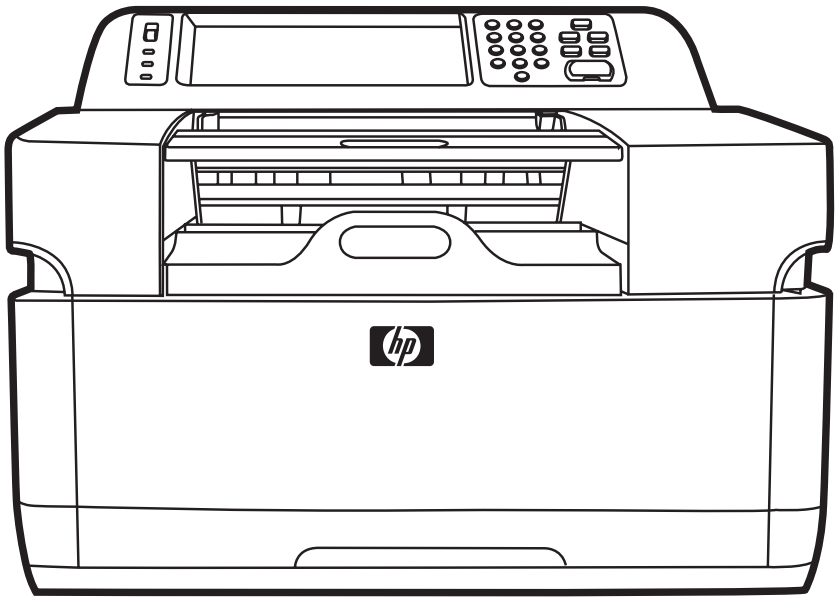
HP 9200c Digital Sender
Service Manual



HP 9200c Digital Sender

Service Manual

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1 Product information

This chapter contains information about the following topics:

- Features and benefits
- Digital-sender components
- Site requirements
- Digital sender specifications
- Media specifications
- Regulatory information

Features and benefits

The HP 9200c Digital Sender helps quickly and conveniently distribute paper documents in an electronic format. It scans all kinds of documents and then uses the included HP Digital Sending Software (HP DSS) to send them to e-mail addresses, fax destinations, or network folders. The digital sender can also be set up to send documents to workflow destinations, along with metadata files containing workflow information that is captured at the device control-panel interface.

Hardware features

The device includes the following hardware features:

- **ADF**-The device comes with a legal-size automatic document feeder (ADF) that accepts up to 50 pages.
- **Interactive touchscreen control panel**-Intuitive onscreen menus and wizards help to complete digital-sending tasks.
- **Flatbed scanner**-The letter/A4-size scanner can scan both black-and-white and color documents, with the ability to scan up to 1 mm (0.04 inch) from the paper edge.
- **Memory**-The device comes standard with 128 megabytes (MB) of random access memory (RAM).
- **Hard disk**-The device includes a 20-gigabyte (GB) internal hard drive for storing documents and settings.
- **Connectivity**-The device provides a 10/100Base-T port and an enhanced input/output (EIO) port for connectivity.
- **HP Jetdirect Inside**- An embedded network interface ensures reliable network connectivity.

Software features

The HP DSS program supports the digital sender by providing the following features:

- **Send to e-mail**-Scan a document and send it to one or more e-mail recipients in the form of a .PDF, .JPEG, .TIFF, or .MTIFF file.
- **Send to secondary (secure) e-mail**-Send a document by using a secure third-party e-mail solution.
- **Send to fax**-Scan a document and send it to a local area network (LAN) fax, Internet fax, or Windows® 2000 fax destination. (This device does not have analog fax capability.)
- **Send to workflow**-Scan a document and save it to a network folder or file transfer protocol (FTP) site along with a file containing additional information about the document. A third-party software program can then retrieve and decipher the information, and perform the appropriate operation on the scanned image. A printer can also be set up as a workflow destination, so that scanned documents can be printed.
- **Send to network folder**-Scan a document and send it to a folder on the network.

Minimum system requirements

The following table describes the network components that are used for digital sending.

Table 1-1 HP 9200c Digital Sender minimum system requirements

Component	Description
Network server running Microsoft® Windows 2000 Professional, Server, or Advanced Server; Windows XP Professional; or Windows 2003 Standard or Enterprise Server	The server contains the following components: ■ HP DSS ■ HP MFP DSS Configuration Utility-used to configure and monitor digital-sending features after the HP DSS program has been installed ■ Windows 2000 Fax service-required only when the Windows 2000 Fax service is the method of fax transport
Network	Fast Ethernet 100Base-TX or Ethernet 10Base-T
Digital senders or MFP products	An HP DSS server can support up to 250 HP 9200c Digital Senders or MFP products on the same network. Each device can be individually configured to support any or all of the digital-sending options. **NOTE** HP DSS does not support the HP 9100C or 8100C Digital Senders.
Web browser	Users can use a Web browser from any computer on the network to configure and monitor the digital sender by using HP Web Jetadmin, or the embedded Web server in the digital sender.
SMTP gateway	This gateway facilitates the e-mail and Internet fax digital-sending options.
LAN fax server	A LAN fax server is a network device that centrally handles the sending and receiving of large numbers of fax jobs. HP DSS can be used to configure the digital sender to route outgoing faxes to a LAN fax server.
LDAP server	An LDAP server is a directory server that contains recipients' names and e-mail addresses and supports Lightweight Directory Access Protocol (LDAP). HP DSS uses the LDAP server to obtain addresses for the digital-sender address book.
FTP server	An FTP server can be used as a destination for documents scanned by the digital sender.
Domain controller/Novell directory server	In order to support user authentication, the digital sender must have access to a domain controller or Novell directory server in order to validate the user's login information.
Network printer	A network printer can be set up as a destination for documents scanned by the digital sender.

Digital-sender components

The following illustrations show the main external parts of the digital sender.

Digital-sender parts

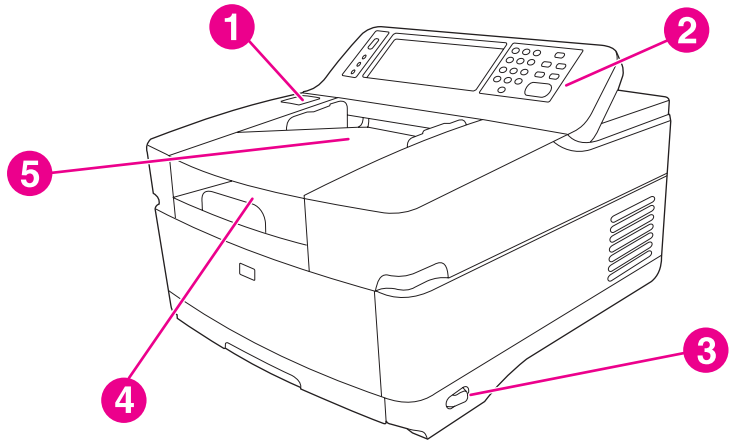


Figure 1-1 External parts (1 of 3)

1	Jam-release button
2	Control panel
3	On/off switch
4	Output bin
5	ADF input bin

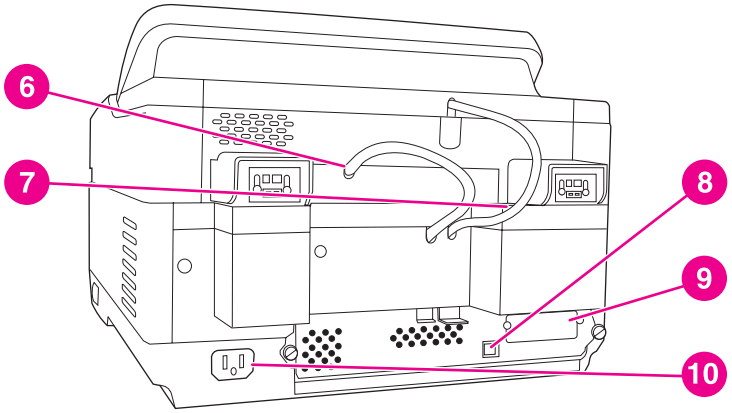


Figure 1-2 External parts (2 of 3)

6	ADF cable
7	Control-panel cable
8	Embedded Jetdirect 10/100Base-T network port
9	EIO port
10	Power connector

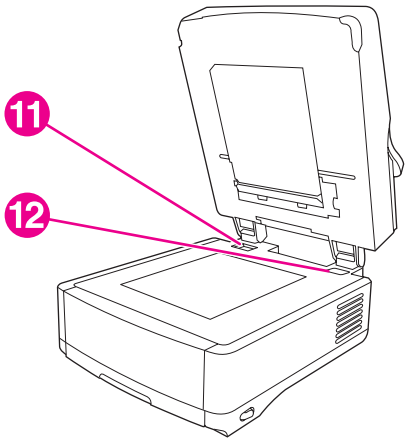


Figure 1-3 External parts (3 of 3)

11	Scanner lock
12	Serial number

Control-panel features

The digital-sender control panel contains the following items.

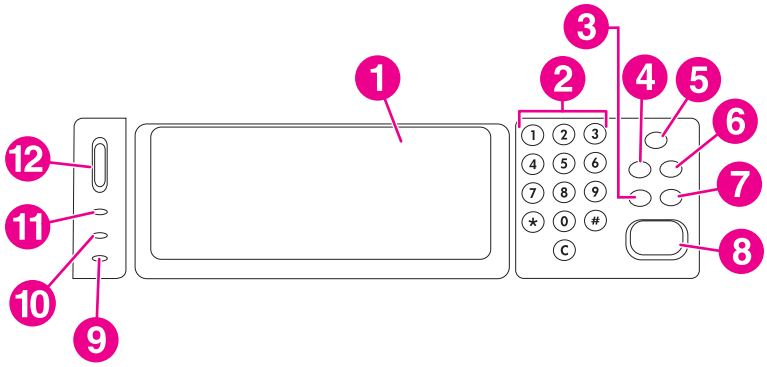


Figure 1-4 Control panel

1	Touch-screen graphical display
2	Numeric key pad
3	RESET button
4	MENU button
5	SLEEP button and LED
6	STATUS button
7	STOP button
8	START button and LED
9	**Attention** LED
10	**Data** LED
11	**Ready** LED
12	Contrast control wheel

Table 1-2 Control-panel button functions

Button	Function
RESET	Logs off the current user. Resets the job settings to factory or user-defined default values.
MENU	Shows the control-panel menu interface on the control-panel display. For a complete list of control-panel menu items, see the *HP 9200C Digital Sender Support Guide*.
SLEEP	Puts the device into sleep mode, in which it shuts down some functions to conserve energy.
STATUS	Shows the digital-sender supply status information on the control-panel display.
STOP	Cancels the job that is currently being scanned. After scanning is complete, the job cannot be canceled.
START	Begins a digital-sending job or continues a job that has been interrupted.

Model and serial numbers

The model and serial number are located on the back of the device. The serial number can also be found at the back of the flatbed.

Site requirements

Place the digital sender on a sturdy surface, away from direct sunlight. Allow enough space around the digital sender to open the doors and trays.

Physical specifications

Table 1-3 Product dimensions

Product	Height	Depth	Width	Weight
HP 9200c Digital Sender	340.26 mm (13.40 inches)	571.82 mm (22.51 inches)	552.62 mm (17.82 inches)	22.7 kg (50 lbs)

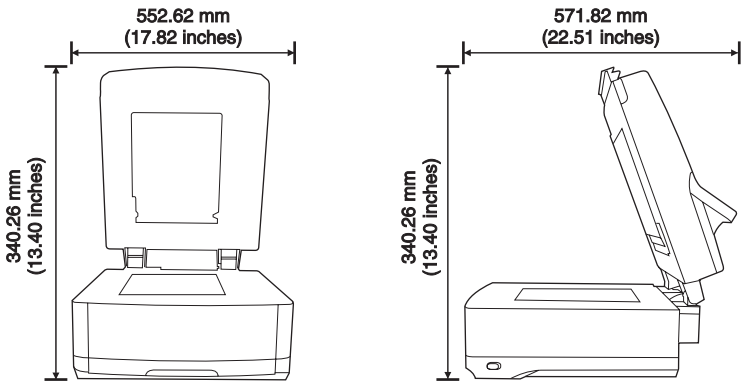


Figure 1-5 Product dimensions

Environmental specifications

Environmental condition	Operating	Storage/standby
Temperature	0°C to 40°C (32°F to 104°F)	-40°C to 60°C (-40°F to 140°F)
Relative humidity	15% to 80%	15% to 90%

Digital sender specifications

Electrical specifications

Table 1-4 Power requirements

Power requirements	100-240 V (±10%) 50/60 Hz (±2 Hz)
Minimum recommended circuit capacity	1.0 Amp

Table 1-5 Power consumption (average, in watts)[1]

Product model	Scanning (47 PPM)[2]	Ready	Sleep	Off
HP 9200c Digital Sender	95 W	36 W	13 W	0 W

1 Values current as of June 22, 2004. Values subject to change. See www.hp.com/support/9200c for current information.
2 Power reported is highest value measured for color and monochrome scanning using all standard voltages.
3 Default time from Ready mode to Sleep = 60 minutes.
4 Recovery time from Sleep to start of scanning = less than 10 seconds.
5 Heat dissipation in Ready mode = 123 BTU/hour.

Acoustic specifications

Table 1-6 Sound power and pressure level[1]

Sound power level	Declared per ISO 9296
Scanning (47 PPM)	L_{WAd}= 6.6 Bels (A) [66 dB(A)]
Ready	L_{pAm}= 5.4 Bels (A) [54 dB (A)]
Sound pressure level - Bystander Position	**Declared per ISO 9296**
Scanning (47 PPM)	L_{pAm}=51 dB (A)
Ready	L_{pAm}=39 dB (A)

1 Values current as of April 26, 2004. Values subject to change. See www.hp.com/support/9200c for current information.
2 Configuration tested by Scanning simplex monochrome using ADF at 47 ppm and Letter-size paper.

Skew specifications

The skew specification is 0.6%. The actual skew varies depending on the length or the width of the page. For example, on a letter-size page the vertical skew is a maximum of 1.67 mm (0.065 inches)

and the horizontal skew is a maximum of 1.29 mm (0.05 inches). The digital sender conforms to the following skew specifications:

- ADF platen <= 0.6%
- ADF simplex <= 0.6%
- ADF duplex <= 0.6%

Media	Horizontal	Vertical
Letter	1.29 mm (0.05 inches)	1.67 mm (0.065 inches)
A4	1.26 mm (0.0496 inches)	1.78 mm (0.07 inches)
Legal	1.29 mm (0.05 inches)	2.13 mm (0.0838 inches)

Media specifications

The HP 9200c Digital Sender supports the following standard paper sizes:

- Letter: 215.9 x 279 mm (8.5 x 11 inches)
- Executive: 190 x 254 mm (7.5 x 10 inches)
- A4: 210 x 297 mm (8.3 x 11.7 inches)
- A5: 148 x 210 mm (5.83 x 8.27 inches)
- B5: 176 x 250 mm (6.9 x 9.8 inches)
- Legal (from the ADF only): 215.9 x 355.6 mm (8.5 x 14 inches)

Paper weight: 60 to 120 g/m2 (16 to 32 lb)

Up to 50 sheets of paper can be stacked in the ADF, for a maximum height of 5 mm (0.2 inch).

Regulatory information

FCC and Telecom regulations

FCC regulations

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If this equipment is not installed and used in accordance with the instructions, it can cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation; the presence of interference can be determined by turning the equipment off and on. If this equipment does cause harmful interference to radio or television communications, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase distance between equipment and receiver.
- Connect equipment to an outlet on a circuit different from that to which the receiver is located.
- Consult your dealer or an experienced radio/television technician.

NOTE Any changes or modifications to the device that are not expressly approved by HP could void the user's authority to operate this equipment.

Environmental Product Stewardship program

Protecting the environment

Hewlett-Packard Company is committed to providing quality products in an environmentally sound manner. This product has been designed with several attributes to minimize impacts on our environment.

Power consumption

Power usage drops significantly while in Sleep mode, which saves natural resources and saves money without affecting the high performance of this product.

Plastics

Plastic parts over 25 grams are marked according to international standards that enhance the ability to identify plastics for recycling purposes at the end of the product's life.

