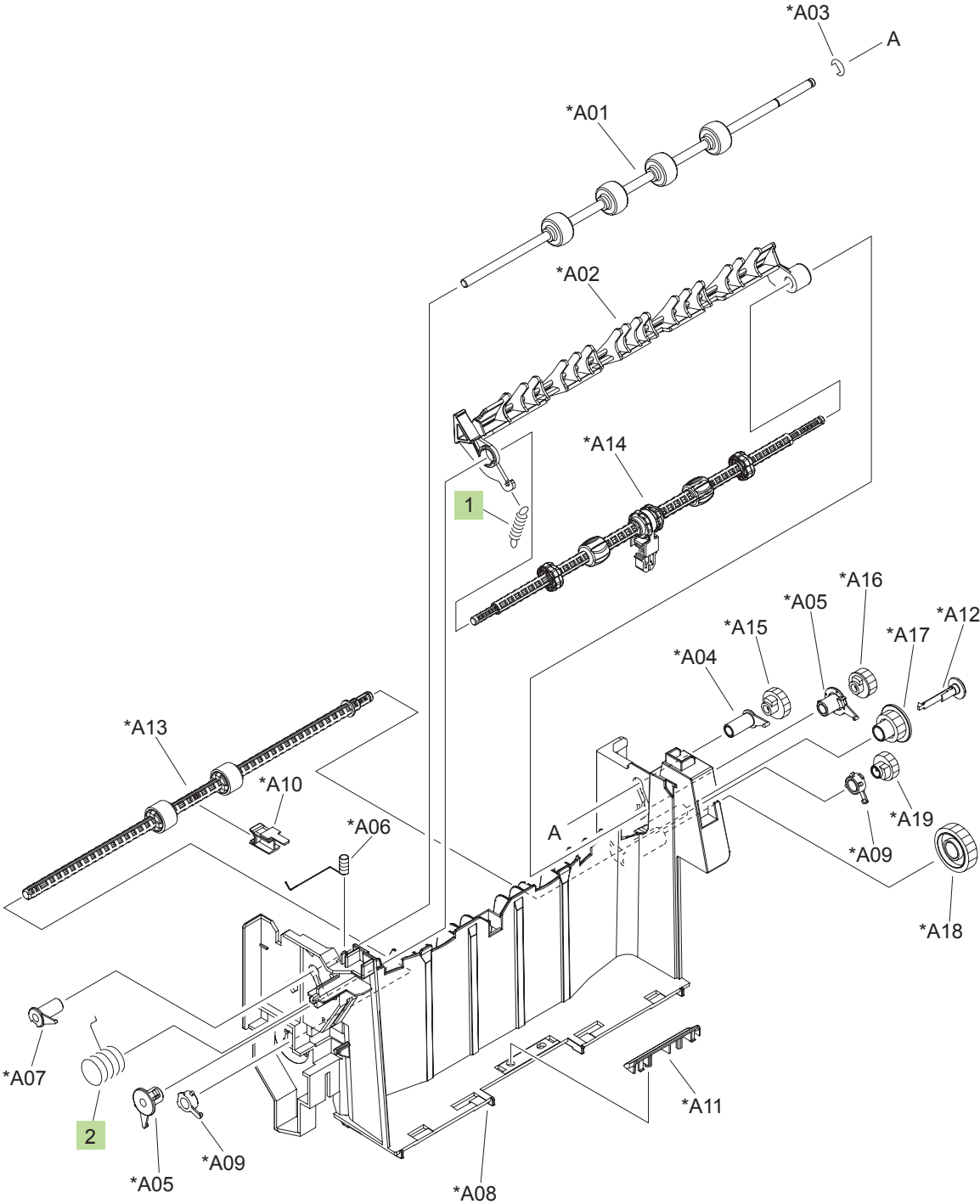


Table 8-11 Paper delivery assembly

Ref	Description	Part number	Qty
	Paper delivery assembly	RM1-4529-000CN	1
1	Spring, tension	RC1-0133-000CN	1
2	Spring, grounding	RU6-2105-000CN	1
A01	Roller, face-down, upper		1
A02	Deflector, delivery		1
A03	Ring, E		1
A04	Bushing, paper delivery, upper		1
A05	Bushing		2
A6	Spring, grounding		1
A07	Bushing, paper delivery, upper		1
A08	Frame, face-down		1
A09	Bushing		2
A10	Bushing		1
A11	Guide, paper delivery		1
A12	Flange, positioning roller, right		1
A13	Roller, delivery intermediate		1
A14	Roller, face-down, lower		1
A15	Gear, 21T		1
A16	Gear, 17T		1
A17	Gear, 20T		1
A18	Gear, 33T		1
A19	Gear, 18T		1

¹ Only orderable parts have part numbers.

Figure 8-13 Fusing assembly

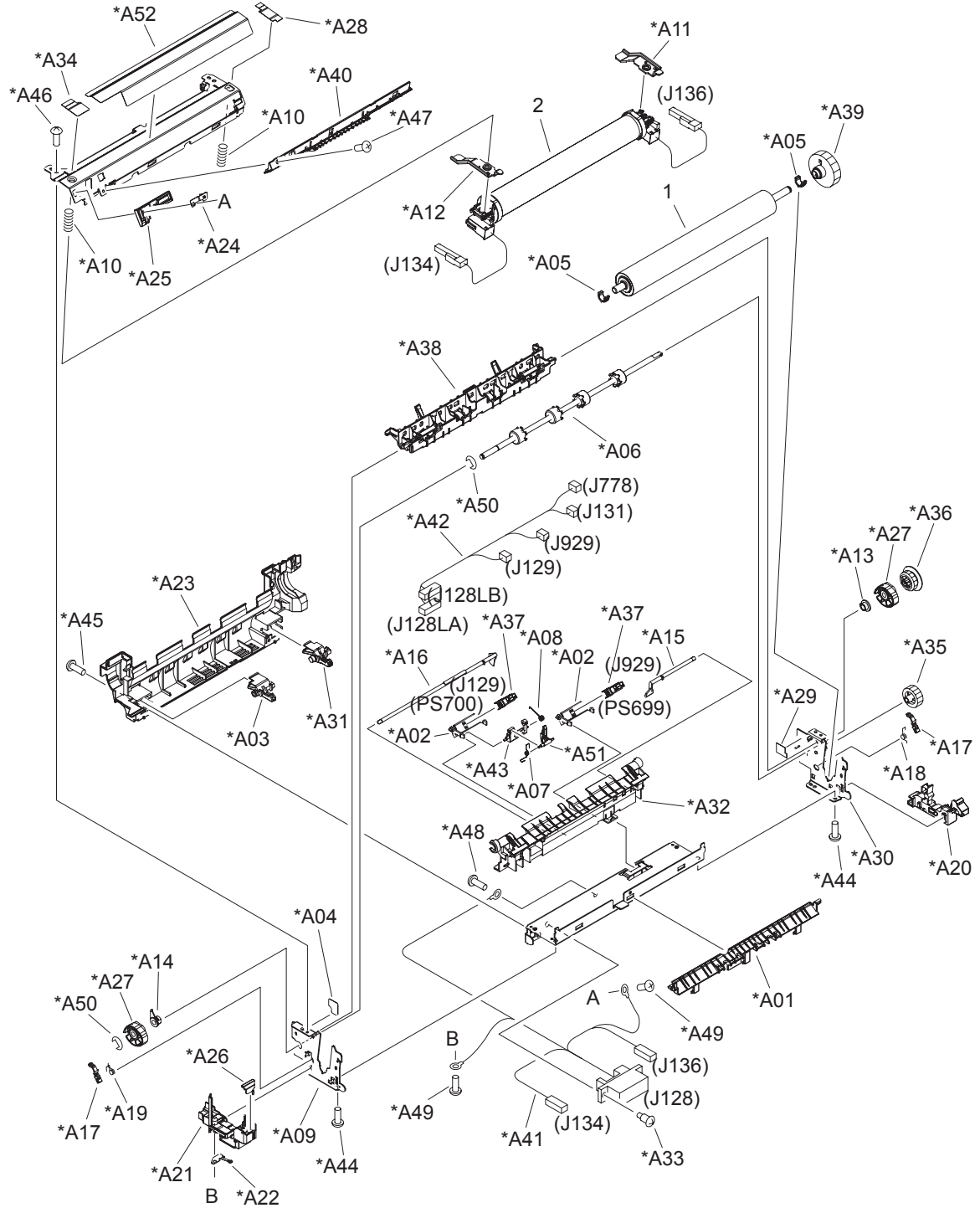


Table 8-12 Fusing assembly

Ref	Description	Part number	Qty
	Fusing assembly (110-127 V)	CB506-67901	1
	Fusing assembly (220-240 V)	CB506-67902	1
1	Roller, pressure		1
2	Sleeve guide assembly (110-127 V)		1
2	Sleeve guide assembly (220-240 V)		1
A01	Guide, paper inlet, lower		1
A02	Holder, fusing sensor		2
A03	Lever, release, left		1
A04	Sheet, fusing protective		1
A05	Bushing		2
A6	Roller, face-up		1
A07	Spring, torsion		1
A08	Spring, torsion		1
A09	Side plate, fusing, left		1
A10	Spring, compression		2
A11	Plate, pressure, right		1
A12	Plate, pressure, left		1
A13	Bushing		1
A14	Bushing		1
A15	Flag, sensor, right		1
A16	Flag, sensor, left		1
A17	Lever, sensor		2
A18	Spring, torsion		1
A19	Spring, torsion		1
A20	Guide, cable, right		1
A21	Guide, cable, left		1
A22	Spring, leaf		1
A23	Bar, filter, rear		1
A24	Eliminator		1
A25	Holder, brush		1
A26	Rib, cable guide		1
A27	Cam		2
A28	Sheet, protective, right upper		1
A29	Sheet, protective, right lower		1

Table 8-12 Fusing assembly (continued)

Ref	Description	Part number	Qty
A30	Side plate, fusing, right		1
A31	Lever, release, right		1
A32	Guide, paper delivery, lower		1
A33	Screw, stepped		2
A34	Sheet, protective, left		1
A35	Gear, 18T		1
A36	Gear, 17T		1
A37	IC, photo interrupter		2
A38	Guide, paper delivery guide, upper		1
A39	Pressure roller gear assembly		1
A40	Upper entrance guide assembly		1
A41	Cable, FSR AC		1
A42	Cable, FSR DC		1
A43	Holder, fusing lever		1
A44	Screw, M3x8		4
A45	Screw, RS, M3x8		2
A46	Screw, D, M3x8		2
A47	Screw with washer, M3x6		1
A48	Screw with washer, M3x6		1
A49	Screw, tap, S		2
A50	Ring, E		2
A51	Lever, paper delivery sensor		1
A52	Label, "Caution, high temp."		1

¹ Only orderable parts have part numbers.

PCAs

Figure 8-14 PCAs—base unit

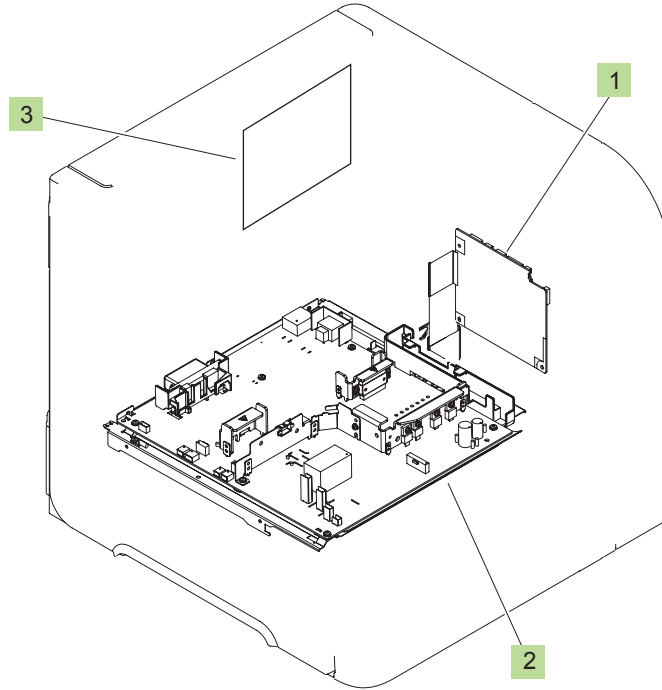


Table 8-13 PCAs—base unit

Ref	Description	Part number	Qty
1	DC controller PCA	RM1-4582-000CN	1
2	Electrical components assembly (110-127 V)	RM1-4549-000CN	1
2	Electrical components assembly (220-240 V)	RM1-4578-000CN	1
3	Formatter assembly (base models)	CB437-69001 (exchange)	1
3	Formatter assembly (network models)	CB438-69001 (exchange)	1
3	Formatter assembly (base models)	CB437-67901 (new)	1
3	Formatter assembly (network models)	CB438-67901 (new)	1

Figure 8-15 Optional 1,500-sheet feeder PCA

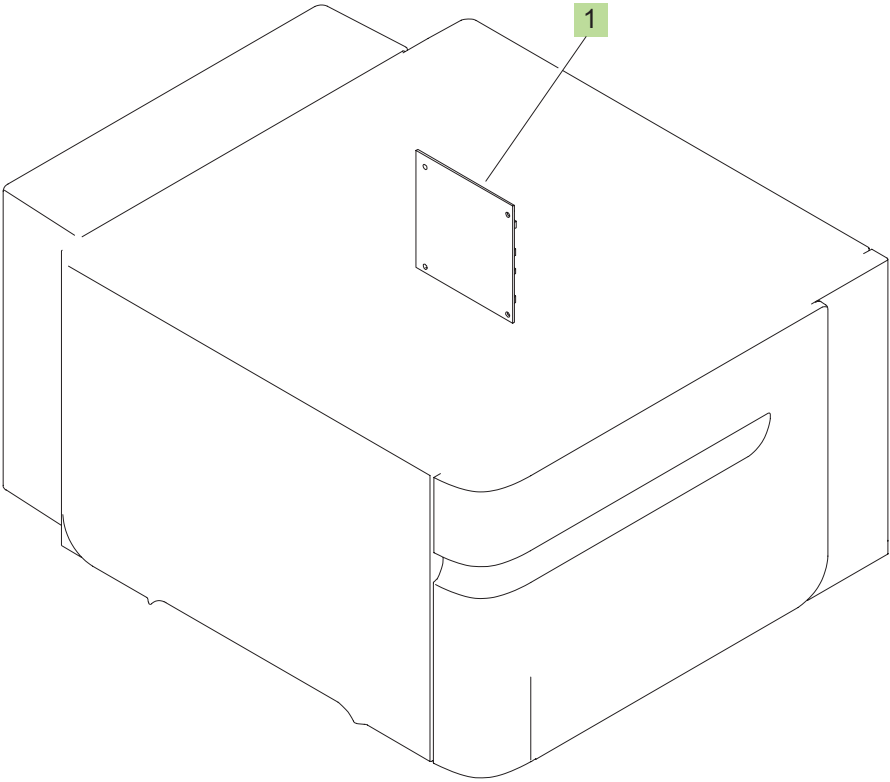


Table 8-14 Optional 1,500-sheet feeder PCA

Ref	Description	Part number	Qty
1	1,500-sheet feeder driver PCA	RM1-6214-000CN	1

Figure 8-16 Multi-bin mailbox PCA

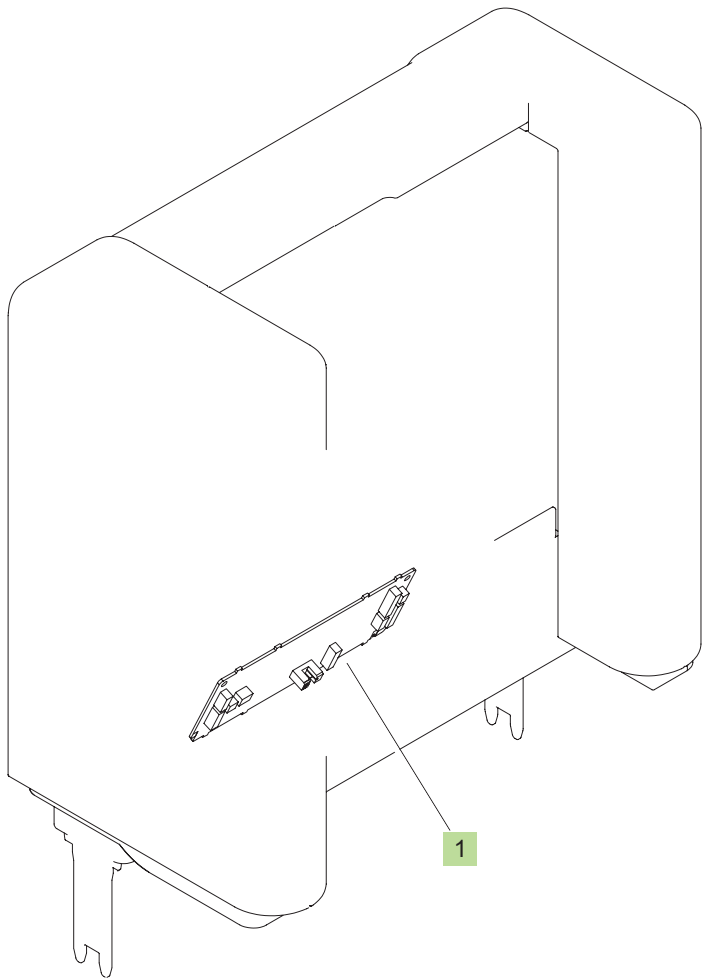


Table 8-15 Multi-bin mailbox PCA

Ref	Description	Part number	Qty
1	Multi-bin mailbox PCA	RM1-6224-000CN	1

Input devices

Figure 8-17 Optional 500-sheet paper feeder main body

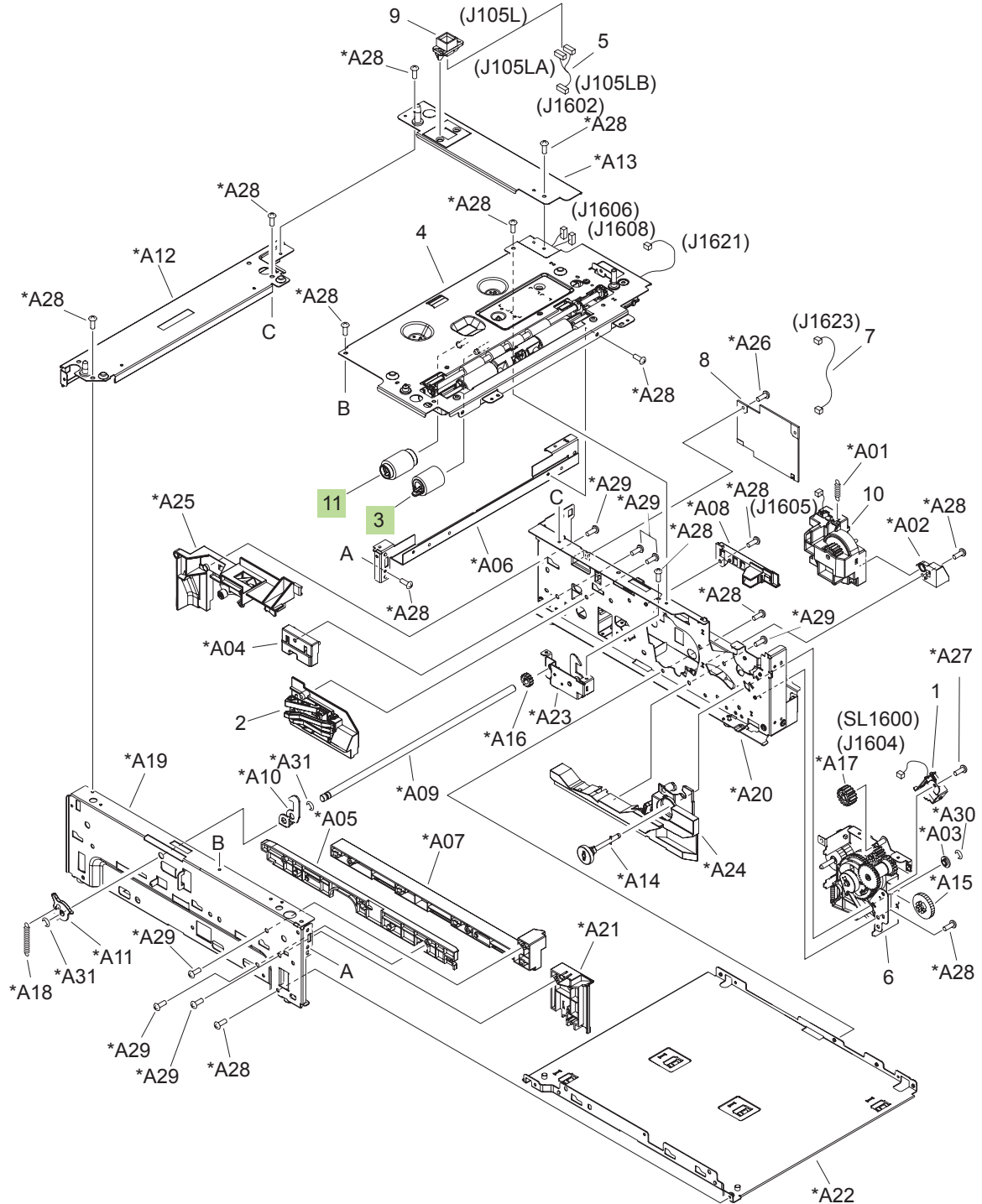


Table 8-16 Optional 500-sheet paper feeder main body

Ref	Description	Part number	Qty
	Product roller kit (contains 2 feed rollers, 1 pickup roller)	CB506-67904	1
1	Solenoid		1
2	Size detect assembly		1
3	Paper feed roller assembly	RM1-0037-020CN	1
4	Front top plate assembly		1
5	Cable, interface, upper		1
6	Pickup drive side plate		1
7	Cable, size sensor		1
8	500-page feeder driver PCA		1
9	Connector, drawer, 6P		1
10	Lifter driver assembly		1
11	Paper pickup roller assembly	RM1-0036-020CN	1
A01	Spring, tension		1
A02	Support, lifter drive assembly		1
A03	Bushing		1
A04	Guide, cassette right, rear		1
A05	Guide, cassette left, rear		1
A06	Plate, reinforcement		1
A07	Guide, left		1
A08	Guide, cable		1
A09	Shaft, lock joint		1
A10	Arm, lock		1
A11	Lever, lock		1
A12	Upper plate, rear		1
A13	Upper plate, right		1
A14	Shaft, retard drive		1
A15	Gear, 23T		1
A16	Gear, 14T		1
A17	Gear, 16T		1
A18	Spring, tension		1
A19	Left frame assembly		1
A20	Right frame assembly		1
A21	Front cassette left guide assembly		1
A22	Lower frame assembly		1

Table 8-16 Optional 500-sheet paper feeder main body (continued)

Ref	Description	Part number	Qty
A23	Lock side plate assembly		1
A24	Right front guide assembly		1
A25	Right guide assembly		1
A26	Screw, with washer, M3x6		2
A27	screw, tap, M3x6		1
A28	Screw, D, M3x8		33
A29	Screw, tap, pan head, M4x10		13
A30	Ring, E		1
A31	Ring, E		2

¹ Only orderable parts have part numbers.

