



hp LaserJet 9000 mfp



i n v e n t

service



hp LaserJet 9000mfp series printer

service _____

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Product information

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Product features



HP LaserJet 9000mfp (C8523A) (Q2458A)

This section lists the major product features of the HP LaserJet 9000mfp.

Table 1. Features of the HP LaserJet 9000mfp

Speed	<ul style="list-style-type: none"> ● 50 pages per minute (ppm), automatic document feeder (ADF) scanning of and printing on letter-size or ISO A4-size paper ● 8-second standby to first page print ● 2.4 seconds or less for the first scan from the ADF ● 3.7 seconds or less for the first scan from the scanner glass
Resolution	<ul style="list-style-type: none"> ● 600 dots per inch (dpi) with Resolution Enhancement technology (REt) ● HP FastRes 1200 (1200-dpi-like quality at up to 50 ppm for letter and A4) ● Up to 256 levels of gray
Consumables	<ul style="list-style-type: none"> ● No-shake, no pull-tab print cartridge ● 3,000-sheet stapler/stacker staple cartridge ● Multifunction finisher staple cartridge
Throughput	<ul style="list-style-type: none"> ● 100-page capacity ADF ● 25 percent to 400 percent scalability using the scanner glass ● 25 percent to 200 percent scalability using the ADF ● Transmit Once, Raster Image Processing (RIP) Once technology
Language and fonts	<ul style="list-style-type: none"> ● PostScript® (PS) Level 3 emulation with 35 built-in PS language fonts ● HP Printer Command Language (PCL) 6 driver ● HP PCL 5e driver for compatibility with previous products ● Printer job language (PJM) ● Printer management language ● 80 scalable TrueType™ typefaces
Enhanced memory and memory expansion	<ul style="list-style-type: none"> ● Memory Enhancement technology (MEt) automatically compresses data to use RAM more efficiently ● 128 megabytes (MB) of RAM, expandable to 384 MB using industry-standard 100-pin dual inline memory modules (DIMMs)
Functions	<ul style="list-style-type: none"> ● Two-sided copying (duplex printing) ● Image modification ● Color digital sending ● Wide-format printing ● Document finishing
Finishing	<ul style="list-style-type: none"> ● 3,000-sheet stapler/stacker ● 3,000-sheet stacker ● Multifunction finisher

Table 3. Electrical specifications

Volts	Frequency	Amperes (amps)	Watts (W) (typical)	Thermal units per hour (Btu/hr)
100-127 Vac ± 10 percent	50/60 Hz ± 2 Hz	Minimum recommended current capacity = 15-amp dedicated circuit	printing = 1,075 W standby = 440 W PowerSave 1 = 70 W low power = 230 W off = .5 W ADF printing = 1,130 W	printing = 3,670 Btu/hr standby = 1,500 Btu/hr PowerSave 1 = 240 Btu/hr low power = 785 Btu/hr off = 1.7 Btu/hr ADF printing = 3,860
220-240 Vac ± 10 percent	50/60 Hz ± 2 Hz	Minimum recommended current capacity = 6.5 amp	printing = 1,070 W standby = 415 W PowerSave 1 = 70 W low power = 230 W off = 1.3 W ADF printing = 1,075 W	printing = 3,650 Btu/hr standby = 1,420 Btu/hr PowerSave 1 = 240 Btu/hr low power = 785 Btu/hr off = 4.5 Btu/hr ADF printing = 3,670

WARNING!

Power requirements are based on the region where the MFP is sold. Do not convert operating voltages. This can damage the MFP and void the product warranty.

The electrical and environmental specifications must be maintained to ensure the proper operation of the MFP. Consider the following points before installing the MFP:

- Install the MFP in a well-ventilated, dust-free area.
- Install the MFP on a level, flat surface that can support its size and weight. Do not install on carpet or on other soft surfaces. Make sure all four MFP feet are level.
- Make sure the power supply circuitry is adequate. (See “Product specifications” on page 17.)
- Install the MFP where temperature and humidity are stable, with no abrupt changes (away from water sources, humidifiers, air conditioners, refrigerators, or other major appliances). (See “Product specifications” on page 17.)
- Install away from direct sunlight, areas that experience vibration, open flames, ammonia fumes, ultrasonic heaters, and devices that emit a magnetic field. If the MFP is placed near a window, make sure the window has a curtain or blind to block direct sunlight.
- Maintain enough space around the MFP for proper access and ventilation. (See “Space requirements” on page 28.)

Table 4. Environmental specifications

	Operating/printing	Storage/standby
Temperature (MFP and print cartridge)	10 degrees to 32.5 degrees C (50 degrees to 90.5 degrees F)	-20 degrees to 40 degrees C (-4 degrees to 104 degrees F)
Relative humidity	20 percent to 80 percent	15 percent to 90 percent

Table 5. Noise level specifications

	Operator position	Bystander (1m)	Sound power
Copying at 50 ppm	L _{Pam} 57 db(A)	L _{Pam} 60 db(A)	L _{WAd} 7.4 bels(A)
Idle	L _{Pam} 40 db(A)	L _{Pam} 40 db(A)	L _{WAd} 5.7 bels(A)
PowerSave	inaudible	inaudible	inaudible

Note

Testing per International Standards Organization (ISO) 9296.

Product overview

Assembly identification

For service issues and section identification, the MFP has been separated into three sections.

- copy/scan engine
- print engine
- finishing device

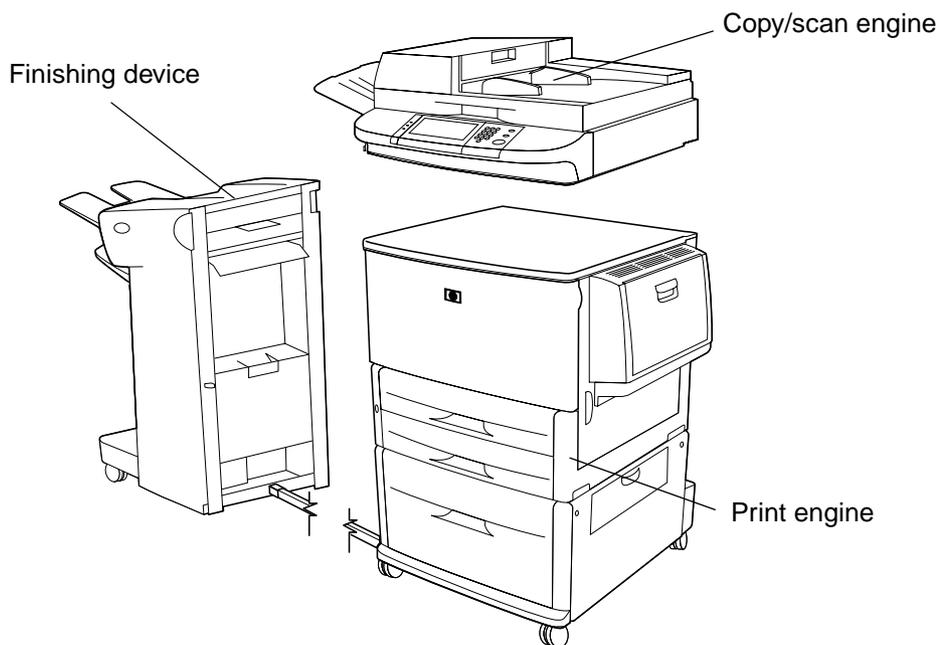


Figure 2. Assembly identification

Note A finishing device is required with the HP LaserJet 9000mfp.

External assembly locations

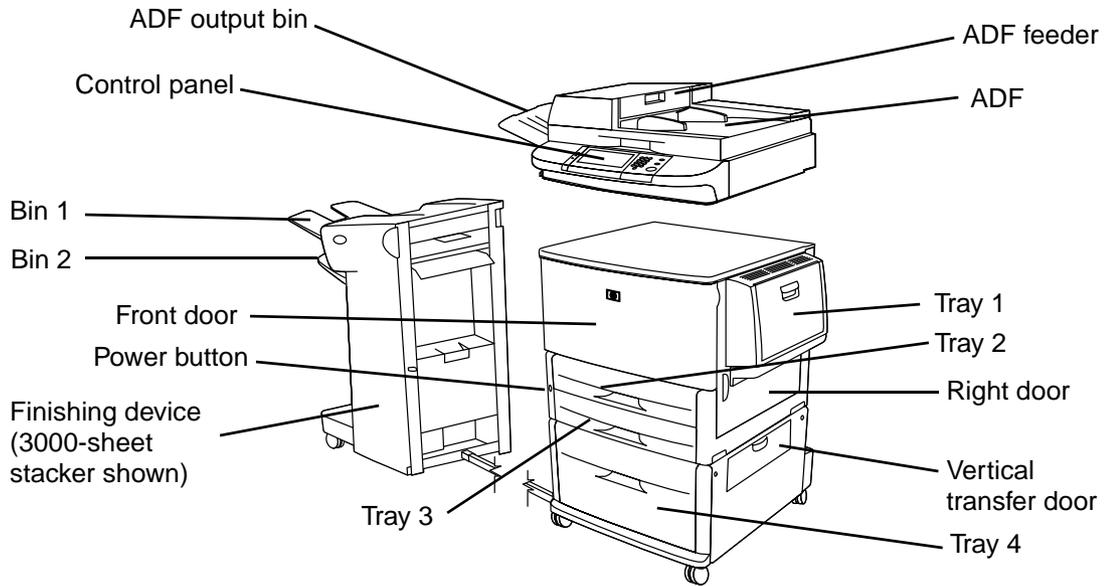


Figure 3. External assembly locations (front view)

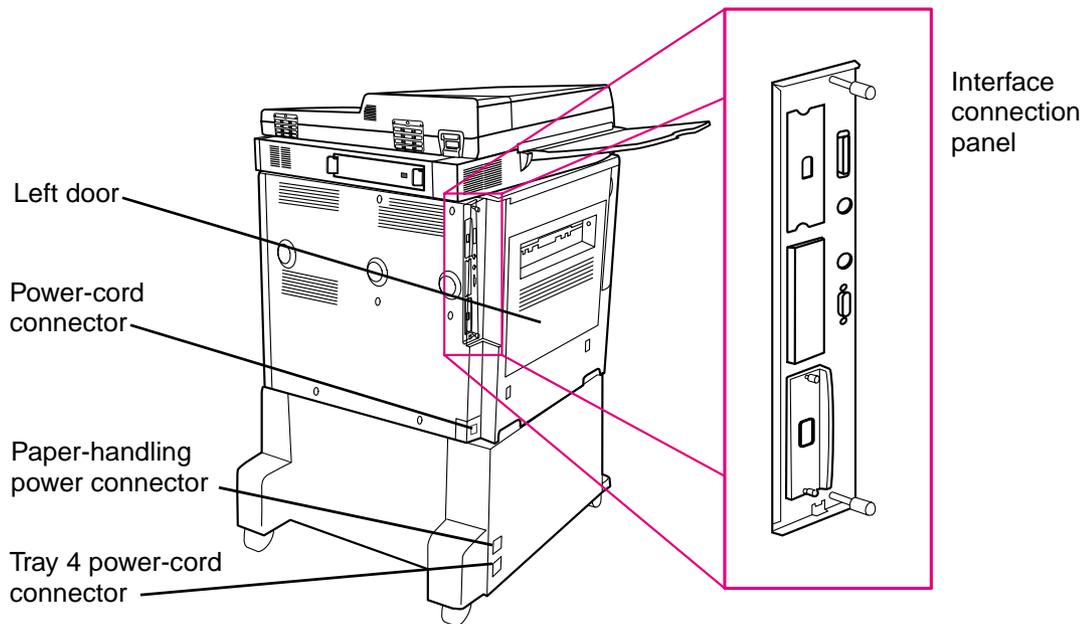


Figure 4. External assembly locations (back view)

Interface connections

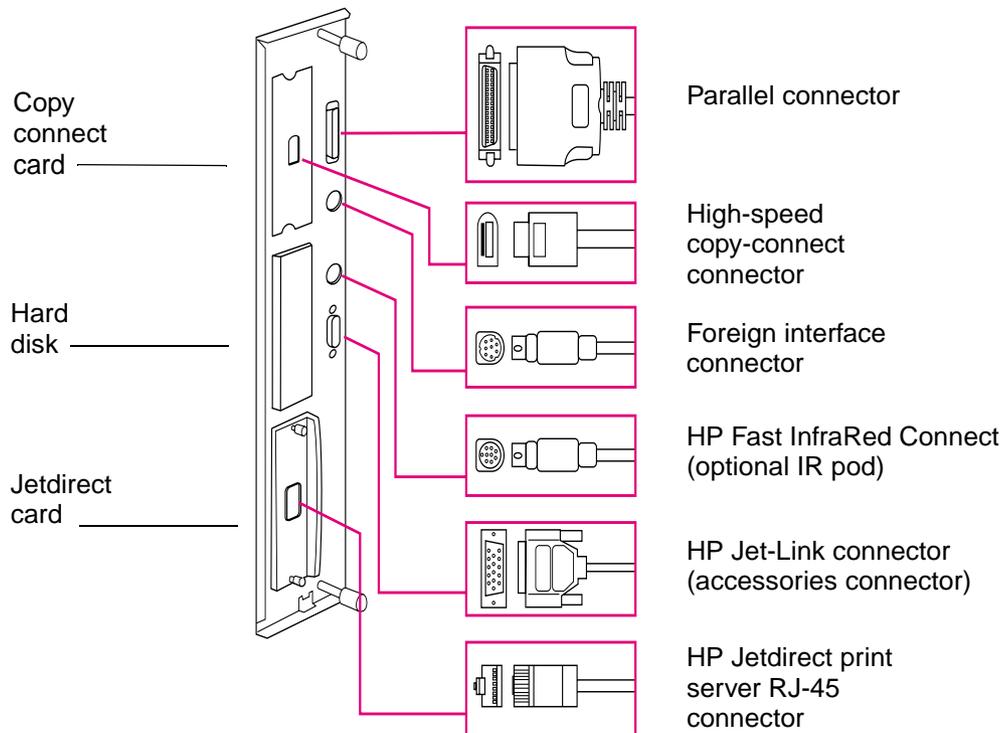


Figure 5. Interface connections

Accessories

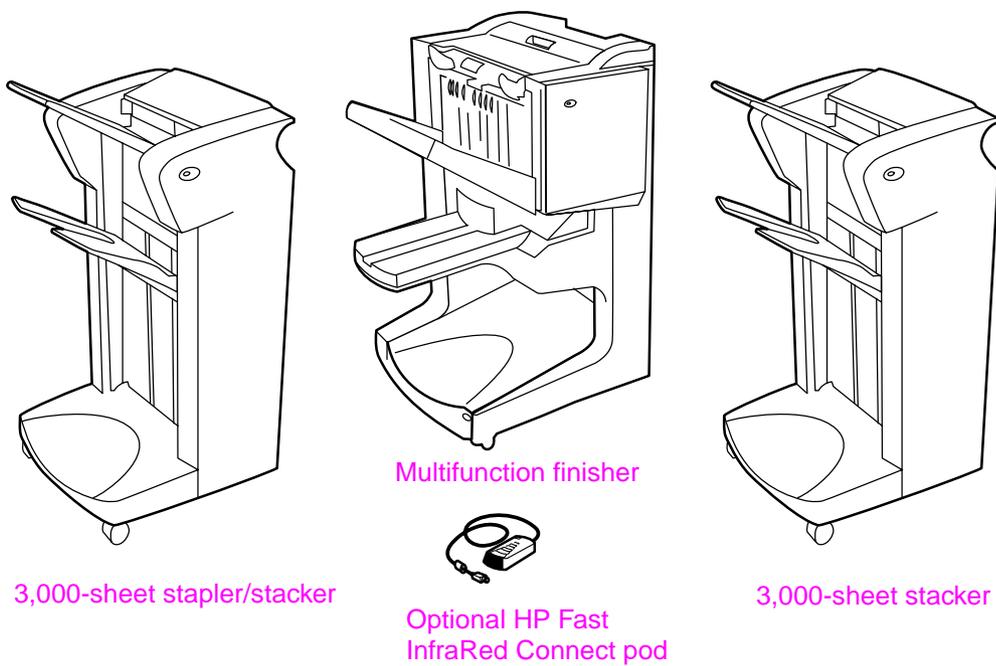


Figure 6. Accessories

Regulatory information

For regulatory information and requirements, FCC regulations, and declaration of conformity, please see the *start* guide.

For environmental product stewardship program information, please see the *use* guide.

Service approach

Repair of the MFP normally begins with a three-step process:

- 1 Isolate the problem to the major system (the host computer, the network and/or server, or the MFP).
- 2 Determine whether the problem is located in the print engine, the copy/scan engine, or the finishing device.
- 3 Troubleshoot the problem using “Malfunction troubleshooting” in chapter 7.

Once a faulty part is located, repair is usually accomplished by assembly-level replacement of field replaceable units (FRUs). Some mechanical assemblies can be repaired at the subassembly level. Hewlett-Packard does not support replacement of components on the printed circuit assemblies.

Parts and supplies

Information about ordering

“Ordering parts” in chapter 8 of this manual contains FRU and replacement part numbers. Replacement parts can be ordered from the HP Customer Support (HPCS) organization.

“Consumables, supplies, accessories, FRUs, and documentation” in chapter 8 of this manual contains information about products specifically designed for this MFP. Order accessories from HPCS.

Note

See “Worldwide service and support offices” on page 25 to find information for a local HP office in the appropriate region.

HPCS phone listings

- HPCS (for U.S.)
(1) (800) 752-0900
- HPCS (for Canada)
(1) (800) 387-3867
- HPCS (for Europe)
(49 7031) 142253

Exchange program

HP might offer remanufactured assemblies for parts. These can be ordered through HPCS.

Warranty

For warranty information and requirements, see the *start* guide.

Limited warranty for the print cartridge

For print cartridge warranty information, see the *start* guide.

Service and support

World Wide Web

Print drivers, updated HP MFP firmware, and product and support information can be obtained from the following URLs:

- U.S., <http://www.hp.com/support/lj9000>
- Europe, <http://www.hp.com/support/lj9000>
- China, <ftp://www.hp.com.cn/support/lj9000>
- Japan, <ftp://www.jpn.hp.com/support/lj9000>
- Korea, <http://www.hp.co.kr/support/lj9000>
- Taiwan, <http://www.hp.com.tw/support/lj9000>, or the local driver website, <http://www.dds.com.tw>

HP support assistant CD-ROM

This support tool offers a comprehensive online information system designed to provide technical and product information about Hewlett-Packard products. To subscribe to this quarterly service in the U.S. or Canada, call (1) (800) 457-1762. In Hong Kong SAR, Indonesia, Malaysia, or Singapore, call Mentor Media at (65) 740-4477.

HP-authorized resellers and support

To locate HP-authorized resellers and support, call (1) (800) 243-9816 in the U.S. or (1) (800) 387-3867 in Canada. See “Worldwide service and support offices” on page 25 for areas outside of North America.

HP service agreements

Call (1) (800) 743-8305 in the U.S. or (1) (800) 268-1221 in Canada.

HP PartnerCare

You can use the following information to contact HP PartnerCare:

- PartnerShip Web. <http://www.partner.americas.hp.com>
e-mail at websupport@mnl.com
- Connect Online. <http://www.connect-online.hp.com>
e-mail at PTS, INFOLINE (HP-Germany, exgen1)
- Asia Pacific countries/regions. <http://partnercare.asiapac.hp.com/>
- Canada Partner. <http://www.canada.hp.com>
- Latin America. <http://www.conecta.latinamerica.hp.com>
e-mail at SUPPORT-TEAM,LAR (HP-Miami, exgen1)

Worldwide service and support offices

- For the U.S., call (1) (208) 323-2551 Monday through Friday from 6 A.M. to 6 P.M., Mountain time.
- For Canada, call (1) (905) 206-4663 or (1) (800) 387-3867 Monday through Friday from 8 A.M. to 8 P.M., Mountain time.
- For customers outside of North America, use the following list and call the appropriate telephone number for the country or region.

Europe

- Austria: 43 (0)810 00 6080
 - Belgium
Dutch: 32 (0)2 626-8806
French: 32 (0)2 626-8806
 - Czech Republic: 42 (0)2 6130 7310
 - Denmark: +45 39 29 4099
 - International English: +44 (0)207 512 52 02
 - Finland: 358 (0)203 47 288
 - France: 33 (0)1 43 62 34 34
 - Germany: 49 (0)180 52 58 143
 - Greece: +30 (0)1 619 64 11
 - Hungary: +36 (0)1 382-1111
 - Ireland: +353 (0)1 662 5525
 - Italy: 39 02 264 10350
 - Netherlands: 31 (0)20 606 8751
 - Norway: 47 22 11 6299
 - Poland: +48 22 865 98 00
 - Portugal: 351 21 3176333
 - Romania: +40 1 315 44 42 (or 01 3154442)
 - Russian Federation
Moscow: +7 095 797 3520
St. Petersburg: +7 812 346 7997
 - Spain: +34 902 321 123
 - Sweden: +46 (0)8 619 2170
 - Switzerland: +41 (0)848 80 11 11
 - Turkey: +90 212 221 69 69
 - Ukraine: +7 (380-44) 490-3520
 - U.K.: +44 (0)207 512 52 02
-

Africa and Middle East

- Egypt: +202 7956222
 - International English: +44 (0)207 512 52 02
 - Israel: +972 (0)9 9524848
 - South Africa
Inside RSA: 086 000 1030
Outside RSA: +27-11 258 9301
 - United Arab Emirates, Bahrain, Jordan, Kuwait, Lebanon, Oman, Palestine, Qatar, Saudi Arabia, and Yemen: 971 4 883 8454
-

Asia-Pacific countries/regions

- Australia: (03) 8877 8000
 - China: +86 (0)10 6564 5959
 - Hong Kong SAR: +85 (2) 2802 4098
 - India: +91 11 682 6035
 - Indonesia: +62 (21) 350-3408
 - Japan: +81 3 3335-8333
 - Republic of Korea
Seoul: +82 (2) 3270-0700
Outside Seoul: 080 999-0700
 - Malaysia: +60 (3) 295 2566
 - New Zealand: +64 (9) 356 6640
 - Philippines: +63 (2) 867 3551
 - Singapore: +65 272 5300
 - Taiwan: +886 (2) 2717 0055
 - Thailand: +66 (2) 661 4000
 - Vietnam: +84 (0) 8 823 4530
-

Latin America

- Argentina: 0810-555-5520
 - Brazil
Greater Sao Paulo: (11) 3747-7799
Outside Greater São Paulo: 0800-157751
 - Chile: 800-22-5547
 - Guatemala: 800-999-5305
 - Mexico
Mexico City: 52-58-9922
Outside Mexico City: 01-800-472-6684
 - Peru: 0-0800-10111
 - Puerto Rico: 1-877-2320-589
 - Venezuela
Caracas: 207 8488
Outside Caracas: 800 47 777
-

2

Product requirements

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Space requirements

The dimensions of the shipping box that contains the HP LaserJet 9000mfp are 40 inches wide, 36 inches deep, and 57 inches high. The customer must locate a door or receiving area large enough to accept delivery of the shipping box.

MFP physical dimensions

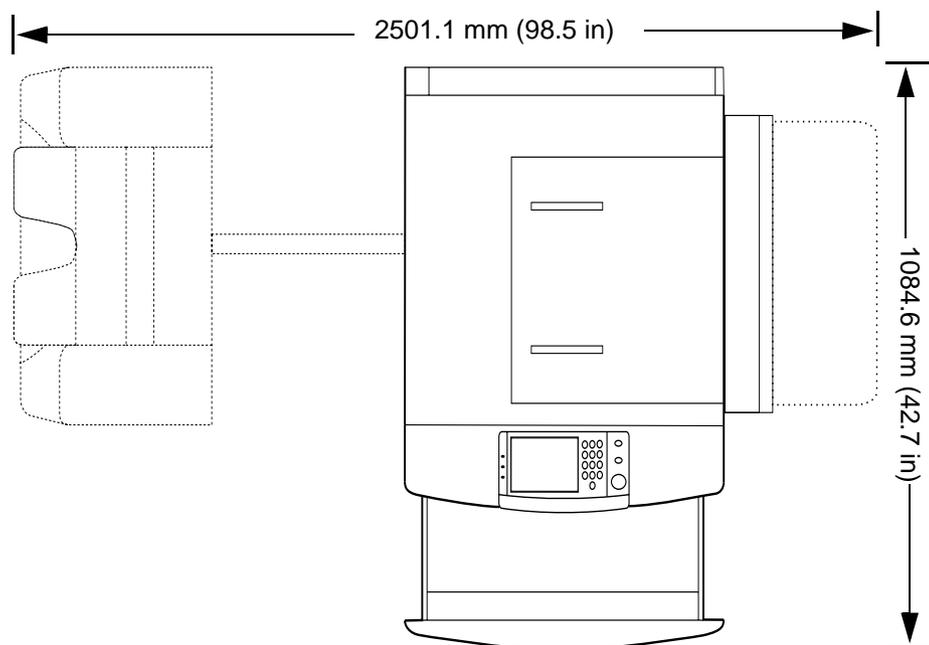


Figure 7. MFP space requirements with a finishing device (3,000-sheet stapler/stacker shown) (top view)

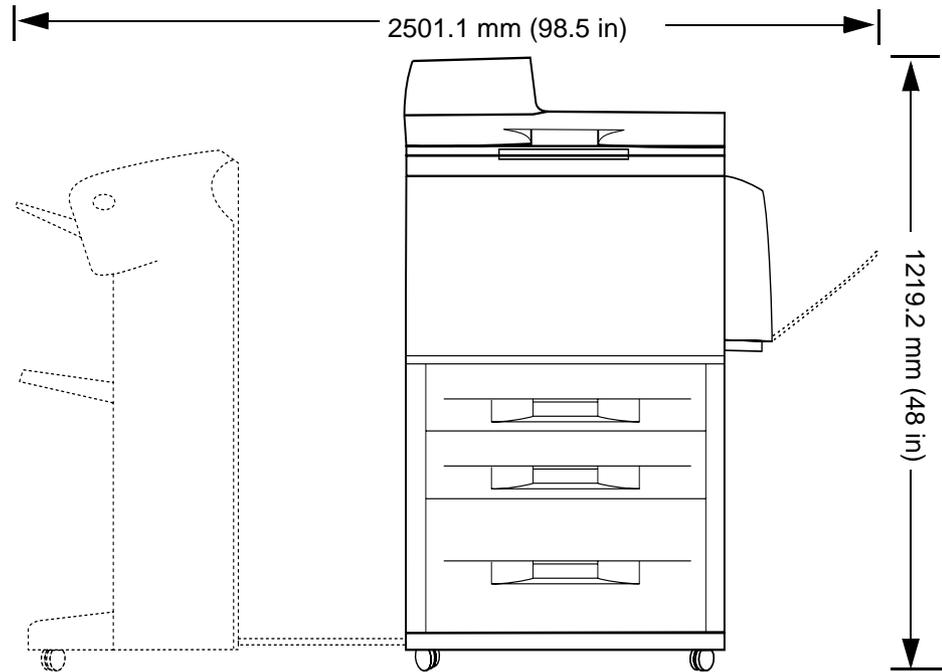


Figure 8. MFP space requirements with a finishing device (3,000-sheet stapler/stacker shown) (front view)

Note Before removing the plastic wrapping around the box, make sure that adequate space is available to unpack the MFP and to roll the product off of the shipping pallet. At least 10 feet of clearance around the box is required to remove all the shipping materials.

Note The front of the shipping box contains a slot that, when opened, reveals the software, the manual, and power cords.

Setup

Initial setup

The initial MFP setup includes the following steps:

- Remove the MFP from the box.
- Set up and install the MFP.
- Set up and install the finishing device.
- Verify installation.
- Familiarize yourself with the MFP.

Note

The initial setup package does not include any software or network setup. *Do not* load any printer software or connect the MFP to the network, even if the customer has an existing network connection in use. If an administrator does not, problems can occur to the network connection.

The shipping box contains the following items:

- HP LaserJet 9000mfp
- One or two power cords

Note

The 110-volt MFP has two power cords, and the 220-volt MFP has one y-power cord.

- ADF output bin
- High-speed copy connect cable
- Control panel overlay
- Print cartridge
- Printer software on CD-ROM (includes the user *introduce* guide)
- *Start* guide
- Finishing device

Note

The finishing device is delivered in a separate box.

Note

The MFP is delivered with the duplexer, tray 1, and tray 4 installed.

Unpacking the MFP

- 1 Remove the plastic wrap from the shipping box.
- 2 Remove the two white, plastic shipping locks, and then remove the top of the box. Pull the locks straight out to remove them from the box.
- 3 Remove the six remaining shipping locks that hold the sides in place.
- 4 Remove the reinforcing ribbon from the top of the box.
- 5 Carefully remove the sides of the box.

Note

Four corner supports in the box can fall out when the sides are removed.

- 6 Remove and set aside the bag that contains the print cartridge (located on the top of the printer). Also remove the manual, cables, and software from the front piece of Styrofoam.
- 7 Remove the ramps (callout 1) by gently lifting them up. The ramps are located near the back piece of Styrofoam.

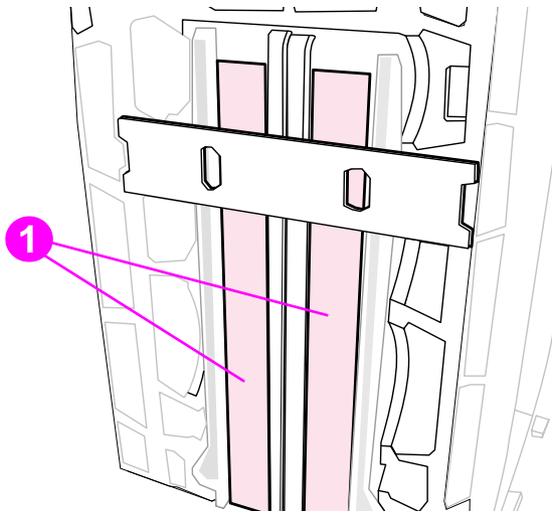


Figure 9.

Unpacking the MFP

- 8 Lift the two Styrofoam pieces away from the MFP.
- 9 Remove the plastic wrap from the MFP, and set aside the ADF output bin.

Removing the MFP from the shipping pallet

- 1 Break apart the ramps and push them into the slots on the front of the shipping pallet (callout 1).

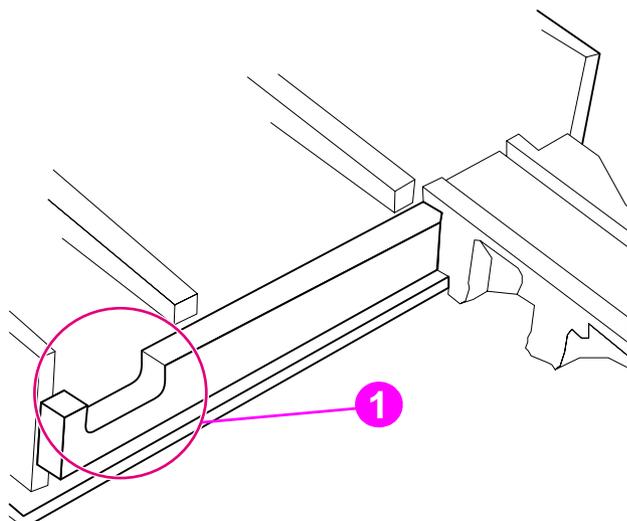


Figure 10. Removing the MFP from the shipping pallet (1 of 2)

- 2 Unlock the wheels on tray 4 and point them forward so that they line up with the ramps.
- 3 Hold the MFP behind the wheels on tray 4 (callout 2) and ease it off of the wood supports.

WARNING!

Do not remove the MFP by holding other parts of the MFP. This can result in damage to the MFP and injury to the people lifting the MFP.

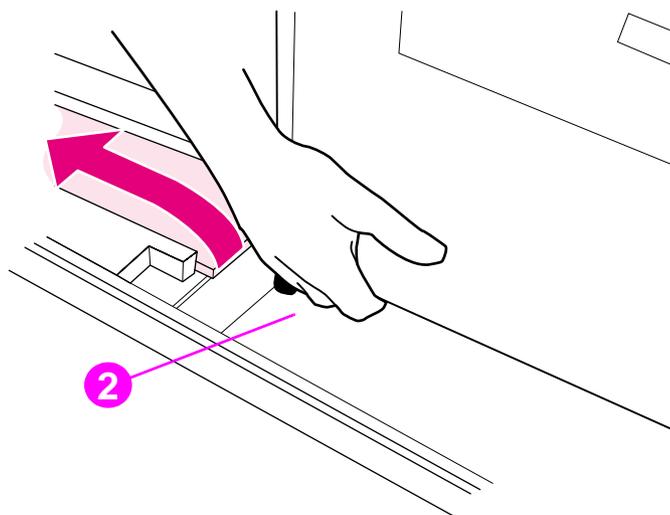


Figure 11. Removing the MFP from the shipping pallet (2 of 2)

- 4 Carefully move the MFP off the supports and onto the ramps. Support the front of the MFP while rolling it off of the shipping pallet.

Initial hardware setup

- 1 Press the shipping lock (callout 1), located on the left side of the scan engine, toward the front of the MFP to unlock it.

Note

Show the user where the shipping lock is located. Before the MFP can be moved, the flatbed optical unit must be “parked” and locked. To lock the carriage, touch **MENUS**, then **CONFIGURE DEVICE**, touch **RESETS**, touch **LOCK CARRIAGE**, and then engage the mechanical lock.

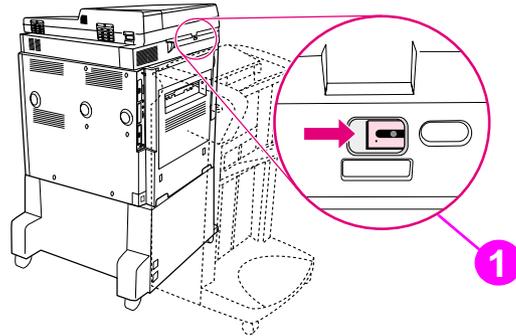


Figure 12. Initial hardware setup (1 of 4)

- 2 Open the left door.
- 3 Pull the shipping tape straight back to remove the two fuser shipping locks. Make sure the fuser levers are in the “down” position before printing.
- 4 Remove the remainder of the orange shipping tape inside the left door.
- 5 Open trays 2, 3, and 4, and remove the shipping tape and the tray locks (two per tray).
- 6 Make sure that the custom/standard switch is in the “standard” position. Show the user where to locate this switch and explain its purpose.
- 7 Open the top of the ADF and pull out the packing material (callout 2).

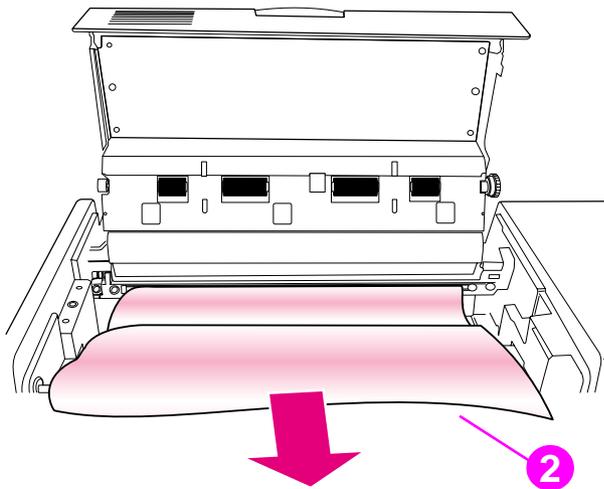


Figure 13. Initial hardware setup (2 of 4)

- 8 Install the high-speed copy connect cable (callout 3). Show the user the shape of the connectors, and how the connectors match up.

CAUTION

Make sure that the high-speed copy connect cable is installed correctly. The cable can be installed incorrectly if it is forced.

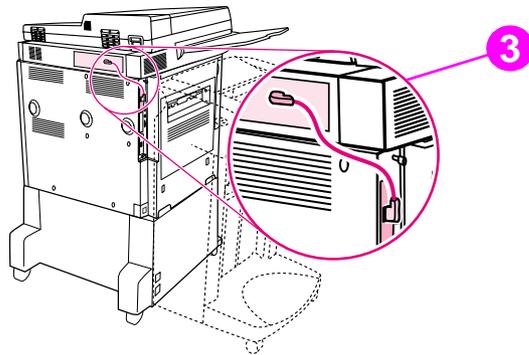


Figure 14. Initial hardware setup (3 of 4)

- 9 Install the two copy processor board (CPB) protectors (callout 4) on the back of the MFP.

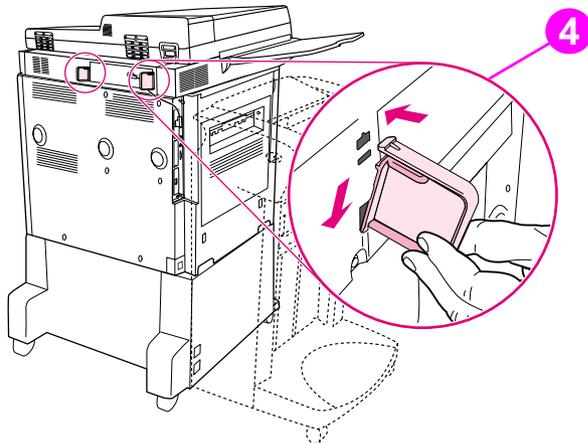


Figure 15. Initial hardware setup (4 of 4)

- 10 Install the ADF output bin.
- 11 Open the front door and install the print cartridge.

Note

The print cartridge does not have a pull tab.

Note

The toner seal automatically rolls up when a new print cartridge is installed in the printer. The motor used to drive the OPC (imaging drum) is initialized in the reverse direction, which rolls the toner seal onto a spindle inside the print cartridge. The noise the printer makes when this occurs is normal.

Installing the finishing device

The MFP is delivered with a finishing device. The finishing device comes in its own box, and must be set up and installed with the MFP. The following are finishing devices:

- 3,000-sheet stacker
- 3,000-sheet stapler/stacker
- Multifunction finisher

Note

Make sure that the printer and finishing device are installed on a level surface so that they function correctly.

- 1 Position the printer in its permanent location, allowing room to install the finishing device.
- 2 Lock the front wheels on the printer.
- 3 Open the box that contains the finishing device and remove the packing material. The box includes two bins: a face-up bin (callout 1), and a stacker bin or a stapler bin (callout 2).

Note

The multifunction finisher is delivered with the bins installed.

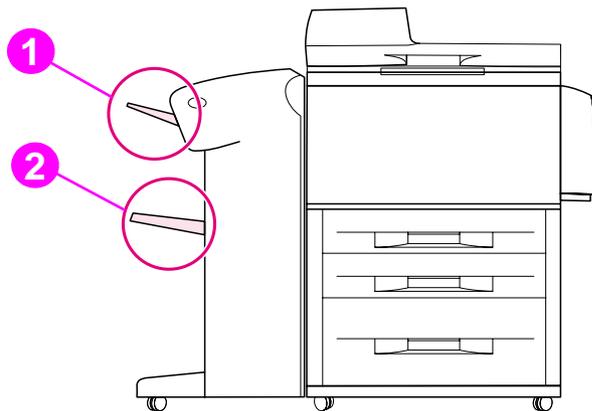


Figure 16. Installing the finishing device (1 of 2)

- 4 Place the finishing device in upright position.
- 5 Remove all of the orange packing materials and tape from the finishing device and the cables.
- 6 Position the finishing device on the left side of the printer.
- 7 Lower the connecting rod to a horizontal position.
- 8 Place the end of the connecting rod into the U-shaped metal slot on tray 4 and align the connecting rod with the gray alignment label.
- 9 Slide the blue plastic bracket into the metal slot until it locks into place.
- 10 Connect the Jet-Link cable to the printer by attaching it to the connector labeled "Finishing Device".

Note

Make sure that the Jet-Link cable is connected securely to the printer. The finishing device will not operate unless the Jet-Link cable is connected.

- 11 Install the power cord(s).
- 12 Connect the power cord on the finishing device to the upper connection on tray 4.
- 13 Connect the printer power cord to the printer.

- 14 Connect the tray 4 power cord to tray 4.
- 15 Slide the finishing device toward the MFP and lock it in place.

Note

Adjust the blue levelers on the finishing device to make sure no gap exists between the finishing device and the MFP.

- 16 To attach the stacker bin, align the slots on the stacker bin with the metal bar on the finishing device. Push in the stacker bin firmly.

Note

Locate the paper stop clips and make sure they cradle the connecting rod. The graphic below (callout 3) indicates the incorrect installation of the paper stop clips.

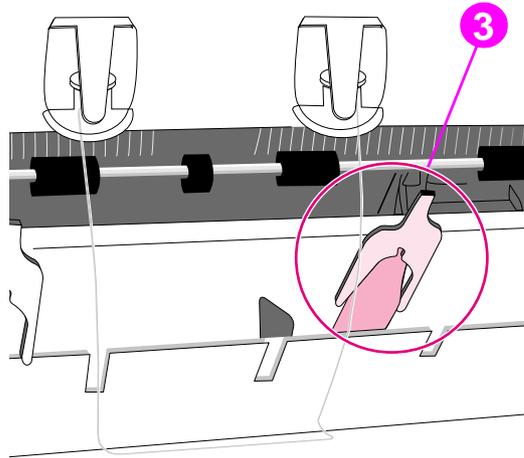


Figure 17. Installing the finishing device (2 of 2)

- 17 Attach the face-up bin.
- 18 Press the power button to turn on the MFP. The **READY** message appears on the control panel when the MFP has warmed up.
- 19 Make sure the LEDs on the front of the finishing device, tray 4, and the MFP are green. This indicates that the finishing device and the MFP are functional.

Testing MFP printing and copying functions

- 1 Adjust the paper guides in the trays for letter- or A4-size paper. Load paper in each tray.
- 2 Print a configuration page from the MFP control panel.
- 3 Make a copy of the configuration page by placing it on the glass.
- 4 Make a copy of the configuration page using the ADF.

3

Product configuration

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Control panel

Control panel layout

The control panel includes a touch-screen graphical display, three job-control buttons, a numeric keypad, and three light-emitting diode (LED) indicator lights.

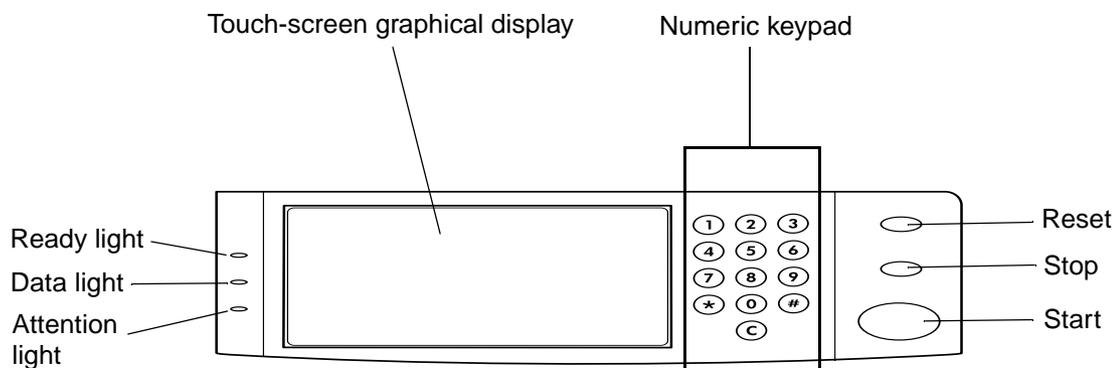


Figure 18. Control panel layout

Control panel features

Table 6. Control panel features, and key functions

Feature or key	Function
Touch-screen graphical display	<ul style="list-style-type: none"> Provides access to settings, help screens, copy functions, and shows device status.
Ready light	<ul style="list-style-type: none"> Off—the product is offline or has an error. On—the product is ready. Blinking—the product is going offline.
Data light	<ul style="list-style-type: none"> Off—the product has no data to print. On—the product has data to print but is offline. Blinking—the product is processing the data.
Attention light	<ul style="list-style-type: none"> Off—the product has no error. On—the product has a critical error; turn power off and then on. Blinking—action is required; see the graphical display.
RESET	<ul style="list-style-type: none"> Resets the job settings to factory or user-defined default values.
STOP	<ul style="list-style-type: none"> Cancels the active job.
START	<ul style="list-style-type: none"> Begins a copy job, starts digital sending, or continues a job that has been interrupted.
Numeric keypad	<ul style="list-style-type: none"> Allows for input of numeric values.

Touch-screen graphical display layout

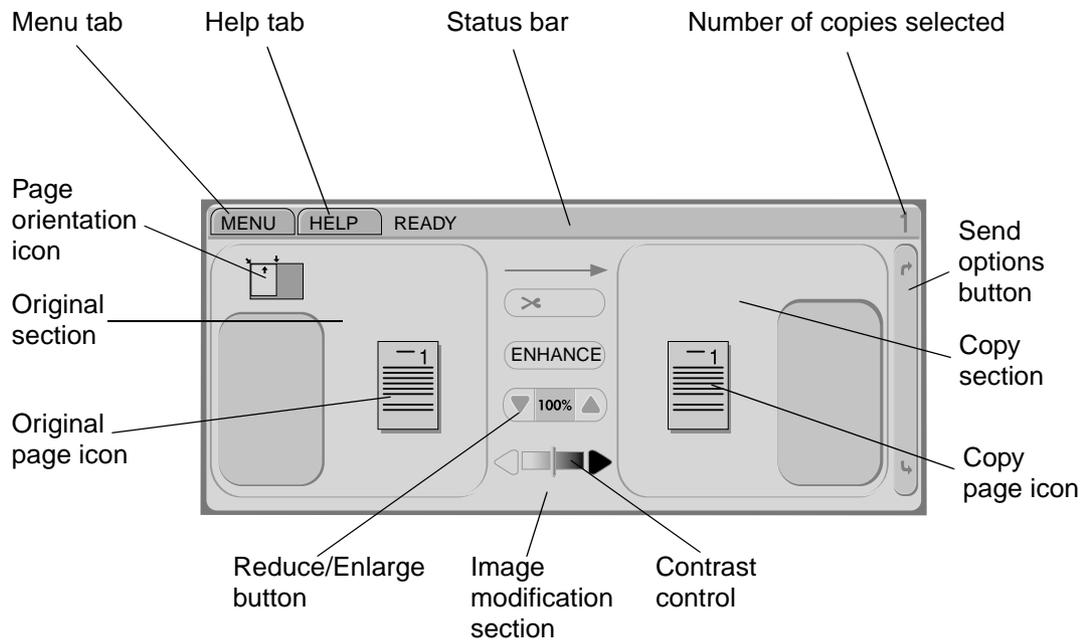


Figure 19. Touch-screen graphical display layout

Touch-screen graphical display features

The touch-screen graphical display provides access to settings, help screens, copy functions, and shows device status. User attention messages are shown in a pop-up window with distinct text and codes. See “Troubleshooting with control panel messages” in chapter 7.

Table 7. Touch-screen graphical display features and functions

Feature	Function
Status bar	<ul style="list-style-type: none"> Shows current device status, number of copies, and menu and Help options.
Menu	<ul style="list-style-type: none"> Provides access to settings, such as paper-handling and device configuration.
Help	<ul style="list-style-type: none"> Provides access to “What is this?” or “Show me how” Help options.
Original	<ul style="list-style-type: none"> Shows settings that describe the original document. The product automatically detects document size.
Copy	<ul style="list-style-type: none"> Shows settings that describe the output features of the document.
Send Options	<ul style="list-style-type: none"> Allows you to send your documents using e-mail.
Reduce/Enlarge 	<ul style="list-style-type: none"> Reduces or enlarges the size of the scanned image.
Contrast Control 	<ul style="list-style-type: none"> Increases or decreases the brightness of the scanned image.
HELP ?	<ul style="list-style-type: none"> Allows access to “What is this?” Help. This feature is embedded in the touch-screen menus.
Enhance 	<ul style="list-style-type: none"> Allows access to the screen that contains enhancement features.

Settings and defaults

Most of the MFP printing decisions are based on temporary settings or on factory defaults.

Note

Most of the settings you send from software applications override MFP defaults.

Temporary settings are the values set through your software application for the current print job. Temporary settings remain in effect until the current print job is finished.

Control panel defaults are the values entered by selecting a control panel item on the touch screen and then touching it. A bullet (●) next to the item name indicates that it is now the default. The MFP retains default settings even when power is turned off.

Factory defaults are preset at the factory and are the default values for each menu item. Factory default values are listed in table 8.

Setting the display language

Method 1

- 1 Using the touch screen, touch MENU to open the menus.
- 2 Touch CONFIGURE DEVICE, and then press ▼ to scroll to system setup.
- 3 Touch SYSTEM SETUP, and then press ▼ to scroll to language.
- 4 Touch LANGUAGE to activate the selection screen.
- 5 Select the language you want, and then touch OK.

Method 2

- 1 Press and hold START while turning on the device.
- 2 Hold START until all three error lights are illuminated at the same time.
- 3 Press ▲ or ▼ to scroll to the language you want, and then press START.

Setting tray registration

- 1 Using the touch screen, touch MENU to open the menus.
- 2 Touch CONFIGURE DEVICE.
- 3 Touch PRINT QUALITY.
- 4 Touch SET REGISTRATION.
- 5 Touch SOURCE. Select the tray that you want to set registration.
- 6 Touch PRINT TEST PAGE.
- 7 The registration page prints. Follow the instructions on the page to complete the registration setting.

Note

The tray registration can only be performed using letter or A4 paper.

hp LaserJet 9000 series printers

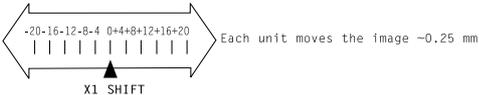
tray 2 - registration page 1

How to center all jobs from tray2:

Step 1:
 A. Examine the borders on the top and bottom of this page.
 B. Note the Y SHIFT value necessary to move the border in the desired direction.



Step 2:
 A. Examine the borders on the left and right of this page.
 B. Note the X1 SHIFT value necessary to move the border in the desired direction.



Step 3:
 A. Press the **✓** key to enter the menus.
 B. Use **▲** and **▼** to highlight **CONFIGURE DEVICE** and press **✓** to select.
 C. Use **▲** and **▼** to highlight **PRINT QUALITY** and press **✓** to select.
 D. Use **▲** and **▼** to highlight **SET REGISTRATION** and press **✓** to select.
 E. Use **▲** and **▼** to highlight **ADJUST TRAY2** and press **✓** to select.
 F. Use **▲** and **▼** to highlight **Y SHIFT** and press **✓** to select.
 G. Use **▲** and **▼** to locate the value you identified in step 1 and press **✓** to select.
 H. Use **▲** and **▼** to highlight **X1 SHIFT** and press **✓** to select.
 I. Use **▲** and **▼** to locate the value you identified in step 1 and press **✓** to select.
 J. Print another test page and repeat steps 1 & 2 to verify the border is properly centered.

Printed in landscape mode

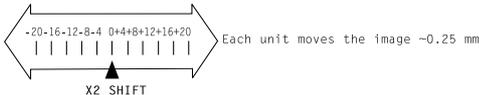
ENGLISH (1)

Figure 20. Registration page (1 of 2)

hp LaserJet 9000 series printers

tray 2 - registration page 2

Note: Y shift adjusts both sides.



Step 4:
 A. Examine the borders on the left and right of this page.
 B. Note the X2 SHIFT value necessary to move the border in the desired direction.

Step 5:
 A. Press the **✓** key to enter the menus.
 B. Use **▲** and **▼** to highlight **CONFIGURE DEVICE** and press **✓** to select.
 C. Use **▲** and **▼** to highlight **PRINT QUALITY** and press **✓** to select.
 D. Use **▲** and **▼** to highlight **SET REGISTRATION** and press **✓** to select.
 E. Use **▲** and **▼** to highlight **ADJUST TRAY 2** and press **✓** to select.
 F. Use **▲** and **▼** to highlight **X2 SHIFT** and press **✓** to select.
 G. Use **▲** and **▼** to locate the value you identified in step 4 and press **✓** to select.
 H. Print another test page and repeat step 4 to verify the front and back of the page align.

Printed in landscape mode

ENGLISH (1)

Figure 21. Registration page (2 of 2)

Print driver information

When you change a setting from the MFP control panel, the new setting becomes the MFP default value. You can override most control panel settings through most software applications, or through the print driver.

Factory default settings

The following table lists the default values for each menu item, grouped by menu. Selecting **RESTORE FACTORY SETTINGS** restores the MFP to these factory default settings.

Note

The Web configuration tool is the preferred mechanism for setting the values. The ability to set these values from the control panel is only available when the embedded e-mail solution is being used. When the Digital Send service is being used on the device, these fields must be set through the service and cannot be set on the control panel.

Table 8. Factory default settings

Menu item	Default value
Paper handling	
Tray 1 mode=	First
Configure device (originals)	
Paper Size=	Letter or A4
Number of sides=	1
Orientation=	Portrait
Content=	Mixed
Text/Photo mix=	4
Density=	4
Heavy paper=	Off
Configure device (copying)	
Number of sides=	1
Collate=	On
Copies=	1
Staple=	None
Configure device (enhancement)	
Sharpness=	2
Background removal=	2
Configure device (sending) (E-mail)	
Scan preference=	Color
File type=	PDF
Configure device (printing)	
Copies=	1
Default paper size=	Letter
Duplex=	Off
Override A4/Letter=	No
Manual feed=	Off

Table 8. Factory default settings (continued)

Edge-to-edge override=	No
Courier font=	Regular
Wide A4=	No
Print PS errors=	Off
Configure device (printing) (PCL)	
Form length=	60
Orientation=	Portrait
Font source=	Internal
Font number=	0
Font pitch=	10.00
Symbol set=	PC-8
Append CR to LF=	No
Configure device (print quality)	
Resolution=	Fastres 1200
RET=	Medium
Economode=	Off
Toner Density=	3
Small paper mode=	Normal
Configure device (system setup)	
Job storage limit=	32
Job held timeout=	Off
PowerSave time=	90 minutes
Copy/send settings	
Reset copy timeout=	60
Reset send timeout=	15
Hold off print job=	On
Hold off time=	15
Scan ahead=	On
Auto job interrupt=	Off
Copy job interrupt=	Off
Edge-to-edge copies=	On
Audible feedback=	On
Personality=	Auto
Clearable warnings=	Job
Auto continue=	On
Cartridge low=	Continue
Cartridge out=	Continue
Jam recovery=	Auto
Configure device (I/O)	
I/O timeout=	15
Parallel input	

Table 8. Factory default settings (continued)

High speed=	Yes
Advanced functions=	On
EIO 1 Jetdirect menu	
TCP/IP	
Enable=	On
Config method=	BOOTP
IPX/SPX	
Enable=	On
Frame type=	Auto
Appletalk	
Enable=	On
DLC/LLC	
Enable=	On
Link Speed=	Auto
Configure device (resets)	
PowerSave=	On

Control panel menus

Touch **MENU** on the touch-screen graphical display to cycle through the control panel menus. Each menu is described in a separate table in this section. Menu items appear only if their associated option is installed, or if their functions are activated.

All menus and their associated items are available when the MFP is online. In menu mode, if no item is touched for approximately 60 seconds, the system automatically returns to the top level and either an existing error or one of the following is displayed:

- **READY**, if the MFP was online
- **OFFLINE**, if the MFP was offline

Menu map

From the control panel, you can print a menu map that shows the current MFP configuration. Additional menu items can appear in the control panel, depending on the options currently installed in the MFP. The following is a list of menus available from the control panel, and where to find information about each.

- Retrieve job menu (page 47)
- Information menu (page 47)
- Paper handling menu (page 47)
- Configure device menu (page 49)
- Diagnostics menu (page 51)
- Service menu (page 51)

Using a menu map

To see the current settings for the menus and items available in the control panel, select or print a menu map.

Select an item from the menu map

- 1 Touch **MENU** on the touch screen.
- 2 Touch the required menu.
- 3 Touch ▲ or ▼ to scroll to the page you want, and then touch the required item.

Print a menu map

- 1 Touch **MENU** on the touch screen.
- 2 Touch **INFORMATION MENU**.
- 3 Touch **PRINT MENU MAP**. A current menu map prints.

Values that appear with a bullet (●) next to them are the currently selected values for a setting. Many of these values can be overridden from the print driver or a user program. You might want to store the menu map near the MFP for reference.

The contents of the menu map vary, depending on the optional accessories installed in the MFP. For a complete list of accessories or to change a control panel item and its values, see the following tables.

Retrieve job menu

This menu contains stored-job information.

Table 9. Retrieve job menu

Item	Explanation
NO STORED JOBS	This menu is displayed when there are no stored print jobs.
[NAME OF CURRENT JOB]	This menu shows a list of currently stored print jobs.

Information menu

This menu contains MFP information pages that give details about the MFP and its configuration.

Table 10. Information menu

Item	Explanation
PRINT MENU MAP	The menu map shows the layout and current settings of the control panel menu item.
PRINT CONFIGURATION	The configuration page shows the current MFP configuration. If an HP Jetdirect print server card is installed, a Jetdirect configuration page will print as well. See "Configuration page" in chapter 7.
PRINT SUPPLIES STATUS PAGE	The supplies status page shows the number of pages remaining for the print cartridge and maintenance kit. Percentage of toner remaining as well as number of pages remaining for all consumables are shown on this page.
PRINT USAGE PAGE	The usage page contains information that can be used for cost analysis and accounting.
PRINT FILE DIRECTORY	The file directory shows information for all installed mass-storage devices. See "File directory page" in chapter 7.
PRINT PCL FONT LIST	The PCL font list shows all of the PCL fonts currently available on the MFP.
PRINT PS FONT LIST	The PS font list shows all of the PS fonts currently available on the MFP.

Paper handling menu

When paper-handling settings are correctly configured through the control panel, you can print by choosing the type and size of paper from the print driver or software application.

Some items in this menu can be set from a software application or from the print driver (if the appropriate driver is installed). Print-driver and software-application settings override control-panel settings.

Table 11. Paper handling menu default settings

Item	Values	Explanation
TRAY 1 MODE= FIRST	FIRST	If TRAY 1 MODE=FIRST and paper is loaded in tray 1, the MFP will pull paper from tray 1 first.
TRAY 1 SIZE= LETTER	LETTER	Set the value to correspond with the paper size currently loaded in tray 1. Note This item is only displayed if TRAY 1 MODE is set to cassette.

Table 11. Paper handling menu default settings (continued)

Item	Values	Explanation
TRAY 1 TYPE= PLAIN	PLAIN	Set the value to correspond with the paper type currently loaded in tray 1. Note This item is only displayed if TRAY 1 MODE is set to cassette.
TRAY 2 SIZE= LETTER	LETTER	Set the value to correspond with the paper size currently loaded in tray 2.
TRAY 2 TYPE= PLAIN	PLAIN	Set the value to correspond with the paper type currently loaded in tray 2.
TRAY 3 SIZE= LETTER	LETTER	Set the value to correspond with the paper size currently loaded in tray 3.
TRAY 3 TYPE= PLAIN	PLAIN	Set the value to correspond with the paper type currently loaded in tray 3.
TRAY 4 SIZE= LETTER	LETTER	Set the value to correspond with the paper size currently loaded in tray 4.
TRAY 4 TYPE= PLAIN	PLAIN	Set the value to correspond with the paper type currently loaded in tray 4.
FUSER MODES	PLAIN	Configure the fuser mode associated with each paper type. The fuser mode can be changed only from this menu option in the control panel. Each value has three settings to choose from: NORMAL, HIGH 1, and LOW.

Configure device menu

It is possible to gain access to some items in this menu either from a software application or from the print driver (if the appropriate driver is installed). Print-driver and software-application settings override control panel settings.

Table 12. Configure device menu

Item	Values	Explanation
ORIGINALS	PAPER SIZE = EXECUTIVE NUMBER OF SIDES = 1 ORIENTATION CONTENT = GRAPHIC TEXT/PHOTO MIX = 4 DENSITY HEAVY PAPER	Set the paper size, number of sides, and the type of content in the original; the number of pages with text and graphics in the original, and the density of the copy to be made.
COPYING	NUMBER OF SIDES = 1 COLLATE = OFF COPIES = 1 STAPLE = NONE	Set the number of sides, the collation option, the number of copies to create, and the stapling option for the copies produced from the original.
ENHANCEMENT	SHARPNESS = 3 BACKGROUND REMOVAL = 2	Enhance the copy being produced.
SENDING	E-MAIL	Configure gateways and send preferences.
PRINTING	COPIES DEFAULT PAPER SIZE DEFAULT CUSTOM PAPER SIZE DUPLEX OVERRIDE A4/LETTER MANUAL FEED EDGE-TO-EDGE COURIER FONT WIDE A4 PRINT PS ERRORS PCL	Set the default number of copies, standard and custom paper sizes, output destination, and the default overrides for A4/letter, edge-to-edge, and manual feed.
PRINT QUALITY	SET REGISTRATION RESOLUTION SET ECONOMODE TONER DENSITY SMALL PAPER MODE CREATE CLEANING PAGE	Set the paper registration and print quality from this menu item. Create a print engine cleaning page and set EconoMode in this menu item.

Table 12. Configure device menu (continued)

Item	Values	Explanation
SYSTEM SETUP	JOB STORAGE LIMIT JOB HELD TIMEOUT POWERSAVE TIME COPY/SEND SETTINGS PERSONALITY CLEARABLE WARNINGS AUTO CONTINUE CARTRIDGE LOW CARTRIDGE OUT JAM RECOVERY LANGUAGE	Set time and quantities for warnings and limits.
I/O	I/O TIMEOUT PARALLEL INPUT FIND SEND GATEWAY SMTP GATEWAY LOAD GATEWAY EIO 1 JET DIRECT MENU TEST SEND GATEWAY	Set timings for the EIO slots.
RESETS	RESTORE FACTORY SETTINGS POWERSAVE LOCK CARRIAGE CLEAR ADDRESS BOOK MESSAGE	Restore factory defaults.

Diagnostics menu

Use this menu to perform MFP and finishing device diagnostics.

Table 13. Diagnostics menu

Item	Values	Explanation
DIAGNOSTICS	PRINT EVENT LOG SHOW EVENT LOG PAPER PATH TEST SCANNER TESTS CONTROL PANEL SERVICE TEST	MFP and finishing device diagnostics. A service test can be performed from this menu.

Service menu

Use this menu to enter the service mode.

Note

The PIN number to enter the service menu is 00900001.

Table 14. Service menu

Item	Values	Explanation
SERVICE	CLEAR EVENT LOG TOTAL PAGE COUNT = MAINTENANCE COUNT = MAINTENANCE INTERVAL = 350000 ADF COUNT = FLATBED COUNT = ADF SIMPLEX COUNT = ADF DUPLEX COUNT = COPY SCAN COUNT = SEND SCAN COUNT = COPY PAGES COUNT = SCANNER SETTINGS SERIAL NUMBER = XXXXX COLD RESET PAPER	Use the service menu after service has been performed on the MFP and accessories. Cold-reset paper is set here.

Remote firmware upgrade

The process for upgrading MFP firmware involves three steps:

- 1 Determine the current level of firmware installed on the MFP.
- 2 Go to the http://www.hp.com/go/lj9000_firmware website and download the latest firmware.
- 3 See "Downloading the new firmware to the MFP" below to download the new firmware to the MFP.

Downloading the new firmware to the MFP

You can send a remote firmware upgrade (RFU) to the MFP at any time. The MFP waits for all input/output channels to become idle before turning power off and back on.

Note

If the firmware upgrade involves a change in the format of NVRAM, the NVRAM settings will be lost and must be reset again by the customer.

Microsoft® Windows® systems

Note

Some Windows systems might require the following command to be performed at the command prompt if the system receives a "time out" error during the MFP firmware upgrade process:
"mode lpt1:,,p"

If the MFP is shared on a network, then the following command can be issued from a command prompt:

```
copy /b FILENAME \\SHARENAME\PRINTERNAME
```

where FILENAME is the name of the RFU file, SHARENAME is the name of the computer from which the MFP is being shared, and PRINTERNAME is the MFP share name.

If the MFP is connected locally, then the RFU file can be sent directly to the MFP with a copy command from a command prompt or MS-DOS® window:

```
copy /b FILENAME PORTNAME
```

where FILENAME is the name of the RFU file, and PORTNAME is the name of the appropriate print engine port (such as LPT 1).

You can also send the file through an infrared receiver (IR) pod.

UNIX® systems

Any method that delivers the RFU file to the MFP will work, including:

```
$ cp /home/yourmachine/FILENAME /dev/parallel
```

in which /home/yourmachine/FILENAME contains the RFU file.

Using HP Web JetAdmin

Note

This procedure requires that HP Web JetAdmin version 6.1 or later is installed.

Complete the following steps to upgrade the firmware for a single MFP through HP Web JetAdmin after downloading the RFU file from the HP website.

- 1 Start HP Web JetAdmin.
- 2 Enter the internet protocol (IP) address or IP hostname of the MFP in the **Quick Device Find** field, and then click **Go**. The printer Status window appears.
- 3 Click the right arrow on the toolbar to show the **Update** button.
- 4 Click **Update**.
- 5 When prompted for the type of update to perform, click **Update Printers**, and then click **Continue**.
- 6 Under **Upload new firmware image:**, click **Browse** to locate the RFU file you downloaded from the http://www.hp.com/go/lj9000_firmware website.
- 7 Click **Upload** to move the RFU file from the hard drive to the HP Web JetAdmin server.
- 8 Refresh the browser.
- 9 Select the RFU file from the **Select new firmware version:** drop-down menu.
- 10 Click **Update Firmware**. HP Web JetAdmin sends the selected RFU file to the MFP.

Also, HP Web JetAdmin 6.1 or later can be used to perform multiple installations.

- 1 Start HP Web JetAdmin.
- 2 Create a device group. A simple way to do this is to:
 - a. Click **Devices** on the **Choose** drop-down menu.
 - b. Click **Device Model** from the **Filter** drop-down menu.
 - c. Type "iy9000lw" in the **Criteria (Optional)** field.
 - d. Click **Go**.
- 3 In the **Device List**, select the printers you want to include in the group and then click **Create Group**.
- 4 When prompted, type a name for the new device group, and then click **OK**.
- 5 Click **Update**.
- 6 When prompted for the type of update to perform, click **Update Printers**, and then click **Continue**.
- 7 From the list of HP Devices, select the printers to be upgraded, or click **Select All**.
- 8 Click **Update** to install the new MFP firmware.

4

Product maintenance

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Cleaning the MFP and accessories

General cleaning

WARNING!

In order to avoid shock hazard, turn the MFP and the finishing device off and unplug all power cords before you begin these steps.

CAUTION

Do not use ammonia-based cleaners on the print engine or finishing device. While cleaning the MFP, be careful not to touch the transfer or delivery rollers. Skin oils on the roller can cause print-quality problems.

- Clean the outside of the MFP with a water-dampened cloth.
- Clean the inside of the MFP with a dry, lint-free cloth.
- Clean the glass and the white vinyl calibration strips with an ammonia-based cleaner.

CAUTION

The ADF and the glass are the only MFP components that can tolerate ammonia-based cleaners. Keep the cleaners in a location away from the MFP. Only bring the dampened cloth near the MFP, and never touch the cloth to any part of the print engine or finishing devices.

Promptly remove any dampened cloth after the cleaning procedure is accomplished.

ADF cleaning

To clean the ADF delivery system

Clean the ADF only if it is visibly marked or dirty, or if you are experiencing a degradation of copy quality (such as streaking).

WARNING!

In order to avoid shock hazard, turn the print engine and the finishing devices off and unplug all power cords before you begin these steps.

- 1 Lift the ADF.

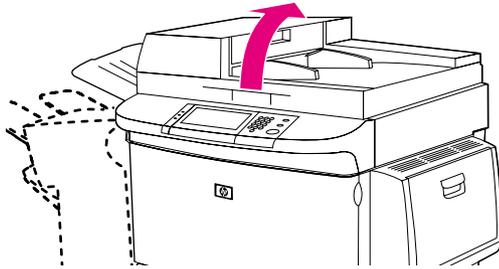


Figure 22. ADF delivery system (1 of 5)

- 2 Locate the top and bottom ADF glass strips.

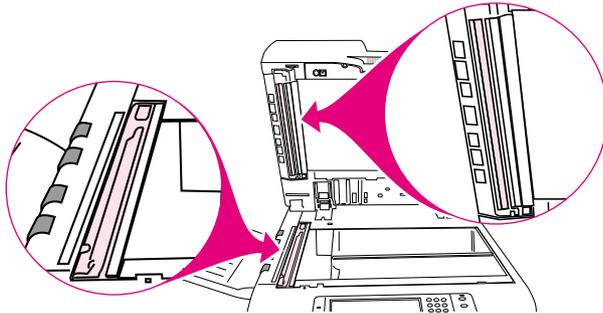


Figure 23. ADF delivery system (2 of 5)

- 3 Clean the ADF glass strips by wiping them gently with a clean, damp, lint-free cloth. Use an ammonia-based surface cleaner to dampen the cloth.

CAUTION

The ADF and the glass are the only MFP components that can tolerate ammonia-based cleaners. Keep the cleaners in a location away from the MFP. Only bring the dampened cloth near the MFP, and never touch the cloth to any part of the print engine or finishing devices.

Promptly remove any dampened cloth after the cleaning procedure is accomplished.

- 4 Locate the white board.

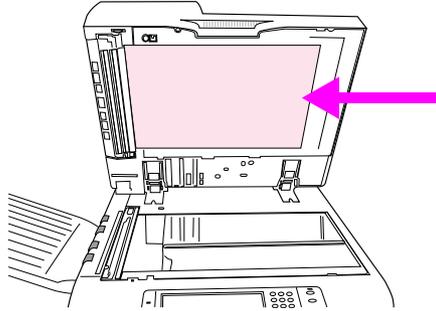


Figure 24. ADF delivery system (3 of 5)

- 5 Locate the white, vinyl calibration strips.