Materials and recycling information

Material restrictions

This HP product contains mercury in the fluorescent lamp of the control-panel liquid crystal display that can require special handling at end-of-life. This HP product contains a lithium battery on the formatter board that can require special handling at end-of-life.

廢電池請回收

For recycling information, you can contact www.hp.com/recycle or contact your local authorities or the Electronics Industry Alliance: www.eiae.org.

For more information

Visit www.hp.com/go/environment, www.hp.com/hpinfo/community/environment/productinfo/safety, or www.hp.com/recycle.www.hp.com/go/environment, www.hp.com/hpinfo/community/environment/productinfo/safety, or www.hp.com/recycle to obtain information about environmental topics, including:

- the product environmental profile sheet for this and many related HP products
- HP's commitment to the environment
- HP's environmental management system
- HP's end-of-life product return and recycling program

Country-/region-specific safety statements

Canadian DOC statement

Complies with Canadian EMC Class B requirements.

«Conforme àla classe B des normes canadiennes de compatibilité électromagnétiques (CEM).»

VCCI statement (Japan)

この装置は，情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＢ情報技術装置です。この装置は，家庭環境で使用することを目的としていますが，この装置がラジオやテレビジョン受信機に近接して使用されると，受信障害を引き起こすことがあります。
取り扱い説明書に従って正しい取り扱いをして下さい。

EMI statement (Korea)

사용자 안내문 (B 급 기기)

이 기기는 비업무용으로 전자파장해검정을 받은 기기로서, 주거지역에서는 물론 모든 지역에서 사용할 수 있습니다.

Declaration of conformity

Declaration of Conformity

according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name:	Hewlett-Packard Company
Manufacturer's Address:	11311 Chinden Boulevard
	Boise, Idaho 83714-1021, USA
declares that the product	
Product Name:	HP 9200c Digital Sender
Regulatory number - what's this?	Place holder content.unit.
Regulatory Model Number[3]:	BOISB-0401–00
Product Options:	ALL
conforms to the following Product Specifications:	
Safety:	IEC 60950-1:2001 / EN60950-1: 2001
	IEC 60825-1:1993 +A1 +A2 / EN 60825-1:1994 +A2 (Class 1 Laser/LED Product)
	GB4943-2001
EMC:	CISPR 22:1997 / EN 55022:1998 - Class B[1]
	EN 61000-3-2:2000
	EN 61000-3-3:1995 / A1
	EN 55024:1998

Declaration of Conformity

FCC Title 47 CFR, Part 15 Class B[2)] / ICES-003, Issue 4

GB9254-1998, GB17625.1-1998

Supplementary Information:

The product herewith complies with the requirements of the EMC Directive 89/336/EEC and the Low Voltage Directive 73/23/EEC, and carries the CE-Marking accordingly.

1) The product was tested in a typical configuration with Hewlett-Packard Personal Computer Systems. Compliance testing of product to standard with the exception of Clause 9.5, which is not yet in effect.

2) This Device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

3) For regulatory purposes, this product is assigned a Regulatory model number. This number should not be confused with the marketing name or the product number(s).

Boise, Idaho , USA

June 16, 2004

For regulatory topics only:

Australia Contact:	Product Regulations Manager, Hewlett-Packard Australia Ltd.,, 31-41 Joseph Street Blackburn, Victoria 3130, Australia,
European Contact:	Your Local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department HQ-TRE / Standards Europe,, Herrenberger Strasse 140 , D-71034, Böblingen, (FAX: +49-7031-14-3143),
USA Contact:	Product Regulations Manager, Hewlett-Packard Company,, PO Box 15, Mail Stop 160 Boise, ID 83707-0015, , (Phone: 208-396-6000),

2 Service approach

This chapter contains information about the following topics:

- Service approach
- How to order parts and supplies
- Hewlett-Packard Limited Warranty Statement
- Availability of support and service
- HP maintenance agreements

Service approach

Digital-sender repair normally begins by using the digital sender internal diagnostics and the following two-step process:

1 Isolate the problem to the major system (for example, the network or server, or the digital-sender system).

2 Troubleshoot the problem by using the procedures in chapter 7.

After a faulty part is located, the digital sender can usually be repaired at the assembly level by replacing field replaceable units (FRUs). Some mechanical assemblies might need to be repaired at the subassembly level. Hewlett-Packard Company does not support replacement of components on the printed circuit assembles.

How to order parts and supplies

You can obtain the following items directly from HP:

- **Replacement parts** To order replacement parts in the U.S. see www.hp.com/go/hpparts/. Outside the United States, order parts by contacting your local authorized HP service center.
- **Supplies** To order supplies in the U.S., see www.hp.com/go/ljsupplies. To order supplies worldwide, see www.hp.com/ghp/buyonline.html.

Hewlett-Packard Limited Warranty Statement

HP PRODUCT	DURATION OF LIMITED WARRANTY
HP 9200c Digital Sender	1 year, Onsite service

HP warrants to you, the end-user customer, that HP hardware and accessories will be free from defects in materials and workmanship after the date of purchase, for the period specified above. If HP receives notice of such defects during the warranty period, HP will, at its option, either repair or replace products which prove to be defective. Replacement products might be either new or equivalent in performance to new.

HP warrants to you that HP software will not fail to execute its programming instructions after the date of purchase, for the period specified above, due to defects in material and workmanship when properly installed and used. If HP receives notice of such defects during the warranty period, HP will replace software which does not execute its programming instructions due to such defects.

HP does not warrant that the operation of HP products will be uninterrupted or error free. If HP is unable, within a reasonable time, to repair or replace any product to a condition as warranted, you will be entitled to a refund of the purchase price upon prompt return of the product.

HP products might contain remanufactured parts equivalent to new in performance or might have been subject to incidental use.

Warranty does not apply to defects resulting from (a) improper or inadequate maintenance or calibration, (b) software, interfacing, parts or supplies not supplied by HP, (c) unauthorized modification or misuse, (d) operation outside of the published environmental specifications for the product, or (e) improper site preparation or maintenance.

TO THE EXTENT ALLOWED BY LOCAL LAW, THE ABOVE WARRANTIES ARE EXCLUSIVE AND NO OTHER WARRANTY OR CONDITION, WHETHER WRITTEN OR ORAL, IS EXPRESSED OR IMPLIED AND HP SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY, AND FITNESS FOR A PARTICULAR PURPOSE. Some countries/regions, states or provinces do not allow limitations on the duration of an implied warranty, so the above limitation or exclusion might not apply to you. This warranty gives you specific legal rights and you might also have other rights that vary from country/region to country/region, state to state, or province to province. HP's limited warranty is valid in any country/region or locality where HP has a support presence for this product and where HP has marketed this product. The level of warranty service you receive might vary according to local standards. HP will not alter form, fit or function of the product to make it operate in a country/region for which it was never intended to function for legal or regulatory reasons.

TO THE EXTENT ALLOWED BY LOCAL LAW, THE REMEDIES IN THIS WARRANTY STATEMENT ARE YOUR SOLE AND EXCLUSIVE REMEDIES. EXCEPT AS INDICATED ABOVE, IN NO EVENT WILL HP OR ITS SUPPLIERS BE LIABLE FOR LOSS OF DATA OR FOR DIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFIT OR DATA), OR OTHER DAMAGE, WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE. Some countries/regions, states or provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion might not apply to you.

THE WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT OR MODIFY AND ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.

Availability of support and service

Around the world, HP provides a variety of service and support options for purchase. Availability of these programs will vary depending upon your location.

HP maintenance agreements

Hewlett-Packard Company has several types of maintenance agreements that meet a wide range of support needs. Maintenance agreements are not part of the standard warranty. Support services vary by location. Contact HP Customer Care to determine the services that are available and for more information about maintenance agreements. In general, the digital sender will have the following maintenance agreement:

Next-Day Onsite Service

This agreement provides support by the next working day following a service request. Extended coverage hours and extended travel beyond HP's designated service zones are available on most onsite agreements (for additional charges).

3 Installation and configuration

This chapter contains information about the following topics:

- What ships in the box
- Viewing the digital sender information pages
- Security features

What ships in the box

The following items ship in the box with the digital sender.

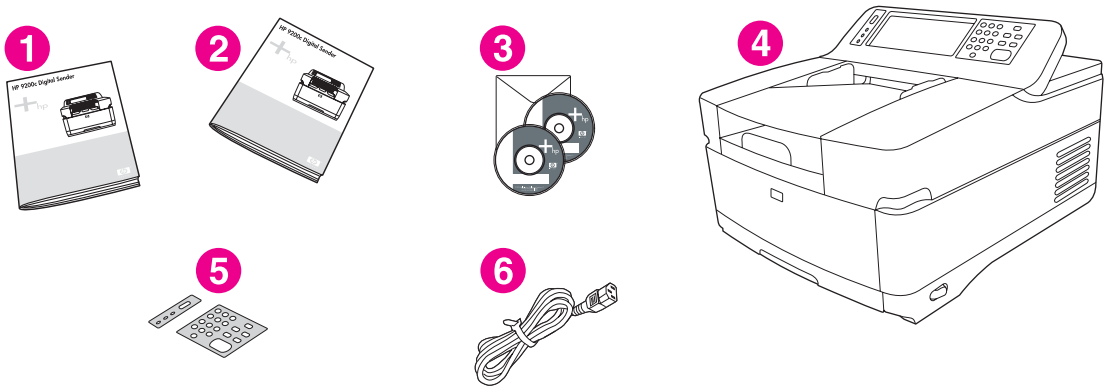


Figure 3-1 What ships in the box

1 Getting started guide

2 Warranty booklet

3 HP DSS software and digital-sender documentation CDs

4 Digital sender

5 Control-panel overlays (optional)

6 Power cord

Viewing the digital sender information pages

Because the digital sender cannot print its information pages, they must be viewed by using the digital-sender control panel or by using the embedded Web server (EWS).

To view the device information pages by using the control panel

Follow these instructions to view the digital-sender information pages:

1. Press the MENU button on the control panel.
2. Touch the **INFORMATION** menu.
3. Touch **SHOW CONFIGURATION**.
4. Use the scroll bar to scroll down through the configuration information. Touch **NEXT** to view the EIO/Jetdirect information.

To view the device information pages by using the EWS

To view the EWS Web pages, you need to have the IP address for the device. You can find the IP address in one of the following two ways:

- Go to the digital sender and look at the upper-left corner of the touchscreen. The IP address should appear next to the word **Ready**.
- If the IP address does not appear on the touchscreen, press the MENU button on the control panel. Touch the **INFORMATION** menu, and then touch **SHOW CONFIGURATION**. The digital-sender configuration information appears on the touchscreen. Touch the **NEXT** button to see the Jetdirect data. Scroll through the information until you find the IP address.

NOTE You can gain access to the embedded Web server from any operating system that supports the TCP/IP protocol and a Web browser, preferably either Netscape Navigator 4.7x or Microsoft Internet Explorer 5.0x or later. You cannot view the embedded Web server pages from outside a firewall.

1. Open a Web browser and type the digital sender IP address into the **Address** box to open the EWS Web page.
2. Click **Configuration Page** to view the configuration page information or **Device Information** to see the device name and the IP address for the device.
3. Scroll to view the information page that you want to see.

Configuration information

The following configuration information appears on the control panel or the EWS page.

Device Information

```
Product Name: hp 9200c Digital Sender

Device Name: hp 9200c Digital Sender

Model Number: XXXXXX
```

Device Serial Number: XXXXXXXXXX

Formatter Number: XXXXXXXXXX

CPB: X.XXX (X.X)

SCB: XXXX X

Firmware Datecode: XXXXXXXX XX.XX.0

Service ID: XXXXX

PS Wait Time–out: 300 seconds

Page Count: XXX

Document Feeder Kit Interval: 90000

Pages since last Doc Feeder Maintenance: XXX

Memory

Total RAM: 128MB

Security

Control Panel Lock: NONE

Control Panel Password: DISABLED

Write Protect: DISABLED

File System Access:

PJL: ENABLED

PML: ENABLED

NFS: ENABLED

PostScript: ENABLED

Options

DIMM Slot 1: Empty

Card Slot 1: 64 MB F/W FLASH: 2MB

Card Slot 2: Empty

EIO 1: Empty

EIO 2: HP Scanner Processor Card

LDAP Gateway: X.X.X.X

SMTP Gateway: X.X.X.X

hp MFP Digital Sending Server: X.X.X.X

The following information is important to note:

- Firmware date codes: **CPB** displays the firmware date code for the copy processor board, and **SCB** displays the firmware date code for the scanner controller board. When you upgrade the firmware, the firmware bundle upgrades all of the product components. See Upgrading the firmware for instructions to upgrade the firmware.
- The **Page Count**, **Document Feeder Kit Interval**, and **Pages since last Doc Feeder Maintenance** items are important to note for digital-sender maintenance. The default Document Feeder Kit replacement interval is 90,000 pages.
- The **LDAP Gateway** and **SMTP Gateway** addresses will be filled in if the digital sender is using its embedded digital-sending functionality (that is, if it is not using a digital sending server). If the digital sender is using a digital sending server, then the **hp MFP Digital Sending Server** address will be filled in, and the LDAP and SMTP addresses will be 0.0.0.0. The **hp MFP Digital Sending Server** address is the IP address of the server where the HP MFP Digital Sending Software is installed.

NOTE Using “restore factory defaults” command clears the **HP MFP Digital Sending Server** address.

Security features

The most basic security feature of the digital sender is its ability to require a network login before a user can gain access to digital sending functions. This prevents unauthorized users from walking up to the device and sending documents. Hewlett-Packard Company highly recommends that authentication be enabled when configuring the digital sender.

For users who are concerned about e-mail security, the digital sender comes with a secure e-mail option. A number of third-party software vendors offer services for secure e-mail delivery. The Secondary E-mail feature is designed to work with one of these third-party software programs for users who require an extra measure of data security. It differs from the regular e-mail feature in that the data between the device and the HP DSS server is encrypted. An rfc822-compliant e-mail message that includes the scanned data as an attachment is created in a folder on the HP DSS server. The third-party software program, which is monitoring this folder, processes the e-mail message and sends it out in a secure manner.

Restricting software access

In order to keep the digital sender secure, you must also restrict access to the software programs that can be used to configure the device. By default, the digital-sending configuration options in the EWS are disabled when the digital sender begins using the HP DSS service. The digital sender can then only be configured by using the HP MFP DSS Configuration Utility. This centralizes configuration tasks and helps control security. Make sure that the HP DSS is installed on a secure server and that unauthorized users cannot use the HP MFP DSS Configuration Utility.

In addition, a password can be set in the EWS to prevent unauthorized access to the device-settings tabs. After the password has been set, users can only see the EWS **Information** tab.

Securing the embedded Web server

You can assign a password for access to the embedded Web server so that unauthorized users cannot change the digital sender settings.

1. Open the embedded Web server. See Viewing the digital sender information pages.
2. Click the **Settings** tab.
3. On the left side of the window, click **Security**.
4. Type the password next to **New Password**, and type it again next to **Verify Password**.
5. Click **Apply**. Make note of the password, and store it in a safe place.

Securing HP Web Jetadmin

The final software program that can be used to control the digital sender is the HP Web Jetadmin program. This program can also be configured to require a password before any changes can be made. It should also be installed on a secure server and should be protected from unauthorized use.

Using the security lock

The security lock is a mechanical lock that prevents the removal of internal device components, such as the hard disk, compact flash, and memory DIMM. The lock is a third-party computer lock similar to the ones that are used to secure laptop computers. Purchase the lock separately, and then install it on the product in the location shown in this figure.

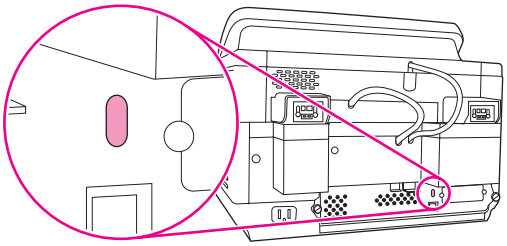


Figure 3-2 Security lock

4 Maintenance

This chapter contains information about the following topics:

- Cleaning the digital sender
- Replacing the mylar sheet
- Calibrating the scanner
- Calibrating the control panel
- Performing preventative maintenance
- Setting the real-time clock
- Upgrading the firmware
- Configuring and verifying an IP address

Cleaning the digital sender

To maintain the scan quality, clean the device only if the ADF or glass is visibly marked or dirty, or if you see a decrease in the scan quality (such as streaking). Clean the outside of the device with a water-dampened cloth. Clean the inside with only a dry, lint-free cloth. Observe all warnings and cautions in the following cleaning tasks.