Figure 8-18 Optional 500-sheet feeder cassette

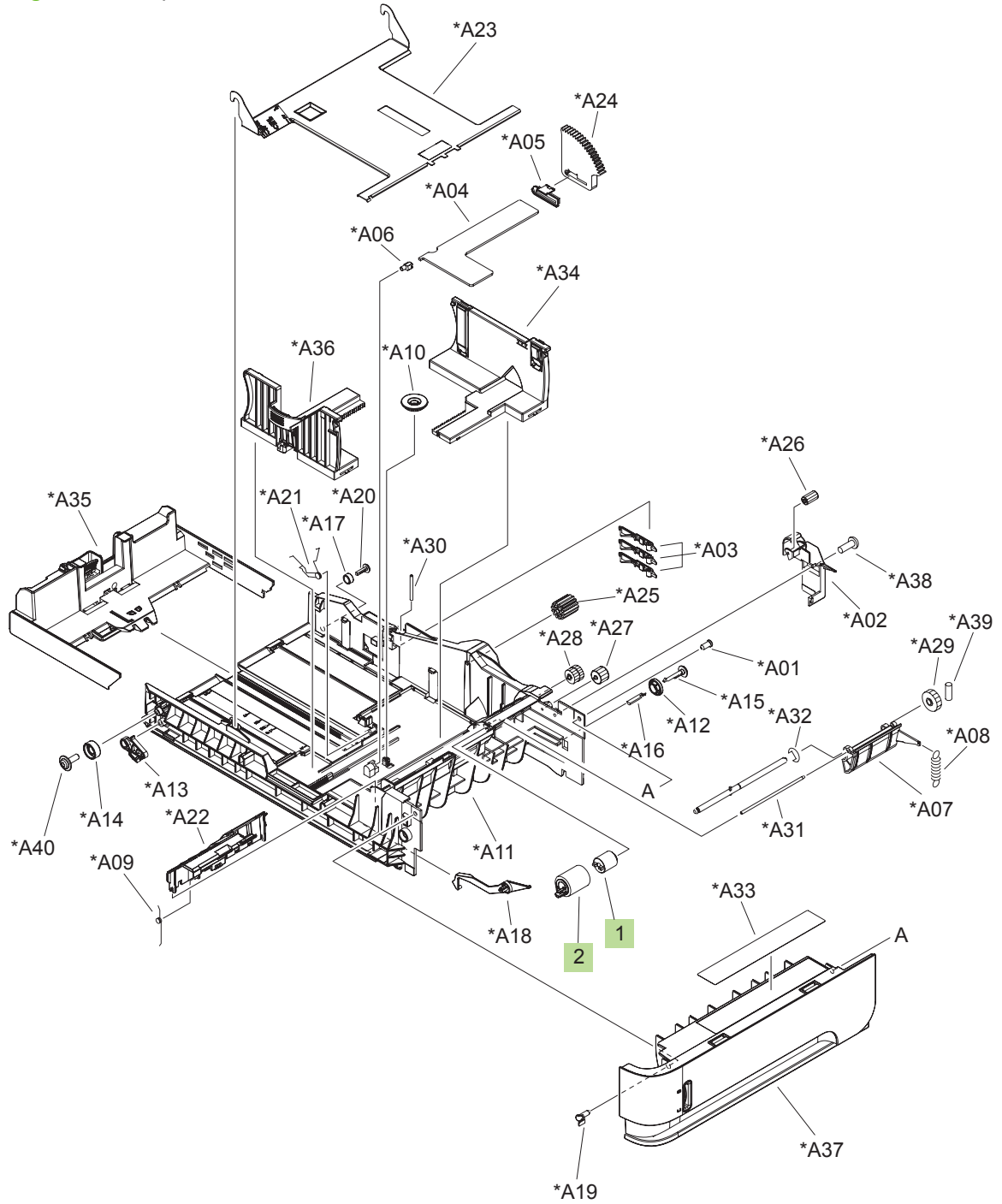


Table 8-17 Optional 500-sheet feeder cassette

Ref	Description	Part number	Qty
	Optional 500-sheet feeder cassette	RM1-4559-000CN	1
1	Limiter, cassette torque	RC2-5262-000CN	1
2	Paper feed roller assembly	RM1-0037-020CN	1
	Product roller kit (contains 2 feed rollers, 1 pickup roller)	CB506-67904	1
A01	Pin, front guide lock, right		1
A02	Cover, gear		1
A03	Flag, size sensing		3
A04	Arm, lifter		1
A05	Support, lifter arm		1
A06	Bushing, lifter arm		1
A07	Holder, retard gear		1
A08	Spring, tension		1
A09	Spring, torsion		1
A10	Gear, 20T		1
A11	Body, cassette		1
A12	Roller, positioning		1
A13	Claw, cassette		1
A14	Roller, LU		1
A15	Flange, positioning roller, right		1
A16	Shaft, positioning roller, auxiliary		1
A17	Roller, RD		1
A18	Gauge, fuel		1
A19			1
A20			1
A21	Spring, torsion		1
A22	Guide, nip		1
A23	Plate, paper lifting		1
A24	Gear, 88T		1
A25	Gear, 14T		1
A26	Gear, 14T		1
A27	Gear, 14T		1
A28	Gear, 15T/25T		1
A29	Gear, 37T		1
A30	Shaft, size sensing		1

Table 8-17 Optional 500-sheet feeder cassette (continued)

Ref	Description	Part number	Qty
A31	Shaft, retard gear holder		1
A32	Ring, E		1
A33	Label, cassette operation		1
A34	Right side end support assembly		1
A35	Cassette rear assembly		1
A36	Left side end support assembly		1
A37	Front cassette assembly		1
A38	Screw, tap, pan head, M4x10		1
A39	Pin, dowel		1
A40	Screw, tap, M4x12		1

¹ Only orderable parts have part numbers.

Figure 8-19 Optional 1,500-sheet paper feeder covers

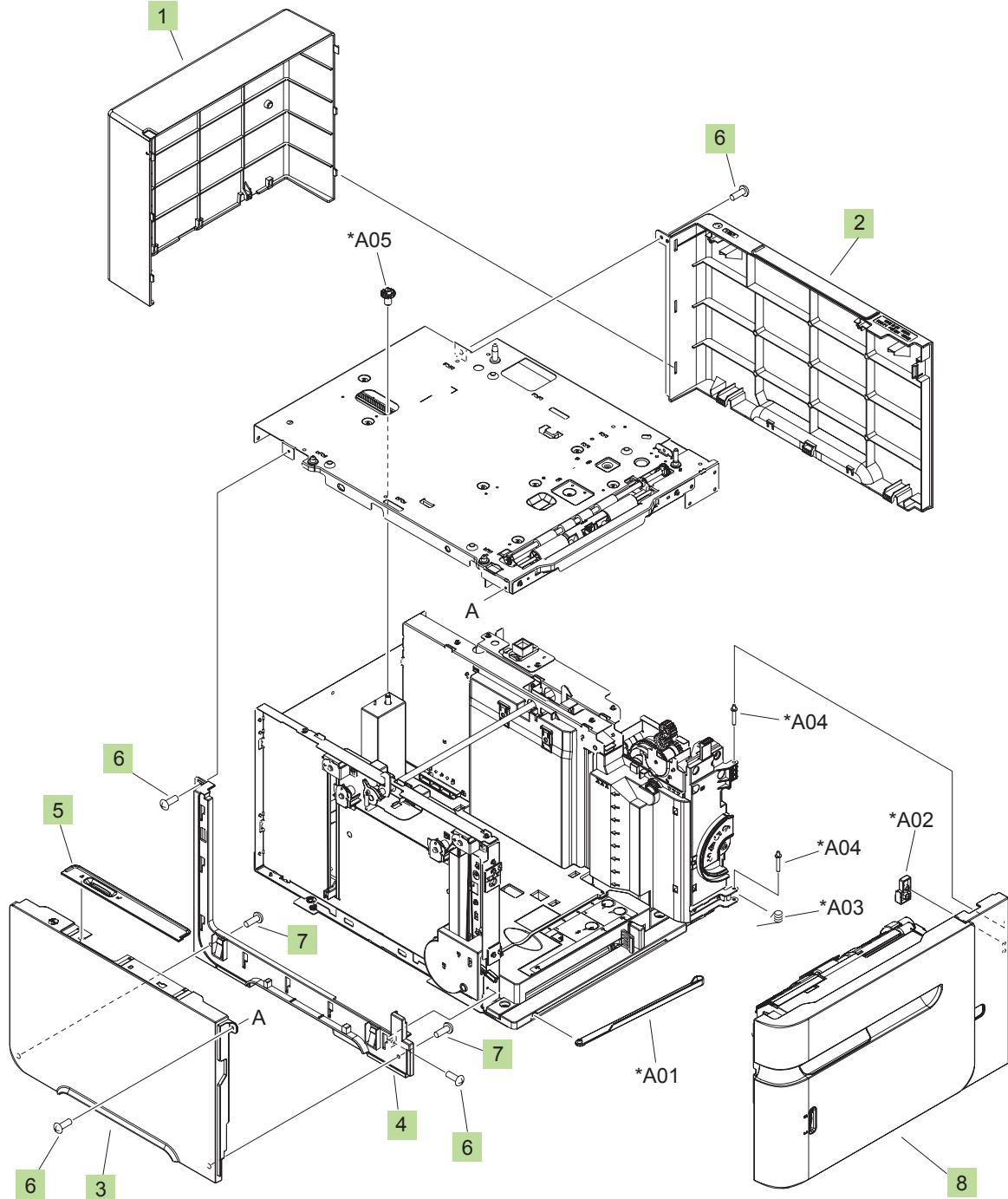


Table 8-18 Optional 1,500-sheet paper feeder covers

Ref	Description	Part number	Qty
1	Cover, rear	RC2-2640-000CN	1
2	Cover, right	RC2-2641-000CN	1
3	Cover, left	RC2-2642-000CN	1
4	Cover, left lower	RC2-2643-000CN	1
5	Cover, lock	RC2-2584-000CN	1
6	Screw, with washer, M3x8	XA9-1420-000CN	4
7	Screw, tap, pan head, M4x10	XB4-7401-007CN	2
8	Front door assembly	RM1-5255-000CN	1
A01	Arm, front cover support		1
A02	Stopper, front door		1
A03	Spring, torsion		1
A04	Shaft, front cover hinge		2
A05	Gear, 16T		1

¹ Only orderable parts have part numbers.

Figure 8-20 Optional 1,500-sheet feeder front door assembly

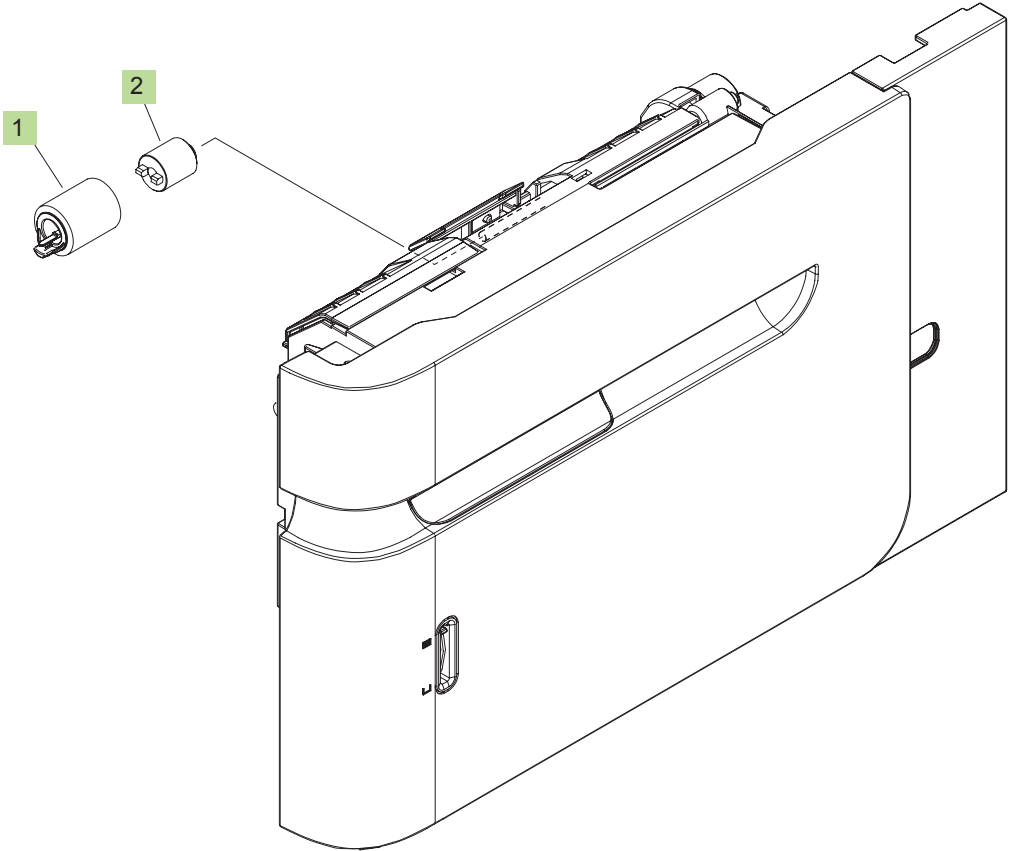


Table 8-19 Optional 1,500-sheet feeder front door assembly

Ref	Description	Part number	Qty
	Optional 1,500-sheet feeder front door assembly	RM1-5255-000CN	1
1	Paper feed roller assembly	RM1-0037-020CN	1
2	Limiter, cassette torque	RC2-5262-000CN	1

Figure 8-21 Optional 1,500-sheet feeder main body (1 of 2)

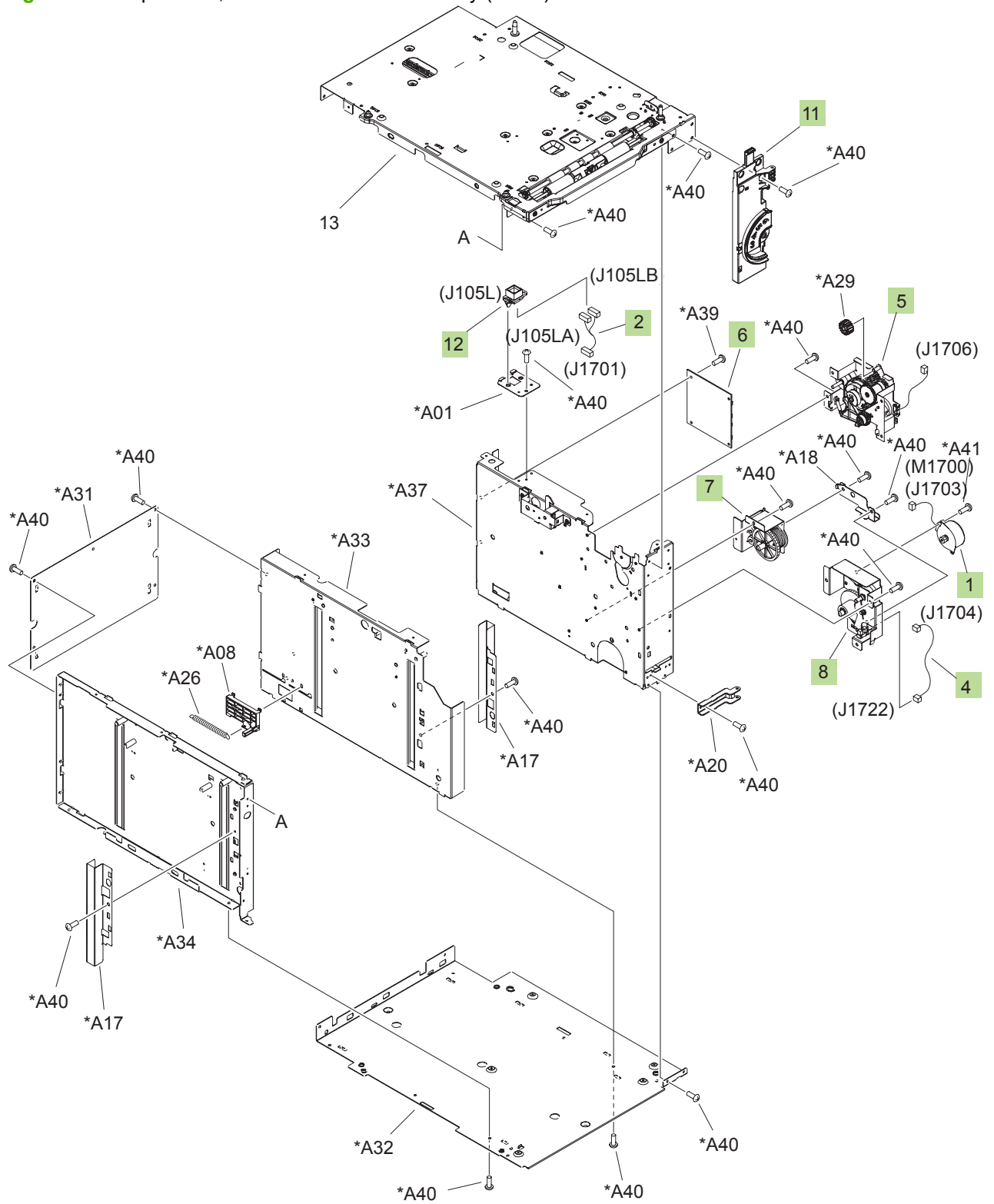


Table 8-20 Optional 1,500-sheet feeder main body (1 of 2)

Ref	Description	Part number	Qty
1	Motor, stepping	RH7-1603-020CN	1
2	Cable, interface	RM1-5126-000CN	1
4	Cable, door sensor	RM1-5128-000CN	1
5	Paper pickup drive assembly	RM1-5262-000CN	1
6	1,500-sheet feeder driver PCA	RM1-6214-000CN	1
7	Oil damper assembly	RM1-0289-030CN	1
8	Lifter drive assembly	RM1-1136-000CN	1
11	Numbering assembly	RM1-5265-000CN	1
12	Connector, drawer, 6P	VS1-7500-006CN	1
13	Paper pickup assembly (see Figure 8-23 Optional 1,500-sheet feeder paper pickup assembly on page 410)		1
A01	Holder, connector		1
A02	Pin, lifter tray stopper		1
A03	Sheet, solenoid damper		1
A04	Latch, front cover, upper		1
A05	Block, front cover pushing		1
A06	Guide, paper set, right		1
A07	Guide, paper set, left		1
A08	Block, paper size sensor		1
A09	Reel, lifter wire		2
A10	Cover, lifter wire reel		2
A11	Support, wire pulley		8
A12	Cover, pulley		8
A13	Shaft, lifter drive		1
A14	Pulley, wire, front		2
A15	Pulley, wire, rear		6
A16	Cover, lifter wire reel		2
A17	Plate, lifter wire cover		2
A18	Plate, damper support		1
A19	Support, release hook, left		1
A20	Holder, hinge shaft, lower		1
A21	Guide, paper set, front		1
A22	Bushing		1
A23	Gear, 14T		1
A24	Gear, 15T		1

Table 8-20 Optional 1,500-sheet feeder main body (1 of 2) (continued)

Ref	Description	Part number	Qty
A25	Gear, 19T/39T		1
A26	Spring, tension		1
A27	Spring, tension		2
A28	Spring, torsion		1
A29	Gear, 16T		1
A30	Spacer, screw		2
A31	Frame, rear		1
A32	Frame, lower		1
A33	Frame, right		1
A34	Frame, left		1
A35	Saddle, wire		1
A36	Lifter tray assembly		1
A37	Paper pickup side plate assembly		1
A38	Left hook assembly		1
A39	Screw, with washer, M3x8		4
A40	Screw, tap, M3x6		67
A41	Screw, with washer, M3x6		2
A42	Ring, E		2
A43	Ring, E		3
A44	Pin, dowel		3
A45	Foot		2

¹ Only orderable parts have part numbers.

Table 8-21 Optional 1,500-sheet feeder main body (2 of 2)

Ref	Description	Part number	Qty
3	Cable, size sensor	RM1-5127-000CN	1
9	Remnant indication assembly	RM1-5259-000CN	1
10	Paper size detect assembly	RM1-5261-000CN	1
A01	Holder, connector		1
A02	Pin, lifter tray stopper		1
A03	Sheet, solenoid damper		1
A04	Latch, front cover, upper		1
A05	Block, front cover pushing		1
A06	Guide, paper set, right		1
A07	Guide, paper set, left		1
A08	Block, paper size sensor		1
A09	Reel, lifter wire		2
A10	Cover, lifter wire reel		2
A11	Support, wire pulley		8
A12	Cover, pulley		8
A13	Shaft, lifter drive		1
A14	Pulley, wire, front		2
A15	Pulley, wire, rear		6
A16	Cover, lifter wire reel		2
A17	Plate, lifter wire cover		2
A18	Plate, damper support		1
A19	Support, release hook, left		1
A20	Holder, hinge shaft, lower		1
A21	Guide, paper set, front		1
A22	Bushing		1
A23	Gear, 14T		1
A24	Gear, 15T		1
A25	Gear, 19T/39T		1
A26	Spring, tension		1
A27	Spring, tension		2
A28	Spring, torsion		1
A29	Gear, 16T		1
A30	Spacer, screw		2
A31	Frame, rear		1

Table 8-21 Optional 1,500-sheet feeder main body (2 of 2) (continued)

Ref	Description	Part number	Qty
A32	Frame, lower		1
A33	Frame, right		1
A34	Frame, left		1
A35	Saddle, wire		1
A36	Lifter tray assembly		1
A37	Paper pickup side plate assembly		1
A38	Left hook assembly		1
A39	Screw, with washer, M3x8		4
A40	Screw, tap, M3x6		67
A41	Screw, with washer, M3x6		2
A42	Ring, E		2
A43	Ring, E		3
A44	Pin, dowel		3
A45	Foot		2

¹ Only orderable parts have part numbers.

This exploded view diagram illustrates the assembly of a mechanical component, likely a motor or actuator. The diagram shows the following parts and their assembly sequence:

- Part 1:** A long shaft with a flange at one end.
- Part 2:** A small cylindrical component that fits onto the shaft.
- Part 3:** A bracket or housing that fits around the shaft and Part 2.
- Part 4:** A small cylindrical component that fits onto the shaft.
- Part 5:** A bracket or housing that fits around the shaft and Part 4.

The diagram also shows various other components and their assembly order, indicated by the numbers in the callouts:

- Part A:** A long shaft with a flange at one end.
- Part B:** A small cylindrical component that fits onto the shaft.
- Part A01:** A small cylindrical component that fits onto the shaft.
- Part A02:** A small cylindrical component that fits onto the shaft.
- Part A03:** A small cylindrical component that fits onto the shaft.
- Part A04:** A small cylindrical component that fits onto the shaft.
- Part A05:** A small cylindrical component that fits onto the shaft.
- Part A06:** A small cylindrical component that fits onto the shaft.
- Part A07:** A small cylindrical component that fits onto the shaft.
- Part A08:** A small cylindrical component that fits onto the shaft.
- Part A09:** A small cylindrical component that fits onto the shaft.
- Part A10:** A small cylindrical component that fits onto the shaft.
- Part A11:** A small cylindrical component that fits onto the shaft.
- Part A12:** A small cylindrical component that fits onto the shaft.
- Part A13:** A small cylindrical component that fits onto the shaft.
- Part A14:** A small cylindrical component that fits onto the shaft.
- Part A15:** A small cylindrical component that fits onto the shaft.
- Part A16:** A small cylindrical component that fits onto the shaft.
- Part A17:** A small cylindrical component that fits onto the shaft.
- Part A18:** A small cylindrical component that fits onto the shaft.
- Part A19:** A small cylindrical component that fits onto the shaft.
- Part A20:** A small cylindrical component that fits onto the shaft.
- Part A21:** A small cylindrical component that fits onto the shaft.
- Part A22:** A small cylindrical component that fits onto the shaft.
- Part A23:** A small cylindrical component that fits onto the shaft.
- Part A24:** A small cylindrical component that fits onto the shaft.
- Part A25:** A small cylindrical component that fits onto the shaft.
- Part A26:** A small cylindrical component that fits onto the shaft.
- Part A27:** A small cylindrical component that fits onto the shaft.
- Part A28:** A small cylindrical component that fits onto the shaft.
- Part A29:** A small cylindrical component that fits onto the shaft.
- Part A30:** A small cylindrical component that fits onto the shaft.
- Part A31:** A small cylindrical component that fits onto the shaft.
- Part A32:** A small cylindrical component that fits onto the shaft.

Table 8-22 Optional 1,500-sheet feeder paper pickup assembly

Ref	Description	Part number	Qty
	Product roller kit (contains 2 feed rollers, 1 pickup roller)	CB506-67904	1
1	Paper feed roller assembly	RM1-0037-020CN	1
2	Paper pickup roller assembly	RM1-0036-020CN	1
3	Paper detect sensor assembly	RM1-5264-000CN	1
4	Flag, paper detect	RC2-2524-000CN	1
5	Cable, feed, sensor	RM1-5129-000CN	1
A01	Bushing, feed shaft		1
A02	Gear, 23T		1
A03	Arm, pick		1
A04	Plate, swing		1
A05	Support, feed bushing		1
A06	Holder, feed shaft		1
A07	Gear, 18T		1
A08	Spring, compression		1
A09	Gear, 16T		1
A10	Screw, tap, M3x6		12
A11	Gear, 14T		1
A12	Spring, compression		1
A13	Ring, retainer		1
A14	Ring, slider		2
A15	Arm, paper load limit		1
A16	Shaft, load limit arm		1
A17	Holder, load limit arm		1
A18	Guide, paper outlet		1
A19	Lack, paper end limit, upper		1
A20	Bushing		2
A21	Roller, paper feed		1
A22	Roller, paper feed		2
A23	Shaft, paper feed roller		1
A24	Flag, paper feed sensor		1
A25	Holder, paper feed sensor flag		1
A26	Spring, torsion		1
A27	Plate, front upper		1
A28	Bushing		2

Table 8-22 Optional 1,500-sheet feeder paper pickup assembly (continued)

Ref	Description	Part number	Qty
A29	Spring, compression		2
A30	Guide, paper feed sensor cable		1
A31	IC, photo interrupter		1
A32	Ring, E		2

¹ Only orderable parts have part numbers.