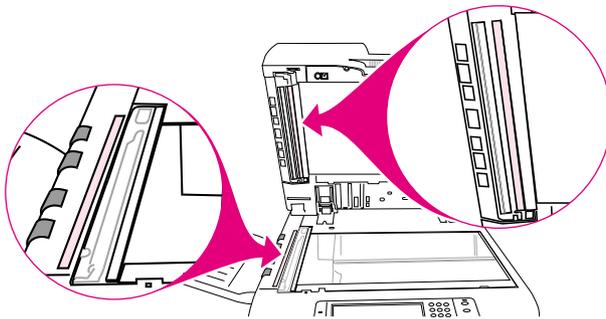


Figure 25. ADF delivery system (4 of 5)

- 6 Clean the ADF backing and the calibration strips by wiping them with a clean, damp, lint-free cloth. Use an ammonia-based surface cleaner to dampen the cloth.
- 7 Close the ADF.

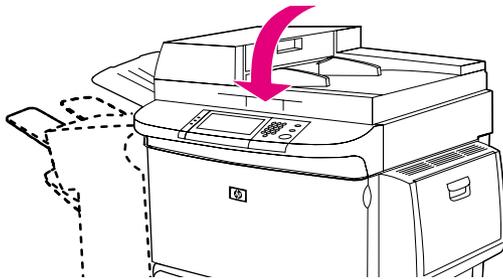


Figure 26. ADF delivery system (5 of 5)

To clean the upper ADF glass strip

If you continue to experience poor copy quality, you might need to clean the upper ADF glass strip.

CAUTION

Clean this area only if you see copy defects such as streaks, and you notice dust inside the glass strip. Cleaning this area frequently could introduce dust into the MFP.

WARNING!

In order to avoid shock hazard, turn the MFP and the finishing device off and unplug all power cords before you begin these steps.

- 1 Open the ADF feeder.

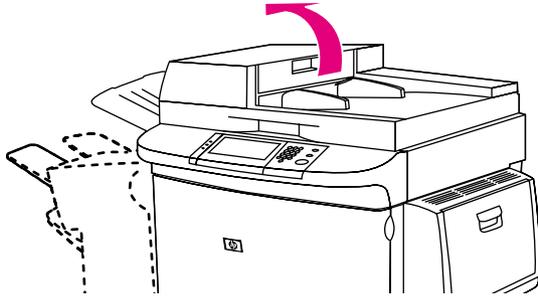


Figure 27. Upper ADF glass strip (1 of 4)

- 2 Locate the latch that releases the upper ADF glass strip. Push the latch to the left, and then pull the latch down to expose the inside of the glass strip.

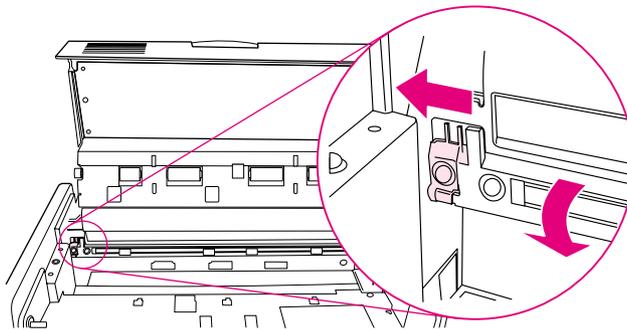


Figure 28. Upper ADF glass strip (2 of 4)

CAUTION

Use dry cloth only in this area. Do not use solvents, cleaners, water, or compressed air. Doing so could severely damage the MFP.

- 3 Gently wipe the glass with a dry, lint-free cloth.

- 4 Pull up the latch to return the glass strip to its normal position.

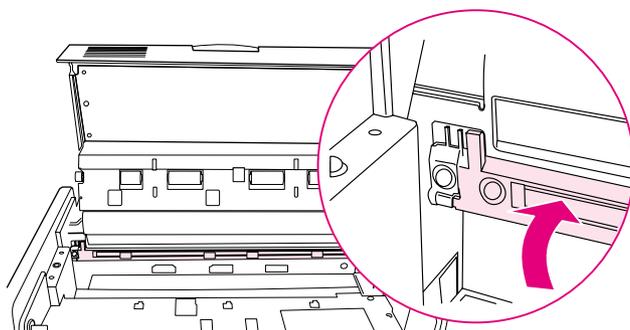


Figure 29. Upper ADF glass strip (3 of 4)

- 5 Close the ADF feeder.

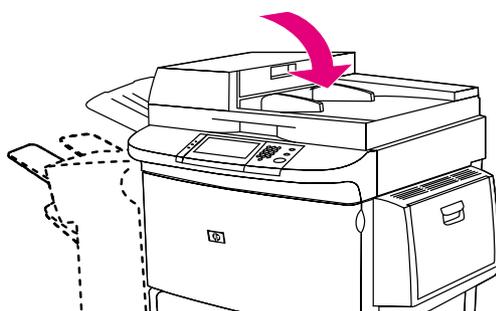


Figure 30. Upper ADF glass strip (4 of 4)

To clean the ADF rollers

If the user is experiencing poor scan quality or several misfeeds, the ADF rollers might need to be cleaned.

CAUTION

Clean the rollers only if the user experiences misfeeds or marks on the originals, or if you notice dust on the rollers. Cleaning the rollers frequently could introduce dust into the MFP.

- 1 Lift the ADF.

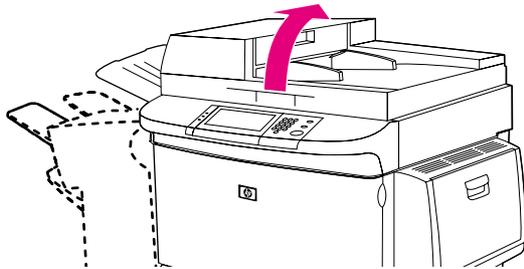


Figure 31. ADF rollers (1 of 6)

- 2 Locate the delivery rollers.
- 3 Wipe the rollers gently with a clean, water-dampened, lint-free cloth.

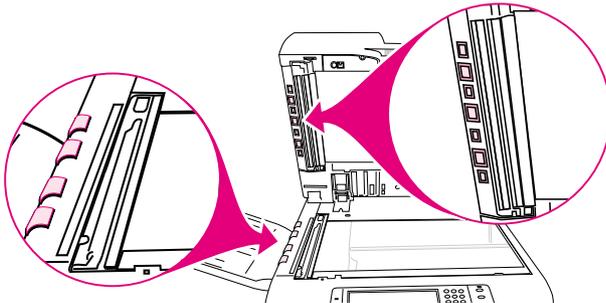


Figure 32. ADF rollers (2 of 6)

CAUTION

Do not pour water directly onto the rollers. Doing so might damage the MFP.

- 4 Close the ADF.



Figure 33. ADF rollers (3 of 6)

- 5 Open the ADF feeder.

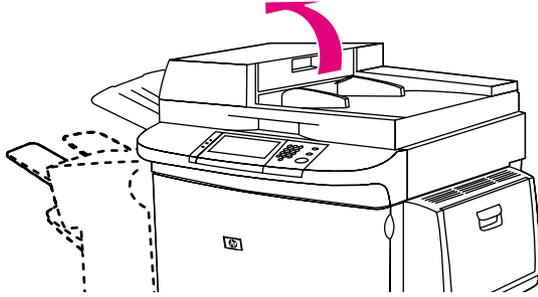


Figure 34. ADF rollers (4 of 6)

- 6 Locate the registration rollers.
- 7 Wipe the rollers with a clean, water-dampened, lint-free cloth.

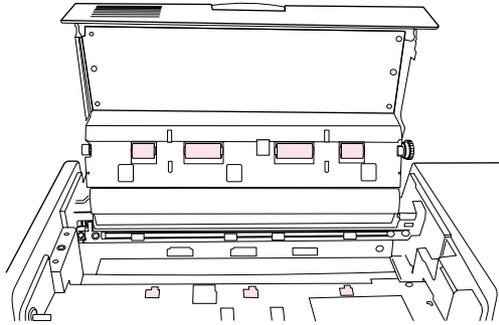


Figure 35. ADF rollers (5 of 6)

CAUTION

Do not pour water directly onto the rollers. Doing so might damage the MFP.

- 8 Close the ADF feeder.

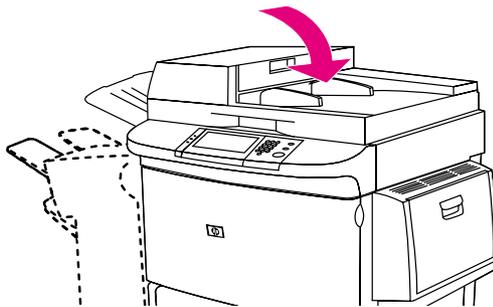


Figure 36. ADF rollers (6 of 6)

Glass cleaning

To clean the glass

Clean the glass only if dirt is visible, or if you see poor copy quality (such as streaking).

Clean the glass surface by wiping it gently with a clean, damp, lint-free cloth. Use an ammonia-based surface cleaner to dampen the cloth.

CAUTION

The ADF and the glass are the only MFP components that can tolerate ammonia-based cleaners. Keep the cleaners in a location away from the MFP. Only bring the dampened cloth near the MFP, and never touch the cloth to any part of the print engine or accessories.

Promptly remove any dampened cloth after the cleaning procedure is accomplished.

Do not pour or spray liquids directly onto the glass.

Do not press hard on the glass surface. You might break the glass.

5

Theory of operation

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Differences in print engines

The following are the parts differences between the HP LaserJet 9000 series printer and the HP LaserJet 9000mfp.

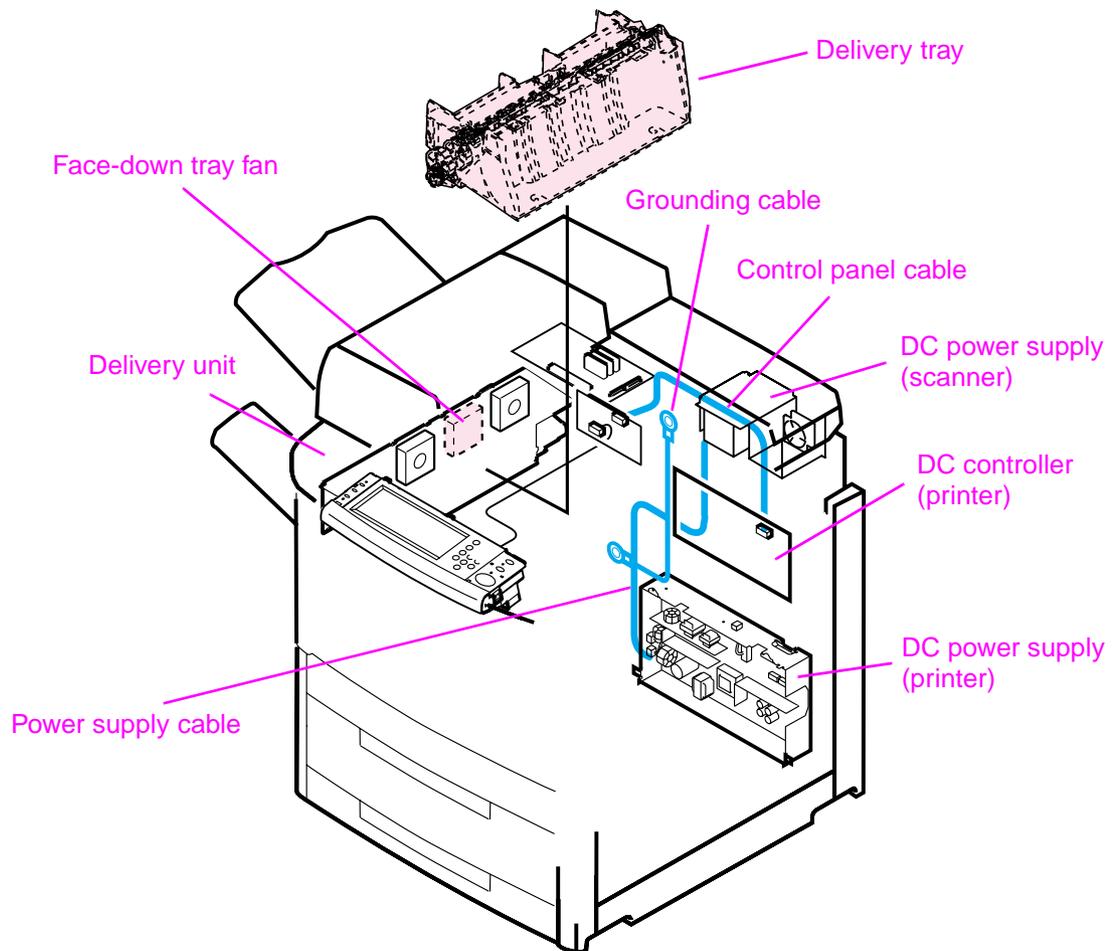


Figure 37. Differences in print engine

The following table provides a list of components that are different between the HP LaserJet 9000 series printer and the HP LaserJet 9000mfp print engine. Part numbers applicable to their respective engine are provided.

Note

For troubleshooting purposes, the HP LaserJet 9000 series face-up tray can be used with the HP LaserJet 9000mfp, but the HP LaserJet 9000mfp does not ship with the face-up tray.

Note

The flapper can keeps the diverter assembly in a constant state for diverting paper to the left output tray.

Table 15. Differences between the HP LaserJet 9000 series and the HP LaserJet 9000mfp

	HP LaserJet 9000 series	HP LaserJet 9000mfp	Qty
Control panel assembly	RG5-5703-000CN	RG5-5734-000CN	1
Control panel cable	N/A	RG5-5752-000CN	1
Cover, left upper cover	RG5-5705-000CN	RG5-5706-000CN	1
Cover, top left	RB2-5660-000CN	N/A	1
Cover, top right	RB2-5659-000CN	N/A	1
Delivery assembly	RG5-5643-000CN	N/A	1
Face-down tray fan	RH7-5302-000CN	N/A	1
Grounding cable	N/A	RG5-5736-000CN	1
Holder, lock	N/A	RB26495-000CN	4
Power supply cable	N/A	RG5-5735-000CN	1
Tray, face-up	RB2-5690-000CN	N/A	1

Mechanical structure

The ADF optical assembly and the flatbed optical assembly both have a complete scanning system. This enables single-pass duplex scanning of a document.

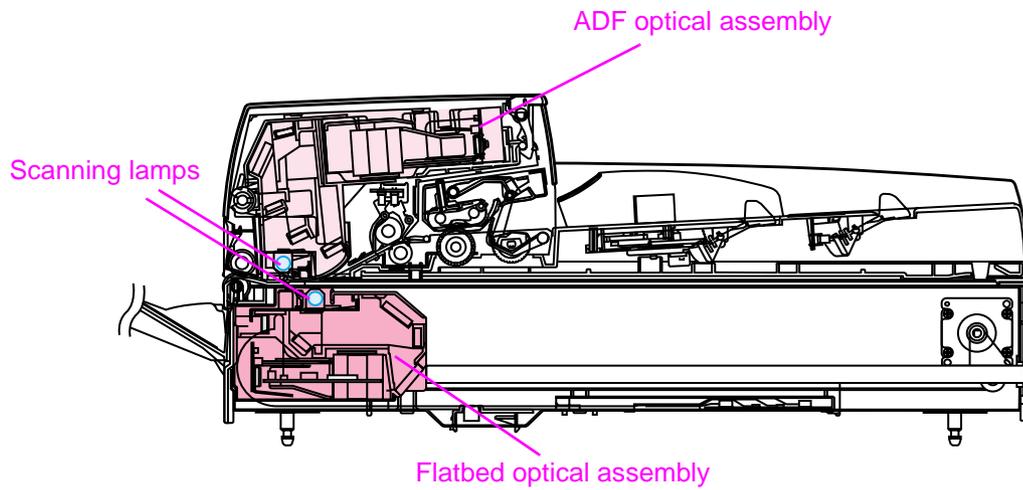


Figure 38. Mechanical structure (1 of 2)

Table 16. Mechanical structure

Description	Part number	Qty
ADF optical assembly	RG5-6307-000CN	1
lamp assembly (includes shading filter)	RG5-6322-000CN	1
lens	N/A	1
mirrors	N/A	5
Flatbed optical assembly	RG5-6263-000CN	1
lamp assembly (includes shading filter)	RG5-6323-000CN	1
lens	N/A	1
mirrors	N/A	5

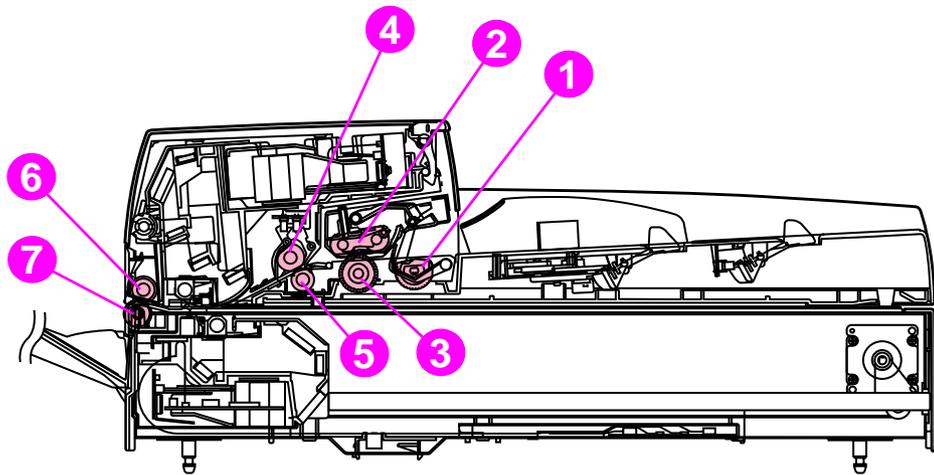


Figure 39. Mechanical structure (2 of 2)

Table 17. Mechanical structure

Ref	Description	Part number	Qty
1	Pickup roller	RB2-7961-000CN	1
2	Separation belt assembly	RB2-7988-000CN	4
3	Feed roller assembly	RB2-6281-000CN	1
4	Upper registration roller assembly	RG5-6304-000CN	1
5	Lower registration roller assembly	RG5-6277-000CN	1
6	Upper delivery roller assembly	RB2-7969-000CN	1
7	Lower delivery rollers	RB2-7884-000CN	4

Motors and fans

The scanner uses three dc stepping motors. Two of the stepping motors drive the ADF unit rollers, and the other stepping motor drives the flatbed optical unit:

- The flatbed motor rotates in one direction to drive the flatbed optical unit when scanning is from the glass. The flatbed motor rotates in the opposite direction to position the flatbed optical unit for scanning from the ADF frontside.
- The pickup motor rotates in one direction to rotate the pickup and feed rollers. The pickup motor rotates in the opposite direction to rotate the registration rollers.
- The delivery motor rotates the delivery rollers.

The three fans are for the ADF, the flatbed, and the power supply:

- The ADF fan assembly includes a fan housing. The ADF fan is an intake fan.

Note

The ADF fan can be ordered separately or with its plastic housing.

- The flatbed fan assembly includes a filter. The flatbed fan is an intake fan.

Note

The flatbed fan assembly filter only needs to be replaced when replacing the flatbed fan.

- The power supply fan is an exhaust fan.

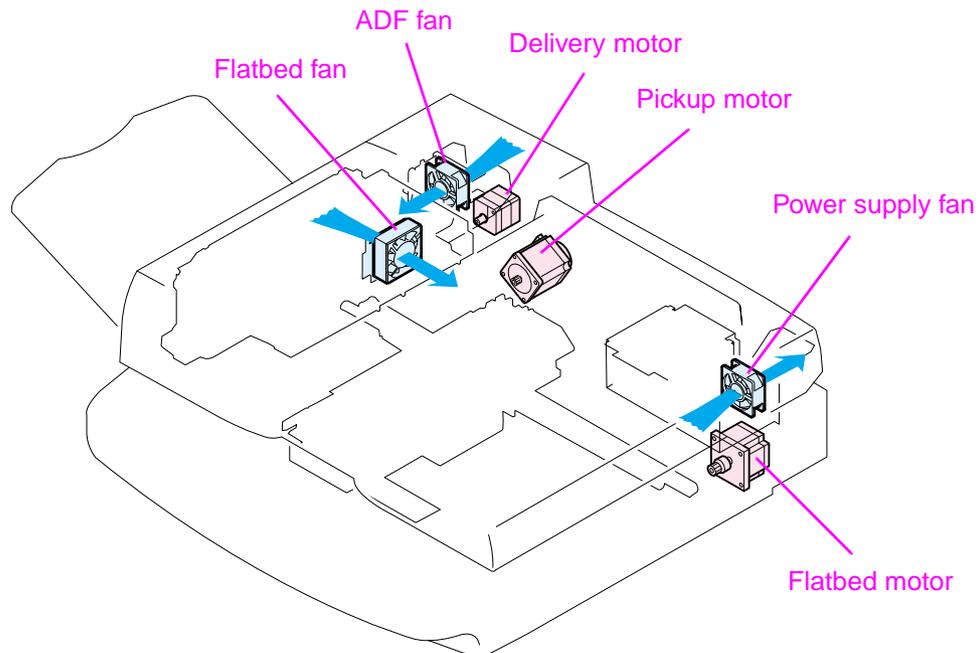


Figure 40. Motors and fans

Table 18. Motors and fans

Description	Part number	Qty
ADF fan	RH7-1486-000CN	1
ADF fan assembly	RG5-6312-000CN	1
Delivery motor (24 vdc)	RH7-1487-000CN	1
Flatbed fan assembly	RG5-6318-000CN	1
Flatbed motor (24 vdc)	RH7-1485-000CN	1
Pickup motor (24 vdc)	RH7-1488-000CN	1
Power supply assembly (fan included)	RG1-4153-000CN	1

Basic block diagram

The CPB processes most jobs at the scan engine and sends the data to the print engine in the form of hardware ready bits (HRB). The formatter performs three processing tasks: n-up, book copying, and image rotation. When one of these tasks is performed, data is sent to the formatter in PCL-XL format.

The formatter sends a scan command to the CPB after it receives a scan command from the control panel by way of the dc controller. The CPB then sends a scan command to the scanner controller board (SCB). The SCB generates the image data and sends the image data back to the CPB which, in turn, passes the image back to the formatter. Depending on the original request from the control panel (n-up, book copying, or image rotation), the formatter completes the processing. The data is then passed to the dc controller for printing, or is passed to a computer for digital sending.

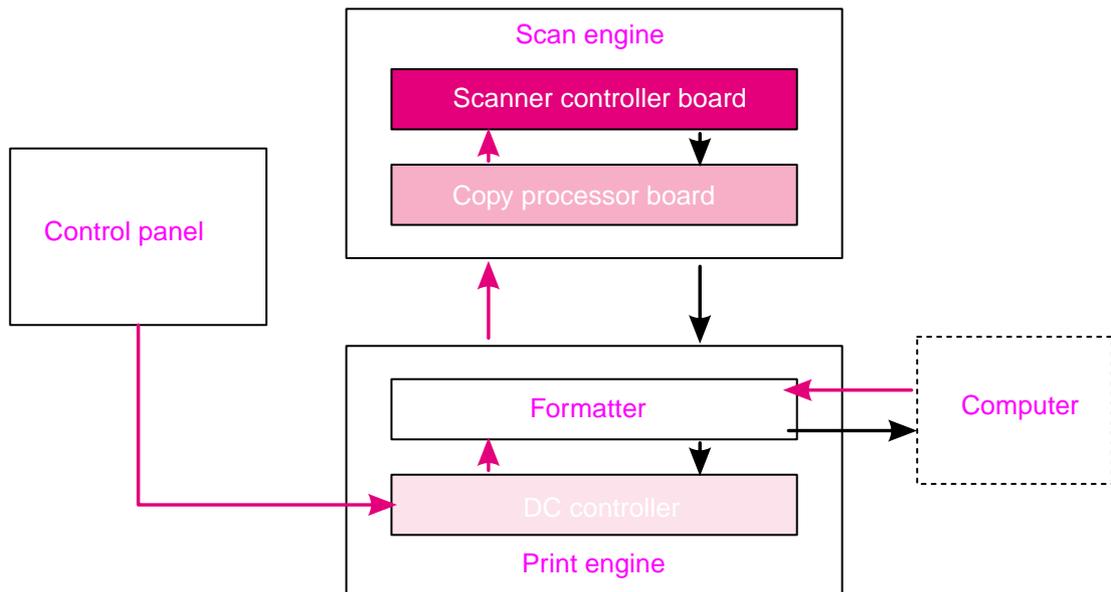


Figure 41. Basic block diagram

Basic system configuration

Scanner unit systems

The five main systems in the scanner unit include the following:

- ADF document feed system
 - ADF output tray
 - ADF feeder
 - ADF input tray
- ADF document exposure system
 - scanning lamp
 - document
 - optical path
- flatbed document exposure system
 - scanning lamp
 - document
 - optical path
 - optical drive unit
 - detection unit (home position sensor)
- image processing system
 - ADF analog processor
 - ADF CCD (charge couple device) driver
 - flatbed analog processor
 - flatbed CCD driver
- scanner control system
 - scanner controller board (SCB)

Scan mode

The functions based on a scan mode include:

- **ADF duplex mode:** controlled by the ADF document feed system, ADF document exposure system, flatbed document exposure system, and image processing system.
- **ADF simplex mode:** controlled by the ADF document feed system, flatbed document exposure system, and image processing system.
- **Flatbed mode:** controlled by the flatbed document exposure system and image processing system.

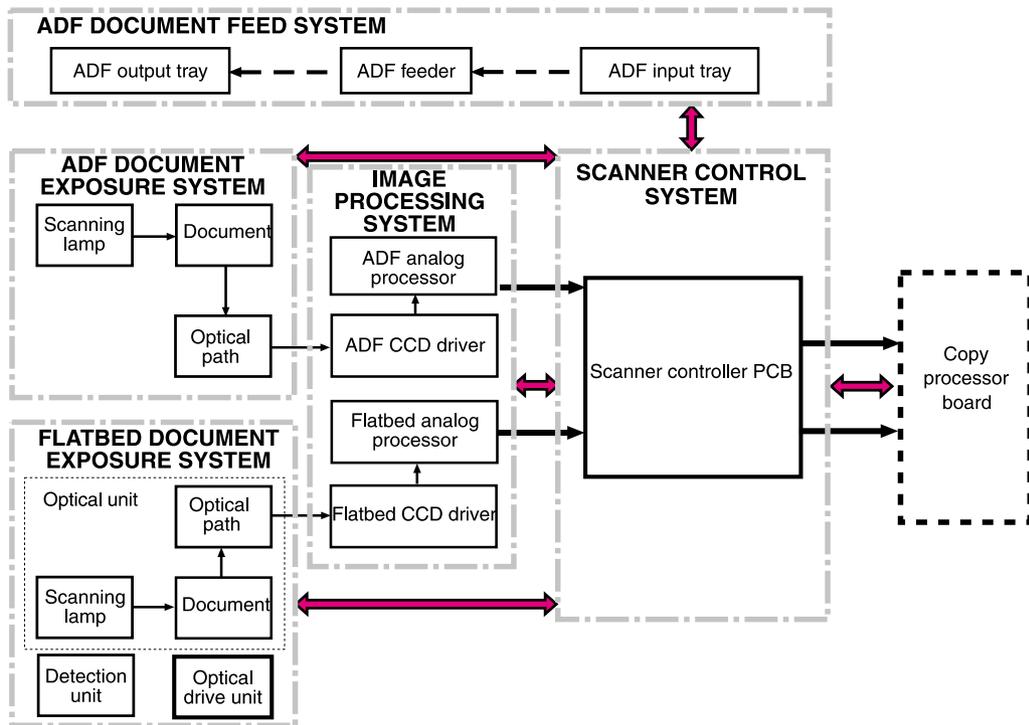


Figure 42. Basic system configuration

Power supply assembly

CAUTION

Alternating current (ac) is always on. Even if the MFP is off, the scan engine power supply is supplied with ac from the print engine power supply. Make sure you unplug the MFP before beginning any service on the MFP.

Table 19. Electrical specifications for the MFP

Volts	Frequency	Amperes (amps)	Watts (W) (typical)	Thermal units per hour (Btu/hr)
100-127 Vac ± 10 percent	50/60 Hz ± 2 Hz	Minimum recommended current capacity = 15.0 amp	printing = 1075 W standby = 440 W PowerSave 1 = 70 W low power = 230 W off = .5 W ADF printing = 1130 W	printing = 3670 Btu/hr standby = 1500 Btu/hr PowerSave 1 = 240 Btu/hr low power = 785 Btu/hr off = 1.7 Btu/hr ADF printing = 3860 Btu/hr
220-240 Vac ± 10 percent	50/60 Hz ± 2 Hz	Minimum recommended current capacity = 6.5 amp	printing = 1075 W standby = 415 W PowerSave 1 = 70 W low power = 230 W off = 1.3 W ADF printing = 1075 W	printing = 3650 Btu/hr standby = 1420 Btu/hr PowerSave 1 = 240 Btu/hr low power = 785 Btu/hr off = 4.5 Btu/hr ADF printing = 3670 Btu/hr

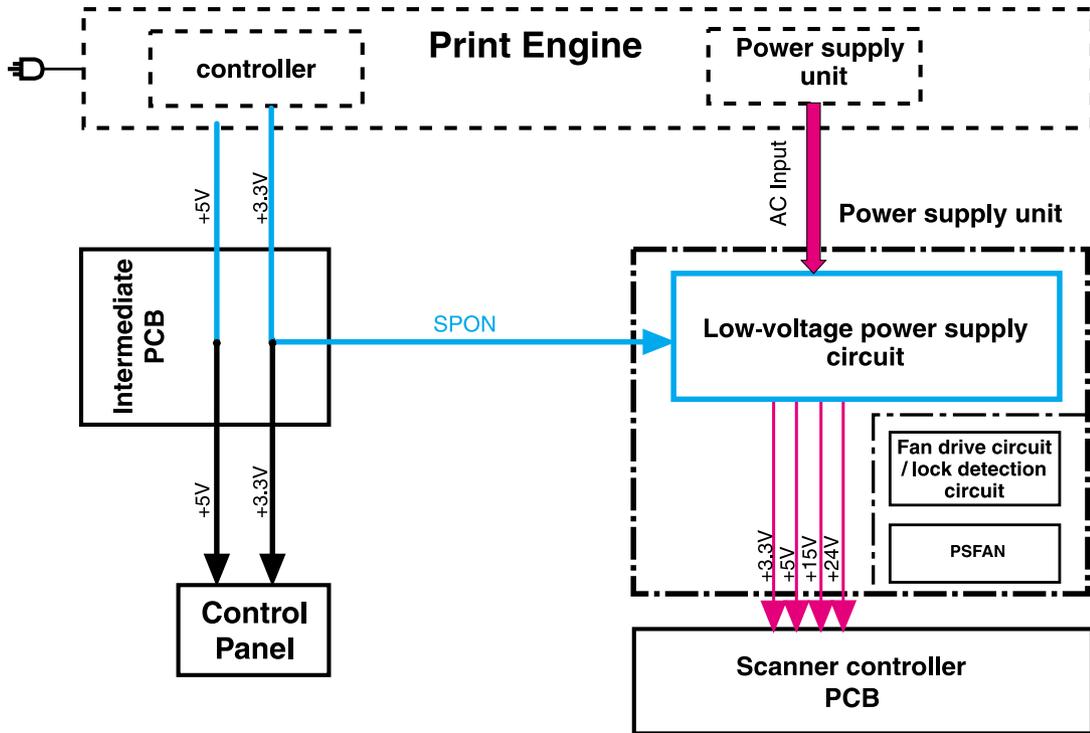


Figure 43. Power supply assembly

Note

When the control panel backlight is off, the +5V line is being signaled off at the control panel assembly by the control panel controller board. SPON is the scanner power-on signal sent to the scan engine power supply when the MFP is powered on by pressing the power switch on the print engine. See "Low-voltage power supply circuit" on page 78 for more information.

To extend the life of the control panel backlight, the lamp is turned off when the HP LaserJet 9000mpf goes into sleep mode. If the sleep mode has been disabled (PowerSave is turned off), the backlight will turn off after an hour of no activity.

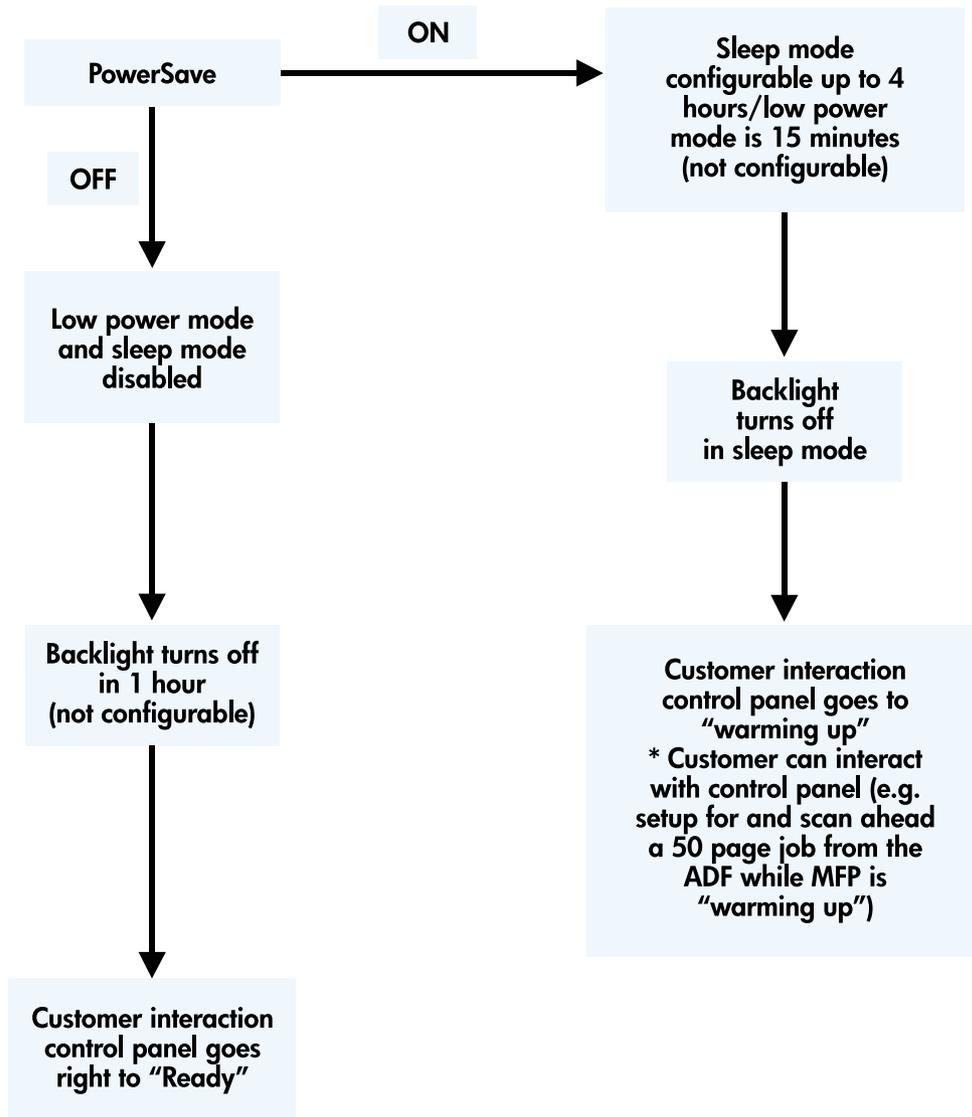


Figure 44. PowerSave flowchart

Low-voltage power supply circuit

Opening the feeder cover switch cuts power to the ADF scanning lamp, pickup motor, delivery motor, and the solenoids.

The power supply unit generates dc power required in the scan engine based on the ac voltage supplied from the print engine power supply.

The remote switch is employed as a power switch of the scan engine. Of the voltages supplied from the print engine dc controller to the power supply of the scan engine, 3.3 vdc are used as a remote signal. The signal is supplied to the power supply unit as the power remote signal (SPON) through the intermediate circuit. When the signal is "H," the low-voltage power supply circuit generates the ac power to the dc power. The power generated in the circuit is converted to +24 vdc, +15 vdc, +5 vdc, and +3.3 vdc required in the scan engine. The +24 vdc is supplied to the motors, solenoids, and scanning lamps; +15 vdc to the sensors, LEDs, and ICs in the SCB; and +3.3 vdc to the CPB.

The +24 vdc is divided into the +24 vb and +24 va. The +24 va is constantly supplied from the low-voltage power supply circuit, and the +24 va stops power supply when the feeder cover switch (JMCSW) is turned off by opening the ADF feeder cover. The +24 va is supplied to the scanning lamps, pickup motors, delivery motors, and solenoids. It also functions as the ADF FEEDER COVER OPEN DETECTION signal, and allows the CPU to detect an open cover.

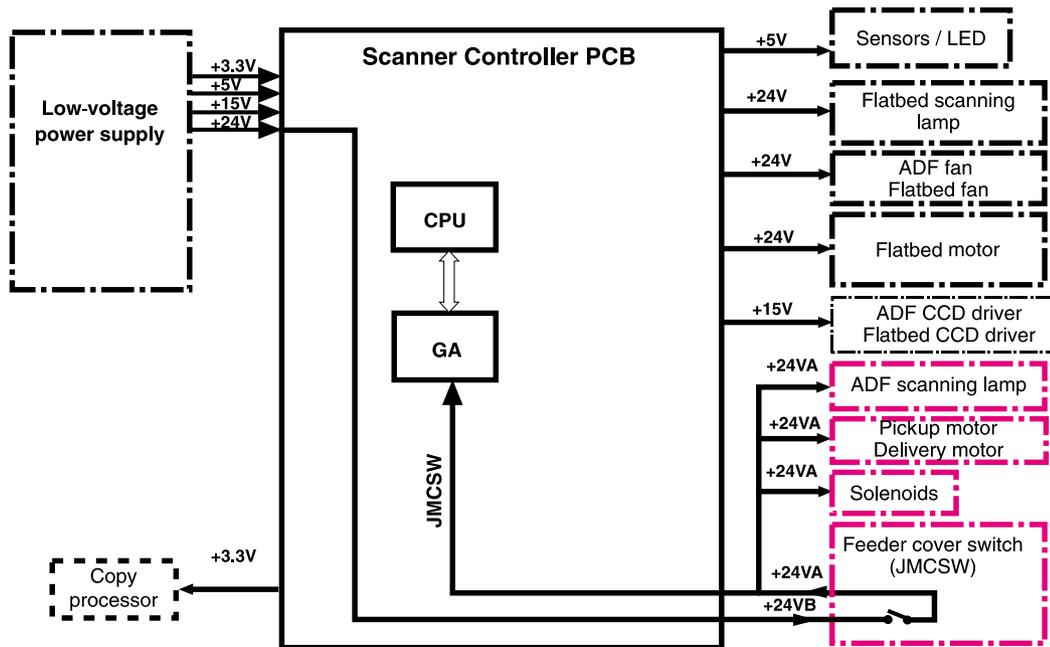


Figure 45. Low-voltage power supply circuit

Protective functions

The low-voltage power supply circuit utilizes overcurrent and overvoltage protective functions. The protective functions automatically interrupt output voltage to prevent power supply failures. These failures occur from an excessive current flow that is caused by a short circuit on the load side, or from an abnormal voltage increase.

When the dc voltage is not output from the low-voltage power supply circuit, the overcurrent or overvoltage protective function might be activated. If it is activated, turn off the printer, correct the problem in the failure loads, wait about two minutes, and then turn on the printer. The circuit contains a power fuse (F1) which breaks and cuts off the power supply if overcurrent flows through the ac line.

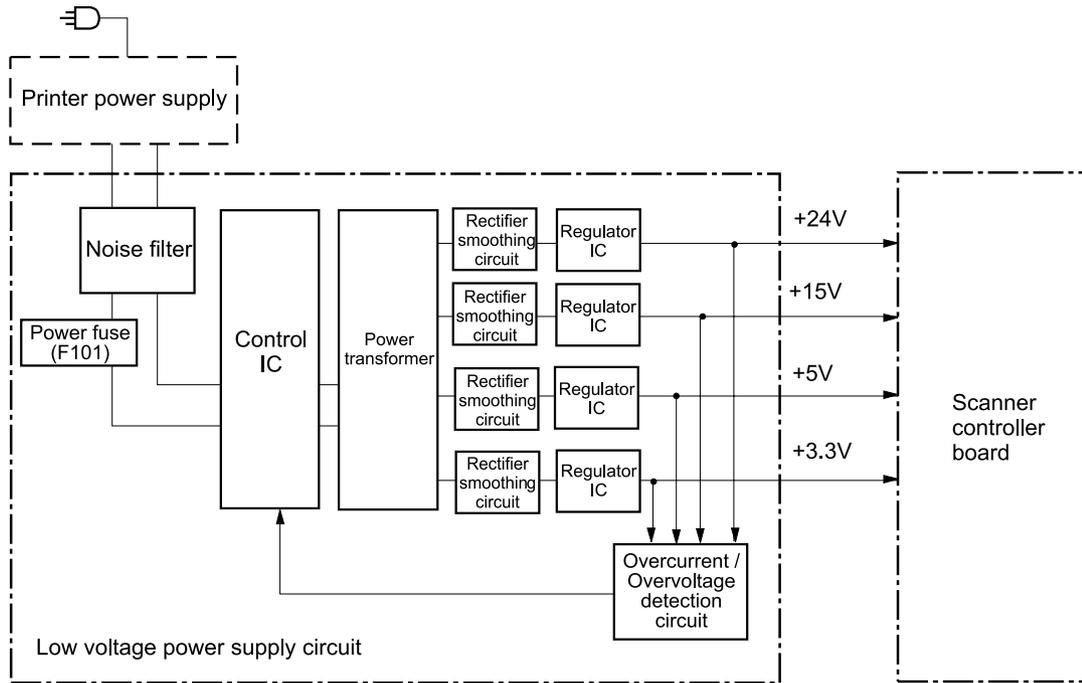


Figure 46. Printer power supply

Scanner controller circuit

The CPU on the SCB controls the operation sequences of the scan engine. When the dc power is supplied to the scanner controller, the CPU starts to control the scan engine. When the scan engine is in standby status, the CPU outputs signals to drive each load of charge-coupled devices (CCDs), motors, solenoids, and scanning lamps based on a scan command from the CPB.

- **CPU (IC7):** According to the control programs stored in the ROM (IC5), the CPU performs:
 - image scanner sequence control
 - communication with the copy processor control
 - pickup motor and delivery motor drives control
- **GA (Gate Array) (IC4):** According to commands from the CPU, the GA performs:
 - scanning lamp drive control
 - sensors, switches, and LEDs control
 - solenoids control
 - fan motors control
 - flatbed document scanning motor control
- **EEPROM (IC16):** The EEPROM stores the specific backup adjustment data of the scanner, such as the leading-edge registration adjustment values and horizontal registration adjustment values.
- **ROM (IC5):** Stores the scanner control programs.
- **Pickup motor driver IC (IC3):** Drives the pickup motor based on commands from the CPU.
- **Delivery motor driver IC (IC1):** Drives the delivery motor based on commands from the CPU.
- **Flatbed document scanning motor driver IC (IC9):** Drives the flatbed scanning motor based on commands from the GA.
- **Reset IC (IC17):** Monitors +3.3V, and resets the CPU and GA when the power is turned on.

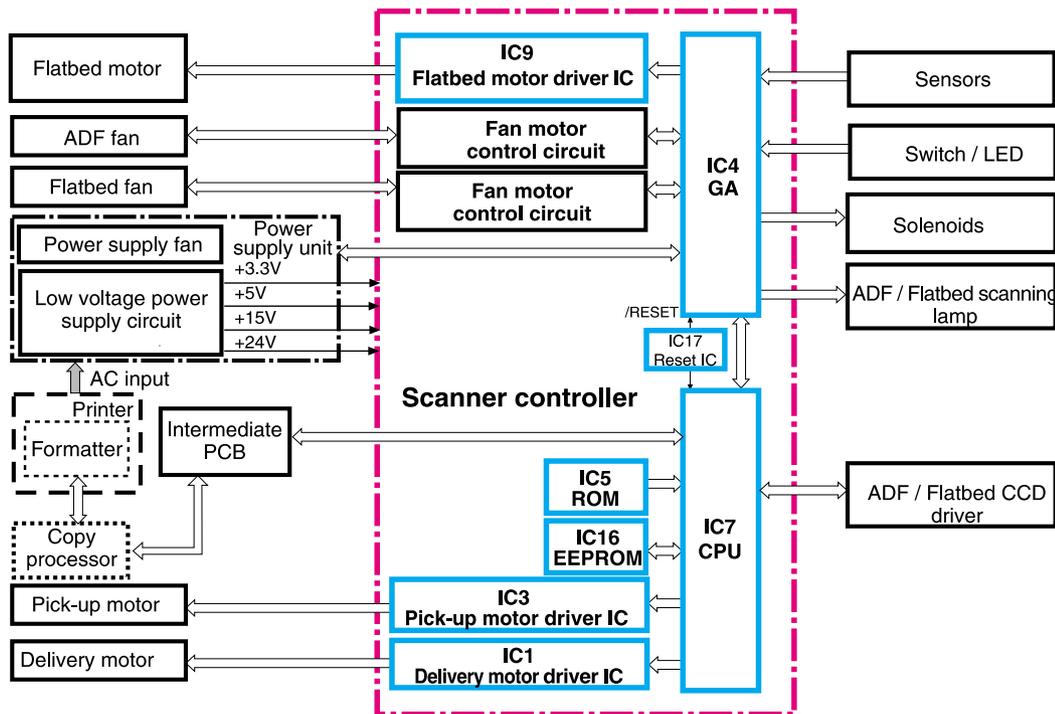


Figure 47. Scanner controller circuit

Flatbed operation

Flatbed document exposure control

The SCB sends a signal (FBLAMP) to the flatbed inverter to turn on the scanning lamp. The flatbed intermediate PCB and flatbed analog processor board pass on the signal. The flatbed inverter sends the signal to the scanning lamp and the document exposure process begins.

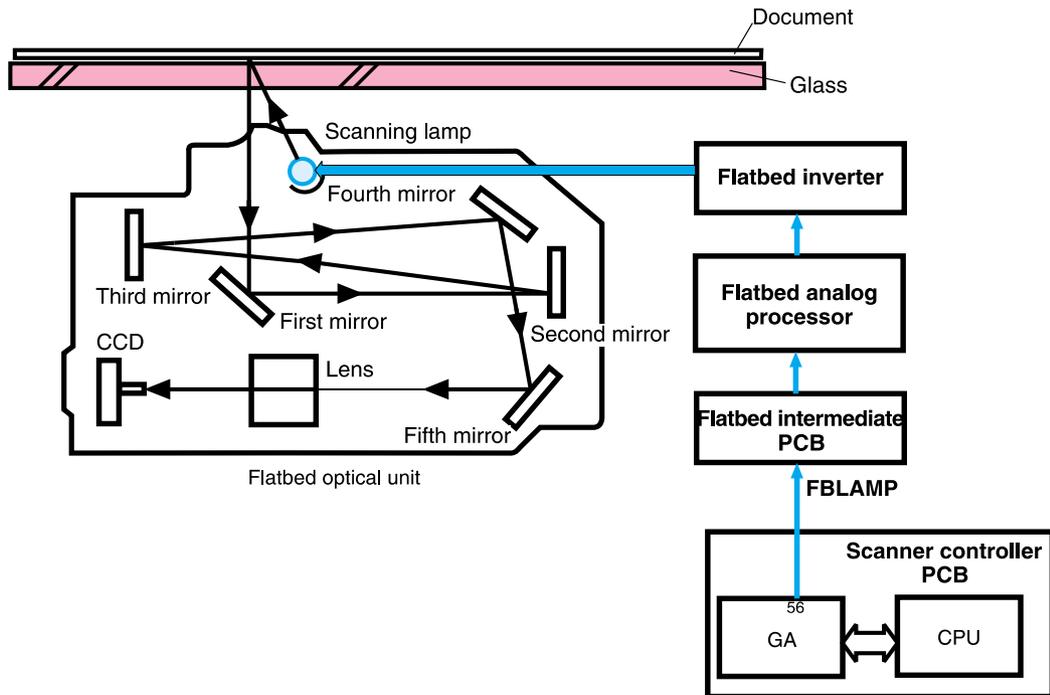


Figure 48. Flatbed document exposure control

Flatbed optical drive control

The SCB sends a signal (CRMOT) to the flatbed motor to drive the flatbed optical unit forward to scan from the glass, or backward when scanning from the ADF frontside.

HP-S is the flatbed home position detection sensor. When the flatbed optical unit is in the home position, a signal (HP-S) is sent to the SCB.

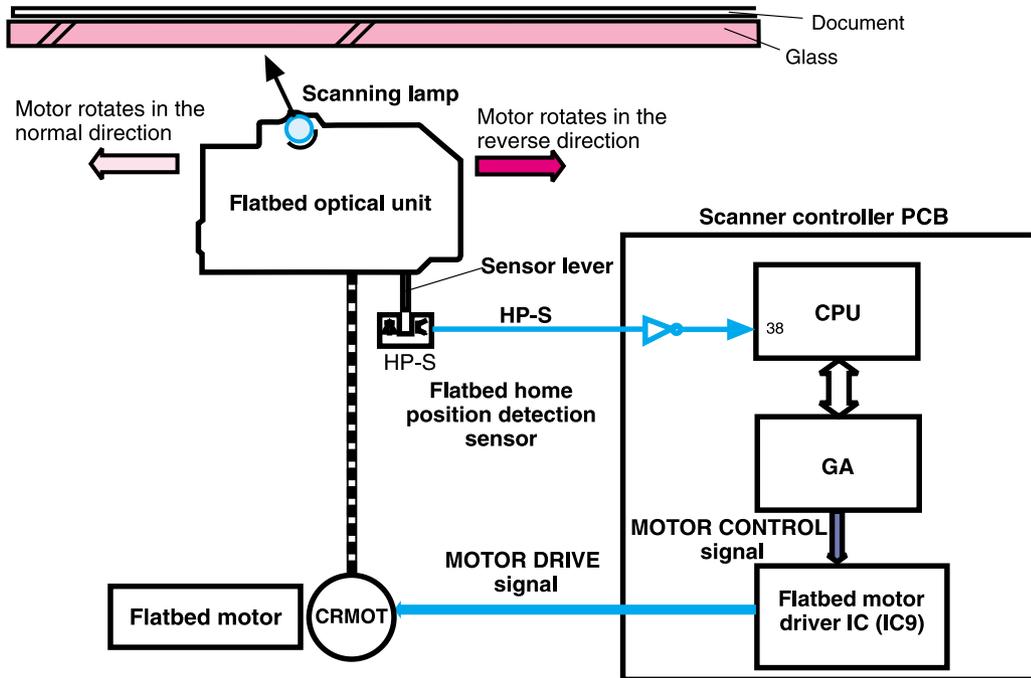


Figure 49. Flatbed optical drive control

Flatbed optical unit operation

The ADF optical unit is located 26.5 mm (1 inch) from the flatbed optical unit when the flatbed optical unit is in the ADF scanning position.

When a two-sided original document is copied from the ADF, the first side begins copying before the second side of the two-sided copy.

Note

The mechanical lock on the HP LaserJet 9000mfp is not located in the “home position.” Locking the carriage in the control panel moves the optical unit into position so the mechanical lock, which is located on the left side of the unit, can hold the flatbed optical unit during a move.

To lock the carriage:

- 1 Touch MENU
- 2 Touch CONFIGURE DEVICE
- 3 Touch RESETS
- 4 Touch LOCK CARRIAGE
- 5 Engage the mechanical lock

CAUTION

Always engage the mechanical lock before moving the HP LaserJet 9000mfp to avoid damaging the flatbed optical unit.

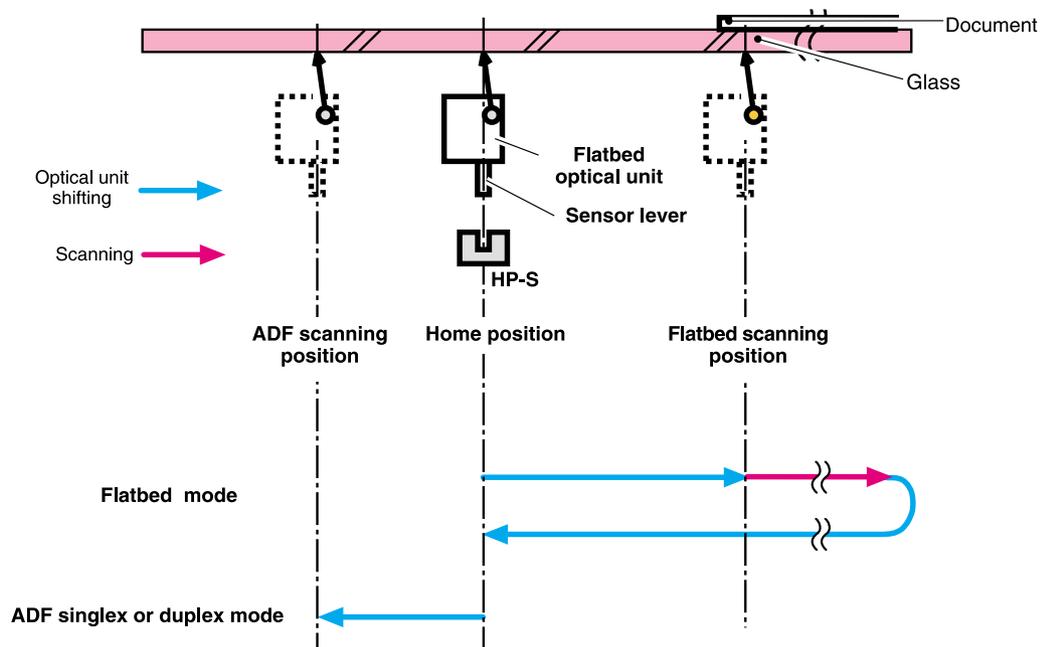


Figure 50. Flatbed optical unit operation

Flatbed document size detection

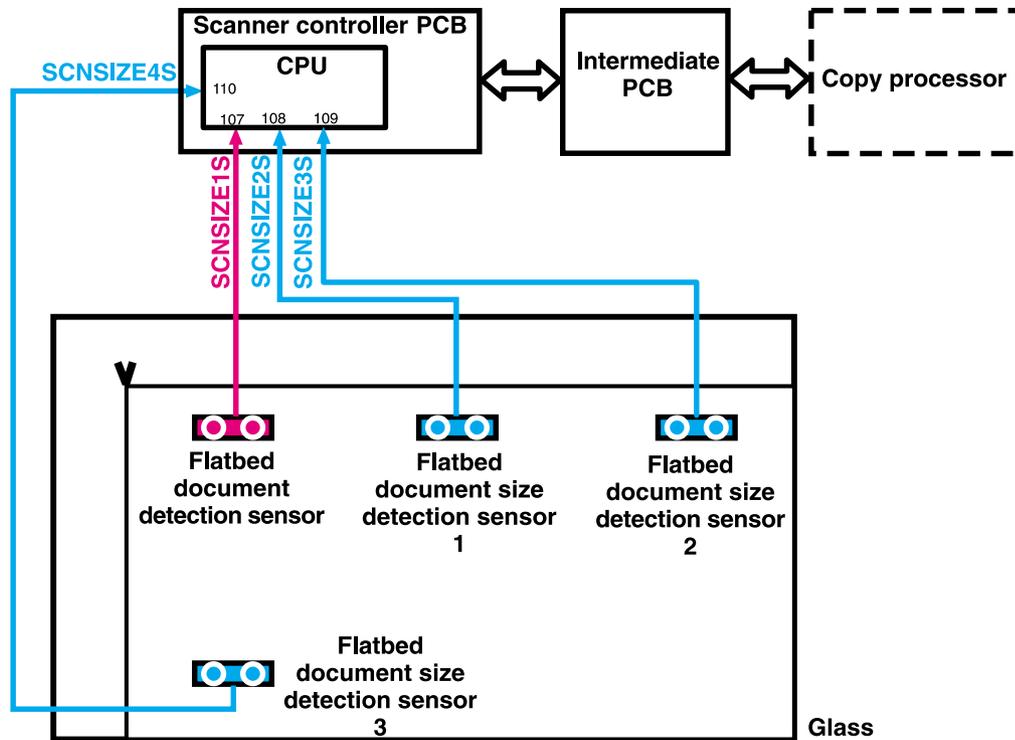


Figure 51. Flatbed document size detection

Sensor names

- Flatbed document detection sensor: SCNSIZE1S (only detects the document on the glass)
- Flatbed document size detection sensor (1): SCNSIZE2S size sensor
- Flatbed document size detection sensor (2): SCNSIZE3S size sensor
- Flatbed document size detection sensor (3): SCNSIZE4S size sensor

The sensors send signals to the SCB. The signals are transferred through the intermediate PCB to the CPB. The CPB calculates the size of the document based on the signals from the sensors.

The flatbed document sensors are located in the same positions on the 110 vdc and 220 vdc HP LaserJet 9000mfp. To determine sizes of larger documents, the HP LaserJet 9000mfp searches the Cold Reset Paper Size. For example, it will detect ledger if it is set to letter, and it will detect A3 if it is set to A4.

Functions operation

When a document is placed on the glass and the ADF unit is closed or at an angle of less than 30 degrees, the SCB begins to detect the presence and size of the document. The SCB monitors outputs from the flatbed document detection sensor (SCNSIZE1S) and the flatbed document size detection sensors (SCNSIZE2S, SCNSIZE3S, and SCNSIZE4S). The SCB passes the signals from the sensors to the CPB.

The reflecting sensor detects the presence and size information of the document based on whether the photoreceptor can receive the emitted light from the luminous body of the sensor. When a document is on the glass, the document reflects the emitted light and the photoreceptor can receive the reflected light. When there is not a document on the glass, the emitted light passes through the glass and the photoreceptor cannot receive the emitted light.

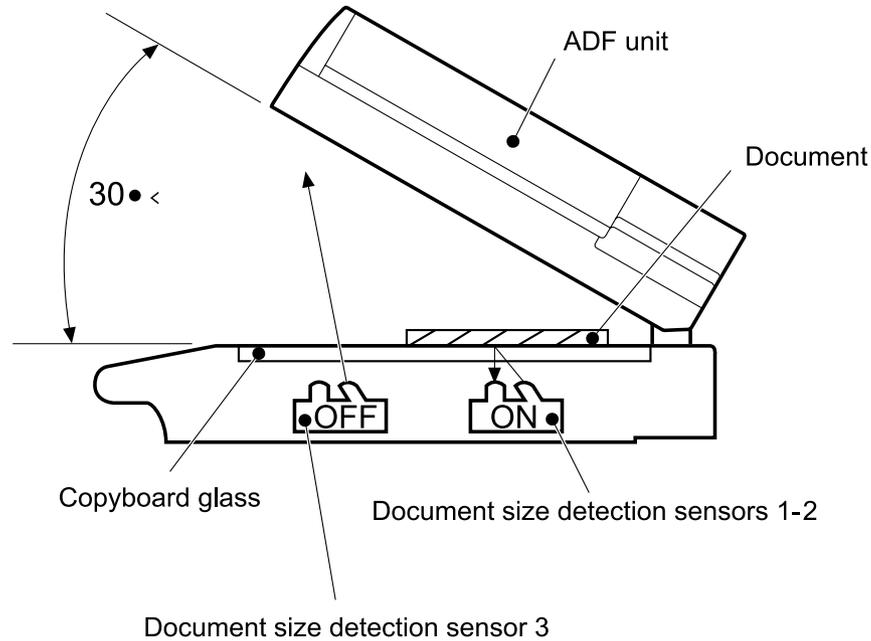


Figure 52. Functions operation

ADF angle detection

The SCB performs the detection by monitoring an output of the ADF angle detection sensor (PI-1). The output of the PI-1 is "H" when the ADF unit is opened. When the angle between the glass and the ADF is less than 30 degrees, the sensor lever interrupts the PI-1 and the output of the PI-1 is "L."

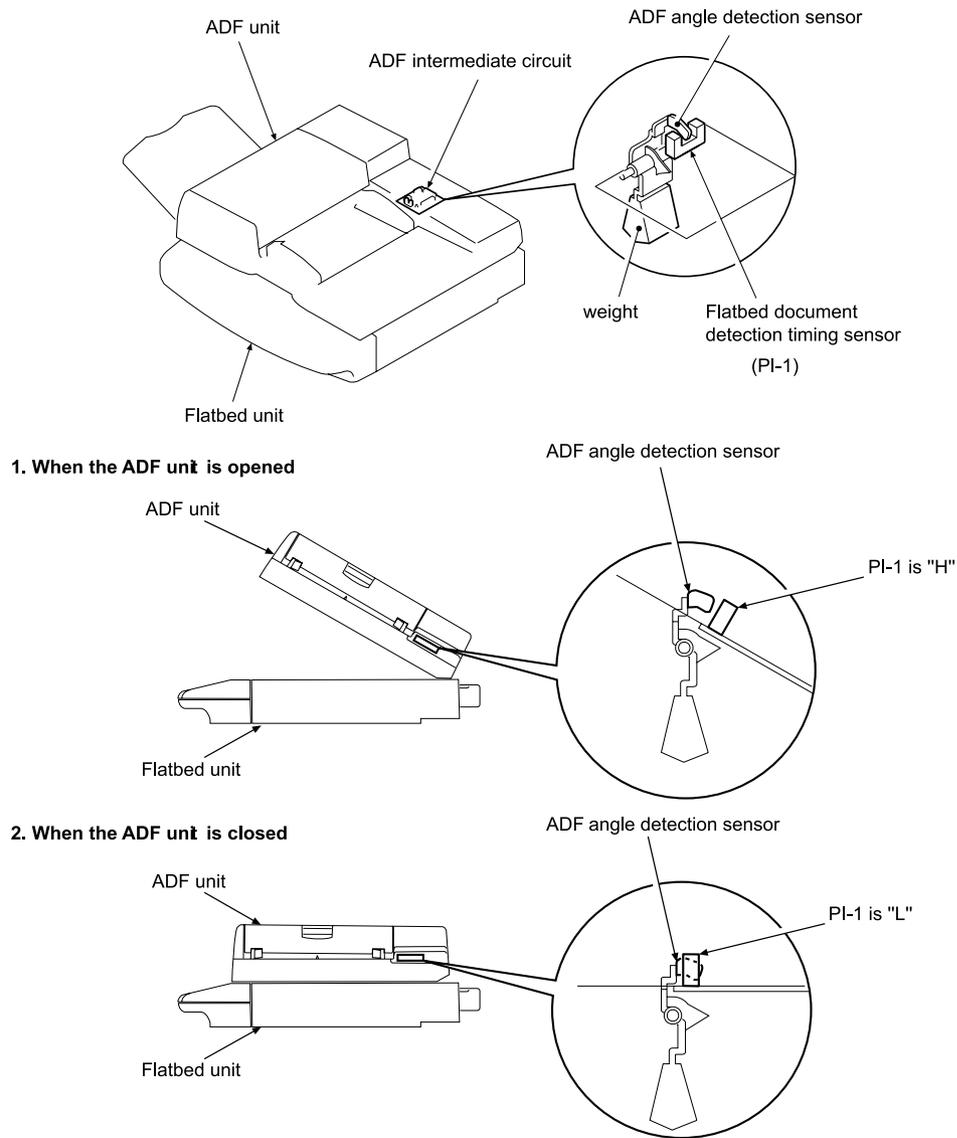


Figure 53. ADF angle detection

ADF operation

ADF document exposure control

- 1 The SCB sends a signal to the ADF inverter to turn on the scanning lamp.
- 2 The ADF intermediate PCB and ADF analog processor board pass the signal through.
- 3 The ADF inverter sends the signal to the scanning lamp and the document exposure process begins.

Note

The ADF inverter, ADF analog processor, and the ADF intermediate PCB are located inside the ADF.

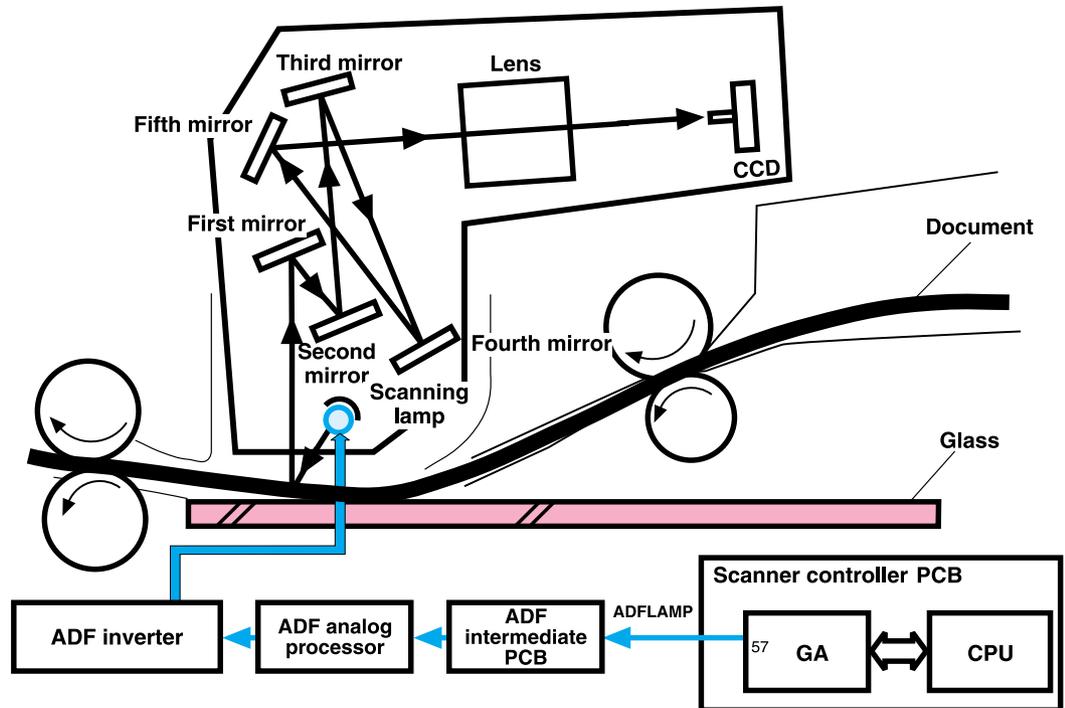


Figure 54. ADF document exposure control

ADF document feed control

ADF document feed control is performed to pass paper over the optical units for exposure. The ADF document feed control process begins when the SCB sends signals. The shutter solenoid helps to align the paper, and the weight plate “slaps” down on the stack of paper.

Note

Both the shutter solenoid and the weight plate help to perform the pickup process.

The pickup motor drives the pickup rollers and the feed rollers, and then reverses rotation to drive the registration rollers.

ADF document feed control terminology

- STSOL: shutter solenoid
- PMOT: pickup motor
- WTSOL: weight solenoid
- DMOT: delivery motor

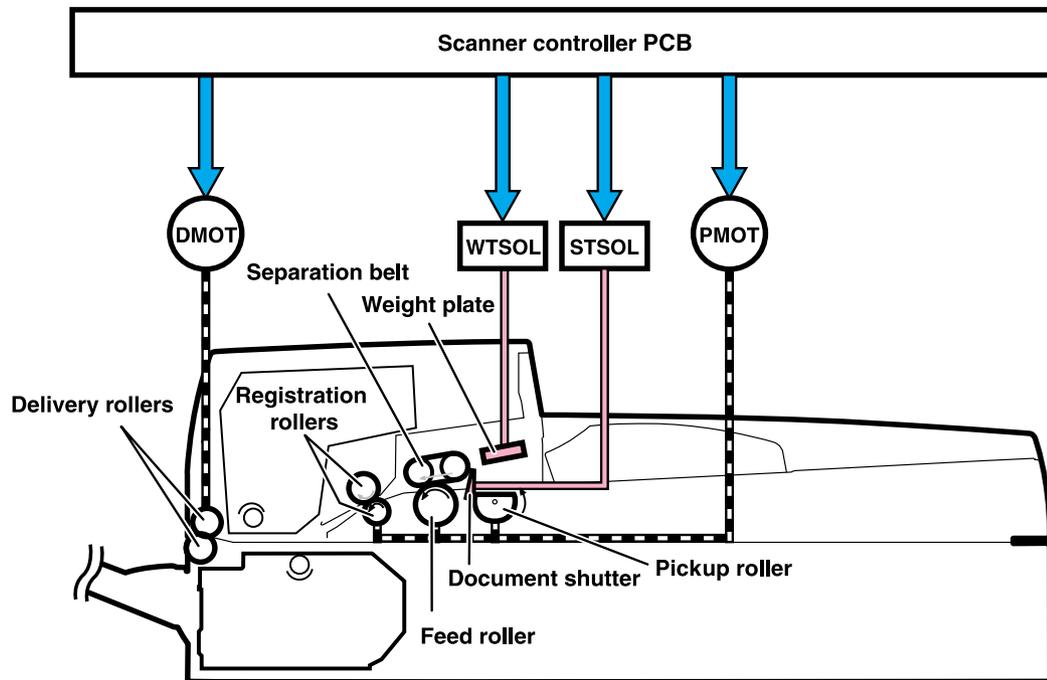


Figure 55. ADF document feed control

Pickup and feed operation

- 1 The shutter solenoid is turned on when the SCB receives a scan command, and the document shutters drop.
- 2 About 200 milliseconds after the shutter solenoid is turned on, the pickup motor rotates in the normal direction. The pickup roller, feed roller, and separation belts begin to rotate. At the same time, the weight solenoid is turned on and the weight plate drops down. This allows the document on the document tray to be sent to the feed roller by receiving the rotation drive from the pickup roller and being pressed by the weight plate.
- 3 The document sent to the feed roller is sent to the ADF feeder after any multiple feeds are cleared by the feed roller and separation belts being driven by the pickup motor.
- 4 The document sent to the ADF feeder passes through the registration document detection sensor (REG-S) and reaches the registration roller. At this time the registration roller is not rotating so that the leading edge of the document is pushed against the registration roller to correct a skew.
- 5 After a set period of time from when the leading edge of the document passes the REG-S, the pickup motor rotates in its reverse direction. This allows the registration roller to start rotating and it re-feeds the document.
- 6 When the leading edge of the re-fed document reaches the timing detection sensor (TMG-S), the document scanning operation starts after a set period of time. The document set to the delivery roller is sent out of the scan engine by the delivery motor rotating in the normal direction. The delivery motor stops rotating after a set period of time.
- 7 When the delivery motor stops, the shutter solenoid is turned off. The pickup operation is complete after the pickup roller home position control operation.