To clean the glass

- Clean the glass only if dirt is visible, or if you see poor scan 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 Do not pour or spray liquids directly onto the glass. Do not press hard on the glass surface, as this could break the glass.

To clean the touchscreen

Clean the touchscreen when needed to clear away fingerprints or dust build-up. To clean it, wipe the touchscreen gently with a clean, water-dampened, lint-free cloth.

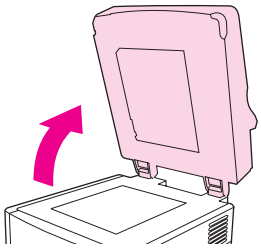
CAUTION Use water only. Solvents or cleaners can damage the touchscreen. Do not pour or spray water directly onto the touchscreen.

Cleaning the ADF delivery system

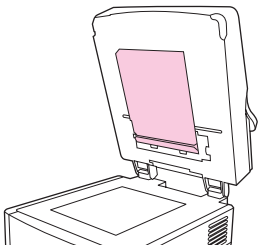
Clean the ADF only if it is visibly marked or dirty, or if you experience a decrease in scan quality (such as streaking).

To clean the ADF delivery system

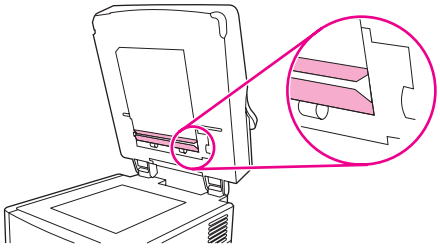
1 Lift the top part of the digital sender.



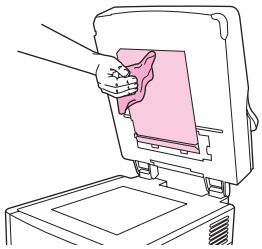
2 Locate the white, vinyl ADF backing.



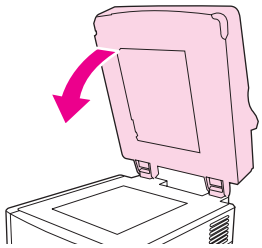
3 Locate the white, vinyl calibration strips.



4 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.



5 Close the top of the digital sender.

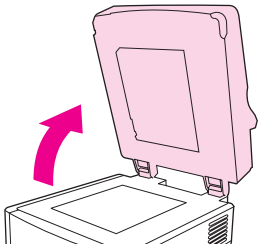


To clean the ADF rollers

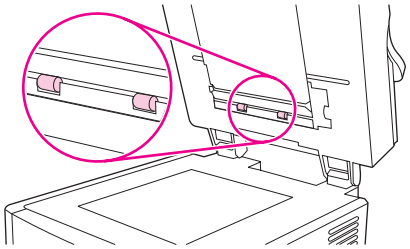
You should clean the rollers in the ADF if documents are misfeeding or if originals show marks as they exit the ADF.

CAUTION Clean the rollers only if documents are misfeeding or marks appear on the originals, and you notice dust on the rollers. Cleaning the rollers frequently could introduce dust into the device.

1 Open the top of the digital sender.



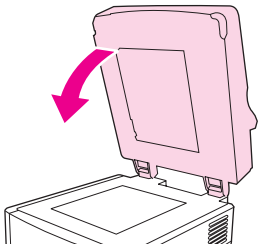
2 Locate the rollers near the white, vinyl calibration strips.



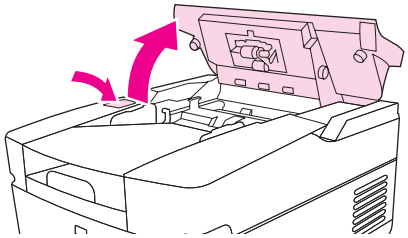
3 Wipe the rollers gently with a clean, water-dampened, lint-free cloth.

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

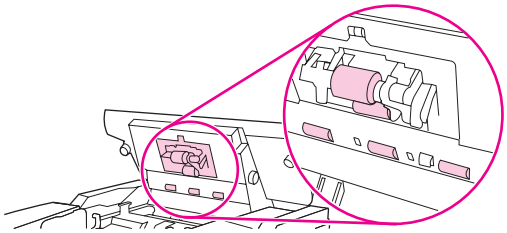
4 Close the top of the digital sender.



5 Push the release button to open the ADF cover.



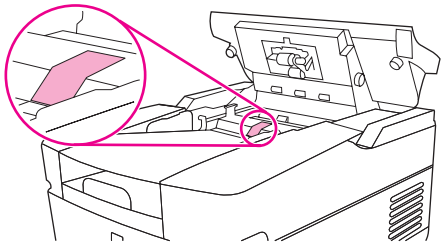
6 Locate the rollers.



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

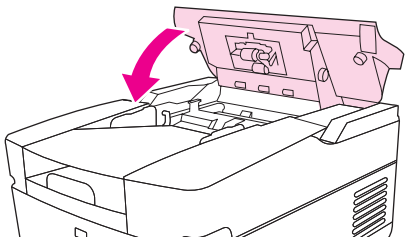
CAUTION Do not pour water directly onto the rollers. Doing so might damage the device.

8 Locate the separation pad.



9 Wipe the pad with a clean, water-dampened, lint-free cloth.

10 Close the ADF cover.



NOTE If the separation pad and feed rollers cannot be cleaned adequately, they might need to be replaced.

Replacing the mylar sheet

If vertical streaks appear on the scanned images, as shown in the following figure, you might need to replace the mylar sheet at the base of the ADF. The device ships with an envelope containing three extra mylar sheets and installation instructions. The envelope is in a pocket behind the ADF vinyl backing, as shown in the following figure.

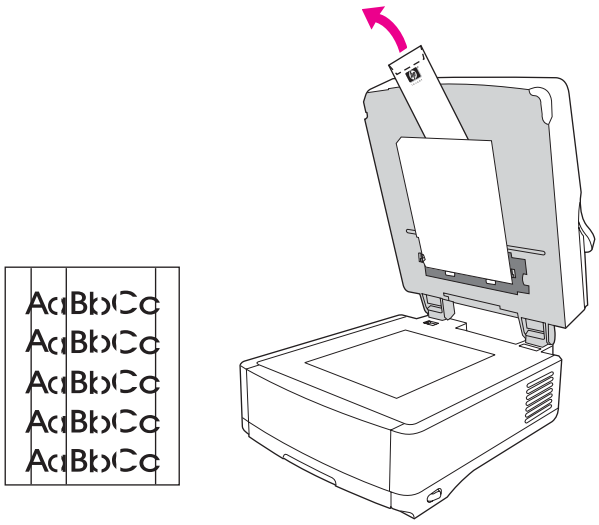


Figure 4-1 Replacing the mylar sheet

Follow the instructions that come in the envelope to replace the mylar sheet.

NOTE If necessary, order extra mylar sheet replacement kits from an HP sales representative. The HP part number is Q6496A.

Calibrating the scanner

The purpose of the scanner calibration process is to compensate for offsets in the scanner imaging system (carriage head) for ADF and flatbed scans. Because of mechanical tolerances, the scanner carriage head might not read the position of the image accurately. During the calibration procedure, scanner offset values are calculated and stored. The offset values are subsequently used when producing scans so that the correct portion of the scanned image is obtained by either adding or subtracting the number of pixels that are indicated in the offset from the lines or rows of the image.

Scanner calibration should only be carried out if you notice offset problems with the scanned images. The scanner is calibrated before it leaves the factory and normally should not need to be calibrated again.

NOTE The scanner should be recalibrated any time the ADF is removed or replaced.

Before calibrating the scanner, you must print the calibration target on a printer.

To print the calibration target

1. Go to www.hp.com/go/9200c_scanner_cal and follow the instructions to download the calibration target. The calibration target file is also available on the documentation CD that came with the device. The file name is CALIBRATION.PDF or CALIBRATION.DOC.

2 Print the target on any HP LaserJet printer or another available, laser-quality printer.

a Verify that the page size in the software program is set to legal, and do not make any adjustments to the image size.

NOTE Ignore any printer errors that might appear about using incorrect paper size. By selecting legal as the page size and printing on letter or A4 paper, the file prints to the edge of the paper.

b Place letter or A4 paper in tray 1 (or the multipurpose tray) and adjust the side guides.

c Print the first pass of the calibration target. (First copy of the file.)

d Return the first pass of the calibration target to tray 1 so that the arrows are facing into the printer.

e Print the second pass (second copy of the file). The final calibration target must look like the following figure.

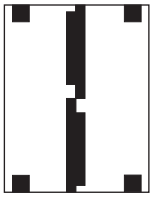


Figure 4-2 Scanner calibration target

CAUTION If the calibration target does not look like the figure shown here, the calibration process will fail and the quality of the digital-sender scans will be degraded. Where shown, the black areas must extend completely to the edges of the page. If they do not, use a black marker to extend the black areas to the edges of the page. If you have problems printing the calibration target, try using a different printer.

To calibrate the scanner

Use the following procedure to calibrate the scanner:

1 Take the calibration target to the digital sender.

2 Place it into the scanner ADF face-up and adjust the side guides.

3 Press the MENU button, touch **DIAGNOSTICS** on the control-panel screen, and then touch **CALIBRATE SCANNER**.

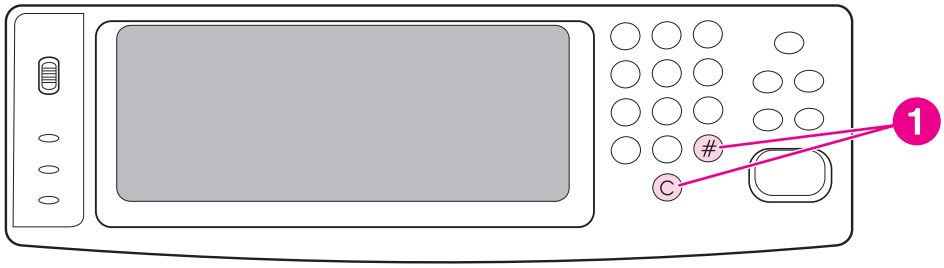
4 After the calibration target has passed through the ADF once, reposition it in the ADF face down.

5 After completing the second pass, position the target on the scanner glass and initiate the final pass.

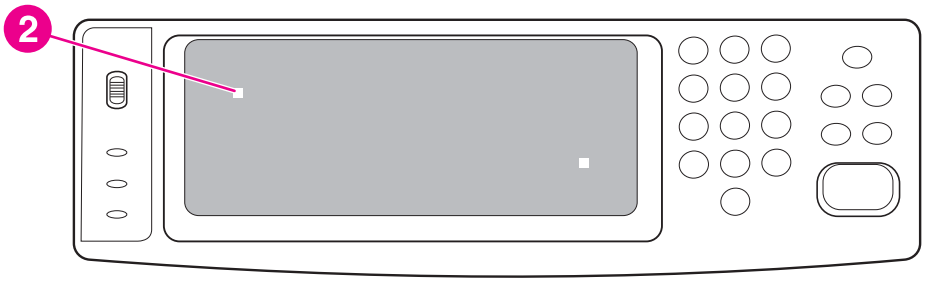
Calibrating the control panel

Use the following procedure to calibrate the control panel

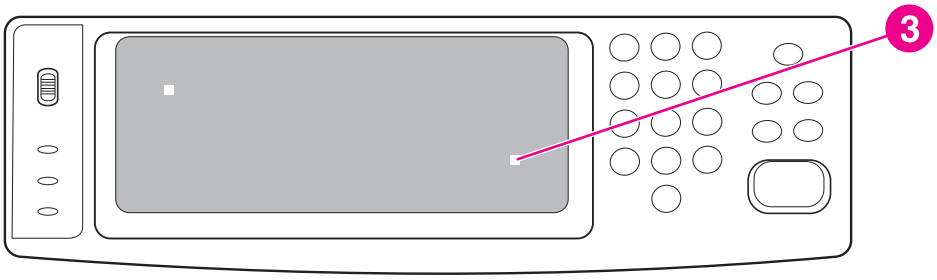
1 Hold down the number (#) key and the C key while turning on the power.



2 Use non-scratching stylus to precisely touch the upper-left calibration point.



3 Use non-scratching stylus to precisely touch the lower-left calibration point.



4 The calibration is complete, and a normal boot with the memory count should resume in a few seconds.

Performing preventative maintenance

The only preventative maintenance operation for the digital sender is the replacement of the ADF maintenance kit.

ADF maintenance kit

The device notifies you when it is time to replace the ADF Maintenance Kit by showing a message on the control-panel display. You can view the remaining life of the Maintenance Kit at any time by pressing the STATUS button on the control panel or visiting the EWS **Supplies Status** page. Use Part Number Q5997A when you need to order a new ADF Maintenance Kit.

The ADF Maintenance Kit includes the following items:

- One pick-up roller assembly
- One separation pad
- One mylar-sheet kit
- An instruction sheet

Follow the instructions that come with the kit to install it.

After replacing the kit, set the **NEW DOCUMENT FEEDER KIT** setting in the control-panel **RESETS** menu to **YES**.

Setting the real-time clock

Use the real-time clock feature to set the date and time settings. The date and time information is attached to digital-send jobs. You can also set the digital sender to automatically warm up and prepare for use at a set time each day.

Setting the date and time

When setting the date and time you can set the date format, date, time format, and time.

To set the date format

1. Touch MENU.
2. Scroll to and touch **CONFIGURE DEVICE**.
3. Scroll to and touch **SYSTEM SETUP**.
4. Touch **DATE/TIME**.
5. Touch **DATE FORMAT**.
6. Touch the appropriate format. The settings are saved and the control panel returns to the **DATE/TIME** submenu.
7. Touch **EXIT** to exit the menu.

To set the date

1. Touch MENU.
2. Scroll to and touch **CONFIGURE DEVICE**.
3. Scroll to and touch **SYSTEM SETUP**.
4. Touch **DATE/TIME**.
5. Touch **DATE**.
6. Touch the appropriate options to set the correct month, date, and the year.

NOTE The order of modifying the month, date, and year depends upon the date format setting.

7. The settings are saved and the control panel returns to the **DATE/TIME** submenu.
8. Touch **EXIT** to exit the menu.

To set the time format

1. Touch MENU.
2. Scroll to and touch **CONFIGURE DEVICE**.
3. Scroll to and touch **SYSTEM SETUP**.
4. Touch **DATE/TIME**.

5 Touch **TIME FORMAT**.

6 Touch the appropriate format. The settings are saved and the control panel returns to the **DATE/TIME** submenu.

7 Touch **EXIT** to exit the menu.

To set the time

1 Touch MENU.

2 Scroll to and touch **CONFIGURE DEVICE**.

3 Scroll to and touch **SYSTEM SETUP**.

4 Touch **DATE/TIME**.

5 Touch **TIME**.

6 Touch the appropriate options to set the correct hour, minute, and AM or PM setting.

NOTE The order of modifying the hour, minute, and AM or PM setting depends upon the time-format setting.

7 The settings are saved and the control panel returns to the **DATE/TIME** submenu.

8 Touch **EXIT** to exit the menu.

Setting the wake time

Use the wake-time feature to wake the digital sender at a set time each day. If a wake time is set, use an extended sleep-delay period. See Setting the sleep delay.

To set the wake time

1 Touch MENU.

2 Scroll to and touch **CONFIGURE DEVICE**.

3 Scroll to and touch **SYSTEM SETUP**.

4 Touch **WAKE TIME**.

5 Touch the day of the week for which you want to set the wake time.

6 Touch **CUSTOM**.

7 Touch the appropriate options to set the correct hour, minute, and AM or PM setting.

8 If you want to wake the digital sender at the same time each day, on the **APPLY TO ALL DAYS** screen, touch **YES**.

9 If you want to set the time for individual days, touch **NO**, and repeat the procedure for each day.

10 The settings are saved and the control panel returns to the **WAKE TIME** submenu.

11 Touch **EXIT** to exit the menu.

Setting the sleep delay

Use the sleep-delay feature to set the period of time that the digital sender must be idle before it enters the sleep mode.