Output devices

Figure 8-24 Multi-bin mailbox covers

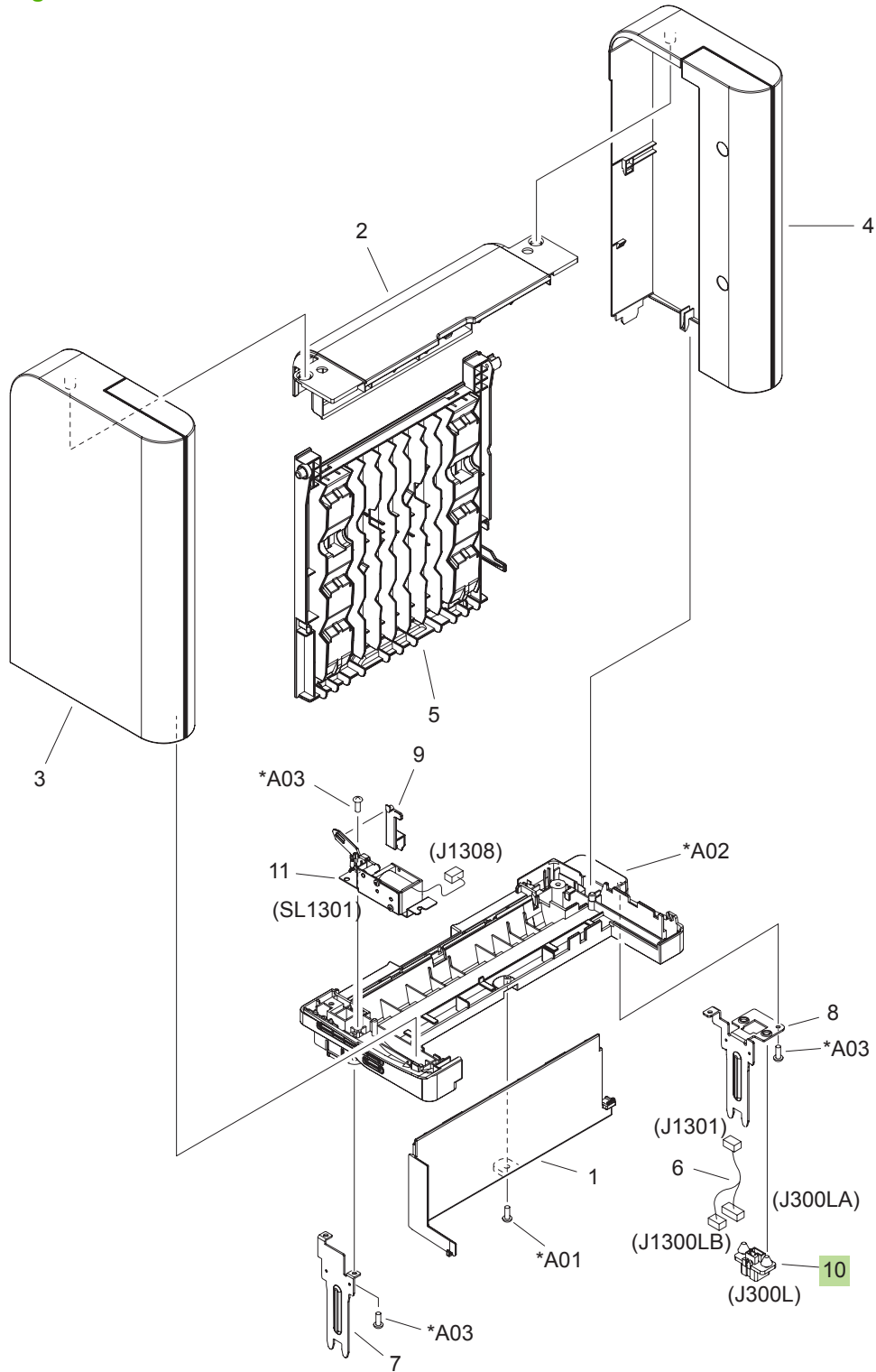


Table 8-23 Multi-bin mailbox covers

Ref	Description	Part number	Qty
1	Cover, front		1
2	Cover, top		1
3	Left cover assembly		1
4	Right cover assembly		1
5	Rear door assembly		1
6	Cable, stacker drawer		1
7	Joint, left		1
8	Joint, right		1
9	Lever, in flapper link		1
10	Connector, 8P	VS1-7500-008CN	1
11	IN solenoid assembly		1
A01	Screw, tap, binding head, M3x8		1
A02	Frame, base		1
A03	Screw, P, M3x8		3

¹ Only orderable parts have part numbers.

Figure 8-25 Multi-bin mailbox main body (1 of 2)

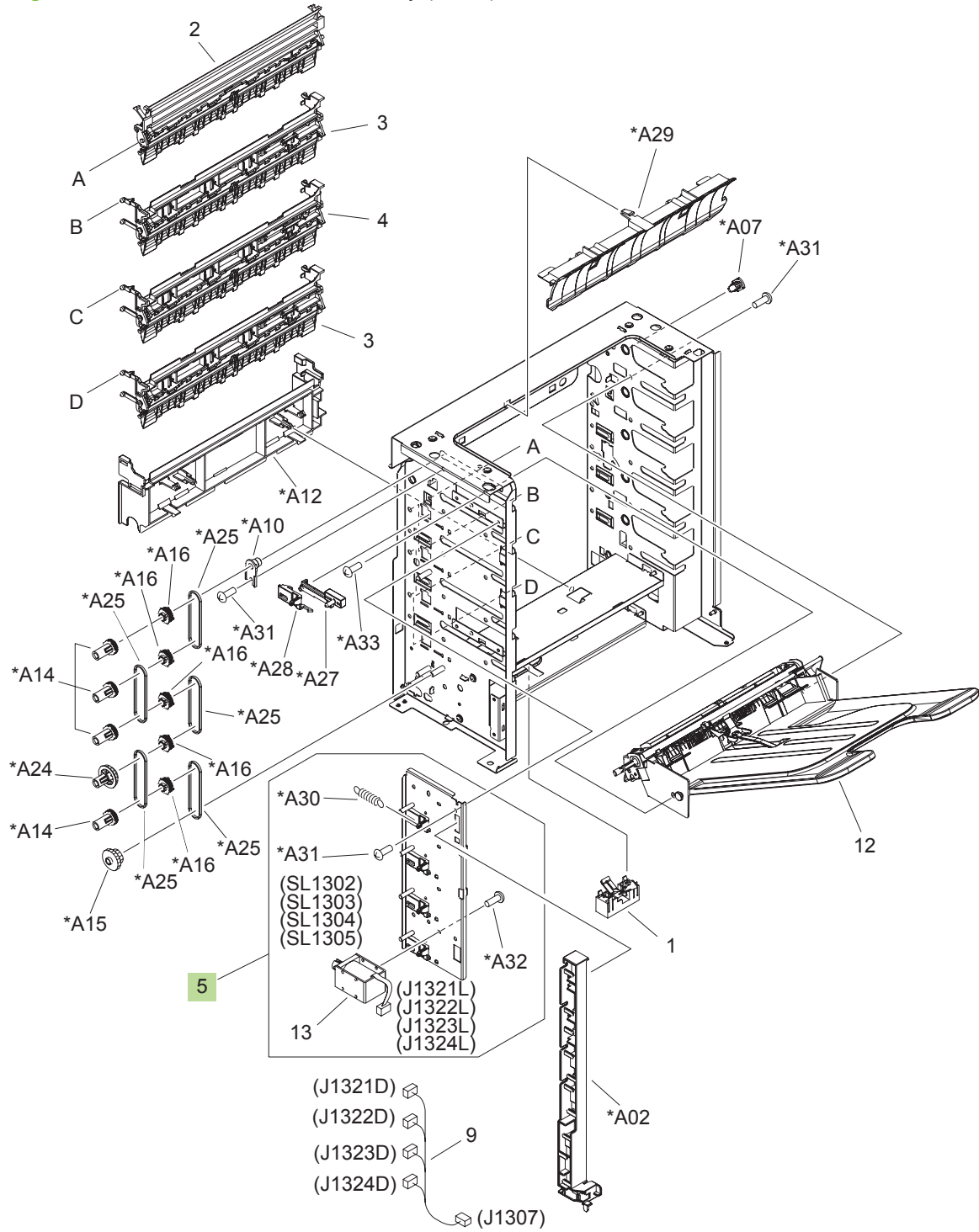


Table 8-24 Multi-bin mailbox main body (1 of 2)

Ref	Description	Part number	Qty
1	Paper sensing flag assembly		1
2	Top bin flapper assembly		1
3	Bin flapper assembly		2
4	Center bin flapper assembly		1
5	Bin solenoid assembly	RM1-5266-000CN	1
9	Cable, bin solenoid		1
12	Bin assembly		5
13	Solenoid		4
14	Frame, base		1
A01	Pad, arm		1
A02	Guide, cable, L		1
A03	Latch, rear door		1
A04	Bushing		1
A05	Stopper, rear door		1
A06	Spring, tension		1
A07	Pin		5
A08	Roller, delivery, inlet		1
A09	Bushing, pressure roller		2
A10	Bushing		5
A11	Roller, intermediate		1
A12	Cover, crossmember		1
A13	Spacer		1
A14	Pulley, 24T		4
A15	Gear, 34T/Pulley, 24T		1
A16	Pulley, 24T		5
A17	Bushing		4
A18	Spring, compression		2
A19	Gear, 24T		1
A20	Gear, 41T		1
A21	Gear, 24T/35T/48T		1
A22	Gear, 35T		1
A23	Gear, 26T		1
A24	Pulley/Gear, 34T		1
A25	Belt, timing		5

Table 8-24 Multi-bin mailbox main body (1 of 2) (continued)

Ref	Description	Part number	Qty
A26	Delivery inlet roller assembly		1
A27	Lever, bin flapper		4
A28	Base, bin lever		4
A29	Guide, crossmember		1
A30	Spring, compression		4
A31	Screw, D, M3x8		29
A32	Screw, machine, truss head, M3x4		8
A33	Screw, tap, binding head, M3x8		6
A34	Screw, tap, pan head, MM4x10		1
A35	Ring, E		2
A36	Sheet, bottom frame, right		2
A37	Sheet, bottom frame, left		2

¹ Only orderable parts have part numbers.

Figure 8-26 Multi-bin mailbox main body (2 of 2)

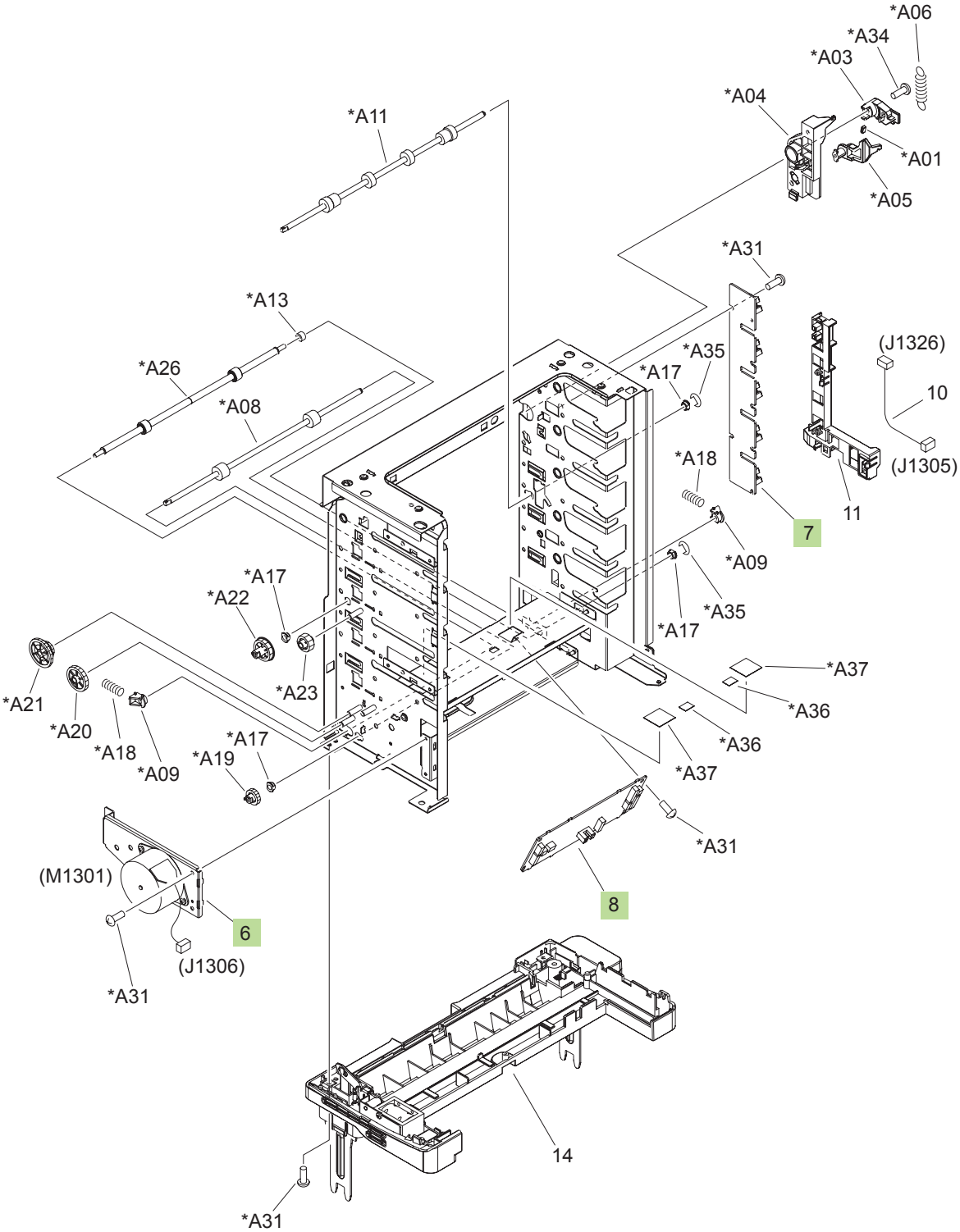


Table 8-25 Multi-bin mailbox main body (2 of 2)

Ref	Description	Part number	Qty
6	Drive assembly	RM1-5267-000CN	1
7	Sensor assembly	RM1-5096-000CN	1
8	Multi-bin mailbox PCA	RM1-6224-000CN	1
10	Cable, sensor PCA		1
11	Cable guide assembly		1
14	Frame, base		1
A01	Pad, arm		1
A02	Guide, cable, L		1
A03	Latch, rear door		1
A04	Bushing		1
A05	Stopper, rear door		1
A06	Spring, tension		1
A07	Pin		5
A08	Roller, delivery, inlet		1
A09	Bushing, pressure roller		2
A10	Bushing		5
A11	Roller, intermediate		1
A12	Cover, crossmember		1
A13	Spacer		1
A14	Pulley, 24T		4
A15	Gear, 34T/Pulley, 24T		1
A16	Pulley, 24T		5
A17	Bushing		4
A18	Spring, compression		2
A19	Gear, 24T		1
A20	Gear, 41T		1
A21	Gear, 24T/35T/48T		1
A22	Gear, 35T		1
A23	Gear, 26T		1
A24	Pulley/Gear, 34T		1
A25	Belt, timing		5
A26	Delivery inlet roller assembly		1
A27	Lever, bin flapper		4
A28	Base, bin lever		4

Table 8-25 Multi-bin mailbox main body (2 of 2) (continued)

Ref	Description	Part number	Qty
A29	Guide, crossmember		1
A30	Spring, compression		4
A31	Screw, D, M3x8		29
A32	Screw, machine, truss head, M3x4		8
A33	Screw, tap, binding head, M3x8		6
A34	Screw, tap, pan head, MM4x10		1
A35	Ring, E		2
A36	Sheet, bottom frame, right		2
A37	Sheet, bottom frame, left		2

¹ Only orderable parts have part numbers.

Alphabetical parts list

Table 8-26 Alphabetical parts list

Description	Part number	Table and page
		Optional 500-sheet feeder cassette on page 395
		Optional 500-sheet feeder cassette on page 395
1,500-sheet feeder driver PCA	RM1-6214-000CN	Optional 1,500-sheet feeder PCA on page 387
1,500-sheet feeder driver PCA	RM1-6214-000CN	Optional 1,500-sheet feeder main body (1 of 2) on page 403
500-page feeder driver PCA		Optional 500-sheet paper feeder main body on page 391
500-sheet cassette	RM1-4559-000CN	500-sheet cassette on page 371
500-sheet tray cassette	RM1-4559-000CN	Internal components (1 of 3) on page 357
Arm, front cover support		Optional 1,500-sheet paper feeder covers on page 399
Arm, lifter		500-sheet cassette on page 371
Arm, lifter		Optional 500-sheet feeder cassette on page 395
Arm, lock		Optional 500-sheet paper feeder main body on page 391
Arm, paper load limit		Optional 1,500-sheet feeder paper pickup assembly on page 411
Arm, pick		Optional 1,500-sheet feeder paper pickup assembly on page 411
Arm, release, A	RC2-2480-000CN	Internal components (1 of 3) on page 357
Arm, release, B	RC2-2481-000CN	Internal components (1 of 3) on page 357
Bar, filter, rear		Fusing assembly on page 381
Base, bin lever		Multi-bin mailbox main body (1 of 2) on page 417
Base, bin lever		Multi-bin mailbox main body (2 of 2) on page 421
Belt, timing		Multi-bin mailbox main body (1 of 2) on page 417
Belt, timing		Multi-bin mailbox main body (2 of 2) on page 421

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Bin assembly		Multi-bin mailbox main body (1 of 2) on page 417
Bin flapper assembly		Multi-bin mailbox main body (1 of 2) on page 417
Bin solenoid assembly	RM1-5266-000CN	Multi-bin mailbox main body (1 of 2) on page 417
Block, front cover pushing		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Block, front cover pushing		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Block, paper size sensor		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Block, paper size sensor		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Body, cassette		500-sheet cassette on page 371
Body, cassette		Optional 500-sheet feeder cassette on page 395
Bushing		Internal components (1 of 3) on page 357
Bushing	RC1-0206-000CN	Internal components (2 of 3) on page 361
Bushing	RC2-5783-000CN	Internal components (2 of 3) on page 361
Bushing		Internal components (2 of 3) on page 361
Bushing		Multipurpose pickup assembly on page 375
Bushing		Multipurpose pickup assembly on page 375
Bushing		Multipurpose pickup assembly on page 375
Bushing		Multipurpose pickup assembly on page 375
Bushing		Paper delivery assembly on page 379
Bushing		Paper delivery assembly on page 379
Bushing		Paper delivery assembly on page 379
Bushing		Fusing assembly on page 381

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Bushing		Fusing assembly on page 381
Bushing		Fusing assembly on page 381
Bushing		Optional 500-sheet paper feeder main body on page 391
Bushing		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Bushing		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Bushing		Optional 1,500-sheet feeder paper pickup assembly on page 411
Bushing		Optional 1,500-sheet feeder paper pickup assembly on page 411
Bushing		Multi-bin mailbox main body (1 of 2) on page 417
Bushing		Multi-bin mailbox main body (1 of 2) on page 417
Bushing		Multi-bin mailbox main body (1 of 2) on page 417
Bushing		Multi-bin mailbox main body (2 of 2) on page 421
Bushing		Multi-bin mailbox main body (2 of 2) on page 421
Bushing		Multi-bin mailbox main body (2 of 2) on page 421
Bushing, feed shaft	RC1-0264-000CN	Internal components (2 of 3) on page 361
Bushing, feed shaft		Optional 1,500-sheet feeder paper pickup assembly on page 411
Bushing, lift arm		500-sheet cassette on page 371
Bushing, lifter arm		Optional 500-sheet feeder cassette on page 395
Bushing, paper delivery	RC1-0136-000CN	Internal components (3 of 3) on page 365
Bushing, paper delivery, upper		Paper delivery assembly on page 379
Bushing, paper delivery, upper		Paper delivery assembly on page 379
Bushing, pressure roller		Multi-bin mailbox main body (1 of 2) on page 417

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Bushing, pressure roller		Multi-bin mailbox main body (2 of 2) on page 421
Cable guide assembly		Multi-bin mailbox main body (2 of 2) on page 421
Cable, bin solenoid		Multi-bin mailbox main body (1 of 2) on page 417
Cable, door sensor	RM1-5128-000CN	Optional 1,500-sheet feeder main body (1 of 2) on page 403
Cable, door switch	RM1-5080-000CN	Internal components (3 of 3) on page 365
Cable, drum motor	RM1-5090-000CN	Internal components (1 of 3) on page 357
Cable, envelope feeder	RM1-5085-000CN	Internal components (3 of 3) on page 365
Cable, feed motor	RM1-5089-000CN	Internal components (2 of 3) on page 361
Cable, feed, sensor	RM1-5129-000CN	Optional 1,500-sheet feeder paper pickup assembly on page 411
Cable, FSR AC		Fusing assembly on page 381
Cable, FSR DC		Fusing assembly on page 381
Cable, full sensor	RM1-5081-000CN	Internal components (3 of 3) on page 365
Cable, fuser motor	RM1-5088-000CN	Internal components (3 of 3) on page 365
Cable, inlet (110-127 V)	RM1-5078-000CN	Power supply assembly on page 369
Cable, inlet (220-240 V)	RM1-5079-000CN	Power supply assembly on page 369
Cable, interface	RM1-5126-000CN	Optional 1,500-sheet feeder main body (1 of 2) on page 403
Cable, interface, upper		Optional 500-sheet paper feeder main body on page 391
Cable, laser	RM1-5087-000CN	Internal components (2 of 3) on page 361
Cable, multipurpose sensor		Multipurpose pickup assembly on page 375
Cable, OPT DEL		Internal components (3 of 3) on page 365
Cable, option feeder		Internal components (3 of 3) on page 365
Cable, panel	RM1-5082-000CN	Internal components (3 of 3) on page 365

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Cable, sensor PCA		Multi-bin mailbox main body (2 of 2) on page 421
Cable, size sensor	RM1-5091-000CN	Internal components (1 of 3) on page 357
Cable, size sensor		Optional 500-sheet paper feeder main body on page 391
Cable, size sensor	RM1-5127-000CN	Optional 1,500-sheet feeder main body (2 of 2) on page 407
Cable, stacker drawer		Multi-bin mailbox covers on page 415
Cam		Multipurpose pickup assembly on page 375
Cam		Fusing assembly on page 381
Cam/gear, 30T		Multipurpose pickup assembly on page 375
Cam/gear, 30T		Multipurpose pickup assembly on page 375
Cap, drum gear		Internal components (1 of 3) on page 357
Case, envelope		Internal components (3 of 3) on page 365
Cassette rear assembly		500-sheet cassette on page 371
Cassette rear assembly		Optional 500-sheet feeder cassette on page 395
Center bin flapper assembly		Multi-bin mailbox main body (1 of 2) on page 417
Clamp, cable		Internal components (3 of 3) on page 365
Clamp, cord		Internal components (1 of 3) on page 357
Claw, cassette		500-sheet cassette on page 371
Claw, cassette		Optional 500-sheet feeder cassette on page 395
Clip, cable		Internal components (2 of 3) on page 361
Connector, 8P	VS1-7500-008CN	Multi-bin mailbox covers on page 415
Connector, drawer, 6P	VS1-7514-006CN	Power supply assembly on page 369
Connector, drawer, 6P		Optional 500-sheet paper feeder main body on page 391

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Connector, drawer, 6P	VS1-7500-006CN	Optional 1,500-sheet feeder main body (1 of 2) on page 403
Control panel assembly (P4014)	RM1-5060-000CN	Covers—base unit on page 355
Control panel assembly (P4015/P4515)	RM1-5059-000CN	Covers—base unit on page 355
Cover, connector		Internal components (3 of 3) on page 365
Cover, crossmember		Multi-bin mailbox main body (1 of 2) on page 417
Cover, crossmember		Multi-bin mailbox main body (2 of 2) on page 421
Cover, duplexing outer (P4014)	RC2-5760-000CN	Covers—base unit on page 355
Cover, duplexing outer (P4015/P4515)	RC2-2510-000CN	Covers—base unit on page 355
Cover, envelope	RL1-1667-000CN	Internal components (1 of 3) on page 357
Cover, envelope connector (P4014)	RC2-5759-000CN	Covers—base unit on page 355
Cover, envelope connector (P4015/P4515)	RC2-2476-000CN	Covers—base unit on page 355
Cover, formatter (P4014)	RC2-5757-000CN	Covers—base unit on page 355
Cover, formatter (P4015/P4515)	RC2-2468-000CN	Covers—base unit on page 355
Cover, front		Multi-bin mailbox covers on page 415
Cover, gear		500-sheet cassette on page 371
Cover, gear		Optional 500-sheet feeder cassette on page 395
Cover, left	RC2-2642-000CN	Optional 1,500-sheet paper feeder covers on page 399
Cover, left lower	RC2-2643-000CN	Optional 1,500-sheet paper feeder covers on page 399
Cover, legal (P4014)	RC2-5761-000CN	Covers—base unit on page 355
Cover, legal (P4015/P4515)	RC2-5239-000CN	Covers—base unit on page 355
Cover, lifter wire reel		Optional 1,500-sheet feeder main body (1 of 2) on page 403

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Cover, lifter wire reel		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Cover, lifter wire reel		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Cover, lifter wire reel		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Cover, lock	RC2-2584-000CN	Optional 1,500-sheet paper feeder covers on page 399
Cover, multipurpose spring, left		Multipurpose pickup assembly on page 375
Cover, multipurpose spring, right		Multipurpose pickup assembly on page 375
Cover, option	RC2-2459-000CN	Covers—base unit on page 355
Cover, pulley		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Cover, pulley		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Cover, rear	RC2-2640-000CN	Optional 1,500-sheet paper feeder covers on page 399
Cover, right	RC2-2641-000CN	Optional 1,500-sheet paper feeder covers on page 399
Cover, right front (P4014)	RC2-5758-000CN	Covers—base unit on page 355
Cover, right front (P4015/P4515)	RC2-2475-000CN	Covers—base unit on page 355
Cover, right rear (P4014)	RC2-5768-000CN	Covers—base unit on page 355
Cover, right rear (P4015/P4515)	RC2-2478-000CN	Covers—base unit on page 355
Cover, roller		Multipurpose pickup assembly on page 375
Cover, top		Multi-bin mailbox covers on page 415
Crossmember, front		Internal components (3 of 3) on page 365
Crossmember, fusing		Power supply assembly on page 369
Crossmember, option, left		Internal components (3 of 3) on page 365