Pickup roller home position control operation

The pickup roller home position control operation sets the pickup roller at its home position as an advance preparation to allow the roller to pick up the document.

- 1 The SCB monitors the pickup home position detection sensor (PICK-S) to detect the home position.
- 2 At the initial operation, or after delivering the document, the SCB rotates the pickup motor in the reverse direction and checks a signal from the PICK-S.
- 3 When the PICK-S detects the pickup home position lever on the shaft of the pickup roller, the SCB determines that the pickup roller is at its home position and stops the pickup motor.
- 4 When the SCB cannot detect the home position of the pickup roller within a specified period of time after the pickup motor starts rotating in the normal direction, the SCB recognizes the pickup motor failure and notifies the CPB. A 30.1.9 error is shown on the control panel.

ADF document size detection

The sensors and the potentiometer send signals to the SCB, and these signals are transferred through the intermediate PCB to the CPB. The CPB calculates the size of the document based on the signals in the service menu.

ADF document size detection terminology

- TRS-S: ADF document length detection (short)
- TRL-S: ADF document length detection (long)
- TRVR: ADF width detection unit (potentiometer)

Note

The width detection unit can be calibrated in the service menu.

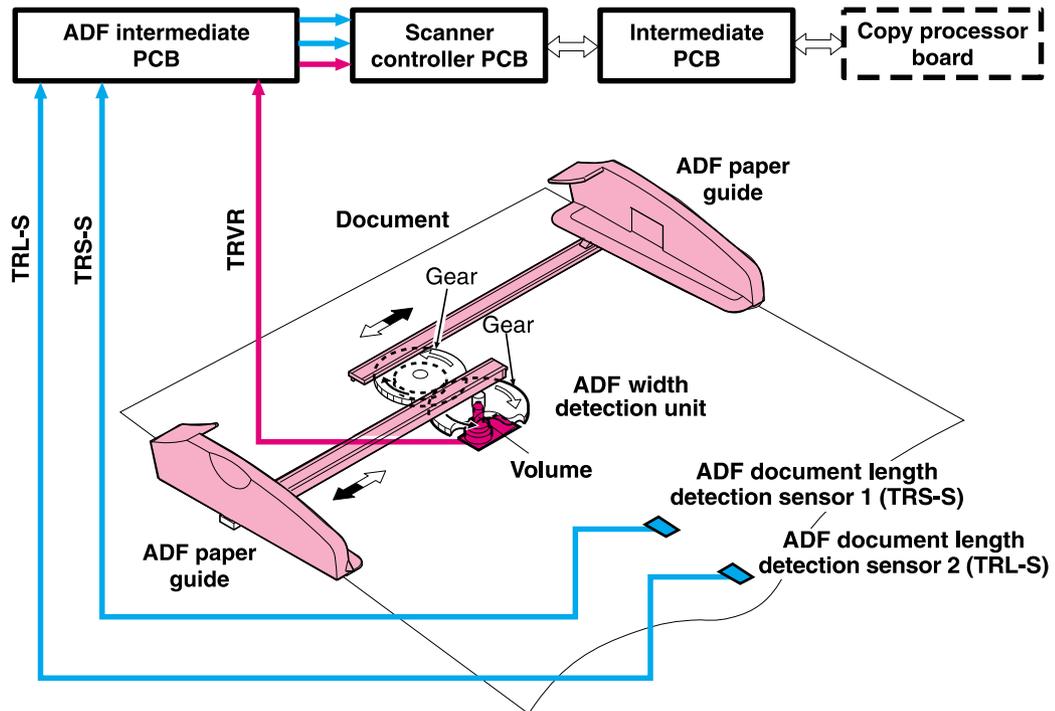


Figure 56. ADF document size detection

ADF feeder sensors

- REG-S (registration sensor): detects when paper is approaching the registration rollers.
- TMG-S (timing sensor): verifies that paper is moving through the paper path.
- SKR-S (back skew sensor)
- SKF-S (front skew sensor)

Note

The ADF has a document detection sensor that detects the presence of paper. This sensor is not shown in the graphic below. When the sensor detects the presence of paper, the LED on the ADF illuminates.

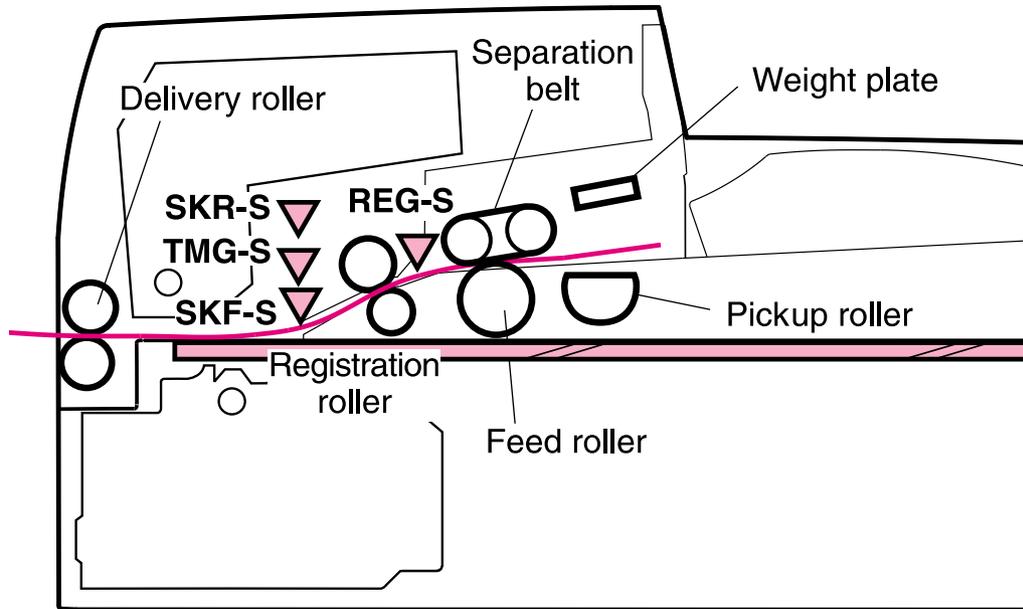


Figure 57. ADF feeder sensors

ADF document skew detection

- 1 One of the skew sensors is activated.
- 2 A signal is sent to the SCB.
- 3 The SCB begins to read a certain number of clock pulses in 6 mm (.02 inch).
- 4 A skew jam is not reported if the second skew sensor is activated before the allotted number of pulses.

Note

Skew detection is only performed when the document width is less than or equal to 257 mm (10.1 inches).

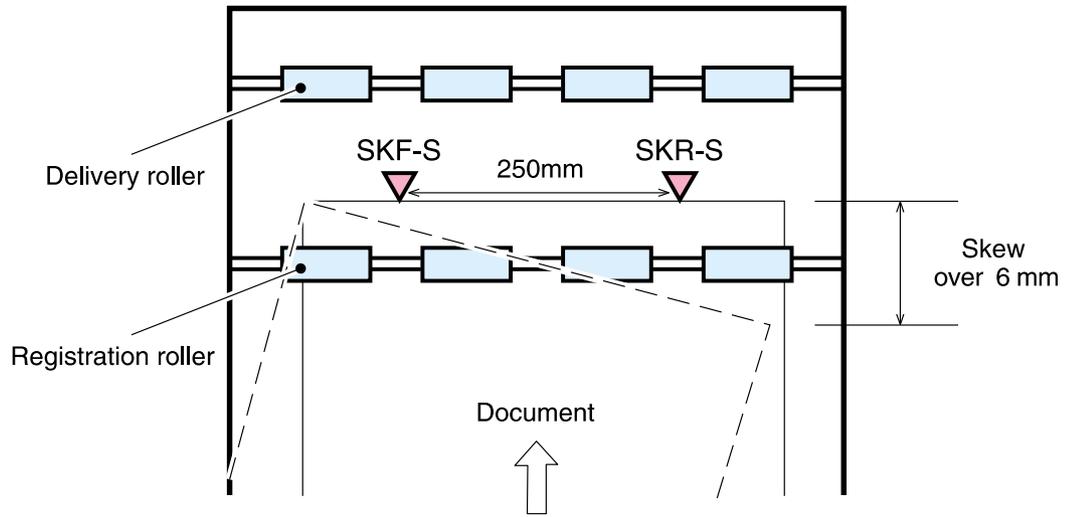


Figure 58. Document skew jam

Scanned data flow

The HP LaserJet 9000mfp has a scan engine with 600 by 600 ppi (pixels per inch) resolution. It has three channels (red, blue, and green) with 10 bits per channel, equalling a 30-bit scan engine.

Analog data is captured by the CCD driver circuit and converted to digital data on the analog processor board. Digital data is then sent through the three channels to the CPB. The CPB converts the digital data into one of the three final output types:

- HRB (hardware ready bits): most copy jobs are processed at the CPB and sent to the print engine as HRB.
- PCL-XL: if rotation, book copying, or n-up is chosen in the job, the CPB passes PCL-XL data to the print engine and the formatter finishes the processing.
- JPEG (lossless): compresses image data from the CPB to the formatter when processing a digital send job. The formatter then processes the data into the desired file type (TIFF, MTIFF, JPEG, or PDF).

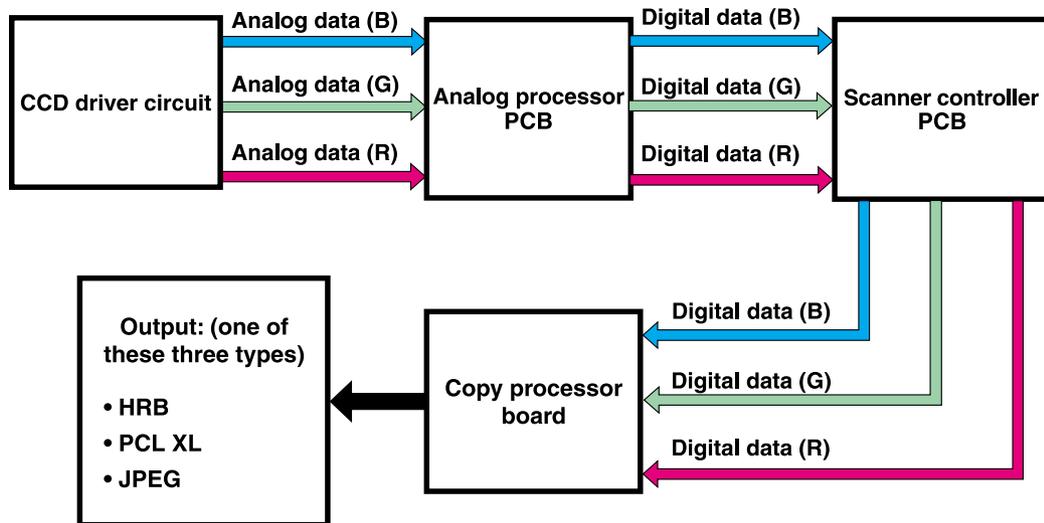


Figure 59. Scanned data flow

Copy processor board

The CPB is the link between the formatter in the print engine and the SCB in the scan engine. Control signals from the formatter are sent to the CPB. The CPB sends these control signals to the SCB. After the scanning process is completed by the SCB, the scanned data is sent to the CPB. The CPB processes the image and sends the image data to the formatter.

CPB terminology

- ASIC (application-specific integrated circuit) (callout 1) is the system controller that provides PCI, DIMM interface, and processor interface, and performs monochrome data compression.
- DSP (digital signal processor) (callout 2) runs image processing algorithms.
- Firmware DIMM (Dual inline memory module) (callout 3) contains firmware that controls the system.
- FPGA (field programmable gate-array) (callout 4) provides an interface to the scanner, SRAM, DSP, and PCI bridge (front-end processing is performed).
- IEEE 1394 phy (physical layer) (callout 5) is the interface from the CPB to the formatter.
- IEEE 1394 protocol chip (callout 6) connects the PCI bus to the IEEE 1394 Phy.
- MIPS (Million instructions per second) processor (callout 7) is the system processor that runs the firmware.
- PCI (peripheral component interface) bridge (callout 8) connects the PCI bus to the FPGA.
- RAM DIMM (callout 9) is the main memory system, and is temporary storage for image data and firmware variables.
- RAM for DSP (digital signal processor) (callout 10) provides temporary storage for image processing in the DSP.
- SRAM (static random-access memory) (callout 11) is memory for aligning the scanner image data.

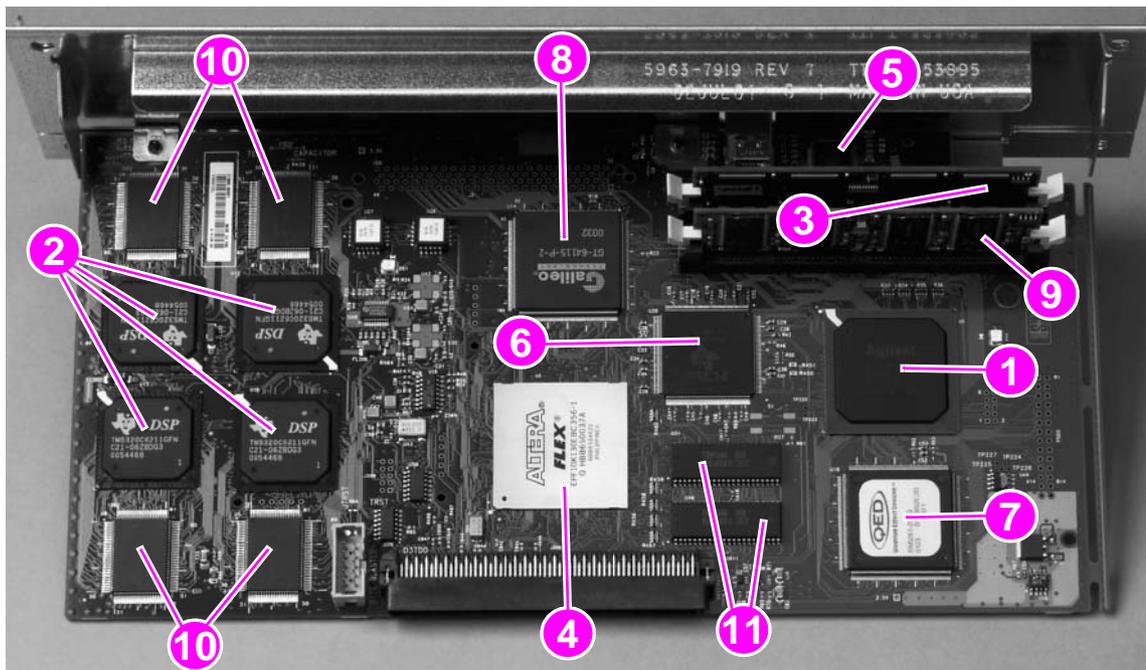


Figure 60. Copy processor board

Scanning process control signals

The CPB controls the following scanning process control signals:

- ADF unit and flatbed unit operation directs the SCB about the following:
 - when to scan
 - how to scan
 - when to activate motors
 - when to turn the scanning lamps on and off
- Image processing
 - color alignment
 - resolution conversion
 - image sharpening
 - moire removal
 - image scaling
 - shifting of data strips (reconstructing separately processed image data before CPB communication to the formatter)
 - RGB conversion for CPB communication
 - CPB communication to the formatter using one of the following formats:
 - HRB (fastpath) communication with the hard drive on the formatter
 - PCL-XL (n-up, rotation, book mode) communication with the hard drive on the formatter
 - JPEG compression (when digitally sending data) communication with the hard drive on the formatter
 - data compression before sending to the formatter over the high speed copy connect cable

Typical scanning process flow

- 1 The original document is placed on the glass or in the ADF.
- 2 The user enters job preferences using the control panel keys. The user presses the **START** key. Job preferences are sent to the formatter.
- 3 Some job preferences, such as n-up, will be held and processed later by the formatter. Others are sent to the CPB.
- 4 The CPB sends control signals to the SCB. The document is scanned.
- 5 The SCB sends scanned image data back to the CPB.
- 6 The CPB processes the image.
- 7 The CPB sends the image data to the formatter.
- 8 The formatter further processes the image data (if required).
- 9 The image data is then either printed or digitally sent depending on what the user specified at the beginning of the process.

Copy processor board LEDs

The CPB has four light-emitting diodes (LEDs) (callout 1) located at the back of the MFP. These LEDs illuminate in specific patterns depending on the status of the CPB. The table in this section details what occurs at each stage of CPB initialization.

Hint The LEDs can be difficult to see through the holes in the CPB faceplate in a high-light environment. It may be necessary to turn off some lights or remove the faceplate to properly troubleshoot the LEDs.

The LED patterns displayed by the HP LaserJet 9000mfp are opposite those displayed by the HP LaserJet 4100/4101mfp because the CPBs are mounted differently.

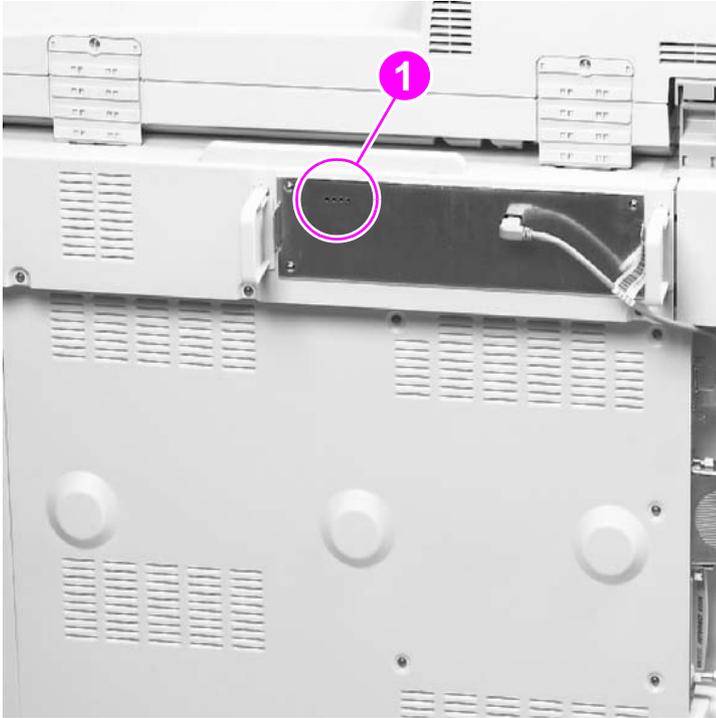


Figure 61. Copy processor board LEDs

Table 20. Copy processor board LEDs

LED pattern	CPB status
First stage of CPB initialization	
1 1 1* 1* * LEDs might flash before final continuous illumination	<ul style="list-style-type: none"> ● Memory DIMM detected ● Firmware DIMM detected ● MIPS processor functional ● MIPS processor communicates with the ASIC
Note If the LEDs stay in the illuminated state, a CPB failure has occurred (for example, a memory DIMM is not present or fully seated).	
1 1 0 1	● The MIPS processor is communicating with the PCI Bridge
0 1 0 1	● The MIPS processor is communicating with the FPGA
0 0 0 1	● A check of the FPGA's SRAM is performed

Table 20. Copy processor board LEDs (continued)

LED pattern	CPB status
0 0 0 0	<ul style="list-style-type: none">● CPB is communicating with the DSP and DSP RAM
Second stage of CPB initialization	
1 0 0 0	<ul style="list-style-type: none">● The left-most LED illuminates and stays on when the connection to the SSA (the portion of the firmware that runs in the print engine RAM) is established.
1 1 0 0	<ul style="list-style-type: none">● The second LED from the left illuminates when communication occurs between the CPB and the scan engine.
1 1 0 1	<ul style="list-style-type: none">● The right-most LED illuminates indicating the CPB has booted properly. When this LED begins to flash (referred to as the CPB heartbeat) the CPB is functioning normally and the MFP is ready to process jobs.

6

Removal and replacement

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Introduction

Removal and replacement strategy

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

Replace parts in the reverse order of their removal. Directions for difficult or critical replacement procedures are included.

Remove the following components before removing or replacing assemblies and parts:

- finishing device
- print cartridge
- ADF output bin

Before removing or replacing assemblies and parts:

- make sure the printer is turned off
- disconnect all cables and cords

WARNING!

Exercise caution when working on the MFP. The MFP can have sharp sheet-metal edges.

Note

Note the lengths, diameters, and locations of screws. 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.

Note

Always remove the print cartridge before removing or replacing assemblies and parts.

IMPORTANT: Put the print cartridge in the original print cartridge bag, or, if the bag is not available, cover it with a piece of paper. Light can damage the print cartridge.

Electrostatic discharge

CAUTION

The MFP contains parts that are sensitive to electrostatic discharge (ESD). Always service the MFP at an ESD-protected workstation, or use an ESD mat.



Watch for the ESD symbol (shown at left) to identify the parts that are sensitive to ESD. Protect these parts by using an ESD wrist strap and protective ESD pouches.

Required tools

The following tools are needed to service this product:

- #2 Phillips screwdriver with magnetic tip
- Small flatblade screwdriver
- Small needle-nose pliers
- ESD mat
- Penlight

CAUTION

A PoziDriv screwdriver will damage screw heads on the MFP. Be sure to use a #2 Phillips screwdriver.

External covers

Control panel

- 1 Open the ADF unit.
- 2 Insert a small flatblade screwdriver in the slot (callout 1) and pry off the overlay. Repeat for the other side.



Figure 62. Control panel (1 of 3)

- 3 Insert a small flatblade screwdriver in the notch on the side of the control panel and press the tab (callout 2) while lifting the control panel. Repeat for the other side.

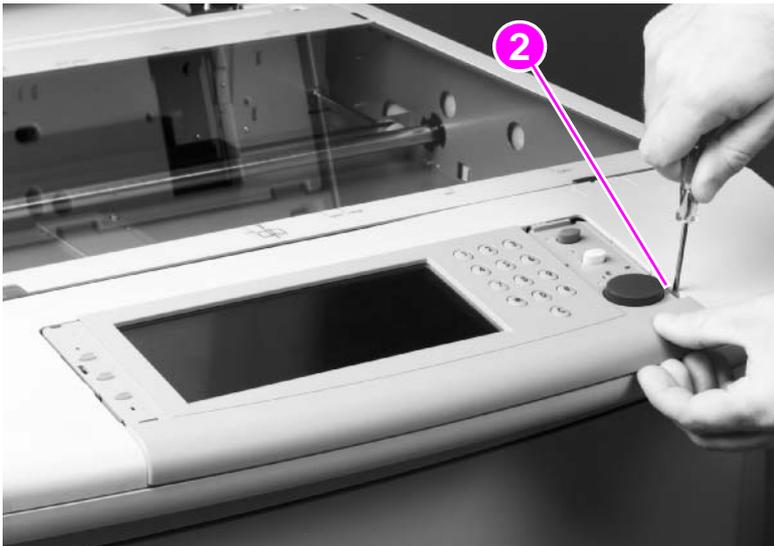


Figure 63. Control panel (2 of 3)

- 4 Disconnect the connector (callout 3) from the control panel and remove the panel.

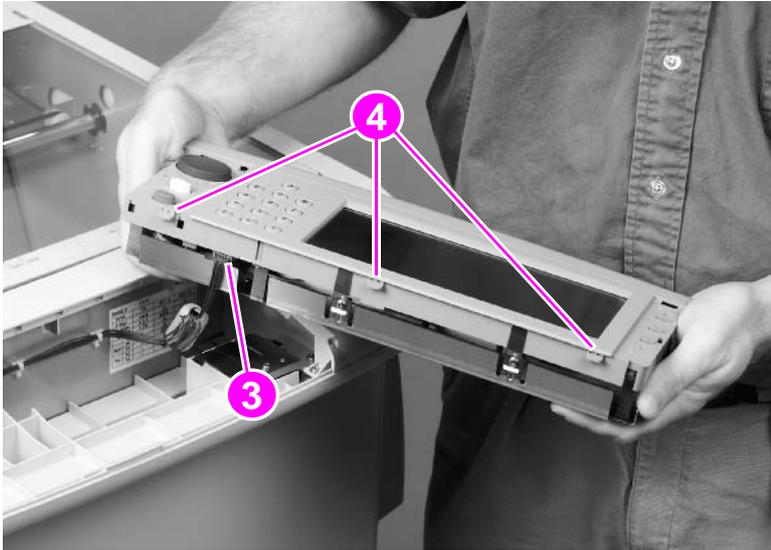


Figure 64.

Control panel (3 of 3)

To reinstall

Make sure the three alignment tabs (callout 4) are in the slots before completely installing the control panel.

ADF feeder cover

- 1 Open the ADF feeder.
- 2 Remove two screws (callout 1).
- 3 Pull the ADF feeder cover away from the MFP to disengage two round tabs (callout 2).

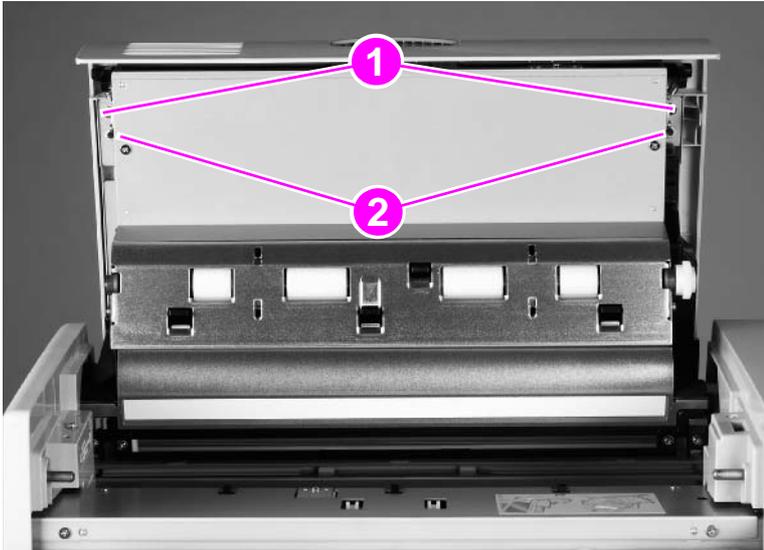


Figure 65. ADF feeder cover (1 of 3)

- 4 Push the ADF feeder cover downward to disengage four claws (callout 3) (two on the right side are shown).

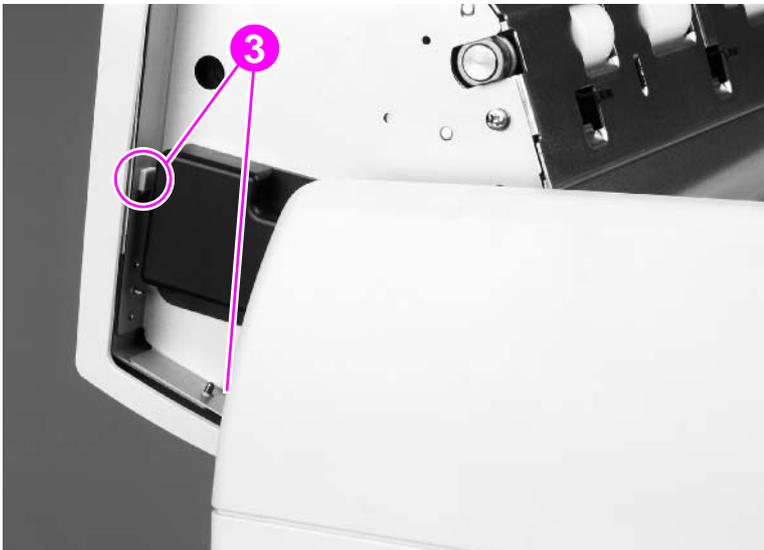


Figure 66. ADF feeder cover (2 of 3)

- 5 Pull the bottom of the ADF feeder cover out (callout 4).
- 6 Squeeze the ADF feeder cover handle (callout 5) to release the attaching tabs (not visible).
- 7 Lift off the cover to remove it.

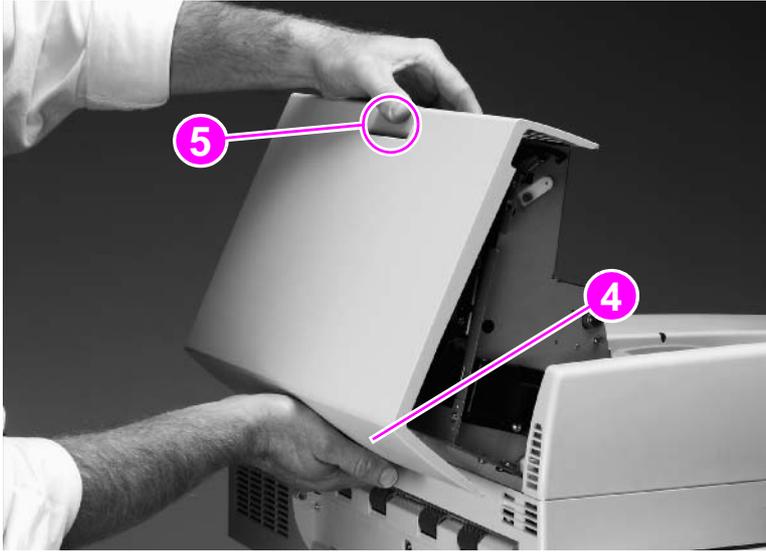


Figure 67. ADF feeder cover (3 of 3)

To reinstall

Reinstall the cover on the handle, and then reinsert the four claws. Make sure that all four claws are aligned in the slots before closing the feeder cover or the cover will break.

ADF feeder cover handle

- 1 Remove the ADF feeder cover. See page 104.
- 2 Remove two springs (callout 1) (one on the right side is shown).
- 3 Remove the latch (callout 2).

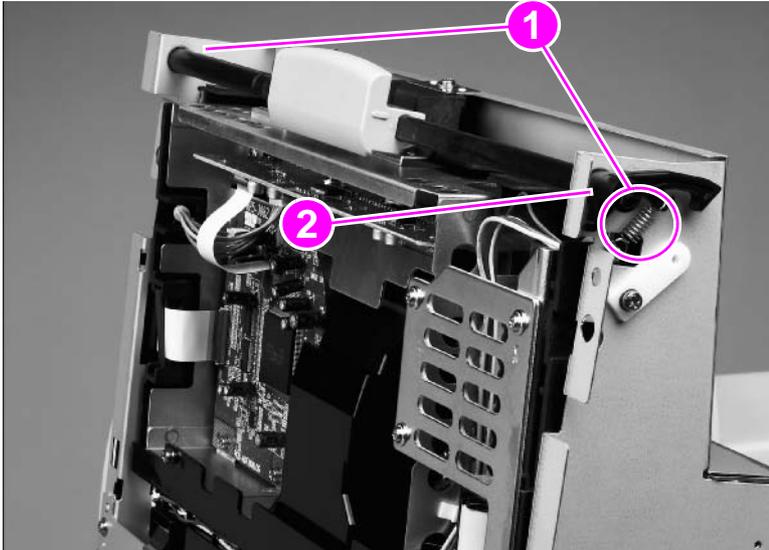


Figure 68. ADF feeder cover handle (1 of 2)

- 4 Slide the shaft to the left and tilt the right end up.
- 5 Slide the handle (callout 3) off to the right and pull the shaft to the left to remove it.

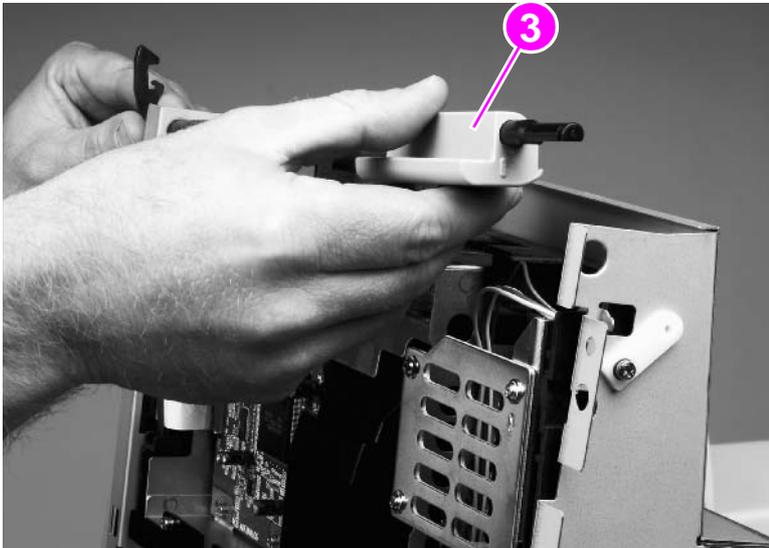


Figure 69. ADF feeder cover handle (2 of 2)

ADF back cover

- 1 Open the ADF feeder.
- 2 Remove three screws (callout 1).

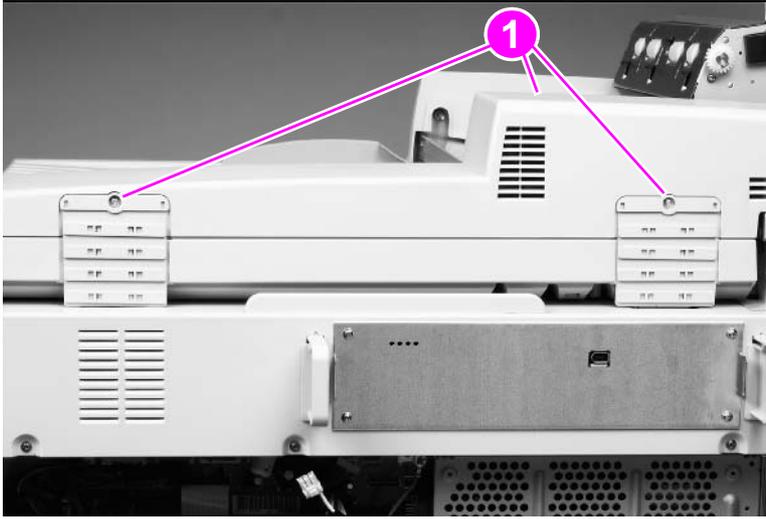


Figure 70. ADF back cover (1 of 2)

- 3 Tilt the ADF back cover up to disengage two claws (not visible) (callout 2) and lift to remove the cover.

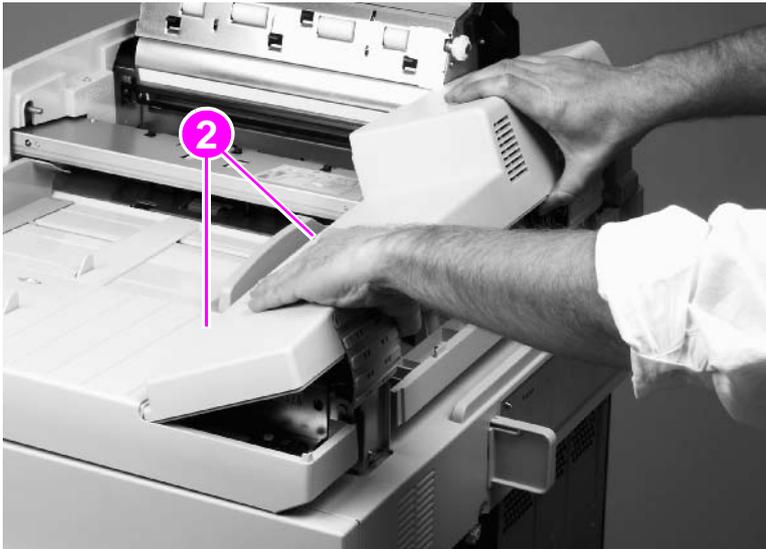


Figure 71. ADF back cover (2 of 2)

ADF front cover

- 1 Remove one screw (callout 1).
- 2 Slightly lift the ADF front cover, and slide the cover to the left to disengage two claws (not visible). Lift to remove the cover.

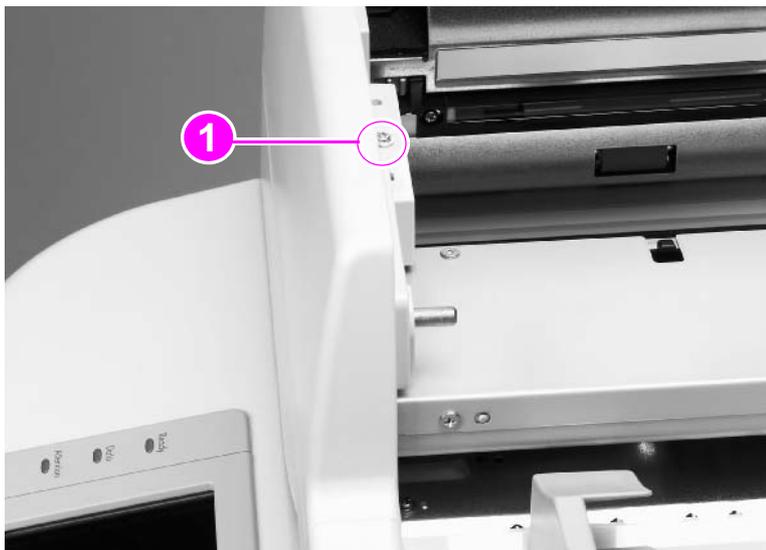


Figure 72. ADF front cover

Lower delivery roller cover

- 1 Open the ADF unit.
- 2 Pull the delivery roller cover to disengage two claws (marked with arrows) (callout 1), and then lift to remove the cover.

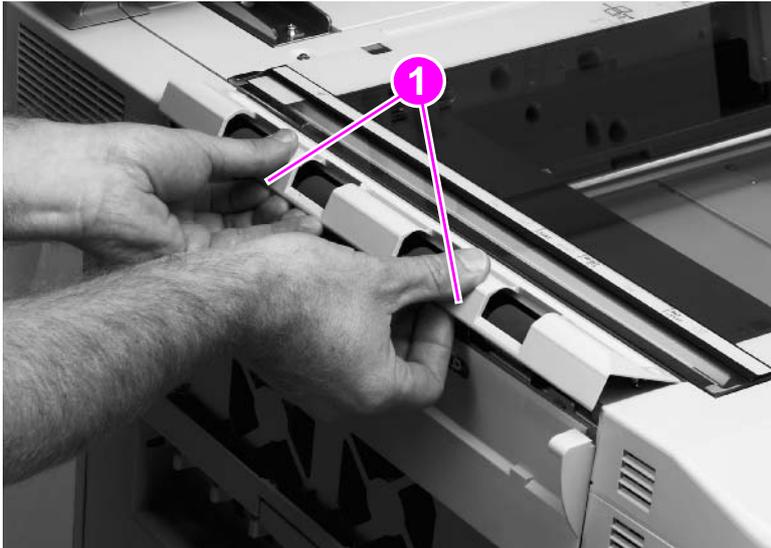


Figure 73. Delivery roller cover

To reinstall

Make sure that all three tabs are aligned in the slots before pressing the cover back into place.

White board cover

- 1 Open the ADF unit.
- 2 Remove two shoulder screws (callout 1).
- 3 Use a small flatblade screwdriver to pry up the outer skin at the slot (callout 2) to disengage the claw (callout 3).
- 4 Tilt out and lift the cover to remove it.

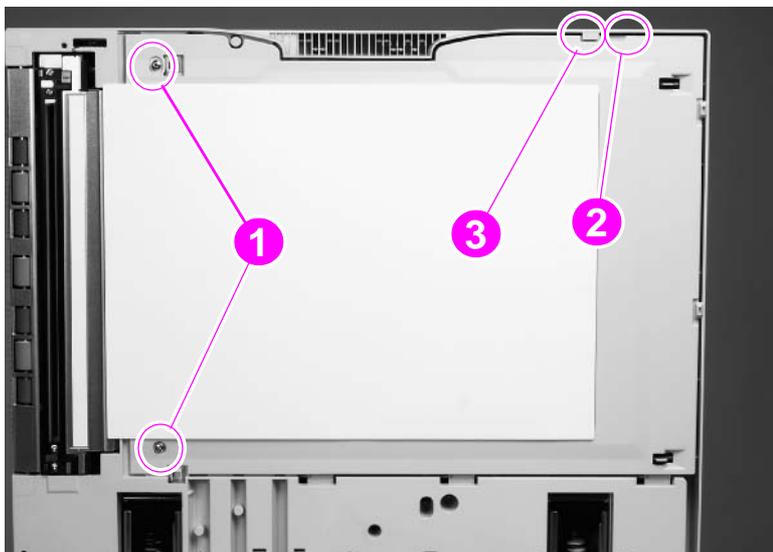


Figure 74. White board cover

Copy processor board

- 1 Squeeze the tabs on the bumpers (callout 1) and pull out to remove the bumpers.
- 2 Remove four screws (callout 2).

CAUTION

When removing or installing the copy processor board, do not drag the top of the board along the RFI fingers at the top of the slot. Doing so will damage the copy processor board components.

- 3 Gently pull the copy processor board out to remove it.

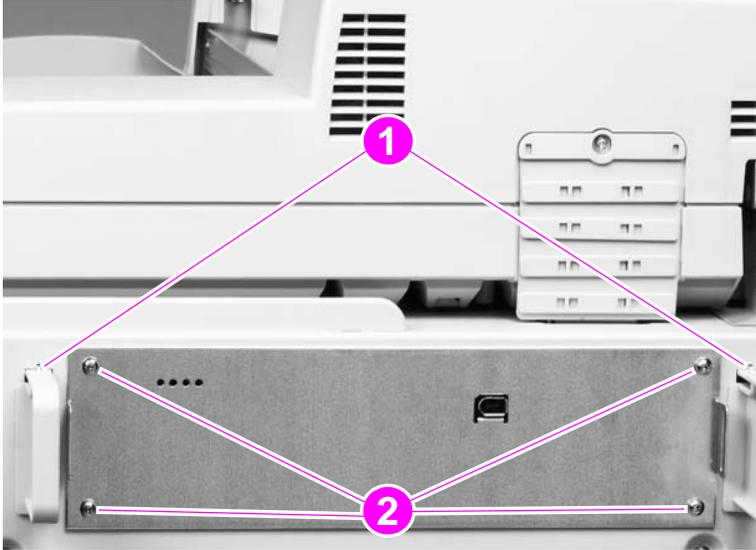


Figure 75.

Copy processor board

To reinstall

Align the copy processor board with the rails and slide the board into the slot. When the board reaches the end of the slot, slightly angle the board, lifting the connector end, and push to engage.

Flatbed rail cover

- 1 Open the ADF unit.
- 2 Remove two screws (callout 1).
- 3 Lift off the flatbed rail cover.

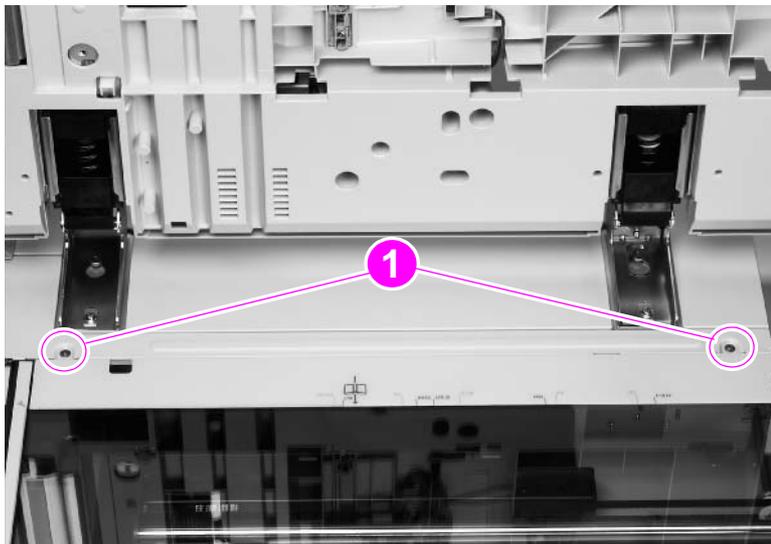


Figure 76. Flatbed rail cover

Flatbed back cover

- 1 Remove the copy processor board. See page 111.
- 2 Remove the print engine back cover. See the HP LaserJet 9000 series printer service manual for removal instructions.
- 3 Remove three screws (callout 1).

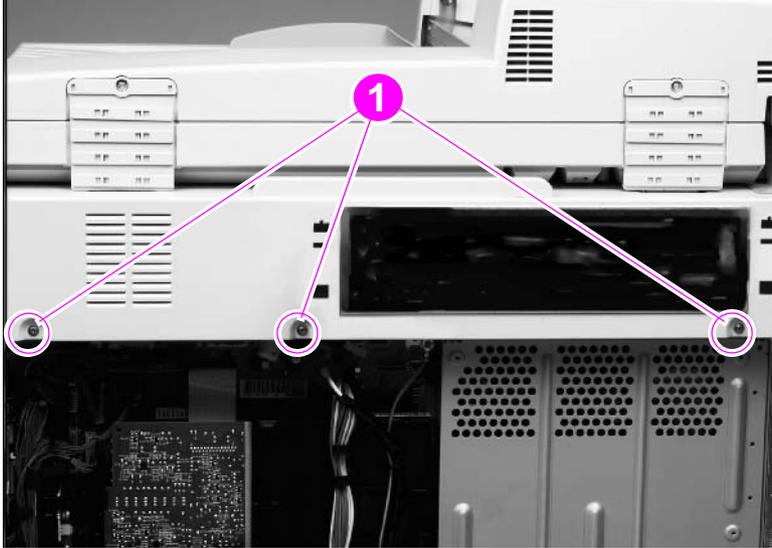


Figure 77. Flatbed back cover (1 of 2)

- 4 Open the ADF unit.
- 5 Remove the flatbed rail cover. See page 112.
- 6 Remove four screws (callout 2).
- 7 Slide the flatbed back cover toward the back of the MFP to remove it.

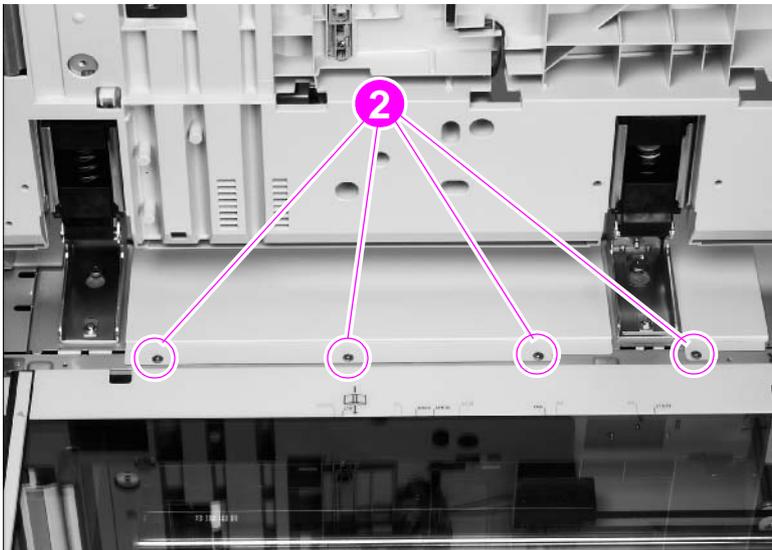


Figure 78. Flatbed back cover (2 of 2)

Flatbed right cover

- 1 Remove one screw (callout 1).

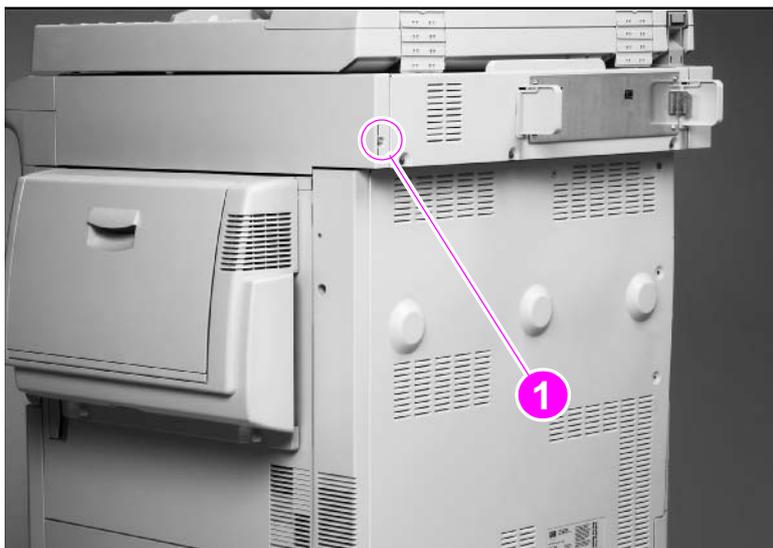


Figure 79. Flatbed right cover (1 of 2)

- 2 Open the ADF unit.
- 3 Open the door on the right side of the print engine.
- 4 Pull out the cover (callout 2) and slide it toward the back of the MFP to remove it.

Hint

Look through the glass to see the tab and claws that you are disengaging.

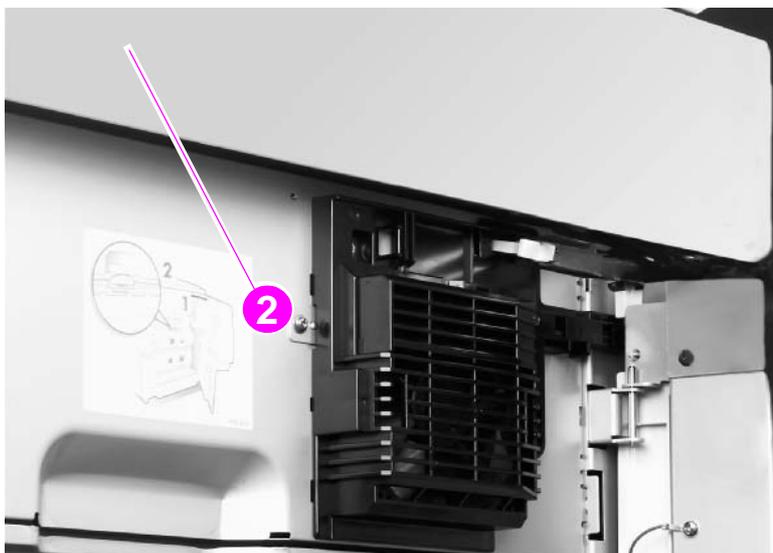


Figure 80. Flatbed right cover (2 of 2)

To reinstall

Align and engage the top claws before completely seating the cover.

Flatbed left cover

- 1 Open the ADF unit.
- 2 Remove the lower delivery roller cover. See page 109.
- 3 Remove two screws (callout 1).

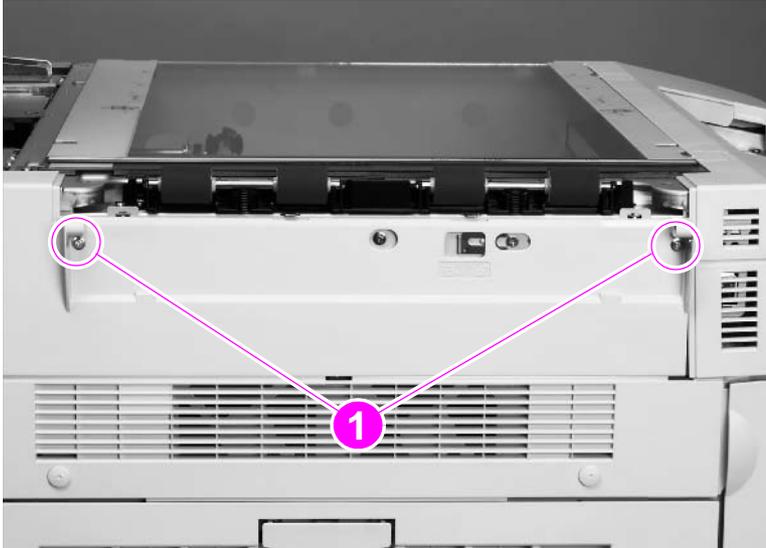


Figure 81. Flatbed left cover (1 of 2)

- 4 Insert a small flatblade screwdriver into the slot (callout 2).
- 5 Slide the screwdriver toward the front of the MFP until the screwdriver is aligned with the lock (callout 3), and pry outward to disengage one tab (not visible).
- 6 Slide the cover toward the back of the scan engine and remove it.

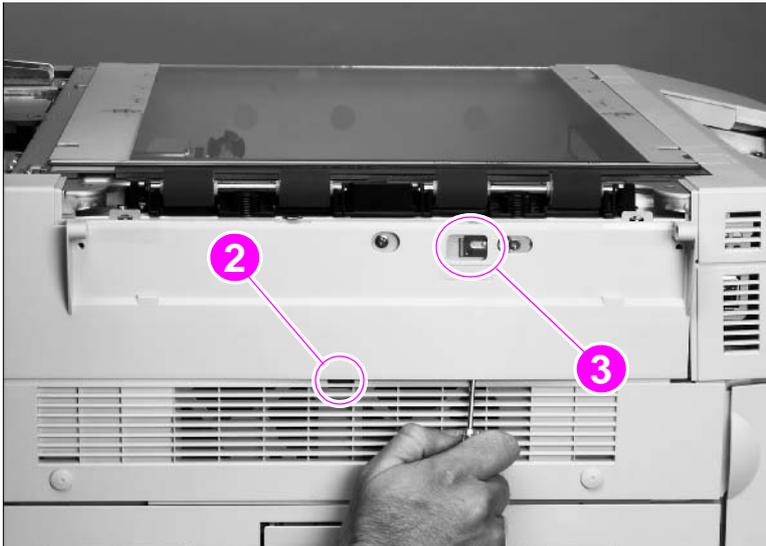


Figure 82. Flatbed left cover (2 of 2)

Flatbed upper front cover

- 1 Remove the following covers:
 - control panel—See page 102.
 - delivery roller cover—See page 109.
 - flatbed right cover—See page 114.
 - flatbed left cover—See page 115.
- 2 Remove four screws located in the plastic tabs (callout 1).
- 3 Lift the cover to remove it.

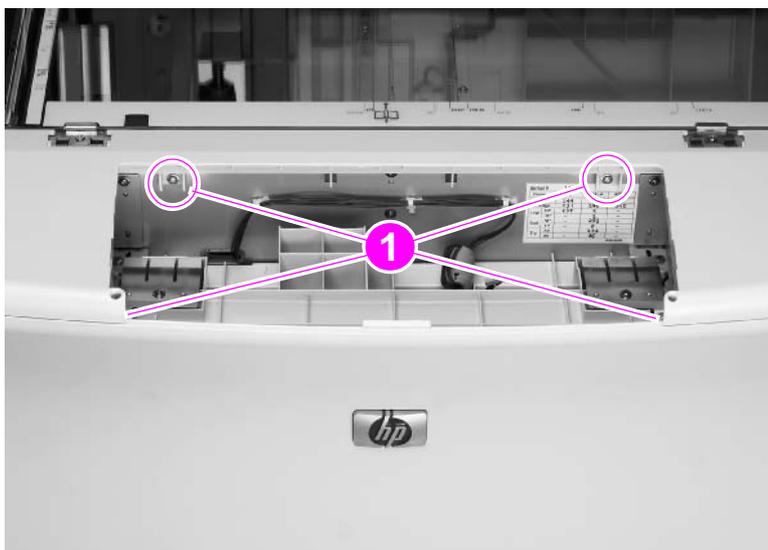


Figure 83. Flatbed upper front cover

Flatbed lower front cover

- 1 Remove the following covers:
 - control panel—See page 102.
 - delivery roller cover—See page 109.
 - flatbed right cover—See page 114.
 - flatbed left cover—See page 115.
 - flatbed upper front cover—See page 116.
- 2 Remove five screws (callout 1).
- 3 Open the print engine front door.
- 4 Flex the sides of the cover out and lower the cover to remove it.

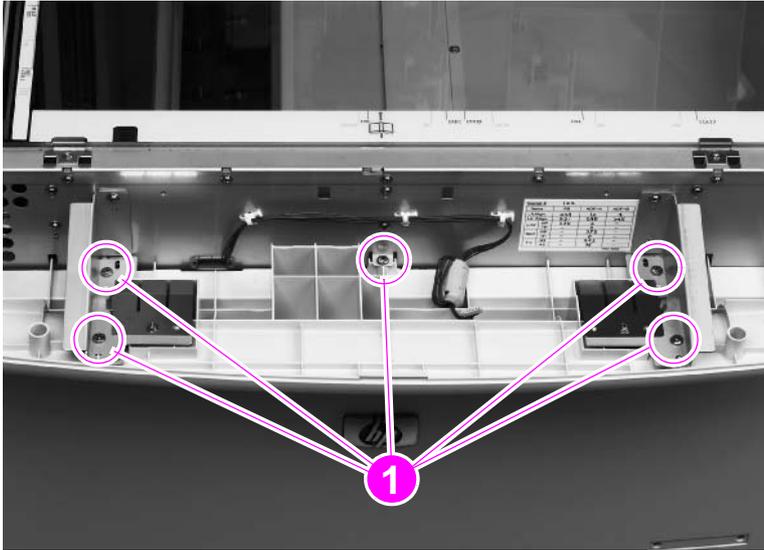


Figure 84. Flatbed lower front cover

ADF base cover assembly

- 1 Remove the following covers:
 - ADF feeder cover—See page 104.
 - ADF back cover—See page 107.
 - ADF front cover—See page 108.
 - flatbed back cover—See page 113.
- 2 Remove the white board. See page 110.
- 3 Remove six brown screws (callout 1) that attach the sheet metal to plastic.

WARNING!

Do not remove the screws connected to the opposite hinge.

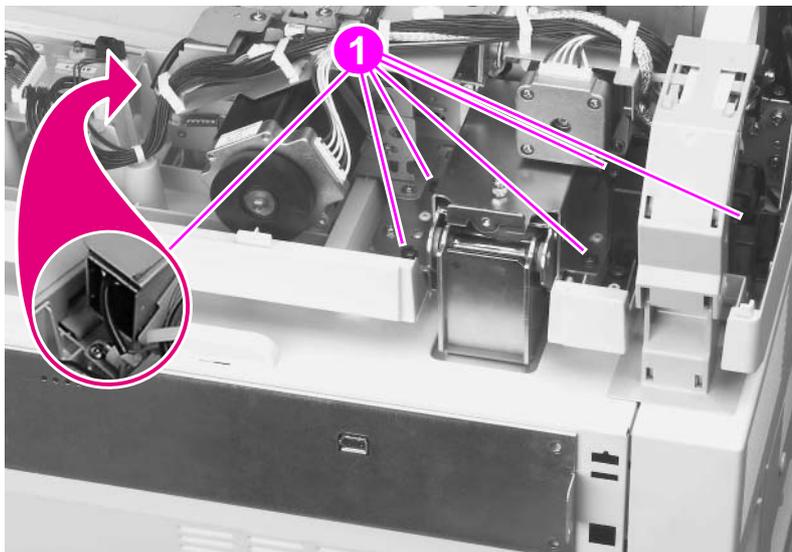


Figure 85. ADF base cover assembly (1 of 9)

- 4 Disconnect three connectors (callout 2) from the ADF intermediate PCB.

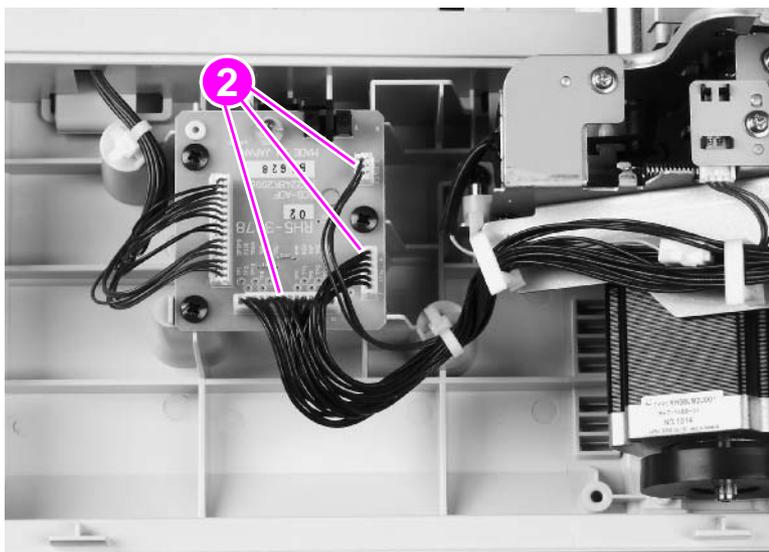


Figure 86. ADF base cover assembly (2 of 9)

5 Remove two screws (callout 3) and remove the ADF fan assembly.

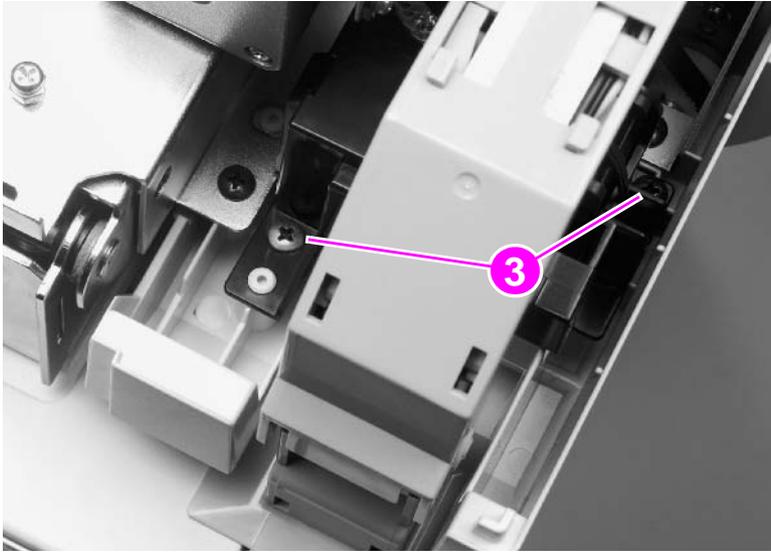


Figure 87. ADF base cover assembly (3 of 9)

6 Remove two screws (callout 4).

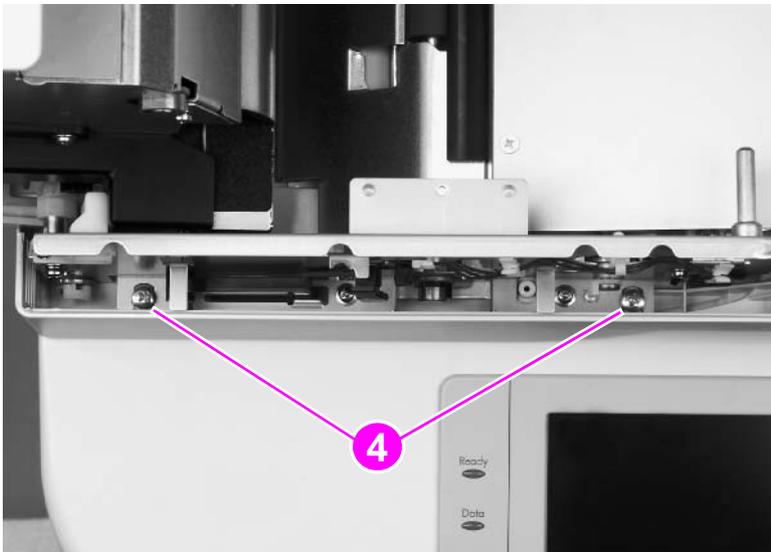


Figure 88. ADF base cover assembly (4 of 9)

- 7 Remove one connector (callout 5) from under the ADF cover.

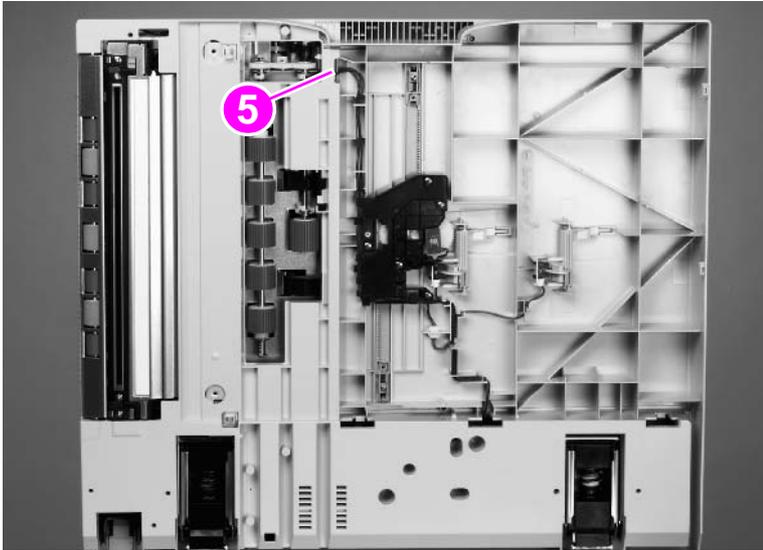


Figure 89. ADF base cover assembly (5 of 9)

- 8 Remove one screw (callout 6), and remove the front ADF paper width guide.

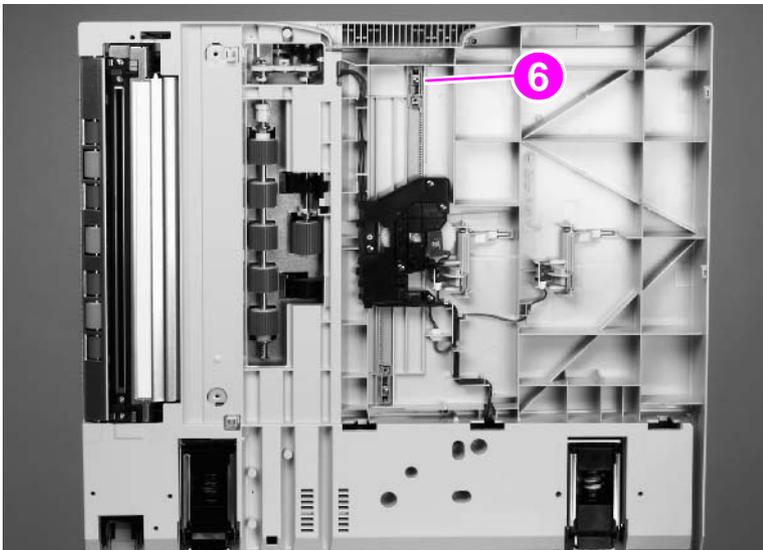


Figure 90. ADF base cover assembly (6 of 9)

- 9 Remove one screw and the locking plate (callout 7) on the right hinge.
- 10 Slide the right hinge off of the placement screw and then remove the ADF base cover assembly.

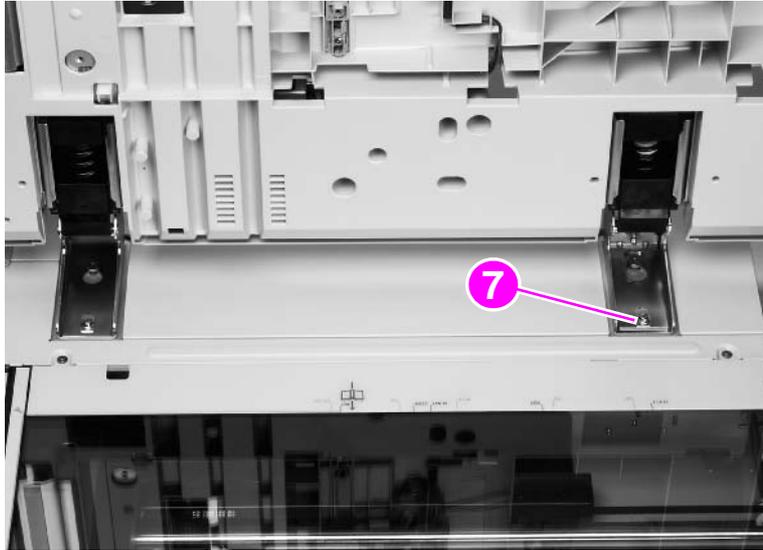


Figure 91. ADF base cover assembly (7 of 9)

- 11 Hold the ADF main assembly open with your left hand, and grasp the ADF base cover handle with your right hand. Shift the ADF main assembly to the right to disengage the assembly from the cover.

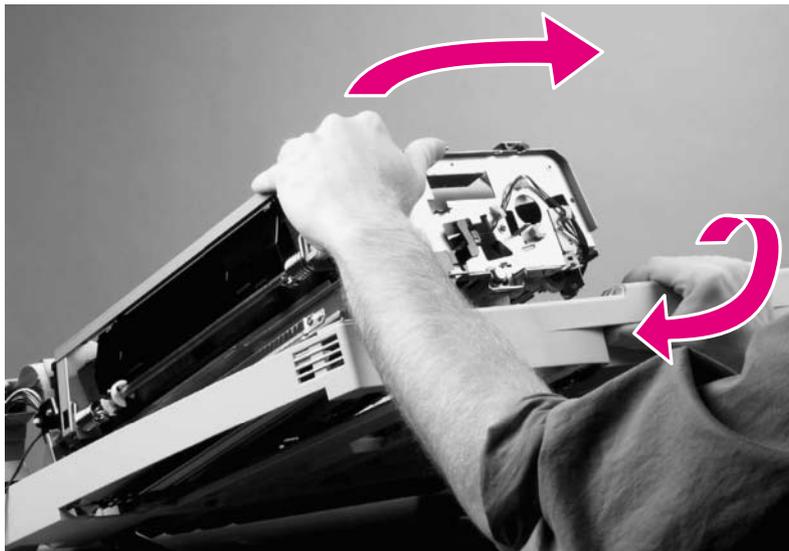


Figure 92. ADF base cover assembly (8 of 9)

- 12 Remove the ADF base cover assembly.