NOTE If the sleep-delay feature is turned off in the **RESETS** menu, the digital sender never enters the sleep mode. Selecting a sleep-delay value automatically turns the sleep feature on. The default value for the sleep delay setting is 60 minutes.

To set the sleep delay

1. Touch MENU.
2. Scroll to and touch **CONFIGURE DEVICE**.
3. Scroll to and touch **SYSTEM SETUP**.
4. Touch **SLEEP DELAY**.
5. Scroll to and touch the sleep-delay setting that you want.
6. The settings are saved and the control panel returns to the **SYSTEM SETUP** submenu.
7. Touch **EXIT** to exit the menu.

Upgrading the firmware

The HP 9200c Digital Sender features remote firmware update (RFU) capability. Use the following steps to remotely upgrade the digital-sender firmware. These steps are explained in more detail in the following sections.

1. Determine the current level of firmware that is installed on the device.
2. Go to the Web site and find out whether a new version is available. If it is, download the latest firmware to your computer.
3. Download the new firmware to the device.

Determining the current level of firmware

To determine the current level of firmware, view the configuration page on the digital-sender control panel. To view the configuration page, follow these instructions.

1. On the control panel, press the MENU button to open the menus.
2. Select the **INFORMATION** menu.
3. Select **VIEW CONFIGURATION**.
4. Scroll to the configuration section marked **Device Information** to find the **Firmware date code**. The firmware date code looks something like this: 20030502 05.003.0.

Downloading the new firmware from the HP Web site

To find the most recent firmware upgrade for the digital sender, go to www.hp.com/go/9200c_firmware. This page also contains instructions for how to download the new firmware version. Download the new firmware version from the Web site and then use one of the following methods to update the digital sender firmware.

Using FTP to upgrade the firmware on a direct network connection

The device must be in a "ready" state to receive an .RFU file update. Any jobs that are ahead of the RFU job in the queue are completed before the update is processed.

The elapsed time for an update depends on the I/O transfer time as well as on the time that it takes for the device to reinitialize. The I/O transfer time depends on a number of things, including the speed of the host computer that is sending the update. If the remote firmware update process is interrupted before the firmware is downloaded (while Receiving Upgrade appears on the control-panel display), the firmware file must be sent again. If power is lost during the flash DIMM update (while the Performing Upgrade message appears on the control-panel display), the update is interrupted and the message Resend Upgrade appears (in English only) on the control-panel display.

Follow these instructions to perform the upgrade by using FTP.

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

1. If you do not already have it, get the TCP/IP address of the digital sender from the Jetdirect page. The HP Jetdirect page is the second page that you see when viewing the configuration page on the control panel.

   NOTE Before connecting to the digital sender, make sure that it is not in Sleep mode. Also make sure that any error messages are cleared from the control-panel display.

2. Open a command window on your computer.
3. Type: `ftp <TCP/IP ADDRESS>`. For example, if the TCP/IP address is 192.168.0.90, type `ftp 192.168.0.90`.
4. Press Enter on the keyboard.
5. When prompted for the user name, press Enter.
6. When prompted for the password, press Enter.
7. Type `bin` at the command prompt.
8. Press Enter. The message **200 Types set to I, Using binary mode to transfer files** appears in the command window.
9. Type `put <FILENAME>`, where <FILENAME> is the path to the .RFU file that you downloaded from the Web. For example, type `put C:\LJ\3500FW.RFU`, and then press Enter.

   NOTE If the file name or path includes a space, you must enclose the file name or path in quotation marks. For example, type `put "C:\MY DOCUMENTS\LJ\3500FW.RFU"`

   The following series of messages appears in the command window:

   200 PORT command successful

   150 Opening BINARY mode data connection

   226 Ready

   226 Processing Job

   226 Transfer complete

   Then, a message containing the transfer-speed information appears.

10. The download process begins and the firmware is updated on the device. This can take about five minutes. Let the process finish without further interaction with the device or computer.

    NOTE The digital sender automatically restarts the firmware after processing the upgrade.

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

Using HP Web Jetadmin to upgrade the firmware

This procedure requires HP Web Jetadmin Version 7.0 or later to be installed. Complete the following steps to update a single device through HP Web Jetadmin after downloading the .RFU file from the HP Web site.

1. Start HP Web Jetadmin.
2. Open the **Device Management** folder in the drop-down list in the Navigation panel. Navigate to the **Device Lists** folder.
3. Expand the **Device Lists** folder and select **All Devices**. Locate the digital sender that you want to update in the list of devices, and then click to select it.
4. Locate the drop-down box for **Device Tools** in the upper-right corner of the window. Select **Update Printer Firmware** from the action list.
5. Click **Browse** under **Upload New Firmware Image** and navigate to the location of the .RFU file that you downloaded from the Web. Select the file.
6. Click **Upload** to move the .RFU file to the correct location on the HP Web Jetadmin server. After the upload is complete, the browser window refreshes.
7. Select the new .RFU date code from the **Select New Firmware Version** drop-down menu.
8. Click **Update Firmware Now**. HP Web Jetadmin sends the selected .RFU file to the device. The digital-sender control panel shows messages that indicate the progress of the upgrade. At the end of the upgrade process, the digital sender restarts the firmware.

Upgrading the HP Jetdirect Inside firmware

The HP Jetdirect Inside network interface in the device has firmware that can be upgraded separately from the digital-sender firmware. This procedure requires HP Web Jetadmin Version 6.2 or greater to be installed. Complete the following steps to update the HP Jetdirect firmware with HP Web Jetadmin.

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

9 In HP Web Jetadmin, return to the main device list and select the digital sender again.

10 In the **Device Tools** drop-down list, select **Jetdirect Firmware Update** again.

11 On the Jetdirect firmware page, the new firmware version appears under **Jetdirect Firmware Available on HP Web Jetadmin**. Click the **Update Firmware Now** button to update the Jetdirect firmware.

Configuring and verifying an IP address

You can use either of two options to assign and configure TCP/IP addresses on an HP Jetdirect print server:

- HP Web Jetadmin
- Embedded Web server

TCP/IP assignment

The system administrator or primary user is responsible for determining the TCP/IP address for a specific print server. If you are unsure what the TCP/IP address should be or if you are unfamiliar with using TCP/IP on a network, go to the HP Web site at www.hp.com. Click **Search** in the upper-left corner of the Web page and search for **TCP/IP Overview**.

Automatic discovery

The product is equipped with an HP Jetdirect Inside embedded print server. If a BootP or DHCP server is available during product installation, the print server is automatically assigned an IP address for use on the network. This occurs because the print server defaults to 192.0.0.192 (Legacy default) or to 159.254.x.x (Auto IP) if the print server cannot obtain an IP address over the network from a BootP or DHCP server. The default that is assigned depends on the particular network (small/private or enterprise) by using sensing algorithms.

To determine the new IP address, view the configuration page and check the TCP/IP status and address.

Dynamic Host Configuration Protocol (DHCP)

When the product is turned on, the HP Jetdirect Inside print server broadcasts DHCP requests. DHCP automatically downloads an IP address from a network server. DHCP servers maintain a fixed set of IP addresses and only loan an IP address to the print server. Consult your operating system documentation to set up DHCP service on your network.

Verifying the TCP/IP configuration

Two ways are available to view the TCP/IP address of the digital sender:

- Go to the digital sender and look at the upper-left corner of the touchscreen. The IP address should appear next to the word **Ready**.
- If the IP address does not appear on the touchscreen, press the MENU button on the control panel. Touch the **INFORMATION** menu, and then touch **SHOW CONFIGURATION**. The digital-sender configuration information appears on the touchscreen. Touch the **NEXT** button to see the Jetdirect data. Scroll through the information until you find the IP address.

Changing an IP address

Use the following procedures if you need to change the product TCP/IP address.

To change an IP address by using HP Web Jetadmin

Open HP Web Jetadmin. Type the TCP/IP address in the **Quick Device Search** field and click **Go**. At the top menu bar, follow this procedure for discovery options.

1. In the drop-down menu, click **Devices**.
2. In the drop-down menu, click **New Devices**. Click **Go**.
3. Click the column header of your choice (such as IP Address or Device Model) to arrange the list of available devices in ascending or descending order.
4. Highlight the product that you want to configure, and click **Open Device**.
5. From the submenu at the top of the HP Web Jetadmin screen, select **Configuration**.
6. Click the network link located on the left side of the configuration screen.
7. Type the new IP information. You might need to scroll down for more options.
8. Click **Apply** to save the settings.
9. Click the **Refresh** button located next to the question mark on the right side of the screen.
10. Verify the IP information by clicking **Status Diagnostics** or by viewing the configuration page.

To change an IP address by using the embedded Web server

The digital sender has an embedded Web server that can be used to modify the TCP/IP parameters. To use the embedded Web server, the IP address for the HP Jetdirect Inside print server must already be configured. On a network, this is done automatically during initial product installation.

1. In a supported Web browser, type the current IP address of the device as the URL. The **Device Status** page of the embedded Web server appears.
2. Click **Networking**. On this page, you can modify the digital sender network configuration.

5 Theory of Operation

This chapter presents an overview of the relationships between major components in the digital sender, and includes information about the following topics:

- Basic operation
- Formatter system
- Engine control system
- Flatbed unit and ADF system

Basic operation

All high-level digital sender processes are routed through the formatter, which processes the image and communicates with the host computer.

The basic digital sender operation can be divided into three systems:

- The engine control system, which includes the power supply and the scanner controller board
- The pickup-and-feed system, which consists of various rollers and transports the media through the digital sender
- The scanner system, which scans data and sends it to the formatter for sending

Sequence of operation (scanner)

Period (sequence)	Description
Power on	The period of time from when the digital sender power is turned on until the main motor begins to rotate.
Initialization	The period of time after the initial power-on sequence and before the digital sender is ready to scan. During this time, the scanner and ADF initialization is completed, scanner calibration is performed, and the ADF checks for media in the input tray.
Standby	The period of time from the end of the initialization sequence until a request for a scan. During this time, the scan carriage is in the Home position and the digital sender might go into Sleep mode.
Scan	The period of time immediately following a request for a scan. The scanner fan turns on, the scan start position is adjusted, the digital sender performs the scan, and data is sent to the formatter.

Formatter system

The formatter is responsible for the following procedures:

- Controlling Sleep mode
- Receiving and processing scan data
- Monitoring control-panel functions and relaying digital-sender status information (through the control panel and the network)
- Developing and coordinating data placement and timing with the scanner controller board
- Communicating with the host computer through the network

The formatter provides the electrical interface and mounting locations for one EIO card, two memory DIMMs, the hard-disk, one flash memory slot for firmware, and one open flash memory card slot

Sleep mode

This feature conserves power after the digital sender has been idle for an adjustable period of time. When the digital sender is in Sleep mode, the control-panel backlight is turned off, but the digital sender retains all settings. The default setting is for Sleep mode to be enabled, and the digital sender enters the Sleep mode after a 60-minute idle time. Sleep mode can also be turned off from the Configure Device System Setup menu on the control panel.

The digital sender exits Sleep mode and enters the warm-up cycle when any of the following occurs:

- A PML or PJL command is received
- A control-panel button is pressed or you touch the touchscreen
- The top cover is opened
- Media is placed in the input tray

NOTE Digital-sender error messages override the Sleep message. The digital sender enters Sleep mode at the appropriate time, but the error message continues to appear.

CPU

The formatter incorporates a 533 MHz RISC processor.

Memory

The formatter system contains the digital sender memory, which is divided into several components. This section describes each memory component.

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

- Hard disk-The digital sender comes standard with a hard disk that has a capacity of more than 20 GB. The hard disk is used to store settings and jobs.
- DIMM slots with random-access memory-The random-access memory (RAM) contains the scanned image. Memory capacity can be increased by adding a DIMM to the formatter or replacing the existing DIMM with a larger DIMM.
- Flash-memory slots-The firmware is contained on a flash-memory card in the first slot on the formatter. *Do not remove the flash-memory card that contains the firmware or the device will not boot.* A remote firmware upgrade process is available, which overwrites the firmware on the flash-memory card.
- Nonvolatile memory-The digital sender uses nonvolatile memory (NVRAM) to store I/O information and other permanent information, such as page counts and serial number. The contents of NVRAM are retained when the digital sender is turned off or disconnected.

Control panel

The control panel contains both touchscreen and hard keys, and sends user commands to the formatter.

Scanner controller board

The scanner controller board sends data to the formatter and receives commands from the formatter. The scanner controller board controls motors, fans, and sensors.

Engine control system

Engine power supply circuit

The power supply consists of a low-voltage circuit. The low-voltage circuit provides uninterrupted 5 V and 3.3 V power to the formatter, and provides 24 V, 5 V, and 3.3 V power to the scanner controller board.

Flatbed unit and ADF system

Electrical system

The scanner-assembly electrical system consists of the following components:

- The charged-coupled device (CCD) PCA (optical assembly)
- The inverter
- The scanner controller board
- The ADF intermediate board

Figure 5-1 Scanner assembly electrical structure shows the scanner-assembly electrical structure.

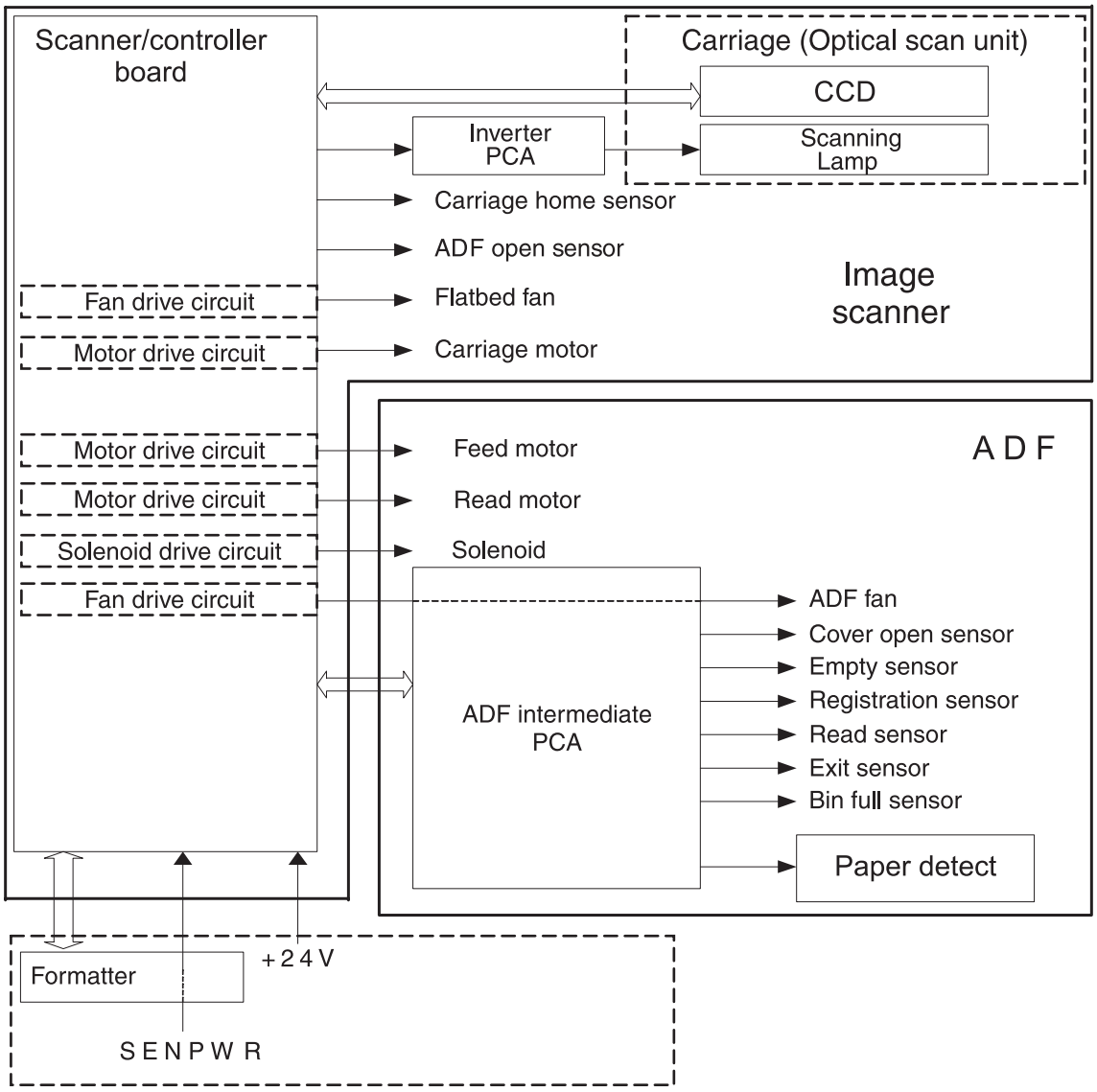


Figure 5-1 Scanner assembly electrical structure

Motors and fans

The scanner assembly has three motors and three fans. The motors are stepping motors, which drive the components inside the scanner assembly. The fans cool various motors and components in the system.