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Crossmember, option, right		Internal components (3 of 3) on page 365
DC controller PCA	RM1-4582-000CN	Internal components (3 of 3) on page 365
DC controller PCA	RM1-4582-000CN	PCAs—base unit on page 385
Deflector, delivery		Paper delivery assembly on page 379
Delivery inlet roller assembly		Multi-bin mailbox main body (1 of 2) on page 417
Delivery inlet roller assembly		Multi-bin mailbox main body (2 of 2) on page 421
Drive assembly	RM1-5267-000CN	Multi-bin mailbox main body (2 of 2) on page 421
Duct, fourth fan		Internal components (3 of 3) on page 365
Duct, scanner protective, 1		Internal components (2 of 3) on page 361
Duct, scanner protective, 2		Internal components (2 of 3) on page 361
Duct, second fan		Internal components (3 of 3) on page 365
Electrical components assembly (110-127 V)	RM1-4549-000CN	Power supply assembly on page 369
Electrical components assembly (110-127 V)	RM1-4549-000CN	PCAs—base unit on page 385
Electrical components assembly (220-240 V)	RM1-4578-000CN	Power supply assembly on page 369
Electrical components assembly (220-240 V)	RM1-4578-000CN	PCAs—base unit on page 385
Eliminator		Fusing assembly on page 381
Face-up tray assembly (P4014)	RM1-5448-000CN	Covers—base unit on page 355
Face-up tray assembly (P4015/P4515)	RM1-4531-000CN	Covers—base unit on page 355
Fan	RK2-1988-000CN	Internal components (3 of 3) on page 365
Fan	RK2-1989-000CN	Internal components (3 of 3) on page 365
Fan	RK2-1991-000CN	Internal components (3 of 3) on page 365
Fan	RK2-1992-000CN	Internal components (3 of 3) on page 365
Feeder sensor cable assembly		Internal components (2 of 3) on page 361

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Flag, paper detect	RC2-2524-000CN	Optional 1,500-sheet feeder paper pickup assembly on page 411
Flag, paper feed sensor		Optional 1,500-sheet feeder paper pickup assembly on page 411
Flag, paper presence detect		Internal components (2 of 3) on page 361
Flag, sensor, left		Fusing assembly on page 381
Flag, sensor, right		Fusing assembly on page 381
Flag, shutter		Internal components (2 of 3) on page 361
Flag, size sensing		500-sheet cassette on page 371
Flag, size sensing		Optional 500-sheet feeder cassette on page 395
Flange, positioning roller, right		500-sheet cassette on page 371
Flange, positioning roller, right		Paper delivery assembly on page 379
Flange, positioning roller, right		Optional 500-sheet feeder cassette on page 395
Foot		Internal components (1 of 3) on page 357
Foot		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Foot		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Formatter assembly (base models)	CB437-69001 (exchange)	PCAs—base unit on page 385
Formatter assembly (base models)	CB437-67901 (new)	PCAs—base unit on page 385
Formatter assembly (network models)	CB438-69001 (exchange)	PCAs—base unit on page 385
Formatter assembly (network models)	CB438-67901 (new)	PCAs—base unit on page 385
Frame, base		Multi-bin mailbox covers on page 415
Frame, base		Multi-bin mailbox main body (1 of 2) on page 417
Frame, base		Multi-bin mailbox main body (2 of 2) on page 421
Frame, face-down		Paper delivery assembly on page 379

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Frame, left		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Frame, left		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Frame, lower		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Frame, lower		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Frame, multi, right		Multipurpose pickup assembly on page 375
Frame, rear		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Frame, rear		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Frame, right		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Frame, right		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Front cassette assembly		500-sheet cassette on page 371
Front cassette assembly		Optional 500-sheet feeder cassette on page 395
Front cassette left guide assembly		Optional 500-sheet paper feeder main body on page 391
Front cassette LF guide assembly		Internal components (3 of 3) on page 365
Front cover assembly	RM1-4534-000CN	Covers—base unit on page 355
Front door assembly	RM1-5255-000CN	Optional 1,500-sheet paper feeder covers on page 399
Front top plate assembly		Optional 500-sheet paper feeder main body on page 391
Fuser assembly (110-127 V) (also see Figure 8-13 Fusing assembly on page 380)	CB506-67901	Internal components (3 of 3) on page 365
Fuser assembly (220-240 V) (also see Figure 8-13 Fusing assembly on page 380)	CB506-67902	Internal components (3 of 3) on page 365
Fuser motor assembly	RM1-5051-000CN	Internal components (3 of 3) on page 365

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Fusing assembly (110-127 V)	CB506-67901	Fusing assembly on page 381
Fusing assembly (220-240 V)	CB506-67902	Fusing assembly on page 381
Gauge, fuel		500-sheet cassette on page 371
Gauge, fuel		Optional 500-sheet feeder cassette on page 395
Gear 35T		Internal components (3 of 3) on page 365
Gear, 14T		500-sheet cassette on page 371
Gear, 14T		500-sheet cassette on page 371
Gear, 14T		500-sheet cassette on page 371
Gear, 14T		Multipurpose pickup assembly on page 375
Gear, 14T		Optional 500-sheet paper feeder main body on page 391
Gear, 14T		Optional 500-sheet feeder cassette on page 395
Gear, 14T		Optional 500-sheet feeder cassette on page 395
Gear, 14T		Optional 500-sheet feeder cassette on page 395
Gear, 14T		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Gear, 14T		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Gear, 14T		Optional 1,500-sheet feeder paper pickup assembly on page 411
Gear, 15T		Internal components (3 of 3) on page 365
Gear, 15T		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Gear, 15T		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Gear, 15T/21T		Multipurpose pickup assembly on page 375
Gear, 15T/25T		500-sheet cassette on page 371

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Gear, 15T/25T		Optional 500-sheet feeder cassette on page 395
Gear, 16T		Optional 500-sheet paper feeder main body on page 391
Gear, 16T		Optional 1,500-sheet paper feeder covers on page 399
Gear, 16T		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Gear, 16T		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Gear, 16T		Optional 1,500-sheet feeder paper pickup assembly on page 411
Gear, 17T		Internal components (3 of 3) on page 365
Gear, 17T		Paper delivery assembly on page 379
Gear, 17T		Fusing assembly on page 381
Gear, 17T/25T		Internal components (2 of 3) on page 361
Gear, 18T	RU5-0045-020CN	Internal components (2 of 3) on page 361
Gear, 18T		Paper delivery assembly on page 379
Gear, 18T		Fusing assembly on page 381
Gear, 18T		Optional 1,500-sheet feeder paper pickup assembly on page 411
Gear, 193T		Internal components (1 of 3) on page 357
Gear, 19T/39T		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Gear, 19T/39T		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Gear, 20T		500-sheet cassette on page 371
Gear, 20T		Paper delivery assembly on page 379
Gear, 20T		Optional 500-sheet feeder cassette on page 395
Gear, 21T		Paper delivery assembly on page 379

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Gear, 23T	RU6-0159-000CN	Internal components (2 of 3) on page 361
Gear, 23T		Optional 500-sheet paper feeder main body on page 391
Gear, 23T		Optional 1,500-sheet feeder paper pickup assembly on page 411
Gear, 23T/19T		Internal components (3 of 3) on page 365
Gear, 24T		Multi-bin mailbox main body (1 of 2) on page 417
Gear, 24T		Multi-bin mailbox main body (2 of 2) on page 421
Gear, 24T/35T/48T		Multi-bin mailbox main body (1 of 2) on page 417
Gear, 24T/35T/48T		Multi-bin mailbox main body (2 of 2) on page 421
Gear, 25T/91T		Internal components (3 of 3) on page 365
Gear, 26T		Multi-bin mailbox main body (1 of 2) on page 417
Gear, 26T		Multi-bin mailbox main body (2 of 2) on page 421
Gear, 29T		Internal components (2 of 3) on page 361
Gear, 30T		Multipurpose pickup assembly on page 375
Gear, 30T/34T		Multipurpose pickup assembly on page 375
Gear, 33T		Internal components (3 of 3) on page 365
Gear, 33T		Paper delivery assembly on page 379
Gear, 34T/Pulley, 24T		Multi-bin mailbox main body (1 of 2) on page 417
Gear, 34T/Pulley, 24T		Multi-bin mailbox main body (2 of 2) on page 421
Gear, 35T		Internal components (2 of 3) on page 361
Gear, 35T		Multi-bin mailbox main body (1 of 2) on page 417
Gear, 35T		Multi-bin mailbox main body (2 of 2) on page 421
Gear, 37T		500-sheet cassette on page 371

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Gear, 37T		Optional 500-sheet feeder cassette on page 395
Gear, 37T/18T		Internal components (2 of 3) on page 361
Gear, 41T		Multi-bin mailbox main body (1 of 2) on page 417
Gear, 41T		Multi-bin mailbox main body (2 of 2) on page 421
Gear, 88T		500-sheet cassette on page 371
Gear, 88T		Optional 500-sheet feeder cassette on page 395
Grounding plate assembly	RM1-5461-000CN	Internal components (1 of 3) on page 357
Guard, edge		Internal components (1 of 3) on page 357
Guard, edge		Power supply assembly on page 369
Guide, cable		Optional 500-sheet paper feeder main body on page 391
Guide, cable, L		Multi-bin mailbox main body (1 of 2) on page 417
Guide, cable, L		Multi-bin mailbox main body (2 of 2) on page 421
Guide, cable, left		Fusing assembly on page 381
Guide, cable, right		Fusing assembly on page 381
Guide, cable, right front		Internal components (2 of 3) on page 361
Guide, cartridge, right		Internal components (3 of 3) on page 365
Guide, cassette left, rear		Internal components (1 of 3) on page 357
Guide, cassette left, rear		Optional 500-sheet paper feeder main body on page 391
Guide, cassette right, rear		Internal components (1 of 3) on page 357
Guide, cassette right, rear		Optional 500-sheet paper feeder main body on page 391
Guide, connecting cable	RC1-0386-000CN	Internal components (1 of 3) on page 357
Guide, crossmember		Multi-bin mailbox main body (1 of 2) on page 417
Guide, crossmember		Multi-bin mailbox main body (2 of 2) on page 421

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Guide, EPU, rear		Internal components (2 of 3) on page 361
Guide, flat flexible cable		Internal components (3 of 3) on page 365
Guide, front		Internal components (2 of 3) on page 361
Guide, gear		Internal components (1 of 3) on page 357
Guide, gear shift, A		Internal components (1 of 3) on page 357
Guide, gear shift, B		Internal components (1 of 3) on page 357
Guide, left		Internal components (3 of 3) on page 365
Guide, left		Optional 500-sheet paper feeder main body on page 391
Guide, left, upper		Internal components (3 of 3) on page 365
Guide, lower		Internal components (2 of 3) on page 361
Guide, nip		500-sheet cassette on page 371
Guide, nip		Optional 500-sheet feeder cassette on page 395
Guide, nip, center		Multipurpose pickup assembly on page 375
Guide, nip, left		Multipurpose pickup assembly on page 375
Guide, nip, right		Multipurpose pickup assembly on page 375
Guide, paper delivery		Paper delivery assembly on page 379
Guide, paper delivery guide, upper		Fusing assembly on page 381
Guide, paper delivery, lower		Fusing assembly on page 381
Guide, paper feed sensor cable		Optional 1,500-sheet feeder paper pickup assembly on page 411
Guide, paper inlet, lower		Fusing assembly on page 381
Guide, paper outlet		Optional 1,500-sheet feeder paper pickup assembly on page 411
Guide, paper set, front		Optional 1,500-sheet feeder main body (1 of 2) on page 403

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Guide, paper set, front		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Guide, paper set, left		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Guide, paper set, left		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Guide, paper set, right		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Guide, paper set, right		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Guide, rear		Internal components (3 of 3) on page 365
Guide, scanner cable		Internal components (1 of 3) on page 357
Hinge, multi, left		Multipurpose pickup assembly on page 375
Hinge, multi, right		Multipurpose pickup assembly on page 375
Holder, brush		Fusing assembly on page 381
Holder, check pin		Internal components (3 of 3) on page 365
Holder, connector		Power supply assembly on page 369
Holder, connector		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Holder, connector		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Holder, DCU		Internal components (3 of 3) on page 365
Holder, feed shaft		Optional 1,500-sheet feeder paper pickup assembly on page 411
Holder, fusing lever		Fusing assembly on page 381
Holder, fusing sensor		Fusing assembly on page 381
Holder, hinge shaft, lower		Optional 1,500-sheet feeder main body (1 of 2) on page 403

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Holder, hinge shaft, lower		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Holder, inlet		Power supply assembly on page 369
Holder, load limit arm		Optional 1,500-sheet feeder paper pickup assembly on page 411
Holder, paper feed sensor flag		Optional 1,500-sheet feeder paper pickup assembly on page 411
Holder, retard gear		500-sheet cassette on page 371
Holder, retard gear		Optional 500-sheet feeder cassette on page 395
Holder, sensor		Internal components (3 of 3) on page 365
Holder, sensor		Internal components (3 of 3) on page 365
Holder, sensor		Internal components (3 of 3) on page 365
Holder, separation		Multipurpose pickup assembly on page 375
Holder, sheet sensor		Internal components (2 of 3) on page 361
IC, photo interrupter	WG8-5624-000CN	Internal components (3 of 3) on page 365
IC, photo interrupter		Fusing assembly on page 381
IC, photo interrupter		Optional 1,500-sheet feeder paper pickup assembly on page 411
IN solenoid assembly		Multi-bin mailbox covers on page 415
Joint, left		Multi-bin mailbox covers on page 415
Joint, right		Multi-bin mailbox covers on page 415
Label, cassette operation		500-sheet cassette on page 371
Label, cassette operation		Optional 500-sheet feeder cassette on page 395
label, jam clear envelope		Multipurpose pickup assembly on page 375
Label, "Caution, high temp."		Fusing assembly on page 381

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Lack, paper end limit, upper		Optional 1,500-sheet feeder paper pickup assembly on page 411
Laser scanner assembly	RM1-5465-000CN	Internal components (2 of 3) on page 361
Latch, front cover, upper		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Latch, front cover, upper		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Latch, rear door		Multi-bin mailbox main body (1 of 2) on page 417
Latch, rear door		Multi-bin mailbox main body (2 of 2) on page 421
Left cover assembly		Multi-bin mailbox covers on page 415
Left cover assembly (P4014)	RM1-5450-000CN	Covers—base unit on page 355
Left cover assembly (P4015/P4515)	RM1-4551-000CN	Covers—base unit on page 355
Left frame assembly		Optional 500-sheet paper feeder main body on page 391
Left hook assembly		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Left hook assembly		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Left side end support assembly		500-sheet cassette on page 371
Left side end support assembly		Optional 500-sheet feeder cassette on page 395
Lever		Multipurpose pickup assembly on page 375
Lever, bin flapper		Multi-bin mailbox main body (1 of 2) on page 417
Lever, bin flapper		Multi-bin mailbox main body (2 of 2) on page 421
Lever, height prevention		Internal components (2 of 3) on page 361
Lever, in flapper link		Multi-bin mailbox covers on page 415
Lever, lens		Internal components (2 of 3) on page 361

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Lever, lock		Optional 500-sheet paper feeder main body on page 391
Lever, paper delivery sensor		Fusing assembly on page 381
Lever, release, left		Fusing assembly on page 381
Lever, release, right		Fusing assembly on page 381
Lever, sensor		Fusing assembly on page 381
Lid, scanner protective duct		Internal components (2 of 3) on page 361
Lifter drive assembly	RM1-4585-000CN	Internal components (3 of 3) on page 365
Lifter drive assembly	RM1-1136-000CN	Optional 1,500-sheet feeder main body (1 of 2) on page 403
Lifter driver assembly		Optional 500-sheet paper feeder main body on page 391
Lifter tray assembly		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Lifter tray assembly		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Limiter, cassette torque	RC2-5262-000CN	500-sheet cassette on page 371
Limiter, cassette torque	RC2-5262-000CN	Optional 500-sheet feeder cassette on page 395
Limiter, cassette torque	RC2-5262-000CN	Optional 1,500-sheet feeder front door assembly on page 401
Limiter, multipurpose torque		Multipurpose pickup assembly on page 375
Lock side plate assembly		Optional 500-sheet paper feeder main body on page 391
Lower frame assembly		Optional 500-sheet paper feeder main body on page 391
Motor, DC, 24 V, drum drive	RL1-1659-000CN	Internal components (1 of 3) on page 357
Motor, DC, 24 V, main drive	RL1-1657-000CN	Internal components (2 of 3) on page 361
Motor, stepping	RH7-1603-020CN	Optional 1,500-sheet feeder main body (1 of 2) on page 403
Mount, lever		Internal components (2 of 3) on page 361
Multi-bin mailbox PCA	RM1-6224-000CN	Multi-bin mailbox PCA on page 389

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Multi-bin mailbox PCA	RM1-6224-000CN	Multi-bin mailbox main body (2 of 2) on page 421
Multipurpose frame assembly		Multipurpose pickup assembly on page 375
Multipurpose guide assembly		Multipurpose pickup assembly on page 375
Multipurpose pickup assembly	RM1-4563-000CN	Multipurpose pickup assembly on page 375
Multipurpose pickup gear assembly		Multipurpose pickup assembly on page 375
Multipurpose solenoid assembly		Multipurpose pickup assembly on page 375
Multipurpose tray assembly		Multipurpose pickup assembly on page 375
Multipurpose tray kit (contains 1 pickup roller, 1 feed roller, 1 separation roller)	CB506-67905	Multipurpose pickup assembly on page 375
Multipurpose tray pickup assembly	RM1-4563-000CN	Internal components (1 of 3) on page 357
Numbering assembly	RM1-5265-000CN	Optional 1,500-sheet feeder main body (1 of 2) on page 403
Oil damper assembly	RM1-0289-030CN	Optional 1,500-sheet feeder main body (1 of 2) on page 403
Optional 1,500-sheet feeder front door assembly	RM1-5255-000CN	Optional 1,500-sheet feeder front door assembly on page 401
Optional 500-sheet feeder cassette	RM1-4559-000CN	Optional 500-sheet feeder cassette on page 395
Pad, arm		Multi-bin mailbox main body (1 of 2) on page 417
Pad, arm		Multi-bin mailbox main body (2 of 2) on page 421
Paper delivery assembly	RM1-4529-000CN	Paper delivery assembly on page 379
Paper delivery assembly (also see Figure 8-12 Paper delivery assembly on page 378)	RM1-4529-000CN	Internal components (3 of 3) on page 365
Paper delivery drive assembly	RM1-4526-000CN	Internal components (3 of 3) on page 365
Paper detect sensor assembly	RM1-5264-000CN	Optional 1,500-sheet feeder paper pickup assembly on page 411
Paper feed assembly	RM1-4548-000CN	Power supply assembly on page 369
Paper feed roller assembly	RM1-4527-000CN	Internal components (1 of 3) on page 357

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Paper feed roller assembly	RM1-0037-020CN	Internal components (2 of 3) on page 361
Paper feed roller assembly	RM1-0037-020CN	500-sheet cassette on page 371
Paper feed roller assembly	RM1-0037-020CN	Optional 500-sheet paper feeder main body on page 391
Paper feed roller assembly	RM1-0037-020CN	Optional 500-sheet feeder cassette on page 395
Paper feed roller assembly	RM1-0037-020CN	Optional 1,500-sheet feeder front door assembly on page 401
Paper feed roller assembly	RM1-0037-020CN	Optional 1,500-sheet feeder paper pickup assembly on page 411
Paper feed shaft Z assembly	RM1-4562-000CN	Internal components (2 of 3) on page 361
Paper pickup assembly (see Figure 8-23 Optional 1,500-sheet feeder paper pickup assembly on page 410)		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Paper pickup drive assembly	RM1-4532-000CN	Internal components (2 of 3) on page 361
Paper pickup drive assembly	RM1-5262-000CN	Optional 1,500-sheet feeder main body (1 of 2) on page 403
Paper pickup roller assembly	RM1-0036-020CN	Internal components (2 of 3) on page 361
Paper pickup roller assembly	RM1-0036-020CN	Optional 500-sheet paper feeder main body on page 391
Paper pickup roller assembly	RM1-0036-020CN	Optional 1,500-sheet feeder paper pickup assembly on page 411
Paper pickup side plate assembly		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Paper pickup side plate assembly		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Paper sensing flag assembly		Multi-bin mailbox main body (1 of 2) on page 417
Paper size detect assembly	RM1-5261-000CN	Optional 1,500-sheet feeder main body (2 of 2) on page 407
Pickup drive side plate		Optional 500-sheet paper feeder main body on page 391
Pin		Multi-bin mailbox main body (1 of 2) on page 417

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Pin		Multi-bin mailbox main body (2 of 2) on page 421
Pin, cassette lock, left		500-sheet cassette on page 371
Pin, dowel		500-sheet cassette on page 371
Pin, dowel		Optional 500-sheet feeder cassette on page 395
Pin, dowel		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Pin, dowel		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Pin, front guide lock, right		500-sheet cassette on page 371
Pin, front guide lock, right		Optional 500-sheet feeder cassette on page 395
Pin, lifter tray stopper		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Pin, lifter tray stopper		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Pin, option	RC1-0306-000CN	Covers—base unit on page 355
Plate, damper support		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Plate, damper support		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Plate, front upper		Optional 1,500-sheet feeder paper pickup assembly on page 411
Plate, lifter wire cover		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Plate, lifter wire cover		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Plate, paper lifting		500-sheet cassette on page 371
Plate, paper lifting		Optional 500-sheet feeder cassette on page 395
Plate, pressure, left		Fusing assembly on page 381

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Plate, pressure, right		Fusing assembly on page 381
Plate, reinforcement		Optional 500-sheet paper feeder main body on page 391
Plate, RW crossmember		Internal components (2 of 3) on page 361
Plate, swing		Optional 1,500-sheet feeder paper pickup assembly on page 411
Power-supply assembly, 110-127 V (see Figure 8-9 Power supply assembly on page 368)		Internal components (1 of 3) on page 357
Power-supply assembly, 220-240 V (see Figure 8-9 Power supply assembly on page 368)		Internal components (1 of 3) on page 357
Presence sensor holder assembly		Multipurpose pickup assembly on page 375
Pressure roller gear assembly		Fusing assembly on page 381
Product roller kit (contains 2 feed rollers, 1 pickup roller)	CB506-67904	Optional 500-sheet paper feeder main body on page 391
Product roller kit (contains 2 feed rollers, 1 pickup roller)	CB506-67904	Optional 500-sheet feeder cassette on page 395
Product roller kit (contains 2 feed rollers, 1 pickup roller)	CB506-67904	Optional 1,500-sheet feeder paper pickup assembly on page 411
Pulley, 24T		Multi-bin mailbox main body (1 of 2) on page 417
Pulley, 24T		Multi-bin mailbox main body (1 of 2) on page 417
Pulley, 24T		Multi-bin mailbox main body (2 of 2) on page 421
Pulley, 24T		Multi-bin mailbox main body (2 of 2) on page 421
Pulley, wire, front		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Pulley, wire, front		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Pulley, wire, rear		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Pulley, wire, rear		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Pulley/Gear, 34T		Multi-bin mailbox main body (1 of 2) on page 417
Pulley/Gear, 34T		Multi-bin mailbox main body (2 of 2) on page 421

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Rear door assembly		Multi-bin mailbox covers on page 415
Reel, lifter wire		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Reel, lifter wire		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Registration assembly	RM1-5460-000CN	Internal components (1 of 3) on page 357
Remnant indication assembly	RM1-5259-000CN	Optional 1,500-sheet feeder main body (2 of 2) on page 407
Rib, cable guide		Fusing assembly on page 381
Right cover assembly		Multi-bin mailbox covers on page 415
Right cover assembly (P4014)	RM1-5449-000CN	Covers—base unit on page 355
Right cover assembly (P4015/P4515)	RM1-4550-000CN	Covers—base unit on page 355
Right frame assembly		Optional 500-sheet paper feeder main body on page 391
Right front guide assembly	RM1-4576-000CN	Internal components (2 of 3) on page 361
Right front guide assembly		Optional 500-sheet paper feeder main body on page 391
Right guide assembly		Optional 500-sheet paper feeder main body on page 391
Right guide assembly (P4014)	RM1-5451-000CN	Internal components (3 of 3) on page 365
Right guide assembly (P4015/P4515)	RM1-4558-000CN	Internal components (3 of 3) on page 365
Right side end support assembly		500-sheet cassette on page 371
Right side end support assembly		Optional 500-sheet feeder cassette on page 395
Right stopper assembly		Internal components (2 of 3) on page 361
Ring, E	XD9-0232-000CN	Internal components (2 of 3) on page 361
Ring, E		500-sheet cassette on page 371
Ring, E		Multipurpose pickup assembly on page 375

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Ring, E		Paper delivery assembly on page 379
Ring, E		Fusing assembly on page 381
Ring, E		Optional 500-sheet paper feeder main body on page 391
Ring, E		Optional 500-sheet paper feeder main body on page 391
Ring, E		Optional 500-sheet feeder cassette on page 395
Ring, E		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Ring, E		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Ring, E		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Ring, E		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Ring, E		Optional 1,500-sheet feeder paper pickup assembly on page 411
Ring, E		Multi-bin mailbox main body (1 of 2) on page 417
Ring, E		Multi-bin mailbox main body (2 of 2) on page 421
Ring, retainer		Optional 1,500-sheet feeder paper pickup assembly on page 411
Ring, slider		Optional 1,500-sheet feeder paper pickup assembly on page 411
Rod, din board		Internal components (3 of 3) on page 365
Rod, release, lower		Internal components (1 of 3) on page 357
Rod, release, upper		Internal components (1 of 3) on page 357
Rod, switch	RC2-2667-000CN	Internal components (2 of 3) on page 361
Rod, third fan		Internal components (3 of 3) on page 365
Roller, delivery intermediate		Paper delivery assembly on page 379