To reinstall

CAUTION

When you reinstall the ADF base cover assembly, make sure you do not damage the ESD threads (callout 8).

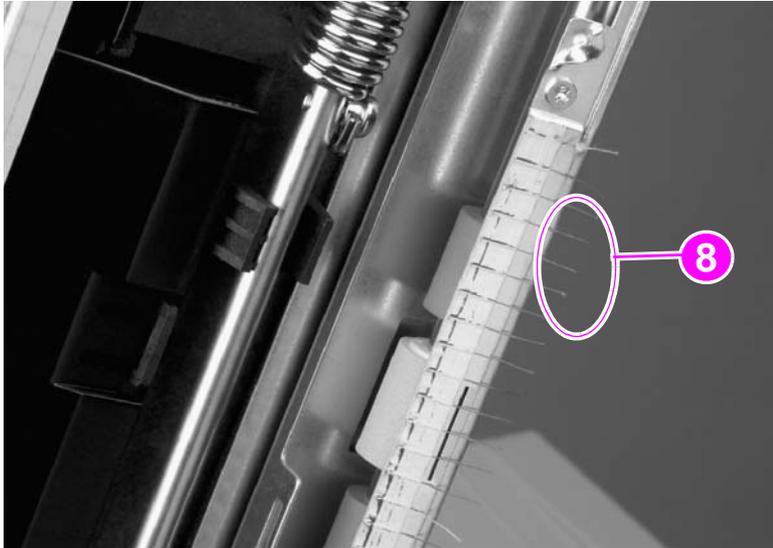


Figure 93. ADF base cover assembly (9 of 9)

Glass

- 1 Remove the following covers:
 - flatbed right cover—See page 114.
 - flatbed rail cover—See page 112.
- 2 Using a small flatblade screwdriver, remove two glass-mount covers (callout 1).

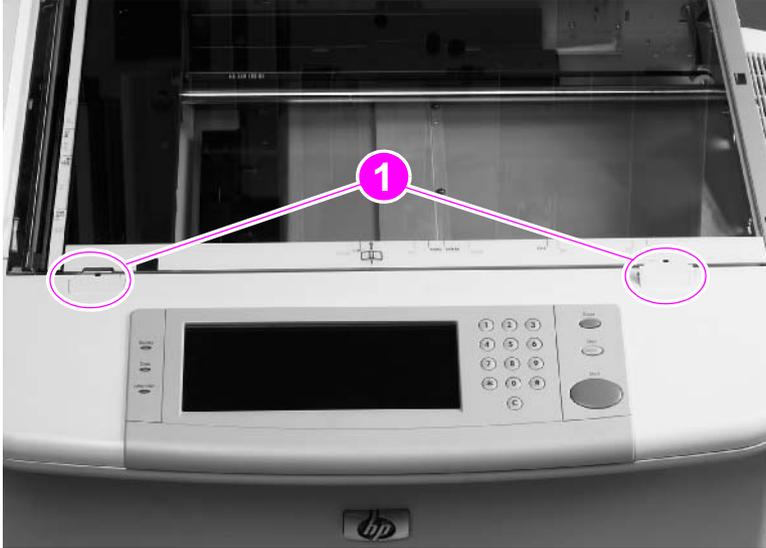


Figure 94. Glass (1 of 2)

- 3 Remove three screws and three glass mounts (callout 2).
- 4 Remove one screw and one alignment glass mount (callout 3).
- 5 Grasp the glass on its edge and carefully lift to remove it.

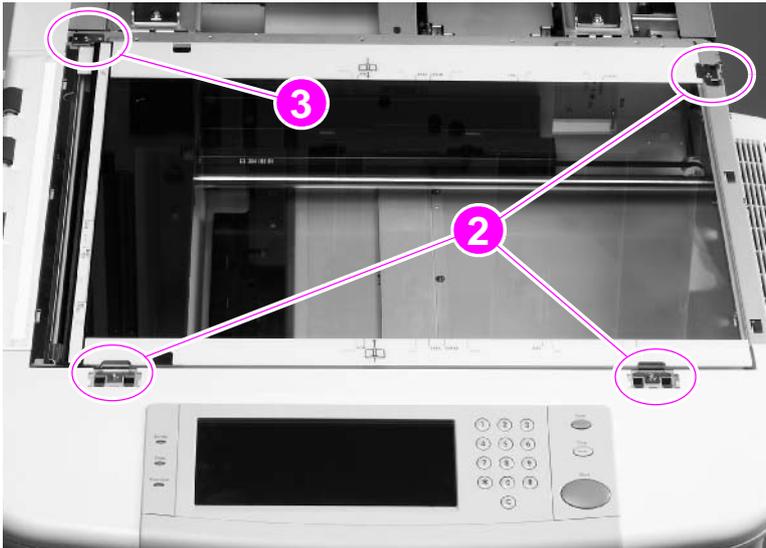


Figure 95. Glass (2 of 2)

To reinstall

Align the glass with the locating tabs located at the back left position, and install the alignment glass mount.

CAUTION

When reinstalling the glass mounts, be sure to seat the mounts completely using your fingers before screwing them in. Using a screw to force the mount into place can break the edges of the glass.

ADF optical unit

CAUTION

Every effort should be made to keep the optical unit free of dirt and dust.

Note

After removing the optical unit, set it on a piece of soft material.



1 Remove the following covers:

- ADF feeder cover—See page 104.
- ADF back cover—See page 107.
- ADF front cover—See page 108.

2 Disconnect three connectors (callout 1).

Note

The ribbon cable is equipped with a ferrite block that can easily come off of the cable. Make sure not to lose the block.

3 Disconnect one ribbon cable (callout 2).

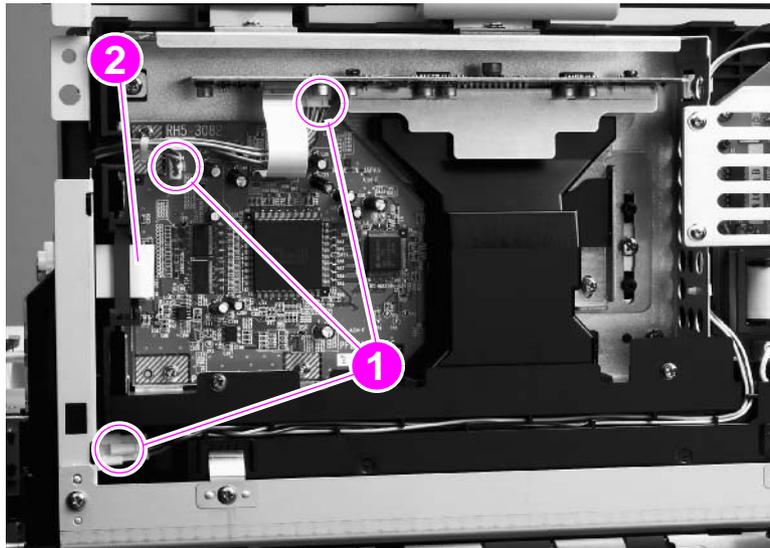


Figure 96. ADF optical unit (1 of 8)

- 4 Remove one screw (callout 3).
- 5 Push the cable cover to your right to disengage four claws (callout 4).
- 6 Tilt the cable cover up and remove it.

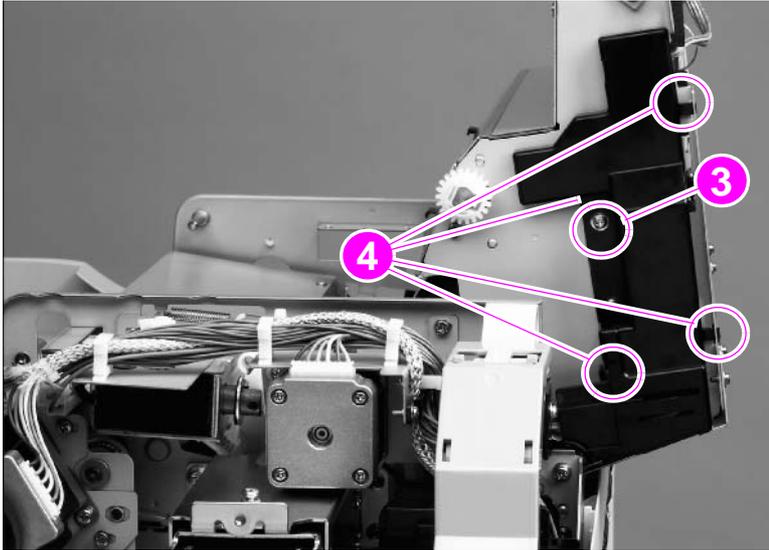


Figure 97. ADF optical unit (2 of 8)

- 7 Remove one grounding screw (callout 5).

Hint

Twist the cable ties to disengage them, and press the tabs to disengage the saddle clamps.

- 8 Remove one cable tie and two saddle clamps (callout 6).
- 9 Disconnect one connector and unseat one connector (callout 7).
- 10 Unlace and remove the cables from the cable harness (callout 8).

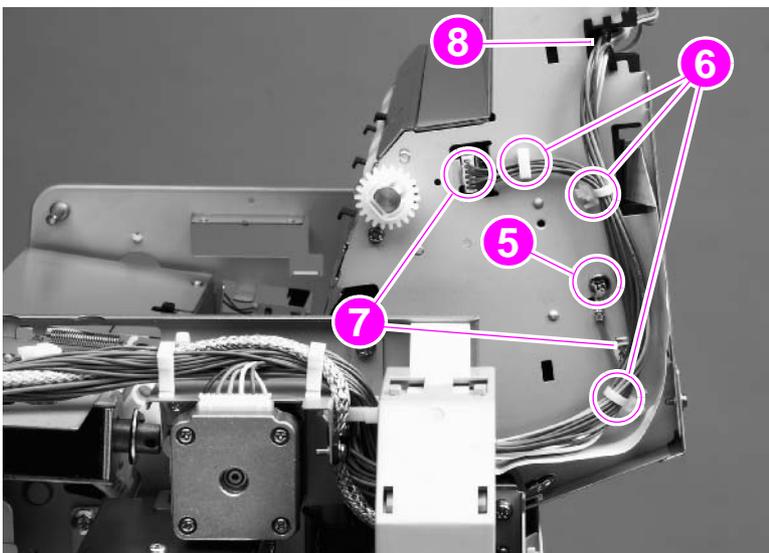


Figure 98. ADF optical unit (3 of 8)

11 Remove one screw (callout 9) from the flatbed cable cover.

12 Slide the flatbed cable cover away from the optical unit to clear it for removal of the optical unit.

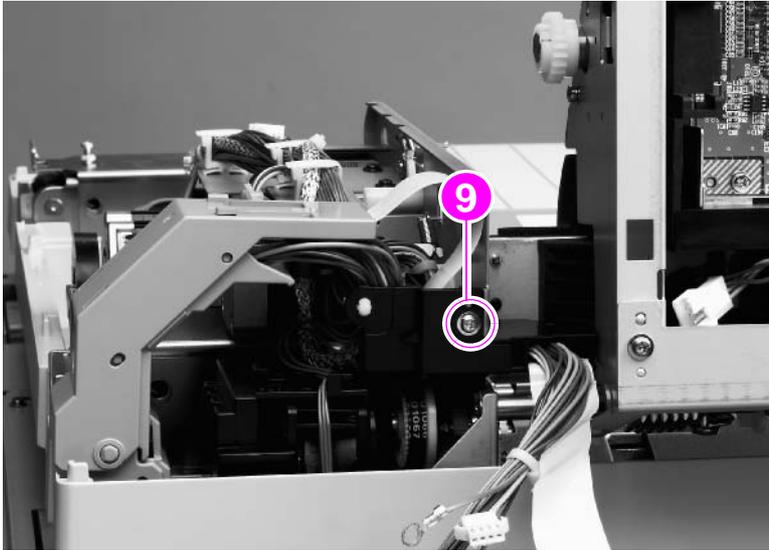


Figure 99. ADF optical unit (4 of 8)

CAUTION

With the ADF stopper cover removed, the optical unit will fall. Before performing step 13, grasp the optical unit and lower it slowly to prevent it from falling.

13 Remove one screw (callout 10) and the ADF stopper cover (callout 11).

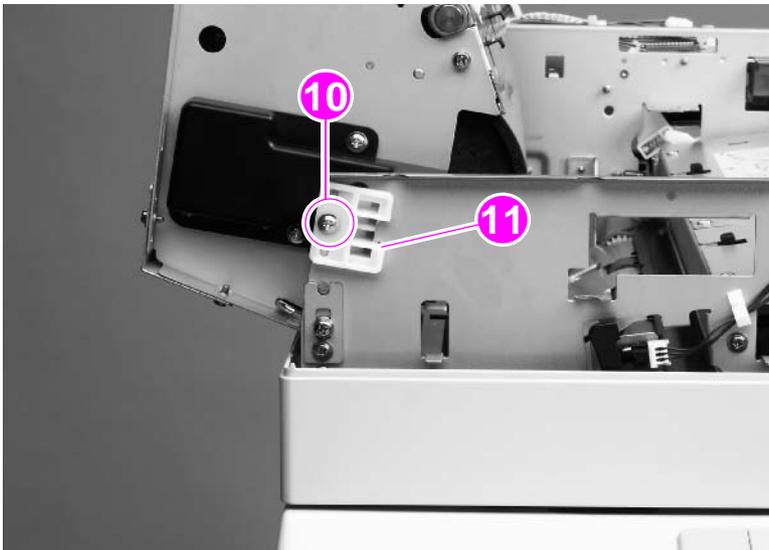


Figure 100. ADF optical unit (5 of 8)

14 Remove one screw (callout 12) from the end of the shaft at the back of the ADF.

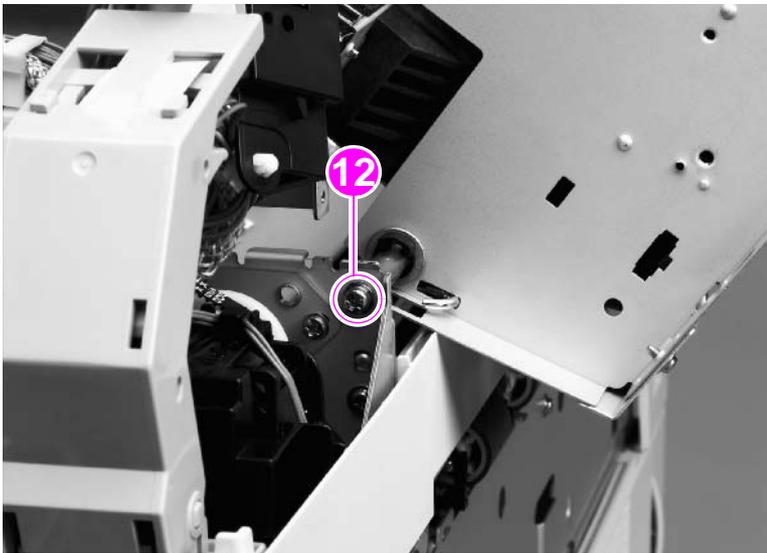


Figure 101. ADF optical unit (6 of 8)

15 Remove one screw from the shaft-retaining plate (callout 13).

CAUTION

Make sure the unit is supported before removing the shaft screws.

16 Remove one screw from the shaft and remove the shaft-retaining plate (callout 14).

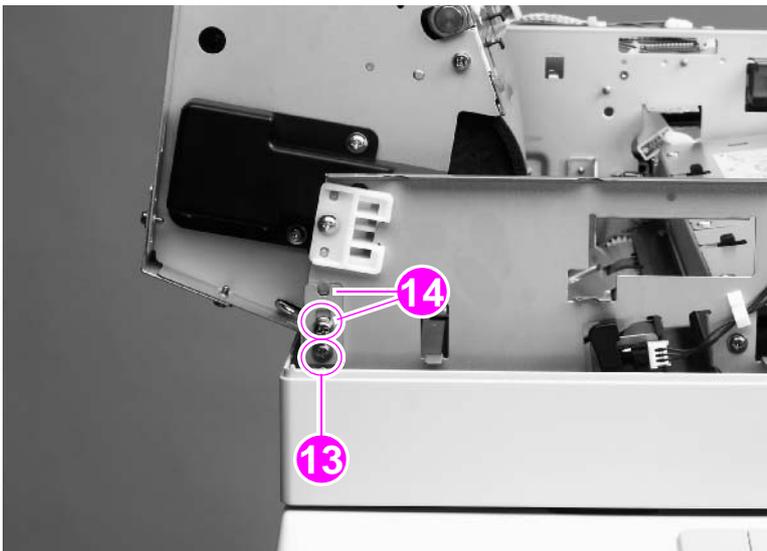


Figure 102. ADF optical unit (7 of 8)

CAUTION

To avoid damage to the optical unit filter (callout 15), maintain an adequate clearance so that the filter will not catch on other parts. A damaged or missing filter causes poor-quality scans.

Note

When removing the optical unit, be sure to hold the ADF down to prevent it from springing open.

17 Remove one screw (callout 16).

18 Slide the optical unit to the right to disengage the shaft (callout 17).

19 Tilt the unit up and slide it to the left to disengage the other end of the shaft, and remove the unit.

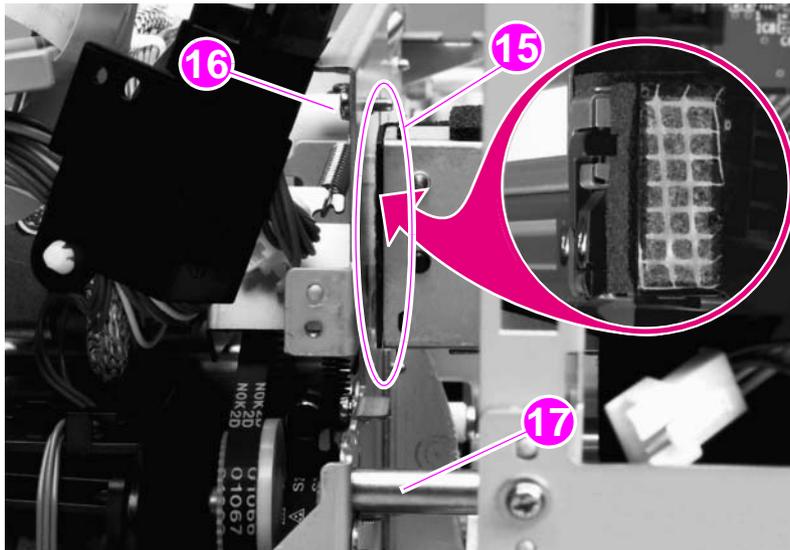


Figure 103. ADF optical unit (8 of 8)

To reinstall

The ribbon cable is equipped with a ferrite block that can easily come off of the cable. Make sure that the ferrite block remains reinstalled.

CAUTION

To avoid damage to the optical unit filter (callout 15), maintain an adequate clearance so that the filter will not catch on other parts. A damaged or missing filter causes poor-quality scans.

ADF scanning lamp

Note

The scanning lamp and the shading filter are a matched set and must be replaced together.

- 1 Remove the ADF optical unit. See page 125.
- 2 Carefully release two clips on the side of the ADF optical unit filter and slide the filter off (callout 1).

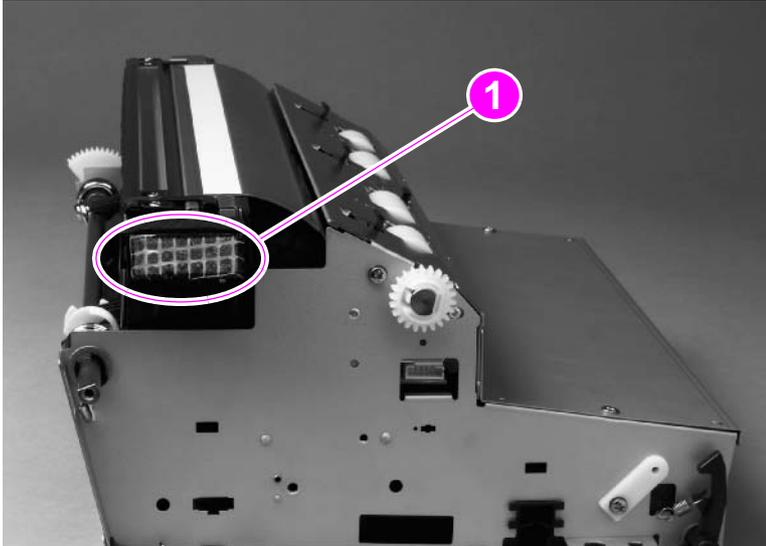


Figure 104. ADF scanning lamp (1 of 5)

- 3 Remove two flat-head screws (callout 2).

Note

Do not touch the glass or the white calibration strip.

- 4 Grasp the ends of the guide (callout 3), lift it up to disengage the lock tabs, and remove the guide.

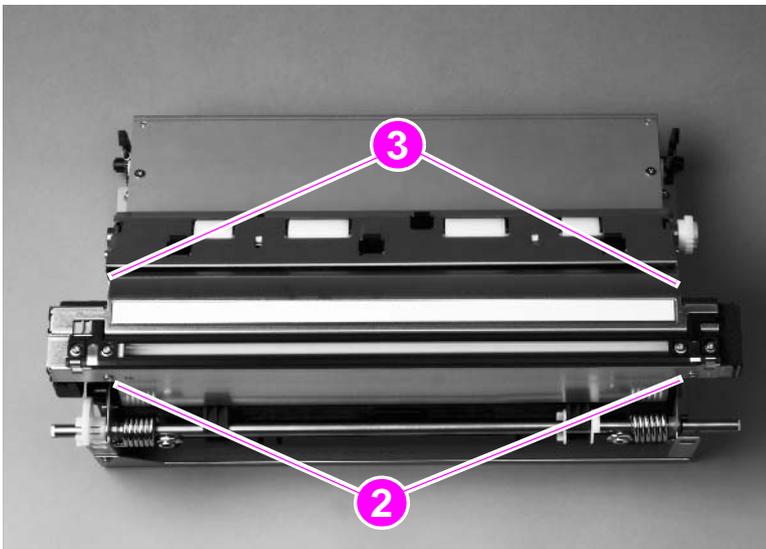


Figure 105. ADF scanning lamp (2 of 5)

- 5 Remove two screws (callout 4) and lift off the cable cover (callout 5).

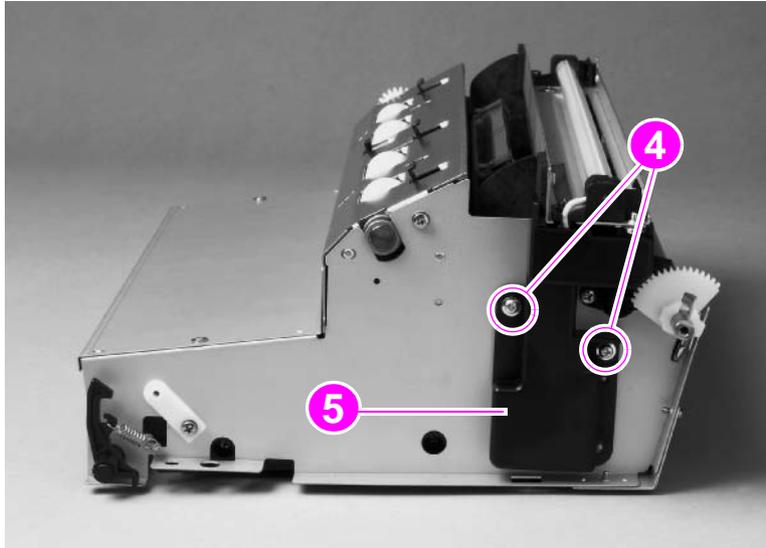


Figure 106. ADF scanning lamp (3 of 5)

- 6 Disconnect the connector (callout 6).

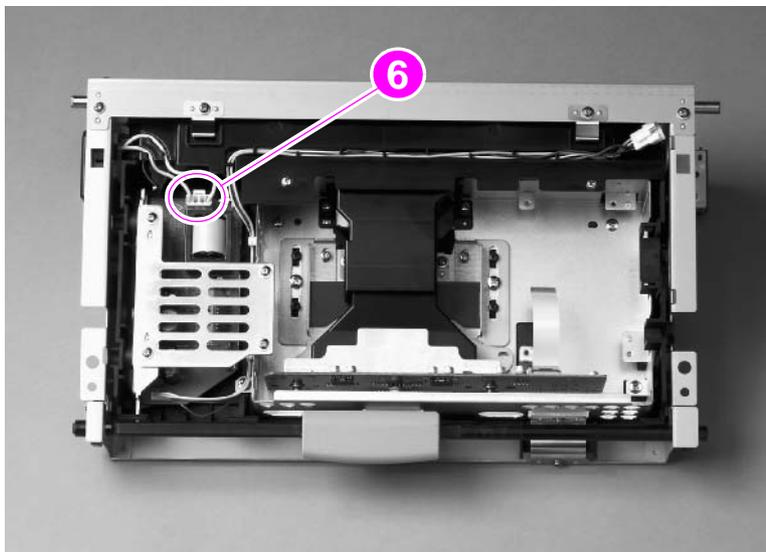


Figure 107. ADF scanning lamp (4 of 5)

7 Remove two screws (callout 7) and remove the scanning lamp (callout 8).

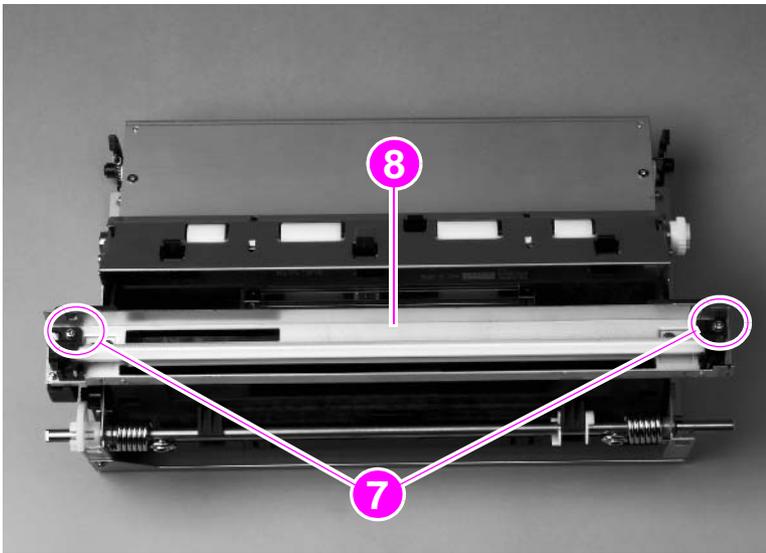


Figure 108. ADF scanning lamp (5 of 5)

To reinstall

Make sure the tabs are aligned and inserted before seating the lamp.

Note Avoid touching the new lamp while installing it.

ADF shading filter

Note

The shading filter and the scanning lamp are a matched set and must be replaced together.

- 1 Remove the ADF analog processor PCB. See page 155.
- 2 Remove two screws (callout 1) and lift off the front ADF lens cover (callout 2).

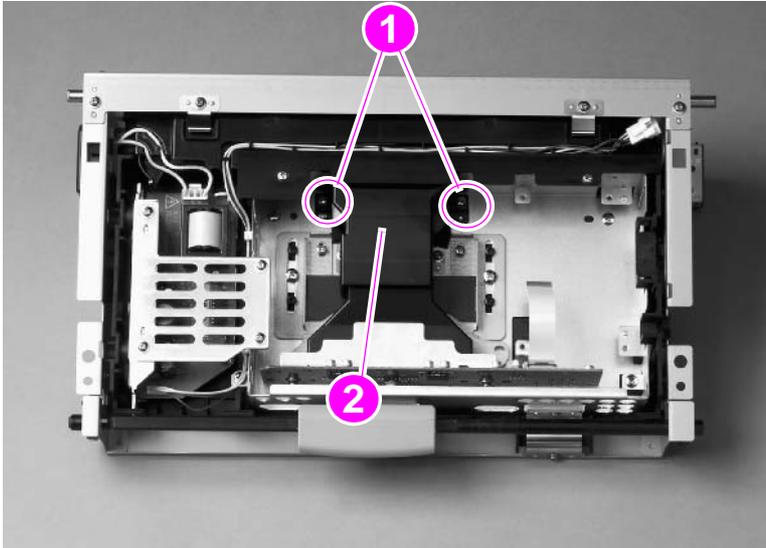


Figure 109. ADF shading filter (1 of 2)

- 3 Squeeze the sides of the back ADF lens cover to release four claws, and lift off the cover.
- 4 Remove one screw (callout 3) and lift off the ADF shading filter (callout 4).

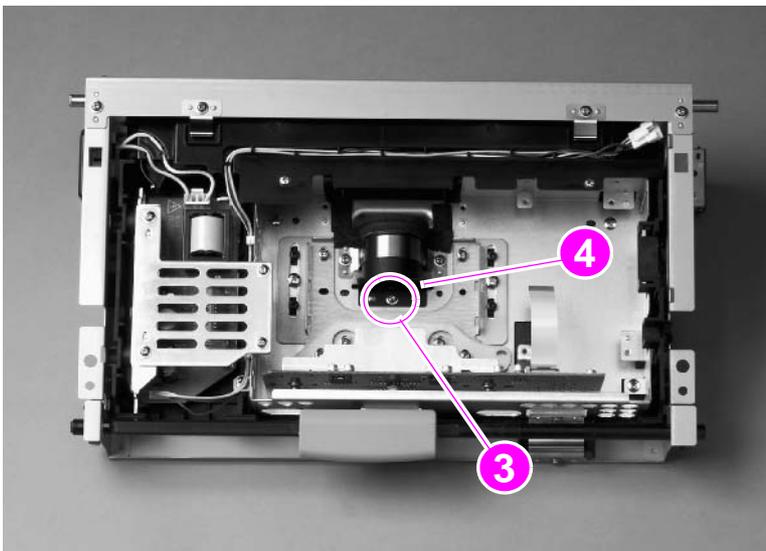


Figure 110. ADF shading filter (2 of 2)

Flatbed optical unit

CAUTION

The flatbed optical unit uses grease on certain parts for lubrication. If grease is smeared onto other parts, clean those parts in accordance with the established cleaning procedures. See “General cleaning” in chapter 4.

- 1 Remove the following components:
 - flatbed right cover—See page 114.
 - flatbed left cover—See page 115.
 - glass—See page 118.
- 2 Remove two screws (callout 1) and remove the flatbed-mount cover (callout 2).

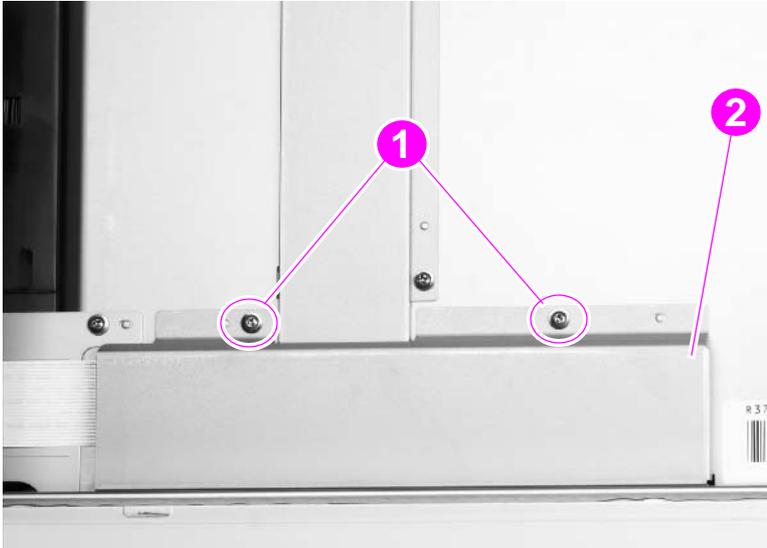


Figure 111. Flatbed optical unit (1 of 6)

- 3 Disconnect two ribbon cables (callout 3).

Note

One of the cables is a Zero Insertion Force (ZIF) cable, and the connector does not have a retaining clip.

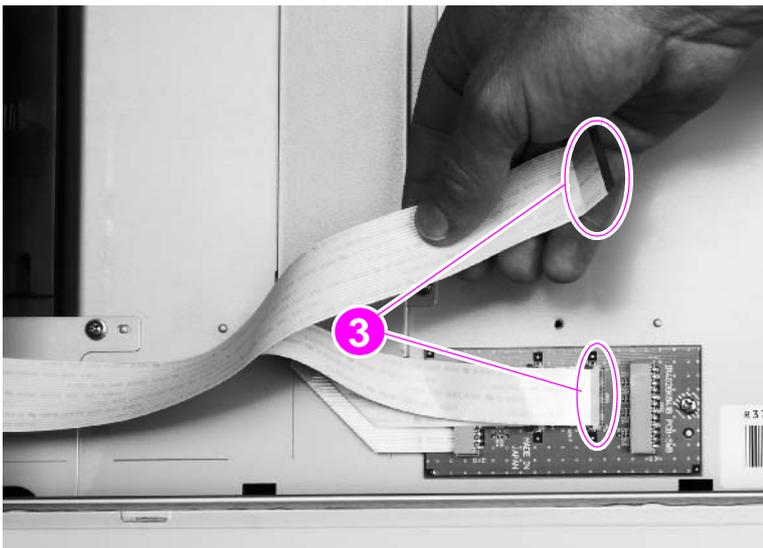


Figure 112. Flatbed optical unit (2 of 6)

CAUTION

The retaining clips on the two center connectors are fragile and can break easily.

- 4 Grasp the optical unit and slide it to the right to gain access to the belt-tension adjusting plate (callout 4).
- 5 Loosen one screw (callout 5).
- 6 Push the adjusting plate to the right to release pressure on the belt, and then remove the belt.

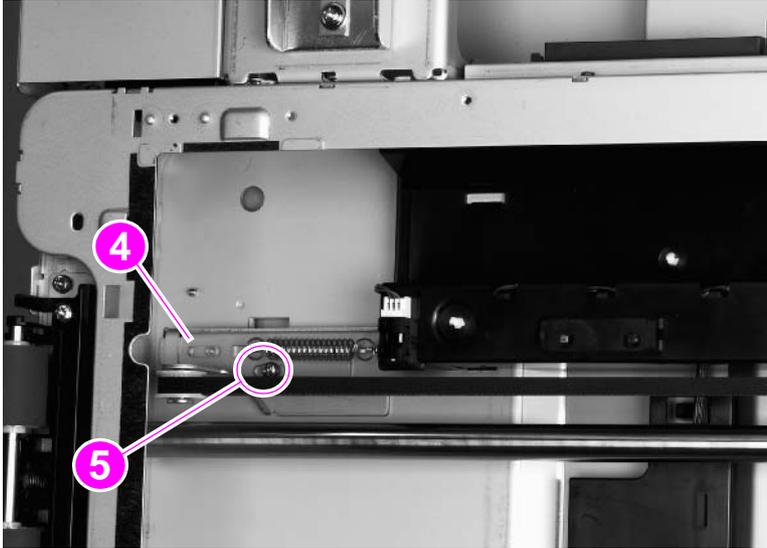


Figure 113. Flatbed optical unit (3 of 6)

- 7 Remove one screw (callout 6) from the left end of the shaft.

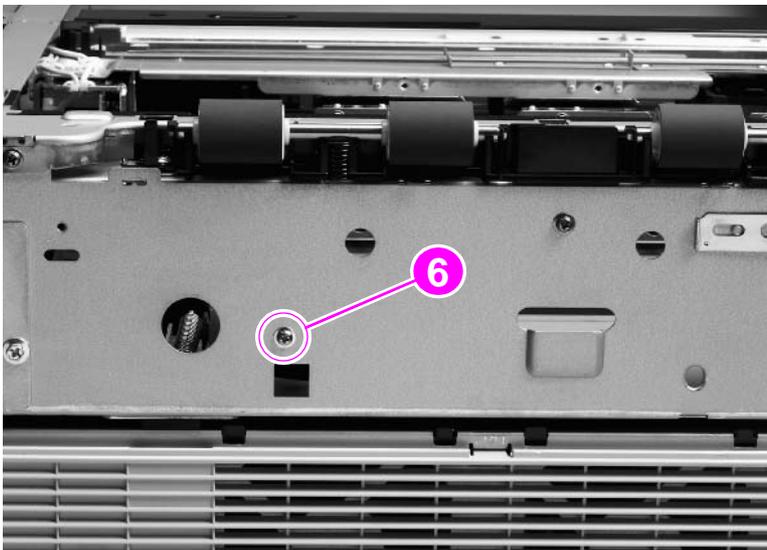


Figure 114. Flatbed optical unit (4 of 6)

- 8 Remove one screw and the shaft ground plate (callout 7) from the right side of the shaft.
- 9 Pull the shaft from the right side to remove it.

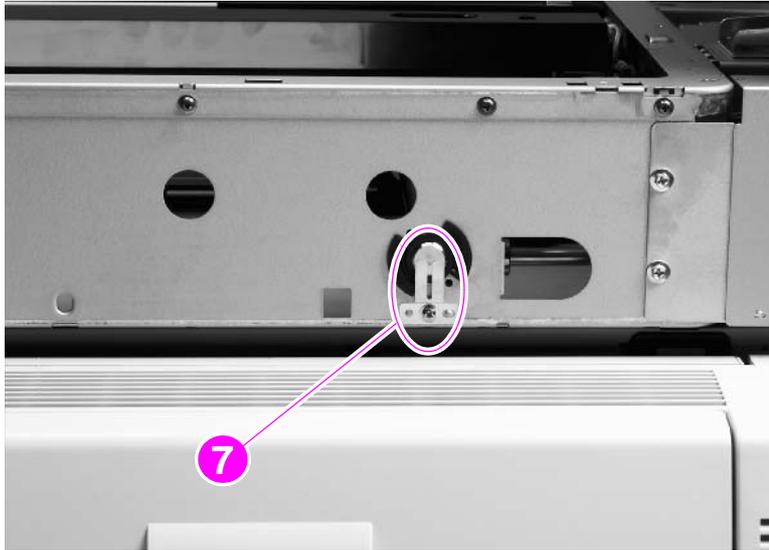


Figure 115. Flatbed optical unit (5 of 6)

CAUTION

Move the shaft slowly and support the optical unit to prevent scrapes on and wear to the optical unit and assemblies.

- 10 Slide the optical unit (callout 8) and turn it clockwise to gain clearance sufficient to lift it out.

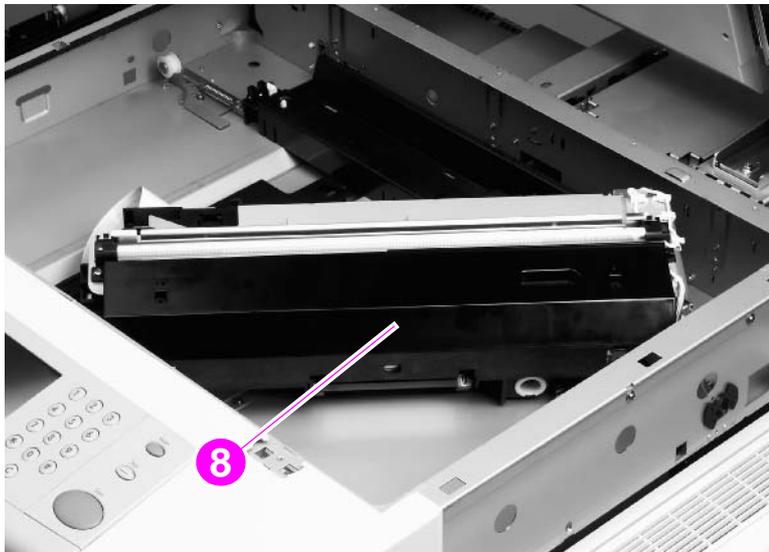


Figure 116. Flatbed optical unit (6 of 6)

To reinstall

Support the left side of the optical unit, insert the shaft, and be sure to maintain support until the left screw is installed. Verify that the keyed end of the shaft and the frame are aligned.

Flatbed scanning lamp

Note

The scanning lamp and the shading filter are a matched set and must be replaced together.

- 1 Remove the flatbed optical unit. See page 134.
- 2 Grasp the ends of the mirror cover (callout 1) and lift to remove it.

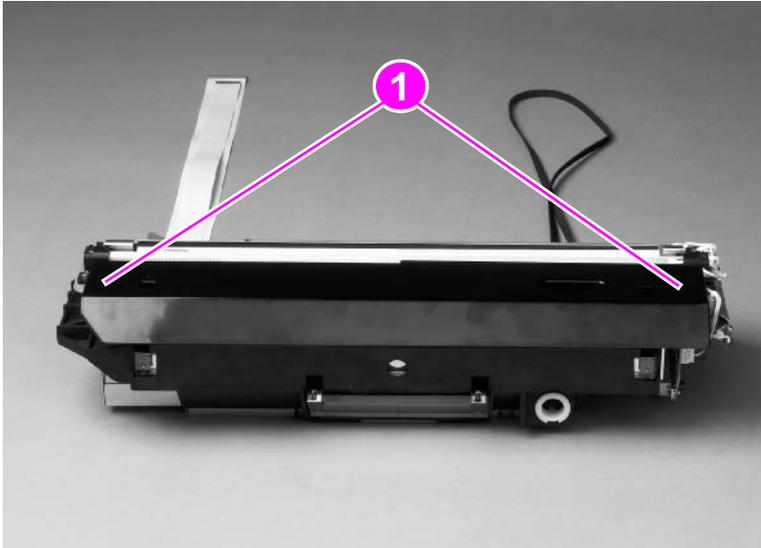


Figure 117. Flatbed scanning lamp (1 of 3)

- 3 Disconnect one connector (callout 2).

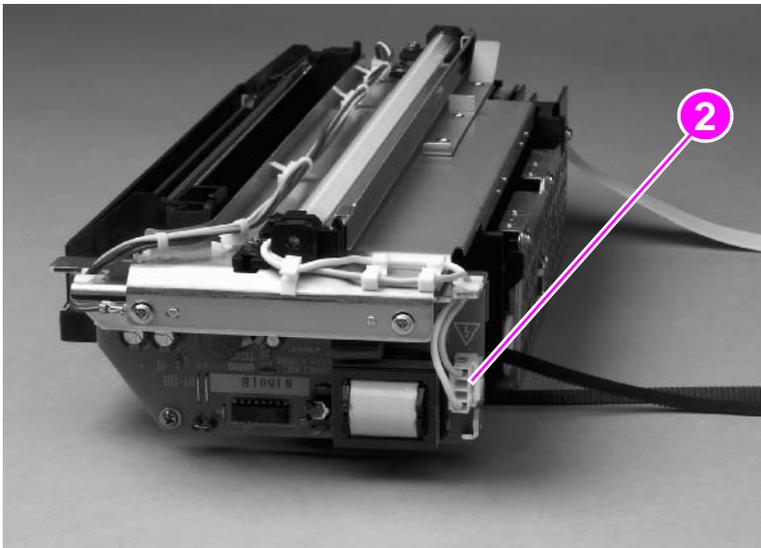


Figure 118. Flatbed scanning lamp (2 of 3)

- 4 Remove two screws (callout 3) and lift out the flatbed scanning lamp.

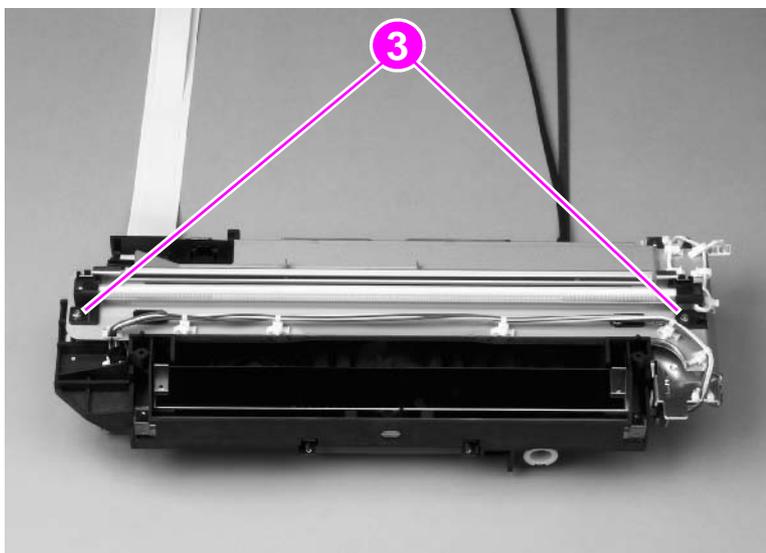


Figure 119. Flatbed scanning lamp (3 of 3)

To reinstall

Make sure the mirror cover is not installed backwards. The scanning mirror is completely covered when the mirror cover is installed correctly.

Flatbed shading filter

Note

The shading filter and the scanning lamp are a matched set and must be replaced together.

- 1 Remove the flatbed optical unit. See page 134.
- 2 Remove seven screws (callout 1) and remove the RFI cover (callout 2).

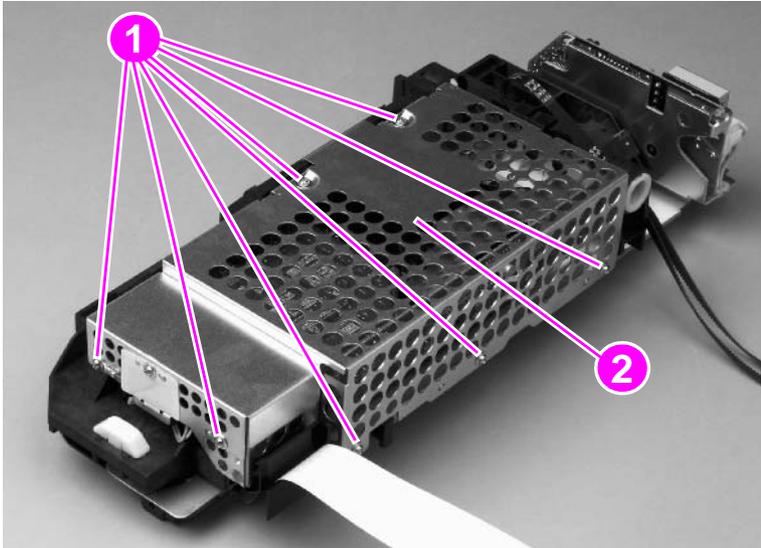


Figure 120. Flatbed shading filter (1 of 3)

- 3 Squeeze the sides of the lens cover (callout 3) to disengage four claws, and remove the cover.

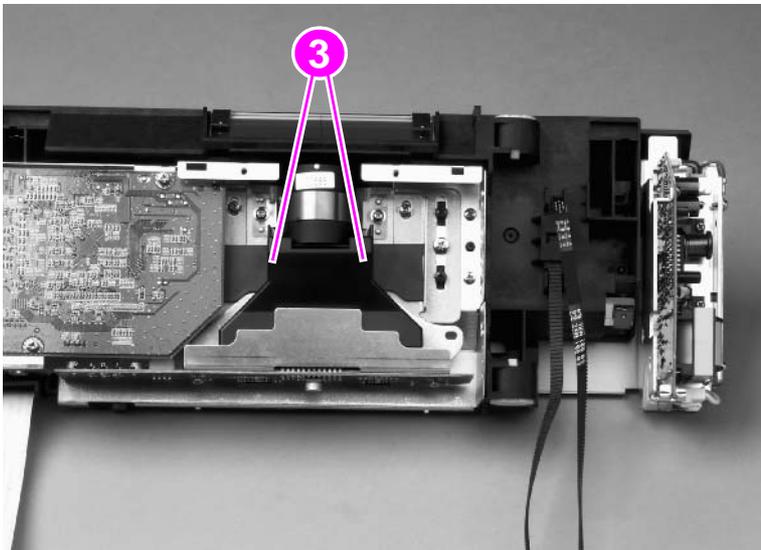


Figure 121. Flatbed shading filter (2 of 3)

- 4 Remove one screw (callout 4) and remove the filter (callout 5).

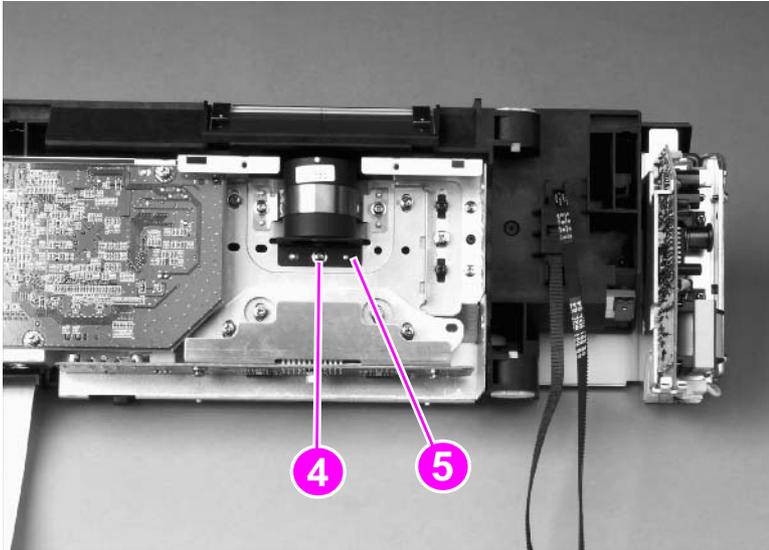


Figure 122. Flatbed shading filter (3 of 3)

To reinstall

Make sure the lens cover is inserted under the sheet-metal frame. See figure 121.

Switch and solenoids

ADF feeder cover detection switch

- 1 Open the ADF feeder.
- 2 Remove the ADF back cover. See page 162.
- 3 Remove one screw (callout 1) and disconnect two connectors (callout 2).
- 4 Remove the ADF feeder cover detection switch and mount.
- 5 Remove the switch from the mount.

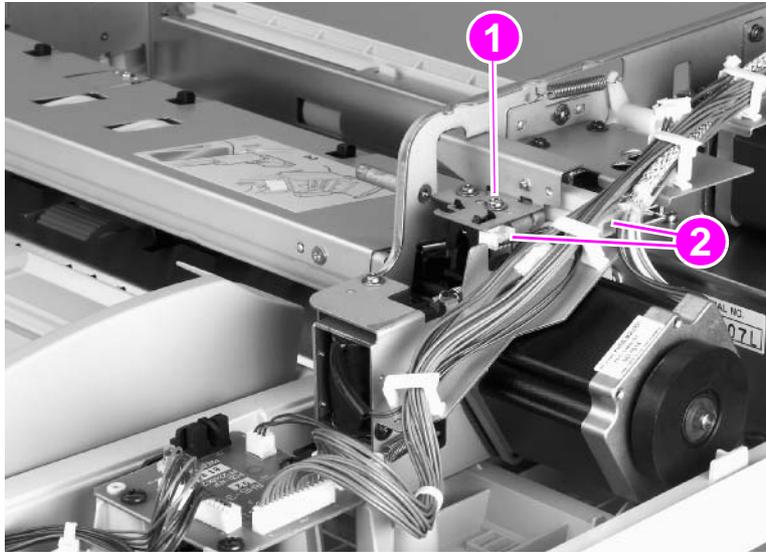


Figure 123. ADF feeder cover detection switch

Weight solenoid

- 1 Remove the ADF back cover. See page 107.

Note

Do not touch the retaining screw (callout 1) on the solenoid mounting plate.

Hint

The retaining screw is marked with blue paint.

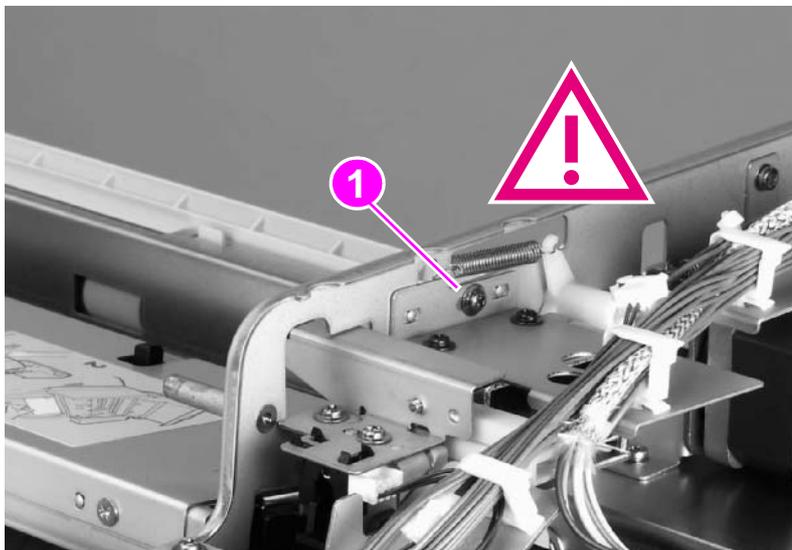


Figure 124. Weight solenoid (1 of 2)

- 2 Disconnect one connector (callout 2).
- 3 Remove one spring (callout 3).
- 4 Remove two screws (callout 4).
- 5 Remove the weight solenoid.

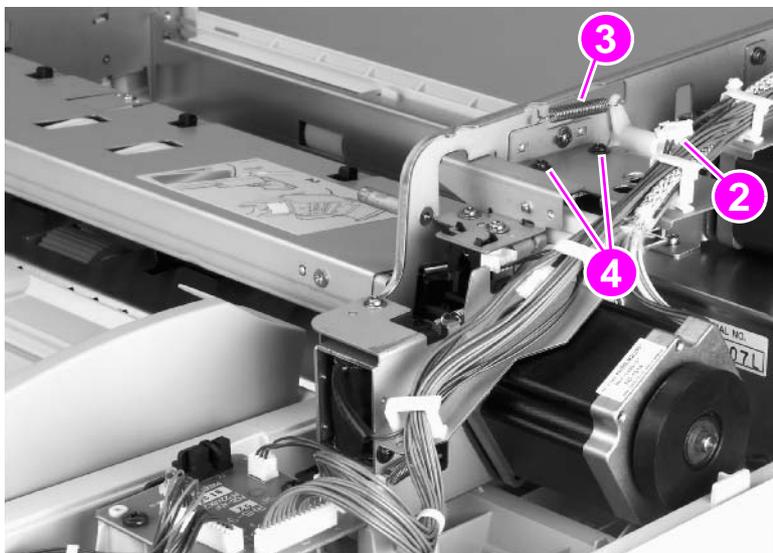


Figure 125. Weight solenoid (2 of 2)

Shutter solenoid

- 1 Remove the ADF back cover. See page 107.
- 2 Disconnect one connector (callout 1).
- 3 Remove one screw (callout 2).
- 4 Remove the shutter solenoid.

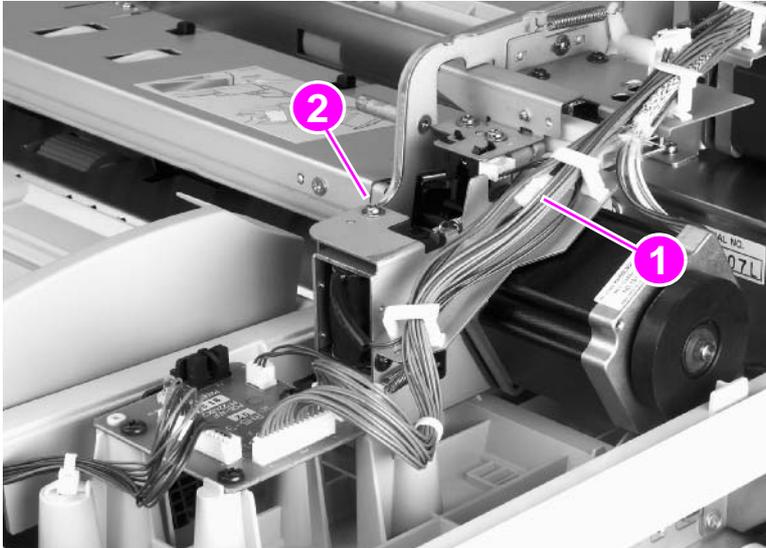


Figure 126. Shutter solenoid

Motors and fans

Pickup motor

- 1 Remove the ADF back cover. See page 107.
- 2 Loosen, but do not remove, three screws on the motor mount (callout 1).

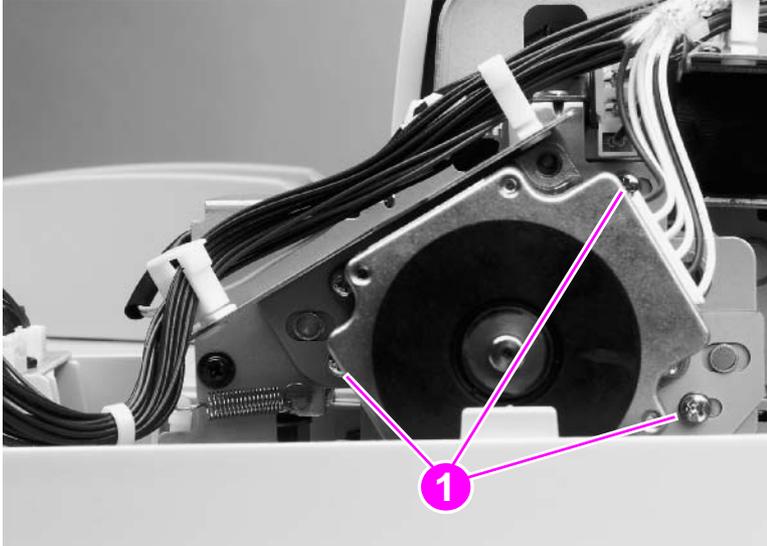


Figure 127. Pickup motor (1 of 2)

- 3 Slide the motor toward the right to loosen belt tension.
- 4 Retighten the three screws on the motor mount.
- 5 Disconnect one connector (callout 2) and remove two screws (callout 3).
- 6 Remove the pickup motor.

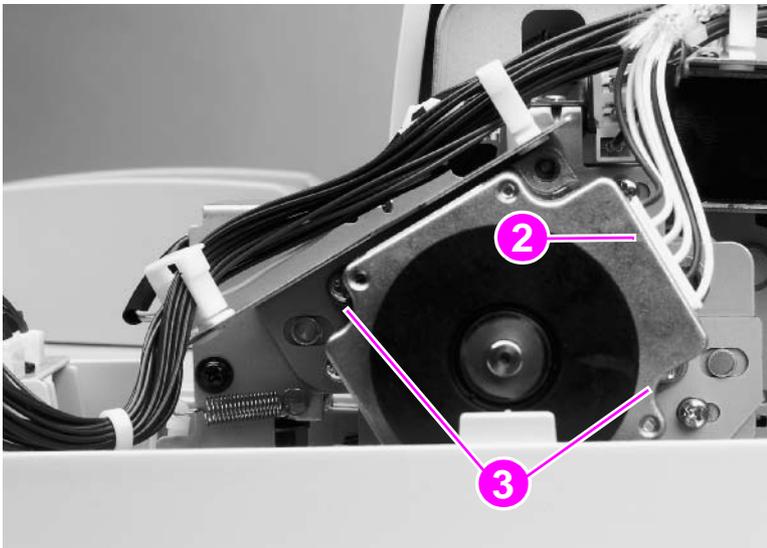


Figure 128. Pickup motor (2 of 2)

To reinstall

Loosen the three screws on the motor mount, and allow the spring to adjust the position of the motor before retightening the screws.

Note

Make sure the belt is captured on the motor gear.

Delivery motor

- 1 Remove the ADF back cover. See page 107.
- 2 Use needlenose pliers to remove one spring (callout 1).
- 3 Remove one screw (callout 2) and one cable clamp.

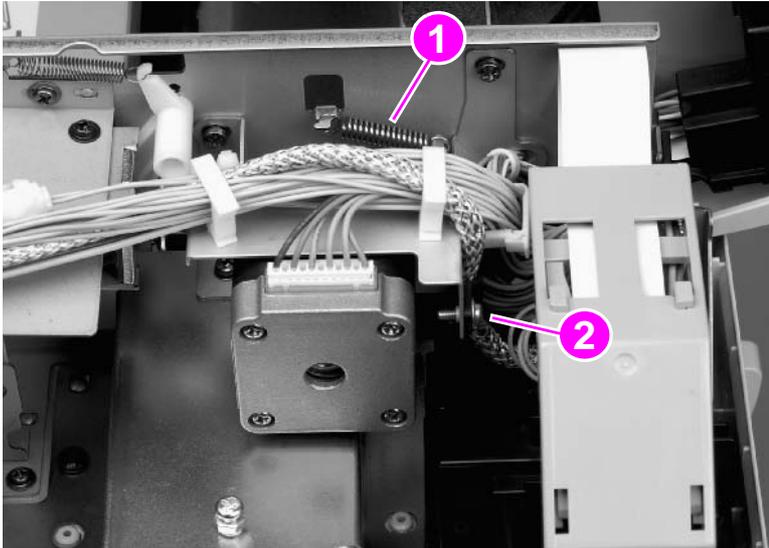


Figure 129. Delivery motor (1 of 2)

- 4 Remove three cable ties (callout 3) and disconnect one connector (callout 4).
- 5 Remove three screws (callout 5).

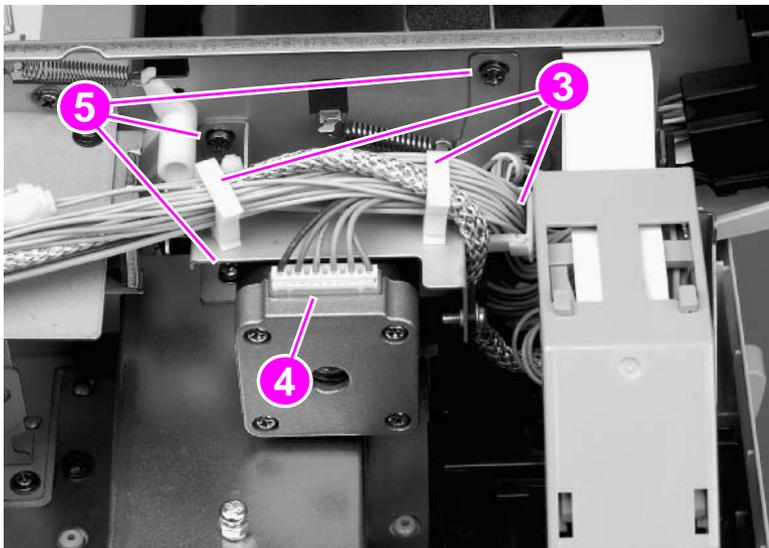


Figure 130. Delivery motor (2 of 2)

- 6 Slide the delivery motor to the right.
- 7 Remove the delivery motor with the motor mount.
- 8 Remove two screws from the back of the mount.
- 9 Remove the delivery motor from the motor mount.

To reinstall

Install the three motor mount screws but do not tighten them. Reinstall the tension spring, and allow the spring to position the motor and mount before tightening the mount screws.

Note

Make sure the belt is captured on the motor gear.

Flatbed motor

- 1 Remove the flatbed back cover. See page 113.
- 2 Remove the flatbed right cover. See page 114.
- 3 Remove three screws (callout 1) and one reinforcement plate (callout 2).

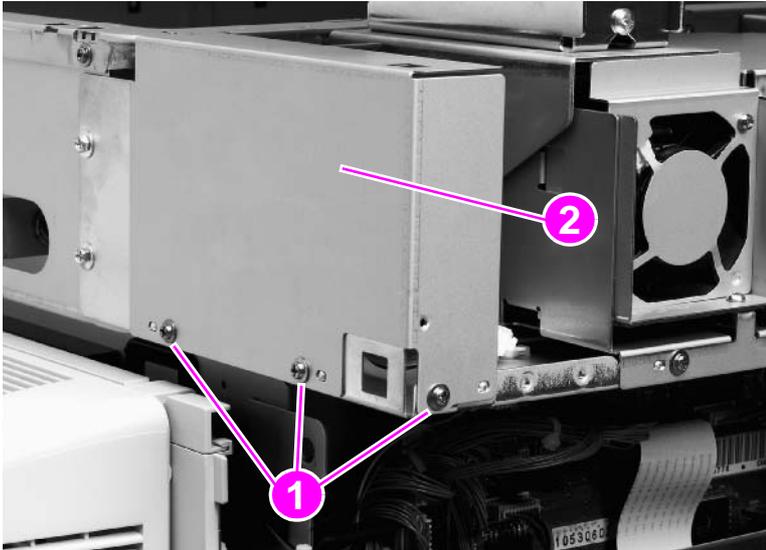


Figure 131. Flatbed motor (1 of 3)

- 4 Loosen two screws (callout 3).

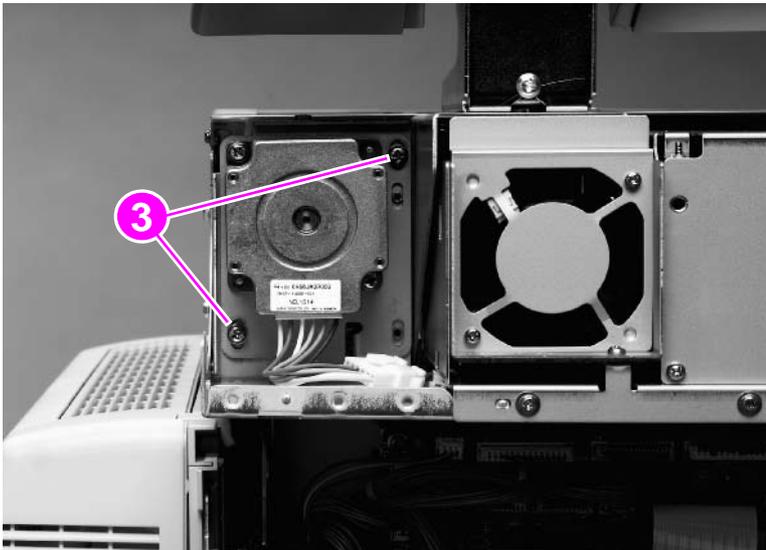


Figure 132. Flatbed motor (2 of 3)

- 5 Slide the motor down to loosen tension on the belt.
- 6 Retighten the two screws.
- 7 Remove two screws (callout 4).
- 8 Remove the flatbed motor.

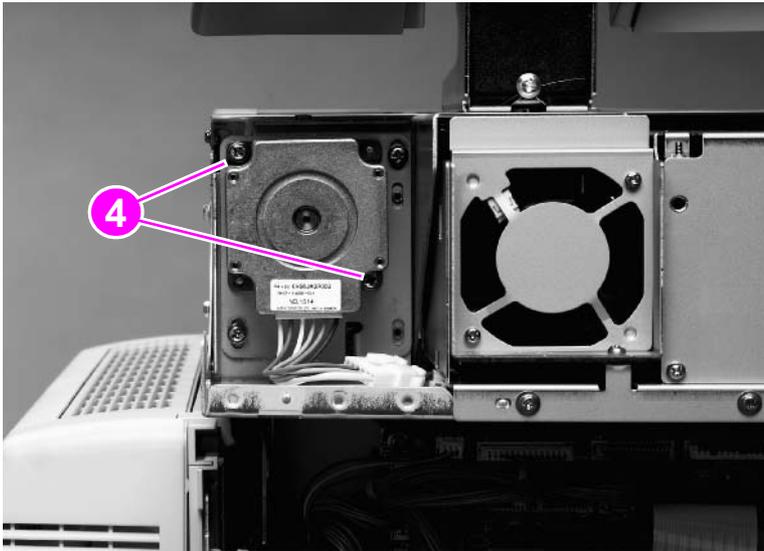


Figure 133. Flatbed motor (3 of 3)

To reinstall

Loosen two screws on the motor mount, and allow the spring to adjust the position of the motor before retightening the screws.

Note Make sure the belt is captured on the motor gear.

Power supply assembly

- 1 Remove the flatbed back cover. See page 113.
- 2 Disconnect the power supply connector (callout 1).



Figure 134. Power supply assembly (1 of 6)

- 3 Remove five screws (callout 2) and remove the RFI shield plate (callout 3).

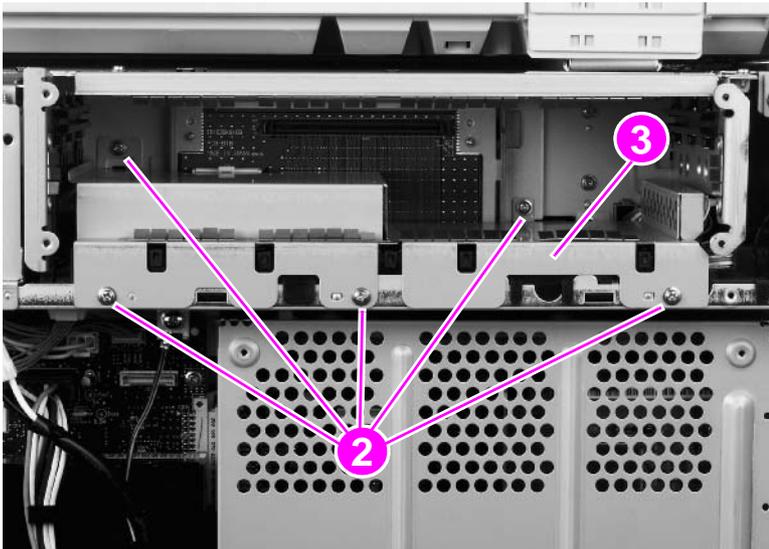


Figure 135. Power supply assembly (2 of 6)

4 Remove two screws (callout 4) and remove the upper rail (callout 5).

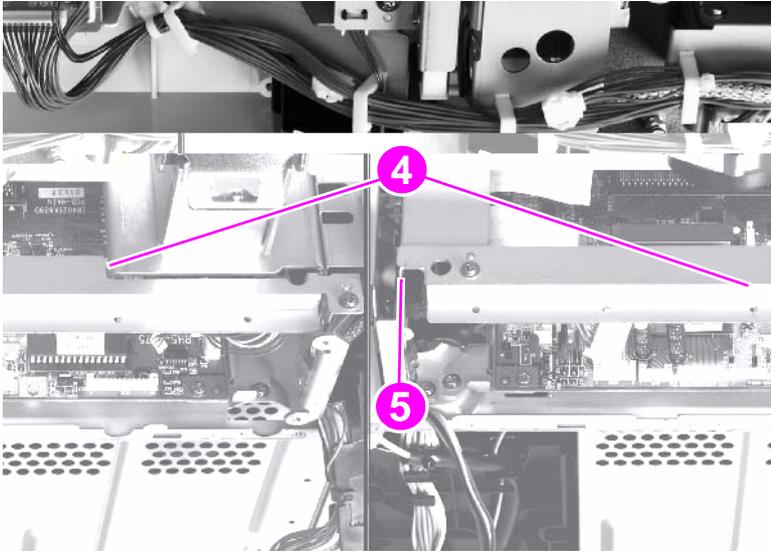


Figure 136. Power supply assembly (3 of 6)

5 Unlock the connector guide claw (callout 6).

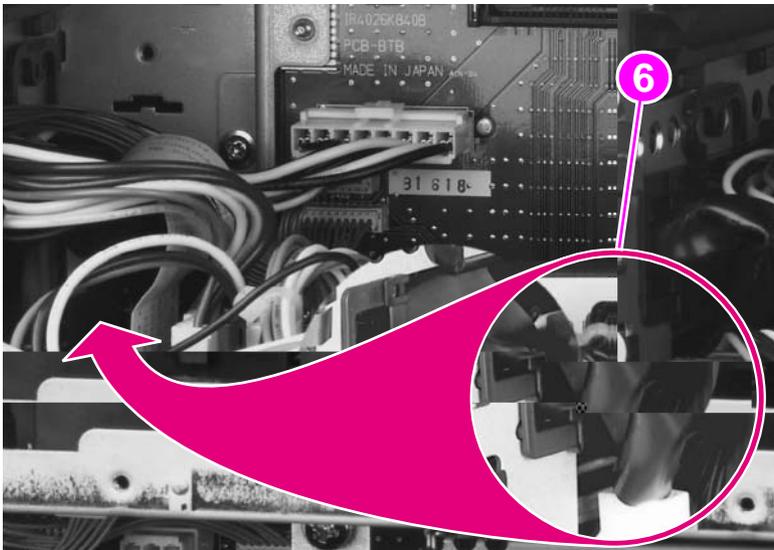


Figure 137. Power supply assembly (4 of 6)

- 6 Remove two screws (callout 7) and remove the left shield plate (callout 8).