Name	Purpose	Type	Rotation	Failure detection
Scanner motor (flatbed motor)	Drives the scanner carriage unit	Stepping motor	Varies	No
Feed motor	Drives the pickup, the separation, and registration rollers	Stepping motor	Varies	No
Read motor	Drives the feed and delivery rollers	Stepping motor	Varies	No
Scanner base fan	Cools the power supply	Fan	Exhaust	No
Scanner motor fan	Cools the scanner lamp and the CCD	Fan	Intake	Yes
ADF fan	Cools the feed motor and the read motor	Fan	Exhaust	Yes

Optical assembly

The optical assembly contains the lamp, five mirrors, a lens, and the charged coupled device (CCD).

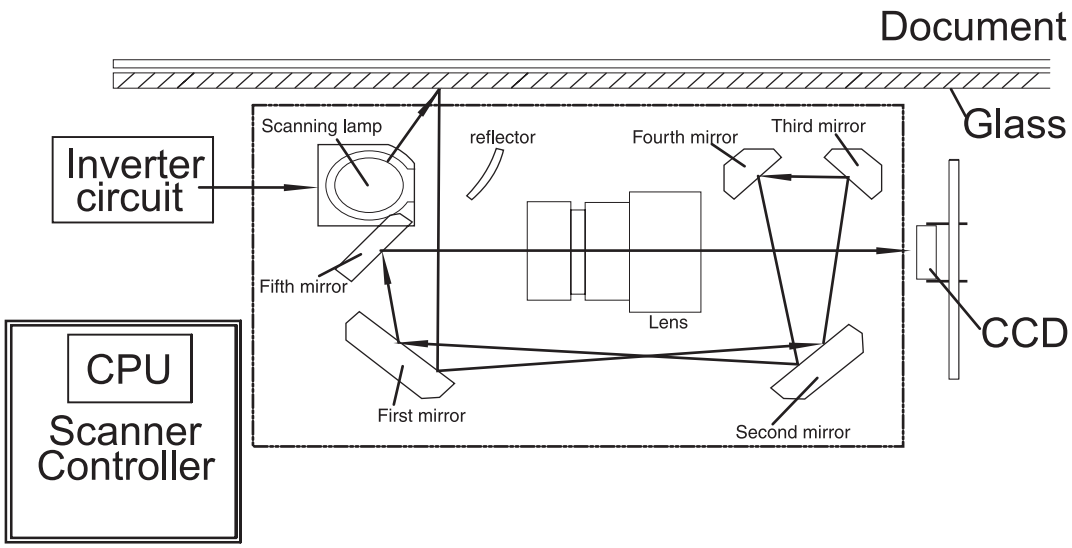


Figure 5-2 Scan carriage components

The scanner lamp illuminates a small strip of the document that is called the raster line. The mirrors direct the light through the lens to the CCD. The CCD senses and records the light, creating an analog representation of the raster line. If the ADF is being used, the document then advances in the ADF to the next raster line. If the flatbed is being used, the carriage advances to the next raster line. This advancing and collection process continues to the end of the sheet.

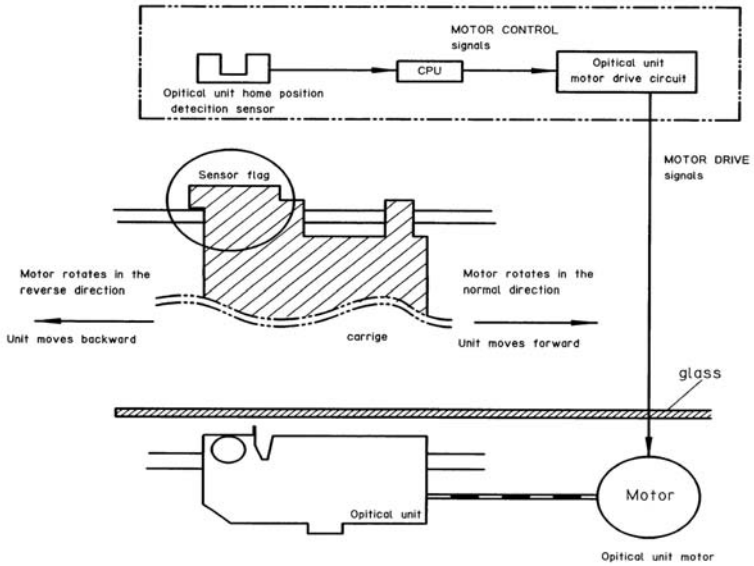


Figure 5-3 Optical assembly

The image data is collected on the scanner controller board, where it is processed and sent to the formatter.

ADF feed system

The ADF has built-in duplexing capability for scanning two-sided documents. Pages from the original document enter the ADF from the ADF input tray. A separation roller and separation pad work together to separate the top sheet from the stack. The page passes through a set of registration rollers and two sets of feed rollers that advance the page. A set of delivery rollers delivers the page to the ADF output bin. A bin-full sensor detects when the ADF output bin is full and stops the feed mechanism until the bin is emptied.

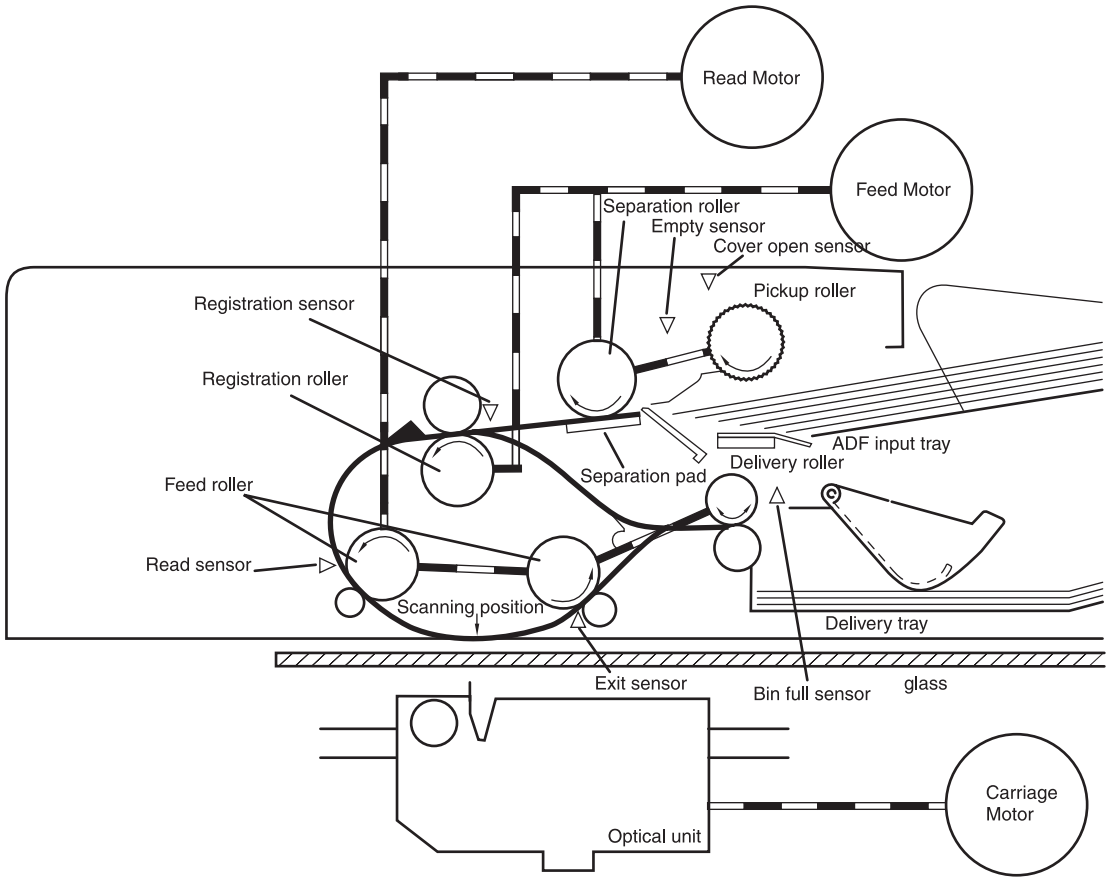


Figure 5-4 ADF paper path and sensors

Jam detection

When the sensors inside the ADF detect a jam, the feed and read motors immediately stop. A signal is sent to the scanner controller board, which notifies the formatter. An **ADF Paper Jam** message appears on the control-panel display.

To clear a jam, open the jam-access cover and remove the media. When sensors do not detect media after entering the jam state, the jam message is cleared from the control-panel display.

Residual-media jam

During the initialization sequence or after the ADF jam cover has been opened and closed, if the registration sensor, read sensor, or exit sensor detects the presence of media, the scanner controller board determines that a residual-media jam has occurred.

ADF pickup jam

If the leading edge of the media did not reach the registration sensor within a specific period of time, the scanner controller board determines that an ADF pickup jam has occurred.

ADF jam

ADF jams can occur in three places inside the ADF.

Registration-sensor jam

If the registration sensor does not detect the trailing edge of the media after the leading edge reaches the scan-ready position, the scanner-controller board determines that an ADF jam has occurred.

Also, when the scanner duplexer is in use, if the registration sensor does not detect the leading edge of the media after a specific period of time after media enters the duplexer, the scanner-controller board determines that an ADF jam has occurred.

Read-sensor jam

If the read sensor does not detect the leading edge of the media within a specific period of time, or if the read sensor does not detect the trailing edge of the media within a specific period of time after it detects the leading edge, the scanner-controller board determines that an ADF jam has occurred.

Exit-sensor jam

If the exit sensor does not detect the leading edge of the media within a specific period of time after the leading edge reaches the read sensor, or if the exit sensor does not detect the trailing edge of the media within a specific period of time after the read sensor detects the trailing edge, the scanner-controller board determines that an ADF jam has occurred.

ADF cover-open jam

If the ADF jam-access cover is opened while media is feeding through the ADF, a jam occurs.

ADF open jam

If the ADF is opened while media is feeding through the ADF, a jam occurs.

6 Removal and replacement

This chapter contains information about the following topics:

- Removal and replacement strategy
- User-replaceable parts
- External components and covers
- Internal components

Removal and replacement strategy

This chapter describes how to remove, replace, and reassemble the major assemblies of the digital sender. Replacement is generally the reverse of removal.

WARNING! Unplug the power cord from the power outlet (at the wall receptacle) before attempting to service the digital sender. If you do not follow this warning, severe injury can result. Certain functional checks during troubleshooting might require power to be supplied to the digital sender. However, all power should be turned off and the product should be unplugged when you remove any digital sender assemblies or components. Never operate or service the digital sender when the protective cover is removed from the laser/scanner assembly. The reflected beams, although invisible, can damage your eyes.

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

NOTE To identify the left side and right side of the digital sender, face the control panel.

Required tools

- #1 Phillips screwdriver
- #2 Phillips screwdriver
- #2 Phillips screwdriver with a shaft diameter of 6 mm (0.25 inch) or less
- Short #2 Phillips screwdriver shaft length of 76 mm (3.0 inches)
- Right-angle #2 Phillips screwdriver
- Small flat-blade screwdriver
- Needle-nose pliers
- ESD mat (if available; see the preceding ESD caution)
- Penlight (optional)
- Tape (optional)

CAUTION A pozidriv screwdriver can damage screw heads on the product. Use a #2 Phillips screwdriver.

Before performing service

- If possible, go to the digital sender embedded Web server and print the configuration page.

After completing service

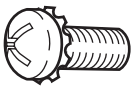
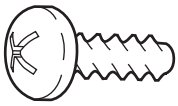
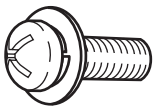
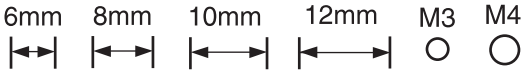
- Reconnect all cables to the product.
- Replace all of the accessories.
- Verify that the most recent firmware is installed. See Viewing the digital sender information pages.

Screws that are used in the digital sender

This table describes the screws that are used in the digital sender and provides guidelines to help determine where each type of screw is used. The screws can vary in length depending on the thickness of the material that is being fastened. Always note where each type of screw is located and replace each one in its original location.

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

Table 6-1 Common fasteners that are used in this digital sender

Drawing and description	Purpose
 Phillips–head machine screw with captive star washer	This screw is used to fasten metal to metal when good electrical contact is needed. This screw also provides high resistance to loosening.
 Phillips–head screw with self-tapping threads	This screw is used to fasten sheet metal or plastic to plastic frames. The deep, coarsely spaced threads provide an increased holding capability while decreasing the possibility of stripping the target hole. **NOTE** To install a self-tapping screw, first turn it counterclockwise to align it with the existing thread pattern, and then carefully turn it clockwise to tighten it. You will feel resistance and hear the screw click when it engages the existing threads in the hole. Do not overtighten the screw. If a self-tapping screw-hole becomes stripped, repair the screw-hole or replace the affected assembly.
 Phillips washer-head machine screw with a broad, flat washer attached to the screw head	This screw is used to fasten sheet metal parts to the sheet metal chassis. It spans large clearance holes and distributes the load by increasing the bearing surface.
Screw measurement guide 	

User-replaceable parts

- Separation pad
- Pickup roller assembly
- Pickup-roller cover
- ADF mylar shield
- Mylar-holder assembly
- Control panel
- Control-panel overlays
- Formatter assembly
- Hard disk
- Hard-disk drive cable
- Memory DIMM
- Compact flash card
- Hinge flaps
- Paper input tray

Separation pad

1 Open the ADF top cover.

2 Raise the separation pad frame assembly.

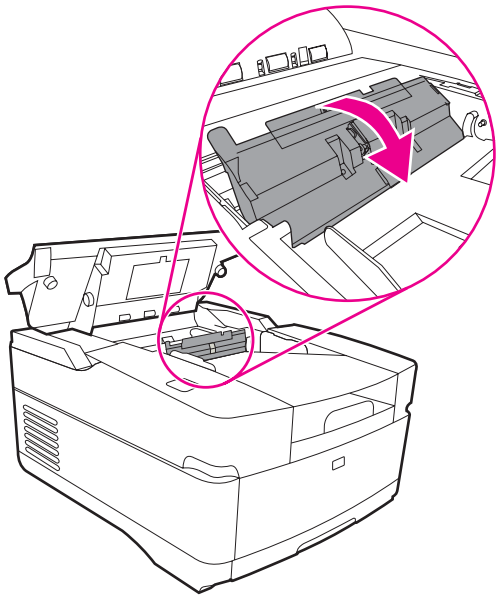


Figure 6-1 Removing the separation pad (1 of 2)