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Roller, delivery, inlet		Multi-bin mailbox main body (1 of 2) on page 417
Roller, delivery, inlet		Multi-bin mailbox main body (2 of 2) on page 421
Roller, face-down, lower		Paper delivery assembly on page 379
Roller, face-down, upper		Paper delivery assembly on page 379
Roller, face-up		Fusing assembly on page 381
Roller, feed	RL1-1663-000CN	Multipurpose pickup assembly on page 375
Roller, intermediate		Multi-bin mailbox main body (1 of 2) on page 417
Roller, intermediate		Multi-bin mailbox main body (2 of 2) on page 421
Roller, LU		500-sheet cassette on page 371
Roller, LU		Optional 500-sheet feeder cassette on page 395
Roller, paper feed		Optional 1,500-sheet feeder paper pickup assembly on page 411
Roller, paper feed		Optional 1,500-sheet feeder paper pickup assembly on page 411
Roller, pickup	RL1-1641-000CN	Multipurpose pickup assembly on page 375
Roller, positioning		500-sheet cassette on page 371
Roller, positioning		Optional 500-sheet feeder cassette on page 395
Roller, pressure		Fusing assembly on page 381
Roller, RD		500-sheet cassette on page 371
Roller, RD		Optional 500-sheet feeder cassette on page 395
Roller, separation	RL1-1654-000CN	Multipurpose pickup assembly on page 375
Saddle, wire		Internal components (2 of 3) on page 361
Saddle, wire		Optional 1,500-sheet feeder main body (1 of 2) on page 403

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Saddle, wire		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Screw with washer, M3x6		Fusing assembly on page 381
Screw with washer, M3x6		Fusing assembly on page 381
Screw, D, M3x8		Covers—base unit on page 355
Screw, D, M3x8	XA9-1671-000CN	Internal components (1 of 3) on page 357
Screw, D, M3x8		Internal components (2 of 3) on page 361
Screw, D, M3x8		Internal components (3 of 3) on page 365
Screw, D, M3x8		Power supply assembly on page 369
Screw, D, M3x8		Multipurpose pickup assembly on page 375
Screw, D, M3x8		Fusing assembly on page 381
Screw, D, M3x8		Optional 500-sheet paper feeder main body on page 391
Screw, D, M3x8		Multi-bin mailbox main body (1 of 2) on page 417
Screw, D, M3x8		Multi-bin mailbox main body (2 of 2) on page 421
Screw, flat head RS, M3x6	XA9-1464-000CN	Power supply assembly on page 369
Screw, M3x8		Fusing assembly on page 381
Screw, M4x5		Internal components (1 of 3) on page 357
Screw, machine, pan head, M3x6	XB1-1300-605CN	Power supply assembly on page 369
Screw, machine, truss head, M3x4		Multi-bin mailbox main body (1 of 2) on page 417
Screw, machine, truss head, M3x4		Multi-bin mailbox main body (2 of 2) on page 421
Screw, P, M3x8		Multi-bin mailbox covers on page 415
Screw, RS, M3x8		Fusing assembly on page 381
Screw, stepped		Fusing assembly on page 381
Screw, tap, binding head, M3x8	XB4-7300-809CN	Internal components (2 of 3) on page 361
Screw, tap, binding head, M3x8		Multi-bin mailbox covers on page 415

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Screw, tap, binding head, M3x8		Multi-bin mailbox main body (1 of 2) on page 417
Screw, tap, binding head, M3x8		Multi-bin mailbox main body (2 of 2) on page 421
Screw, tap, M3x6	XA9-1503-000CN	Internal components (1 of 3) on page 357
Screw, tap, M3x6		Internal components (2 of 3) on page 361
Screw, tap, M3x6		Internal components (3 of 3) on page 365
Screw, tap, M3x6		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Screw, tap, M3x6		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Screw, tap, M3x6		Optional 1,500-sheet feeder paper pickup assembly on page 411
screw, tap, M3x6		Optional 500-sheet paper feeder main body on page 391
Screw, tap, M4x12		500-sheet cassette on page 371
Screw, tap, M4x12		Optional 500-sheet feeder cassette on page 395
Screw, tap, pan head, M4x10		Internal components (2 of 3) on page 361
Screw, tap, pan head, M4x10		Internal components (3 of 3) on page 365
Screw, tap, pan head, M4x10		Power supply assembly on page 369
Screw, tap, pan head, M4x10		500-sheet cassette on page 371
Screw, tap, pan head, M4x10		Multipurpose pickup assembly on page 375
Screw, tap, pan head, M4x10		Optional 500-sheet paper feeder main body on page 391
Screw, tap, pan head, M4x10		Optional 500-sheet feeder cassette on page 395
Screw, tap, pan head, M4x10	XB4-7401-007CN	Optional 1,500-sheet paper feeder covers on page 399
Screw, tap, pan head, MM4x10		Multi-bin mailbox main body (1 of 2) on page 417
Screw, tap, pan head, MM4x10		Multi-bin mailbox main body (2 of 2) on page 421

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Screw, tap, S		Fusing assembly on page 381
Screw, tapping, pan head, M4x10		Covers—base unit on page 355
Screw, tapping, pan head, M4x10	XB4-7401-007CN	Internal components (1 of 3) on page 357
Screw, with washer, M3x6	XB2-7300-607CN	Internal components (3 of 3) on page 365
Screw, with washer, M3x6		Power supply assembly on page 369
Screw, with washer, M3x6		Optional 500-sheet paper feeder main body on page 391
Screw, with washer, M3x6		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Screw, with washer, M3x6		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Screw, with washer, M3x8	XA9-1420-000CN	Optional 1,500-sheet paper feeder covers on page 399
Screw, with washer, M3x8		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Screw, with washer, M3x8		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Screw, with washer, M4x6	XB2-7400-606CN	Power supply assembly on page 369
Sensor assembly	RM1-5096-000CN	Multi-bin mailbox main body (2 of 2) on page 421
Shaft, front cover hinge		Optional 1,500-sheet paper feeder covers on page 399
Shaft, lifter drive		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Shaft, lifter drive		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Shaft, load limit arm		Optional 1,500-sheet feeder paper pickup assembly on page 411
Shaft, lock joint		Optional 500-sheet paper feeder main body on page 391
Shaft, multipurpose cam, left		Multipurpose pickup assembly on page 375
Shaft, multipurpose cam, right		Multipurpose pickup assembly on page 375

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Shaft, paper feed roller		Optional 1,500-sheet feeder paper pickup assembly on page 411
Shaft, positioning roller auxiliary		500-sheet cassette on page 371
Shaft, positioning roller, auxiliary		Optional 500-sheet feeder cassette on page 395
Shaft, RD roller		500-sheet cassette on page 371
Shaft, retard drive	RL1-1658-000CN	Internal components (2 of 3) on page 361
Shaft, retard drive		Optional 500-sheet paper feeder main body on page 391
Shaft, retard gear holder		500-sheet cassette on page 371
Shaft, retard gear holder		Optional 500-sheet feeder cassette on page 395
Shaft, size sensing		500-sheet cassette on page 371
Shaft, size sensing		Multipurpose pickup assembly on page 375
Shaft, size sensing		Optional 500-sheet feeder cassette on page 395
Sheet, bottom frame, left		Multi-bin mailbox main body (1 of 2) on page 417
Sheet, bottom frame, left		Multi-bin mailbox main body (2 of 2) on page 421
Sheet, bottom frame, right		Multi-bin mailbox main body (1 of 2) on page 417
Sheet, bottom frame, right		Multi-bin mailbox main body (2 of 2) on page 421
Sheet, fusing protective		Fusing assembly on page 381
Sheet, protective, left		Fusing assembly on page 381
Sheet, protective, right lower		Fusing assembly on page 381
Sheet, protective, right upper		Fusing assembly on page 381
Sheet, solenoid damper		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Sheet, solenoid damper		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Side plate, drum drive		Internal components (1 of 3) on page 357

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Side plate, fuser drive		Internal components (3 of 3) on page 365
Side plate, fusing, left		Fusing assembly on page 381
Side plate, fusing, right		Fusing assembly on page 381
Side plate, paper feed drive		Internal components (2 of 3) on page 361
Size detect assembly	RM1-4525-000CN	Internal components (1 of 3) on page 357
Size detect assembly		Optional 500-sheet paper feeder main body on page 391
Sleeve guide assembly (110-127 V)		Fusing assembly on page 381
Sleeve guide assembly (220-240 V)		Fusing assembly on page 381
Solenoid	RK2-0270-000CN	Internal components (2 of 3) on page 361
Solenoid		Optional 500-sheet paper feeder main body on page 391
Solenoid		Multi-bin mailbox main body (1 of 2) on page 417
Spacer		Multi-bin mailbox main body (1 of 2) on page 417
Spacer		Multi-bin mailbox main body (2 of 2) on page 421
Spacer, frame		Internal components (1 of 3) on page 357
Spacer, scanner, front		Internal components (2 of 3) on page 361
Spacer, scanner, rear		Internal components (2 of 3) on page 361
Spacer, screw		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Spacer, screw		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Spring, compression		Internal components (1 of 3) on page 357
Spring, compression	RC1-0213-000CN	Internal components (2 of 3) on page 361
Spring, compression		Multipurpose pickup assembly on page 375
Spring, compression		Fusing assembly on page 381
Spring, compression		Optional 1,500-sheet feeder paper pickup assembly on page 411

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Spring, compression		Optional 1,500-sheet feeder paper pickup assembly on page 411
Spring, compression		Optional 1,500-sheet feeder paper pickup assembly on page 411
Spring, compression		Multi-bin mailbox main body (1 of 2) on page 417
Spring, compression		Multi-bin mailbox main body (1 of 2) on page 417
Spring, compression		Multi-bin mailbox main body (2 of 2) on page 421
Spring, compression		Multi-bin mailbox main body (2 of 2) on page 421
Spring, grounding		Internal components (3 of 3) on page 365
Spring, grounding	RU6-2105-000CN	Paper delivery assembly on page 379
Spring, grounding		Paper delivery assembly on page 379
Spring, leaf		Power supply assembly on page 369
Spring, leaf		Fusing assembly on page 381
Spring, tension	RU6-2115-000CN	Internal components (2 of 3) on page 361
Spring, tension	RC1-0198-000CN	Internal components (3 of 3) on page 365
Spring, tension		500-sheet cassette on page 371
Spring, tension		500-sheet cassette on page 371
Spring, tension		Multipurpose pickup assembly on page 375
Spring, tension		Multipurpose pickup assembly on page 375
Spring, tension		Multipurpose pickup assembly on page 375
Spring, tension	RC1-0133-000CN	Paper delivery assembly on page 379
Spring, tension		Optional 500-sheet paper feeder main body on page 391
Spring, tension		Optional 500-sheet paper feeder main body on page 391
Spring, tension		Optional 500-sheet feeder cassette on page 395

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Spring, tension		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Spring, tension		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Spring, tension		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Spring, tension		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Spring, tension		Multi-bin mailbox main body (1 of 2) on page 417
Spring, tension		Multi-bin mailbox main body (2 of 2) on page 421
Spring, torsion		Internal components (2 of 3) on page 361
Spring, torsion		Internal components (2 of 3) on page 361
Spring, torsion		500-sheet cassette on page 371
Spring, torsion		Fusing assembly on page 381
Spring, torsion		Fusing assembly on page 381
Spring, torsion		Fusing assembly on page 381
Spring, torsion		Fusing assembly on page 381
Spring, torsion		Optional 500-sheet feeder cassette on page 395
Spring, torsion		Optional 500-sheet feeder cassette on page 395
Spring, torsion		Optional 1,500-sheet paper feeder covers on page 399
Spring, torsion		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Spring, torsion		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Spring, torsion		Optional 1,500-sheet feeder paper pickup assembly on page 411
Stopper, C left (P4014)		Internal components (2 of 3) on page 361
Stopper, C left (P4015/P4515)		Internal components (2 of 3) on page 361

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Stopper, C right (P4014)		Internal components (2 of 3) on page 361
Stopper, C right (P4015/P4515)		Internal components (2 of 3) on page 361
Stopper, front door		Optional 1,500-sheet paper feeder covers on page 399
Stopper, rear door		Multi-bin mailbox main body (1 of 2) on page 417
Stopper, rear door		Multi-bin mailbox main body (2 of 2) on page 421
Support, DCU		Internal components (2 of 3) on page 361
Support, feed bushing		Optional 1,500-sheet feeder paper pickup assembly on page 411
Support, lifter arm		500-sheet cassette on page 371
Support, lifter arm		Optional 500-sheet feeder cassette on page 395
Support, lifter drive assembly		Internal components (3 of 3) on page 365
Support, lifter drive assembly		Optional 500-sheet paper feeder main body on page 391
Support, power supply switch		Internal components (1 of 3) on page 357
Support, release hook, left		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Support, release hook, left		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Support, wire pulley		Optional 1,500-sheet feeder main body (1 of 2) on page 403
Support, wire pulley		Optional 1,500-sheet feeder main body (2 of 2) on page 407
Tag holder assembly	RM1-4539-000CN	Internal components (2 of 3) on page 361
Thermistor unit	RK2-0359-000CN	Internal components (3 of 3) on page 365
Top bin flapper assembly		Multi-bin mailbox main body (1 of 2) on page 417
Top cover assembly (P4014)	RM1-5250-000CN	Covers—base unit on page 355

Table 8-26 Alphabetical parts list (continued)

Description	Part number	Table and page
Top cover assembly (P4015/P4515)	RM1-4552-000CN	Covers—base unit on page 355
Transfer roller assembly	CB506-67903	Internal components (1 of 3) on page 357
Upper entrance guide assembly		Fusing assembly on page 381
Upper plate, rear		Optional 500-sheet paper feeder main body on page 391
Upper plate, right		Optional 500-sheet paper feeder main body on page 391

Numerical parts list

Table 8-27 Numerical parts list

Part number	Description	Table and page
	Screw, tapping, pan head, M4x10	Covers—base unit on page 355
	Screw, D, M3x8	Covers—base unit on page 355
	Screw, M4x5	Internal components (1 of 3) on page 357
	Power-supply assembly, 110-127 V (see Figure 8-9 Power supply assembly on page 368)	Internal components (1 of 3) on page 357
	Power-supply assembly, 220-240 V (see Figure 8-9 Power supply assembly on page 368)	Internal components (1 of 3) on page 357
	Gear, 193T	Internal components (1 of 3) on page 357
	Guard, edge	Internal components (1 of 3) on page 357
	Clamp, cord	Internal components (1 of 3) on page 357
	Rod, release, upper	Internal components (1 of 3) on page 357
	Rod, release, lower	Internal components (1 of 3) on page 357
	Guide, gear shift, A	Internal components (1 of 3) on page 357
	Guide, gear shift, B	Internal components (1 of 3) on page 357
	Guide, scanner cable	Internal components (1 of 3) on page 357
	Guide, gear	Internal components (1 of 3) on page 357
	Guide, cassette right, rear	Internal components (1 of 3) on page 357
	Guide, cassette left, rear	Internal components (1 of 3) on page 357
	Support, power supply switch	Internal components (1 of 3) on page 357
	Foot	Internal components (1 of 3) on page 357
	Spacer, frame	Internal components (1 of 3) on page 357
	Side plate, drum drive	Internal components (1 of 3) on page 357
	Cap, drum gear	Internal components (1 of 3) on page 357

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Bushing	Internal components (1 of 3) on page 357
	Spring, compression	Internal components (1 of 3) on page 357
	Feeder sensor cable assembly	Internal components (2 of 3) on page 361
	Screw, tap, pan head, M4x10	Internal components (2 of 3) on page 361
	Screw, D, M3x8	Internal components (2 of 3) on page 361
	Spacer, scanner, front	Internal components (2 of 3) on page 361
	Spacer, scanner, rear	Internal components (2 of 3) on page 361
	Screw, tap, M3x6	Internal components (2 of 3) on page 361
	Guide, front	Internal components (2 of 3) on page 361
	Support, DCU	Internal components (2 of 3) on page 361
	Bushing	Internal components (2 of 3) on page 361
	Guide, cable, right front	Internal components (2 of 3) on page 361
	Lever, height prevention	Internal components (2 of 3) on page 361
	Holder, sheet sensor	Internal components (2 of 3) on page 361
	Guide, EPU, rear	Internal components (2 of 3) on page 361
	Clip, cable	Internal components (2 of 3) on page 361
	Saddle, wire	Internal components (2 of 3) on page 361
	Guide, lower	Internal components (2 of 3) on page 361
	Duct, scanner protective, 1	Internal components (2 of 3) on page 361
	Flag, shutter	Internal components (2 of 3) on page 361
	Spring, torsion	Internal components (2 of 3) on page 361
	Plate, RW crossmember	Internal components (2 of 3) on page 361

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Lever, lens	Internal components (2 of 3) on page 361
	Stopper, C right (P4015/P4515)	Internal components (2 of 3) on page 361
	Stopper, C right (P4014)	Internal components (2 of 3) on page 361
	Stopper, C left (P4015/P4515)	Internal components (2 of 3) on page 361
	Stopper, C left (P4014)	Internal components (2 of 3) on page 361
	Mount, lever	Internal components (2 of 3) on page 361
	Right stopper assembly	Internal components (2 of 3) on page 361
	Side plate, paper feed drive	Internal components (2 of 3) on page 361
	Gear, 29T	Internal components (2 of 3) on page 361
	Gear, 35T	Internal components (2 of 3) on page 361
	Gear, 37T/18T	Internal components (2 of 3) on page 361
	Gear, 17T/25T	Internal components (2 of 3) on page 361
	Spring, torsion	Internal components (2 of 3) on page 361
	Flag, paper presence detect	Internal components (2 of 3) on page 361
	Lid, scanner protective duct	Internal components (2 of 3) on page 361
	Duct, scanner protective, 2	Internal components (2 of 3) on page 361
	Support, lifter drive assembly	Internal components (3 of 3) on page 365
	Cover, connector	Internal components (3 of 3) on page 365
	Case, envelope	Internal components (3 of 3) on page 365
	Holder, sensor	Internal components (3 of 3) on page 365
	Front cassette LF guide assembly	Internal components (3 of 3) on page 365
	Screw, tap, pan head, M4x10	Internal components (3 of 3) on page 365

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Screw, D, M3x8	Internal components (3 of 3) on page 365
	Holder, sensor	Internal components (3 of 3) on page 365
	Guide, cartridge, right	Internal components (3 of 3) on page 365
	Rod, third fan	Internal components (3 of 3) on page 365
	Crossmember, front	Internal components (3 of 3) on page 365
	Crossmember, option, left	Internal components (3 of 3) on page 365
	Guide, rear	Internal components (3 of 3) on page 365
	Duct, second fan	Internal components (3 of 3) on page 365
	Duct, fourth fan	Internal components (3 of 3) on page 365
	Holder, DCU	Internal components (3 of 3) on page 365
	Guide, flat flexible cable	Internal components (3 of 3) on page 365
	Holder, check pin	Internal components (3 of 3) on page 365
	Spring, grounding	Internal components (3 of 3) on page 365
	Guide, left	Internal components (3 of 3) on page 365
	Guide, left, upper	Internal components (3 of 3) on page 365
	Holder, sensor	Internal components (3 of 3) on page 365
	Rod, din board	Internal components (3 of 3) on page 365
	Gear, 23T/19T	Internal components (3 of 3) on page 365
	Crossmember, option, right	Internal components (3 of 3) on page 365
	Side plate, fuser drive	Internal components (3 of 3) on page 365
	Gear, 17T	Internal components (3 of 3) on page 365
	Gear, 15T	Internal components (3 of 3) on page 365

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Gear, 25T/91T	Internal components (3 of 3) on page 365
	Gear, 33T	Internal components (3 of 3) on page 365
	Gear 35T	Internal components (3 of 3) on page 365
	Cable, option feeder	Internal components (3 of 3) on page 365
	Cable, OPT DEL	Internal components (3 of 3) on page 365
	Clamp, cable	Internal components (3 of 3) on page 365
	Screw, tap, M3x6	Internal components (3 of 3) on page 365
	Holder, inlet	Power supply assembly on page 369
	Holder, connector	Power supply assembly on page 369
	Guard, edge	Power supply assembly on page 369
	Spring, leaf	Power supply assembly on page 369
	Crossmember, fusing	Power supply assembly on page 369
	Screw, tap, pan head, M4x10	Power supply assembly on page 369
	Screw, D, M3x8	Power supply assembly on page 369
	Screw, with washer, M3x6	Power supply assembly on page 369
	Pin, front guide lock, right	500-sheet cassette on page 371
	Cover, gear	500-sheet cassette on page 371
	Flag, size sensing	500-sheet cassette on page 371
	Arm, lifter	500-sheet cassette on page 371
	Support, lifter arm	500-sheet cassette on page 371
	Bushing, lift arm	500-sheet cassette on page 371
	Holder, retard gear	500-sheet cassette on page 371

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Spring, tension	500-sheet cassette on page 371
	Spring, tension	500-sheet cassette on page 371
	Gear, 20T	500-sheet cassette on page 371
	Body, cassette	500-sheet cassette on page 371
	Roller, positioning	500-sheet cassette on page 371
	Claw, cassette	500-sheet cassette on page 371
	Roller, LU	500-sheet cassette on page 371
	Flange, positioning roller, right	500-sheet cassette on page 371
	Shaft, positioning roller auxiliary	500-sheet cassette on page 371
	Roller, RD	500-sheet cassette on page 371
	Gauge, fuel	500-sheet cassette on page 371
	Pin, cassette lock, left	500-sheet cassette on page 371
	Shaft, RD roller	500-sheet cassette on page 371
	Spring, torsion	500-sheet cassette on page 371
	Guide, nip	500-sheet cassette on page 371
	Plate, paper lifting	500-sheet cassette on page 371
	Gear, 88T	500-sheet cassette on page 371
	Gear, 14T	500-sheet cassette on page 371
	Gear, 14T	500-sheet cassette on page 371
	Gear, 14T	500-sheet cassette on page 371
	Gear, 15T/25T	500-sheet cassette on page 371
	Gear, 37T	500-sheet cassette on page 371

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Shaft, size sensing	500-sheet cassette on page 371
	Shaft, retard gear holder	500-sheet cassette on page 371
	Ring, E	500-sheet cassette on page 371
	Label, cassette operation	500-sheet cassette on page 371
	Right side end support assembly	500-sheet cassette on page 371
	Cassette rear assembly	500-sheet cassette on page 371
	Left side end support assembly	500-sheet cassette on page 371
	Front cassette assembly	500-sheet cassette on page 371
	Screw, tap, pan head, M4x10	500-sheet cassette on page 371
	Pin, dowel	500-sheet cassette on page 371
	Screw, tap, M4x12	500-sheet cassette on page 371
	Frame, multi, right	Multipurpose pickup assembly on page 375
	Guide, nip, left	Multipurpose pickup assembly on page 375
	Guide, nip, center	Multipurpose pickup assembly on page 375
	Guide, nip, right	Multipurpose pickup assembly on page 375
	Bushing	Multipurpose pickup assembly on page 375
	Bushing	Multipurpose pickup assembly on page 375
	Bushing	Multipurpose pickup assembly on page 375
	Bushing	Multipurpose pickup assembly on page 375
	Shaft, size sensing	Multipurpose pickup assembly on page 375
	Hinge, multi, left	Multipurpose pickup assembly on page 375
	Hinge, multi, right	Multipurpose pickup assembly on page 375

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	label, jam clear envelope	Multipurpose pickup assembly on page 375
	Cam	Multipurpose pickup assembly on page 375
	Lever	Multipurpose pickup assembly on page 375
	Shaft, multipurpose cam, left	Multipurpose pickup assembly on page 375
	Shaft, multipurpose cam, right	Multipurpose pickup assembly on page 375
	Cover, multipurpose spring, left	Multipurpose pickup assembly on page 375
	Cover, multipurpose spring, right	Multipurpose pickup assembly on page 375
	Gear, 15T/21T	Multipurpose pickup assembly on page 375
	Gear, 30T/34T	Multipurpose pickup assembly on page 375
	Gear, 30T	Multipurpose pickup assembly on page 375
	Cam/gear, 30T	Multipurpose pickup assembly on page 375
	Cam/gear, 30T	Multipurpose pickup assembly on page 375
	Gear, 14T	Multipurpose pickup assembly on page 375
	Spring, tension	Multipurpose pickup assembly on page 375
	Spring, compression	Multipurpose pickup assembly on page 375
	Spring, tension	Multipurpose pickup assembly on page 375
	Spring, tension	Multipurpose pickup assembly on page 375
	Multipurpose guide assembly	Multipurpose pickup assembly on page 375
	Presence sensor holder assembly	Multipurpose pickup assembly on page 375
	Multipurpose pickup gear assembly	Multipurpose pickup assembly on page 375
	Multipurpose frame assembly	Multipurpose pickup assembly on page 375
	Multipurpose tray assembly	Multipurpose pickup assembly on page 375

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Cable, multipurpose sensor	Multipurpose pickup assembly on page 375
	Limiter, multipurpose torque	Multipurpose pickup assembly on page 375
	Holder, separation	Multipurpose pickup assembly on page 375
	Screw, D, M3x8	Multipurpose pickup assembly on page 375
	Screw, tap, pan head, M4x10	Multipurpose pickup assembly on page 375
	Cover, roller	Multipurpose pickup assembly on page 375
	Ring, E	Multipurpose pickup assembly on page 375
	Multipurpose solenoid assembly	Multipurpose pickup assembly on page 375
	Roller, face-down, upper	Paper delivery assembly on page 379
	Deflector, delivery	Paper delivery assembly on page 379
	Ring, E	Paper delivery assembly on page 379
	Bushing, paper delivery, upper	Paper delivery assembly on page 379
	Bushing	Paper delivery assembly on page 379
	Spring, grounding	Paper delivery assembly on page 379
	Bushing, paper delivery, upper	Paper delivery assembly on page 379
	Frame, face-down	Paper delivery assembly on page 379
	Bushing	Paper delivery assembly on page 379
	Bushing	Paper delivery assembly on page 379
	Guide, paper delivery	Paper delivery assembly on page 379
	Flange, positioning roller, right	Paper delivery assembly on page 379
	Roller, delivery intermediate	Paper delivery assembly on page 379
	Roller, face-down, lower	Paper delivery assembly on page 379