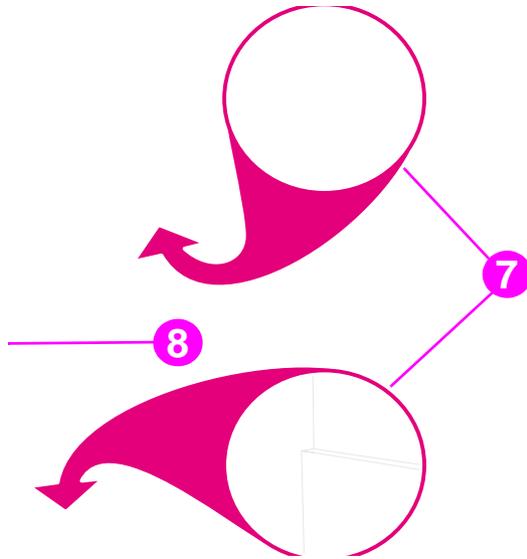


Figure 138. Power supply assembly (5 of 6)

- 7 Remove two screws (callout 9).

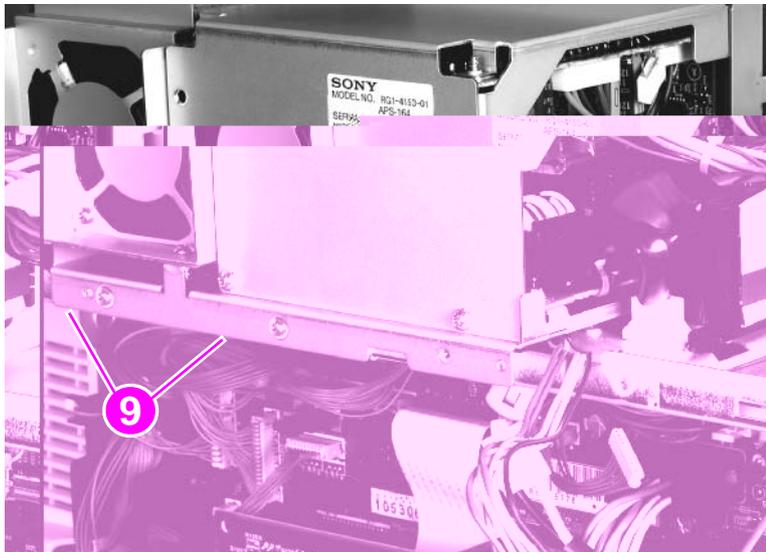


Figure 139. Power supply assembly (6 of 6)

- 8 Slide the power supply assembly out slightly.
- 9 Disconnect two connectors: one from the scanner controller board (SCB) and one from the intermediate PCB.
- 10 Thread the power supply connector up through the sheet metal.
- 11 Remove the power supply assembly.

To reinstall

Make sure not to pinch any cables when reinstalling the left shield plate. When reinstalling the power supply assembly, replace the two screws in the left and center holes.

ADF fan assembly

Note

The ADF fan is an intake fan.

- 1 Remove the ADF back cover. See page 107.
- 2 Remove two screws (callout 1) in the plastic fan housing.
- 3 Lift out the ADF fan and housing.

Note

You might have to lift up the cable guide assembly (callout 2) to remove the ADF fan.

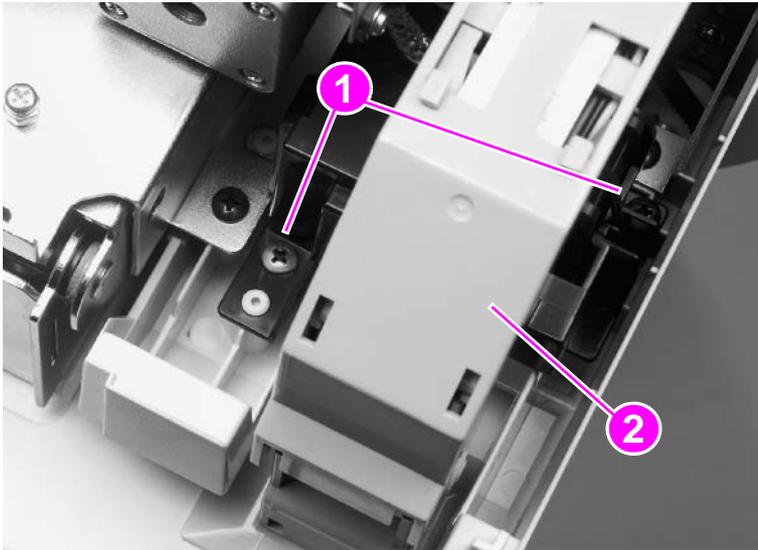


Figure 140. ADF fan

- 4 Disconnect one connector from the ADF fan.
- 5 Remove the ADF fan from the housing.

To reinstall

When reinstalling the ADF fan, make sure the direction of the airflow arrow marked on the fan matches the airflow arrow on the housing.

Flatbed fan assembly

Note

The flatbed fan is an intake fan.

- 1 Remove the flatbed left cover. See page 115.
- 2 Remove two screws (callout 1).

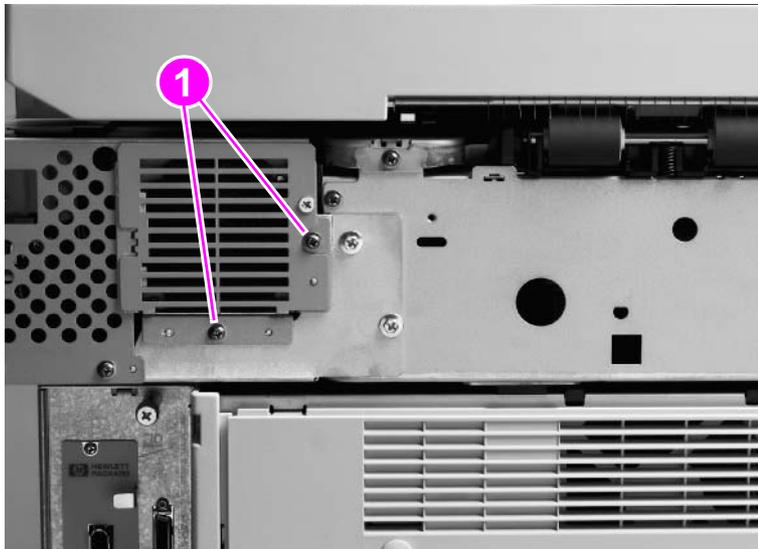


Figure 141. Flatbed fan assembly

- 3 Remove the flatbed fan assembly.
- 4 Disconnect one connector.

PCB assemblies

ADF analog processor PCB



- 1 Remove the ADF optical unit. See page 125.
- 2 Disconnect one ribbon cable (callout 1).
- 3 Remove four mount screws (callout 2).
- 4 Lift the ADF analog processor PCB to remove it.

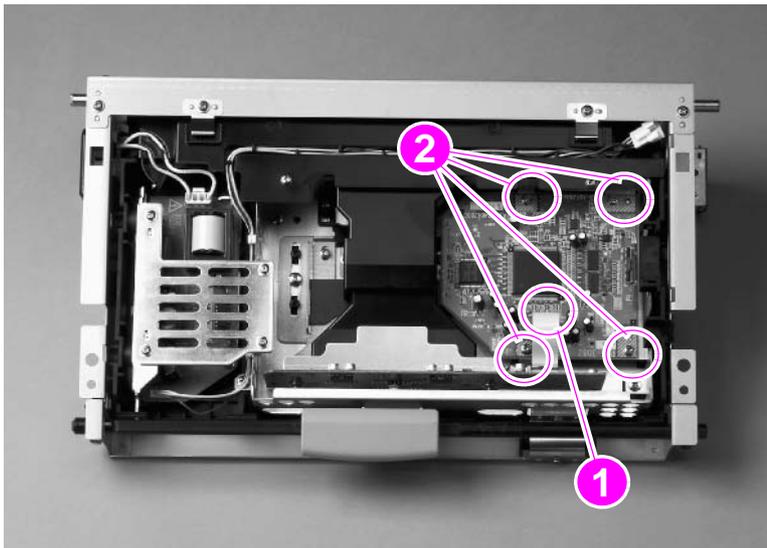


Figure 142. ADF analog processor PCB

To reinstall

Make sure that the mount pins are aligned correctly before securing the PCB with the mount screws.

ADF inverter PCB

- 1 Remove the ADF optical unit. See page 125.
- 2 Remove four screws (callout 1) and remove the inverter retaining plate (callout 2).

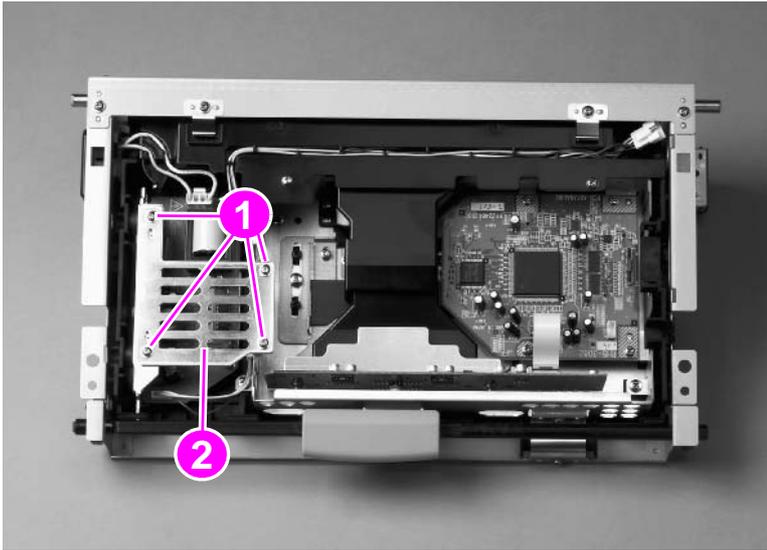


Figure 143. ADF inverter PCB (1 of 2)

- 3 Disconnect two connectors (callout 3).
- 4 Remove three screws (callout 4).
- 5 Slide the ADF inverter PCB assembly (callout 5) up and lift to remove it.

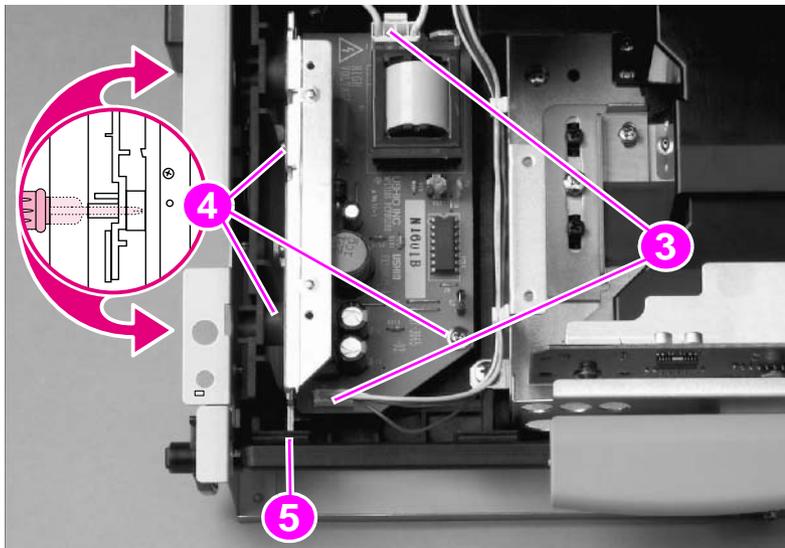


Figure 144. ADF inverter PCB (2 of 2)

ADF intermediate PCB

- 1 Remove the ADF back cover. See page 107.
- 2 Disconnect four connectors (callout 1) and remove three screws (callout 2).
- 3 Remove the ADF intermediate PCB.

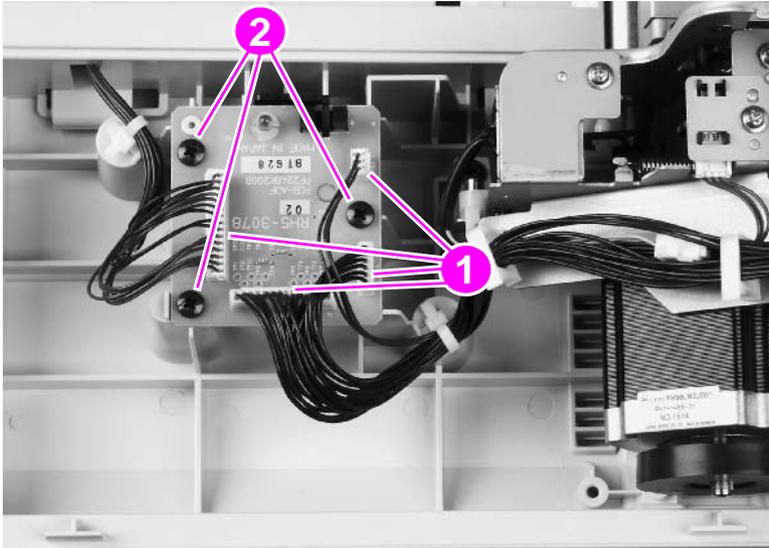


Figure 145. ADF intermediate PCB

ADF width detection sensor assembly

- 1 Remove the white board. See page 110.
- 2 Remove two screws (callout 1).
- 3 Remove the sheet metal plate while holding the plastic assembly in place.
- 4 Replace the two screws.
- 5 Remove two screws (callout 2).
- 6 Remove one connector (callout 3).
- 7 Remove the ADF width detection sensor assembly.

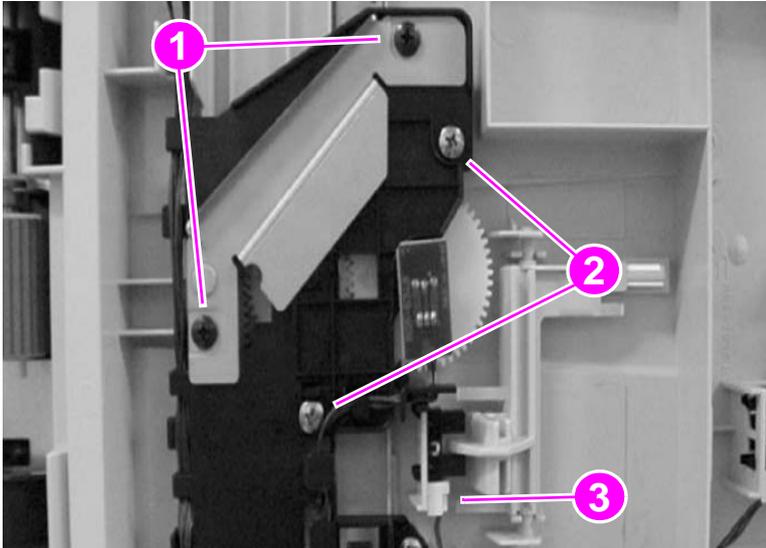


Figure 146. ADF width detection sensor assembly

To reinstall

Make sure you replace the sheet metal plate.

Make sure to correctly align the arrows on the three gears. When the ADF width guides are extended to the maximum width, the arrow of each gear should be pointing to the left. If the gears are not properly aligned, they will not report the correct width values.

Note

By not removing the larger, plastic assembly, you will not have to reinstall all three gears. If you accidentally remove the larger assembly, make sure you realign all three gears.

Flatbed inverter PCB

- 1 Remove the flatbed optical unit. See page 134.
- 2 Grasp the ends of the mirror cover (callout 1) and lift to remove it.

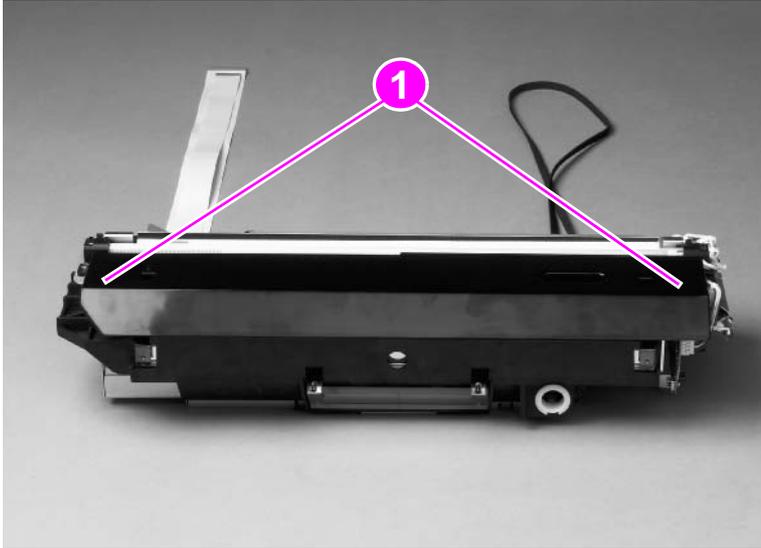
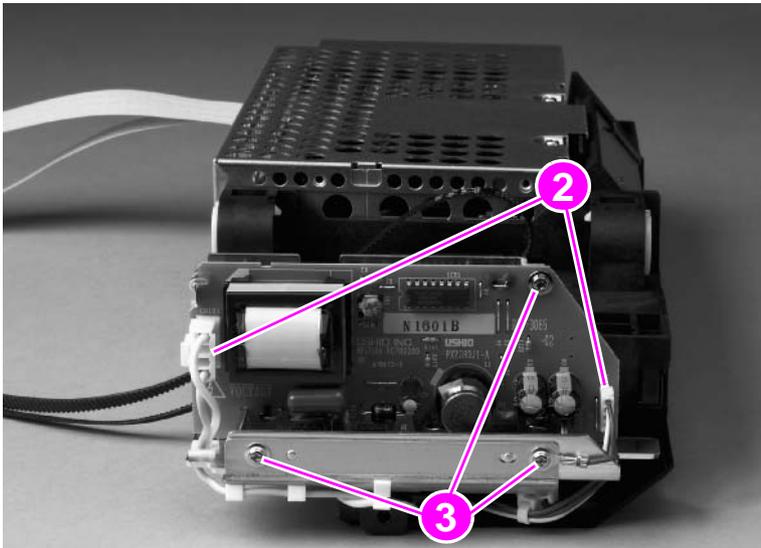


Figure 147. Flatbed inverter PCB (1 of 2)

- 3 Disconnect two connectors (callout 2).
- 4 Remove three screws (callout 3) and remove the flatbed inverter PCB assembly.



Flatbed inverter PCB (2 of 2)

Flatbed intermediate PCB

- 1 Remove the following components:
 - flatbed right cover—See page 114.
 - flatbed left cover—See page 115.
 - glass—See page 118.
- 2 Remove two screws (callout 1) and remove the flatbed-mount cover (callout 2).

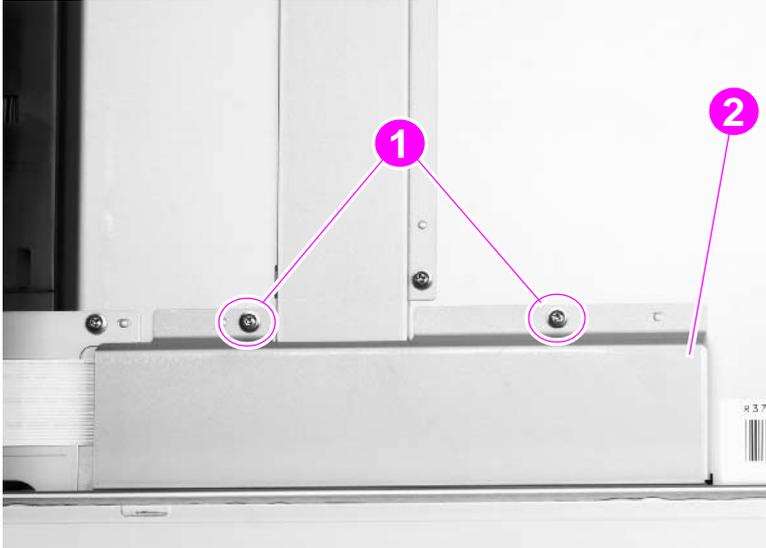


Figure 148. Flatbed intermediate PCB (1 of 2)

- 3 Disconnect four ribbon cables.

Note

Two of the cables are ZIF cables, and the connectors do not have retaining clips.

CAUTION

The retaining clips on the two center connectors are fragile and can break easily.

- 4 Remove one screw (callout 3).

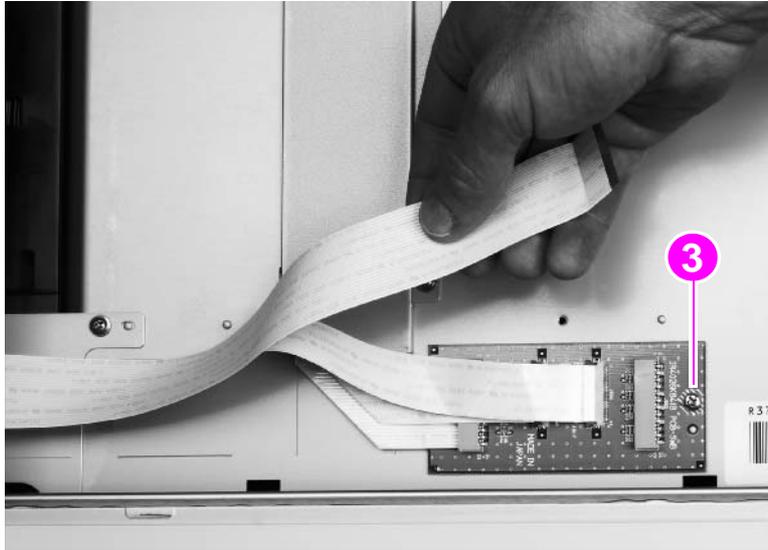


Figure 149. Flatbed intermediate PCB (2 of 2)

- 5 Remove the flatbed intermediate PCB.

Scanner controller board

- 1 Remove the copy processor board. See page 111.
- 2 Remove the flatbed back cover. See page 113.
- 3 Remove five screws and remove the RFI shield plate. See page 150.
- 4 Disconnect 11 connectors and three ribbon cables.
- 5 Release two tabs (callout 1) and remove one cable guide (callout 2).

Hint

It is not necessary to remove the cables from the cable guide.

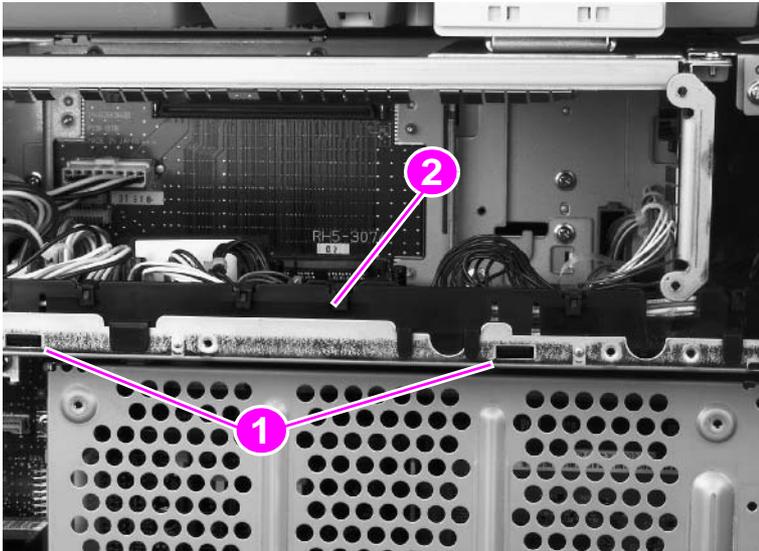


Figure 150. Scanner controller board (1 of 4)

- 6 Remove two screws (callout 3) and the upper rail (callout 4).

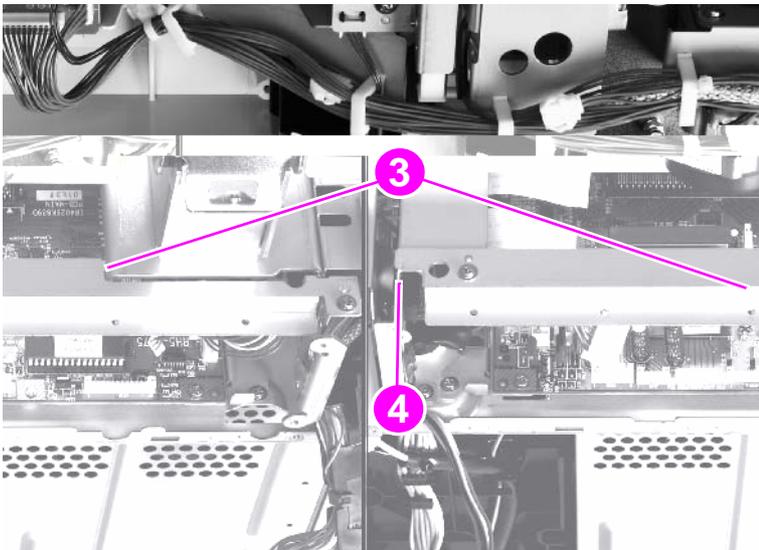


Figure 151. Scanner controller board (2 of 4)

Note

Remove the two screws in the sheet metal. Do not remove the screws in the SCB.

- 7 Remove two screws (callout 5).

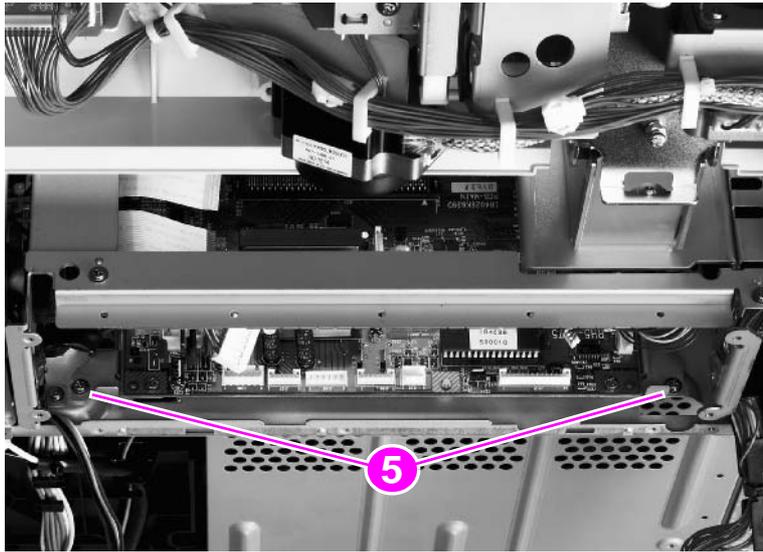


Figure 152. Scanner controller board (3 of 4)

- 8 Slide the SCB toward you to remove it.
- 9 Remove four screws (callout 8) and remove the SCB from the mounting brackets.

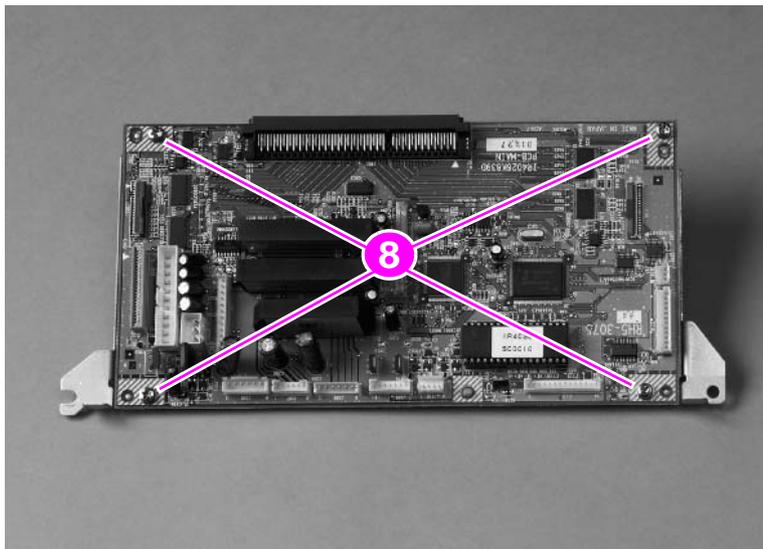


Figure 153. Scanner controller board (4 of 4)

Intermediate PCB assembly

- 1 Remove the scanner controller PCB. See page 162.
- 2 Remove one screw (callout 1) and disconnect three connectors (callout 2).
- 3 Remove the intermediate PCB assembly.

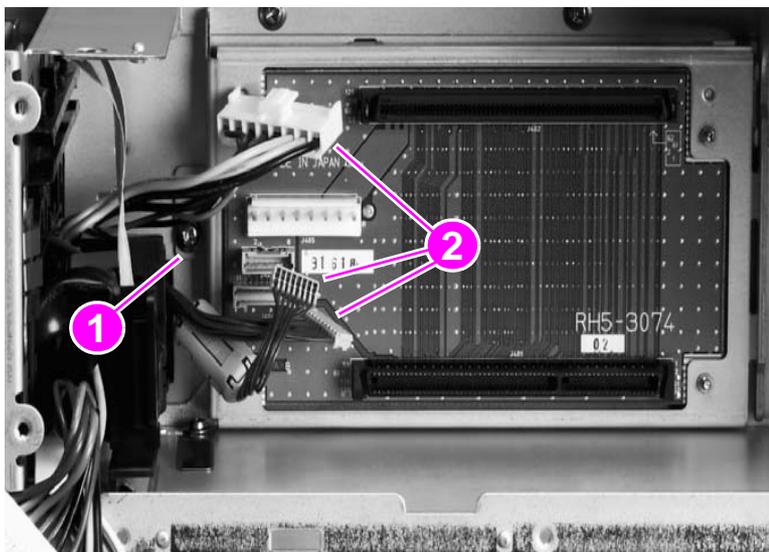


Figure 154. Intermediate PCB assembly

Power supply assembly

- 1 Remove the flatbed back cover. See page 113.
- 2 Disconnect the power supply connector (callout 1).

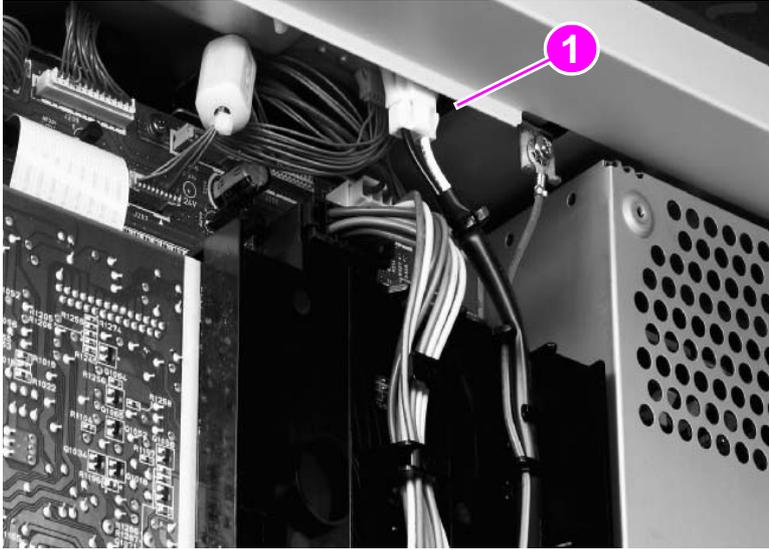


Figure 155. Power supply assembly (1 of 6)

- 3 Remove five screws (callout 2) and remove the RFI shield plate (callout 3).

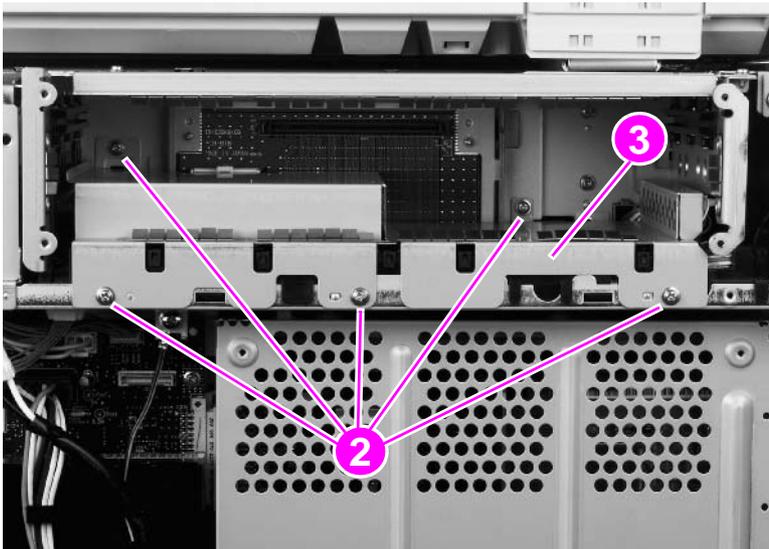


Figure 156. Power supply assembly (2 of 6)

- 4 Remove two screws (callout 4) and remove the upper rail (callout 5).

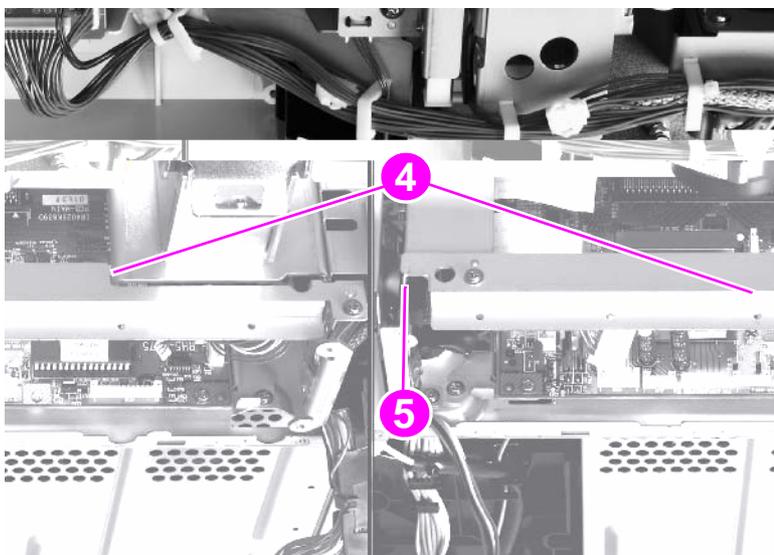


Figure 157. Power supply assembly (3 of 6)

- 5 Unlock the connector guide claw (callout 6).

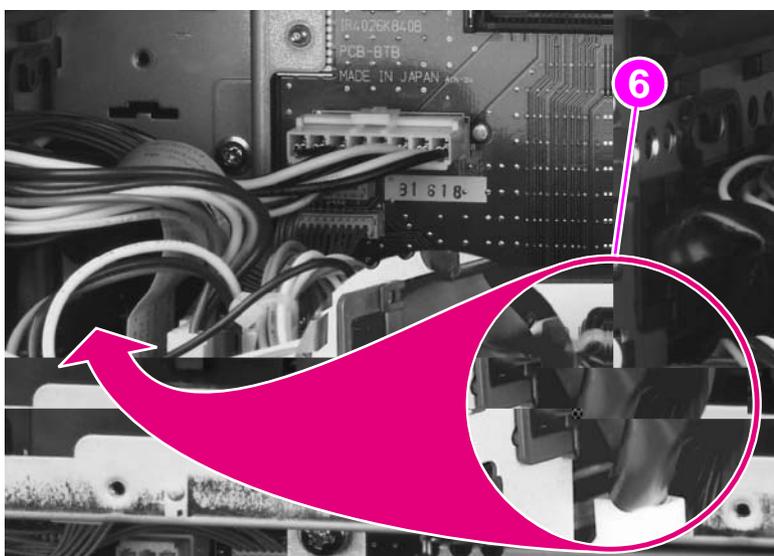


Figure 158. Power supply assembly (4 of 6)

- 6 Remove two screws (callout 7) and remove the left shield plate (callout 8).

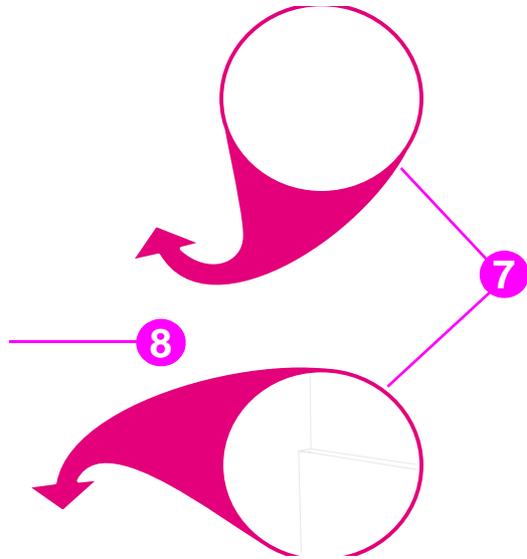


Figure 159. Power supply assembly (5 of 6)

- 7 Remove two screws (callout 9).

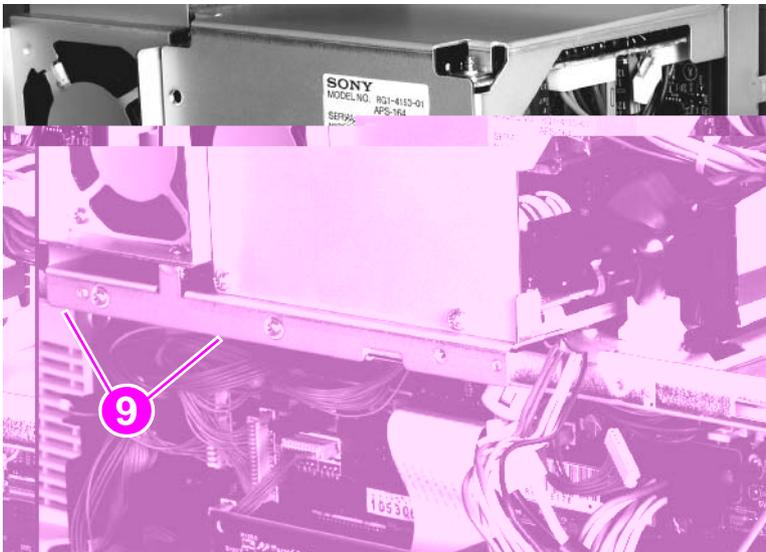


Figure 160. Power supply assembly (6 of 6)

- 8 Slide the power supply assembly out slightly.
- 9 Disconnect two connectors: one from the SCB and one from the intermediate PCB.
- 10 Thread the power supply connector up through the sheet metal.
- 11 Remove the power supply assembly.

To reinstall

Make sure not to pinch any cables when reinstalling the left shield plate. When reinstalling the power supply assembly, the two screws go in the left and center holes.

Rollers and belts

Pickup roller (D-roller)

- 1 Remove the white board. See page 110.
- 2 Squeeze the tab (callout 1) while sliding the pickup roller (callout 2) down to remove it.

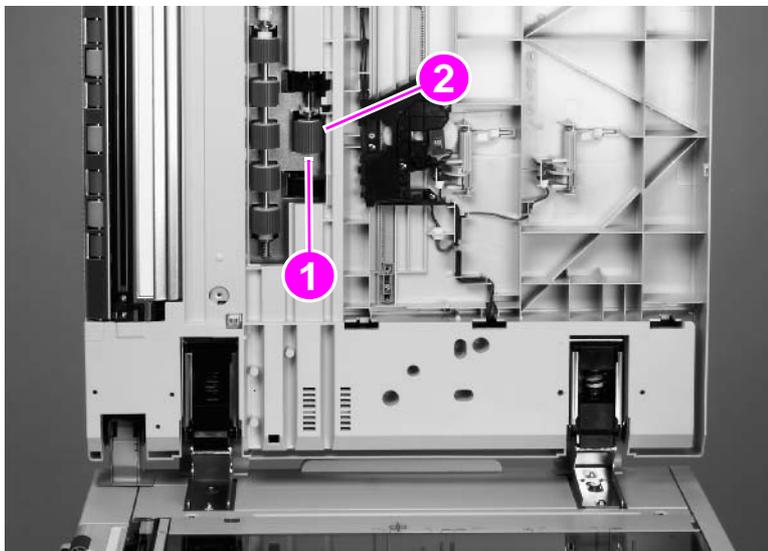


Figure 161. Pickup roller

Pickup roller assembly

- 1 Remove the pickup roller. See page 168.
- 2 Rotate the gear manually until the tab on the black circular sensor flag (callout 1) is pointing out.

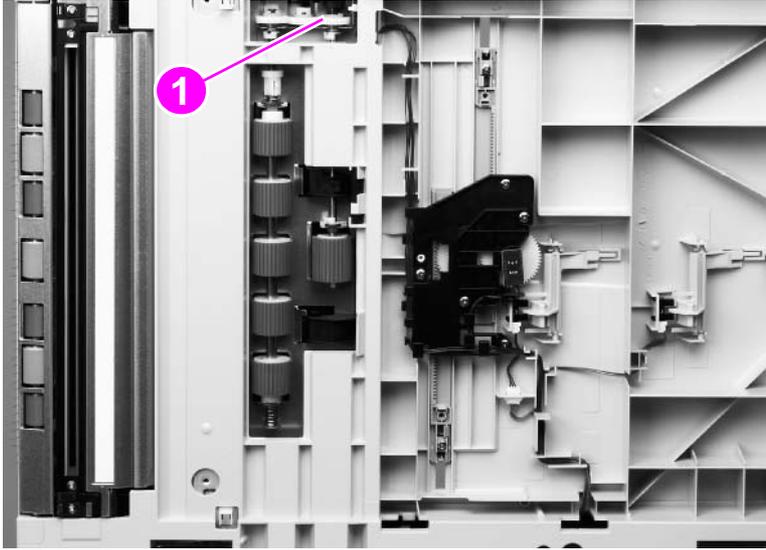


Figure 162. Pickup roller assembly

- 3 Remove the lower c-clip.
- 4 Hold the gear with one hand and remove the pickup roller assembly. Make sure you hold the bushing with your other hand.

Feed roller assembly

- 1 Remove the white board. See page 110.
- 2 Disengage the locking tab and slide the collar (callout 1) up.
- 3 Push the bottom brass bushing (callout 2) down and tilt the roller assembly out to remove it.

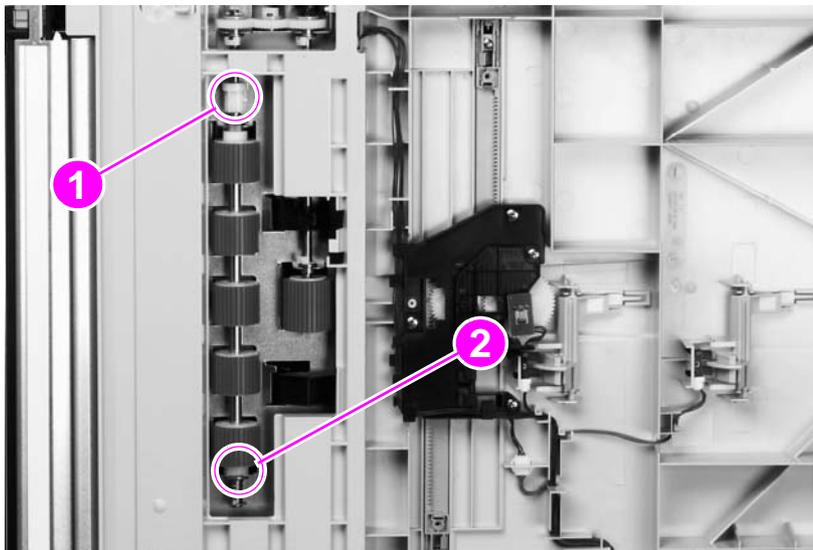


Figure 163. Feed roller assembly

Lower registration roller assembly

- 1 Remove the ADF base cover assembly. See page 118.
- 2 Disconnect the shutter solenoid connector (callout 1).
- 3 Disconnect one connector on the feeder cover detection switch (callout 2).
- 4 Disconnect one connector from the weight solenoid (callout 3).
- 5 Disconnect the paper loaded sensor connector (callout 4).

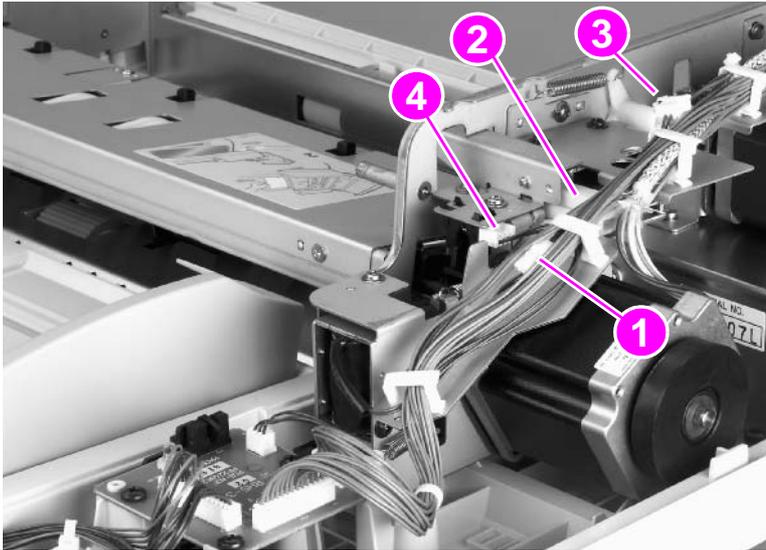


Figure 164. Lower registration roller assembly (1 of 10)

- 6 Disconnect the delivery motor connector (callout 5).
- 7 Open six cable guides and remove the cables.

Hint

The six cable guides are located on the following: one from the shutter solenoid, two from the feeder cover detection switch, one from the weight solenoid, and two from the motor.

- 8 Remove one screw, and the cable clamp on the shielded cable (callout 6).

Note

When reinstalling the lower registration roller assembly, one end of the cable clamp goes into the sheet metal.

- 9 Remove the tie wrap from the motor mount (callout 7), but keep the cables captured in the tie wrap.
- 10 Remove one screw (callout 8).
- 11 Push the cable cover to your right to disengage four claws (callout 9).
- 12 Tilt the cable cover up and remove it.

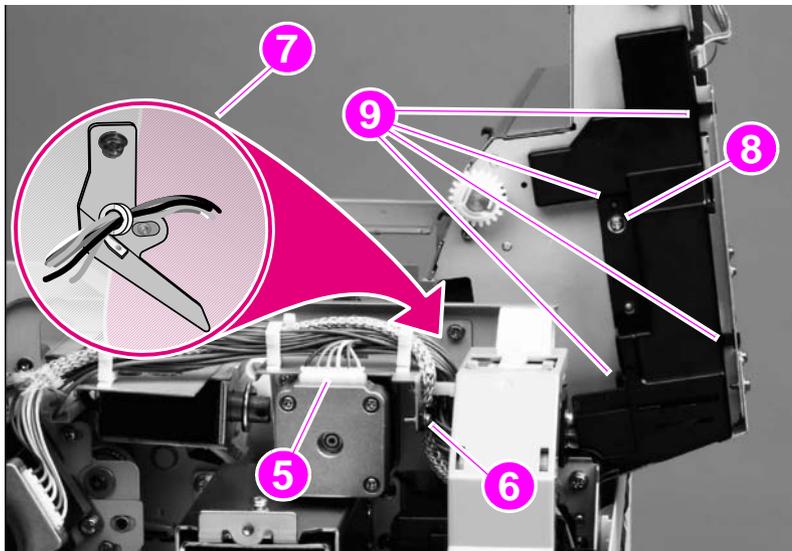


Figure 165. Lower registration roller assembly (2 of 10)

13 Remove one grounding screw (callout 10).

Hint

Twist the cable ties to disengage them, and depress the tabs to disengage the saddle clamps.

14 Remove one cable tie and two saddle clamps (callout 11).

15 Disconnect one connector and unseat one connector (callout 12).

16 Unlace and remove the cables from the cable harness (callout 13).

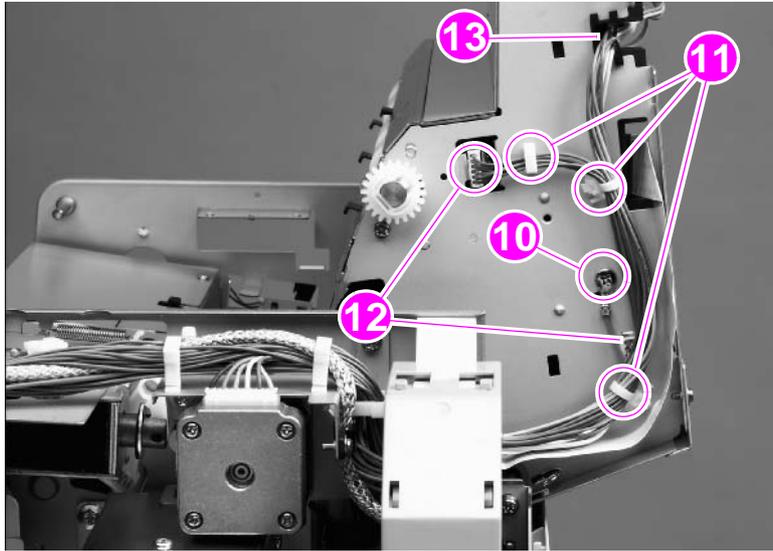


Figure 166. Lower registration roller assembly (3 of 10)

17 Remove one screw (callout 14) from the flatbed cable cover.

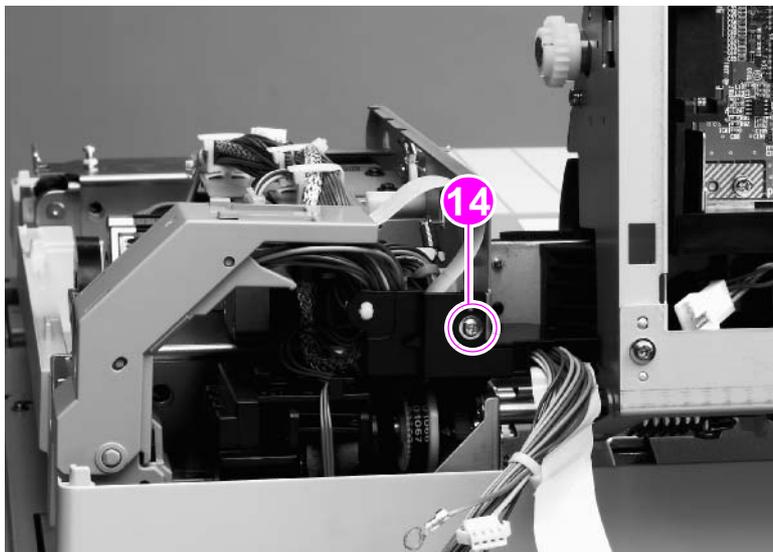


Figure 167. Lower registration roller assembly (4 of 10)

18 Remove one screw and the locking plate on the left hinge. Remove the ADF main assembly and place it on an ESD mat.

CAUTION

To loosen the locking plate, insert a small flatblade screwdriver in the screw hole and wiggle it back and forth to work the locking plate free. Do not use a screwdriver to pry the locking plate or it will bend.

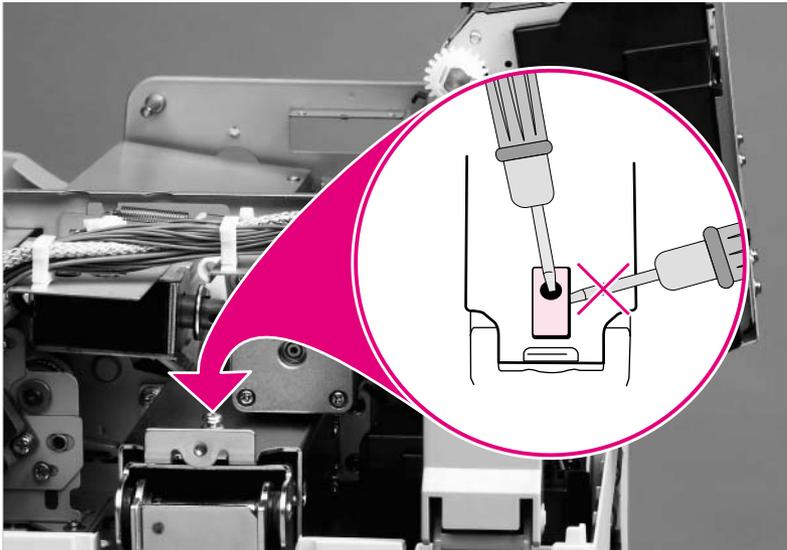


Figure 168. Lower registration roller assembly (5 of 10)

19 Remove five screws (callout 15), and then remove the right hinge from the ADF main assembly.

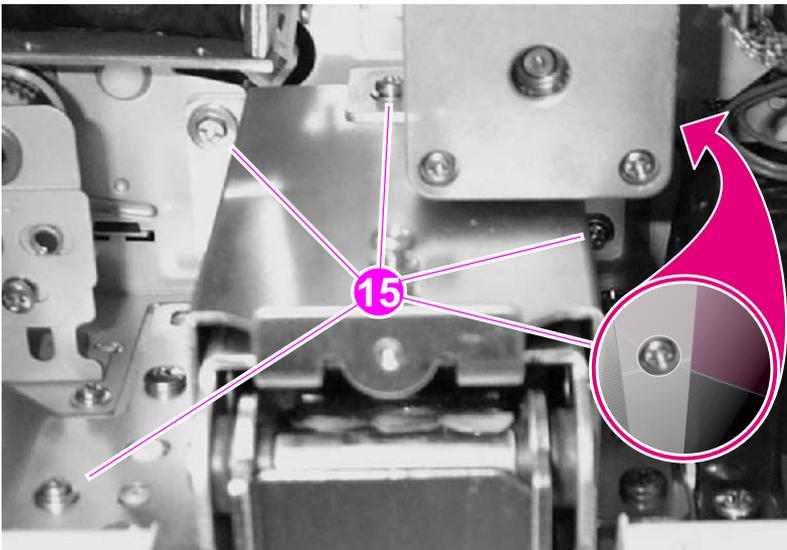


Figure 169. Lower registration roller assembly (6 of 10)

20 Use a long screwdriver to remove two screws (callout 16) in the brass plate.

CAUTION

Remove the two screws with the ADF feeder closed to prevent stripping the screws.

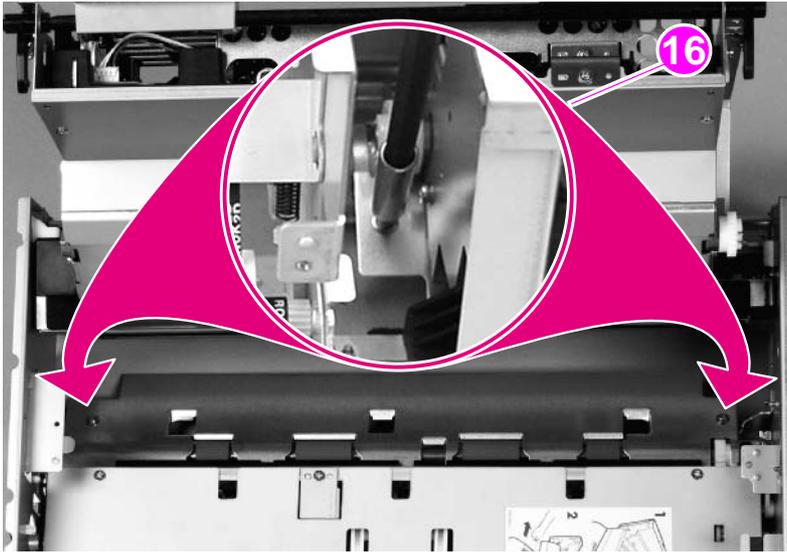


Figure 170. Lower registration roller assembly (7 of 10)

21 Remove three screws (callout 17) from the side of the ADF main assembly with the motors.

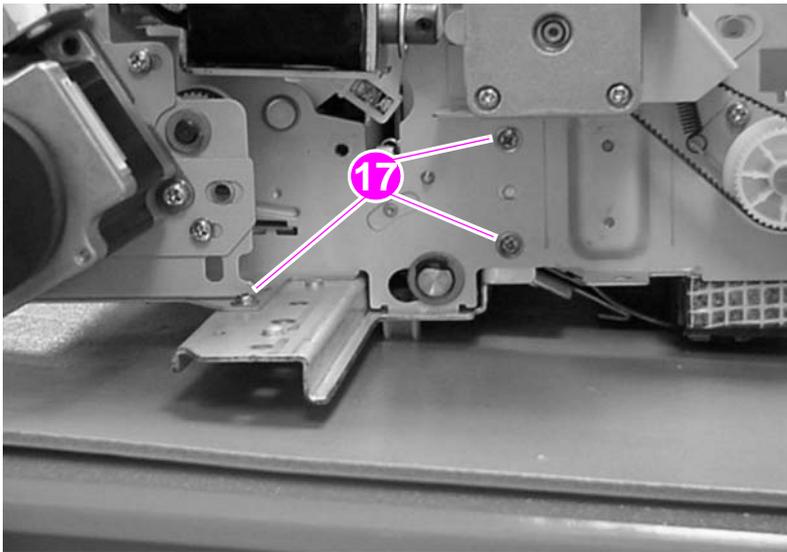


Figure 171. Lower registration roller assembly (8 of 10)

22 Remove two screws (callout 18), and remove the reinforcement rail.

Note

You might have to work the rail loose.

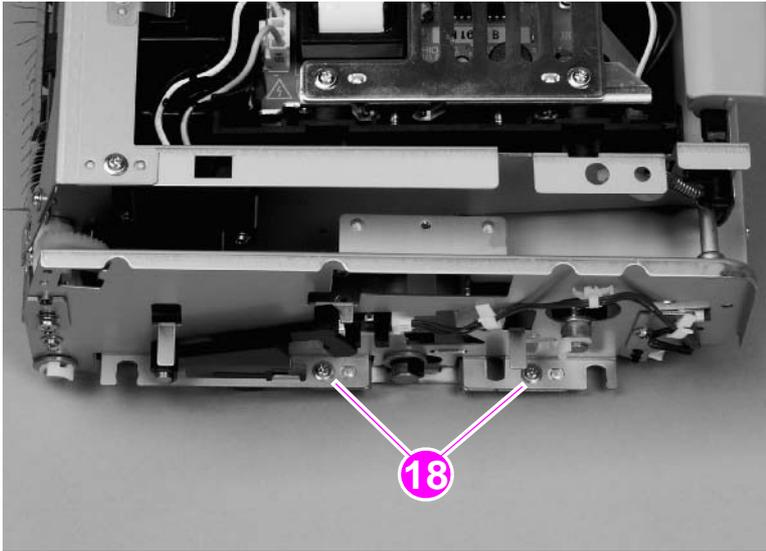


Figure 172. Lower registration roller assembly (9 of 10)

23 With the assembly open, loosen one screw (callout 19) on the registration belt tension plate.

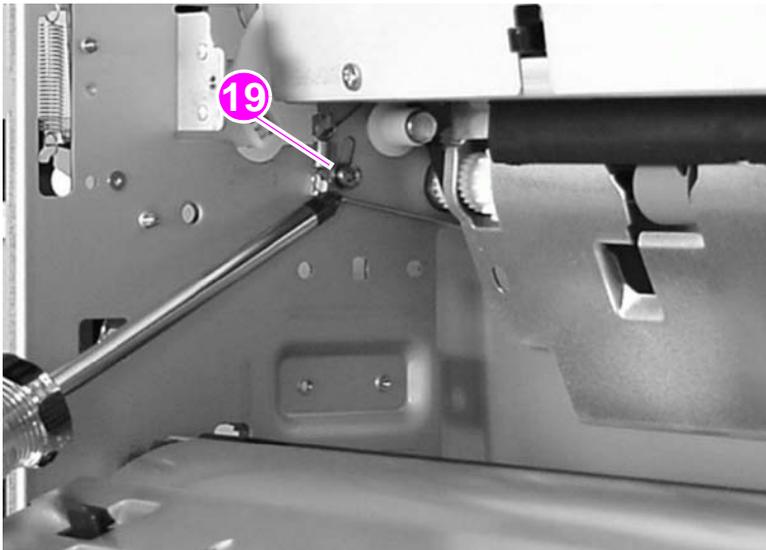


Figure 173. Lower registration roller assembly (10 of 10)

24 Rotate the plate to release tension on the registration belt.

25 Retighten the screw.

26 Remove two c-clips (one on each end of the shaft).

27 Slide off two bushings (one on each end of the shaft).

28 Slide out the lower registration assembly with the gear.

To reinstall

When reinstalling, remember to apply tension to the registration belt (loosen the screw, rotate the plate back, and tighten the screw).

Lower delivery roller

Note

When removing the delivery rollers, be sure to hold the springs (callout 1). The springs are under tension and will eject from the MFP.

- 1 Remove the lower delivery roller cover. See page 109.

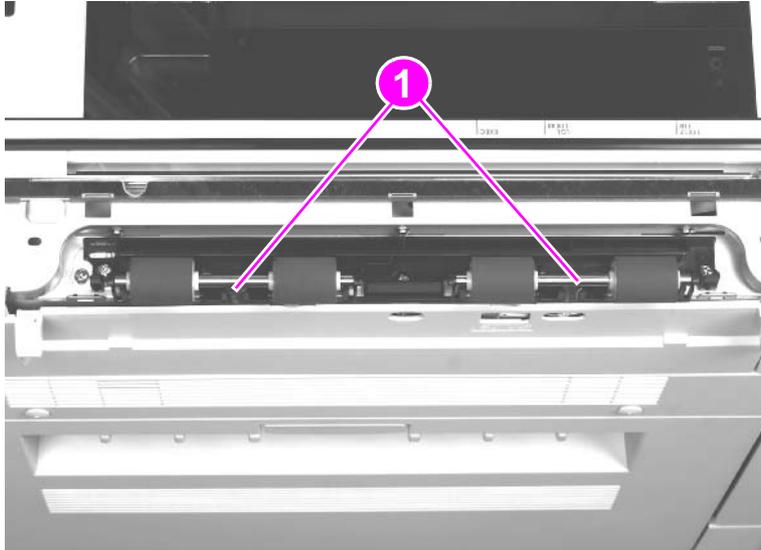


Figure 174. Lower delivery roller (1 of 2)

Note

There is lubricant on the shafts. If lubricant gets on a roller, clean the roller. See “Cleaning the MFP and accessories” in chapter 4.

- 2 Disengage the four claws (callout 2) and remove the delivery rollers with shafts (callout 3).

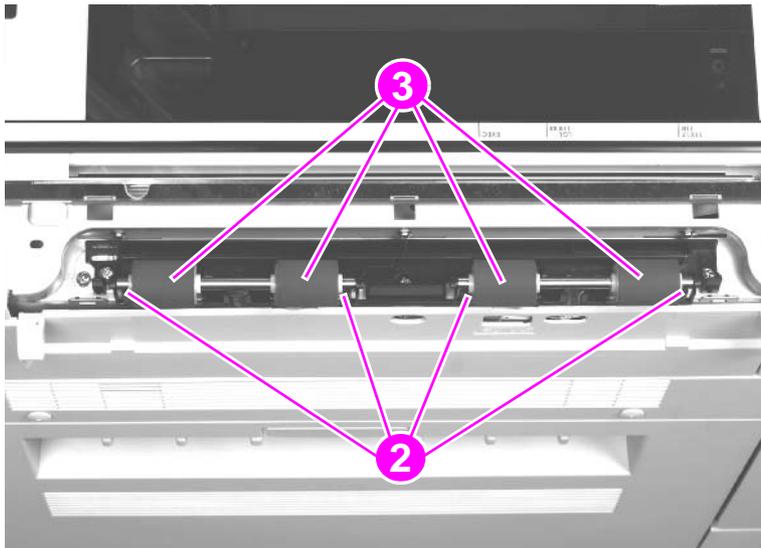


Figure 175. Lower delivery roller (2 of 2)

To reinstall

When replacing the lower delivery rollers, be sure that the keyed end of each shaft is inserted in the keyed claw.

Hint

The innermost claws are the keyed claws.

Upper delivery roller assembly

- 1 Remove the ADF base cover assembly. See page 118.
- 2 Remove two c-clips (one from each end of the shaft).
- 3 Remove one gear (callout 1).
- 4 Slide off two bushings (one on each end of the shaft).
- 5 Remove two screws (callout 2) and remove the ESD strip (callout 3).

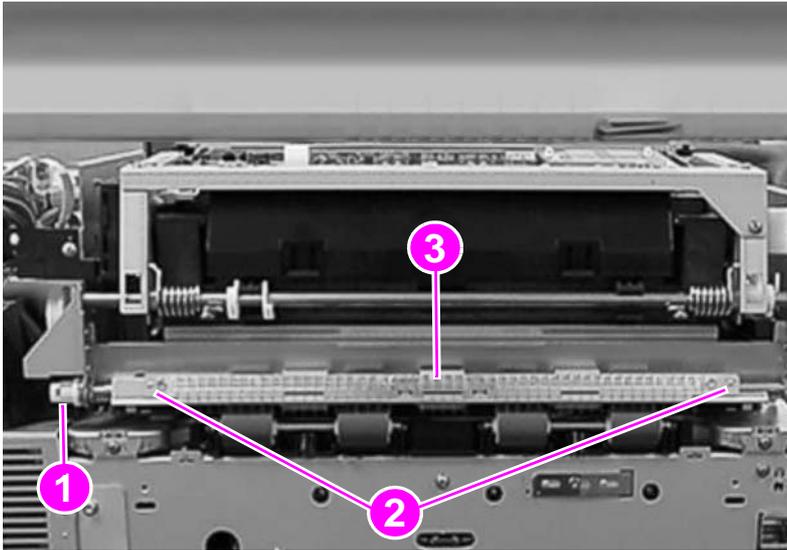


Figure 176. Upper delivery roller

- 6 Remove the upper delivery roller assembly.

Note

Slightly lift up the ADF to help in removing the upper delivery roller assembly.

To reinstall

When reinstalling, make sure the end of the shaft with the longer keyed end is toward the back of the MFP.

Separation belt assembly

Note

The separation belt assembly is not a replaceable assembly. You must replace the necessary components of the assembly.

- 1 Remove the following covers:
 - ADF back cover. See page 107.
 - ADF front cover. See page 108.
- 2 Remove four screws (callout 1) and lift off the separation belt assembly cover (callout 2).

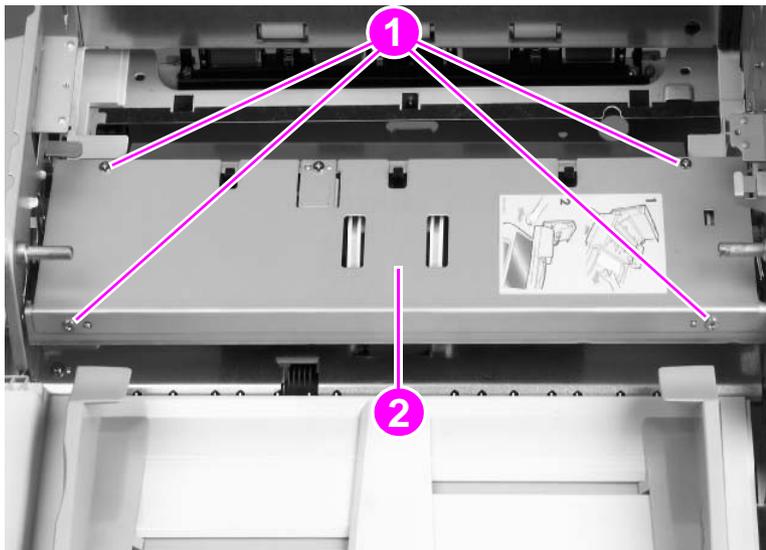


Figure 177. Separation belt assembly (1 of 6)

CAUTION

Do not touch the retaining screws (callout 3) on the gap adjustment roller. This is a factory setting and it cannot be adjusted in the field.

Hint

The retaining screws are marked with blue paint.