3 Push the bottom edge of the separation pad away from the frame.

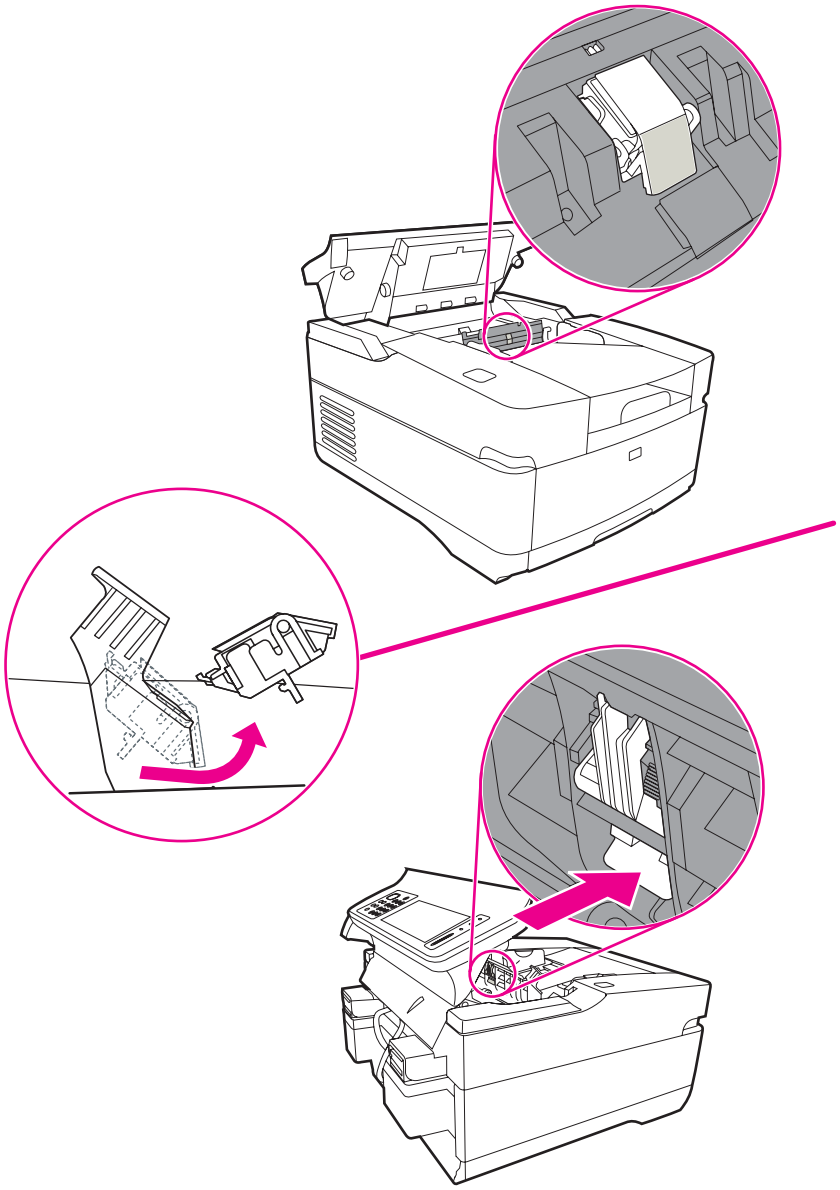


Figure 6-2 Removing the separation pad (2 of 2)

4 Remove the separation pad.

Pickup roller assembly

1 Open the ADF top cover.

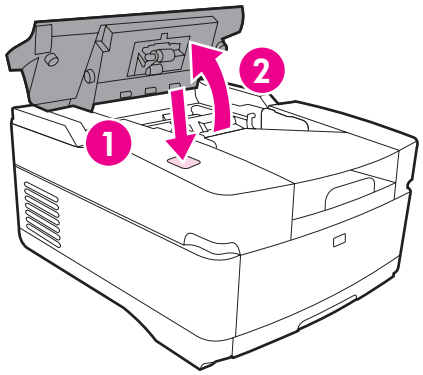


Figure 6-3 Removing the pickup roller assembly (1 of 3)

2 Open the pickup-roller cover by pressing the locking tab and rotating the top of the assembly away from the ADF.

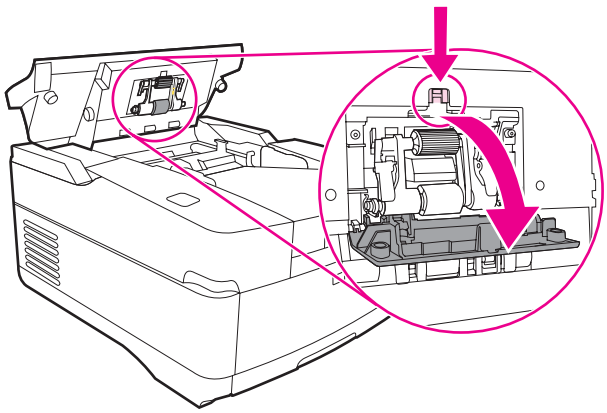


Figure 6-4 Removing the pickup roller assembly (2 of 3)

3 Disengage the left side (gear end) of the roller-assembly drive shaft, and slide the assembly to the left of the device to remove it.

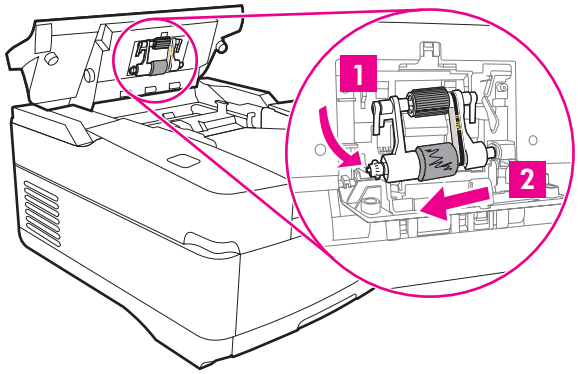


Figure 6-5 Removing the pickup roller assembly (3 of 3)

Pickup-roller cover

1 Open the ADF top cover.

2 Open the pickup-roller cover.

3 Release two clips (callout 1) to remove the cover.

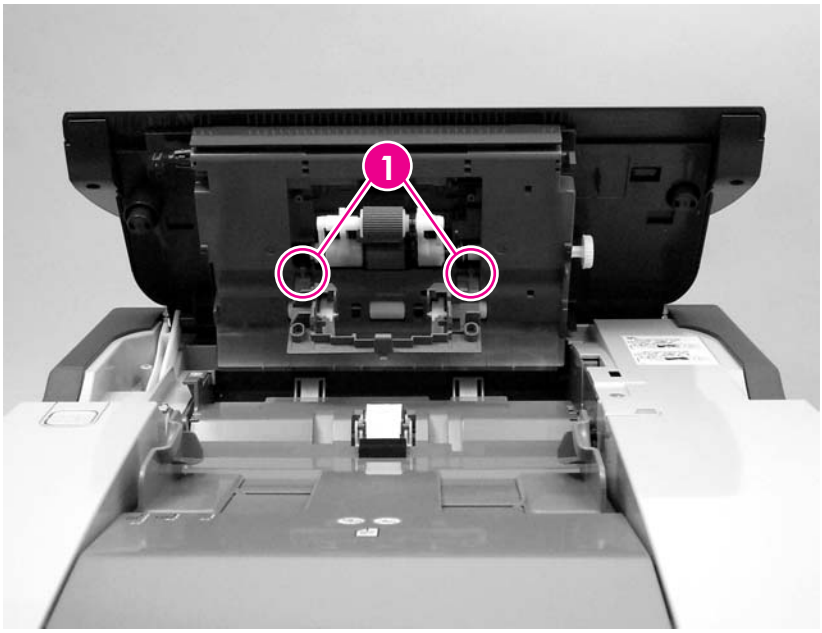


Figure 6-6 Removing the pickup-roller cover

ADF mylar shield

1 Open the ADF/scanner assembly and release the locking tabs on the mylar-holder assembly.

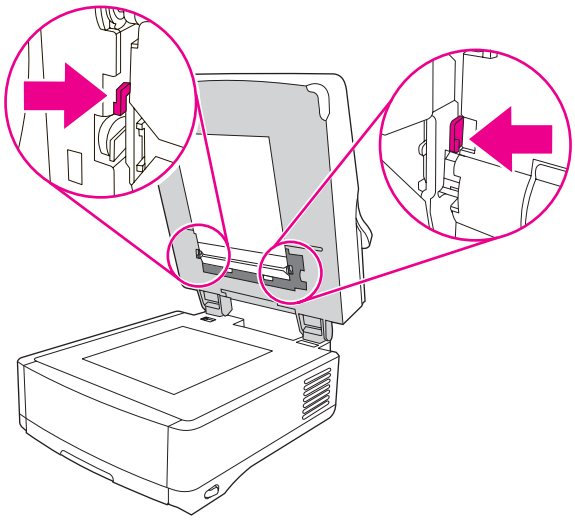


Figure 6-7 Replacing the ADF mylar shield (1 of 5)

The mylar-holder assembly will drop open.

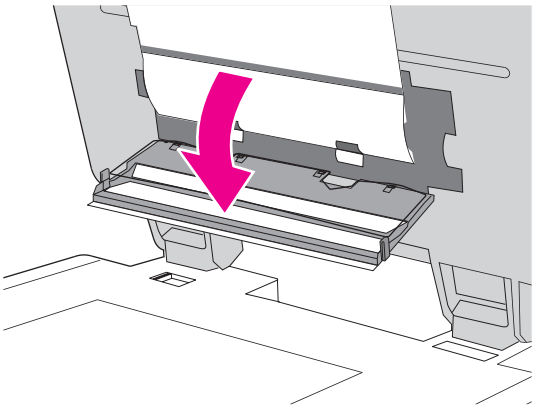


Figure 6-8 Replacing the ADF mylar shield (2 of 5)

2 Carefully unhook the mylar shield from the four tabs on the mylar-holder assembly, and then remove and discard the mylar shield.

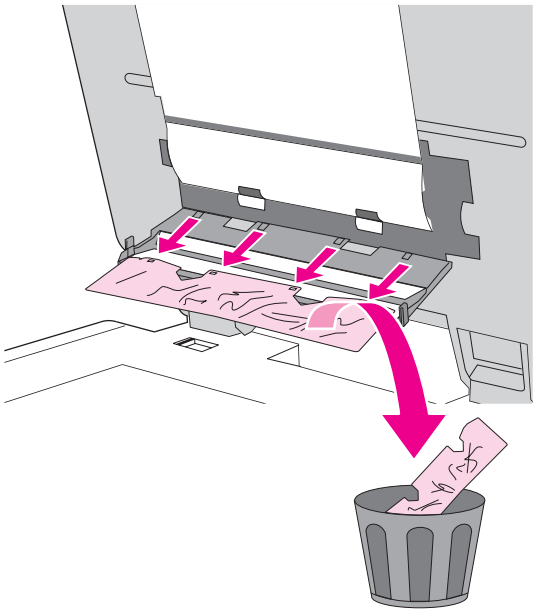


Figure 6-9 Replacing the ADF mylar shield (3 of 5)

3 Insert a new mylar shield, and clip it onto the four tabs on the mylar-holder assembly.

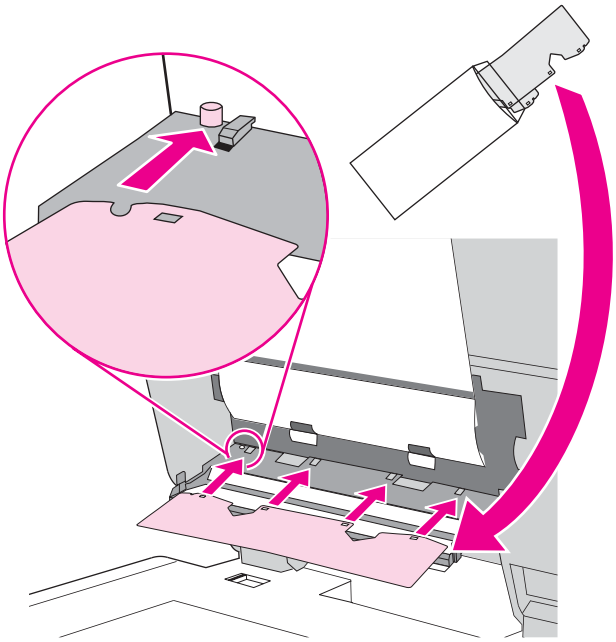


Figure 6-10 Replacing the ADF mylar shield (4 of 5)

4 Close the mylar-holder assembly.

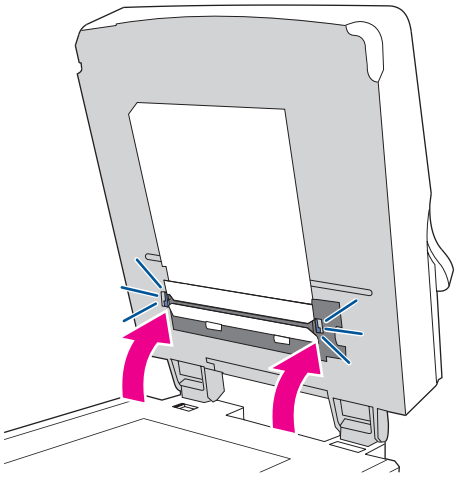


Figure 6-11 Replacing the ADF mylar shield (5 of 5)

Mylar-holder assembly

1 Open the ADF/scanner assembly and release the locking tabs on the mylar-holder assembly.

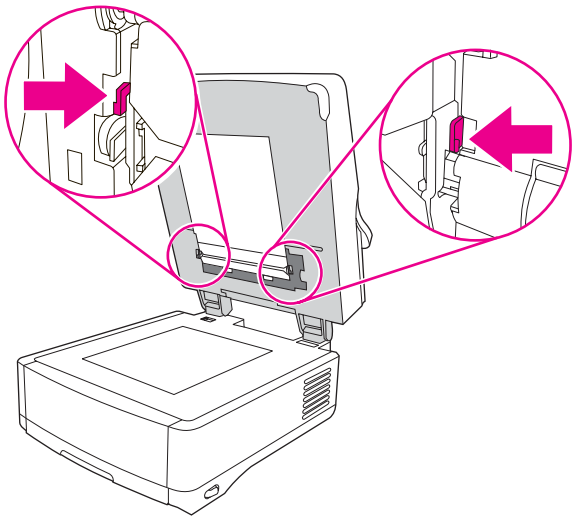


Figure 6-12 Removing the mylar-holder assembly (1 of 2)

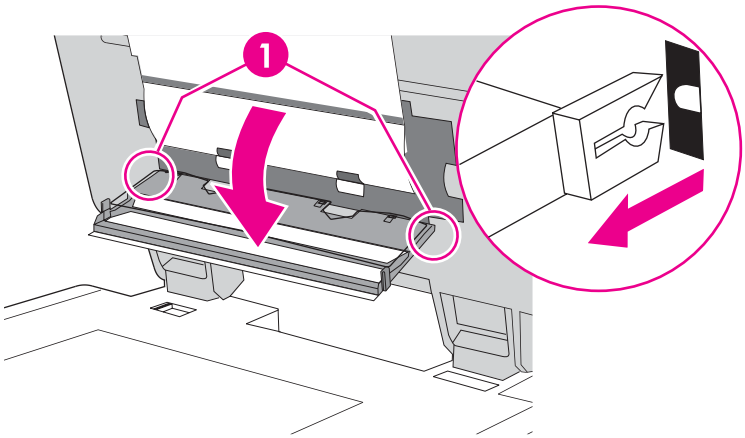


Figure 6-13 Removing the mylar-holder assembly (2 of 2)

2 Remove the mylar-holder assembly by unclipping two clips (callout 1) and pulling the assembly toward you.

Control panel

1 Turn the two latches (callout 1) counterclockwise 90° until they click.

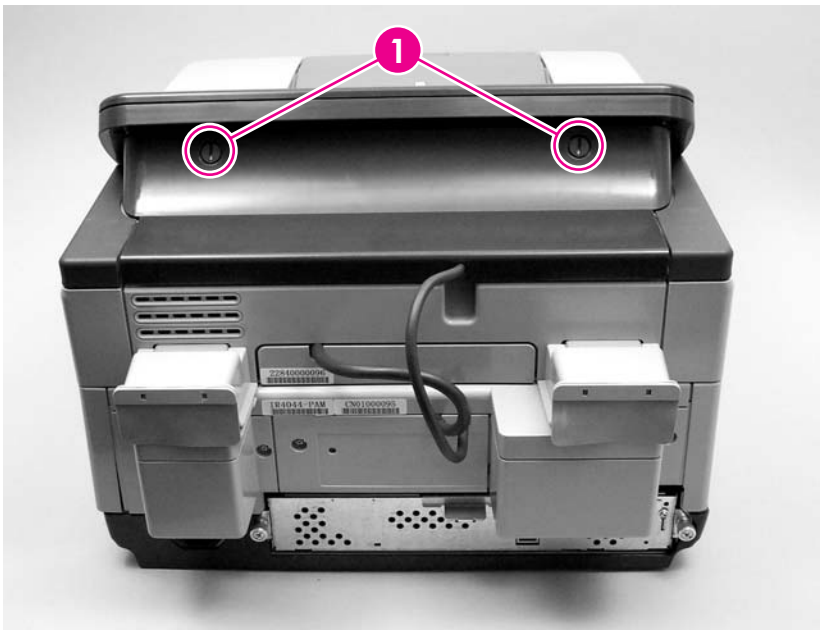


Figure 6-14 Removing the control panel (1 of 2)

2 Rotate the top of the control panel away from the device and disconnect one connector to free the control panel from the device.