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Gear, 21T	Paper delivery assembly on page 379
	Gear, 17T	Paper delivery assembly on page 379
	Gear, 20T	Paper delivery assembly on page 379
	Gear, 33T	Paper delivery assembly on page 379
	Gear, 18T	Paper delivery assembly on page 379
	Roller, pressure	Fusing assembly on page 381
	Sleeve guide assembly (110-127 V)	Fusing assembly on page 381
	Sleeve guide assembly (220-240 V)	Fusing assembly on page 381
	Guide, paper inlet, lower	Fusing assembly on page 381
	Holder, fusing sensor	Fusing assembly on page 381
	Lever, release, left	Fusing assembly on page 381
	Sheet, fusing protective	Fusing assembly on page 381
	Bushing	Fusing assembly on page 381
	Roller, face-up	Fusing assembly on page 381
	Spring, torsion	Fusing assembly on page 381
	Spring, torsion	Fusing assembly on page 381
	Side plate, fusing, left	Fusing assembly on page 381
	Spring, compression	Fusing assembly on page 381
	Plate, pressure, right	Fusing assembly on page 381
	Plate, pressure, left	Fusing assembly on page 381
	Bushing	Fusing assembly on page 381
	Bushing	Fusing assembly on page 381
	Flag, sensor, right	Fusing assembly on page 381
	Flag, sensor, left	Fusing assembly on page 381
	Lever, sensor	Fusing assembly on page 381
	Spring, torsion	Fusing assembly on page 381
	Spring, torsion	Fusing assembly on page 381
	Guide, cable, right	Fusing assembly on page 381
	Guide, cable, left	Fusing assembly on page 381
	Spring, leaf	Fusing assembly on page 381
	Bar, filter, rear	Fusing assembly on page 381

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Eliminator	Fusing assembly on page 381
	Holder, brush	Fusing assembly on page 381
	Rib, cable guide	Fusing assembly on page 381
	Cam	Fusing assembly on page 381
	Sheet, protective, right upper	Fusing assembly on page 381
	Sheet, protective, right lower	Fusing assembly on page 381
	Side plate, fusing, right	Fusing assembly on page 381
	Lever, release, right	Fusing assembly on page 381
	Guide, paper delivery, lower	Fusing assembly on page 381
	Screw, stepped	Fusing assembly on page 381
	Sheet, protective, left	Fusing assembly on page 381
	Gear, 18T	Fusing assembly on page 381
	Gear, 17T	Fusing assembly on page 381
	IC, photo interrupter	Fusing assembly on page 381
	Guide, paper delivery guide, upper	Fusing assembly on page 381
	Pressure roller gear assembly	Fusing assembly on page 381
	Upper entrance guide assembly	Fusing assembly on page 381
	Cable, FSR AC	Fusing assembly on page 381
	Cable, FSR DC	Fusing assembly on page 381
	Holder, fusing lever	Fusing assembly on page 381
	Screw, M3x8	Fusing assembly on page 381
	Screw, RS, M3x8	Fusing assembly on page 381
	Screw, D, M3x8	Fusing assembly on page 381
	Screw with washer, M3x6	Fusing assembly on page 381
	Screw with washer, M3x6	Fusing assembly on page 381
	Screw, tap, S	Fusing assembly on page 381
	Ring, E	Fusing assembly on page 381
	Lever, paper delivery sensor	Fusing assembly on page 381
	Label, "Caution, high temp."	Fusing assembly on page 381
	Solenoid	Optional 500-sheet paper feeder main body on page 391
	Size detect assembly	Optional 500-sheet paper feeder main body on page 391
	Front top plate assembly	Optional 500-sheet paper feeder main body on page 391

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Cable, interface, upper	Optional 500-sheet paper feeder main body on page 391
	Pickup drive side plate	Optional 500-sheet paper feeder main body on page 391
	Cable, size sensor	Optional 500-sheet paper feeder main body on page 391
	500-page feeder driver PCA	Optional 500-sheet paper feeder main body on page 391
	Connector, drawer, 6P	Optional 500-sheet paper feeder main body on page 391
	Lifter driver assembly	Optional 500-sheet paper feeder main body on page 391
	Spring, tension	Optional 500-sheet paper feeder main body on page 391
	Support, lifter drive assembly	Optional 500-sheet paper feeder main body on page 391
	Bushing	Optional 500-sheet paper feeder main body on page 391
	Guide, cassette right, rear	Optional 500-sheet paper feeder main body on page 391
	Guide, cassette left, rear	Optional 500-sheet paper feeder main body on page 391
	Plate, reinforcement	Optional 500-sheet paper feeder main body on page 391
	Guide, left	Optional 500-sheet paper feeder main body on page 391
	Guide, cable	Optional 500-sheet paper feeder main body on page 391
	Shaft, lock joint	Optional 500-sheet paper feeder main body on page 391
	Arm, lock	Optional 500-sheet paper feeder main body on page 391
	Lever, lock	Optional 500-sheet paper feeder main body on page 391
	Upper plate, rear	Optional 500-sheet paper feeder main body on page 391
	Upper plate, right	Optional 500-sheet paper feeder main body on page 391
	Shaft, retard drive	Optional 500-sheet paper feeder main body on page 391
	Gear, 23T	Optional 500-sheet paper feeder main body on page 391
	Gear, 14T	Optional 500-sheet paper feeder main body on page 391

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Gear, 16T	Optional 500-sheet paper feeder main body on page 391
	Spring, tension	Optional 500-sheet paper feeder main body on page 391
	Left frame assembly	Optional 500-sheet paper feeder main body on page 391
	Right frame assembly	Optional 500-sheet paper feeder main body on page 391
	Front cassette left guide assembly	Optional 500-sheet paper feeder main body on page 391
	Lower frame assembly	Optional 500-sheet paper feeder main body on page 391
	Lock side plate assembly	Optional 500-sheet paper feeder main body on page 391
	Right front guide assembly	Optional 500-sheet paper feeder main body on page 391
	Right guide assembly	Optional 500-sheet paper feeder main body on page 391
	Screw, with washer, M3x6	Optional 500-sheet paper feeder main body on page 391
	screw, tap, M3x6	Optional 500-sheet paper feeder main body on page 391
	Screw, D, M3x8	Optional 500-sheet paper feeder main body on page 391
	Screw, tap, pan head, M4x10	Optional 500-sheet paper feeder main body on page 391
	Ring, E	Optional 500-sheet paper feeder main body on page 391
	Ring, E	Optional 500-sheet paper feeder main body on page 391
	Pin, front guide lock, right	Optional 500-sheet feeder cassette on page 395
	Cover, gear	Optional 500-sheet feeder cassette on page 395
	Flag, size sensing	Optional 500-sheet feeder cassette on page 395
	Arm, lifter	Optional 500-sheet feeder cassette on page 395
	Support, lifter arm	Optional 500-sheet feeder cassette on page 395
	Bushing, lifter arm	Optional 500-sheet feeder cassette on page 395
	Holder, retard gear	Optional 500-sheet feeder cassette on page 395

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Spring, tension	Optional 500-sheet feeder cassette on page 395
	Spring, torsion	Optional 500-sheet feeder cassette on page 395
	Gear, 20T	Optional 500-sheet feeder cassette on page 395
	Body, cassette	Optional 500-sheet feeder cassette on page 395
	Roller, positioning	Optional 500-sheet feeder cassette on page 395
	Claw, cassette	Optional 500-sheet feeder cassette on page 395
	Roller, LU	Optional 500-sheet feeder cassette on page 395
	Flange, positioning roller, right	Optional 500-sheet feeder cassette on page 395
	Shaft, positioning roller, auxiliary	Optional 500-sheet feeder cassette on page 395
	Roller, RD	Optional 500-sheet feeder cassette on page 395
	Gauge, fuel	Optional 500-sheet feeder cassette on page 395
		Optional 500-sheet feeder cassette on page 395
		Optional 500-sheet feeder cassette on page 395
	Spring, torsion	Optional 500-sheet feeder cassette on page 395
	Guide, nip	Optional 500-sheet feeder cassette on page 395
	Plate, paper lifting	Optional 500-sheet feeder cassette on page 395
	Gear, 88T	Optional 500-sheet feeder cassette on page 395
	Gear, 14T	Optional 500-sheet feeder cassette on page 395
	Gear, 14T	Optional 500-sheet feeder cassette on page 395
	Gear, 14T	Optional 500-sheet feeder cassette on page 395
	Gear, 15T/25T	Optional 500-sheet feeder cassette on page 395
	Gear, 37T	Optional 500-sheet feeder cassette on page 395

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Shaft, size sensing	Optional 500-sheet feeder cassette on page 395
	Shaft, retard gear holder	Optional 500-sheet feeder cassette on page 395
	Ring, E	Optional 500-sheet feeder cassette on page 395
	Label, cassette operation	Optional 500-sheet feeder cassette on page 395
	Right side end support assembly	Optional 500-sheet feeder cassette on page 395
	Cassette rear assembly	Optional 500-sheet feeder cassette on page 395
	Left side end support assembly	Optional 500-sheet feeder cassette on page 395
	Front cassette assembly	Optional 500-sheet feeder cassette on page 395
	Screw, tap, pan head, M4x10	Optional 500-sheet feeder cassette on page 395
	Pin, dowel	Optional 500-sheet feeder cassette on page 395
	Screw, tap, M4x12	Optional 500-sheet feeder cassette on page 395
	Arm, front cover support	Optional 1,500-sheet paper feeder covers on page 399
	Stopper, front door	Optional 1,500-sheet paper feeder covers on page 399
	Spring, torsion	Optional 1,500-sheet paper feeder covers on page 399
	Shaft, front cover hinge	Optional 1,500-sheet paper feeder covers on page 399
	Gear, 16T	Optional 1,500-sheet paper feeder covers on page 399
	Paper pickup assembly (see Figure 8-23 Optional 1,500-sheet feeder paper pickup assembly on page 410)	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Holder, connector	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Pin, lifter tray stopper	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Sheet, solenoid damper	Optional 1,500-sheet feeder main body (1 of 2) on page 403

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Latch, front cover, upper	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Block, front cover pushing	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Guide, paper set, right	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Guide, paper set, left	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Block, paper size sensor	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Reel, lifter wire	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Cover, lifter wire reel	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Support, wire pulley	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Cover, pulley	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Shaft, lifter drive	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Pulley, wire, front	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Pulley, wire, rear	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Cover, lifter wire reel	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Plate, lifter wire cover	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Plate, damper support	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Support, release hook, left	Optional 1,500-sheet feeder main body (1 of 2) on page 403

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Holder, hinge shaft, lower	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Guide, paper set, front	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Bushing	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Gear, 14T	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Gear, 15T	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Gear, 19T/39T	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Spring, tension	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Spring, tension	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Spring, torsion	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Gear, 16T	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Spacer, screw	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Frame, rear	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Frame, lower	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Frame, right	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Frame, left	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Saddle, wire	Optional 1,500-sheet feeder main body (1 of 2) on page 403

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Lifter tray assembly	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Paper pickup side plate assembly	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Left hook assembly	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Screw, with washer, M3x8	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Screw, tap, M3x6	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Screw, with washer, M3x6	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Ring, E	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Ring, E	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Pin, dowel	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Foot	Optional 1,500-sheet feeder main body (1 of 2) on page 403
	Holder, connector	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Pin, lifter tray stopper	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Sheet, solenoid damper	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Latch, front cover, upper	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Block, front cover pushing	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Guide, paper set, right	Optional 1,500-sheet feeder main body (2 of 2) on page 407

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Guide, paper set, left	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Block, paper size sensor	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Reel, lifter wire	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Cover, lifter wire reel	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Support, wire pulley	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Cover, pulley	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Shaft, lifter drive	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Pulley, wire, front	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Pulley, wire, rear	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Cover, lifter wire reel	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Plate, lifter wire cover	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Plate, damper support	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Support, release hook, left	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Holder, hinge shaft, lower	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Guide, paper set, front	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Bushing	Optional 1,500-sheet feeder main body (2 of 2) on page 407

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Gear, 14T	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Gear, 15T	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Gear, 19T/39T	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Spring, tension	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Spring, tension	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Spring, torsion	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Gear, 16T	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Spacer, screw	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Frame, rear	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Frame, lower	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Frame, right	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Frame, left	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Saddle, wire	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Lifter tray assembly	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Paper pickup side plate assembly	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Left hook assembly	Optional 1,500-sheet feeder main body (2 of 2) on page 407

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Screw, with washer, M3x8	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Screw, tap, M3x6	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Screw, with washer, M3x6	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Ring, E	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Ring, E	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Pin, dowel	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Foot	Optional 1,500-sheet feeder main body (2 of 2) on page 407
	Bushing, feed shaft	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Gear, 23T	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Arm, pick	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Plate, swing	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Support, feed bushing	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Holder, feed shaft	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Gear, 18T	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Spring, compression	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Gear, 16T	Optional 1,500-sheet feeder paper pickup assembly on page 411

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Screw, tap, M3x6	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Gear, 14T	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Spring, compression	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Ring, retainer	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Ring, slider	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Arm, paper load limit	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Shaft, load limit arm	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Holder, load limit arm	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Guide, paper outlet	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Lack, paper end limit, upper	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Bushing	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Roller, paper feed	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Roller, paper feed	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Shaft, paper feed roller	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Flag, paper feed sensor	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Holder, paper feed sensor flag	Optional 1,500-sheet feeder paper pickup assembly on page 411

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Spring, torsion	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Plate, front upper	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Bushing	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Spring, compression	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Guide, paper feed sensor cable	Optional 1,500-sheet feeder paper pickup assembly on page 411
	IC, photo interrupter	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Ring, E	Optional 1,500-sheet feeder paper pickup assembly on page 411
	Cover, front	Multi-bin mailbox covers on page 415
	Cover, top	Multi-bin mailbox covers on page 415
	Left cover assembly	Multi-bin mailbox covers on page 415
	Right cover assembly	Multi-bin mailbox covers on page 415
	Rear door assembly	Multi-bin mailbox covers on page 415
	Cable, stacker drawer	Multi-bin mailbox covers on page 415
	Joint, left	Multi-bin mailbox covers on page 415
	Joint, right	Multi-bin mailbox covers on page 415
	Lever, in flapper link	Multi-bin mailbox covers on page 415
	IN solenoid assembly	Multi-bin mailbox covers on page 415
	Screw, tap, binding head, M3x8	Multi-bin mailbox covers on page 415
	Frame, base	Multi-bin mailbox covers on page 415

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Screw, P, M3x8	Multi-bin mailbox covers on page 415
	Paper sensing flag assembly	Multi-bin mailbox main body (1 of 2) on page 417
	Top bin flapper assembly	Multi-bin mailbox main body (1 of 2) on page 417
	Bin flapper assembly	Multi-bin mailbox main body (1 of 2) on page 417
	Center bin flapper assembly	Multi-bin mailbox main body (1 of 2) on page 417
	Cable, bin solenoid	Multi-bin mailbox main body (1 of 2) on page 417
	Bin assembly	Multi-bin mailbox main body (1 of 2) on page 417
	Solenoid	Multi-bin mailbox main body (1 of 2) on page 417
	Frame, base	Multi-bin mailbox main body (1 of 2) on page 417
	Pad, arm	Multi-bin mailbox main body (1 of 2) on page 417
	Guide, cable, L	Multi-bin mailbox main body (1 of 2) on page 417
	Latch, rear door	Multi-bin mailbox main body (1 of 2) on page 417
	Bushing	Multi-bin mailbox main body (1 of 2) on page 417
	Stopper, rear door	Multi-bin mailbox main body (1 of 2) on page 417
	Spring, tension	Multi-bin mailbox main body (1 of 2) on page 417
	Pin	Multi-bin mailbox main body (1 of 2) on page 417
	Roller, delivery, inlet	Multi-bin mailbox main body (1 of 2) on page 417
	Bushing, pressure roller	Multi-bin mailbox main body (1 of 2) on page 417
	Bushing	Multi-bin mailbox main body (1 of 2) on page 417
	Roller, intermediate	Multi-bin mailbox main body (1 of 2) on page 417
	Cover, crossmember	Multi-bin mailbox main body (1 of 2) on page 417
	Spacer	Multi-bin mailbox main body (1 of 2) on page 417

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Pulley, 24T	Multi-bin mailbox main body (1 of 2) on page 417
	Gear, 34T/Pulley, 24T	Multi-bin mailbox main body (1 of 2) on page 417
	Pulley, 24T	Multi-bin mailbox main body (1 of 2) on page 417
	Bushing	Multi-bin mailbox main body (1 of 2) on page 417
	Spring, compression	Multi-bin mailbox main body (1 of 2) on page 417
	Gear, 24T	Multi-bin mailbox main body (1 of 2) on page 417
	Gear, 41T	Multi-bin mailbox main body (1 of 2) on page 417
	Gear, 24T/35T/48T	Multi-bin mailbox main body (1 of 2) on page 417
	Gear, 35T	Multi-bin mailbox main body (1 of 2) on page 417
	Gear, 26T	Multi-bin mailbox main body (1 of 2) on page 417
	Pulley/Gear, 34T	Multi-bin mailbox main body (1 of 2) on page 417
	Belt, timing	Multi-bin mailbox main body (1 of 2) on page 417
	Delivery inlet roller assembly	Multi-bin mailbox main body (1 of 2) on page 417
	Lever, bin flapper	Multi-bin mailbox main body (1 of 2) on page 417
	Base, bin lever	Multi-bin mailbox main body (1 of 2) on page 417
	Guide, crossmember	Multi-bin mailbox main body (1 of 2) on page 417
	Spring, compression	Multi-bin mailbox main body (1 of 2) on page 417
	Screw, D, M3x8	Multi-bin mailbox main body (1 of 2) on page 417
	Screw, machine, truss head, M3x4	Multi-bin mailbox main body (1 of 2) on page 417
	Screw, tap, binding head, M3x8	Multi-bin mailbox main body (1 of 2) on page 417
	Screw, tap, pan head, MM4x10	Multi-bin mailbox main body (1 of 2) on page 417
	Ring, E	Multi-bin mailbox main body (1 of 2) on page 417

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Sheet, bottom frame, right	Multi-bin mailbox main body (1 of 2) on page 417
	Sheet, bottom frame, left	Multi-bin mailbox main body (1 of 2) on page 417
	Cable, sensor PCA	Multi-bin mailbox main body (2 of 2) on page 421
	Cable guide assembly	Multi-bin mailbox main body (2 of 2) on page 421
	Frame, base	Multi-bin mailbox main body (2 of 2) on page 421
	Pad, arm	Multi-bin mailbox main body (2 of 2) on page 421
	Guide, cable, L	Multi-bin mailbox main body (2 of 2) on page 421
	Latch, rear door	Multi-bin mailbox main body (2 of 2) on page 421
	Bushing	Multi-bin mailbox main body (2 of 2) on page 421
	Stopper, rear door	Multi-bin mailbox main body (2 of 2) on page 421
	Spring, tension	Multi-bin mailbox main body (2 of 2) on page 421
	Pin	Multi-bin mailbox main body (2 of 2) on page 421
	Roller, delivery, inlet	Multi-bin mailbox main body (2 of 2) on page 421
	Bushing, pressure roller	Multi-bin mailbox main body (2 of 2) on page 421
	Bushing	Multi-bin mailbox main body (2 of 2) on page 421
	Roller, intermediate	Multi-bin mailbox main body (2 of 2) on page 421
	Cover, crossmember	Multi-bin mailbox main body (2 of 2) on page 421
	Spacer	Multi-bin mailbox main body (2 of 2) on page 421
	Pulley, 24T	Multi-bin mailbox main body (2 of 2) on page 421
	Gear, 34T/Pulley, 24T	Multi-bin mailbox main body (2 of 2) on page 421
	Pulley, 24T	Multi-bin mailbox main body (2 of 2) on page 421
	Bushing	Multi-bin mailbox main body (2 of 2) on page 421

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
	Spring, compression	Multi-bin mailbox main body (2 of 2) on page 421
	Gear, 24T	Multi-bin mailbox main body (2 of 2) on page 421
	Gear, 41T	Multi-bin mailbox main body (2 of 2) on page 421
	Gear, 24T/35T/48T	Multi-bin mailbox main body (2 of 2) on page 421
	Gear, 35T	Multi-bin mailbox main body (2 of 2) on page 421
	Gear, 26T	Multi-bin mailbox main body (2 of 2) on page 421
	Pulley/Gear, 34T	Multi-bin mailbox main body (2 of 2) on page 421
	Belt, timing	Multi-bin mailbox main body (2 of 2) on page 421
	Delivery inlet roller assembly	Multi-bin mailbox main body (2 of 2) on page 421
	Lever, bin flapper	Multi-bin mailbox main body (2 of 2) on page 421
	Base, bin lever	Multi-bin mailbox main body (2 of 2) on page 421
	Guide, crossmember	Multi-bin mailbox main body (2 of 2) on page 421
	Spring, compression	Multi-bin mailbox main body (2 of 2) on page 421
	Screw, D, M3x8	Multi-bin mailbox main body (2 of 2) on page 421
	Screw, machine, truss head, M3x4	Multi-bin mailbox main body (2 of 2) on page 421
	Screw, tap, binding head, M3x8	Multi-bin mailbox main body (2 of 2) on page 421
	Screw, tap, pan head, MM4x10	Multi-bin mailbox main body (2 of 2) on page 421
	Ring, E	Multi-bin mailbox main body (2 of 2) on page 421
	Sheet, bottom frame, right	Multi-bin mailbox main body (2 of 2) on page 421
	Sheet, bottom frame, left	Multi-bin mailbox main body (2 of 2) on page 421
CB437-67901 (new)	Formatter assembly (base models)	PCAs—base unit on page 385
CB437-69001 (exchange)	Formatter assembly (base models)	PCAs—base unit on page 385
CB438-67901 (new)	Formatter assembly (network models)	PCAs—base unit on page 385

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
CB438-69001 (exchange)	Formatter assembly (network models)	PCAs—base unit on page 385
CB506-67901	Fuser assembly (110-127 V) (also see Figure 8-13 Fusing assembly on page 380)	Internal components (3 of 3) on page 365
CB506-67901	Fusing assembly (110-127 V)	Fusing assembly on page 381
CB506-67902	Fuser assembly (220-240 V) (also see Figure 8-13 Fusing assembly on page 380)	Internal components (3 of 3) on page 365
CB506-67902	Fusing assembly (220-240 V)	Fusing assembly on page 381
CB506-67903	Transfer roller assembly	Internal components (1 of 3) on page 357
CB506-67904	Product roller kit (contains 2 feed rollers, 1 pickup roller)	Optional 500-sheet paper feeder main body on page 391
CB506-67904	Product roller kit (contains 2 feed rollers, 1 pickup roller)	Optional 500-sheet feeder cassette on page 395
CB506-67904	Product roller kit (contains 2 feed rollers, 1 pickup roller)	Optional 1,500-sheet feeder paper pickup assembly on page 411
CB506-67905	Multipurpose tray kit (contains 1 pickup roller, 1 feed roller, 1 separation roller)	Multipurpose pickup assembly on page 375
RC1-0133-000CN	Spring, tension	Paper delivery assembly on page 379
RC1-0136-000CN	Bushing, paper delivery	Internal components (3 of 3) on page 365
RC1-0198-000CN	Spring, tension	Internal components (3 of 3) on page 365
RC1-0206-000CN	Bushing	Internal components (2 of 3) on page 361
RC1-0213-000CN	Spring, compression	Internal components (2 of 3) on page 361
RC1-0264-000CN	Bushing, feed shaft	Internal components (2 of 3) on page 361
RC1-0306-000CN	Pin, option	Covers—base unit on page 355
RC1-0386-000CN	Guide, connecting cable	Internal components (1 of 3) on page 357
RC2-2459-000CN	Cover, option	Covers—base unit on page 355
RC2-2468-000CN	Cover, formatter (P4015/P4515)	Covers—base unit on page 355
RC2-2475-000CN	Cover, right front (P4015/P4515)	Covers—base unit on page 355
RC2-2476-000CN	Cover, envelope connector (P4015/P4515)	Covers—base unit on page 355

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
RC2-2478-000CN	Cover, right rear (P4015/P4515)	Covers—base unit on page 355
RC2-2480-000CN	Arm, release, A	Internal components (1 of 3) on page 357
RC2-2481-000CN	Arm, release, B	Internal components (1 of 3) on page 357
RC2-2510-000CN	Cover, duplexing outer (P4015/P4515)	Covers—base unit on page 355
RC2-2524-000CN	Flag, paper detect	Optional 1,500-sheet feeder paper pickup assembly on page 411
RC2-2584-000CN	Cover, lock	Optional 1,500-sheet paper feeder covers on page 399
RC2-2640-000CN	Cover, rear	Optional 1,500-sheet paper feeder covers on page 399
RC2-2641-000CN	Cover, right	Optional 1,500-sheet paper feeder covers on page 399
RC2-2642-000CN	Cover, left	Optional 1,500-sheet paper feeder covers on page 399
RC2-2643-000CN	Cover, left lower	Optional 1,500-sheet paper feeder covers on page 399
RC2-2667-000CN	Rod, switch	Internal components (2 of 3) on page 361
RC2-5239-000CN	Cover, legal (P4015/P4515)	Covers—base unit on page 355
RC2-5262-000CN	Limiter, cassette torque	500-sheet cassette on page 371
RC2-5262-000CN	Limiter, cassette torque	Optional 500-sheet feeder cassette on page 395
RC2-5262-000CN	Limiter, cassette torque	Optional 1,500-sheet feeder front door assembly on page 401
RC2-5757-000CN	Cover, formatter (P4014)	Covers—base unit on page 355
RC2-5758-000CN	Cover, right front (P4014)	Covers—base unit on page 355
RC2-5759-000CN	Cover, envelope connector (P4014)	Covers—base unit on page 355
RC2-5760-000CN	Cover, duplexing outer (P4014)	Covers—base unit on page 355
RC2-5761-000CN	Cover, legal (P4014)	Covers—base unit on page 355
RC2-5768-000CN	Cover, right rear (P4014)	Covers—base unit on page 355