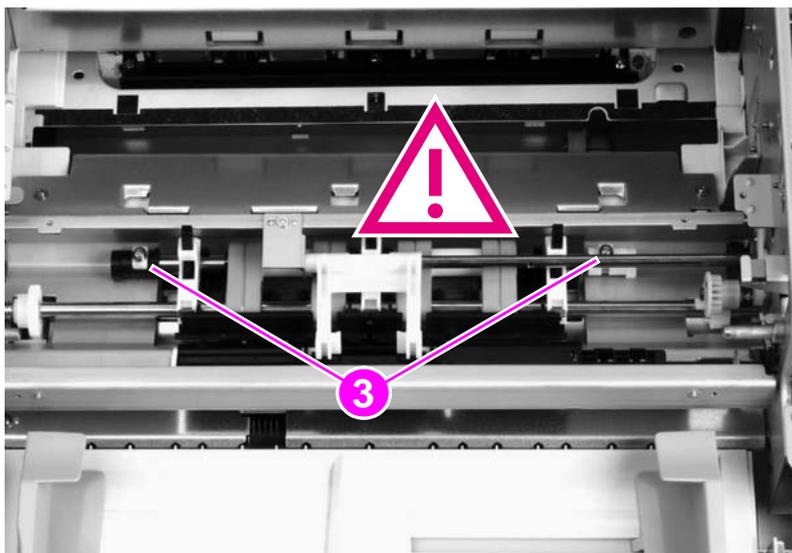


Figure 178. Separation belt assembly (2 of 6)

- 3 Remove one screw (callout 4) and lift off the weight-arm retaining plate (callout 5).

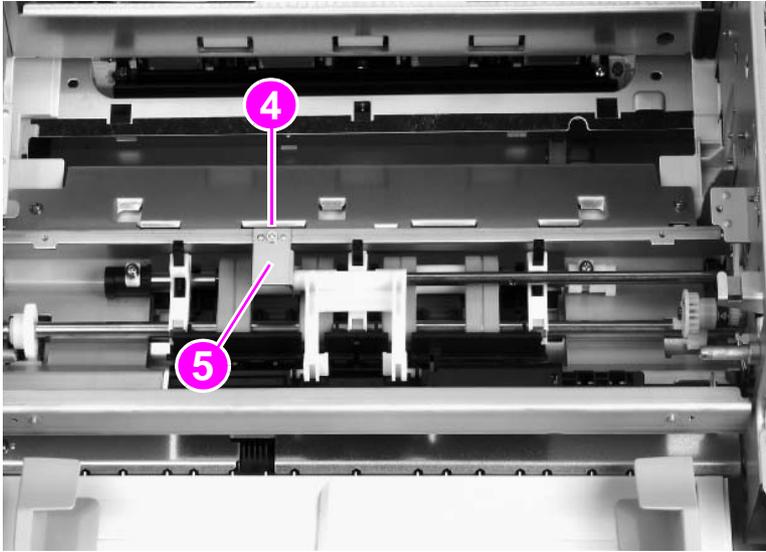


Figure 179. Separation belt assembly (3 of 6)

- 4 Tilt the end of the weight arm (callout 6) to disengage the weight arm from the solenoid lever, and remove it.

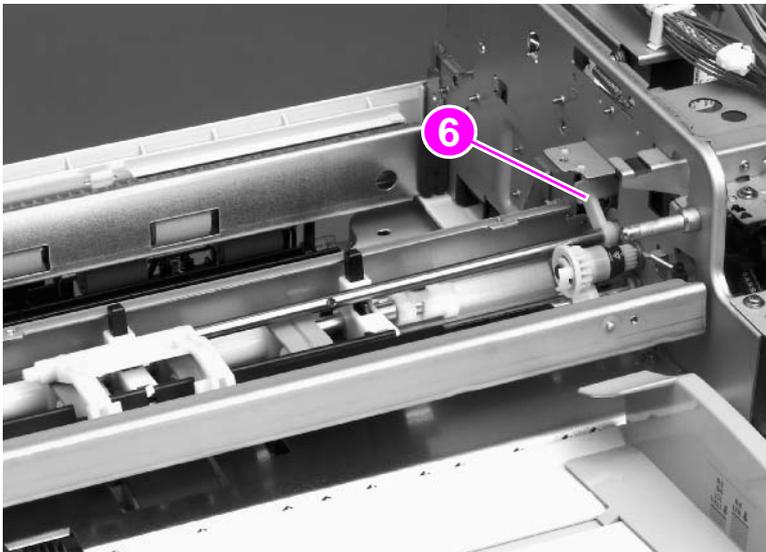


Figure 180. Separation belt assembly (4 of 6)

- 5 Remove the u-ring (callout 7) and pull off the drive gear (callout 8).

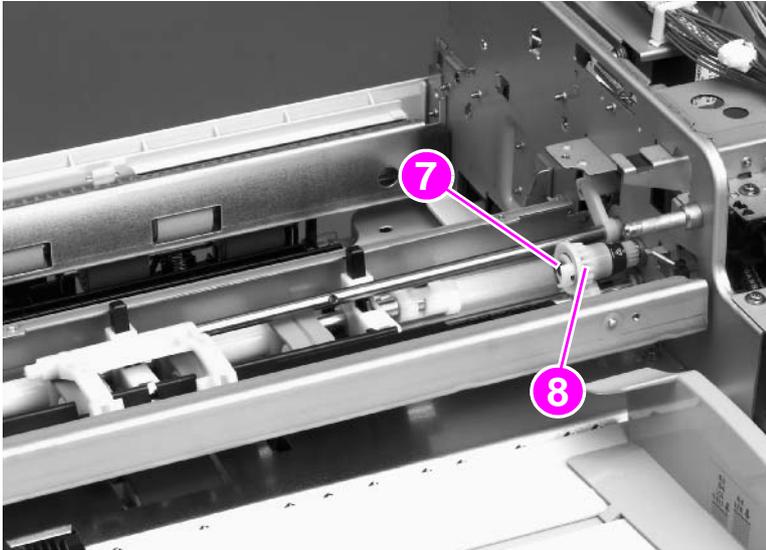


Figure 181. Separation belt assembly (5 of 6)

- 6 Push the bushing (callout 9) inward and lift out the separation belt assembly.

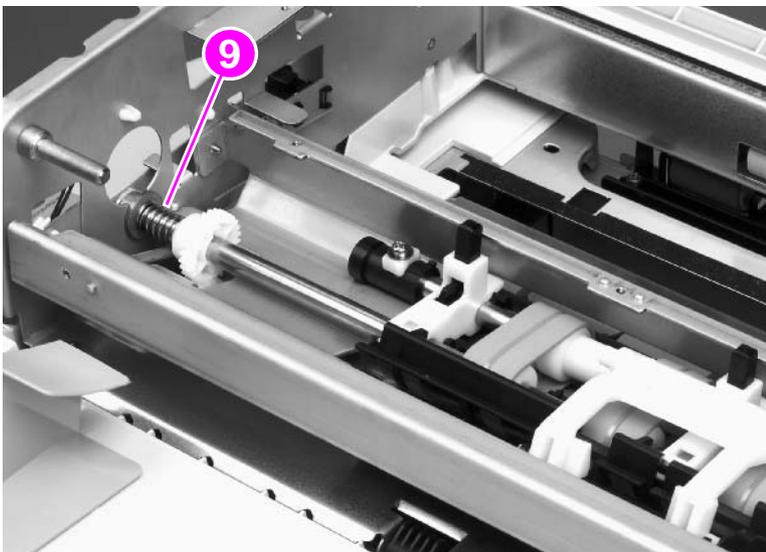


Figure 182. Separation belt assembly (6 of 6)

To reinstall

Be sure to align the pin on the shaft of the weight arm with the arm-stop hole on the solenoid lever. See figure 180.

Separation belts

Note

The separation unit is structured with four belts. When replacing the belts, be sure to replace only two on the same side at one time. It is very difficult to reassemble the unit if all four belts are removed at the same time.

- 1 Remove the separation belt assembly. See page 180.
- 2 Unhook two claws (callout 1) and remove the document guide (callout 2).

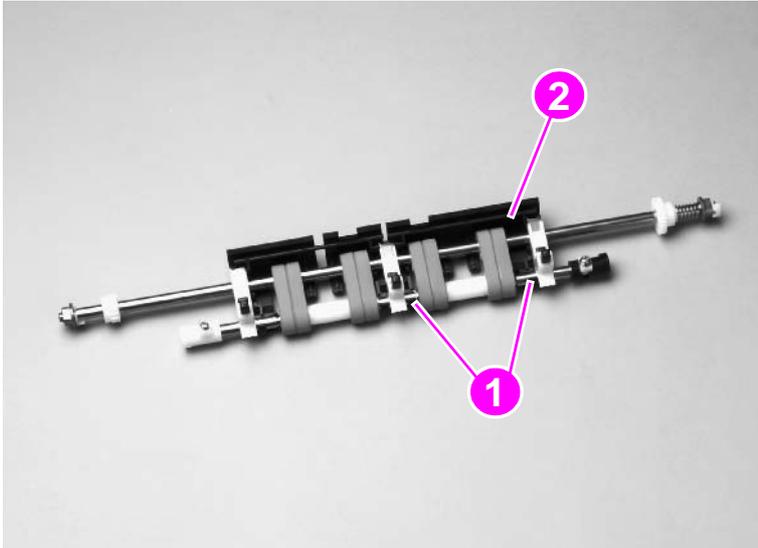


Figure 183. Separation belts (1 of 3)

- 3 Lift the end of the shaft holder (callout 3) and pull to remove it.

Note

When removing the assembly holder, be careful not to lose the leaf spring (callout 4) and holder block (callout 5).

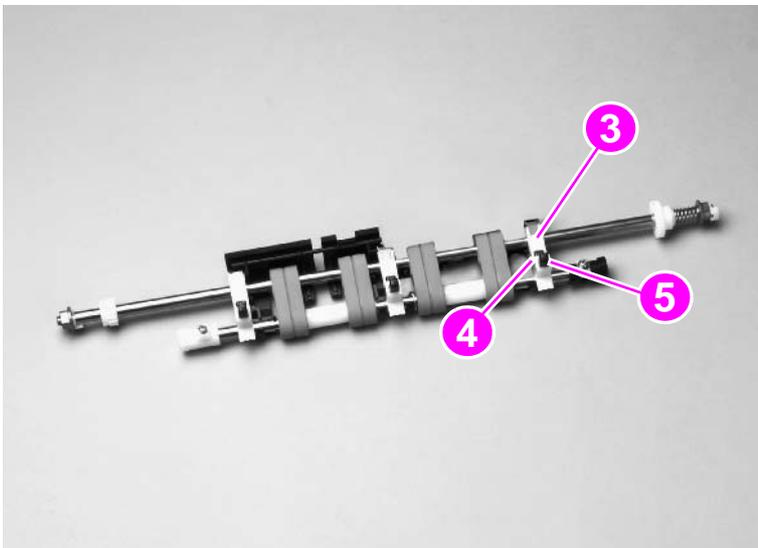


Figure 184. Separation belts (2 of 3)

- Slide off the two separation belts (callout 6) while squeezing the shafts together.

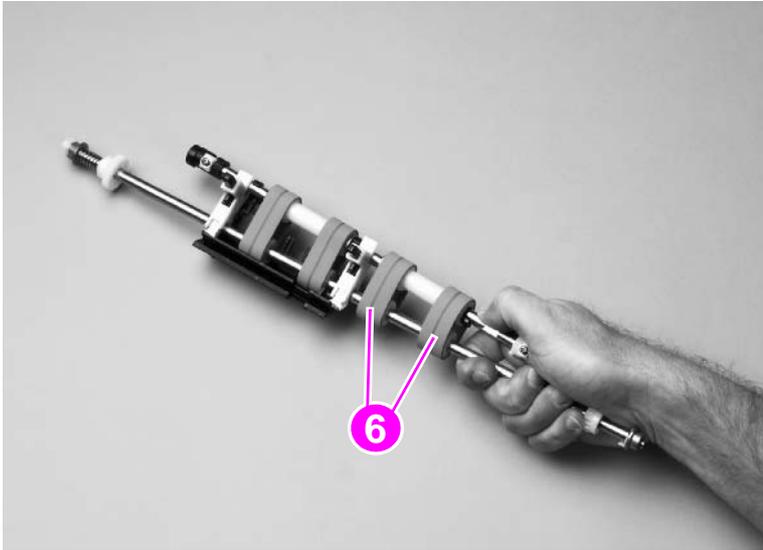


Figure 185. Separation belts (3 of 3)

To reinstall

When installing the new belts, make sure that no grease gets on the belts. After installing the two new belts, repeat for the opposite end of the assembly.

Scan engine

Note

To gain access to certain components in the print engine, such as the laser scanner assembly and the fuser motor, you will have to remove the scan engine. See the HP LaserJet 9000 series printer service manual for removal instructions.

- 1 Remove the print engine back cover. See the HP LaserJet 9000 series printer service manual for removal instructions.
- 2 Disconnect two connectors (callout 1) and one grounding wire (callout 2).

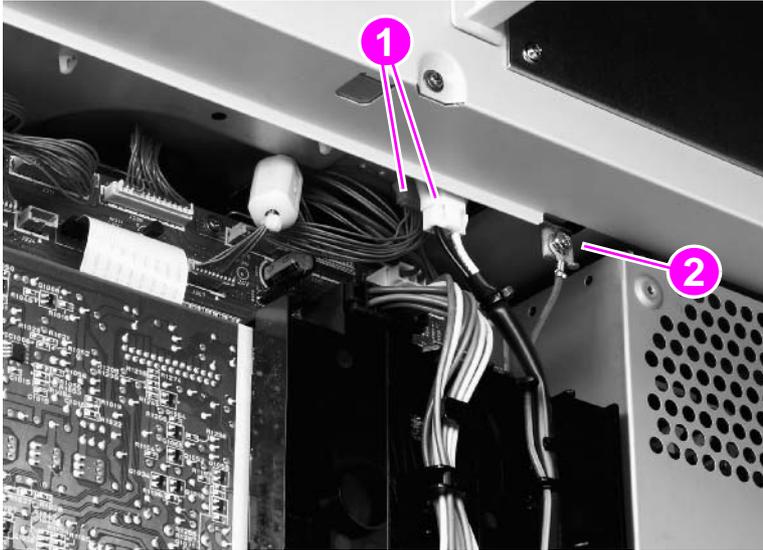


Figure 186. Scan engine (1 of 7)

- 3 Open the print engine right door.
- 4 Press the tabs on the end of the black strap and disconnect the strap (callout 3).

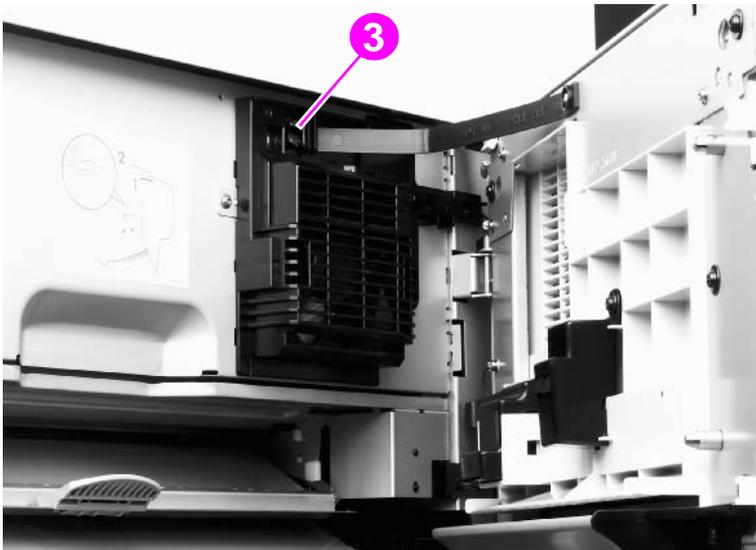


Figure 187. Scan engine (2 of 7)

- 5 Remove one locking clip (callout 4) from the right side.

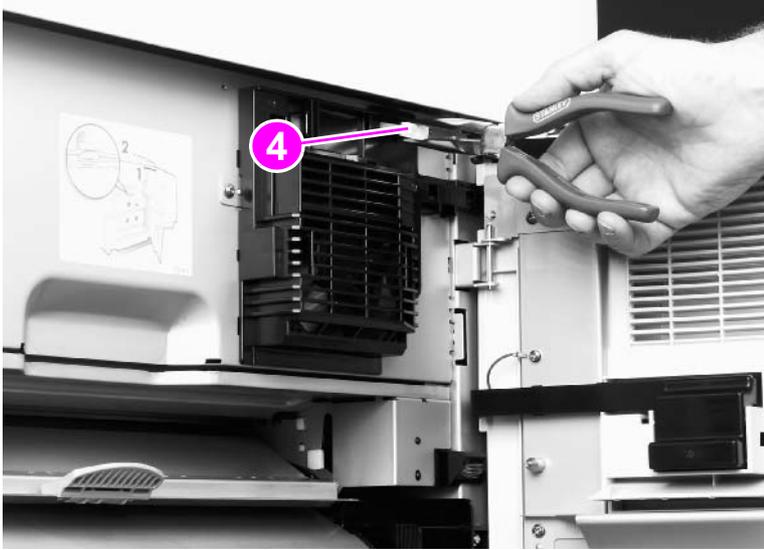


Figure 188. Scan engine (3 of 7)

- 6 Remove the top left print engine cover and remove one locking clip (callout 5).

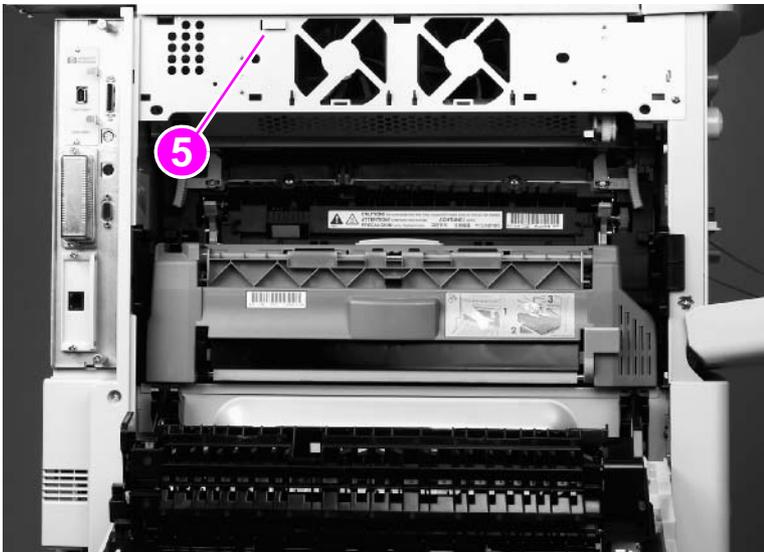


Figure 189. Scan engine (4 of 7)

- 7 Open the print engine front door and remove two locking clips (callout 6).

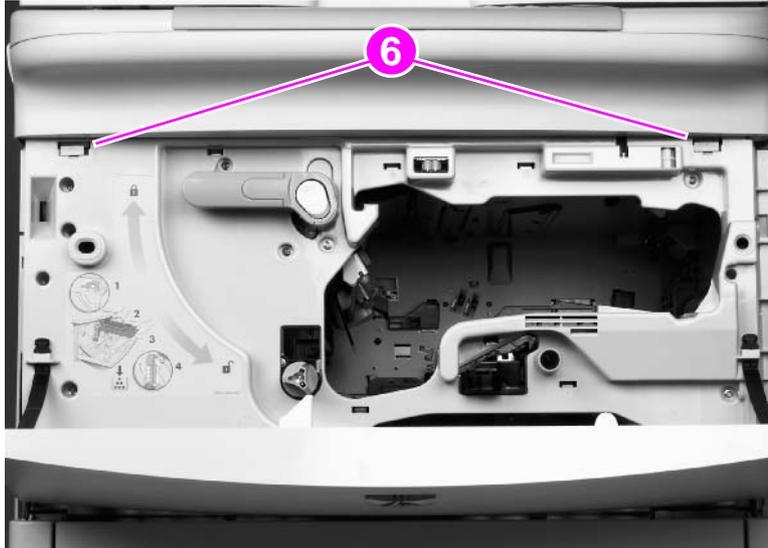


Figure 190. Scan engine (5 of 7)

Note Close all exterior doors.

8 Have *two people* lift the copy/scan unit off of the print engine. See figure 191.

WARNING! The copy/scan unit weighs 36.3 kg (80 lb).

CAUTION Set the copy/scan unit on a flat, level surface so the ground post does not break.



Figure 191. Scan engine (6 of 7)

To reinstall

Make sure that the seating pegs are lined up with the seating tabs (callout 7) before reinstalling the scan engine.

CAUTION

The seating tabs can become disengaged when removing the copy/scan unit. If a tab becomes disengaged, make sure you replace it before reinstalling the copy/scan unit.

WARNING!

Position your hands carefully when reinstalling the copy/scan unit to prevent pinching your fingers.

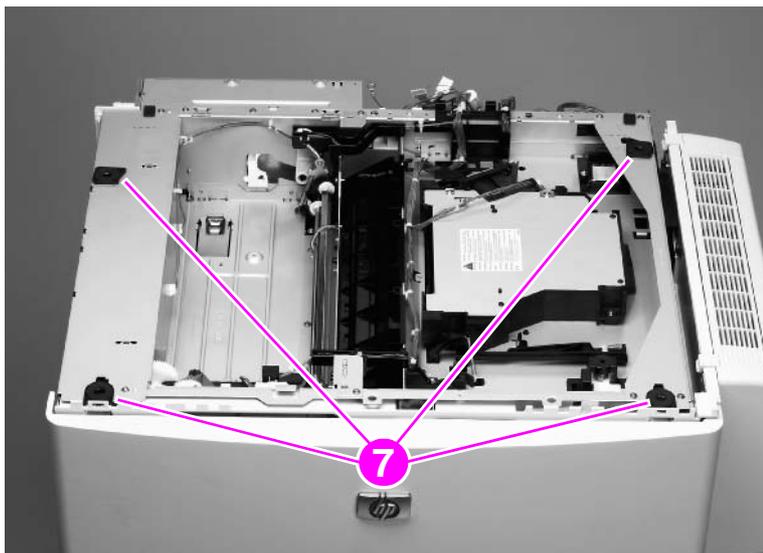


Figure 192. Scan engine (7 of 7)

7

Troubleshooting

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Troubleshooting process

The troubleshooting process is a systematic approach that addresses the primary problems first, and then other problems, to discover the causes for MFP malfunctions and errors. An answer to a troubleshooting question allows troubleshooting to proceed to the next primary step.

Certain answers indicate that additional testing and correction is needed. Proceed to the appropriate section in this chapter and follow the directions. After completing the additional testing and correcting the problem, proceed to the next primary step.

This table describes the basic questions to answer and provides the corresponding troubleshooting sections that define the problem(s).

Table 21. Primary steps for troubleshooting

Power on (page 192)	Does the MFP perform the initialization and power-on sequence? This section contains the procedures for correcting power-supply problems.
MFP message tables (page 198)	Does the control panel indicate an error condition? This section contains the procedures for clearing control panel messages.
ADF paper-path test (page 205)	Is it possible to perform a paper path test? This section contains information about how to troubleshoot paper-path and print-media problems.
Evaluating the information pages (page 222)	Does information in the event log explain the problem? This section contains the procedures for printing the information pages and evaluating and correcting MFP configuration.
Image-formation troubleshooting (page 228)	Does the print quality meet customer expectations? This section contains print-cartridge checks, information about EconoMode, image-defect examples, and the repeating-defect ruler.
Measurement and adjustment (page 232)	Is the media in use acceptable for this MFP? This section contains information about how to determine print-media problems and correct them.

Preliminary operating checks

Make sure that the conditions in the following lists are met before troubleshooting a specific MFP problem.

Installation environment:

- The MFP is plugged in, and specified power is delivered.
- The MFP receives maintenance on a regular basis.
- The scan engine is securely installed on the print engine.
- The customer is using acceptable print media.
- The MFP is positioned on a solid, level surface.
- The line voltage does not vary more than 10 percent from the nominal rated value specified on the power rating label.
- The operating environment for the MFP is within the temperature and humidity specifications.
- The print engine is not exposed to ammonia fumes.
- The MFP is not exposed to direct sunlight.
- Non-HP components (such as refilled print cartridges, font DIMMs, and memory DIMMs) are removed from the MFP.

Note

Sudden changes in MFP environment can cause image defects and media-handling problems. Make sure the MFP is not exposed to direct sunlight or to heating or cooling vents. Allow time for the MFP and media to acclimate whenever changing environments (for example, moving from a cold environment to a warm one). Acclimation can take from 3 to 24 hours depending on the ambient conditions.

Document checks

- The selected tray contains media that has been properly loaded and adjusted.
- The selected tray contains the correct amount of media.
- The recommended print media is in use.
- The document is not damp.
- The document is not dirty.

Unit checks

- Make sure the ADF feeder is closed.
- Make sure the ADF unit is closed.

Power on

It is important to have the MFP control panel functional as soon as possible in the troubleshooting process so that the MFP diagnostics can be used to assist in locating printing errors.

Power-on defects

Table 22. Power-on defects or blank display

Problem	Action
Is ac power available at the print engine power receptacle?	Verify that power is available. See "Specifications" in Chapter 1.
Is the MFP on/off switch set to the on position?	Push the switch to the "on" position.
Are the print engine fans on?	<p>Touch the display screen to put the MFP in the ready state.</p> <p>Note: The fan operation is significant because all fans are controlled by the dc controller on the print engine. Fans 1 through 5 operate at full speed for 30 seconds during the WAIT period. Fans 1 through 4 will slow to half-speed, and fan 5 will stop during the STBY period and when the MFP is in PowerSave mode. Make sure that the MFP is not in PowerSave mode.</p> <p>Operational fans indicate the following:</p> <ol style="list-style-type: none">1 ac power is present in the print engine2 the dc power supply is functional (both 24 vdc and 5 vdc are being generated)3 the dc controller is functional
NO	If the fans are NOT working, troubleshoot using the HP LaserJet 9000 series printer service manual.
YES	If the test is successful, check the control panel cable connections at the back of the control panel and at the back of the print engine.

Malfunction troubleshooting

If the malfunction is identified, use the following table for troubleshooting:

Table 23. Malfunction troubleshooting

Cause	Solution
No ac power	
Defective power supply assembly	<ul style="list-style-type: none"> ● Replace the power supply assembly.
Defective remote function	<ul style="list-style-type: none"> ● Reconnect connectors J404 and J405 on the intermediate PCB, intermediate connector J171, and connector J206 on the dc controller on the print engine.
No dc power	
No ac power is supplied	<ul style="list-style-type: none"> ● Check for ac power.
The over-current/over-voltage detection circuit is activated	<ul style="list-style-type: none"> ● Turn off the MFP, wait approximately two minutes, and then turn it back on. If the problem persists, find the cause of the overcurrent/overvoltage detection circuit activation in the power supply assembly.
Defective power supply assembly	<ul style="list-style-type: none"> ● Replace the power supply assembly.
Defective wiring, dc loads, or scanner controller PCB	<ul style="list-style-type: none"> ● Turn off the power switch. Check the wiring ahead of the scanner controller PCB and the dc loads. If you discover the problem, replace the wiring and dc loads. If no problem exists on the wiring or dc loads, replace the scanner controller PCB.

Troubleshooting with control panel messages

Control panel display

The control panel should show `READY`, `PAUSED`, or `POWERSAVE ON`. For information about error messages that appear, see the event log. If the control panel is blank, see “Power on” on page 192.

Event log page

Use the event log to diagnose and troubleshoot MFP errors and intermittent failures. You can either print or show the event log from the control panel. (Select `PRINT EVENT LOG` or `SHOW EVENT LOG`.)

The event log is a last in-first out (LIFO) ordered listing of the last 50 entries. The printed event log is printed in four columns that show event number, page count, error code, and description or personality.

The description or personality gives detail to the error messages. The information is more useful for troubleshooting.

Items that should be logged in the event log include the following:

- critical errors
- jams
- sensors sensing out of range
- deleted jobs
- unexpected paper size
- complex pages
- buffer overflow
- NVRAM changes
- any diagnostics tests

Print the event log

The MFP internal event log stores the 50 most recent events, and can be printed at any time. To print the event log:

- 1 Using the touch screen, touch `MENU` to open the menus.
- 2 Touch `DIAGNOSTICS`.
- 3 Touch `PRINT EVENT LOG`.
- 4 The event log prints. The control panel shows the message `PRINTING EVENT LOG`.

Interpret the event log

Each individual entry in the log is called an “error,” while all errors occurring at the same page count are called an event. See page 146 for each error within an event and to better understand the event. Events usually conclude with a time-out or no response from the MFP (error 66.xx in the event log). Turn the MFP off, and then turn it back on.

Use the event log tables in this section to associate errors in the event log with the control panel error message. For each error or event, follow the recommended action listed in the event log table starting on page 198.

- 1 Check the event log for specific error trends in the last 10,000 printed pages.
- 2 Ask the customer for any observed error trends. (For example, do jams tend to occur in a specific area of the MFP?)
- 3 Record any specific error trends.
- 4 See “MFP message tables” on page 198 and follow the recommended actions.

Sample event log

HP LaserJet 9000 series printers

Event Log Page 1

Current Page Count: 4 Serial Number: XXXXXXXXXX

Number	Error	Page Count	Description or Personality
2	55 0492	0	
1	55 0000	0	?? PRINTER ERROR CYCLE POWER TO CONTINUE

Figure 193. Sample event log page

Show the event log

Using the displayed event log, the customer can scroll through the contents of the event log from the control panel. Select this to show the 50 most recent events, with the most recent first. Use ▲ or ▼ to scroll through the event log contents. If the event log is empty, the control panel shows the message EVENT LOG IS EMPTY.

Follow these steps to show the event log:

- 1 Using the touch screen, touch MENU to open the menus.
- 2 Touch DIAGNOSTICS.
- 3 Touch SHOW EVENT LOG.
- 4 The event log appears.

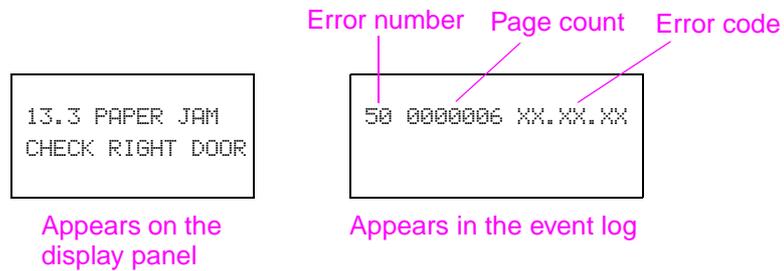


Figure 194. Example of events on the event log

Hint

Whenever a 13.xx message appears on the control panel, a good practice is to clear the jammed paper from the MFP, press **STOP** to stop printing, and print the event log. Even if you cannot print the event log, you can read it on the control panel.

Control panel messages

Be sure to read the exact text of the control panel message, including the error message number and the text, in order to locate the error message in the tables.

Messages that appear on the control panel provide six categories of information. Each message category is assigned a priority. If more than one condition occurs at the same time, the highest priority message appears. When it has been cleared, the next priority message appears, and so on. The messages and their priorities are:

- **Status messages**—Status messages communicate the current state of the MFP to the user. Whenever the MFP is ready and online, the MFP status message `READY` appears unless warning messages are pending. When the MFP is performing a task, such as a reset or a test, the associated MFP status message appears. When the task is complete, the message returns to `READY`, depending on the current state of the MFP.
- **Warning messages**—Warning messages are messages that are important enough that the user must acknowledge them, but not serious enough to cause the MFP to stop the printing process. They are usually transient in nature but they can affect the output, and so a record of their occurrence is important. Warnings generally alternate with the `READY` status message and remain on the control panel until the user touches Continue or presses Stop. Warnings appear in most recent order (LIFO) with duplicates removed.
- **Error messages**—Error messages communicate to the user that some action must be performed, such as adding paper or clearing a jam. Some errors are considered auto-continuable, because the error message appears on the control panel for 10 seconds, and then the MFP clears the message and continues normal operation. Pressing a control panel key during the 10-second period cancels the auto-continue feature and initiates the function of the key that was pressed. Error messages are limited to 19 seven-bit characters (or 9 two-byte characters) per line up, and to two lines. Unlike status and warning messages, error messages stop the printing process. The user has to either fix the problem or give the MFP a different command. If the error message is a scan engine error (30.x.xx), then the user cannot copy and scan, but can continue to print. If the user can continue past the error conditions without actually fixing the problem, then the user should be able to perform the task by touching Continue. If only one option is available when the user touches Continue, printing should continue by applying the option shown. If more than one option is available, the options are listed with the most logical option listed first and highlighted.
- **Critical error messages**—Critical error messages communicate MFP failures to the user. Generally, turning power off and then on is required in order for the MFP to resume normal operation. If the critical error persists, then the MFP probably requires maintenance and the user will have to request a service call. Critical errors are not auto-continuable.
- **Finishing device warning messages**—These messages are similar to the warning messages described above, except that they relate to the finishing device. By default, the message is all that appears if the finishing device does not provide any additional help. The prompt at the bottom of the control panel does not appear.
- **Finishing device error messages**—These messages are similar to the error messages described above, except that they relate to the finishing device. By default, the message is all that appears if the finishing device does not provide any additional help. The prompt at the bottom of the control panel does not appear.

Note

Print a configuration page to identify the input or finishing device that is configured. Notice that the error format only identifies the Jet-Link device number and the device type; it does not identify the input or finishing device.

MFP message tables

Messages appear on the control panel to indicate MFP operation errors. Within the groupings listed below, the alphabetic error messages are listed first, followed by the numeric error messages.

Alphabetic error messages

Table 24. Alphabetic error messages

Message	Event log display	Explanation	Recommended action
ADF COVER OPEN		The ADF feeder is open or the ADF feeder switch is not functioning correctly.	<ol style="list-style-type: none">1. Close the ADF feeder.2. If the error persists, perform a <code>SENSORS</code> diagnostic in the diagnostics menu to test the ADF feeder switch.
ADF PAPER JAM		A page has jammed inside the ADF feeder and must be cleared before copying can continue.	<ol style="list-style-type: none">1. Open the ADF feeder and remove the jammed media. Close the ADF feeder.2. Reload the document and press <code>START</code>.3. If the error persists, perform an <code>ADF INPUT</code>, <code>ADF INPUT REVERSE</code>, and <code>ADF OUTPUT</code> diagnostic in the diagnostics menu to verify proper functionality of the ADF feeder rollers.3. Verify that the pickup roller, feed roller assembly, separation belt assembly, and registration roller assemblies are clean and not damaged.
ADF PICK ERROR		Too many pages have been placed in the ADF or the pages are not correctly paced in the ADF feeder. The pickup roller might be dirty, damaged, or not installed correctly.	<ol style="list-style-type: none">1. Remove some of the pages and try the operation again. If necessary, open the ADF feeder and remove any jammed media, and then close the ADF feeder.2. Perform an <code>ADF INPUT</code> diagnostic in the diagnostics menu to verify that the pickup roller is functioning correctly.3. Perform a <code>WEIGHT SOLENOID</code> diagnostic in the diagnostics menu to verify the the weight arm is functioning correctly.4. Verify that the pickup roller is clean and not damaged.

Table 24. Alphabetic error messages (continued)

Message	Event log display	Explanation	Recommended action
ADF SKEW ERROR		A skew in the ADF feeder has been detected by the ADF skew sensors.	<ol style="list-style-type: none">1. Open the ADF feeder and remove the skewed media. Close the ADF feeder.2. Reload the document and press START.3. If the error persists, perform a SENSORS diagnostic in the diagnostics menu to verify that the skew front and skew back sensors are functioning correctly.4. Verify that the pickup roller, feed roller assembly, separation belt assembly, and registration roller assemblies are clean and not damaged.
FLATBED COVER OPEN		The ADF is open or the ADF open/closed sensor is not functioning correctly.	<ol style="list-style-type: none">1. Close the ADF.2. If the error persists, perform a SENSORS diagnostic in the diagnostics menu to test the ADF open/closed sensor.
RESEND UPGRADE		Power to the MFP was lost during a firmware upgrade	<ol style="list-style-type: none">1. Start the firmware upgrade operation over.

Numeric error messages

Table 25. Numeric error messages

Message	Event log display	Explanation	Recommended action
30.0.01 SCANNER I/O FAILURE CHECK CABLES AND CYCLE POWER		Communication between the formatter and the copy processor board has failed.	<ol style="list-style-type: none"> 1. Verify that the high-speed copy connect cable between the copy connect card and the copy processor board is correctly connected. See figure 14 in Chapter 2. 2. Verify that the copy processor board is firmly seated into the connector on the intermediate PCB. 3. Check for broken, frayed, or pinched wires. 4. Verify that the copy processor board LEDs are illuminated.
30.0.02 SCANNER I/O FAILURE CHECK COPY CONNECT CARD		The IEEE-1394 copy connect card is not detected.	Refer to the steps in this table for clearing the scanner I/O failure.
30.1.06 SCAN FAILURE		Flatbed fan failure.	<ol style="list-style-type: none"> 1. With the MFP powered on, verify that the fan is not functioning. 2. Check for loose connections and broken, frayed, or pinched wires. Reseat the fan connector at scanner control PCB location J110, and connector J163 on the flatbed fan. 3. Replace the fan. See "Flatbed fan assembly" on page 154.
30.1.07 SCAN FAILURE		Communication error.	Powercycle.
30.1.08 SCAN FAILURE		Flatbed motor failure.	<ol style="list-style-type: none"> 1. Perform a FLATBED MOTOR diagnostic in the diagnostics menu to verify that the flatbed motor is functioning correctly. 2. Check for loose connections and broken, frayed, or pinched wires. 3. Reseat the flatbed motor connector at the SCB location J108. 4. Replace the flatbed motor.

Table 25. Numeric error messages (continued)

Message	Event log display	Explanation	Recommended action
30.1.09 SCAN FAILURE		The pickup roller home position sensor is not detecting the pickup roller home position.	<ol style="list-style-type: none"> 1. Perform an ADF INPUT diagnostic in the diagnostics menu to verify that the pickup roller assembly is functioning correctly. 2. Check for loose connections and broken, frayed, or pinched wires. 3. Reseat connector J112 on the SCB, connectors J701 and J703 on the ADF intermediate PCB, and connector J716 on the pickup roller home position detection sensor. 4. Check the pickup roller home position detection sensor and the pickup roller assembly for disengagement or damage. 5. Replace the SCB.
30.1.10 SCAN FAILURE		ADF fan error.	<ol style="list-style-type: none"> 1. With the MFP powered on, verify that the fan is not functioning. 2. Check for loose connections and broken, frayed, or pinched wires. 3. Reseat the fan connector at scanner control PCB location J109, and connector J156 on the ADF fan. 4. Replace the ADF fan. 5. Replace the SCB.
30.1.12 SCAN FAILURE		ADF ASIC error.	<ol style="list-style-type: none"> 1. Powercycle. 2. Reconnect connectors J158 and J159 on the ADF inverter PCB, and reconnect connector J104 on the SCB. 3. Reconnect connector J102 on the ADF inverter PCB, connectors J301 and J304 on the ADF analog processor board, and J601 on the ADF CCD driver PCB. 4. Reconnect connector J303 on the ADF analog processor PCB, and connector J602 on the ADF CCD driver PCB. 5. Replace the ADF inverter PCB. 6. Replace the ADF lamp assembly. 7. Replace the ADF analog processor PCB. 8. Replace the SCB. 9. Replace the ADF optical assembly.

Table 25. Numeric error messages (continued)

Message	Event log display	Explanation	Recommended action
30.1.13 SCAN FAILURE		Scanner ASIC error.	<ol style="list-style-type: none"> 1. Powercycle. 2. Reconnect connector J161 and J162 on the flatbed inverter PCB, and connector J205 on the SCB. 3. Reconnect connector J103 on the SCB, J504 and J503 on the flatbed intermediate PCB, J201 and J202 on the flatbed analog processor PCB, and J601 on the flatbed CCD driver PCB. 4. Reconnect connector J105 on the SCB, J502 and J501 on the flatbed intermediate PCB, J203 and J204 on the flatbed analog processor PCB, and J602 on the flatbed CCD driver PCB. 5. Replace the flatbed inverter PCB. 6. Replace the flatbed lamp assembly. 7. Replace the SCB. 8. Replace the flatbed optical assembly.
30.1.14 SCAN FAILURE		EEPROM error.	Replace the SCB.
30.1.15 SCAN FAILURE		A condition has prevented the scan engine from initializing.	<ol style="list-style-type: none"> 1. Verify that all covers are installed correctly and that the ADF and ADF feeder are closed. 2. Powercycle. 3. If the error persists, perform a <code>SENSORS</code> diagnostic in the diagnostics menu to verify that all of the sensors are functioning correctly. 4. Check the LED status on the CPB. Follow the CPB troubleshooting instructions if the LEDs are not in the ready status.
30.1.16 SCAN FAILURE		Incorrect ADF width sensor values.	Perform an <code>ADF WIDTH SENSOR</code> calibration.
30.1.20 SCAN FAILURE		CPB processing error.	Powercycle.
30.1.21 SCAN FAILURE		CPB processing error.	Powercycle.
30.1.22 SCAN FAILURE		CPB processing error.	Powercycle.
30.1.25 SCAN FAILURE		CPB processing error.	Powercycle.

Troubleshooting with the copy processor board

The table in this section is a quick-reference source for troubleshooting common copy processor board (CPB) failures that might occur. The LED pattern column describes the status of the four LEDs located on the back of the MFP. The control panel display column lists the messages appearing on the control panel display when a failure occurs. The MFP functionality column describes what MFP functions are affected by the CPB failure. The action column lists the appropriate troubleshooting steps.

To troubleshoot the CPB using the LEDs, verify which LEDs are illuminated and those that are not. Check for messages appearing on the control panel display, and press **OK**. Match the LED pattern to the examples found in table 26 and perform the procedure found in the action column of the table.

Note

For information about CPB initialization LED patterns and their meanings, see “Copy processor board LEDs” in chapter 5.

The print engine and scan engine have separate power supplies. The control panel is powered by the power supply in the print engine. The CPB is powered by the power supply in the scan engine.

Hint

The LEDs can be difficult to see through the holes (callout 1) in the CPB face-plate in a high-light environment. It might be necessary to turn off some lights or remove the face-plate to properly troubleshoot the LEDs.

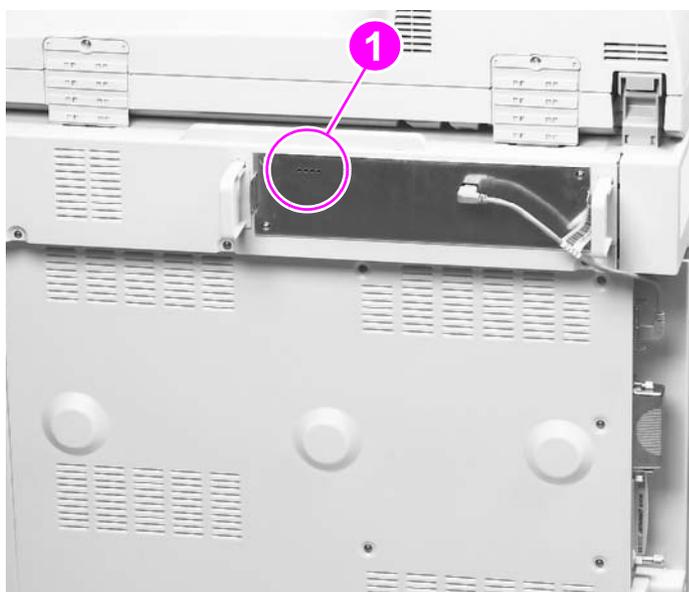


Figure 195. Copy processor board LEDs

When troubleshooting the copy processor board LEDs, remember that the:

- Scan engine power supply is powered by the print engine power supply.
- Control panel is powered by the print engine power supply.
- CPB is powered by the scan engine power supply.

Table 26. Troubleshooting copy processor board LEDs

LED pattern (HP LaserJet 9000mfp only)	Control panel display	MFP functionality	Action
1 1 1 1 0 0 0 1 0 1 0 0 1 1 0 1 1 1 0 1* *Flashing	READY	<ul style="list-style-type: none"> ● Print - yes ● Copy - yes ● Send - yes 	Normal, ready state and the CPB is functioning properly. No troubleshooting is necessary.
1 1 1 1 0 0 0 1 0 1 0 0 1 1 0 1 0 1 0 1* *Flashing	CHECK CABLES AND CYCLE POWER	Select OK, then attempt to: <ul style="list-style-type: none"> ● Print - yes ● Copy - no ● Send - no 	1. Verify that the high-speed copy connect cable is fully seated at both ends. 2. Turn the MFP power off, and then back on again. 3. Replace the high-speed copy connect cable.
1 1 1 1 0 0 0 1 0 1 0 0	CHECK CABLES AND CYCLE POWER	Select OK, then attempt to: <ul style="list-style-type: none"> ● Print - yes ● Copy - no ● Send - no 	1. Verify that the high-speed copy connect cable is fully seated at both ends. 2. Turn the MFP power off, and then back on again. 3. Replace the high-speed copy connect cable.
1 1 1 1* *Flashing	CHECK CABLES AND CYCLE POWER	Select OK, then attempt to: <ul style="list-style-type: none"> ● Print - yes ● Copy - no ● Send - no 	1. Reseat the firmware DIMM. 2. Turn the MFP power off, and then back on again.
1 1 1 1* *Dimly lit	CHECK CABLES AND CYCLE POWER	Select OK, then attempt to: <ul style="list-style-type: none"> ● Print - yes ● Copy - no ● Send - no 	1. Redownload the firmware, 2. Replace the firmware DIMM.
1 1 1 1	CHECK CABLES AND CYCLE POWER	Select OK, then attempt to: <ul style="list-style-type: none"> ● Print - yes ● Copy - no ● Send - no 	1. Reseat the memory DIMM. 2. Verify that the DIMM is 32 MB. 3. Replace the memory DIMM.
0 0 0 0	CHECK CABLES AND CYCLE POWER	Select OK, then attempt to: <ul style="list-style-type: none"> ● Print - yes ● Copy - no ● Send - no 	1. Reseat the CPB. 2. Turn the MFP power off, and then back on again.
1 1 1 1 0 0 0 1 0 1 0 0	CHECK COPY CONNECT CARD	Select OK, then attempt to: <ul style="list-style-type: none"> ● Print - yes ● Copy - no ● Send - no 	1. Reseat the copy connect card. 2. Turn the MFP power off, and then back on again.

Note If the CPB failure persists after all attempts to troubleshoot the problem, replace the CPB.

Hint The LED patterns displayed by the HP LaserJet 9000mfp are opposite those displayed by the HP LaserJet 4100/4101mfp because the CPBs are mounted differently.

User- and service-level diagnostics

Diagnostics

- Print event log
- Show event log
- Paper-path test
- Sensor tests:
 - Paper path
 - Trays
 - Doors
 - Scanner
- Scanner tests:
 - Lower lamp
 - Upper lamp
 - Shutter solenoid
 - Weight solenoid
 - Sensors
 - ADF output motor
 - ADF input motor
 - ADF input reverse
 - Flatbed motor
- Control panel
 - LEDs
 - Display
 - Buttons
 - Touchscreen
- Test
- Service test

ADF paper-path test

The paper-path test can be used to verify that various paper paths are working correctly or to troubleshoot problems with tray configuration.

To print a paper-path test

- 1 Touch `MENU`.
- 2 Scroll to `DIAGNOSTICS`.
- 3 Touch `DIAGNOSTICS` to open the menu.
- 4 Scroll to `SET PAPER PATH TEST`, and then touch `OK`.
- 5 Scroll to select the input tray that you want to test, the output bin, the duplex printing accessory (if available), and number of copies.
- 6 Scroll to `PRINT TEST PAGE`, and then press `OK` to start the paper-path test.

Service test

The service test helps to determine whether the print engine is functioning correctly. This test is very useful for isolating MFP problems. The test can be performed with a finishing device attached, but it will not activate any of the finishing device motors, switches, or sensors.

To perform a service test

- 1 Turn the power off.
- 2 Make sure that the MFP paper path is clear of all media, and that the left, front, and right doors are closed.
- 3 Open tray 2 and tray 3.
- 4 Turn the power on, and when the MFP is ready, touch `MENU` to open the menus.
- 5 Scroll to `DIAGNOSTICS`.
- 6 Touch `DIAGNOSTICS` to open that menu.
- 7 Touch `SERVICE TEST`. The service test can take up to two minutes to complete. The control panel shows `PERFORMING SERVICE TEST`.
- 8 When the test is complete, `SERVICE TEST PASSED` should appear on the control panel display or up to five sets of four-digit numbers. If no abnormalities were noted, (0000 0000 0000 0000 0000) should appear. If abnormalities were noted, up to five four-digit codes show up in parentheses (0101 0111 0132 0000 0000). Write down these codes and see table 31 in the HP LaserJet 9000 service manual for an explanation of the codes.
- 9 Close tray 2 and tray 3.

Service-level diagnostics

Service menu

Only authorized service personnel should use the MFP service menu commands. The service menu can only be accessed by using the PIN code 00900001. While in the service menu, you can:

- clear the event log.
- enter a total page count.
- enter a maintenance count.
- enter a maintenance interval.
- enter an ADF count.
- enter a flatbed count.
- enter an ADF simplex count.
- enter a duplex count.
- enter a copy/scan count.
- enter a send/scan count.
- enter a copy pages count.
- set the cold-reset paper size.
- perform the following calibrations:
 - ADF SETTINGS:
 - LEFT SIDE FRONT: adjusts which CCD pixels are used on the CCD array in the flatbed optical unit when using the ADF to scan.
 - LEFT SIDE BACK: adjusts which CCD pixels are used on the CCD array in the ADF optical unit.
 - LEADING EDGE FRONT: adjusts the time between when the pickup motor starts reverse rotation (registration roller mode) and when the CCD starts to read that the pickup motor is rotating.
 - LEADING EDGE BACK: adjusts the time between when the pickup motor starts reverse rotation (registration roller mode) and when the CCD starts to read that the pickup motor is rotating.
 - ADF PLAIN SCALING: adjusts the overall motor speeds of the registration rollers and the delivery rollers.
 - ADF HEAVY SCALING: adjusts the overall motor speeds of the registration rollers and the delivery rollers.
 - MOTOR SPEED PLAIN: adjusts the difference of motor speeds between the registration rollers and the delivery rollers.
 - MOTOR SPEED HEAVY: adjusts the difference of motor speeds between the registration rollers and the delivery rollers.
 - GLASS SETTINGS:
 - LEFT SIDE GLASS: adjusts which CCD pixels are used on the CCD array in the flatbed optical unit when scanning from the flatbed.
 - LEADING EDGE GLASS: adjusts the time between when the flatbed optical unit carriage leaves the “home” position and when the CCD on the flatbed optical unit starts to read that the flatbed optical unit is moving.
 - GLASS SCALING: adjusts the flatbed optical unit carriage speed.

- CLOCK DENSITY SETUP¹
- ADF TRAY WIDTH CALIBRATION: writes the minimum (A6R) and maximum (A4) width values to the potentiometer.
- SAVE SETTINGS.
- RESTORE SETTINGS.

¹ This calibration is not used on the HP LaserJet 9000mfp.

Perform calibrations if a customer experiences an image defect (image stretch, for example).

Also, perform calibrations if the glass, ADF width sensor, ADF optical unit, or flatbed optical unit are replaced.

Table 27. Replaced components and required calibrations

Replaced component	Required calibration
Glass	<ul style="list-style-type: none"> • Leading edge glass • Left side glass • Leading edge front • Left side front • ADF plain scaling (ADF heavy scaling if necessary) • Glass scaling
ADF width sensor	<ul style="list-style-type: none"> • ADF tray width calibration
ADF optical unit	<ul style="list-style-type: none"> • Leading edge back • Left side back
Flatbed optical unit	<ul style="list-style-type: none"> • Leading edge glass • Left side glass • Leading edge front • Left side front

- 4 On the calibration target page, extend the wide line (callout 1) on the top, left corner and the wide line on the top, right corner (callout 2) to the edge of the paper.
- 5 Using a straight edge, draw a line 1 mm (0.04 inch) in from the top, left edge of the page (callout 1) and from the top, right edge of the page (callout 2). Make the lines approximately 30 mm (1.2 inch) long.

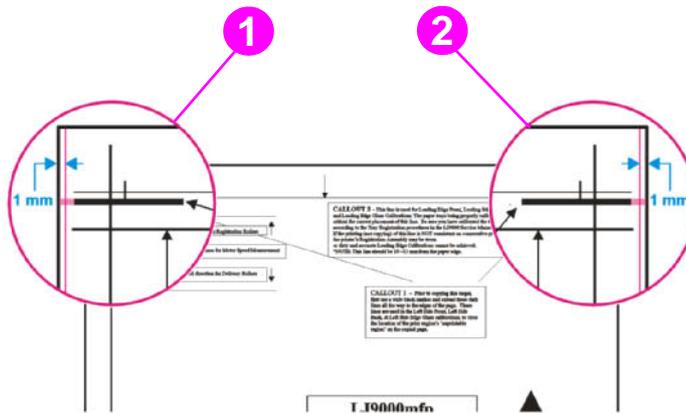


Figure 197. Left side front calibration (2 of 4)

- 6 Load the calibration target face down, and copy it using the ADF frontside optical unit.
- 7 Align the edge of the thick, black lines on the copy to the lines drawn on the original calibration target that are 1 mm (0.04 inch) from the edges.

Note

Make sure that you can see white on both sides of the calibration target. If not, you cannot perform the necessary measurements.

- 8 On the calibration target, compare the line on the left side of the original to the line on the left side of the copy.

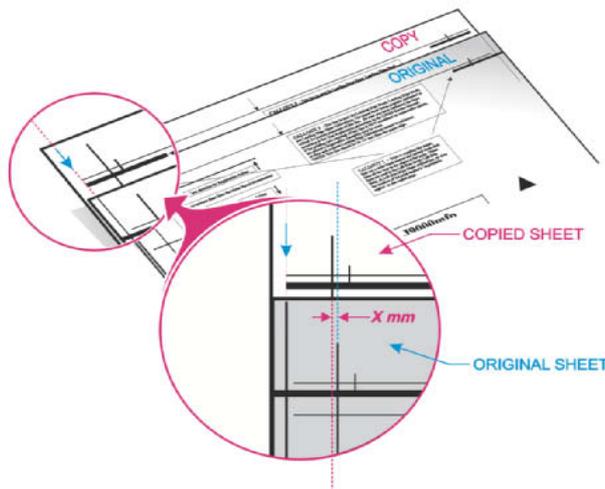


Figure 198. Left side front calibration (3 of 4)

- 9 Determine whether the copied page needs to be shifted to the left or to the right. If the copied page needs to be shifted, determine the required distance in millimeters.

- 10 Using the two HP LaserJet 9000mfp calibration values charts, determine the value for the left side front that will be entered into the service menu.

UNFOLDED SHEET

L9000mfp Calibration Values

FOLDED SHEET

L9000mfp

Component	Value
1	0.0
2	0.0
3	0.0
4	0.0
5	1.60
6	1.70
7	1.80
8	1.90
9	2.00
10	2.10
11	2.20
12	2.30
13	0.0
14	0.0
15	0.0
16	0.0
17	0.0
18	0.0
19	0.0
20	0.0
21	0.0
22	0.0
23	0.0
24	0.0
25	0.0
26	0.0
27	0.0
28	0.0
29	0.0
30	0.0
31	0.0
32	0.0
33	0.0
34	0.0
35	0.0
36	0.0
37	0.0
38	0.0
39	0.0
40	0.0
41	0.0
42	0.0
43	0.0
44	0.0
45	0.0
46	0.0
47	0.0
48	0.0
49	0.0
50	0.0
51	0.0
52	0.0
53	0.0
54	0.0
55	0.0
56	0.0
57	0.0
58	0.0
59	0.0
60	0.0
61	0.0
62	0.0
63	0.0
64	0.0
65	0.0
66	0.0
67	0.0
68	0.0
69	0.0
70	0.0
71	0.0
72	0.0
73	0.0
74	0.0
75	0.0
76	0.0
77	0.0
78	0.0
79	0.0
80	0.0
81	0.0
82	0.0
83	0.0
84	0.0
85	0.0
86	0.0
87	0.0
88	0.0
89	0.0
90	0.0
91	0.0
92	0.0
93	0.0
94	0.0
95	0.0
96	0.0
97	0.0
98	0.0
99	0.0
100	0.0
101	0.0
102	0.0
103	0.0
104	0.0
105	0.0
106	0.0
107	0.0
108	0.0
109	0.0
110	0.0
111	0.0
112	0.0
113	0.0
114	0.0
115	0.0
116	0.0
117	0.0
118	0.0
119	0.0
120	0.0
121	0.0
122	0.0
123	0.0
124	0.0
125	0.0
126	0.0
127	0.0
128	0.0
129	0.0
130	0.0
131	0.0
132	0.0
133	0.0
134	0.0
135	0.0
136	0.0
137	0.0
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139	0.0
140	0.0
141	0.0
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151	0.0
152	0.0
153	0.0
154	0.0
155	0.0
156	0.0
157	0.0
158	0.0
159	0.0
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161	0.0
162	0.0
163	0.0
164	0.0
165	0.0
166	0.0
167	0.0
168	0.0
169	0.0
170	0.0
171	0.0
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187	0.0
188	0.0
189	0.0
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191	0.0
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196	0.0
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199	0.0
200	0.0
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211	0.0
212	0.0
213	0.0
214	0.0
215	0.0
216	0.0
217	0.0
218	0.0
219	0.0
220	0.0
221	0.0
222	0.0
223	0.0
224	0.0
225	0.0
226	0.0
227	0.0
228	0.0
229	0.0
230	0.0
231	0.0
232	0.0
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239	0.0
240	0.0
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242	0.0
243	0.0
244	0.0
245	0.0
246	0.0
247	0.0
248	0.0
249	0.0
250	0.0
251	0.0
252	0.0
253	0.0
254	0.0
255	0.0
256	0.0
257	0.0
258	0.0
259	0.0
260	0.0
261	0.0
262	0.0
263	0.0
264	0.0
265	0.0
266	0.0
267	0.0
268	0.0
269	0.0
270	0.0
271	0.0
272	0.0
273	0.0
274	0.0
275	0.0
276	0.0
277	0.0
278	0.0
279	0.0
280	0.0
281	0.0
282	0.0
283	0.0
284	0.0
285	0.0
286	0.0
287	0.0
288	0.0
289	0.0
290	0.0
291	0.0
292	0.0
293	0.0
294	0.0
295	0.0
296	0.0
297	0.0
298	0.0
299	0.0
300	0.0
301	0.0
302	0.0
303	0.0
304	0.0
305	0.0
306	0.0
307	0.0
308	0.0
309	0.0
310	0.0
311	0.0
312	0.0
313	0.0
314	0.0
315	0.0
316	0.0
317	0.0
318	0.0
319	0.0
320	0.0
321	0.0
322	0.0
323	0.0
324	0.0
325	0.0
326	0.0
327	0.0
328	0.0
329	0.0
330	0.0
331	0.0
332	0.0
333	0.0
334	0.0
335	0.0
336	0.0
337	0.0
338	0.0
339	0.0
340	0.0
341	0.0
342	0.0
343	0.0
344	0.0
345	0.0
346	0.0
347	0.0
348	0.0
349	0.0
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351	0.0
352	0.0
353	0.0
354	0.0
355	0.0
356	0.0
357	0.0
358	0.0
359	0.0
360	0.0
361	0.0
362	0.0
363	0.0
364	0.0
365	0.0
366	0.0
367	0.0
368	0.0
369	0.0
370	0.0
371	0.0
372	0.0
373	0.0
374	0.0
375	0.0
376	0.0
377	0.0
378	0.0
379	0.0
380	0.0
381	0.0
382	0.0
383	0.0
384	0.0
385	0.0
386	0.0
387	0.0
388	0.0
389	0.0
390	0.0
391	0.0
392	0.0
393	0.0
394	0.0
395	0.0
396	0.0
397	0.0
398	0.0
399	0.0
400	0.0
401	0.0
402	0.0
403	0.0
404	0.0
405	0.0
406	0.0
407	0.0
408	0.0
409	0.0
410	0.0
411	0.0
412	0.0
413	0.0
414	0.0
415	0.0
416	0.0
417	0.0
418	0.0
419	0.0
420	0.0
421	0.0
422	0.0
423	0.0
424	0.0
425	0.0
426	0.0
427	0.0
428	0.0
429	0.0
430	0.0
431	0.0
432	0.0
433	0.0
434	0.0
435	0.0
436	0.0
437	0.0
438	0.0
439	0.0
440	0.0
441	0.0
442	0.0
443	0.0
444	0.0
445	0.0
446	0.0
447	0.0
448	0.0
449	0.0
450	0.0
451	0.0
452	0.0
453	0.0
454	0.0
455	0.0
456	0.0
457	0.0
458	0.0
459	0.0
460	0.0
461	0.0
462	0.0
463	0.0
464	0.0
465	0.0
466	0.0
467	0.0
468	0.0
469	0.0
470	0.0
471	0.0
472	0.0
473	0.0
474	0.0
475	0.0
476	0.0
477	0.0
478	0.0
479	0.0
480	0.0
481	0.0
482	0.0
483	0.0
484	0.0
485	0.0
486	0.0
487	0.0
488	0.0
489	0.0
490	0.0
491	0.0
492	0.0
493	0.0
494	0.0
495	0.0
496	0.0
497	0.0
498	0.0
499	0.0
500	0.0
501	0.0
502	0.0
503	0.0
504	0.0
505	0.0
506	0.0
507	0.0
508	0.0
509	0.0
510	0.0
511	0.0
512	0.0
513	0.0
514	0.0
515	0.0
516	0.0
517	0.0
518	0.0
519	0.0
520	0.0
521	0.0
522	0.0
523	0.0
524	0.0
525	0.0
526	0.0
527	0.0
528	0.0
529	0.0
530	0.0
531	0.0
532	0.0
533	0.0
534	0.0
535	0.0
536	0.0
537	0.0
538	0.0
539	0.0
540	0.0
541	0.0
542	0.0
543	0.0
544	0.0
545	0.0
546	0.0
547	0.0
548	0.0
549	0.0
550	0.0
551	0.0
552	0.0
553	0.0
554	0.0
555	0.0
556	0.0
557	0.0
558	0.0
559	0.0
560	0.0
561	0.0
562	0.0
563	0.0
564	0.0
565	0.0
566	0.0
567	0.0
568	0.0
569	0.0
570	0.0
571	0.0
572	0.0
573	0.0
574	0.0
575	0.0
576	0.0
577	0.0
578	0.0
579	0.0
580	0.0

Left side back calibration

Note

Before beginning the left side back calibration, perform the tray registration calibration on the print engine. To perform the tray registration calibration, touch **MENU**, then touch **CONFIGURE DEVICE**, then touch **PRINT QUALITY**, then touch **SET REGISTRATION**, then touch **SOURCE**, and then touch **PRINT TEST PAGE**. Follow the instructions on the printed registration page to complete the registration setting.

Note

Make sure you perform the left side back calibration for all of the trays.

- 1 Download the HP LaserJet 9000mfp calibration target and the HP LaserJet 9000mfp calibration values chart.
- 2 On the MFP to be calibrated, print the calibration target on ledger or A3 paper. See figure 196.
- 3 Print two copies of the calibration values chart on ledger or A3 paper.
- 4 On the calibration target page, extend the wide line on the top, left corner and the wide line on the top, right corner to the edge of the paper. See figure 197.
- 5 Using a straight edge, draw a line 1 mm (0.04 inch) in from the top, left edge of the page and from the top, right edge of the page. Make the lines approximately 30 mm (1.2 inch) long.
- 6 Load the calibration target face up, and choose “two-sided original to a one-sided copy” to eliminate any print engine duplexing issues.
- 7 Copy the calibration target using the ADF backside optical unit.
- 8 Align the edge of the thick, black lines on the copied calibration target to the lines drawn on the original calibration target that are 1 mm (0.04 inch) from the edges.

Note

Make sure that you can see white on both sides of the calibration target. If not, you cannot perform the necessary measurements.

- 9 On the calibration target, compare the line on the left side of the original to the line on the left side of the copy. See figure 198.
- 10 Determine whether the copied page needs to be shifted to the left or to the right. If the copied page needs to be shifted, determine the required distance in millimeters.
- 11 Using the two HP LaserJet 9000mfp calibration values charts, determine the value for the left side front that will be entered into the service menu. See figure 199.

Leading edge front calibration

Note

Before beginning the leading edge front calibration, perform the tray registration calibration on the print engine. To perform the tray registration calibration, touch **MENU**, then touch **CONFIGURE DEVICE**, then touch **PRINT QUALITY**, then touch **SET REGISTRATION**, then touch **SOURCE**, and then touch **PRINT TEST PAGE**. Follow the instructions on the printed registration page to complete the registration setting.

Note

Make sure you perform the leading edge front calibration for all of the trays.

- 1 Download the HP LaserJet 9000mfp calibration target and the HP LaserJet 9000mfp calibration values chart.
- 2 On the MFP to be calibrated, print the calibration target on ledger or A3 paper. See figure 196.
- 3 Print two copies of the calibration values chart on ledger or A3 paper.
- 4 Load the calibration target face down, and copy it using the ADF frontside optical unit.
- 5 Align the top edge of the copied calibration target to the top edge of the original calibration target.

Note

Make sure you align the paper edges and *not* the lines.

- 6 On the calibration target, compare the line at the top edge of the original to the line at top edge of the copy.
- 7 Determine if the copied page needs to be shifted up or down. If the copied page needs to be shifted, determine the required distance in millimeters.
- 8 Using the two HP LaserJet 9000mfp calibration values charts, determine the value for the leading edge front that will be entered into the service menu. See figure 199.

Leading edge back calibration

Note

Before beginning the leading edge back calibration, you must perform the tray registration calibration on the print engine. To perform the tray registration calibration, touch **MENU**, then touch **CONFIGURE DEVICE**, then touch **PRINT QUALITY**, then touch **SET REGISTRATION**, then touch **SOURCE**, and then touch **PRINT TEST PAGE**. Follow the instructions on the printed registration page to complete the registration setting.

Note

Make sure you perform the leading edge back calibration for all of the trays.

- 1 Download the HP LaserJet 9000mfp calibration target and the HP LaserJet 9000mfp calibration values chart.
- 2 On the MFP to be calibrated, print the calibration target on ledger or A3 paper. See figure 196.
- 3 Print two copies of the calibration values chart on ledger or A3 paper.
- 4 Load the calibration target face up, and choose “two-sided original to a one-sided copy” to eliminate any print engine duplexing issues.
- 5 Copy the calibration target using the ADF backside optical unit.
- 6 Align the top edge of the copied calibration target to the top edge of the original calibration target.

Note

Make sure you align the paper edges and *not* the lines.

- 7 On the calibration target, compare the line at the top edge of the original to the line at top edge of the copy.
- 8 Determine whether the copied page needs to be shifted up or down. If the copied page needs to be shifted, determine the required distance in millimeters.
- 9 Using the two HP LaserJet 9000mfp calibration values charts, determine the value for the leading edge back that will be entered into the service menu. See figure 199.

ADF plain scaling calibration

Note

Before beginning the ADF plain scaling calibration, perform the tray registration calibration on the print engine. To perform the tray registration calibration, touch **MENU**, then touch **CONFIGURE DEVICE**, then touch **PRINT QUALITY**, then touch **SET REGISTRATION**, then touch **SOURCE**, and then touch **PRINT TEST PAGE**. Follow the instructions on the printed registration page to complete the registration setting.

Note

Make sure you perform the ADF plain scaling calibration for all of the trays.

- 1 Download the HP LaserJet 9000mfp calibration target and the HP LaserJet 9000mfp calibration values chart.
- 2 On the MFP to be calibrated, print the calibration target on ledger or A3 paper. See figure 196.
- 3 Print two copies of the calibration values chart on ledger or A3 paper.
- 4 Load the calibration target face down, and copy it using the ADF frontside optical unit.
- 5 Align the top line of the copied calibration target to the top line of the original calibration target.

Note

Make sure you align the lines and *not* the edges.

- 6 On the calibration target, compare the line at the bottom edge of the original to the line at bottom edge of the copy.
- 7 Determine whether the copied page needs to be lengthened (line shifted down) or shortened (line shifted up). If the copied page needs to be shifted, determine the required distance in millimeters.
- 8 Using the two HP LaserJet 9000mfp calibration values charts, determine the value for the ADF plain scaling that will be entered into the service menu. See figure 199.

ADF heavy scaling calibration

Note This calibration only needs to be performed if the customer is using heavy media.

Note Before beginning the ADF heavy scaling calibration, perform the tray registration calibration on the print engine. To perform the tray registration calibration, touch **MENU**, then touch **CONFIGURE DEVICE**, then touch **PRINT QUALITY**, then touch **SET REGISTRATION**, then touch **SOURCE**, and then touch **PRINT TEST PAGE**. Follow the instructions on the printed registration page to complete the registration setting.

Note Make sure you perform the ADF heavy scaling calibration for all of the trays.

- 1 Download the HP LaserJet 9000mfp calibration target and the HP LaserJet 9000mfp calibration values chart.
- 2 On the MFP to be calibrated, print the calibration target on *heavy* ledger or A3 paper. See figure 196.
- 3 Print two copies of the calibration values chart on ledger or A3 paper.
- 4 Load the calibration target face down, and copy it using the ADF frontside optical unit.
- 5 Align the top line of the copied calibration target to the top line of the original calibration target.

Note Make sure you align the lines and *not* the edges.

- 6 On the calibration target, compare the line at the bottom edge of the original to the line at bottom edge of the copy.
- 7 Determine whether the copied page needs to be lengthened (line shifted down) or shortened (line shifted up). If the copied page needs to be shifted, determine the required distance in millimeters.
- 8 Using the two HP LaserJet 9000mfp calibration values charts, determine the value for the ADF heavy scaling that will be entered into the service menu. See figure 199.