Figure 6-15 Removing the control panel (2 of 2)

3 Remove the control panel.

Control-panel overlays

Use a small flat-blade screwdriver to release the two control-panel overlays.

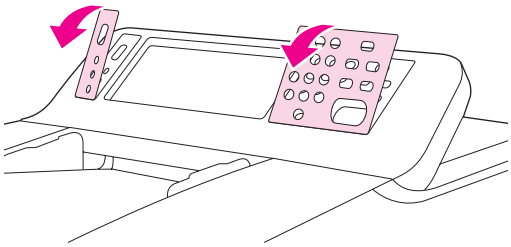


Figure 6-16 Removing the control panel overlays

Formatter assembly

1 Unscrew the thumb screws at the back of the device and use them to pull the formatter cage out of the unit.

Figure 6-17 Removing the formatter cage

2 Remove the hard disk (see Hard disk), the compact flash (see Compact flash card), and the memory DIMM (see Memory DIMM), and install them into the new formatter cage.

Hard disk

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

1 Remove the formatter cage and open the formatter cage door. See Formatter assembly.

2 Disconnect the hard-disk drive cable from the hard-disk drive.

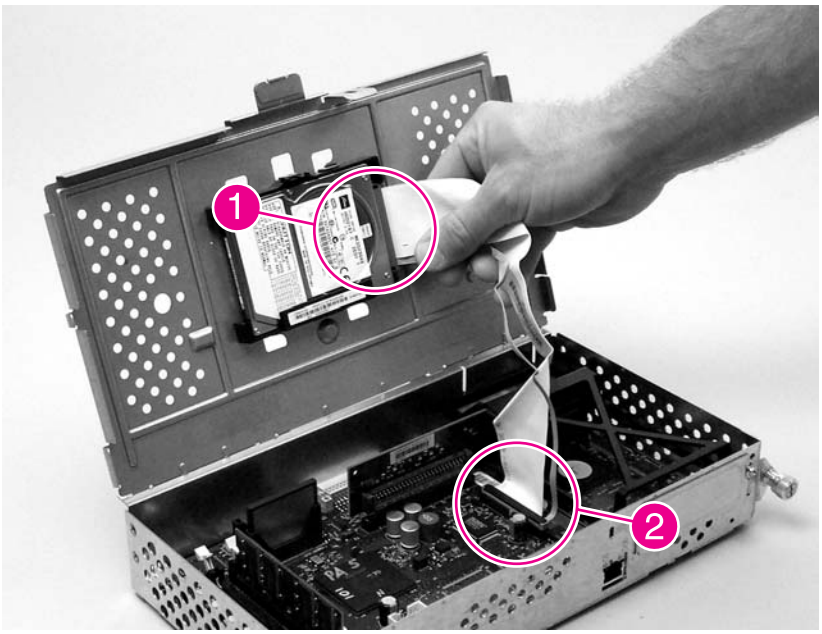


Figure 6-18 Removing the hard drive (1 of 2)

3 Squeeze the locking tab to release the hard-disk drive, and then push it to the right to remove it.

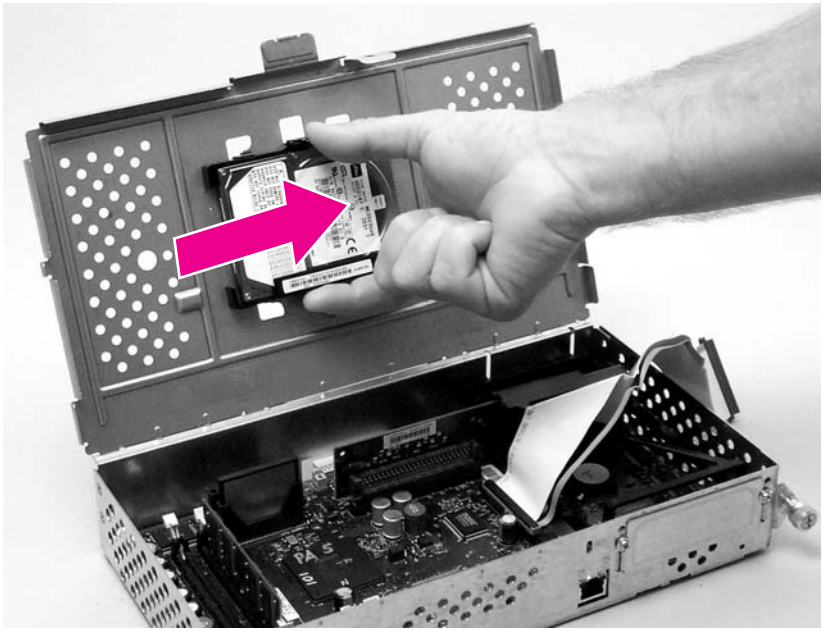


Figure 6-19 Removing the hard drive (2 of 2)

Hard-disk drive cable

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

1. Remove the formatter cage and open the formatter cage door. See Formatter assembly.
2. Disconnect the hard-disk-drive cable from the hard-disk drive (callout 1) and from the formatter (callout 2).

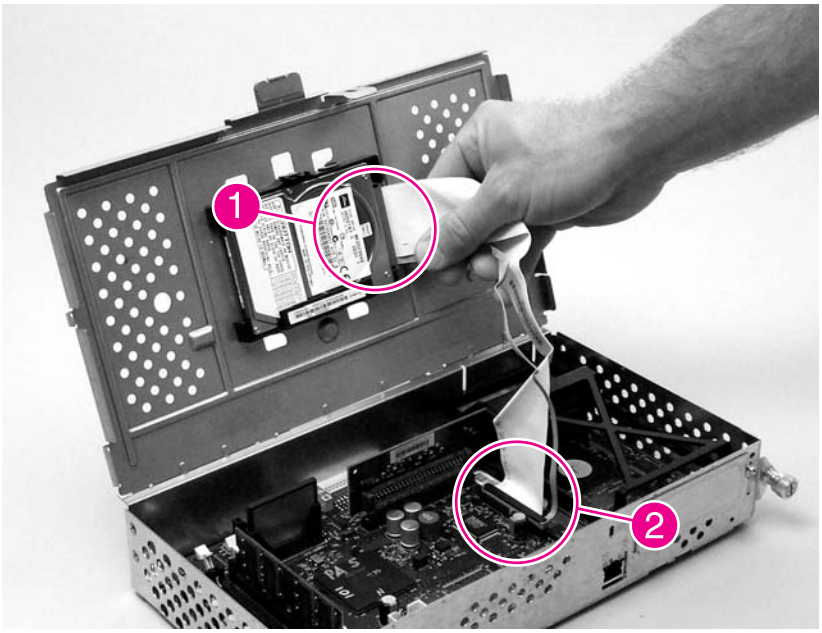


Figure 6-20 Removing the hard-disk drive cable (1 of 2)

Memory DIMM

1 Remove the formatter cage. See Formatter assembly.

2 Push down on the two tabs (callout 1) and release the memory DIMM.

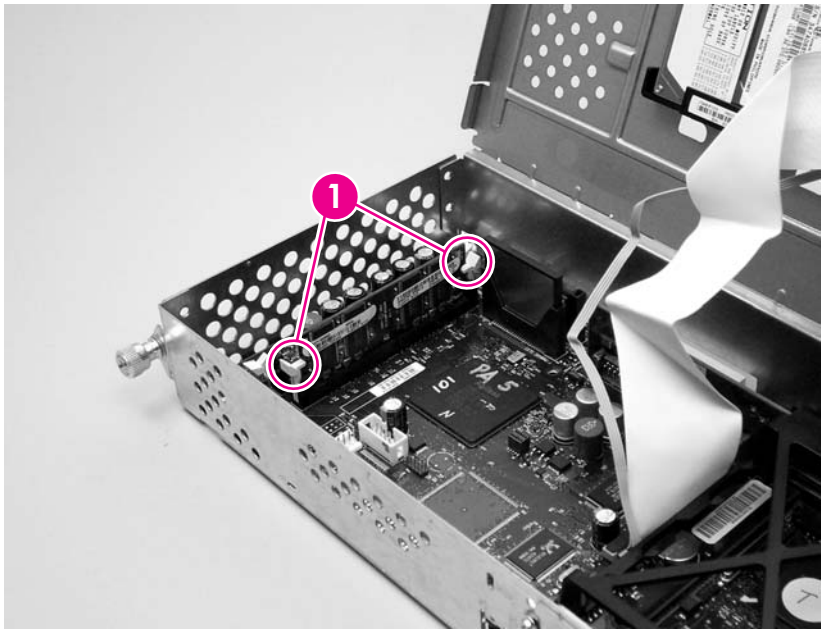


Figure 6-21 Removing the memory DIMM

Compact flash card

1 Remove the formatter cage. See Formatter assembly.

2 Slide the compact flash card up to remove it.

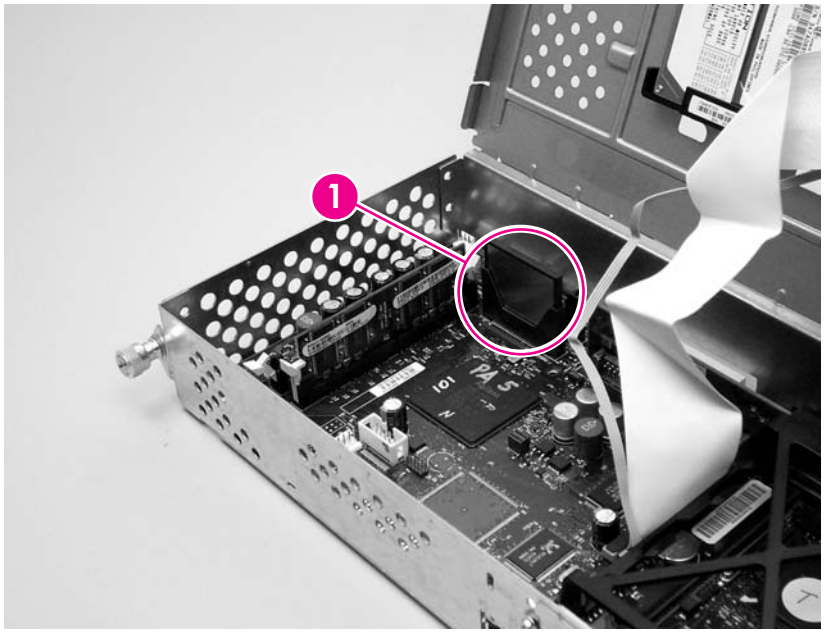


Figure 6-22 Removing the compact flash card

NOTE The compact flash that contains the firmware image can only be installed in the first slot.

Hinge flaps

Grasp each hinge flap (callout 1) by its edges and pull back to remove the flaps.

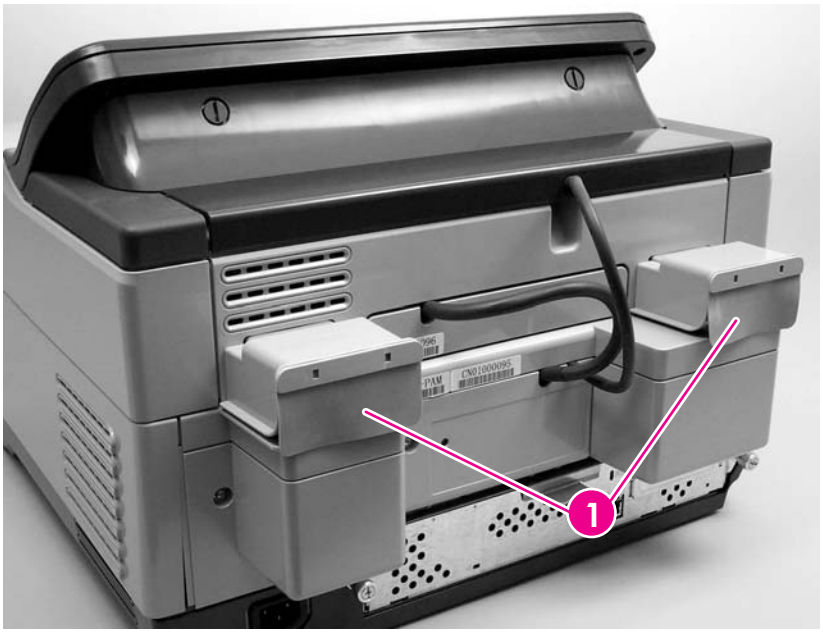


Figure 6-23 Removing the hinge flaps

Paper input tray

1 Open the ADF top cover.

2 Pull the tab on the left side of the paper input tray.

Figure 6-24 Removing the paper input tray

3 Remove the tray.

External components and covers

- Control panel lower cover
- Control panel upper cover
- Control panel cover assembly
- External control-panel cable
- Output bin base cover or output bin extender
- Output bin paper lever
- ADF right cover
- ADF right corner cover
- ADF left cover
- ADF left corner cover
- ADF rear cover
- Scanner right cover
- Scanner left cover
- Scanner front cover
- Scanner rear cover
- Right hinge cover
- Left hinge cover
- Upper hinge cover

Control panel lower cover

1 Remove the control panel. See Control panel.

2 Remove four screws (callout 1).

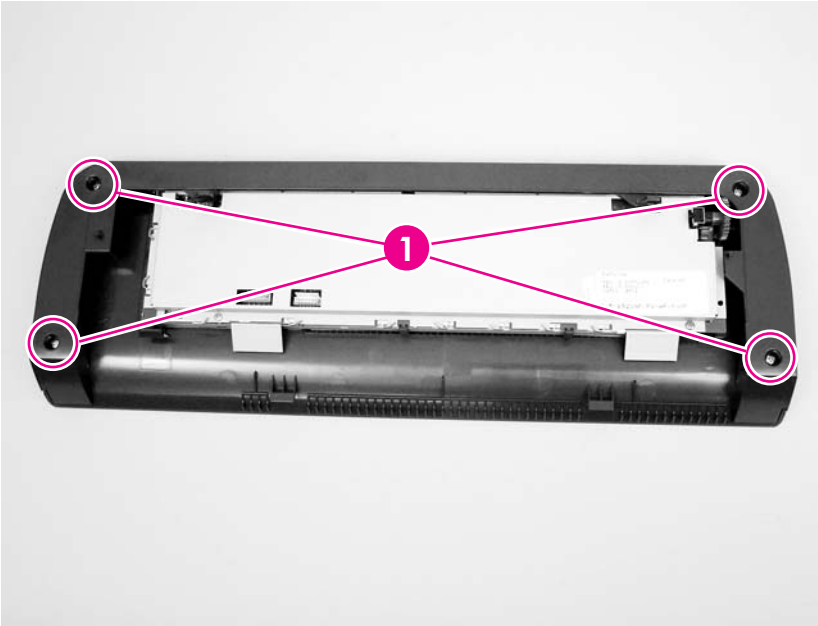


Figure 6-25 Removing the control panel lower cover

3 Remove the control panel lower cover.

Control panel upper cover

1 Remove the following items:

- Control panel. See Control panel.
- Control panel lower cover. See Control panel lower cover.

2 Remove five screws (callout 1) in the back of the control panel, and pull two tabs (callout 2) toward you to release the control panel upper cover.