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
RC2-5783-000CN	Bushing	Internal components (2 of 3) on page 361
RH7-1603-020CN	Motor, stepping	Optional 1,500-sheet feeder main body (1 of 2) on page 403
RK2-0270-000CN	Solenoid	Internal components (2 of 3) on page 361
RK2-0359-000CN	Thermistor unit	Internal components (3 of 3) on page 365
RK2-1988-000CN	Fan	Internal components (3 of 3) on page 365
RK2-1989-000CN	Fan	Internal components (3 of 3) on page 365
RK2-1991-000CN	Fan	Internal components (3 of 3) on page 365
RK2-1992-000CN	Fan	Internal components (3 of 3) on page 365
RL1-1641-000CN	Roller, pickup	Multipurpose pickup assembly on page 375
RL1-1654-000CN	Roller, separation	Multipurpose pickup assembly on page 375
RL1-1657-000CN	Motor, DC, 24 V, main drive	Internal components (2 of 3) on page 361
RL1-1658-000CN	Shaft, retard drive	Internal components (2 of 3) on page 361
RL1-1659-000CN	Motor, DC, 24 V, drum drive	Internal components (1 of 3) on page 357
RL1-1663-000CN	Roller, feed	Multipurpose pickup assembly on page 375
RL1-1667-000CN	Cover, envelope	Internal components (1 of 3) on page 357
RM1-0036-020CN	Paper pickup roller assembly	Internal components (2 of 3) on page 361
RM1-0036-020CN	Paper pickup roller assembly	Optional 500-sheet paper feeder main body on page 391
RM1-0036-020CN	Paper pickup roller assembly	Optional 1,500-sheet feeder paper pickup assembly on page 411
RM1-0037-020CN	Paper feed roller assembly	Internal components (2 of 3) on page 361
RM1-0037-020CN	Paper feed roller assembly	500-sheet cassette on page 371
RM1-0037-020CN	Paper feed roller assembly	Optional 500-sheet paper feeder main body on page 391

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
RM1-0037-020CN	Paper feed roller assembly	Optional 500-sheet feeder cassette on page 395
RM1-0037-020CN	Paper feed roller assembly	Optional 1,500-sheet feeder front door assembly on page 401
RM1-0037-020CN	Paper feed roller assembly	Optional 1,500-sheet feeder paper pickup assembly on page 411
RM1-0289-030CN	Oil damper assembly	Optional 1,500-sheet feeder main body (1 of 2) on page 403
RM1-1136-000CN	Lifter drive assembly	Optional 1,500-sheet feeder main body (1 of 2) on page 403
RM1-4525-000CN	Size detect assembly	Internal components (1 of 3) on page 357
RM1-4526-000CN	Paper delivery drive assembly	Internal components (3 of 3) on page 365
RM1-4527-000CN	Paper feed roller assembly	Internal components (1 of 3) on page 357
RM1-4529-000CN	Paper delivery assembly (also see Figure 8-12 Paper delivery assembly on page 378)	Internal components (3 of 3) on page 365
RM1-4529-000CN	Paper delivery assembly	Paper delivery assembly on page 379
RM1-4531-000CN	Face-up tray assembly (P4015/P4515)	Covers—base unit on page 355
RM1-4532-000CN	Paper pickup drive assembly	Internal components (2 of 3) on page 361
RM1-4534-000CN	Front cover assembly	Covers—base unit on page 355
RM1-4539-000CN	Tag holder assembly	Internal components (2 of 3) on page 361
RM1-4548-000CN	Paper feed assembly	Power supply assembly on page 369
RM1-4549-000CN	Electrical components assembly (110-127 V)	Power supply assembly on page 369
RM1-4549-000CN	Electrical components assembly (110-127 V)	PCAs—base unit on page 385
RM1-4550-000CN	Right cover assembly (P4015/P4515)	Covers—base unit on page 355
RM1-4551-000CN	Left cover assembly (P4015/P4515)	Covers—base unit on page 355
RM1-4552-000CN	Top cover assembly (P4015/P4515)	Covers—base unit on page 355
RM1-4558-000CN	Right guide assembly (P4015/P4515)	Internal components (3 of 3) on page 365

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
RM1-4559-000CN	500-sheet tray cassette	Internal components (1 of 3) on page 357
RM1-4559-000CN	500-sheet cassette	500-sheet cassette on page 371
RM1-4559-000CN	Optional 500-sheet feeder cassette	Optional 500-sheet feeder cassette on page 395
RM1-4562-000CN	Paper feed shaft Z assembly	Internal components (2 of 3) on page 361
RM1-4563-000CN	Multipurpose tray pickup assembly	Internal components (1 of 3) on page 357
RM1-4563-000CN	Multipurpose pickup assembly	Multipurpose pickup assembly on page 375
RM1-4576-000CN	Right front guide assembly	Internal components (2 of 3) on page 361
RM1-4578-000CN	Electrical components assembly (220-240 V)	Power supply assembly on page 369
RM1-4578-000CN	Electrical components assembly (220-240 V)	PCAs—base unit on page 385
RM1-4582-000CN	DC controller PCA	Internal components (3 of 3) on page 365
RM1-4582-000CN	DC controller PCA	PCAs—base unit on page 385
RM1-4585-000CN	Lifter drive assembly	Internal components (3 of 3) on page 365
RM1-5051-000CN	Fuser motor assembly	Internal components (3 of 3) on page 365
RM1-5059-000CN	Control panel assembly (P4015/P4515)	Covers—base unit on page 355
RM1-5060-000CN	Control panel assembly (P4014)	Covers—base unit on page 355
RM1-5078-000CN	Cable, inlet (110-127 V)	Power supply assembly on page 369
RM1-5079-000CN	Cable, inlet (220-240 V)	Power supply assembly on page 369
RM1-5080-000CN	Cable, door switch	Internal components (3 of 3) on page 365
RM1-5081-000CN	Cable, full sensor	Internal components (3 of 3) on page 365
RM1-5082-000CN	Cable, panel	Internal components (3 of 3) on page 365
RM1-5085-000CN	Cable, envelope feeder	Internal components (3 of 3) on page 365
RM1-5087-000CN	Cable, laser	Internal components (2 of 3) on page 361
RM1-5088-000CN	Cable, fuser motor	Internal components (3 of 3) on page 365

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
RM1-5089-000CN	Cable, feed motor	Internal components (2 of 3) on page 361
RM1-5090-000CN	Cable, drum motor	Internal components (1 of 3) on page 357
RM1-5091-000CN	Cable, size sensor	Internal components (1 of 3) on page 357
RM1-5096-000CN	Sensor assembly	Multi-bin mailbox main body (2 of 2) on page 421
RM1-5126-000CN	Cable, interface	Optional 1,500-sheet feeder main body (1 of 2) on page 403
RM1-5127-000CN	Cable, size sensor	Optional 1,500-sheet feeder main body (2 of 2) on page 407
RM1-5128-000CN	Cable, door sensor	Optional 1,500-sheet feeder main body (1 of 2) on page 403
RM1-5129-000CN	Cable, feed, sensor	Optional 1,500-sheet feeder paper pickup assembly on page 411
RM1-5250-000CN	Top cover assembly (P4014)	Covers—base unit on page 355
RM1-5255-000CN	Front door assembly	Optional 1,500-sheet paper feeder covers on page 399
RM1-5255-000CN	Optional 1,500-sheet feeder front door assembly	Optional 1,500-sheet feeder front door assembly on page 401
RM1-5259-000CN	Remnant indication assembly	Optional 1,500-sheet feeder main body (2 of 2) on page 407
RM1-5261-000CN	Paper size detect assembly	Optional 1,500-sheet feeder main body (2 of 2) on page 407
RM1-5262-000CN	Paper pickup drive assembly	Optional 1,500-sheet feeder main body (1 of 2) on page 403
RM1-5264-000CN	Paper detect sensor assembly	Optional 1,500-sheet feeder paper pickup assembly on page 411
RM1-5265-000CN	Numbering assembly	Optional 1,500-sheet feeder main body (1 of 2) on page 403
RM1-5266-000CN	Bin solenoid assembly	Multi-bin mailbox main body (1 of 2) on page 417
RM1-5267-000CN	Drive assembly	Multi-bin mailbox main body (2 of 2) on page 421

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
RM1-5448-000CN	Face-up tray assembly (P4014)	Covers—base unit on page 355
RM1-5449-000CN	Right cover assembly (P4014)	Covers—base unit on page 355
RM1-5450-000CN	Left cover assembly (P4014)	Covers—base unit on page 355
RM1-5451-000CN	Right guide assembly (P4014)	Internal components (3 of 3) on page 365
RM1-5460-000CN	Registration assembly	Internal components (1 of 3) on page 357
RM1-5461-000CN	Grounding plate assembly	Internal components (1 of 3) on page 357
RM1-5465-000CN	Laser scanner assembly	Internal components (2 of 3) on page 361
RM1-6214-000CN	1,500-sheet feeder driver PCA	Optional 1,500-sheet feeder PCA on page 387
RM1-6214-000CN	1,500-sheet feeder driver PCA	Optional 1,500-sheet feeder main body (1 of 2) on page 403
RM1-6224-000CN	Multi-bin mailbox PCA	Multi-bin mailbox PCA on page 389
RM1-6224-000CN	Multi-bin mailbox PCA	Multi-bin mailbox main body (2 of 2) on page 421
RU5-0045-020CN	Gear, 18T	Internal components (2 of 3) on page 361
RU6-0159-000CN	Gear, 23T	Internal components (2 of 3) on page 361
RU6-2105-000CN	Spring, grounding	Paper delivery assembly on page 379
RU6-2115-000CN	Spring, tension	Internal components (2 of 3) on page 361
VS1-7500-006CN	Connector, drawer, 6P	Optional 1,500-sheet feeder main body (1 of 2) on page 403
VS1-7500-008CN	Connector, 8P	Multi-bin mailbox covers on page 415
VS1-7514-006CN	Connector, drawer, 6P	Power supply assembly on page 369
WG8-5624-000CN	IC, photo interrupter	Internal components (3 of 3) on page 365
XA9-1420-000CN	Screw, with washer, M3x8	Optional 1,500-sheet paper feeder covers on page 399
XA9-1464-000CN	Screw, flat head RS, M3x6	Power supply assembly on page 369

Table 8-27 Numerical parts list (continued)

Part number	Description	Table and page
XA9-1503-000CN	Screw, tap, M3x6	Internal components (1 of 3) on page 357
XA9-1671-000CN	Screw, D, M3x8	Internal components (1 of 3) on page 357
XB1-1300-605CN	Screw, machine, pan head, M3x6	Power supply assembly on page 369
XB2-7300-607CN	Screw, with washer, M3x6	Internal components (3 of 3) on page 365
XB2-7400-606CN	Screw, with washer, M4x6	Power supply assembly on page 369
XB4-7300-809CN	Screw, tap, binding head, M3x8	Internal components (2 of 3) on page 361
XB4-7401-007CN	Screw, tapping, pan head, M4x10	Internal components (1 of 3) on page 357
XB4-7401-007CN	Screw, tap, pan head, M4x10	Optional 1,500-sheet paper feeder covers on page 399
XD9-0232-000CN	Ring, E	Internal components (2 of 3) on page 361

A Service and support

Hewlett-Packard limited warranty statement

HP PRODUCT

HP LaserJet P4014, P4014n, P4015n, P4015tn, P4015x, P4515n,
P4515tn, P4515x, P4515xm

DURATION OF LIMITED WARRANTY

One-year limited warranty

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

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

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

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

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

TO THE EXTENT ALLOWED BY LOCAL LAW, THE ABOVE WARRANTIES ARE EXCLUSIVE AND NO OTHER WARRANTY OR CONDITION, WHETHER WRITTEN OR ORAL, IS EXPRESSED OR IMPLIED AND HP SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY, AND FITNESS FOR A PARTICULAR PURPOSE. Some countries/regions, states or provinces do not allow limitations on the duration of an implied warranty, so the above limitation or exclusion might not apply to you. This warranty gives you specific legal rights and you might also have other rights that vary from country/region to country/region, state to state, or province to province. HP's limited warranty is valid in any country/region or locality where HP has a support presence for this product and where HP has marketed this product. The level of warranty service you receive may vary according to local standards. HP will not alter form, fit or function of the product to make it operate in a country/region for which it was never intended to function for legal or regulatory reasons.

TO THE EXTENT ALLOWED BY LOCAL LAW, THE REMEDIES IN THIS WARRANTY STATEMENT ARE YOUR SOLE AND EXCLUSIVE REMEDIES. EXCEPT AS INDICATED ABOVE, IN NO EVENT WILL HP OR ITS

SUPPLIERS BE LIABLE FOR LOSS OF DATA OR FOR DIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFIT OR DATA), OR OTHER DAMAGE, WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE. Some countries/regions, states or provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

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

Print cartridge limited warranty statement

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

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

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

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

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

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

Customer self-repair warranty service

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

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

Customer support

Get telephone support, free during your warranty period, for your country/region	Country/region phone numbers are on the flyer that was in the box with your product or at www.hp.com/support/ .
Have the product name, serial number, date of purchase, and problem description ready.	
Get 24-hour Internet support	www.hp.com/support/hpljp4010series or www.hp.com/support/hpljp4510series
Get support for products used with a Macintosh computer	www.hp.com/go/macosx
Download software utilities, drivers, and electronic information	www.hp.com/go/ljp4010series_software or www.hp.com/go/ljp4510series_software
Order supplies and paper	www.hp.com/go/suresupply
Order genuine HP parts or accessories	www.hp.com/buy/parts
Order additional HP service or maintenance agreements	www.hp.com/go/carepack

HP maintenance agreements

HP has several types of maintenance agreements that meet a wide range of support needs. Maintenance agreements are not part of the standard warranty. Support services may vary by area. Check with your local HP dealer to determine the services available to you.

On-site service agreements

To provide you with the level of support best suited to your needs, HP has on-site service agreements with a selection of response times.

Next-day on-site service

This agreement provides support by the next working day following a service request. Extended coverage hours and extended travel beyond HP's designated service zones are available on most on-site agreements (for additional charges).

Weekly (volume) on-site service

This agreement provides scheduled weekly on-site visits for organizations with many HP products. This agreement is designated for sites using 25 or more workstation products, including devices, plotters, computers, and disk drives.

Repacking the device

If HP Customer Care determines that your device needs to be returned to HP for repair, follow the steps below to repack the device before shipping it.

△ **CAUTION:** Shipping damage as a result of inadequate packing is the customer's responsibility.

To repack the device

1. Remove and retain any DIMMs cards that you have purchased and installed in the device. Do not remove the DIMM that came with the device.

△ **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 and then touch bare metal on the device. To remove the DIMMs, see [Install memory on page 84](#).

2. Remove and retain the print cartridge.

△ **CAUTION:** It is *extremely important* to remove the print cartridge before shipping the device. A print cartridge that remains in the device during shipping will leak and entirely cover the device engine and other parts with toner.

To prevent damage to the print cartridge, avoid touching the roller on it, and store the print cartridge in its original packing material or so that it is not exposed to light.

3. Remove and retain the power cable, interface cable, and optional accessories.
4. If possible, include print samples and 50 to 100 sheets of paper or other print media that did not print correctly.
5. In the U.S., call HP Customer Care to request new packing material. In other areas, use the original packing material, if possible. Hewlett-Packard recommends insuring the equipment for shipment.

Extended warranty

HP Support provides coverage for the HP hardware product and all HP-supplied internal components. The hardware maintenance covers a 1- to 3-year period from date of the HP product purchase. The customer must purchase HP Support within the stated factory warranty. For more information, contact the HP Customer Care Service and Support group.

B Specifications

- [Physical specifications](#)
- [Electrical specifications](#)
- [Acoustic specifications](#)
- [Operating environment](#)

Physical specifications

Table B-1 Product dimensions and weights

Product model	Height	Depth	Width	Weight
HP LaserJet P4010 and P4510 Series base and n models	394 mm (15.5 in)	4515 mm (17.8 in)	425 mm (16.75 in)	23.6 kg (51.9 lb)
HP LaserJet P4010 and P4510 Series tn models	514 mm (20.25 in)	451 mm (17.8 in)	425 mm (16.75 in)	30.4 kg (66.8 lb)
HP LaserJet P4010 and P4510 Series x models	514 mm (20.25 in)	533 mm (21.0 in)	425 mm (16.75 in)	32.6 kg (71.7 lb)
HP LaserJet P4510 Series xm model	955 mm (37.6 in)	533 mm (21.0 in)	425 mm (16.75 in)	39.6 kg (87.1 lb)
Optional 500-sheet feeder	121 mm (4.8 in)	448.4 mm (17.7 in)	415 mm (16.3 in)	6.7 kg (14.7 lb)
Optional 1500-sheet tray	263.5 mm (10.4 in)	511.5 mm (20.1 in)	421 mm (16.6 in)	13 kg (28.7 lb)
Optional duplexing unit	154 mm (6.1 in)	348 mm (13.7 in)	332 mm (13.1 in)	2.5 kg (5.5 lb)
Optional envelope feeder	113 mm (4.4 in)	354 mm (13.9 in)	328 mm (12.9 in)	2.5 kg (5.5 lb)
Optional stapler/stacker	371 mm (14.6 in)	430 mm (16.9 in)	387 mm (15.2 in)	4.2 kg (9.3 lb)
Optional stacker	304 mm (12 in)	430 mm (16.9 in)	378 mm (14.9 in)	3.2 kg (7.1 lb)
Optional multi-bin mailbox	522 mm (20.6 in)	306 mm (12 in)	353 mm (13.9 in)	7.0 kg (15.4 lb)
Optional printer stand	114 mm (4.5 in)	653 mm (25.7 in)	663 mm (26.1 in)	13.6 kg (30 lb)

Table B-2 Product dimensions with all doors and trays fully opened

Product model	Height	Depth	Width
HP LaserJet P4010 and P4510 Series base and n models	394 mm (15.5 in)	864 mm (34.0 in)	425 mm (16.75 in)
HP LaserJet P4010 and P4510 Series tn models	514 mm (20.25 in)	864 mm (34.0 in)	425 mm (16.75 in)
HP LaserJet P4010 and P4510 Series x models	514 mm (20.25 in)	864 mm (34.0 in)	425 mm (16.75 in)
HP LaserJet P4510 Series xm model	955 mm (37.6 in)	902 mm (35.5 in)	425 mm (16.75 in)

Electrical specifications

⚠ WARNING! Power requirements are based on the country/region where the product is sold. Do not convert operating voltages. This can damage the product and void the product warranty.

Table B-3 Power requirements

Specification	110-volt models	220-volt models
Power requirements	100 to 127 volts (± 10%) 50/60 Hz (± 2 Hz)	220 to 240 volts (± 10%) 50/60 Hz (± 2 Hz)
Rated current	10.7 Amps	5.7 Amps

Table B-4 Power consumption (average, in watts)

Product model	Printing	Ready	Sleep	Off
HP LaserJet P4014 models	800 W	18 W	13 W	Less than 0.1 W
HP LaserJet P4015 models	840 W	18 W	13 W	Less than 0.1 W
HP LaserJet P4515 models	910 W	20 W	13 W	Less than 0.1 W

¹ Values subject to change. See www.hp.com/support/hpljp4010series or www.hp.com/support/hpljp4510series for current information.

² Power numbers are the highest values measured using all standard voltages.

³ Default time from Ready mode to Sleep = 30 minutes.

⁴ Heat dissipation in Ready mode = 70 BTU/hour.

⁵ Recovery time from Sleep to start of printing = less than 15 seconds.

⁶ HP LaserJet P4014 speed is 45 ppm Letter size. HP LaserJet P4015 speed is 52 ppm Letter size. HP LaserJet P4515 speed is 62 ppm Letter size.

Acoustic specifications

Table B-5 Sound power and pressure level

Product model	Sound power level	Declared per ISO 9296
HP LaserJet P4014 models	Printing	$L_{WAd} = 7.1$ Bels (A) [71 dB(A)]
	Ready	$L_{WAd} = 4.0$ Bels (A) [40 dB(A)]
HP LaserJet P4015 models	Printing	$L_{WAd} = 7.2$ Bels (A) [72 dB(A)]
	Ready	$L_{WAd} = 4.1$ Bels (A) [41 dB(A)]
HP LaserJet P4515 models	Printing	$L_{WAd} = 7.4$ Bels (A) [74 dB(A)]
	Ready	$L_{WAd} = 4.8$ Bels (A) [48 dB(A)]
Product model	Sound pressure level	Declared per ISO 9296
HP LaserJet P4014 models	Printing	$L_{pAm} = 58$ dB (A)
	Ready	$L_{pAm} = 27$ dB (A)
HP LaserJet P4015 models	Printing	$L_{pAm} = 58$ dB (A)
	Ready	$L_{pAm} = 27$ dB (A)
HP LaserJet P4515 models	Printing	$L_{pAm} = 60$ dB (A)
	Ready	$L_{pAm} = 31$ dB (A)

¹ Values are based on preliminary data. See www.hp.com/support/hpljp4010series or www.hp.com/support/hpljp4510series for current information.

² HP LaserJet P4014 speed is 45 ppm Letter size. HP LaserJet P4015 speed is 52 ppm Letter size. HP LaserJet P4515 speed is 62 ppm Letter size.

³ Configuration tested (HP LaserJet P4014): LJ P4014n model, printing on A4-size paper in simplex mode

⁴ Configuration tested (HP LaserJet P4015): LJ P4015x model, printing on A4-size paper in simplex mode

⁵ Configuration tested (HP LaserJet P4515): LJ P4515x model, printing on A4-size paper in simplex mode

Operating environment

Table B-6 Necessary conditions

Environmental condition	Printing	Storage/standby
Temperature (product and print cartridge)	7.5° to 32.5°C (45.5° to 90.5°F)	0° to 35°C (32° to 95°F)
Relative humidity	5% to 90%	35% to 85%

C Regulatory information

- [FCC regulations](#)
- [Declaration of conformity](#)
- [Safety statements](#)

FCC regulations

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

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



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

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

Declaration of conformity

Declaration of conformity

Declaration of Conformity

according to ISO/IEC 17050-1 and EN 17050-1, DoC#: BOISB-0702-00-rel.1.0

Manufacturer's Name: Hewlett-Packard Company
Manufacturer's Address: 11311 Chinden Boulevard,
Boise, Idaho 83714-1021, USA

declares, that the product

Product Name: HP LaserJet P4014 series, P4015 series, and P4515 series

Regulatory Model Number³⁾: BOISB-0702-00

Product Options: ALL

Print Cartridges: CC364A /CC364X

conforms to the following Product Specifications:

Safety: IEC 60950-1:2001 / EN60950-1: 2001 +A11
IEC 60825-1:1993 +A1 +A2 / EN 60825-1:1994 +A1 +A2 (Class 1 Laser/LED Product)
GB4943-2001

EMC: CISPR22:2005 / EN 55022:2006 - Class B¹⁾
EN 61000-3-2:2000 +A2
EN 61000-3-3:1995 +A1
EN 55024:1998 +A1 +A2
FCC Title 47 CFR, Part 15 Class B²⁾ / ICES-003, Issue 4
GB9254-1998, GB17625.1-2003

Supplementary Information:

The product herewith complies with the requirements of the EMC Directive 2004/108/EEC and the Low Voltage Directive 2006/95/EEC, and carries the CE-Marking accordingly.

- 1) The product was tested in a typical configuration with Hewlett-Packard Personal Computer Systems.
- 2) This Device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- 3) For regulatory purposes, this product is assigned a Regulatory model number. This number should not be confused with the marketing name or the product number(s).

Boise, Idaho , USA

June 29, 2007

For regulatory topics only:

European Contact: Your Local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department HQ-TRE / Standards Europe,, Herrenberger Strasse 140, , D-71034, Böblingen, (FAX: +49-7031-14-3143), <http://www.hp.com/go/certificates>

USA Contact: Product Regulations Manager, Hewlett-Packard Company,, PO Box 15, Mail Stop 160, Boise, ID 83707-0015, , (Phone: 208-396-6000)

Safety statements

Laser safety

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

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

Canadian DOC regulations

Complies with Canadian EMC Class B requirements.

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

VCCI statement (Japan)

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。

Power cord statement (Japan)

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

EMI statement (Korea)

B급 기기 (가정용 정보통신기기)

이 기기는 가정용으로 전자파적합등록을 한 기기로서
주거지역에서는 물론 모든 지역에서 사용할 수 있습니다.

Laser statement for Finland

Luokan 1 laserlaite

Klass 1 Laser Apparat

HP LaserJet P4014, P4014n, P4015n, P4015tn, P4015x, P4515n, P4515tn, P4515x, P4515xm, laserkirjoitin on käyttäjän kannalta turvallinen luokan 1 laserlaite. Normaalissa käytössä kirjoittimen suojakoteloointi estää lasersäteen pääsyn laitteen ulkopuolelle. Laitteen turvallisuusluokka on määritetty standardin EN 60825-1 (1994) mukaisesti.