Glass calibrations

Left side glass calibration

Note

Before beginning the left side glass calibration, perform the tray registration calibration on the print engine. To perform the tray registration calibration, touch **MENU**, then touch **CONFIGURE DEVICE**, then touch **PRINT QUALITY**, then touch **SET REGISTRATION**, then touch **SOURCE**, and then touch **PRINT TEST PAGE**. Follow the instructions on the printed registration page to complete the registration setting.

Note

Make sure you perform the left side glass calibration for all of the trays.

- 1 Download the HP LaserJet 9000mfp calibration target and the HP LaserJet 9000mfp calibration values chart.
- 2 On the MFP to be calibrated, print the calibration target on ledger or A3 paper. See figure 196.
- 3 Print two copies of the calibration values chart on ledger or A3 paper.
- 4 On the calibration target page, extend the wide line on the top, left corner and the wide line on the top, right corner to the edge of the paper. See figure 197.
- 5 Using a straight edge, draw a line 1 mm (0.04 inch) in from the top, left edge of the page and from the top, right edge of the page. Make the lines approximately 30 mm (1.2 inch) long.
- 6 Load the calibration target face down on the glass with the left edge of the calibration target toward the back of the glass.
- 7 Copy the calibration target.
- 8 Align the edge of the thick, black lines on the copy to the lines drawn on the original calibration target that are 1 mm (0.04 inch) from the edges.

Note

Make sure that you can see white on both sides of the calibration target. If not, you cannot perform the necessary measurements.

- 9 On the calibration target, compare the line on the left side of the original to the line on the left side of the copy. See figure 198.
- 10 Determine whether the copied page needs to be shifted to the left or to the right. If the copied page needs to be shifted, determine the required distance in millimeters.
- 11 Using the two HP LaserJet 9000mfp calibration values charts, determine the value for the left side glass that will be entered into the service menu. See figure 199.

Leading edge glass calibration

Note

Before beginning the leading edge glass calibration, perform the tray registration calibration on the print engine. To perform the tray registration calibration, touch **MENU**, then touch **CONFIGURE DEVICE**, then touch **PRINT QUALITY**, then touch **SET REGISTRATION**, then touch **SOURCE**, and then touch **PRINT TEST PAGE**. Follow the instructions on the printed registration page to complete the registration setting.

Note

Make sure you perform the leading edge glass calibration for all of the trays.

- 1 Download the HP LaserJet 9000mfp calibration target and the HP LaserJet 9000mfp calibration values chart.
- 2 On the MFP to be calibrated, print the calibration target on ledger or A3 paper. See figure 196.
- 3 Print two copies of the calibration values chart on ledger or A3 paper.
- 4 Load the calibration target face down on the glass with the left edge of the calibration target toward the back of the glass.
- 5 Copy the calibration target.
- 6 Align the top edge of the copied calibration target to the top edge of the original calibration target.

Note

Make sure you align the paper edges and *not* the lines.

- 7 On the calibration target, compare the line on the left side of the original to the line on the left side of the copy.
- 8 Determine whether the copied page needs to be shifted up or down. If the copied page needs to be shifted, determine the required distance in millimeters.
- 9 Using the two HP LaserJet 9000mfp calibration values charts, determine the value for the leading edge glass that will be entered into the service menu. See figure 199.

Glass scaling calibration

Note

Before beginning the glass scaling calibration, perform the tray registration calibration on the print engine. To perform the tray registration calibration, touch MENU, then touch CONFIGURE DEVICE, then touch PRINT QUALITY, then touch SET REGISTRATION, then touch SOURCE, and then touch PRINT TEST PAGE. Follow the instructions on the printed registration page to complete the registration setting.

Note

Make sure you perform the glass scaling calibration for all of the trays.

- 1 Download the HP LaserJet 9000mfp calibration target and the HP LaserJet 9000mfp calibration values chart.
- 2 On the MFP to be calibrated, print the calibration target on ledger or A3 paper. See figure 196.
- 3 Print two copies of the calibration values chart on ledger or A3 paper.
- 4 Load the calibration target face down on the glass with the left edge of the calibration target toward the back of the glass.
- 5 Copy the calibration target.
- 6 Align the top line of the copied calibration target to the top line of the original calibration target.

Note

Make sure you align the lines and *not* the edges.

- 7 On the calibration target, compare the line at the bottom of the original to the line at the bottom of the copy.
- 8 Determine whether the copied page needs to be lengthened (line shifted down) or shortened (line shifted up). If the copied page needs to be shifted, determine the required distance in millimeters.
- 9 Using the two HP LaserJet 9000mfp calibration values charts, determine the value for the glass scaling that will be entered into the service menu. See figure 199.

Jam troubleshooting

Jams occur when media either does not reach or does not clear a sensor along the paper path in a specific amount of time. If a jam occurs, a 13.XX PAPER JAM message appears on the MFP control panel.

Jams

Jams occur most often when the following conditions exist:

- Paper trays are not correctly loaded.
- The print media does not meet the specifications listed in the *HP LaserJet Printer Family Print Media Guide*.
- The media is in poor condition.
- The MFP needs to be cleaned.

If a jam occurs in the print engine, a 13.x PAPER JAM message will appear on the MFP control panel. For detailed descriptions of the 13.x messages and the actions recommended to resolve the errors, see the HP LaserJet 9000 service manual.

If a jam occurs in the scan engine, the MFP control panel shows an ADF PAPER JAM error.

Table 28. General jam troubleshooting

Cause	Solution
Improper action of the document shutter.	<ul style="list-style-type: none">● If the spring or arm for the document shutter is out of place, reset it.
Defective shutter solenoid.	<ul style="list-style-type: none">● Replace the shutter solenoid.
Dirty, worn, or deformed weight solenoid.	<ul style="list-style-type: none">● If the weight solenoid is dirty, clean it.● If the weight solenoid is worn or deformed, replace it.
Dirty, worn, or deformed pickup roller.	<ul style="list-style-type: none">● If the pickup roller is dirty, clean it.● If the pickup roller is worn or deformed, replace it.
Dirty, worn, or deformed feed roller assembly.	<ul style="list-style-type: none">● If the feed roller assembly is dirty, clean it.● If the feed roller assembly is worn or deformed, replace it.
Dirty, worn, or deformed registration roller assembly ¹ .	<ul style="list-style-type: none">● If the registration roller assembly is dirty, clean it.● If the registration roller assembly is worn or deformed, replace it.
Dirty, worn, or deformed delivery rollers ¹ .	<ul style="list-style-type: none">● If the delivery rollers are dirty, clean them.● If the delivery rollers are worn or deformed, replace them.

¹Upper and lower

Table 29. General jam troubleshooting

Cause	Solution
Multiple feed	
Dirty, worn, or deformed separation belts.	<ul style="list-style-type: none"> ● If the separation belts are dirty, clean them. ● If the separation belts are worn or deformed, replace them.
Dirty, worn, or deformed feed roller assembly.	<ul style="list-style-type: none"> ● If the feed roller assembly is dirty, clean it. ● If the feed roller assembly is worn or deformed, replace it.
Wrinkles/folded leading edge	
Dirty, worn, or deformed separation belts.	<ul style="list-style-type: none"> ● If the separation belts are dirty, clean them. ● If the separation belts are worn or deformed, replace them.
Dirty, worn, or deformed feed roller assembly.	<ul style="list-style-type: none"> ● If the feed roller assembly is dirty, clean it. ● If the feed roller assembly is worn or deformed, replace it.
Dirty, worn, or deformed registration roller assembly.	<ul style="list-style-type: none"> ● If the registration roller assembly is dirty, clean it. ● If the registration roller assembly is worn or deformed, replace it.
Dirty, worn, or deformed delivery rollers.	<ul style="list-style-type: none"> ● If the delivery rollers are dirty, clean them. ● If the delivery rollers are worn or deformed, replace them.
Skew¹	
Paper dust or dirt in the feed roller, registration roller, and/or feed guide.	<ul style="list-style-type: none"> ● Clean the dirty area.
Deformed registration roller or feed roller.	<ul style="list-style-type: none"> ● Replace the deformed roller.

¹If the skew is an ADF backside skew, follow the solutions in the table. If the skew is an ADF frontside skew, see page 234.

Evaluating the information pages

From the MFP control panel, you can print pages that show detailed information about the MFP and its current configuration. The following information pages are available:

- Configuration page
- HP Jetdirect page
- Supplies status page
- File directory page
- Usage page

For a complete list of the MFP information pages, print a menu map. See “Using a menu map” in chapter 3.

To select and print items from the information menu:

- 1 Press **START** to enter menus.
- 2 Use ▲ or ▼ to scroll to the **INFORMATION** menu, and then press **START**.
- 3 Use ▲ or ▼ to scroll to the information page you want and press **START**.

Configuration page

Use the configuration page to view current MFP settings, to help troubleshoot MFP problems, or to verify installation of optional accessories, such as memory (DIMMs), and printer languages.

The content of the configuration page varies, depending on the options currently installed in the MFP.

If any of the installed devices are not shown on the configuration page, verify that the Jet-Link cabling is correctly connected and functional and that dc power is available to the finishing device. Check and reseal suspect cable connections. If any of the cables are replaced, you must turn the power off and back on again to have the MFP recognize the device.

Configuration page elements

Figure 200 shows a sample configuration page, which contains information about the following attributes:

- A. MFP information
- B. Event log
- C. Installed personalities and options
- D. Memory
- E. Security
- F. Paper trays and options

hp LaserJet 9000mfp series 

configuration page 1

Device Information (A)

Product Name: HP LaserJet 9000 MFP
Device Name: HP LaserJet 9000 MFP
Device Number: 18
Formatter Number: S46XXXXXXXXX
Device Serial Number: XXXXXXXXXXXX
CPB: 1.98 (2.1)
SCB: MFP300 17
Firmware Datecode: 20020311 20020311
PS Wait Time-out: 300 seconds
Page Count: 185
Preventive Maintenance Interval: 350000
Pages Since Last Maintenance: 185

Memory (D)

Total Memory: 128 MB
DNS: 57.87
Automatic Resource Saving Enabled

Event Log (B)

Number of Entries in Use: 0
Maximum Number of Entries: 50
Event Log Is Empty

Security (E)

Control Panel Lock: NONE
Control Panel Password: DISABLED
Write Protect: DISABLED

Installed Personalities and Options (C)

PS (20010402)
PCL_XL (20010402)
PCL (20010402)
DIMM Slot 1: Side 1: 8 MB Flash
Side 2: 8 MB Flash
DIMM Slot 2: Side 1: 64 MB SDRAM
Side 2: 64 MB SDRAM
DIMM Slot 3: Empty
DIMM Slot 4: Empty
EIO 1: HP JetDirect J6057A
EIO 2: HP J6054A
EIO 3: TI PCILynx
DISK Storage: 4641 MB Capacity
LDAP Gateway: 15.56.8.155
SMTP Gateway: 15.56.8.201

Paper Trays and Options (F)

Default Paper Size: LETTER
Tray 1 Size: UNKNOWN
Tray 2 Size: LETTER
Tray 3 Size: 11X17
Duplex Unit
Device 1:
HEWLETT-PACKARD
2000 SHEETS INPUT TRAY [03.26] C8531A
Input Trays:
1: TRAY 4, 2000 Sheets
Device 2:
HEWLETT-PACKARD
HP MULTIFUNCTION FINISHER [020219] C8088A
Output Bins:
1: OPTIONAL BIN 1, 1000 Sheets, Face Up/Down
2: OPTIONAL BIN 2, 250 Sheets, Face Down

Figure 200. Sample configuration page

Jetdirect page

Use the Jetdirect page to view current network settings, to help troubleshoot MFP problems, or to verify network statistics or protocol information.

Jetdirect page elements

- A. HP Jetdirect configuration
- B. Security settings
- C. Network statistics
- D. TCP/IP status
- E. IPX/SPX status
- F. Novell/Netware settings
- G. AppleTalk status
- H. DLC/LLC status

hp LaserJet 9000mfp series

EIO 1 - JetDirect Page 1

----- HP JetDirect Configuration -----
Status: I/O Card Ready **A**
Model Number: J6057A
Hardware Address: 0001E6627404
Firmware Version: R.22.09
Port Config: 10BASE-T HALF
Auto Negotiation: On
Manufacturing ID: 22014203902201
Date Manufactured: 01/2002

----- Security Settings -----
Admin Password: Not Specified **B**
SSL/TLS: Disabled
Cert Expires: Not Applicable
SNMP Versions: 1:2
SNMP Set Cmty Name: Not Specified
Access List: Not Specified

----- Network Statistics -----
Total Packets Received: 344285 **C**
Unicast Packets Received: 19292
Bad Packets Received: 0
Framing Errors Received: 0
Total Packets Transmitted: 22056
Undeliverable Packets: 0
Transmit Collisions: 130
Transmit Late Collisions: 0

----- TCP/IP -----
Status: Ready **D**
Host Name: NP1627404
IP Address: 15.237.22.20
Subnet Mask: 255.255.252.0
Default Gateway: 15.237.20.1
Config By: DHCP
DHCP Server: 15.235.128.30
TFTP Server: Not Specified
Config File: Not Specified
Domain Name: bol.hp.com
DNS Server: 15.235.128.51
WINS Server: 15.56.40.21
Syslog Server: Not Specified
Idle Timeout: 270 sec
Syslog Server: Not Specified
Idle Timeout: 270 sec

----- IPX/SPX -----
Status: Initializing **E**
Primary Frame Type: Auto Select
Network Frame Type Rcvd
Unknown EN II 5699
Unknown EN"802.2 48365
Unknown EN"SNAP 5017
Unknown EN"802.3 19558

----- Novell/NetWare -----
Status: 16 **F**
NOT CONFIGURED
Node Name: NP1627404
NetWare Mode: Queue Server
NDS Tree Name:
NDS Context:
Attached Server:
SAP Interval: 60 sec

----- AppleTalk -----
Status: Ready **G**
Name: HP LaserJet 9000 MFP
Zone: *
Type 1: HP LaserJet
Type 2: LaserWriter
Network Number: 65281
Node Number: 53

----- DLC/LLC -----
Status: Ready **H**

Figure 201. Sample Jetdirect page

Supplies status page

Use the supplies status page to view the current MFP supply status, to help troubleshoot MFP problems, or to verify MFP information.

Supplies page elements

- A. Supplies-ordering information
- B. Cartridge information
- C. Other supplies information
- D. MFP information

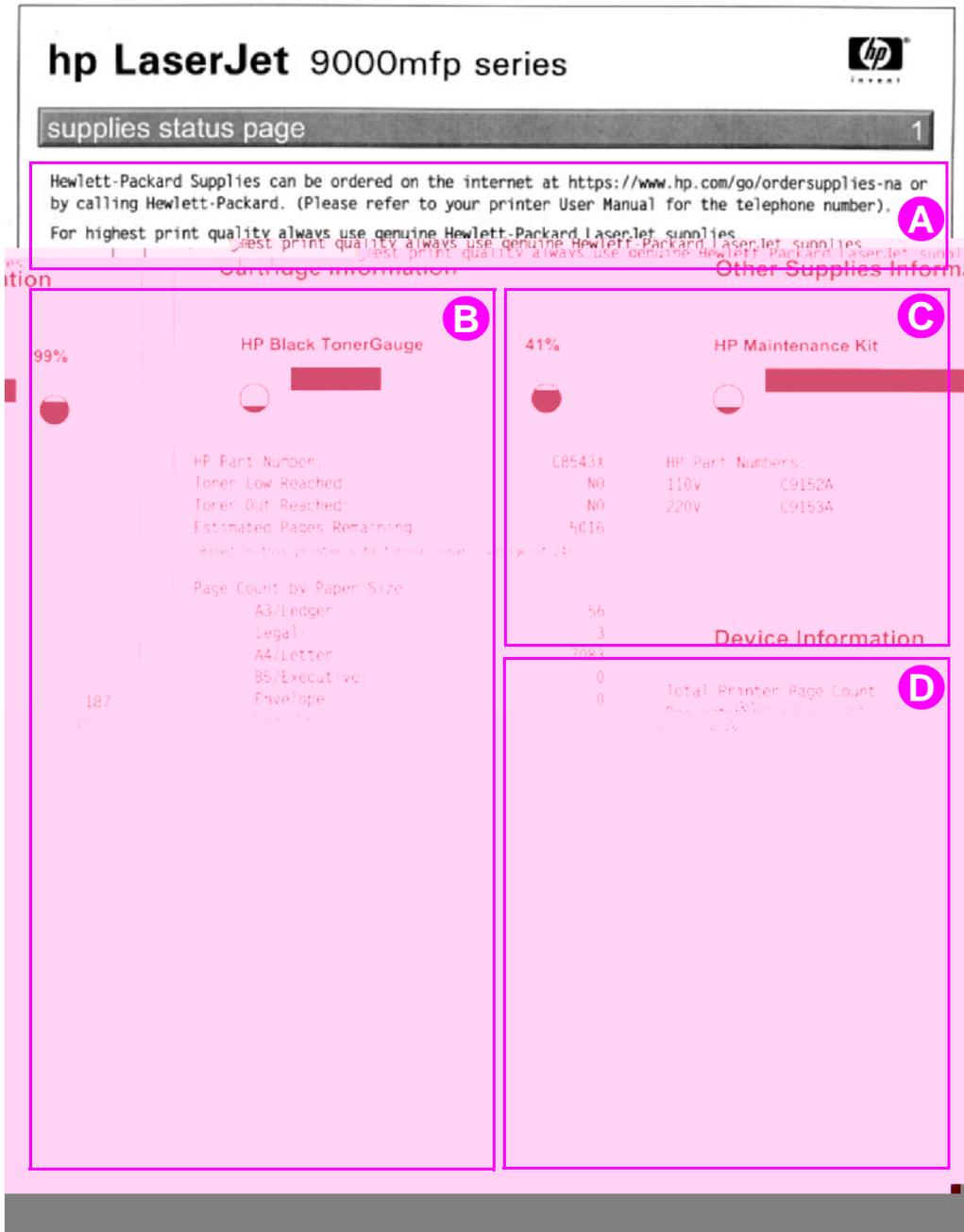


Figure 202. Sample supplies status page

Usage page

The usage page is designed to fit into a pay-per-page (PPP) model. A reseller can configure the usage page with instructions that a user can send the information back to the reseller in order to prepare bills.

Print a usage page from the MFP control panel (or gain access to the information remotely from HP Web JetAdmin) to determine how many simplex or duplex pages of each paper size have been scanned on the copy module and printed on the MFP. Average toner coverage is approximated by counting pixels. Jams are not counted. The data cannot be reset manually, and values such as total print and scan impressions, toner coverage, serial number, default language, and default paper size are backed up between the MFP NVRAM and the hard disk.

Product Name: HP LaserJet 9000 MFP
Device Name: HP LaserJet 9000 MFP

Usage Totals

PRINTED (PRINT & COPY)

Page Size	SIMPLEX		DUPLEX		Total
	Count	Units	Count	Units	
LETTER	19	1.0	0	2.0	19.0
LEGAL	0	1.3	0	2.6	0.0
A4	0	1.0	0	2.0	0.0
EXECUTIVE	0	0.8	0	1.6	0.0
11x17	0	2.0	0	4.0	0.0
A3	0	2.0	0	4.0	0.0
COM10 ENVE	0	0.4	**	**	0.0
MONARCH EN	0	0.3	**	**	0.0
C5 ENVELOP	0	0.6	**	**	0.0
DL ENVELOP	0	0.4	**	**	0.0
J15B4	0	1.5	0	3.0	0.0
J15B5	0	0.7	0	1.4	0.0
B5 ENVELOP	0	0.7	**	**	0.0
CUSTOM	0	1.0	0	2.0	0.0
JPOSTD	0	1.0	**	**	0.0
A5	0	0.5	0	1.0	0.0
BK	0	1.7	0	3.4	0.0
16K	0	0.8	0	1.6	0.0
JEKEC	0	1.1	0	2.2	0.0
LETTER-R	0	1.0	0	2.0	0.0
A4-R	0	1.0	0	2.0	0.0
ISOB5	0	1.0	0	2.0	0.0

SCANNED (COPY & SEND)

Page Size	SIMPLEX		DUPLEX		Total
	Count	Units	Count	Units	
LETTER	0	1.0	0	2.0	0.0
LEGAL	0	1.3	0	2.6	0.0
A4	0	1.0	0	2.0	0.0
EXECUTIVE	0	0.8	0	1.6	0.0
11x17	0	2.0	0	4.0	0.0
A3	0	2.0	0	4.0	0.0
J15B4	0	1.5	0	3.0	0.0
J15B5	0	0.7	0	1.4	0.0
CUSTOM	0	1.0	0	2.0	0.0
A5	0	0.5	0	1.0	0.0

TOTAL SCANNER USAGE

Copy Job Scan Count 0
Send Job Scan Count 0

ADF Simplex Pages 0
ADF Duplex Pages 0
ADF Total Pages 0
Flatbed Scan Count 0

Coverage 3.665 (2)

Figure 203. Sample usage page

File directory page

Use the file directory page to view current directory structures, to help troubleshoot MFP problems, or to verify storage capabilities.

File directory page elements

Directory information

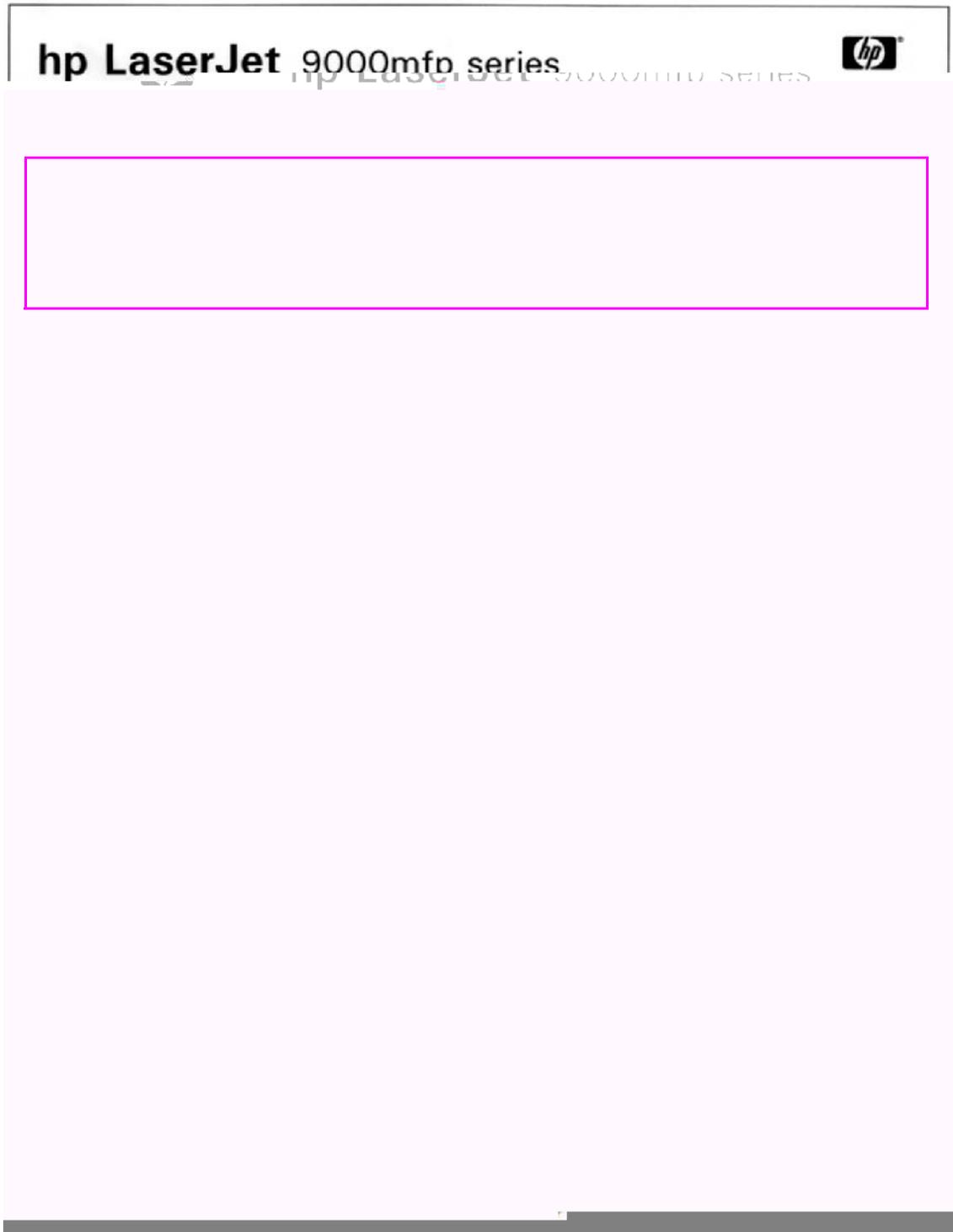


Figure 204. Sample file directory page

Image-formation troubleshooting

When working with customers, obtain a print sample before troubleshooting the MFP. Also, ask the customer to describe the quality expected from the MFP. The print sample helps clarify the customer's description of the problem.

Often an image-formation problem can be linked to media that is outside the specifications that Hewlett-Packard has established for optimum MFP performance. See "Measurement and adjustment" on page 232 for help with persistent image-formation problems.

Table 30. Image quality checks

Image quality checks	Action
Is the image defect on printed pages?	See image formation troubleshooting in the HP LaserJet 9000 service manual.
Does the problem repeat on the page?	See "Measurement and adjustment" on page 232.
Is the customer using print media that meets all HP specifications?	See "Measurement and adjustment" on page 232.
Is the print sample similar to those in the image defect tables?	See "Image defects" on page 229. Compare the sample to the tables and perform the recommended actions.
Does the media meet HP standards?	See "Measurement and adjustment" on page 232.

Image defects

The quality of the MFP output is subject to user judgment. This section of the manual helps to define print-quality defects and the factors that affect print quality.

The print samples shown in the following table illustrate some print-quality defects. Keep copies of print-quality defects you encounter in the field and an explanation of their causes to use for future reference.

Note

Verify that the image defect is only on scanned images. If an image defect is on printed pages, see the HP LaserJet 9000 series printer service manual.

Note

For blank pages, vertical lines, and horizontal lines defects, verify whether the image defect occurs on scanned pages from the glass, the ADF, or both.

Table 31. Image defects

Problem	Condition	Solution
<p>Blank page</p> 	Dirty white calibration strips.	<ul style="list-style-type: none"> ● Clean the white calibration strips on the back of the glass. ● If the problem persists, replace the glass.
	Defective flatbed inverter PCB.	<ul style="list-style-type: none"> ● Replace the flatbed inverter PCB.
	Defective flatbed scanning lamp.	<ul style="list-style-type: none"> ● Replace the flatbed scanning lamp assembly.
	Defective flatbed CCD driver.	<ul style="list-style-type: none"> ● Replace the flatbed optical assembly.
	Dirty white calibration strips.	<ul style="list-style-type: none"> ● Clean the white calibration strip on the delivery roller cover. ● If the problem persists, replace the delivery roller cover.
	Defective ADF inverter PCB.	<ul style="list-style-type: none"> ● Replace the ADF inverter PCB.
	Defective ADF scanning lamp.	<ul style="list-style-type: none"> ● Replace the ADF scanning lamp assembly.
	Defective ADF analog processor PCB.	<ul style="list-style-type: none"> ● Replace the ADF analog processor PCB.
Defective ADF CCD driver.	<ul style="list-style-type: none"> ● Replace the ADF optical assembly. 	

Table 31. Image defects (continued)

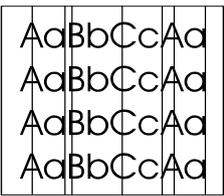
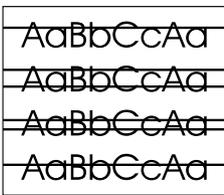
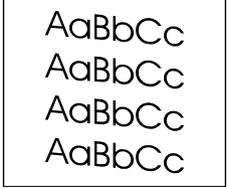
Problem	Condition	Solution
<p data-bbox="292 182 432 212">Vertical lines</p> 	Foreign substances deposited on the pickup roller.	<ul style="list-style-type: none"> ● Clean the pickup roller. ● If the problem persists, replace the pickup roller.
	Foreign substances deposited on the weight plate.	<ul style="list-style-type: none"> ● Clean the weight plate. ● If the problem persists, replace the weight plate.
	Foreign substances deposited on the feed rollers.	<ul style="list-style-type: none"> ● Clean the feed rollers. ● If the problem persists, replace the feed roller assembly.
	Foreign substances deposited on the registration rollers.	<ul style="list-style-type: none"> ● Clean the registration roller (upper and lower). ● If the problem persists, replace the registration roller.
	Scars on the white calibration strips on the back of the glass.	<ul style="list-style-type: none"> ● Clean the white calibration strips on the back of the glass. ● If the problem persists, replace the glass.
	Defective flatbed CCD driver.	<ul style="list-style-type: none"> ● Replace the flatbed optical assembly.
	Defective scanner controller board.	<ul style="list-style-type: none"> ● Replace the scanner controller board.
	Scars on the white calibration strip placed on the delivery roller cover.	<ul style="list-style-type: none"> ● Clean the white calibration strip on the delivery roller cover. ● If the problem persists, replace the delivery roller cover.
	Defective ADF scanner controller board.	<ul style="list-style-type: none"> ● Replace the ADF scanner controller board.
	Defective ADF analog processor PCB.	<ul style="list-style-type: none"> ● Replace the ADF analog processor PCB.
Defective ADF CCD driver.	<ul style="list-style-type: none"> ● Replace the ADF optical assembly. 	
<p data-bbox="292 1176 461 1205">Horizontal lines</p> 	Scars on the back of the glass.	<ul style="list-style-type: none"> ● Clean the white calibration strips on the back of the glass. ● If the problem persists, replace the glass.
	Defective flatbed inverter PCB.	<ul style="list-style-type: none"> ● Replace the flatbed inverter PCB.
	Defective flatbed CCD driver.	<ul style="list-style-type: none"> ● Replace the flatbed optical assembly.
	Defective scanner controller board.	<ul style="list-style-type: none"> ● Replace the scanner controller board.
	Scars on the white calibration strip on the delivery roller cover.	<ul style="list-style-type: none"> ● Clean the white calibration strip on the delivery roller cover. ● If the problem persists, replace the delivery roller cover.
	Defective ADF inverter PCB.	<ul style="list-style-type: none"> ● Replace the ADF inverter PCB.
	Defective ADF analog processor PCB.	<ul style="list-style-type: none"> ● Replace the ADF analog processor PCB.
	Defective ADF CCD driver.	<ul style="list-style-type: none"> ● Replace the ADF optical assembly.
	Defective scanner controller PCB.	<ul style="list-style-type: none"> ● Replace the scanner controller PCB.

Table 31. Image defects (continued)

Problem	Condition	Solution
<p data-bbox="320 191 579 218">Stretched/shrunk image</p> 	<p data-bbox="592 191 989 275">Incorrect motor speeds driving the registration rollers and delivery motors.</p>	<p data-bbox="1005 191 1489 247">Perform the appropriate scaling calibration in the service menu.</p>
<p data-bbox="320 470 579 497">Skewed image</p> 	<p data-bbox="592 470 746 497">See page 221.</p>	<p data-bbox="1005 470 1160 497">See page 221.</p>

Measurement and adjustment

ADF unit height adjustment

If the height between the ADF and the glass is not properly adjusted, a transport defect might occur. If a transport defect occurs, check the height between the ADF unit and the glass according to the following procedures and then adjust the gap within the specifications.

- 1 Remove the following covers:
 - ADF back cover—See page 107.
 - Flatbed back cover—See page 113.
 - Flatbed right cover—See page 114.
- 2 Close the ADF unit.
- 3 Measure the gap between the four ADF height spacers and the glass. Make sure the gap is within the ADF unit height adjustment specification (h) of 0.7 mm (0.03 inch) or less.

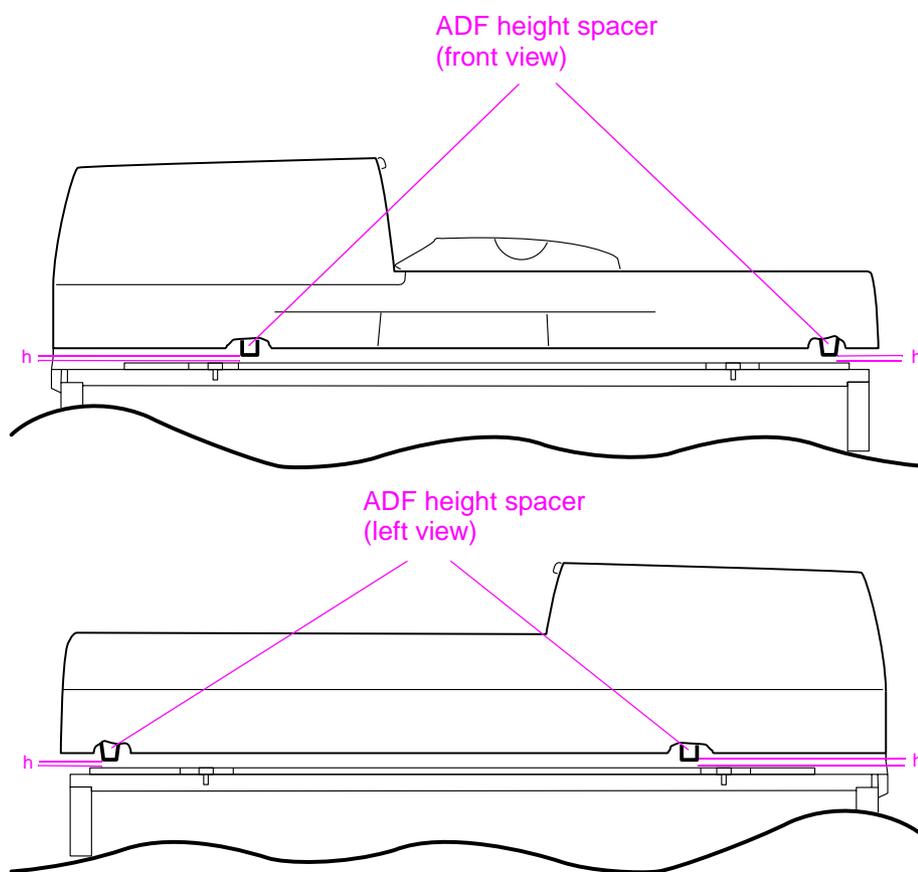


Figure 205. ADF unit height adjustment (1 of 2)

Hint The gap is within specifications if a short ruler (0.5 mm thick) does not fit into the gap.

- 4 If the gap is not within specifications, turn the two ADF height adjust screws (callout 1). Turn the screws clockwise (CW) to increase the gap, or counterclockwise (CCW) to decrease the gap.

Note

The gap will increase or decrease 0.7 mm (0.03 inch) with each rotation of the screw.

Note

Make sure you loosen the fixing nut (callout 2) before rotating the screw.

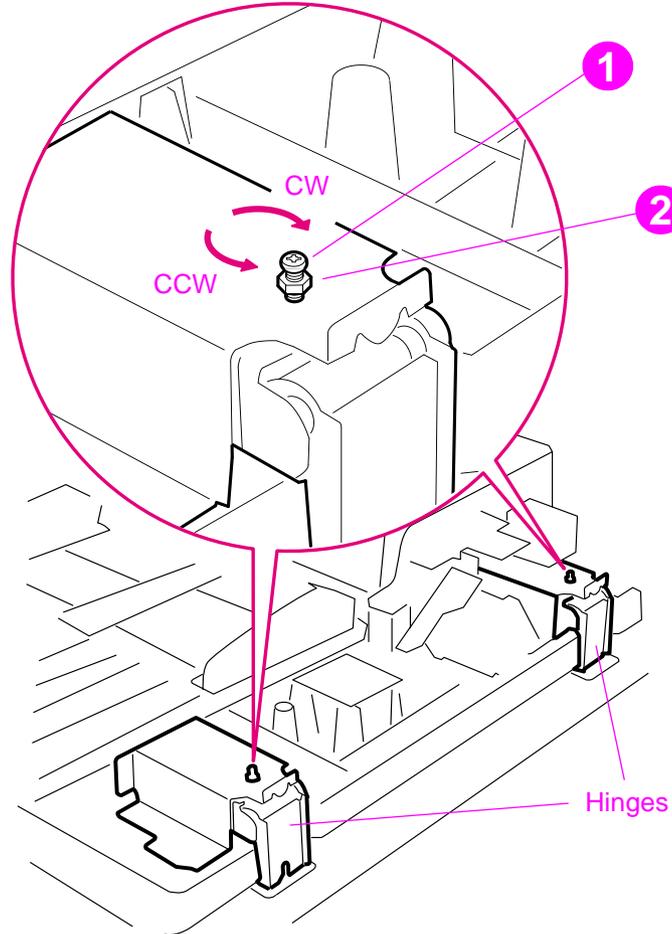


Figure 206. ADF unit height adjustment (2 of 2)

ADF skew adjustment

If the ADF unit is not properly aligned on the flatbed, a scanned image skew might occur from the ADF front optics. If an image skew occurs, check the amount of ADF skew and adjust it within specifications.

- 1 Make a copy in the ADF simplex mode by loading a test page face down in the ADF input tray.

Note

Use a sheet of paper that allows you to measure at least 257 mm (10.1 inches).

- 2 Measure the L1 distance and the L2 distance with a ruler. If the difference between the two distances is equal to or less than 1.5 mm (0.06 inch), the skew is within the ADF skew adjustment specifications.

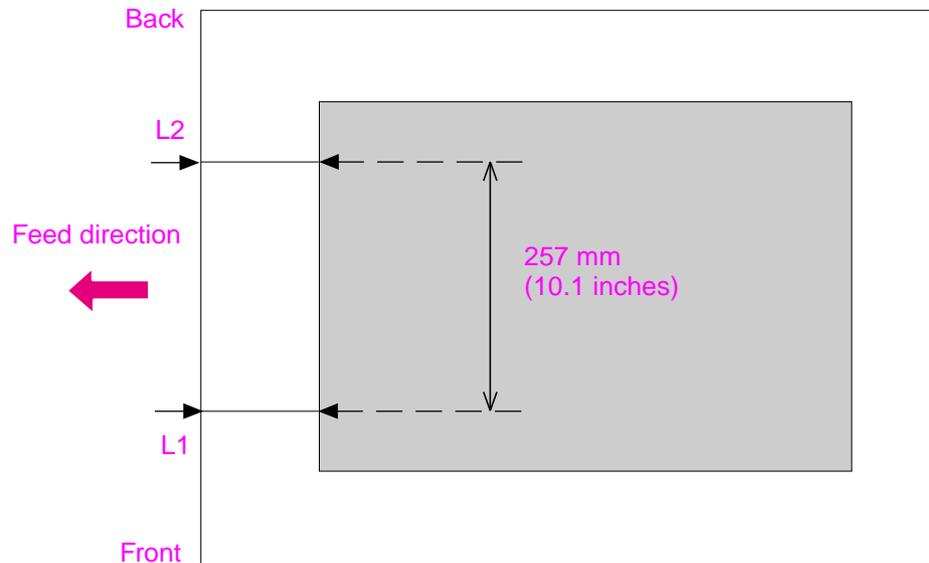


Figure 207. ADF skew adjustment (1 of 3)

- 3 If the distance is not within the ADF skew adjustment specifications, turn the ADF skew adjusting screw (callout 1). Turn the screw clockwise (CW) to decrease the distance of L1 (increase L2), and counterclockwise to increase the distance of L1 (decrease L2).

Note

The skew adjusts 0.7 mm (0.03 inch) with each rotation of the ADF skew adjusting screw.

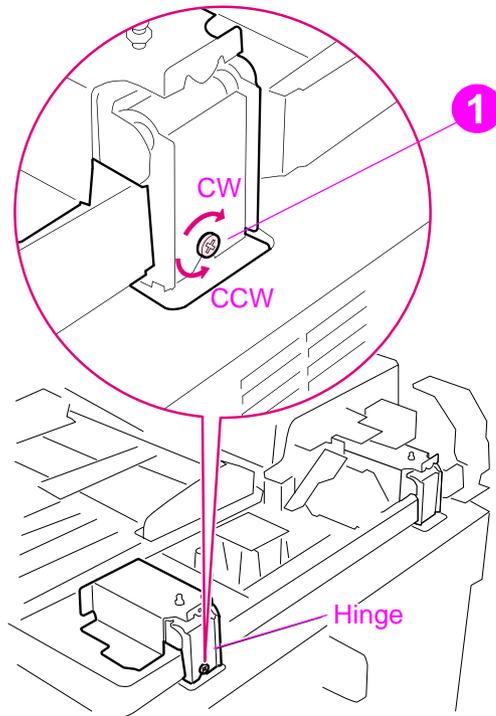


Figure 208. ADF skew adjustment (2 of 3)

Note

Make sure the bracket fixing screw (callout 2) is loosened before beginning the ADF skew adjustment, and make sure the screw is tightened after the adjustment.

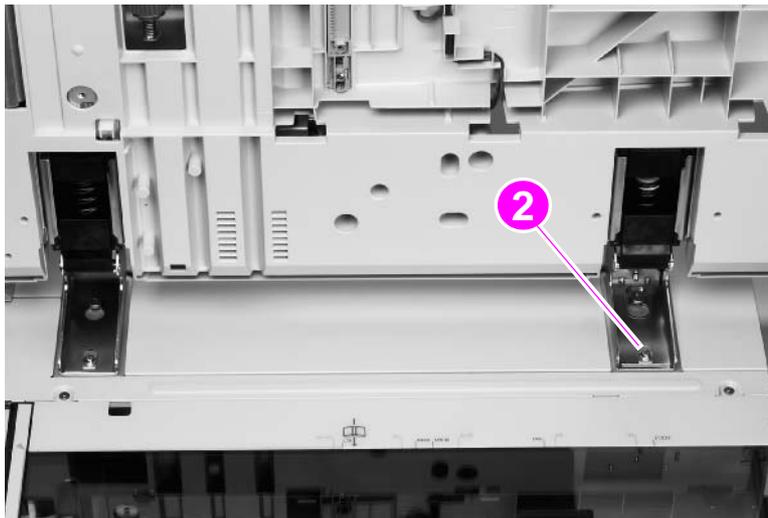


Figure 209. ADF skew adjustment (3 of 3)

Weight solenoid stroke adjustment

Measure the distance “h” with the weight arm lowered. If the distance of “h” is not 4.5 mm (0.18 inch) +/- 0.3 mm (0.012 inch), then loosen the fixing screw and slide the adjustment plate to the left or to the right until the distance “h” is within specifications.

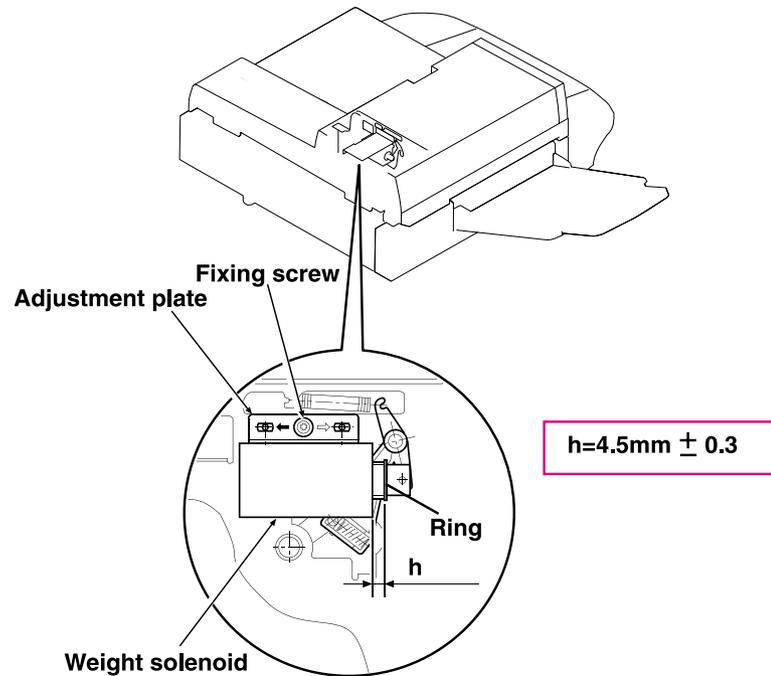


Figure 211. Weight solenoid stroke adjustment

Scanner controller PCB

The MFP scan engine calibrations are stored on the scanner controller board (SCB). If the SCB needs to be replaced, back up the calibrations by copying the settings to the hard drive. To copy the settings:

- 1 Touch MENU.
- 2 Touch SERVICE MENU.
- 3 Touch SCANNER SETTINGS.
- 4 Touch SAVE SETTINGS.

To write the stored values back to the new SCB:

- 1 Touch MENU.
- 2 Touch SERVICE MENU.
- 3 Touch SCANNER SETTINGS.
- 4 Touch RESTORE SETTINGS.

Note

HP recommends backing up the calibration values before performing any of the scan engine calibrations. If you experience a problem while performing a calibration, restore the old values and start over again.

Note

A service label located inside the flatbed lower front cover is a hard copy backup of the calibration values. If you enter new calibration values, download the file `SERVICE LABELS` and record the new values on the label. Tape the new label over the old label.

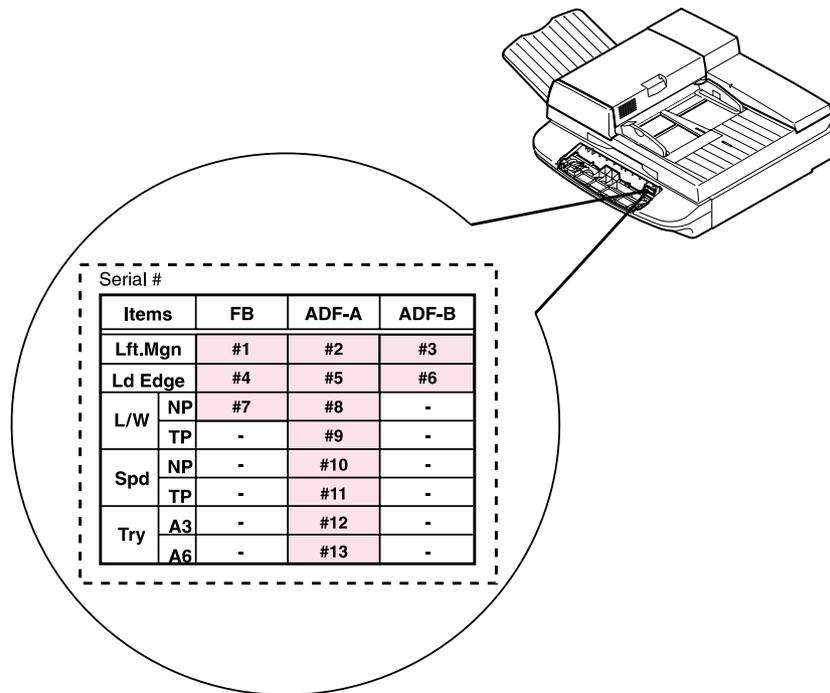


Figure 212. Scanner controller PCB

Connector locations

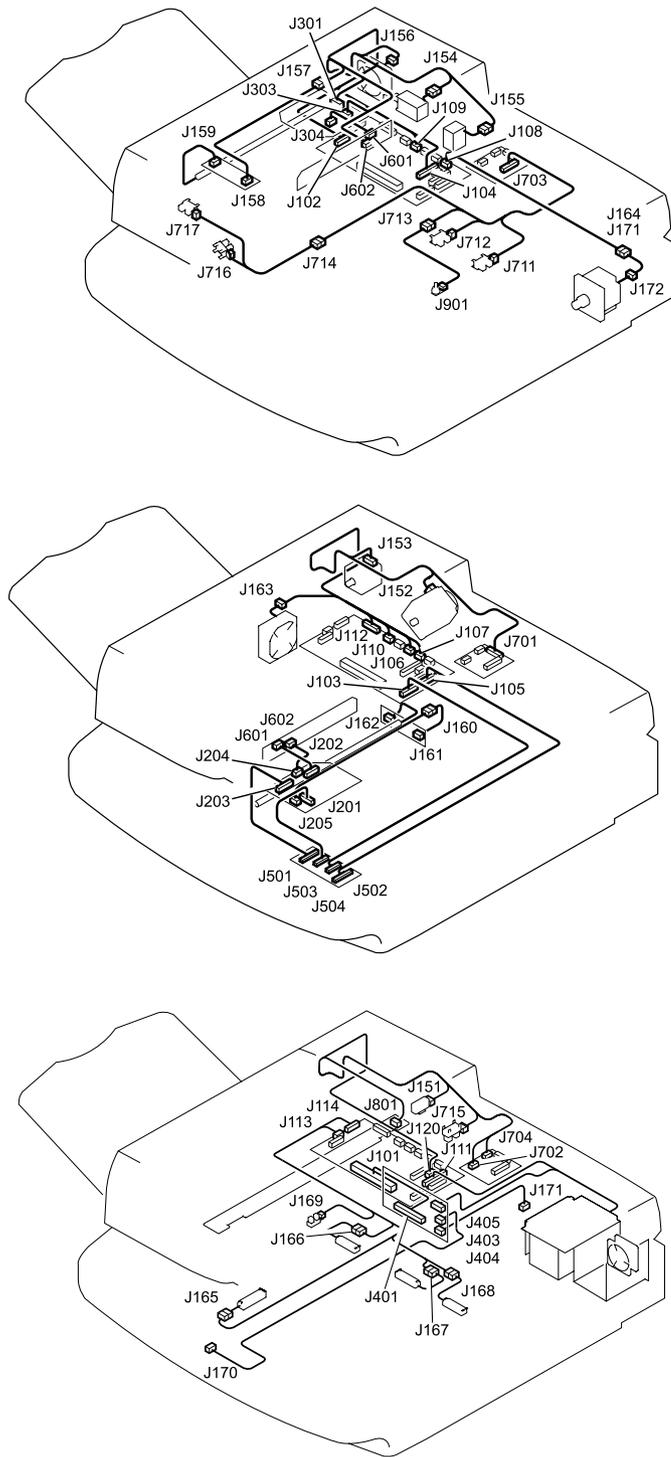


Figure 213. Connector locations

Electrical structure

Table 32. Sensors

Sensor	Location	Type	Qty
ADF angle (detects when ADF is 30°)	ADF	optical/flag	1
ADF document length detection	ADF	optical/flag	2
ADF feeder switch	ADF feeder	optical/flag	1
ADF open/closed	ADF	optical/flag	1
Document detection	flatbed	optical/reflective	1
Document size	flatbed	optical/reflective	3
Document width	ADF	potentiometer	1
Flatbed carriage home position	flatbed	optical/flag	1
Paper loaded (empty)	ADF feeder	optical/flag	1
Pickup roller home position	ADF feeder	optical/flag	1
Registration detections	ADF feeder	optical flag	1
Skew detection	ADF feeder	optical flag	2
Timing	ADF feeder	optical/flag	1

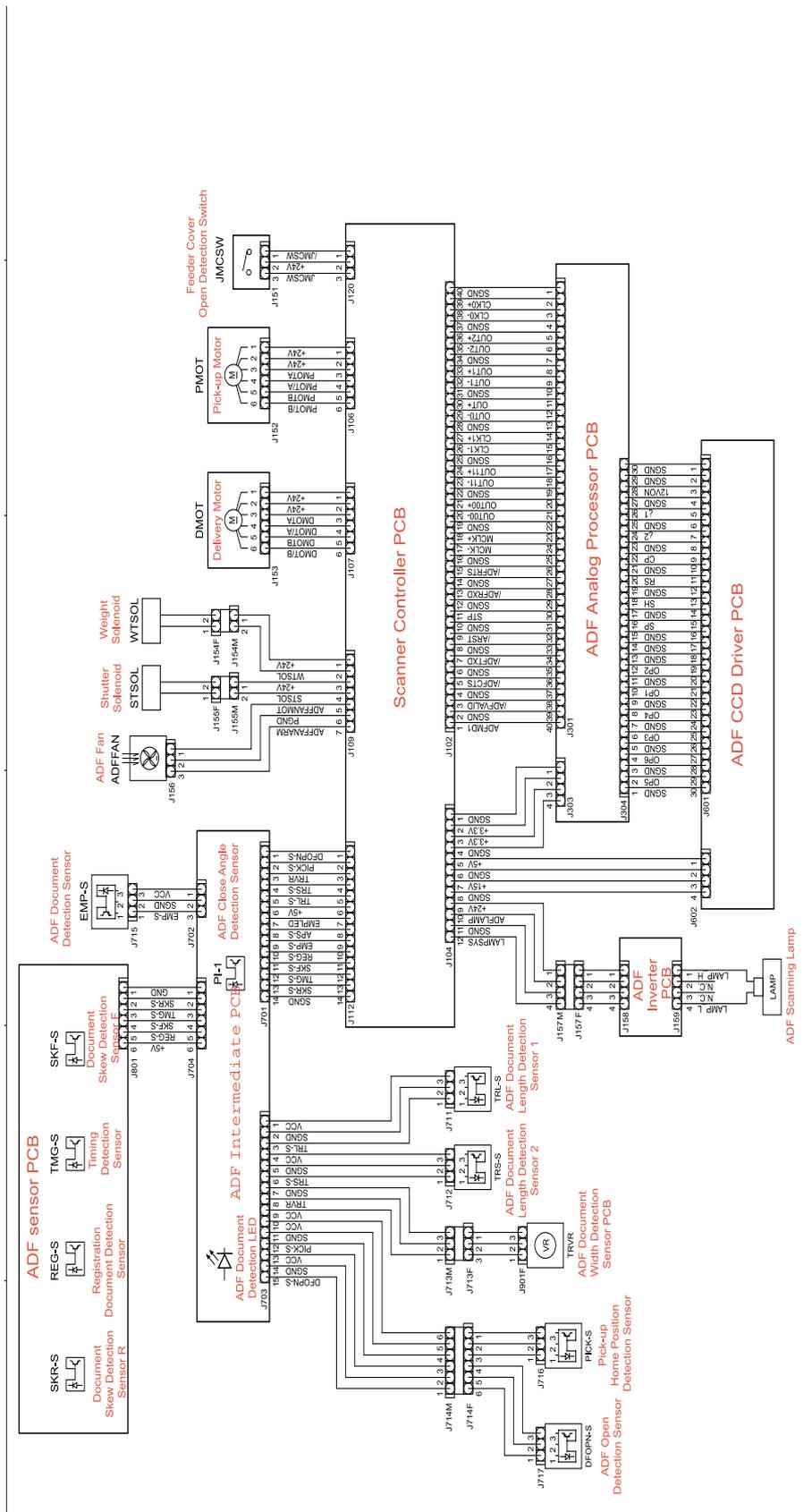


Figure 214. Circuit diagram (1 of 2)

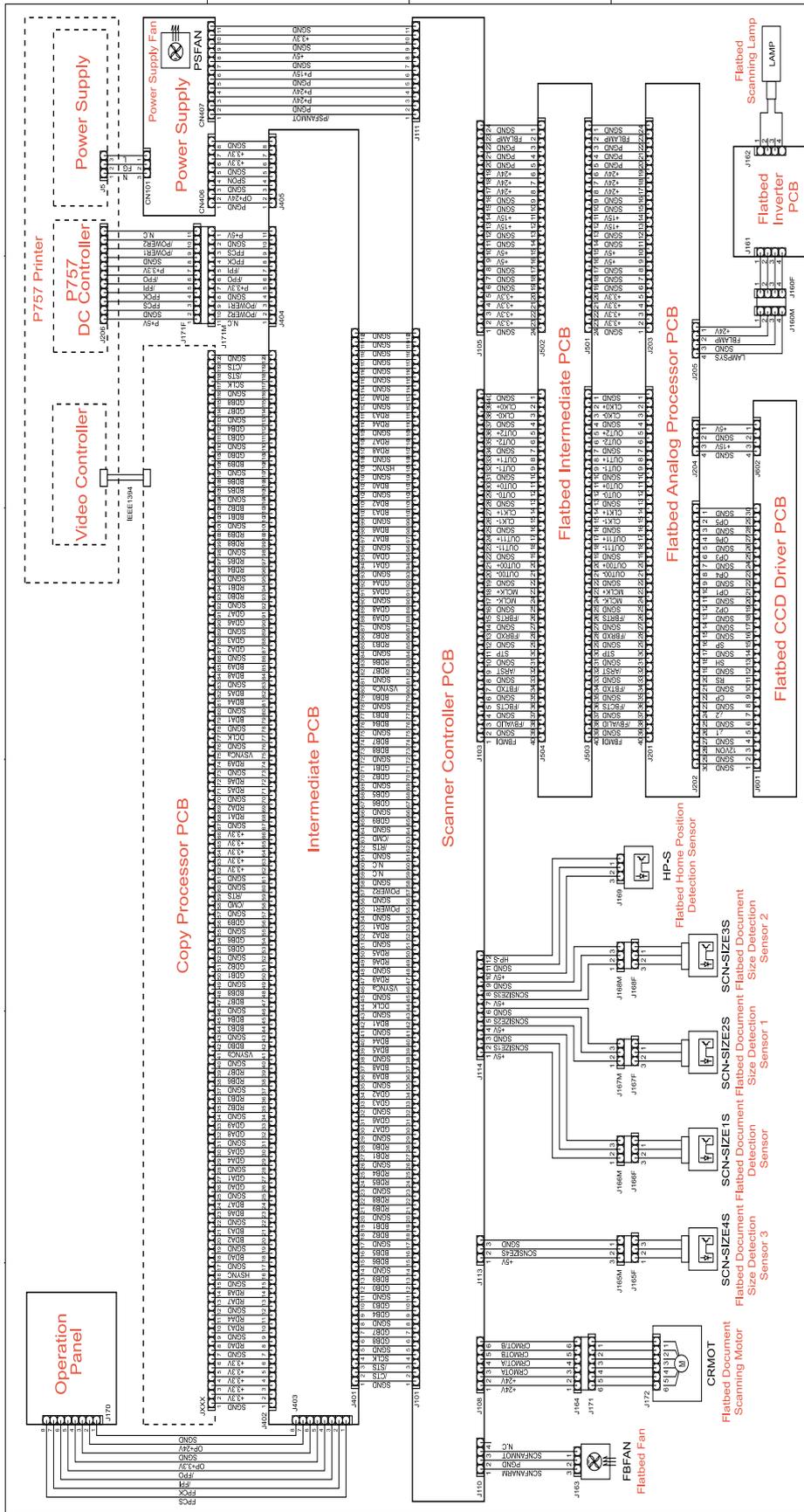


Figure 215. Circuit diagram (2 of 2)

8

Parts and diagrams

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Introduction

The figures in this chapter illustrate the major subassemblies in the printer and their component parts. A table accompanies each exploded-view diagram. Each table lists the item number for the replaceable part, the associated part number for the item, the quantity, and a description of the part.

Note

When looking for a part number, pay careful attention to the voltage listed in the description column to ensure that the part number selected is for the correct printer model.

Ordering parts

All standard part numbers listed are stocked and can be ordered from HP's Customer Services and Support Organization. See "Service and support" in chapter 1.

Consumables and accessories like those listed in table 33 can be ordered from Hewlett-Packard. See "Parts and supplies" in chapter 1.

Consumables, supplies, accessories, FRUs, and documentation

Note

* These products come standard with the MFP.

** One of these devices must be installed in order to operate the MFP.

Table 33. Consumables, supplies, accessories, FRUs, and documentation

Product number	Service number	Exchange number	Description
Consumables			
C8543X			Print cartridge
C8091A			Staple cartridge for stapler/stacker
C8092A			Staple cartridge for Multifunction Finisher
Supplies			
C9152A	C9152-67901	C9152-69001	PM kit/110 V
C9153A	C9153-67901	C9153-69001	PM kit/220 V
FRUs			
C7860A	C8519-67901	C8519-69001	Formatter assembly
RG5-5750-000CN		C8519-69002	Fuser assembly, 110 V
RG5-5751-000CN		C8519-69003	Fuser assembly, 220 V
RG5-5677-000CN		C8519-69004	Paper input unit (PIU)
RG5-5778-000CN		C8519-69005	dc controller
RG5-5728-000CN			High-voltage power supply
RG5-5730-000CN		C8519-69007	Low-voltage power supply, 110 V
RG5-5731-000CN		C8519-69008	Low-voltage power supply, 220 V
Accessories			
C9147A	C9147-67901		16 MB flash firmware DIMM formatter*
			8 MB flash firmware DIMM for CPB*
C7843A	C7843-67901		16 MB DIMM
C7845A	C7845-67901		32 MB DIMM*
C7846A	C7846-67901		64 MB DIMM
C9121A	C9121-67901		128 MB DIMM*
C4103A	C4103-67901		HP Fast InfraRed Connect pod
C4293A			Font DIMM—simplified Chinese
C4292A			Font DIMM—traditional Chinese
J6054A	J6054-61001		Hard disk*
J4169A	J4169-61001	J4169-69001	HP Jetdirect 615N Fast Ethernet (10/100 Base-TX)*
J4135A			HP Jetdirect Connectivity (USB)
C8568A	C8568-67901	C8568-69001	Tray 1*
C8531A	C8531-67901	C8531-69001	2000-sheet feeder (tray 4)*
RG5-6212-000CN		C8531-69002	2000-sheet feeder (tray 4) cassette only**
C8084A			3000-sheet stacker**
C8085A			3000-sheet stapler/stacker**

Table 33. Consumables, supplies, accessories, FRUs, and documentation (continued)

Product number	Service number	Exchange number	Description
C8088A			Multifunction Finisher**
C8532A	C8532-67901	C8532-69001	Duplexer*
Documentation			
C8523-90921			MFP service manual
C8523-6790			Self-paced training kit for HP LaserJet 9000mfp

Common hardware

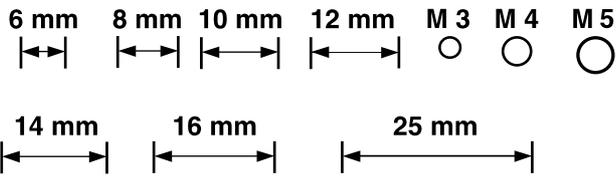


Table 34. Hardware table

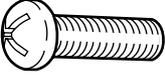
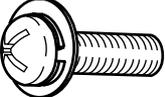
Example	Description	Sizes	Uses
	Screw	M3 by 6 mm M3 by 8 mm M4 by 8 mm M4 by 10 mm	
	Screw, tapping	M3 by 6 mm M3 by 8 mm M3 by 30 mm M4 by 6 mm M4 by 12 mm	To hold plastic to metal (excluding the MFP control panel)
	Screw, pan head	M3 by 6 mm	To hold plastic to plastic
	Screw, w/washer	M3 by 6 mm M3 by 8 mm M3 by 7 mm M4 by 6 mm M4 by 12 mm	To hold plastic to metal (excluding the covers)

Table 35. Common torque values

Material	HP recommended torque value
Plastic to metal	5.5 lb-inch
Metal to metal	10 lb-inch
PCBA	5.5 lb-inch
Plastic to plastic	5.5 lb-inch

Illustrations and parts lists

The following illustration and parts tables show the field replaceable units (FRUs). Two tables at the end of this chapter list all of the parts shown in this chapter: table 51 lists the parts in alphabetical order, and table 52 lists the parts in numerical order by part number. Both tables also provide the figure in this chapter that shows the part.

Note

Only the scan engine parts and the print engine parts that are different from those in the HP LaserJet 9000 printer are listed. Refer the HP LaserJet 9000 printer service manual for a list of engine parts.

Note

Parts that have no item number or part number listed are not FRUs and cannot be ordered.

MFP system assembly

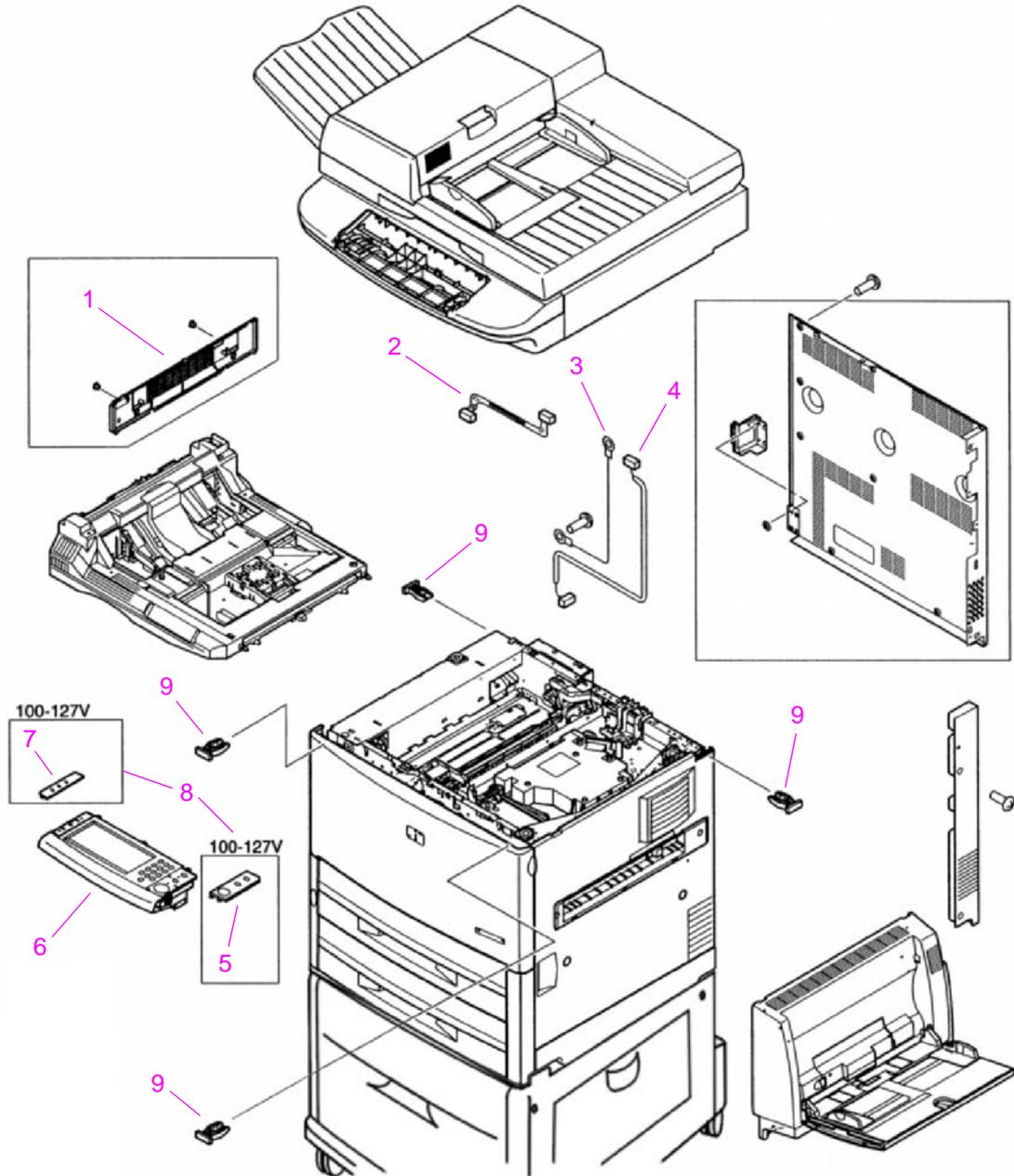


Figure 216. MFP system assembly

Table 36. MFP system assembly

Ref	Description	Part number	Qty
1	Left upper cover assembly	RG5-5706-000CN	1
2	Control panel cable	RG5-5752-000CN	1
3	Grounding cable	RG5-5736-000CN	1
4	Power supply cable	RG5-5735-000CN	1
5	Cover, control panel overlay (right) (English)	RB2-6501-000CN	1
6	Control panel assembly	RG5-5734-000CN	1

Table 36. MFP system assembly

Ref	Description	Part number	Qty
7	Cover, control panel overlay (left) (English)	RB2-6500-000CN	1
8	Cover, control panel overlay (left and right) (Arabic)	5969-9492	1
	Cover, control panel overlay (left and right) (Danish)	5969-9480	1
	Cover, control panel overlay (left and right) (Dutch)	5969-9475	1
	Cover, control panel overlay (left and right) (Finnish)	5969-9479	1
	Cover, control panel overlay (left and right) (French)	5969-9471	1
	Cover, control panel overlay (left and right) (German)	5969-9473	1
	Cover, control panel overlay (left and right) (Hebrew)	5969-9490	1
	Cover, control panel overlay (left and right) (Italian)	5969-9472	1
	Cover, control panel overlay (left and right) (Korean)	5969-9487	1
	Cover, control panel overlay (left and right) (Norwegian)	5969-9477	1
	Cover, control panel overlay (left and right) (Portuguese)	5969-9476	1
	Cover, control panel overlay (left and right) (Russian)	5969-9482	1
	Cover, control panel overlay (left and right) (simplified Chinese)	5969-9483	1
	Cover, control panel overlay (left and right) (Spanish)	5969-9474	1
	Cover, control panel overlay (left and right) (Swedish)	5969-9478	1
	Cover, control panel overlay (left and right) (traditional Chinese)	5969-9489	1
9	Holder, lock	RB2-6495-000CN	4

Image scanner

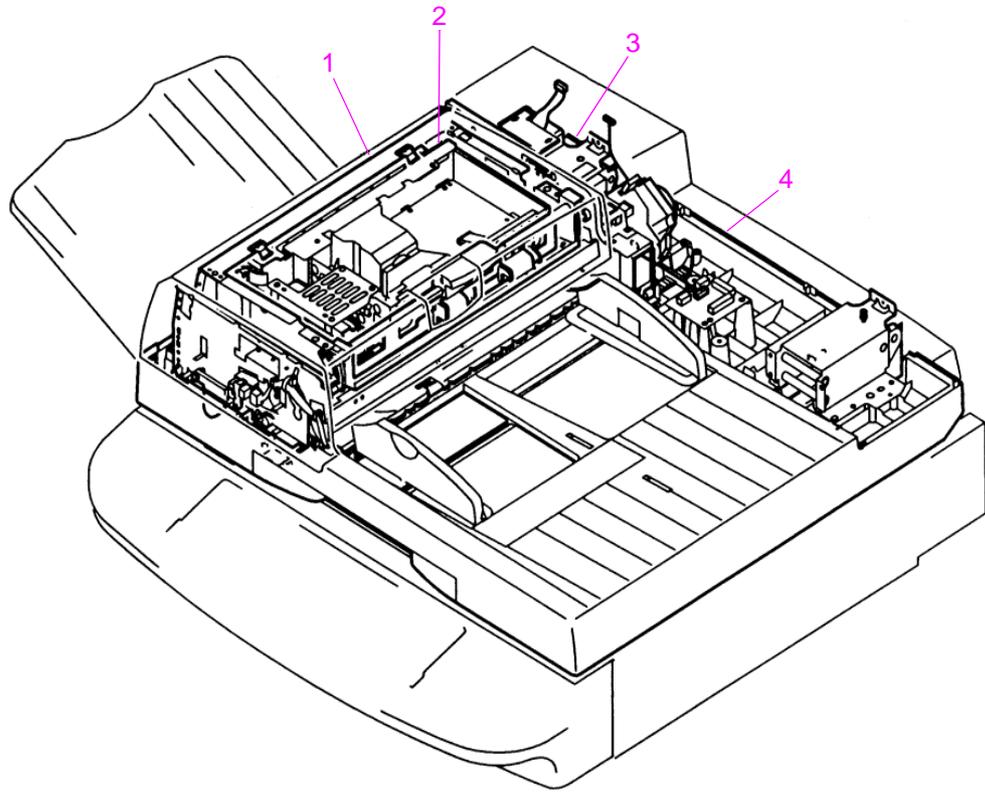


Figure 217. Image scanner (1 of 2)

Table 37. Image scanner

Ref	Description	Figure and page
1	ADF main assembly	Figure 228 on page 266
2	ADF optical assembly	Figure 229 on page 268
3	Paper pickup assembly	Figure 226 on page 262
4	ADF scanner assembly	Figure 225 on page 260

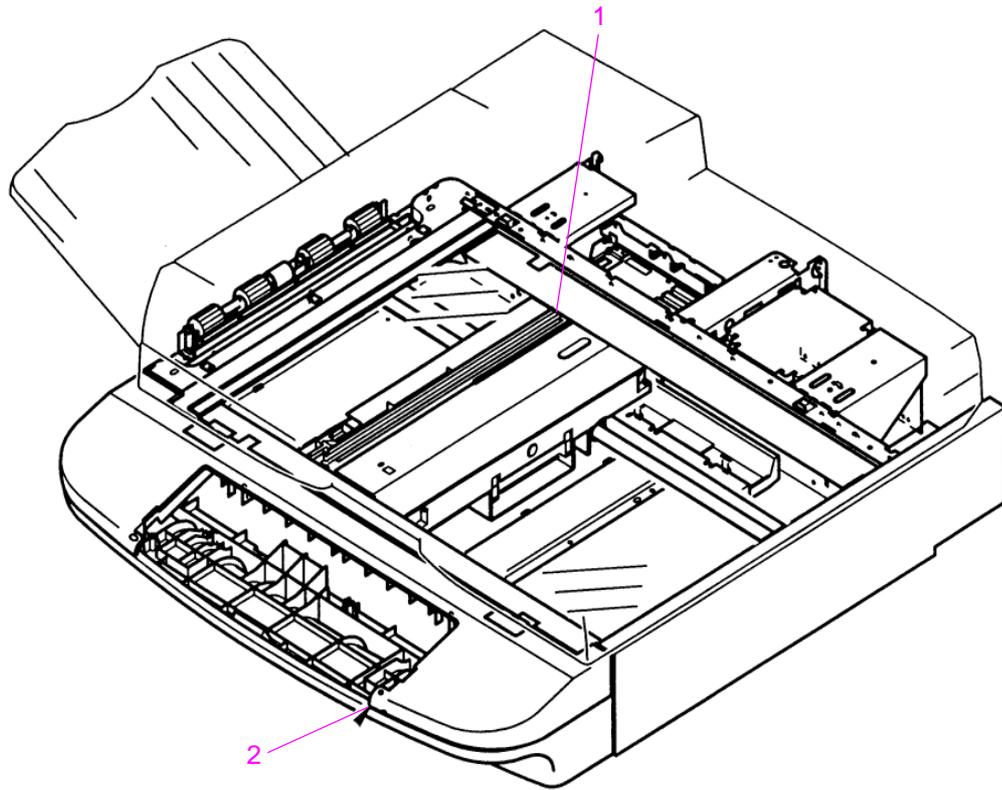


Figure 218. Image scanner (2 of 2)

Table 38. Image scanner

Ref	Description	Figure and page
1	Flatbed optical assembly	Figure 224 on page 259
2	Flatbed scanner assembly	Figure 223 on page 257

External panels and covers

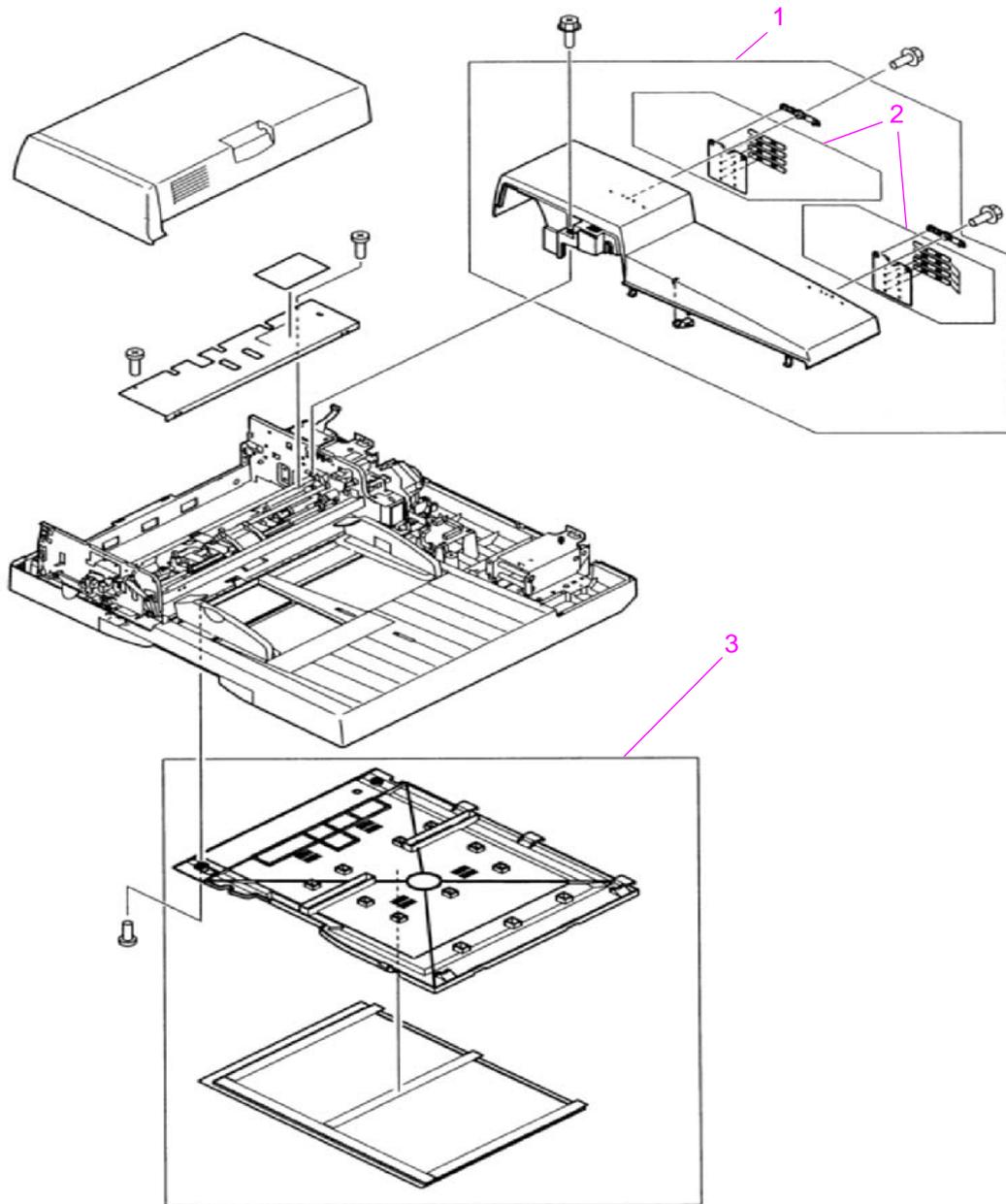


Figure 219. External panels and covers (1 of 2)

Table 39. External panels and covers (1 of 2)

Ref	Description	Part number	Qty
1	ADF back cover assembly	RG5-6315-000CN	1
2	Hinge cover assembly	RG5-6317-000CN	2
3	Cover, whiteboard	RF5-3695-000CN	1

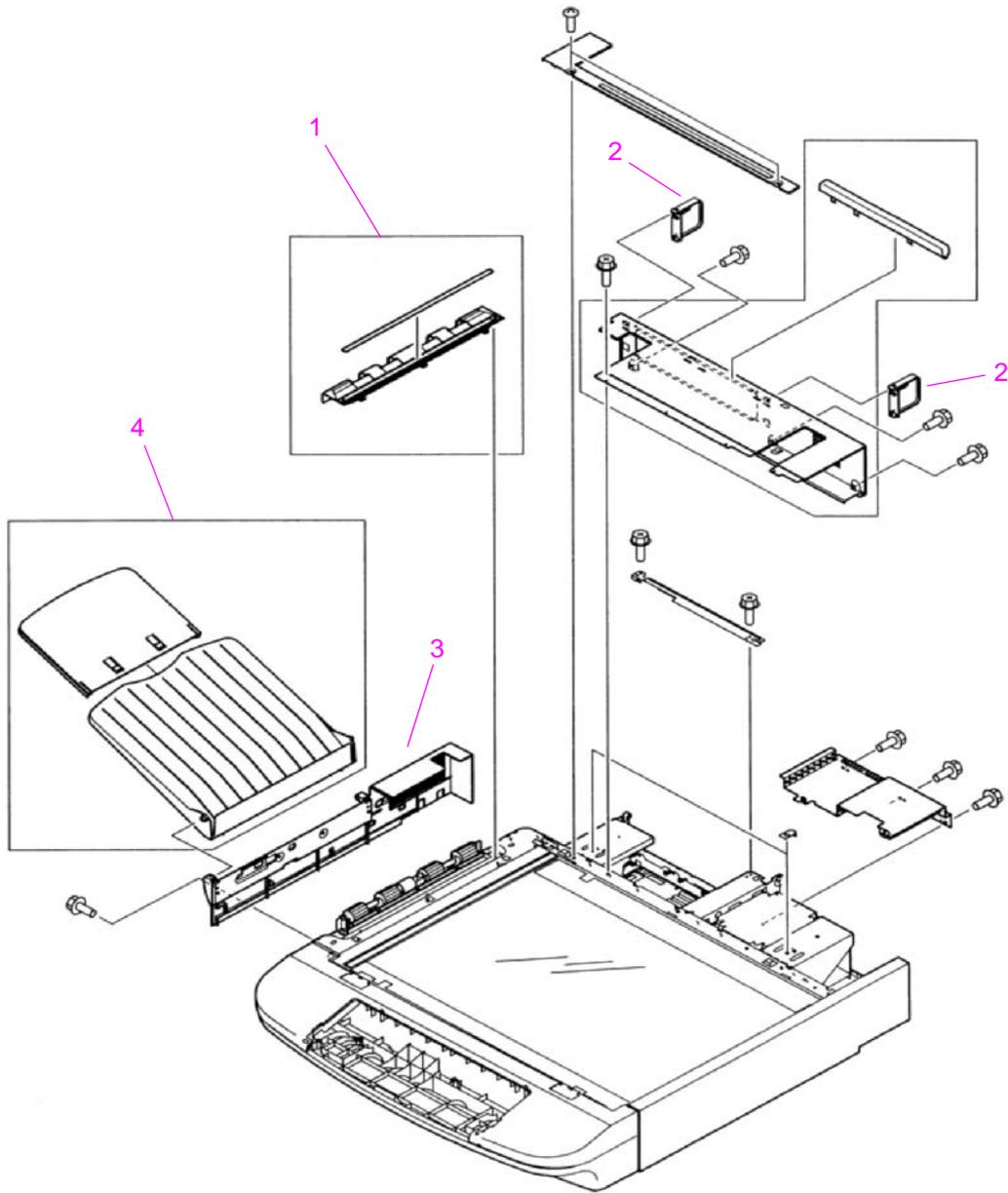


Figure 220. External panels and covers (2 of 2)

Table 40. External panels and covers (2 of 2)

Ref	Description	Part number	Qty
1	Cover, lower delivery roller	RF5-3674-000CN	1
2	CPB protectors	RB2-8060-000CN	2
3	Cover, flatbed left	RB2-8054-000CN	1
4	ADF output tray	RG5-6316-000CN	1

Flatbed scanner assembly

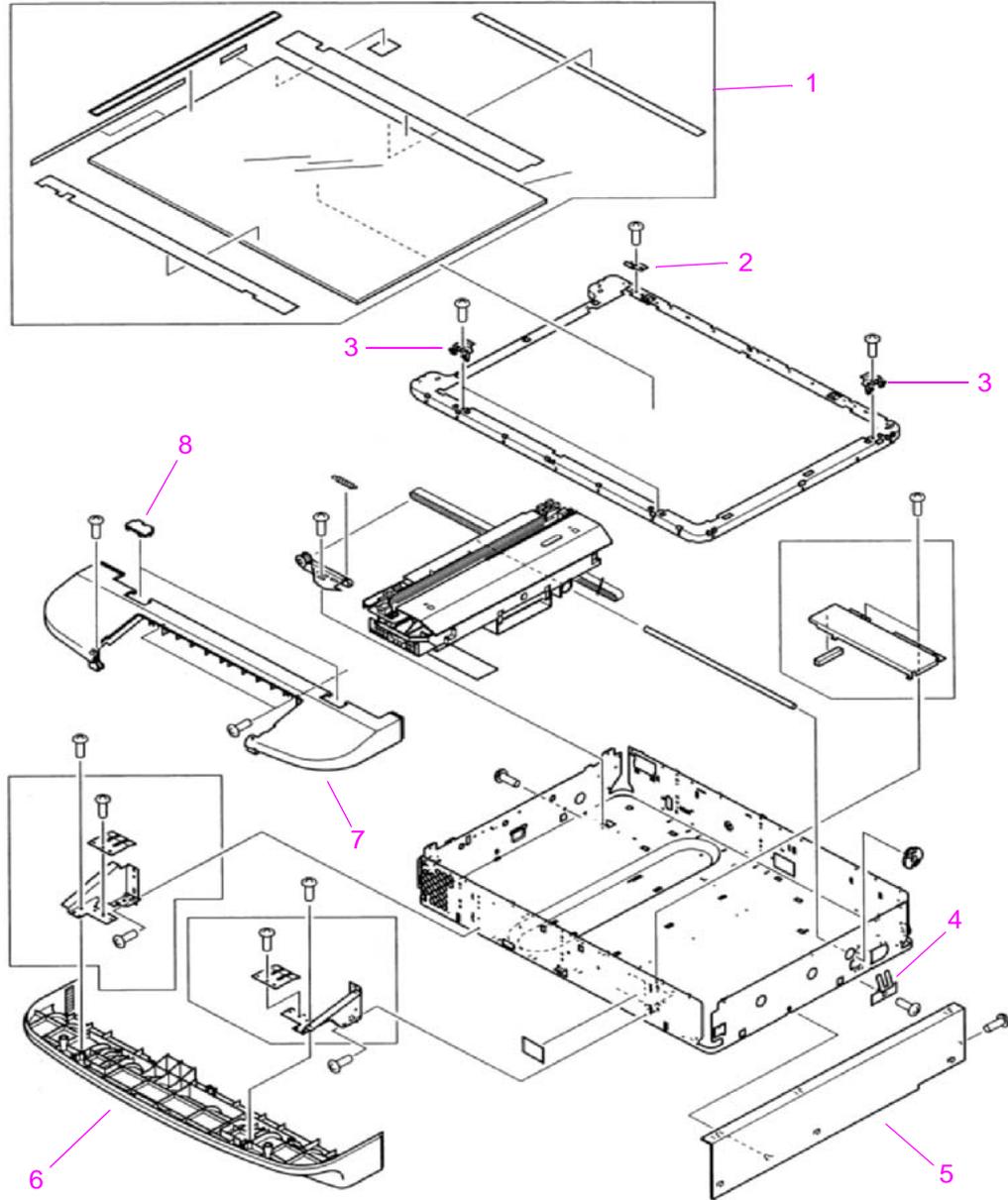


Figure 221. Flatbed scanner assembly (1 of 3)

Table 41. Flatbed scanner assembly (1 of 3)

Ref	Description	Part number	Qty
1	Flatbed glass	RF5-3676-000CN	1
2	Mount, glass alignment	RG2-7927-000CN	1
3	Mount, glass	RG2-7928-000CN	3
4	Plate, shaft ground	RB2-7920-000CN	1
5	Cover, flatbed right	RB2-8063-000CN	1
6	Cover, flatbed lower front	RB2-7933-000CN	1
7	Cover, flatbed upper front	RB2-7934-000CN	1
8	Cover, glass mount	RB2-7935-000CN	2

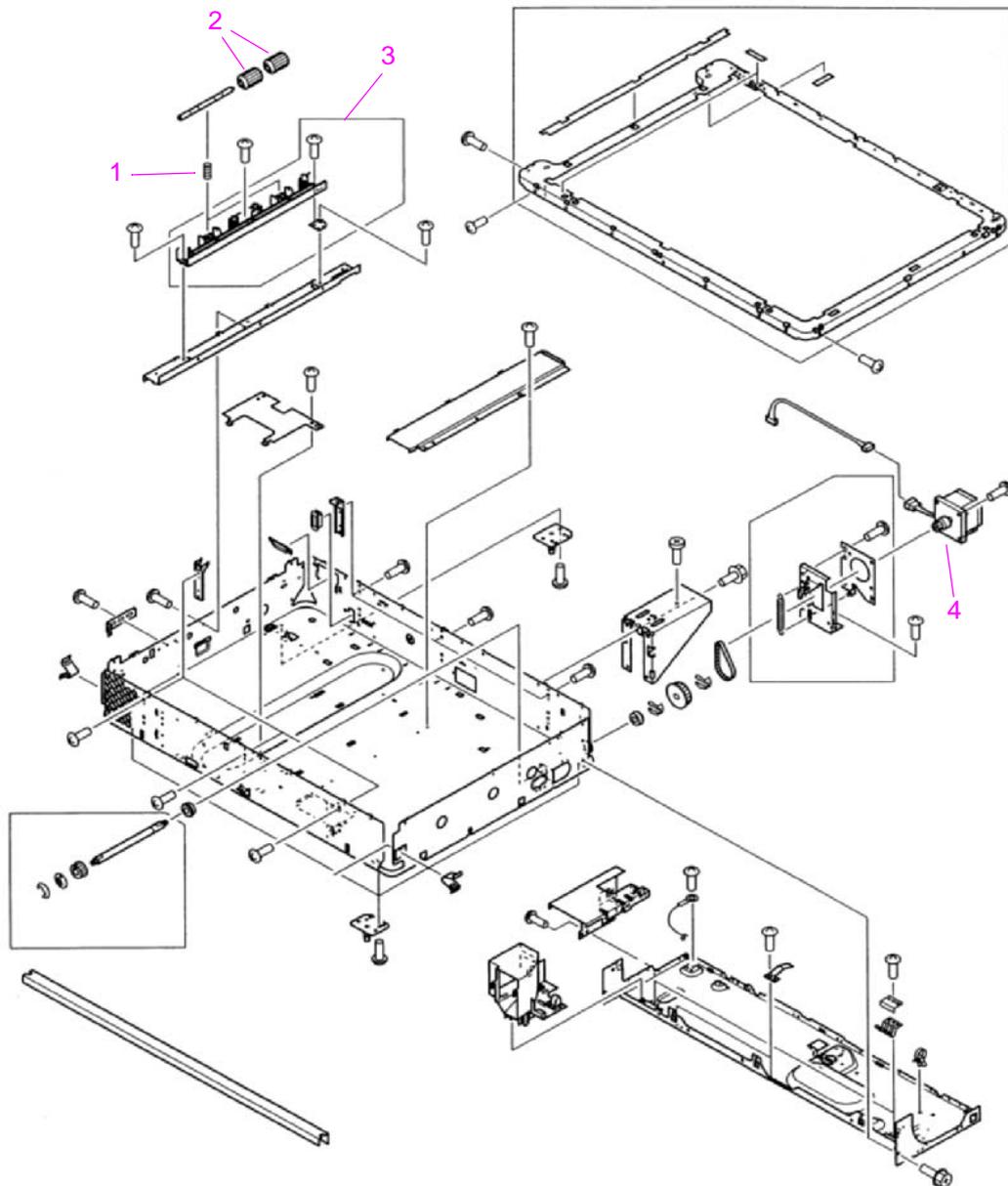


Figure 222. Flatbed scanner assembly (2 of 3)

Table 42. Flatbed scanner assembly (2 of 3)

Ref	Description	Part number	Qty
1	Spring, compression	RS6-2492-000CN	2
2	Roller, lower delivery	RB2-7884-000CN	4
3	Lower delivery roller assembly	RG5-6266-000CN	1
4	Motor, flatbed, 24 vdc	RH7-1485-000CN	1

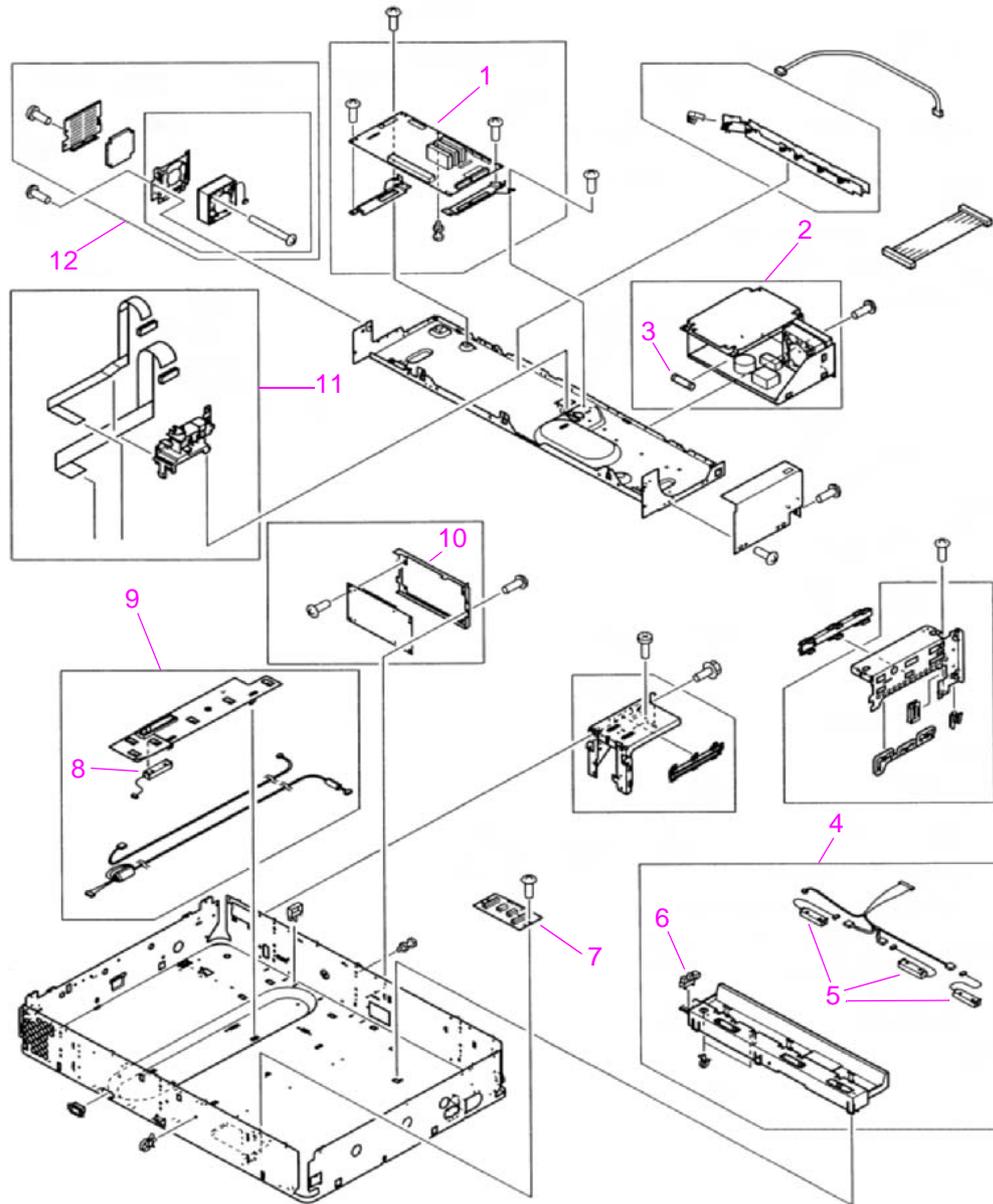


Figure 223. Flatbed scanner assembly (3 of 3)

Table 43. Flatbed scanner assembly (3 of 3)

Ref	Description	Part number	Qty
1	Scanner controller PCB	RH5-3075-000CN	1
2	Power supply assembly	RG1-4153-000CN	1
3	Fuse, 250 V, 5 A	VD7-0645-001CN	1
4	Sensor crossmember assembly	RG5-6258-000CN	1
5	Sensor, document size	FH7-7423-000CN	3
6	Photo-interrupter, TLP1241	WG8-5362-000CN	1
7	Flatbed intermediate PCB	RH5-3073-000CN	1
8	Sensor, document size	FH7-7424-000CN	1
9	Flatbed document unit	RG5-6259-000CN	1
10	Intermediate PCB	RH5-3074-000CN	1
11	Scanner controller cable	RG5-6257-000CN	1
12	Flatbed fan assembly	RG5-6318-000CN	1

Flatbed optical assembly

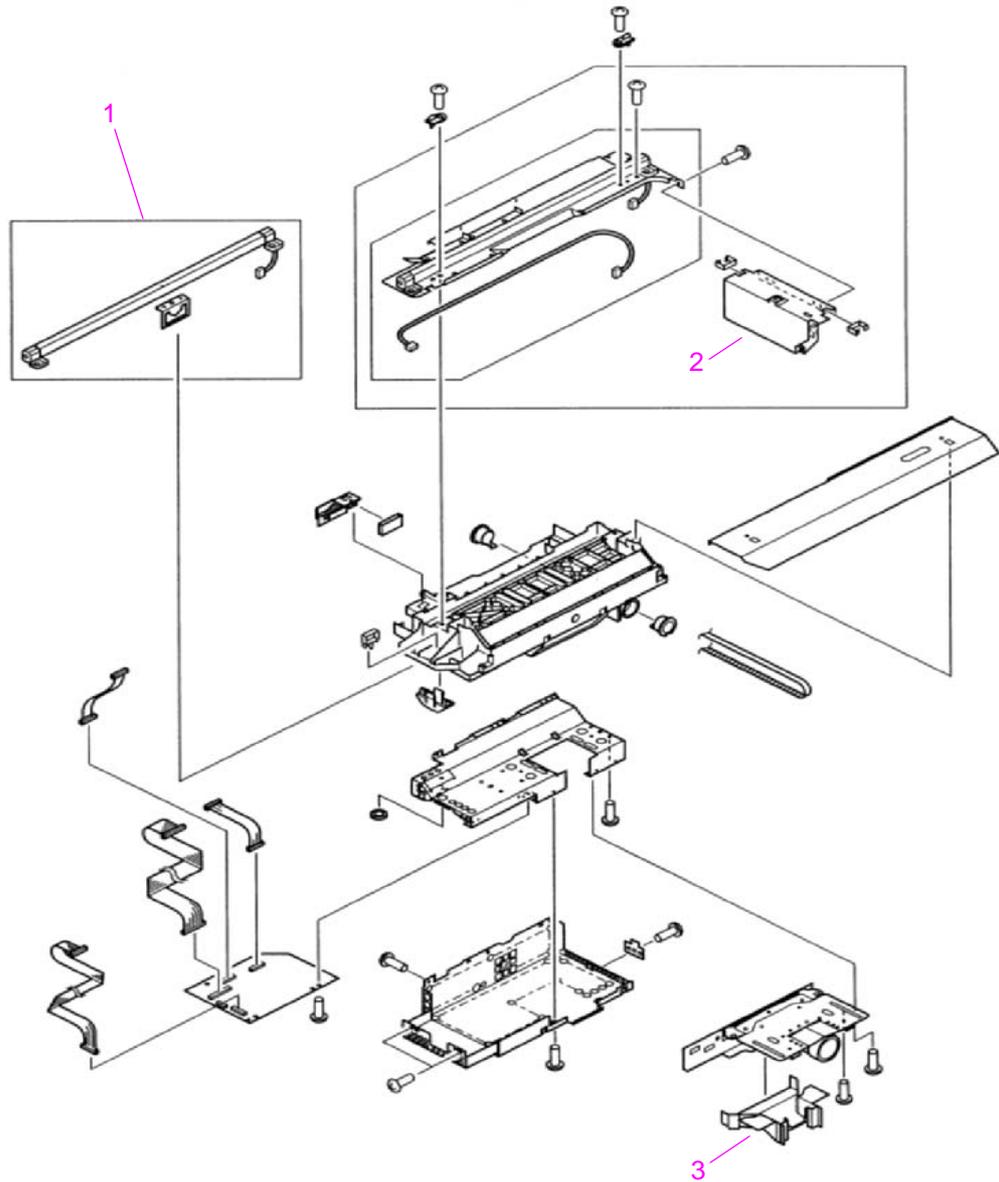


Figure 224. Flatbed optical assembly

Table 44. Flatbed optical assembly

Ref	Description	Part number	Qty
	Flatbed optical assembly	RG5-6263-000CN	1
1	Flatbed lamp assembly	RG5-6323-000CN	1
2	Inverter PCB assembly	RH7-3065-000CN	1
3	Cover, lens	RB2-7902-000CN	1

Table 45. ADF scanner assembly

Ref	Description	Part number	Qty
1	Cover, ADF front	RB2-8048-000CN	1
2	Cover, ADF feeder	RB2-8040-000CN	1
3	Ferrite core	RB2-8678-000CN	1
4	Processing PCB ribbon cable	RH2-5456-000CN	1
5	Cable guide assembly	RG5-6311-000CN	1
6	ADF fan assembly	RG5-6312-000CN	1
7	Fan, ADF	RH7-1486-000CN	1
8	I/F cable guide assembly	RG5-6313-000CN	1
9	Guide, I/F 6	RB2-8682-000CN	1
10	Guide, I/F 4	RB2-8047-000CN	1
11	Guide, I/F 1	RB2-8046-000CN	1
12	Guide, I/F 5	RB2-8681-000CN	1
13	Guide, back ADF tray	RF5-3682-000CN	1
14	ADF intermediate PCB	RH5-3078-000CN	1
15	Lever, sensor	RB2-7943-000CN	2
16	Photo-interrupter, TLP1241	WG8-5362-000CN	2
17	ADF base cover assembly	RG5-6272-000CN	1
18	ADF width sensor assembly	RG5-6274-000CN	1
19	Tray, rack	RB2-7939-000CN	2
20	Guide, front ADF tray	RF5-3698-000CN	1
21	Holder, ADF stop	RB2-8693-000CN	1
22	ADF optical unit filter	RF5-3850-000CN	1

Paper pickup assembly

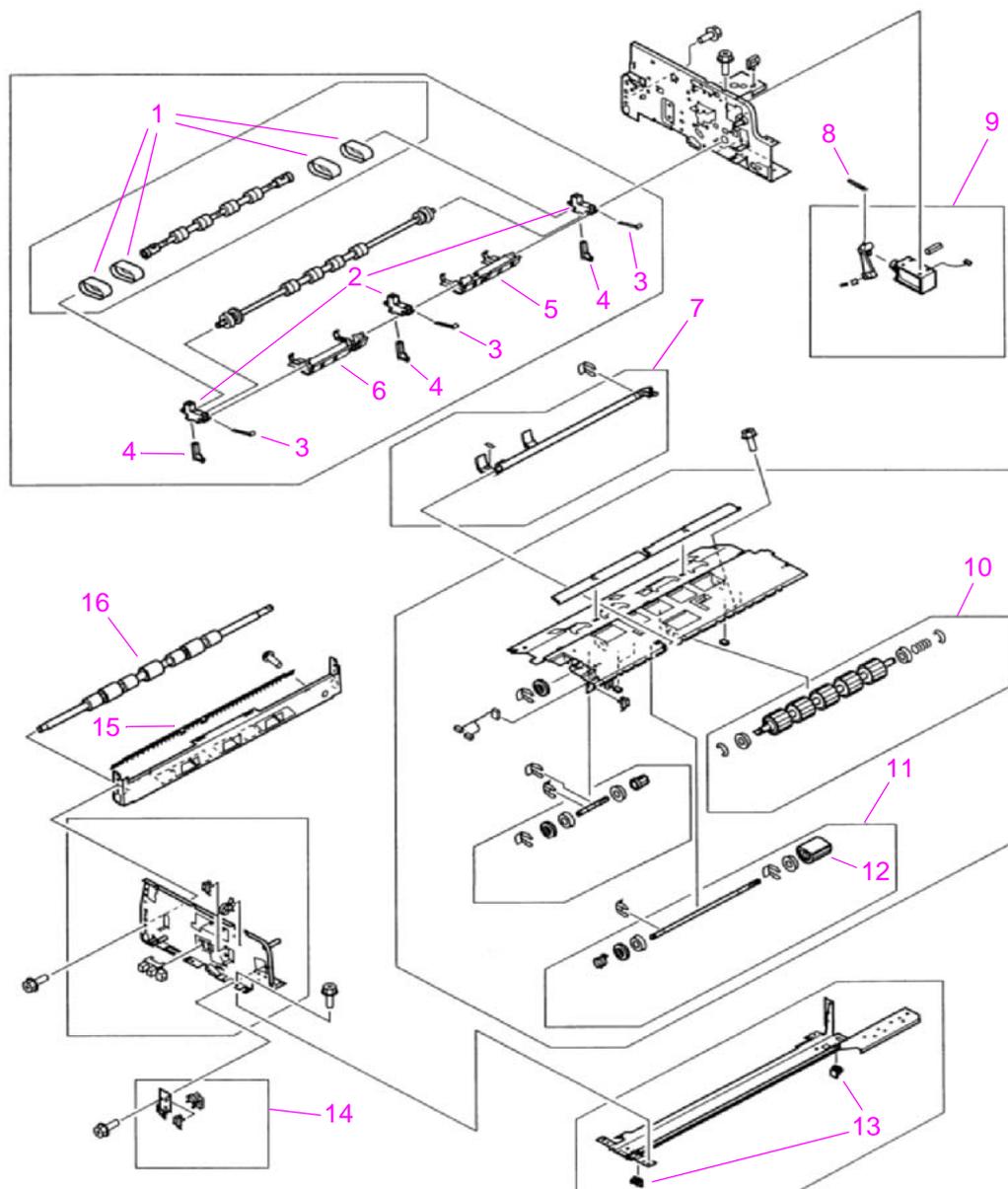


Figure 226. Paper pickup assembly (1 of 2)

Table 46. Paper pickup assembly (1 of 2)

Ref	Description	Part number	Qty
1	Belt, separation	RB2-7988-000CN	4
2	Holder, separation	RB2-7989-000CN	3
3	Spring, leaf	RB2-7991-000CN	3
4	Holder, spring	RB2-7990-000CN	3
5	Arm, flapper, back	RF5-3689-000CN	1
6	Arm, flapper, front	RF5-3688-000CN	1
7	Shutter assembly	RG5-6286-000CN	1
8	Spring, tension	RS6-2498-000CN	1
9	Weight solenoid assembly	RG5-6289-000CN	1
10	Feed roller assembly	RG5-6281-000CN	1
11	Pickup (D-roller) assembly	RG5-6283-000CN	1
12	Roller, pickup	RB2-7961-000CN	1
13	ADF spacer	RB2-7950-000CN	2
14	Pickup sensor assembly	RG5-6285-000CN	1
15	Static charge eliminator	RB2-7970-000CN	1
16	Roller, upper delivery assembly	RB2-7969-000CN	1

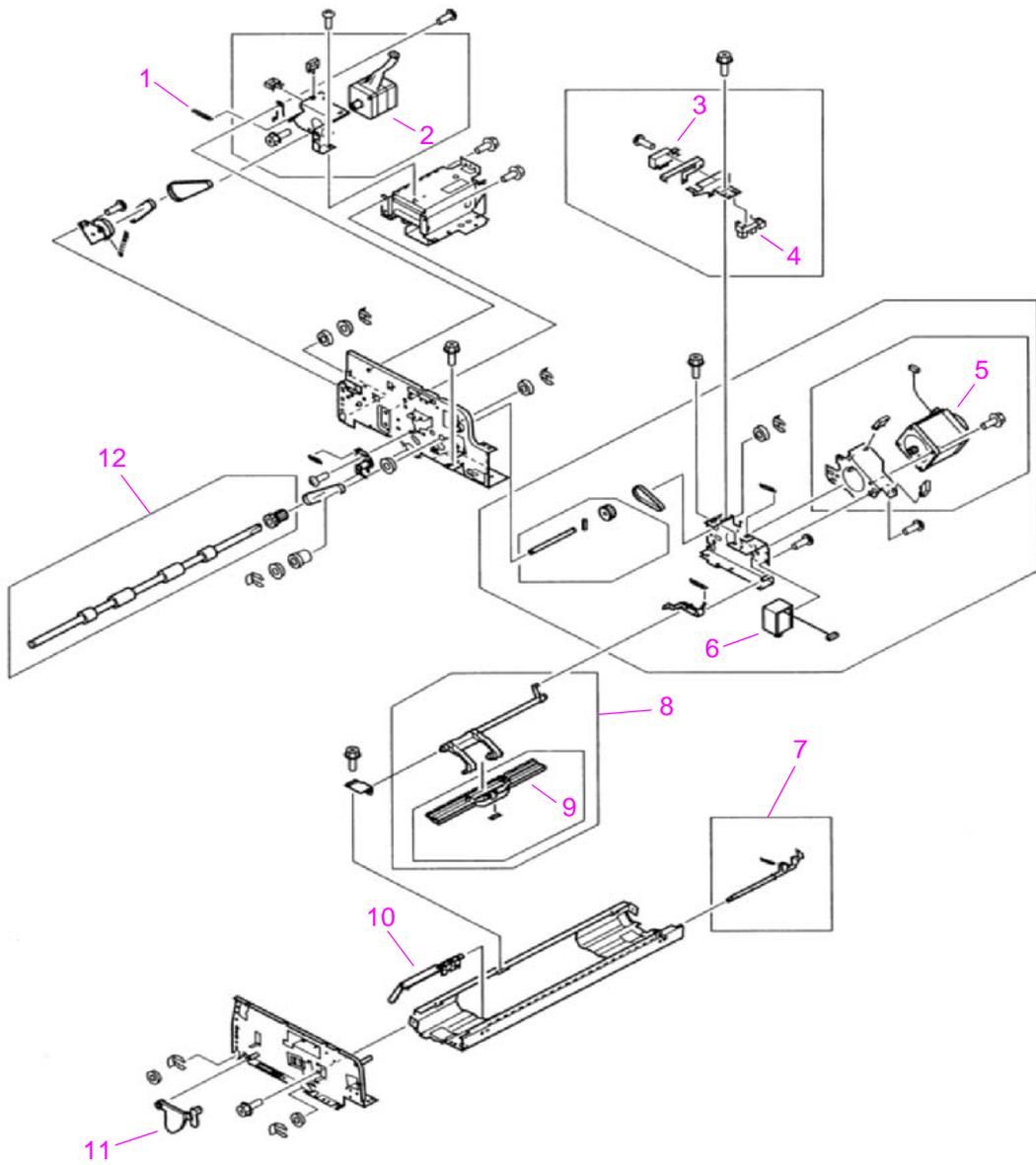


Figure 227. Paper pickup assembly (2 of 2)

Table 47. Paper pickup assembly (2 of 2)

Ref	Description	Part number	Qty
1	Spring, tension	RS6-2496-000CN	1
2	Motor, delivery, 24 vdc	RH7-1487-000CN	1
3	Micro switch	WC4-5175-000CN	1
4	Photo-interrupter, TLP1241	WG8-5362-000CN	1
5	Motor, pickup, 24 vdc	RH7-1488-000CN	1
6	Solenoid, shutter	RH7-5312-000CN	1
7	Empty flag assembly	RG5-6290-000CN	1
8	Weight assembly	RG5-6298-000CN	1
9	Holder, weight plate	RB2-7999-000CN	1
10	Lever, empty	RB2-8002-000CN	1
11	Flag, ADF open	RB2-7964-000CN	1
12	Lower registration roller assembly	RG5-6277-000CN	1

ADF main assembly

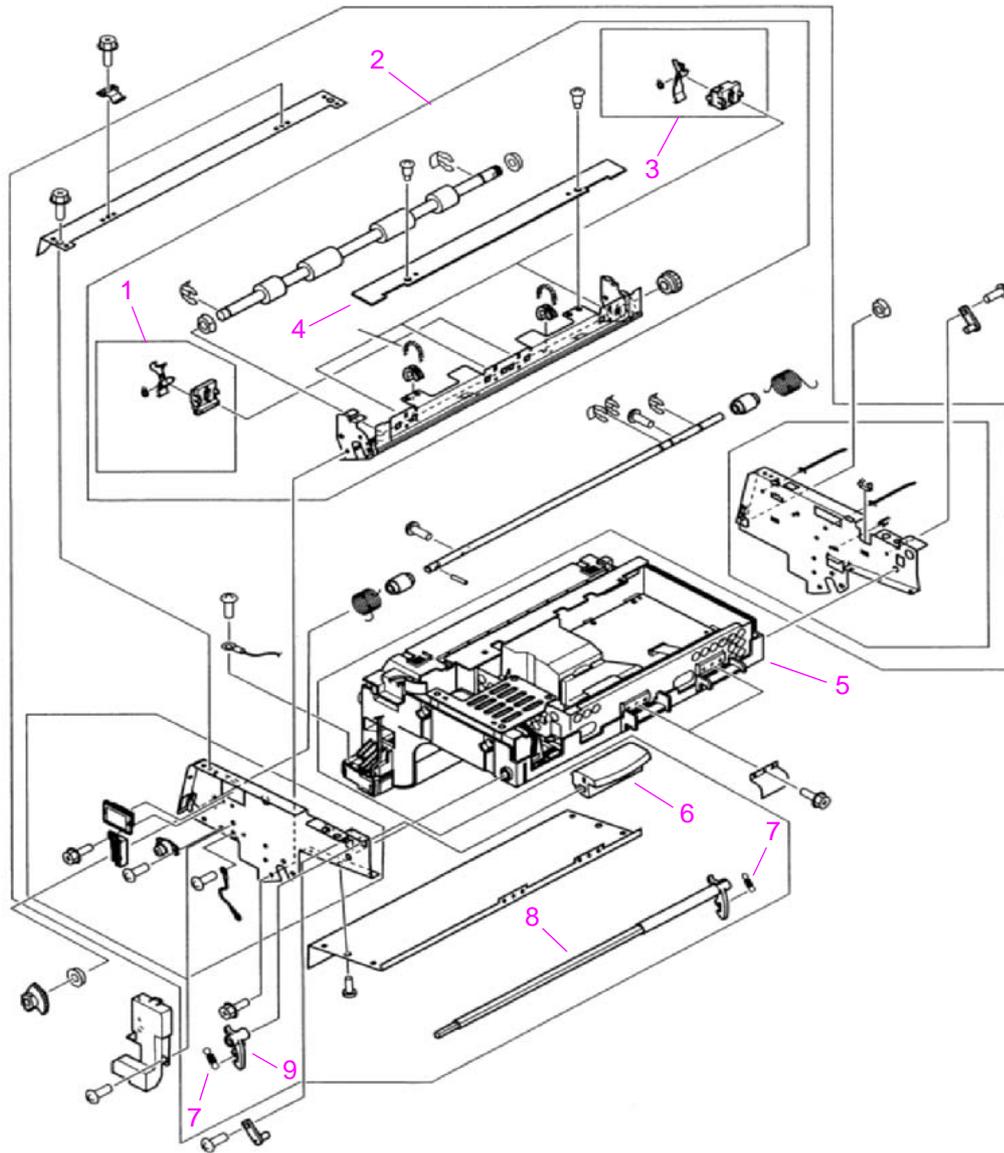


Figure 228. ADF main assembly

Table 48. ADF main assembly

Ref	Description	Part number	Qty
1	Registration sensor holder assembly	RG5-6305-000CN	1
2	Upper registration guide assembly	RG5-6304-000CN	1
3	Timing sensor holder assembly	RG5-6306-000CN	3
4	ADF sensor PCB assembly	RH5-3079-000CN	1
5	ADF optical assembly	RG5-6307-000CN	1
6	Handle	RB2-8015-000CN	1
7	Spring, tension	RS6-2503-000CN	2
8	Shaft, handle	RB2-8016-000CN	1
9	Lever, handle	RB2-8017-000CN	1

ADF optical assembly

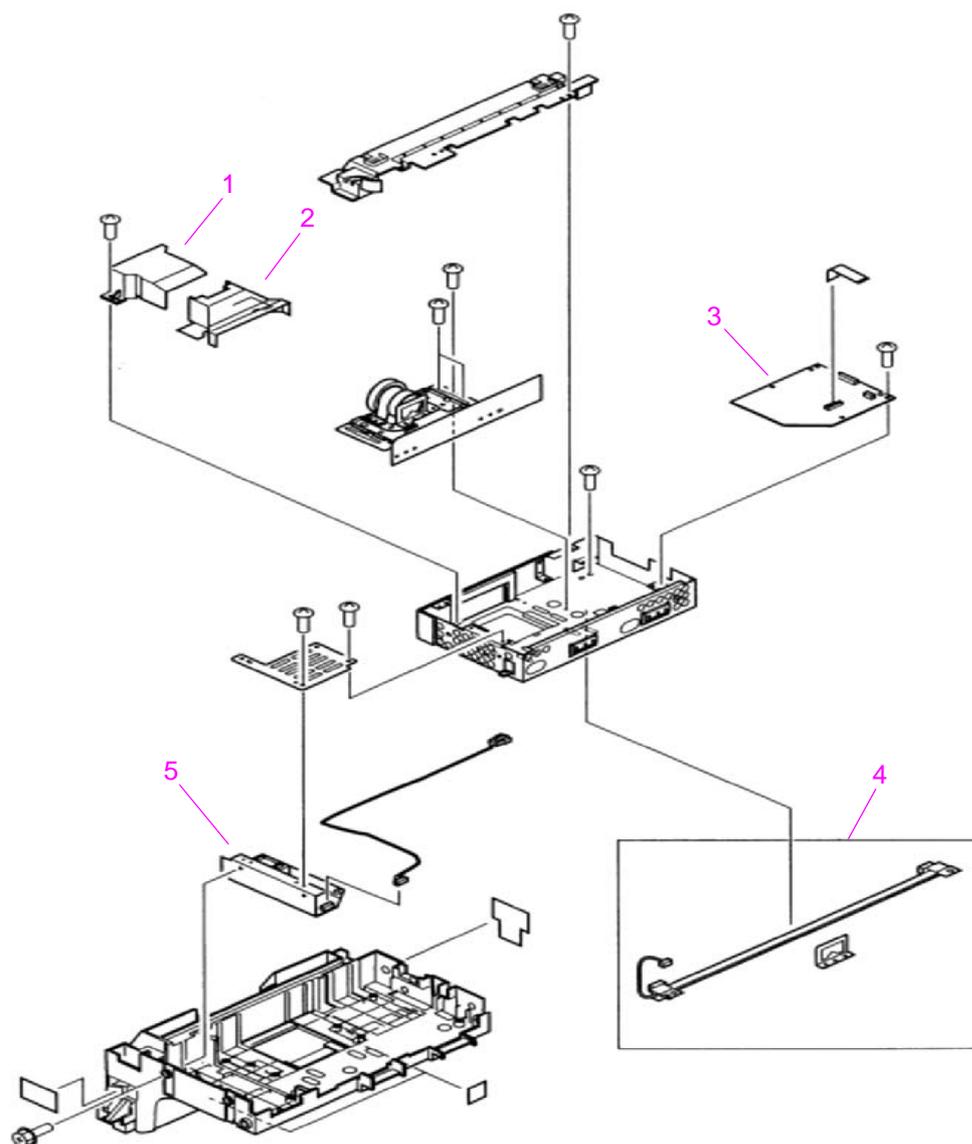


Figure 229. ADF optical assembly

Table 49. ADF optical assembly

Ref	Description	Part number	Qty
	ADF optical assembly	RG5-6307-000CN	1
1	Cover, lens	RB2-8692-000CN	1
2	Cover, lens	RB2-7902-000CN	1
3	ADF analog processor PCB	RH5-3082-000CN	1
4	ADF lamp assembly	RG5-6322-000CN	1
5	Inverter PCB assembly	RH7-3065-000CN	1

PCB assemblies

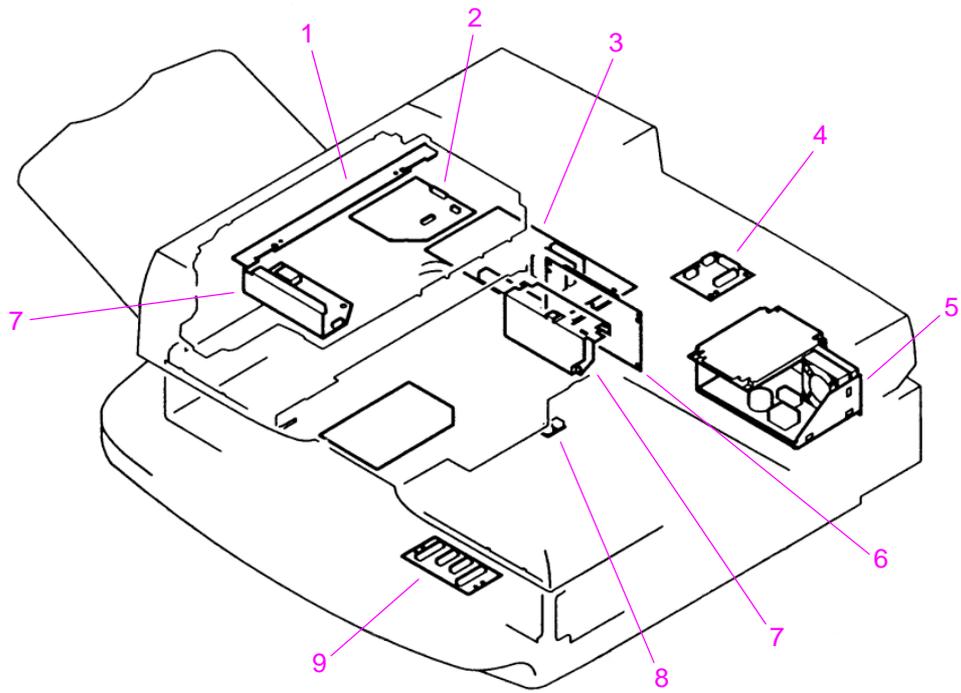


Figure 230. PCB assemblies

Table 50. PCB assemblies

Ref	Description	Part number	Qty
1	ADF sensor PCB assembly	RH5-3079-000CN	1
2	ADF analog processor PCB assembly	RH5-3082-000CN	1
3	Scanner controller PCB assembly	RH5-3075-000CN	1
4	ADF intermediate PCB assembly	RH5-3078-000CN	1
5	Power supply assembly	RG1-4153-000CN	1
6	Intermediate PCB assembly	RH5-3074-000CN	1
7	Inverter PCB assembly	RH7-3065-000CN	2
8	ADF width sensor assembly	RG5-6274-000CN	1
9	Flatbed intermediate PCB assembly	RH5-3073-000CN	1

Alphabetical parts list

Table 51. Alphabetical parts list

Description	Part number	Figure and page
ADF analog processor PCB assembly	RH5-3082-000CN	Figure 229 on page 268
ADF back cover assembly	RG5-6315-000CN	Figure 219 on page 253
ADF base cover assembly	RG5-6272-000CN	Figure 225 on page 260
ADF fan assembly	RG5-6312-000CN	Figure 225 on page 260
ADF intermediate PCB assembly	RH5-3078-000CN	Figure 225 on page 260
ADF lamp assembly	RG5-6322-000CN	Figure 229 on page 268
ADF optical assembly	RG5-6307-000CN	Figure 228 on page 266
ADF optical unit filter	RF5-3850-000CN	Figure 225 on page 260
ADF output tray	RG5-6316-000CN	Figure 220 on page 254
ADF sensor PCB assembly	RH5-3079-000CN	Figure 228 on page 266
ADF spacer	RB2-7950-000CN	Figure 226 on page 262
ADF width sensor assembly	RG5-6274-000CN	Figure 225 on page 260
ADF width sensor PCB assembly	RG5-6348-000CN	Figure 230 on page 269
Arm, flapper, front	RF5-3688-000CN	Figure 226 on page 262
Arm, flapper, back	RF5-3689-000CN	Figure 226 on page 262
Belt, separation	RB2-7988-000CN	Figure 226 on page 262
Cable guide assembly	RG5-6311-000CN	Figure 225 on page 260
Control panel assembly	RG5-5734-000CN	Figure 216 on page 249
Control panel cable	RG5-5752-000CN	Figure 216 on page 249
Copy connect EIO card	Q1312-60101	
Copy processor board assembly	C8523-67901	
Cover, ADF feeder	RB2-8040-000CN	Figure 225 on page 260
Cover, ADF front	RB2-8048-000CN	Figure 225 on page 260
Cover, control panel overlay (left) (English)	RB2-6500-000CN	Figure 216 on page 249
Cover, control panel overlay (left and right) (Arabic)	5969-9492	Figure 216 on page 249
Cover, control panel overlay (left and right) (Danish)	5969-9480	Figure 216 on page 249
Cover, control panel overlay (left and right) (Dutch)	5969-9475	Figure 216 on page 249
Cover, control panel overlay (left and right) (Finnish)	5969-9479	Figure 216 on page 249
Cover, control panel overlay (left and right) (French)	5969-9471	Figure 216 on page 249
Cover, control panel overlay (left and right) (German)	5969-9473	Figure 216 on page 249
Cover, control panel overlay (left and right) (Hebrew)	5969-9490	Figure 216 on page 249
Cover, control panel overlay (left and right) (Italian)	5969-9472	Figure 216 on page 249
Cover, control panel overlay (left and right) (Korean)	5969-9487	Figure 216 on page 249
Cover, control panel overlay (left and right) (Norwegian)	5969-9477	Figure 216 on page 249
Cover, control panel overlay (left and right) (Portuguese)	5969-9476	Figure 216 on page 249
Cover, control panel overlay (left and right) (Russian)	5969-9482	Figure 216 on page 249

Table 51. Alphabetical parts list (continued)

Description	Part number	Figure and page
Cover, control panel overlay (left and right) (simplified Chinese)	5969-9483	Figure 216 on page 249
Cover, control panel overlay (left and right) (Spanish)	5969-9474	Figure 216 on page 249
Cover, control panel overlay (left and right) (Swedish)	5969-9478	Figure 216 on page 249
Cover, control panel overlay (left and right) (traditional Chinese)	5969-9489	Figure 220 on page 254
Cover, flatbed lower front	RB2-7933-000CN	Figure 221 on page 255
Cover, flatbed right	RB2-8063-000CN	Figure 221 on page 255
Cover, flatbed upper front	RB2-7934-000CN	Figure 221 on page 255
Cover, glass mount	RB2-7935-000CN	Figure 221 on page 255
Cover, left control panel (English)	RB2-6500-000CN	Figure 216 on page 249
Cover, lens	RB2-7902-000CN	Figure 224 on page 259
Cover, lens	RB2-8692-000CN	Figure 229 on page 268
Cover, lower delivery roller	RF5-3674-000CN	Figure 220 on page 254
Cover, right control panel (English)	RB2-6501-000CN	Figure 216 on page 249
Cover, whiteboard	RF5-3695-000CN	Figure 219 on page 253
CPB protectors	RB2-8060-000CN	Figure 220 on page 254
Empty flag assembly	RG5-6290-000CN	Figure 227 on page 264
Fan, ADF	RH7-1486-000CN	Figure 225 on page 260
Feed roller assembly	RG5-6281-000CN	Figure 226 on page 262
Ferrite core	RB2-8678-000CN	Figure 225 on page 260
Flag, ADF open	RB2-7964-000CN	Figure 227 on page 264
Flatbed document unit	RG5-6259-000CN	Figure 223 on page 257
Flatbed fan assembly	RG5-6318-000CN	Figure 223 on page 257
Flatbed glass	RB2-7933-000CN	Figure 221 on page 255
Flatbed intermediate PCB assembly	RH5-3073-000CN	Figure 223 on page 257
Flatbed lamp assembly	RG5-6323-000CN	Figure 224 on page 259
Flatbed optical assembly	RG5-6263-000CN	Figure 224 on page 259
Fuse, 250 V, 5 A	VD7-0645-000CN	Figure 223 on page 257
Grounding cable	RG5-5736-000CN	Figure 216 on page 249
Guide, front ADF tray	RF5-3698-000CN	Figure 225 on page 260
Guide, I/F 1	RB2-8046-000CN	Figure 225 on page 260
Guide, I/F 4	RB2-8047-000CN	Figure 225 on page 260
Guide, I/F 5	RB2-8681-000CN	Figure 225 on page 260
Guide, I/F 6	RB2-8682-000CN	Figure 225 on page 260
Guide, back ADF tray	RF5-3682-000CN	Figure 225 on page 260
Handle	RB2--8015-000CN	Figure 228 on page 266
Hard disk	J6054-61003	
High-speed copy connect cable	C8523-60101	
Hinge cover assembly	RG5-6317-000CN	Figure 219 on page 253

Table 51. Alphabetical parts list (continued)

Description	Part number	Figure and page
Holder, ADF stop	RB2-8693-000CN	Figure 225 on page 260
Holder, lock	RB2-6495-000CN	Figure 216 on page 249
Holder, separation	RB2-7989-000CN	Figure 226 on page 262
Holder, spring	RB2-7990-000CN	Figure 226 on page 262
Holder, weight plate	RB2-7990-000CN	Figure 227 on page 264
I/F cable guide assembly	RG5-6313-000CN	Figure 225 on page 260
Intermediate PCB assembly	RH5-3074-000CN	Figure 223 on page 257
Inverter PCB assembly	RH7-3065-000CN	Figure 224 on page 259
Left upper cover assembly	RG5-5706-000CN	Figure 216 on page 249
Lever, empty	RB2-8002-000CN	Figure 227 on page 264
Lever, handle	RB2-8017-000CN	Figure 228 on page 266
Lever, sensor	RB2-7943-000CN	Figure 225 on page 260
Lower delivery roller assembly	RG5-6266-000CN	Figure 222 on page 256
Lower registration roller assembly	RG5-6277-000CN	Figure 227 on page 264
Micro switch	WC4-5175-000CN	Figure 227 on page 264
Motor, delivery, 24 vdc	RH7-1487-000CN	Figure 227 on page 264
Motor, flatbed, 24 vdc	RH7-1485-000CN	Figure 222 on page 256
Motor, pickup, 24 vdc	RH7-1488-000CN	Figure 227 on page 264
Mount, glass	RG2-7928-000CN	Figure 221 on page 255
Mount, glass alignment	RG2-7927-000CN	Figure 221 on page 255
Photo-interrupter, TLP1241	WG8-5362-000CN	Figure 223 on page 257
Pickup (D-roller) assembly	RG5-6283-000CN	Figure 226 on page 262
Pickup sensor assembly	RG5-6285-000CN	Figure 226 on page 262
Plate, shaft ground	RB2-7920-000CN	Figure 221 on page 255
Power supply assembly	RG1-4153-000CN	Figure 223 on page 257
Power supply cable	RG5-5735-000CN	Figure 216 on page 249
Processing PCB ribbon cable	RH2-5456-000CN	Figure 225 on page 260
Registration sensor holder assembly	RG5-6305-000CN	Figure 228 on page 266
Roller, lower delivery	RB2-7884-000CN	Figure 222 on page 256
Roller, pickup	RB2-7961-000CN	Figure 226 on page 262
Roller, upper delivery	RB2-7969-000CN	Figure 226 on page 262
Scanner controller cable	RG5-6257-000CN	Figure 223 on page 257
Scanner controller PCB assembly	RH5-3075-000CN	Figure 223 on page 257
Sensor crossmember assembly	RG5-6258-000CN	Figure 223 on page 257
Sensor, document size	FH7-7423-000CN	Figure 223 on page 257
Sensor, document size	FH7-7424-000CN	Figure 223 on page 257
Shaft, handle	RB2-8016-000CN	Figure 228 on page 266
Shutter assembly	RG5-6286-000CN	Figure 226 on page 262
Solenoid, shutter	RH7-5312-000CN	Figure 227 on page 264
Spring, compression	RS6-2492-000CN	Figure 222 on page 256

Table 51. Alphabetical parts list (continued)

Description	Part number	Figure and page
Spring, leaf	RB2-7991-000CN	Figure 226 on page 262
Spring, tension	RS6-2496-000CN	Figure 227 on page 264
Spring, tension	RS6-2498-000CN	Figure 226 on page 262
Spring, tension	RS6-2503-000CN	Figure 228 on page 266
Static charge eliminator	RB2-7970-000CN	Figure 226 on page 262
Timing sensor holder assembly	RG5-6306-000CN	Figure 228 on page 266
Tray, rack	RB2-7939-000CN	Figure 225 on page 260
Upper registration guide assembly	RG5-6304-000CN	Figure 228 on page 266
Weight assembly	RG5-6298-000CN	Figure 227 on page 264
Weight solenoid assembly	RG5-6289-000CN	Figure 226 on page 262

Numerical parts list

Table 52. Numerical parts list

Part number	Description	Figure and page
5969-9471	Cover, control panel overlay (left and right) (French)	Figure 216 on page 249
5969-9472	Cover, control panel overlay (left and right) (Italian)	Figure 216 on page 249
5969-9473	Cover, control panel overlay (left and right) (German)	Figure 216 on page 249
5969-9474	Cover, control panel overlay (left and right) (Spanish)	Figure 216 on page 249
5969-9475	Cover, control panel overlay (left and right) (Dutch)	Figure 216 on page 249
5969-9476	Cover, control panel overlay (left and right) (Portuguese)	Figure 216 on page 249
5969-9477	Cover, control panel overlay (left and right) (Norwegian)	Figure 216 on page 249
5969-9478	Cover, control panel overlay (left and right) (Swedish)	Figure 216 on page 249
5969-9479	Cover, control panel overlay (left and right) (Finnish)	Figure 216 on page 249
5969-9480	Cover, control panel overlay (left and right) (Danish)	Figure 216 on page 249
5969-9482	Cover, control panel overlay (left and right) (Russian)	Figure 216 on page 249
5969-9483	Cover, control panel overlay (left and right) (simplified Chinese)	Figure 216 on page 249
5969-9487	Cover, control panel overlay (left and right) (Korean)	Figure 216 on page 249
5969-9489	Cover, control panel overlay (left and right) (traditional Chinese)	Figure 216 on page 249
5969-9490	Cover, control panel overlay (left and right) (Hebrew)	Figure 216 on page 249
5969-9492	Cover, control panel overlay (left and right) (Arabic)	Figure 216 on page 249
C8523-60101	High-speed copy connect cable	
C8523-67901	Copy processor board assembly	
FH7-7423-000CN	Sensor, document size	Figure 223 on page 257
FH7-7424-000CN	Sensor, document size	Figure 223 on page 257
J6054-61003	Hard disk	
Q1312-60101	Copy connect EIO card	
RB2-6495-000CN	Holder, lock	Figure 216 on page 249
RB2-6500-000CN	Cover, left control panel (English)	Figure 216 on page 249
RB2-6501-000CN	Cover, right control panel (English)	Figure 216 on page 249
RB2-7884-000CN	Roller, lower delivery	Figure 222 on page 256
RB2-7902-000CN	Cover, lens	Figure 224 on page 259
RB2-7920-000CN	Plate, shaft ground	Figure 221 on page 255
RB2-7933-000CN	Cover, flatbed lower front	Figure 221 on page 255
RB2-7933-000CN	Flatbed glass	Figure 221 on page 255
RB2-7934-000CN	Cover, flatbed upper front	Figure 221 on page 255
RB2-7935-000CN	Cover, glass mount	Figure 221 on page 255
RB2-7939-000CN	Tray, rack	Figure 225 on page 260
RB2-7943-000CN	Lever, sensor	Figure 225 on page 260
RB2-7950-000CN	ADF spacer	Figure 226 on page 262

Table 52. Numerical parts list (continued)

Part number	Description	Figure and page
RB2-7961-000CN	Roller, pickup	Figure 226 on page 262
RB2-7964-000CN	Flag, ADF open	Figure 227 on page 264
RB2-7969-000CN	Roller, upper delivery	Figure 226 on page 262
RB2-7970-000CN	Static charge eliminator	Figure 226 on page 262
RB2-7988-000CN	Belt, separation	Figure 226 on page 262
RB2-7989-000CN	Holder, separation	Figure 226 on page 262
RB2-7990-000CN	Holder, spring	Figure 226 on page 262
RB2-7990-000CN	Holder, weight plate	Figure 227 on page 264
RB2-7991-000CN	Spring, leaf	Figure 226 on page 262
RB2-8002-000CN	Lever, empty	Figure 227 on page 264
RB2--8015-000CN	Handle	Figure 228 on page 266
RB2-8016-000CN	Shaft, handle	Figure 228 on page 266
RB2-8017-000CN	Lever, handle	Figure 228 on page 266
RB2-8040-000CN	Cover, ADF feeder	Figure 225 on page 260
RB2-8046-000CN	Guide, I/F 1	Figure 225 on page 260
RB2-8047-000CN	Guide, I/F 4	Figure 225 on page 260
RB2-8048-000CN	Cover, ADF front	Figure 225 on page 260
RB2-8054-000CN	Cover, flatbed left	Figure 220 on page 254
RB2-8060-000CN	CPB protectors	Figure 220 on page 254
RB2-8063-000CN	Cover, flatbed right	Figure 221 on page 255
RB2-8678-000CN	Ferrite core	Figure 225 on page 260
RB2-8681-000CN	Guide, I/F 5	Figure 225 on page 260
RB2-8682-000CN	Guide, I/F 6	Figure 225 on page 260
RB2-8692-000CN	Cover, lens	Figure 229 on page 268
RB2-8693-000CN	Holder, ADF stop	Figure 225 on page 260
RF5-3674-000CN	Cover, lower delivery roller	Figure 220 on page 254
RF5-3682-000CN	Guide, back ADF tray	Figure 225 on page 260
RF5-3688-000CN	Arm, flapper, front	Figure 226 on page 262
RF5-3689-000CN	Arm, flapper, back	Figure 226 on page 262
RF5-3695-000CN	Cover, whiteboard	Figure 219 on page 253
RF5-3698-000CN	Guide, front ADF tray	Figure 225 on page 260
RF5-3850-000CN	ADF optical unit filter	Figure 225 on page 260
RG1-4153-000CN	Power supply assembly	Figure 223 on page 257
RG2-7927-000CN	Mount, glass alignment	Figure 221 on page 255
RG2-7928-000CN	Mount, glass	Figure 221 on page 255
RG5-5706-000CN	Left upper cover assembly	Figure 216 on page 249
RG5-5734-000CN	Control panel assembly	Figure 216 on page 249
RG5-5735-000CN	Power supply cable	Figure 216 on page 249
RG5-5736-000CN	Grounding cable	Figure 216 on page 249
RG5-5752-000CN	Control panel cable	Figure 216 on page 249

Table 52. Numerical parts list (continued)

Part number	Description	Figure and page
RG5-6257-000CN	Scanner controller cable	Figure 223 on page 257
RG5-6258-000CN	Sensor crossmember assembly	Figure 223 on page 257
RG5-6259-000CN	Flatbed document unit	Figure 223 on page 257
RG5-6263-000CN	Flatbed optical assembly	Figure 224 on page 259
RG5-6266-000CN	Lower delivery roller assembly	Figure 222 on page 256
RG5-6272-000CN	ADF base cover assembly	Figure 225 on page 260
RG5-6274-000CN	ADF width sensor assembly	Figure 225 on page 260
RG5-6277-000CN	Lower registration roller assembly	Figure 227 on page 264
RG5-6281-000CN	Feed roller assembly	Figure 226 on page 262
RG5-6283-000CN	Pickup (D-roller) assembly	Figure 226 on page 262
RG5-6285-000CN	Pickup sensor assembly	Figure 226 on page 262
RG5-6286-000CN	Shutter assembly	Figure 226 on page 262
RG5-6289-000CN	Weight solenoid assembly	Figure 226 on page 262
RG5-6290-000CN	Empty flag assembly	Figure 227 on page 264
RG5-6298-000CN	Weight assembly	Figure 227 on page 264
RG5-6304-000CN	Upper registration guide assembly	Figure 228 on page 266
RG5-6305-000CN	Registration sensor holder assembly	Figure 228 on page 266
RG5-6306-000CN	Timing sensor holder assembly	Figure 228 on page 266
RG5-6307-000CN	ADF optical assembly	Figure 228 on page 266
RG5-6311-000CN	Cable guide assembly	Figure 225 on page 260
RG5-6312-000CN	ADF fan assembly	Figure 225 on page 260
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