VAROITUS !

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

VARNING !

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

HUOLTO

HP LaserJet P4014, P4014n, P4015n, P4015tn, P4015x, P4515n, P4515tn, P4515x, P4515xm - kirjoittimen sisällä ei ole käyttäjän huollettavissa olevia kohteita. Laitteen saa avata ja huoltaa ainoastaan sen huoltamiseen koulutettu henkilö. Tällaiseksi huoltotoimenpiteeksi ei katsota väriainekasetin vaihtamista, paperiradan puhdistusta tai muita käyttäjän käsikirjassa lueteltuja, käyttäjän tehtäväksi tarkoitettuja ylläpitotoimia, jotka voidaan suorittaa ilman erikoistyökaluja.

VARO !

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

VARNING !

Om laserprinterns skyddshölje öppnas då apparaten är i funktion, utsättas användaren för osynlig laserstrålning. Betrakta ej strålen. Tiedot laitteessa käytettävän laserdiodin säteilyominaisuuksista: Aallonpituus 775-795 nm Teho 5 m W Luokan 3B laser.

Substances table (China)

有毒有害物质表

根据中国电子信息产品污染控制管理办法的要求而出台

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

3043

0：表示在此部件所用的所有同类材料中，所含的此有毒或有害物质均低于 SJ/T11363-2006 的限制要求。

X：表示在此部件所用的所有同类材料中，至少一种所含的此有毒或有害物质高于 SJ/T11363-2006 的限制要求。

注：引用的“环保使用期限”是根据在正常温度和湿度条件下操作使用产品而确定的。

Index

Symbols/Numerics

1,500-sheet tray
 door, removing 230
 driver PCA, removing 233
 feed rollers, removing 223
 left-side cover, removing 227
 lift-drive assembly,
 removing 234
 loading 59
 motor, removing 232
 paper jams 310
 rear cover, removing 225
 right-side cover,
 removing 226
 separation roller,
 removing 224
500-sheet tray
 loading 57
 paper jams 309

A

A4 paper settings 27, 28
accessibility features 7
accessories
 available 6
 ordering 340
 part numbers 340
acoustic specifications 502
after service checklist 130
alerts, e-mail 16
anticounterfeit supplies 79
AppleTalk settings 40
assembly locations 350
auto continue setting 35

B

binding edge settings 27
bins, output
 jams, clearing 318
 paper path test 45

 removing rear 148
 selecting 63
blank pages
 suppressing 29
blank pages, troubleshooting 332
blurred print, problem-
 solving 331
Bonjour Settings 16
both sides, printing on
 binding edge settings 27
 Macintosh settings 16
 Show Me How menu 23
 usage page 25
browser requirements
 embedded Web server 71
buttons, control panel 20

C

cables
 network, troubleshooting 332
 USB, troubleshooting 332
Canadian DOC regulations 506
card stock
 fuser modes 30
 output bin, selecting 63
carriage returns, settings 29
cartridges
 authentication 79
 density settings 32
 EconoMode 31, 78
 features 7
 genuine HP 78
 non-HP 78
 ordering through embedded
 Web server 73
 part numbers 342
 replacement intervals 78
 replacing 80
 status messages 20
 storage 78
 warranty 494
cartridges, print
 paper jams 305
 replacing 137
cartridges, staple
 loading 82
characters, misformed 329
checklists
 after service 130
 before service 130
 preservice 130
circuit diagram 272
cleaning
 exterior 95
 fuser 278
cleaning page 32
cleaning page, printing 278
clearable warnings setting 35
clearing jams
 1,500-sheet tray 310
 500-sheet tray 309
 duplexer 312
 envelope feeder 307
 fuser area 313
 locations 305
 output area 318
 staple 320
 top-cover 305
 Tray 1 309
cold reset 337
component locations 350, 356
configuration page
 Macintosh 16
Configure Device menu 27
connectors
 locating 266
control panel
 blank, troubleshooting 240

- buttons 20
- cleaning page, automatic 95, 279
- cleaning page, printing 95
- clearable warning settings 35
- Configure Device menu 27
- date/time settings 33
- Diagnostics menu 45
- display 20
- I/O menu 38
- Information menu 25
- language, selecting 36
- lights 20
- menus 22
- Paper Handling menu 26
- Print Quality menu 30
- Printing menu 27
- Resets menu 44
- Retrieve Job menu 24
- security 76
- Show Me How menu 23
- System Setup menu 33
- controlling print jobs 62
- cooling fan FN101, replacing 200
- cooling fan FN102, replacing 174
- cooling fan FN103, replacing 176
- cooling fan FN301, replacing 202
- copies, default number of 27
- copying
 - quality, troubleshooting 327
- counterfeit supplies 79
- counts, page 336
- Courier font settings 28
- covers
 - 1,500-sheet tray, removing 225
 - envelope accessory, removing 145
 - formatter, removing 150
 - front, removing 172
 - left-side, removing 164
 - right-side, removing 161
 - top, removing 159
- creased paper, problem-solving 330
- crooked pages 329
- curled paper, problem-solving 329
- custom-size paper
 - tray settings 27
- customer support
 - embedded Web server links 73
 - HP Printer Utility pages 16
 - online 496
 - repacking device 497
- D**
 - darkness, setting 32
 - date, setting 33
 - DC controller
 - PCA, locating 266
 - removing 186
 - replacing 151
 - declaration of conformity 505
 - default settings
 - cold reset 337
 - restoring 44
 - defects
 - examples of 327
 - repeating 278
 - density
 - problem-solving 327
 - settings 16, 32
 - device discovery 18
 - device languages
 - settings 35
 - diagnostics
 - manual sensor test 248
 - network 41
 - Diagnostics menu 45
 - dimensions, product 500
 - DIMMs
 - installing 84
 - memory 139
 - part numbers 343
 - types available 84
 - verifying installation 88
 - disk
 - file directory, printing 25
 - initialization 336
 - installing 93
 - removing 94
 - DLC/LLC 40
 - DNS settings 39
 - documentation 2
 - dots, problem-solving 327, 330
 - double-sided printing
 - binding edge settings 27
 - Macintosh settings 16
 - Show Me How menu 23
 - usage page 25
- dpi, settings 16, 31
- draft quality printing 31
- drivers
 - included 6
 - paper types 50
 - supported 16
- dropouts, problem-solving 327
- drum drive, removing 197
- drum drive, replacing 197
- duplex printing accessory
 - jams 312
 - part number 342
- duplexer
 - Macintosh settings 16
 - paper path test 45
 - settings 27
 - Show Me How menu 23
 - usage page 25
- E**
 - e-mail alerts 16
 - EconoMode setting 31, 78
 - EIO cards
 - installing 93
 - part numbers 343
 - removing 94
 - settings 38
 - electrical specifications 500
 - electrostatic discharge (ESD) 128
 - embedded Web server
 - features 71
 - security 75
 - energy specifications 500
 - envelope accessory, front covers, removing 145
 - envelope feeder
 - paper jams 307
 - part number 342
 - envelopes
 - default size, setting 27
 - output bin, selecting 63
 - wrinkled, problem-solving 330
 - envelopes, loading 55
 - environment for product specifications 502
 - error messages
 - e-mail alerts 16

- event log 45
- lights, control panel 20
- settings 35
- ESD (electrostatic discharge) 128
- Ethernet cards, part numbers 343
- event log 45
- Explorer, versions supported
 - embedded Web server 71
- extended warranty 498

F

- factory defaults, restoring 44
- fan FN101, removing 200
- fan FN102, removing 174
- fan FN103, removing 176
- fan FN301, removing 202
- fans
 - troubleshooting 240
- fasteners, types of 132
- FastRes 6, 31
- features 3
- feed and pickup rollers, replacing
 - Tray 1 152
- feed rollers, replacing 83
- feed rollers, replacing tray 2 141
- file directory, printing 25
- File Upload, Macintosh 16
- Finnish laser safety
 - statement 507
- firewall settings 41
- Firmware Update, Macintosh 16
- firmware, upgrading 96
- fonts
 - Courier 28
 - included 6
 - list, printing 25
 - permanent resources 88
 - settings 29
 - Upload Macintosh 16
- formatter
 - replacing 151
 - security 77
- formatter cage, removing 150
- formatter cover, removing 150
- formatter lights 243
- formatter, removing 150
- fraud hotline 79
- front cover, removing 172

- fuser
 - cleaning 278
 - modes 30
 - paper jams 313
 - replacing 83, 149
- fuser motor, removing 195
- fuser motor, replacing 195

G

- Getting Started Guide 2
- gray background, problem-solving 328
- guides. See documentation

H

- hard disk
 - initialization 336
- heartbeat LED 243
- heavy paper
 - fuser modes 30
 - output bin, selecting 63
- held jobs
 - Retrieve Job control panel
 - menu 24
 - settings 33
- Help button, control panel 20
- help, Show Me How menu 23
- HP Customer Care 496
- HP Easy Printer Care
 - description 14
 - downloading 14
 - opening 68
 - options 68
 - supported browsers 14
 - supported operating systems 14
- HP fraud hotline 79
- HP Jetdirect print server
 - firmware updates 99
 - installing 93
 - lights 243
 - part numbers 343
 - removing 94
 - settings 38
- HP paper, ordering 344
- HP Printer Utility 14, 16
- HP Printer Utility, Macintosh 14
- HP SupportPack 498
- HP Web Jetadmin
 - firmware updates 98

- HP-UX software 17
- humidity
 - specifications 502

I

- I/O menu 38
- image quality. See print quality
- image repetition, problem-solving 331
- Information menu 25
- information pages
 - printing 66
- Information tab, embedded Web server 72
- initializing
 - hard disk 336
 - NVRAM 336
- installing
 - EIO cards 93
 - memory (DIMMs) 84
 - USB devices 90
- internal components 356
- Internet Explorer, versions supported
 - embedded Web server 71
- IP address
 - displaying 33
- IP addressing 18
- IP Security 75
- IPsec 75
- IPSEC status 41
- IPV6 settings 39
- IPX/SPX settings 40

J

- jams
 - 1,500-sheet tray 310
 - 500-sheet tray 309
 - common causes of 302
 - duplexer 312
 - envelope feeder 307
 - fuser area 313
 - locations 305
 - output bin 318
 - recovery 323
 - recovery setting 36
 - Show Me How menu 23
 - staple 320
 - top-cover 305
 - Tray 1 309

- Japanese VCCI statement 506
- Jetadmin
 - firmware updates 98
- Jetadmin, HP Web 13, 74
- Jetdirect print server
 - firmware updates 99
 - installing 93
 - lights 243
 - part numbers 343
 - removing 94
 - settings 38
- jobs
 - Macintosh settings 16
 - Retrieve Job menu 24
- K**
- kit, maintenance
 - part number 342
- kit, printer maintenance
 - using 83
- Korean EMI statement 506
- L**
- labels
 - fuser modes 30
 - output bin, selecting 63
- landscape orientation
 - setting as default 29
- language, control panel 36
- languages, device
 - settings 35
- laser safety statements 506, 507
- laser/scanner
 - removing 217
- left-side cover, removing 164
- letter paper, override A4
 - settings 27
- letterhead
 - fuser modes 30
- light print
 - problem-solving 327
 - setting toner density 32
- lights
 - formatter 243
- lights, control panel 20
- line spacing, setting default 29
- lines, problem-solving 328, 330, 331
- link speed 43
- Linux software 17

- loading
 - 1,500-sheet tray 59
 - 500-sheet tray 57
 - Show Me How menu 23
 - staples 82
 - Tray 1 56
- Lock Resources, Macintosh 16
- loose toner, problem-solving 328

M

- Macintosh
 - AppleTalk settings 40
 - HP Printer Utility 14
 - support 496
- main assemblies
 - locating 261
- maintenance agreements 497
- maintenance kit
 - part number 342
 - using 83
- manual feed
 - settings 28
- manuals. *See* documentation
- margins
 - settings 30
- media
 - A4 settings 27, 28
 - custom-size 27
 - default size, setting 27
 - Show Me How menu 23
 - supported sizes 48
 - tray settings 26
 - usage page 25
- memory
 - installing DIMMs 84
 - NVRAM initialization 336
 - part numbers 343
 - permanent resources 88
 - RAM disk settings 36
 - upgrading 84
 - verifying installation 88
- memory DIMMs
 - security 77
- menu map 25
- menus, control panel
 - accessing 20
 - Configure Device 27
 - Diagnostics 45
 - I/O 38
 - Information 25

- Paper Handling 26
- Print Quality 30
- Printing 27
- Resets 44
- Retrieve Job 24
- Show Me How 23
- System Setup 33
- messages
 - e-mail alerts 16
 - event log 45
 - lights, control panel 20
 - settings 35
- misformed characters, problem-solving 329
- models, feature comparison 3
- motors
 - troubleshooting 240
- N**
- Netscape Navigator, versions
 - supported
 - embedded Web server 71
- network port
 - troubleshooting 332
- Networking tab, embedded Web server 72
- networks
 - device discovery 18
 - diagnostics 41
 - HP Web Jetadmin 74
 - IP address 18
 - link speed 43
 - Macintosh settings 16
 - protocols 38, 43
 - protocols supported 18
 - security settings 41
 - settings 38
 - troubleshooting printing 333
- next-day on-site service 497
- noise specifications 502
- non-HP supplies 78
- nonvolatile memory
 - initialization 336
- number of copies, setting
 - default 27
- NVRAM
 - initialization 336
- O**
- on-site service agreements 497

- online support 496
- operating environment
 - specifications 502
- ordering
 - paper, HP 344
 - part numbers for 340
 - supplies and accessories 340
 - supplies through embedded
 - Web server 73
- orientation, page
 - default, setting 29
- output bins
 - paper jams 318
 - removing rear 148
- output quality
 - defect examples 327
 - repeating defects 278
 - troubleshooting 327
- override A4/letter 27

P

- packaging device 497
- page counts 336
- page orientation
 - default, setting 29
- pages
 - blank 332
 - not printing 332
 - printing slowly 332
- paper
 - A4 settings 27, 28
 - curled 329
 - custom-size 27
 - default size, setting 27
 - fuser modes 30
 - HP, ordering 344
 - loading 1,500-sheet tray 59
 - loading 500-sheet tray 57
 - loading Tray 1 56
 - Show Me How menu 23
 - skewed 329
 - supported sizes 48
 - supported types 50
 - tray settings 26
 - usage page 25
 - wrinkled 330
- Paper Handling menu 26
- paper jams
 - 1,500-sheet tray 310
 - 500-sheet tray 309

- duplexer 312
- envelope feeder 307
- fuser area 313
- locations 305
- output bin 318
- top-cover 305
- Tray 1 309
- paper path test 45
- paper-delivery assembly
 - removing 219
- part numbers
 - assemblies 350
 - cables 343
 - EIO cards 343
 - internal components 356
 - maintenance kit 342
 - memory 343
 - paper, HP 344
 - print cartridges 342
 - trays 341
- parts
 - removal-order list 133
- PCAs
 - diagrams and part
 - numbers 384
- PCL drivers 16
- PCL font list, printing 25
- PCL, setting as device
 - language 35
- PDF error pages 28
- PDF files, printing 84
- perform printer maintenance
 - message 83
- permanent resources 88
- personalities
 - settings 35
- physical specifications 500
- pickup and feed rollers, replacing
 - Tray 1 152
- pickup rollers, replacing 83
- pickup rollers, replacing tray
 - 2 141
- pickup-drive assembly
 - removing 190
- ping test 334
- pliers, required 129
- portrait orientation
 - setting as default 29
- ports
 - supported 6

- post-service tests 131
- postcards
 - output bin, selecting 63
- PostScript
 - setting as device language 35
- PostScript error pages
 - settings 28
- power
 - troubleshooting 240
- power specifications 500
- power supply, high voltage
 - removing 206
- preprinted paper
 - fuser modes 30
- prepunched paper
 - fuser modes 30
- preservice checklist 130
- print cartridges
 - authentication 79
 - density settings 32
 - EconoMode 31, 78
 - features 7
 - genuine HP 78
 - non-HP 78
 - ordering through embedded
 - Web server 73
 - paper jams 305
 - part numbers 342
 - replacement intervals 78
 - replacing 80, 137
 - status messages 20
 - storage 78
 - warranty 494
- print jobs
 - retention 33
- print quality
 - blurred 331
 - defect examples 327
 - dropouts 327
 - gray background 328
 - light print 327
 - lines 328
 - loose toner 328
 - misformed characters 329
 - repeating defects 278, 329
 - repetitive images 331
 - scattered lines 331
 - settings 31
 - smear toner 328
 - specks 327

- test 131
- tire tracks 330
- troubleshooting 327
- white lines 330
- white spots 330
- Print Quality menu 30
- print-quality test 131
- printer languages
 - settings 35
- printer maintenance kit
 - using 83
- printer stand
 - part number 342
- printing
 - troubleshooting 332
- Printing menu 27
- problem-solving
 - blurred print 331
 - curled paper 329
 - dropouts 327
 - e-mail alerts 16
 - event log 45
 - gray background 328
 - light print 327
 - lines 328, 330
 - repeating defects 329
 - repetitive images 331
 - scattered lines 331
 - Show Me How menu 23
 - skewed pages 329
 - smeared toner 328
 - specks 327
 - text quality 329, 331
 - tire tracks 330
 - white spots 330
 - wrinkled paper 330
- processor speed 6
- product
 - electrostatic discharge (ESD) 128
- product comparison 3
- product status
 - HP Easy Printer Care 68
- ProRes 6
- protocols, network 18, 38, 43
- Proxy Server settings 40
- PS Emulation drivers 16
- PS error pages
 - settings 28
- PS font list, printing 25

- PS, setting as device
 - language 35
- punched paper
 - fuser modes 30
- Q**
 - quality
 - defect examples 327
 - repeating defects 278
 - troubleshooting 327
 - quick copy jobs 33
- R**
 - RAM disk
 - settings 36
 - rear output bin
 - paper jams 318
 - printing to 63
 - removing 148
 - recovery, jam 36
 - registration assembly
 - removing 157
 - registration settings 30
 - remote firmware update (RFU) 96
 - removing
 - order of parts 133
 - parts, order 133
 - screws 128
 - removing parts
 - cautions for 128
 - checklists 130
 - order 133
 - tools, required 129
 - repacking device 497
 - repeating defects 278
 - repeating defects, problem-solving 329, 331
 - replacing
 - screws 128
 - replacing printing cartridges 80
 - required tools
 - user-replaceable parts 129
 - Resets menu 44
 - resolution
 - features 6
 - settings 16, 31
 - troubleshooting quality 327
 - Resolution Enhancement technology (REt) 16, 31

- resource saving 88
- restoring default settings 44
- REt (Resolution Enhancement technology) 16, 31
- retention, job
 - Retrieve Job menu 24
 - settings 33
- Retrieve Job menu 24
- right-side cover
 - removing 161
- rollers
 - 1,500-sheet tray, removing 223
 - locating 261
 - repetitive defects 278
 - transfer, replacing 143
 - Tray 1 pickup and feed, replacing 152
 - tray 2 separation, pickup, and feed, replacing 141
- rollers, replacing 83
- rough paper
 - output bin, selecting 63
- S**
 - safety statements 506, 507
 - saving resources, memory 88
 - screwdrivers, required 129
 - screws
 - removing 128
 - replacing 128
 - screws, types of 132
 - security
 - network settings 41
 - security features 75
 - sensors
 - manual test 248
 - separation roller
 - replacing 155
 - separation rollers, replacing tray 2 141
 - service
 - after-service check list 130
 - before service checklist 130
 - checklist, after service 130
 - checklist, before service 130
 - checklist, post-service 130
 - checklist, preservice 130
 - post-service checklist 130
 - preservice checklist 130

- repacking device 497
 - tools, required 129
- service agreements 497
- Service ID 337
- settings
 - cold reset 337
 - restoring defaults 44
- Settings tab, embedded Web server 72
- shipping device 497
- Show Me How menu 23
- show-me-how pages
 - printing 66
- SIMMs, incompatibility 84
- skewed pages 329
- Sleep mode
 - delay, setting 34
 - power specifications 500
 - turning on or off 44
- small paper, printing on 63
- smeared toner, problem-solving 328
- software
 - embedded Web server 13
 - HP Easy Printer Care 14, 68
 - HP Printer Utility 14
 - HP Web Jetadmin 13
- Solaris software 17
- special media
 - guidelines 53
- special paper
 - guidelines 53
- specifications
 - acoustic 502
 - electrical 500
 - operating environment 502
 - physical 500
- specks, problem-solving 327, 330
- speed
 - resolution settings 31
- spots, problem-solving 327, 330
- stacker
 - part number 342
 - printing to 64
- staple cartridges
 - loading 82
 - part numbers 342
- staple jams 320

- stapler/stacker
 - jams, staple 320
 - loading staples 82
 - part number 342
 - printing to 64
- static precautions 128
- status
 - embedded Web server 72
 - HP Easy Printer Care 68
 - HP Printer Utility, Macintosh 16
 - supplies page, printing 25
- status, supplies
 - control panel messages 20
- storage, job
 - Macintosh settings 16
 - Retrieve Job menu 24
 - settings 33
- stored jobs
 - security 75
- storing
 - print cartridges 78
- straight-through paper path 63
- strategy
 - parts, removal 128
 - parts, replacement 128
- supplies
 - authentication 79
 - counterfeit 79
 - non-HP 78
 - ordering 340
 - ordering through embedded Web server 73
 - part numbers 342
 - replacement intervals 78
 - replacing print cartridges 80
 - status page, printing 25
 - status, viewing with embedded Web server 72
 - status, viewing with HP Printer Utility 16
- supplies, status
 - control panel messages 20
 - HP Easy Printer Care 68
- support
 - embedded Web server links 73
 - HP Printer Utility pages 16
 - online 496
 - repacking device 497

- supported media 48
- SupportPack, HP 498
- symbol sets 29
- system requirements
 - embedded Web server 71
- System Setup menu 33
- T**
- TCP/IP settings 38
- technical support
 - online 496
 - repacking device 497
- temperature specifications 502
- tests
 - manual sensor test 248
 - network 41
 - post-service 131
 - print-quality 131
- text, problem-solving
 - blurred 331
 - misformed characters 329
- three-hole punched paper
 - fuser modes 30
- time, setting 33
- timeout settings
 - held jobs 33
 - I/O 38
 - Sleep mode 34
- timing chart 271
- tire tracks, problem-solving 330
- toner
 - density setting 16, 32
 - EconoMode 31, 78
 - output quality, problem-solving 328
- toner cartridges. *See* print cartridges
- tools, required
 - user-replaceable parts 129
- top cover
 - paper jams, clearing 305
- top cover, removing 159
- top output bin
 - paper jams 318
 - printing to 63
- transfer roller
 - replacing 143
- transfer rollers, replacing 83
- transparencies
 - fuser modes 30

- HP, ordering 346
- output bin 63
- Tray 1
 - loading 56
 - manual feed settings 28
 - paper jams 309
 - pickup and feed rollers, replacing 152
 - settings 26
- tray 1
 - paper-pickup assembly, removing 214
 - separation roller, replacing 155
- Tray 2
 - settings 26
- tray 2
 - extension door, removing 147
 - separation, pickup, and feed rollers, replacing 141
- Tray 3
 - physical specifications 500
- trays
 - configure 61
 - custom-size settings 27
 - loading 1,500-sheet tray 59
 - loading 500-sheet tray 57
 - loading Tray 1 56
 - Macintosh settings 16
 - manual feed settings 28
 - paper jams 305, 309, 310
 - paper orientation 54
 - paper path test 45
 - part numbers 341
 - registration settings 30
 - settings 26
 - Show Me How menu 23
- trays, status
 - HP Easy Printer Care 68
- troubleshooting
 - 1,500-sheet tray paper jams 310
 - 500-sheet tray paper jams 309
 - blank pages 332
 - checklist 238
 - duplexer jams 312
 - duplexing 326
 - envelope feeder jams 307
 - fuser-area paper jams 313

- network cable 332
- network printing 333
- output bin jams 318
- pages not printing 332
- pages printing slowly 332
- paper jams 305
- power-on 240
- print quality 327
- process 240
- quality 327
- repeating defects 278
- staple jams 320
- top-cover paper jams 305
- Tray 1 paper jams 309
- USB cable 332
- two-sided printing
 - binding edge settings 27
 - Macintosh settings 16
 - Show Me How menu 23
 - usage page 25

U

- UNIX
 - carriage return settings 29
- UNIX software 17
- upgrading firmware 96
- upgrading memory 84
- usage page 25
- USB cable, part number 343
- USB devices
 - installing 90
- USB port
 - supported 6
 - troubleshooting 332
- User Guide 2
- user-replaceable parts
 - required tools 129
 - tools required 129

V

- vertical spacing, setting
 - default 29
- voltage specifications 500

W

- wake time
 - changing 35
- warnings setting 35
- warranty
 - customer self repair 495
 - extended 498

- print cartridges 494
- product 493
- wavy paper, problem-solving 329
- Web browser requirements
 - embedded Web server 71
- Web Jetadmin
 - firmware updates 98
- Web sites
 - customer support 496
 - fraud reports 79
 - HP Web Jetadmin, downloading 74
 - Macintosh customer support 496
 - ordering supplies 340
- weekly on-site service 497
- weight, product 500
- white lines or spots, problem-solving 330
- Wide A4 settings 28
- Windows
 - drivers supported 16
- wrinkled paper, problem-solving 330



CB506-91004