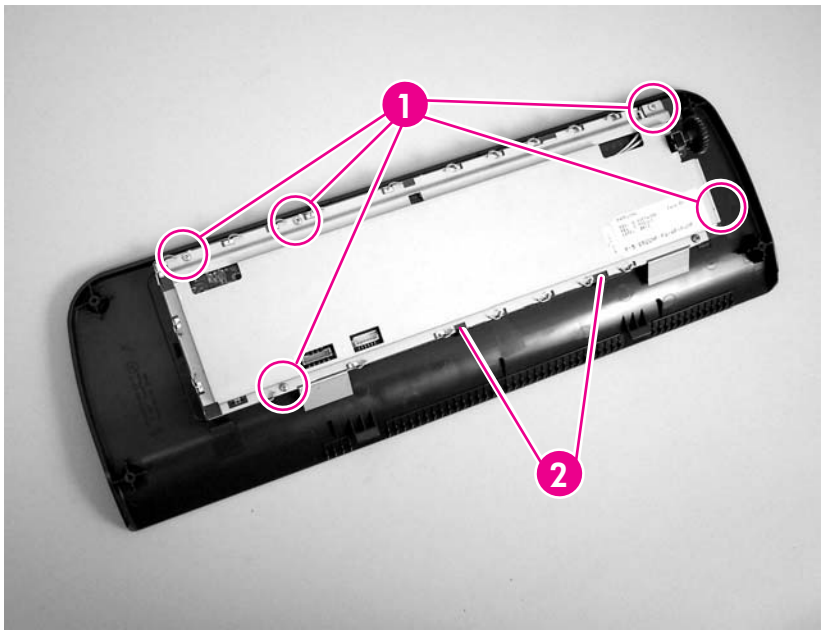


Figure 6-26 Removing the control panel upper cover

3 Remove the control-panel upper cover.

Control panel cover assembly

1 Remove the control panel. See Control panel.

2 Remove three screws (callout 1), and slide the cable bundle out of the slot.

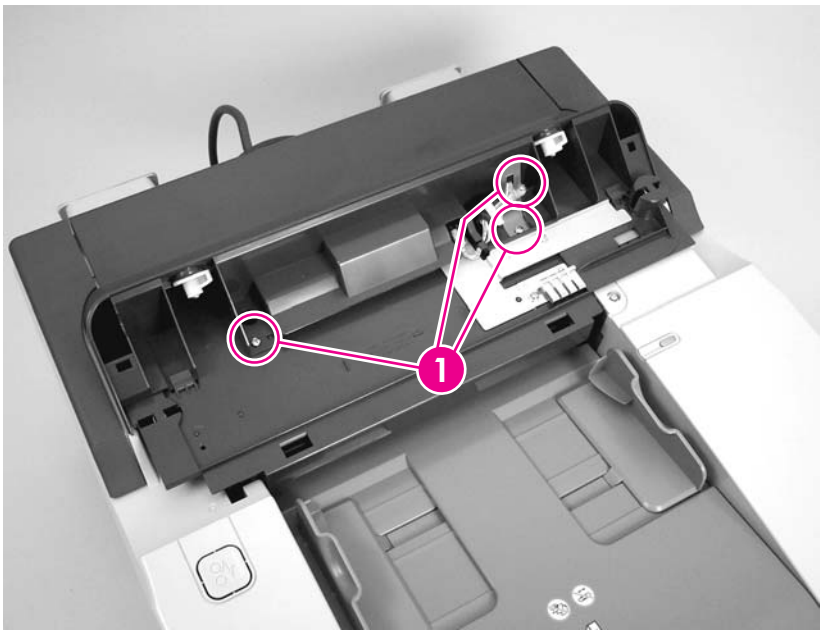


Figure 6-27 Removing the control panel cover assembly (1 of 6)

3 Slide the rear control-panel cover past the latches and remove the cover.

4 Remove two screws (callout 2).

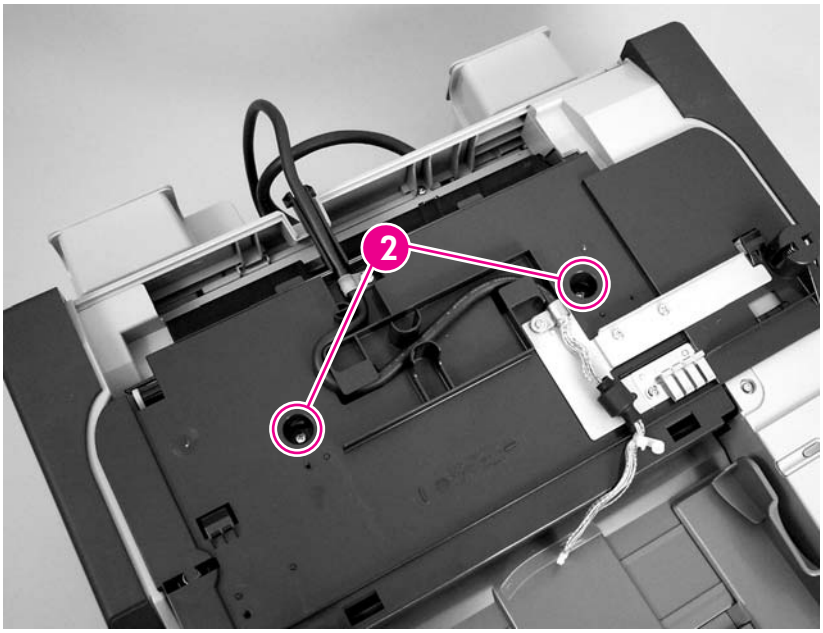


Figure 6-28 Removing the control panel cover assembly (2 of 6)

5 Use a screwdriver to disengage two tabs (callout 3).

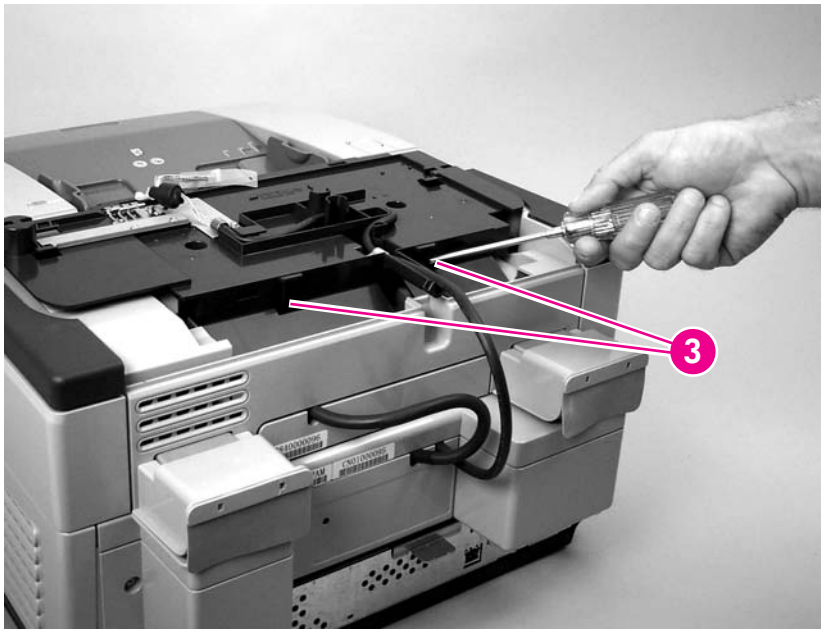


Figure 6-29 Removing the control panel cover assembly (3 of 6)

6 Release the arm.

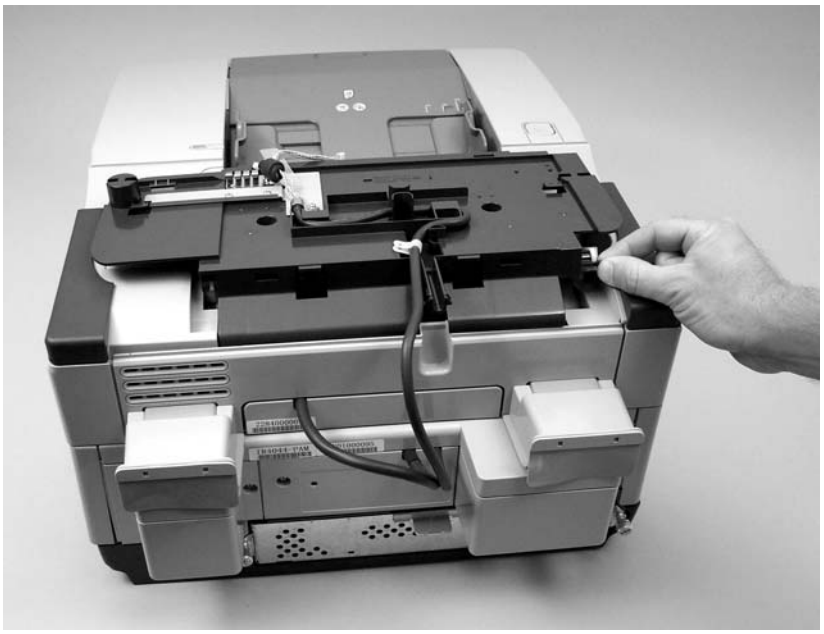


Figure 6-30 Removing the control panel cover assembly (4 of 6)

7 Remove one screw (callout 4).

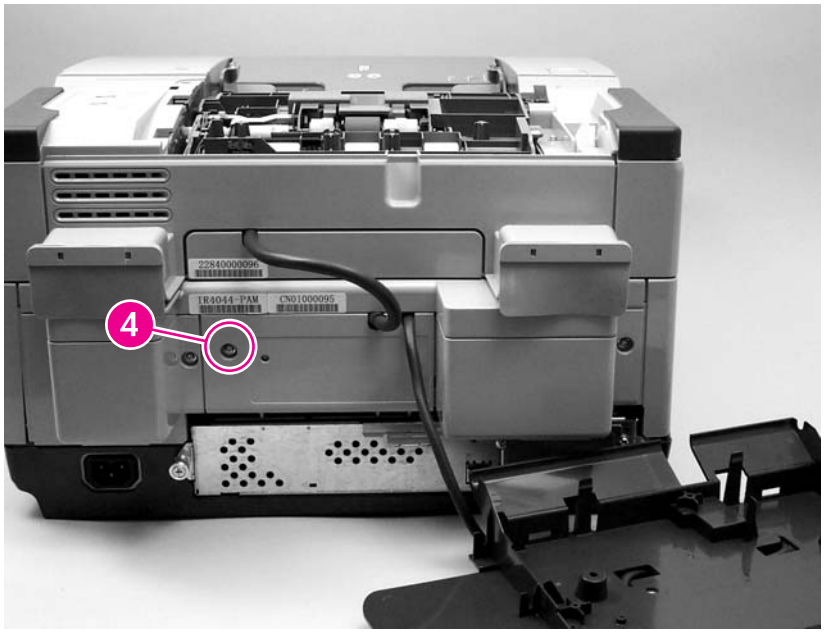


Figure 6-31 Removing the control panel cover assembly (5 of 6)

8 Remove the scanner rear cover by firmly pulling the cover toward you.

9 Remove one screw and metal wire clip (callout 5), and disconnect one cable (callout 6).

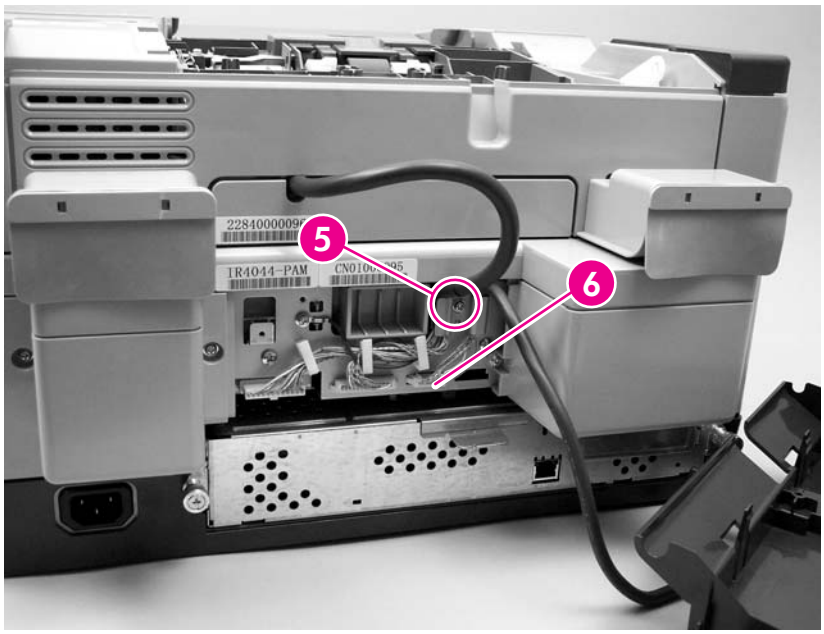


Figure 6-32 Removing the control panel cover assembly (6 of 6)

10 Remove the control panel cover assembly.

External control-panel cable

1 Perform steps 1 through 3 of removing the control panel cover assembly. See Control panel cover assembly

2 Remove two screws (callout 1).

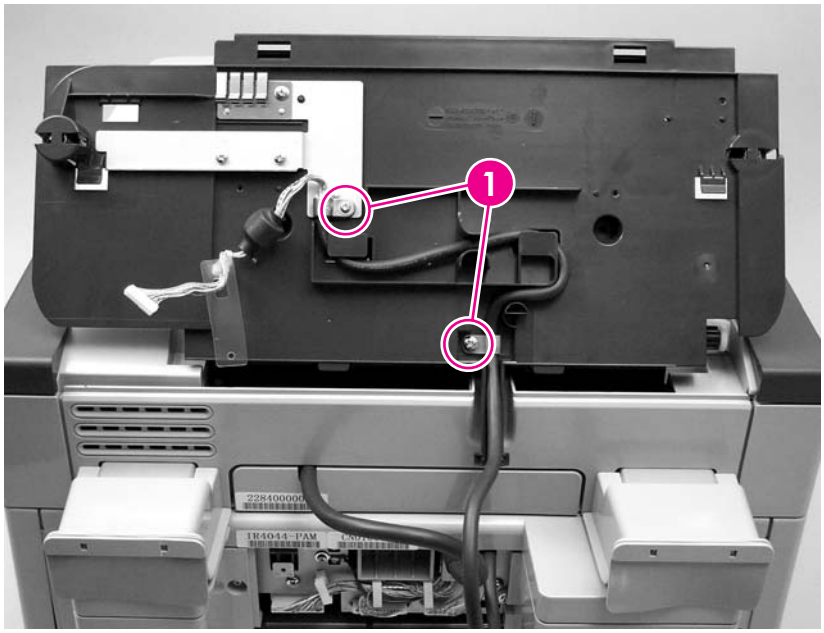


Figure 6-33 Removing the external control-panel cable

3 Perform steps 7 through 9 of removing the control panel cover assembly.

4 Remove the external control-panel cable.

NOTE During reinstallation, make sure that the cable is routed correctly.

Output bin base cover or output bin extender

1 Remove the mylar replacement kit (envelope).

2 Gently peel back the white scan background.

NOTE The foam backing should not tear if the white scan background is peeled back gently.

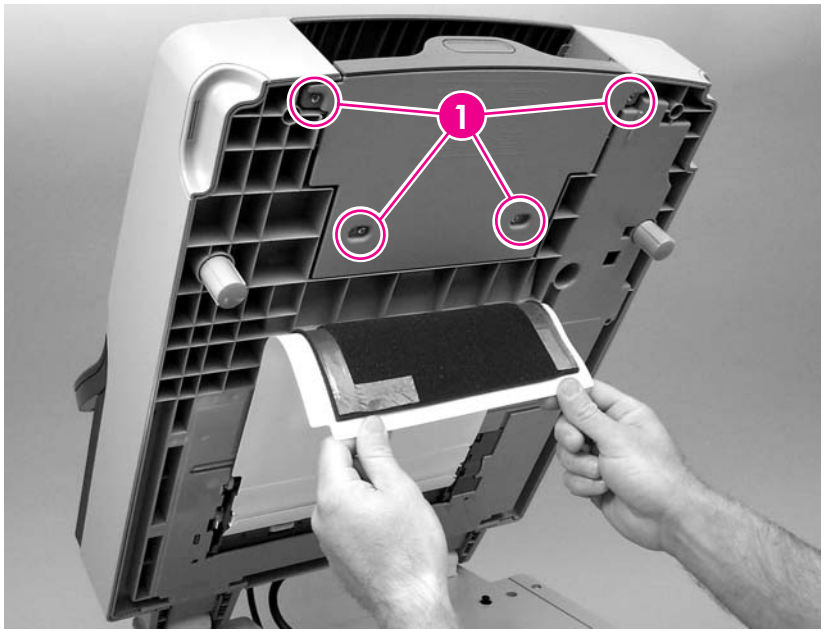


Figure 6-34 Removing the output bin base cover or output bin extender

3 Remove four screws (callout 1) and remove the output bin base cover or the output bin base extender.

Output bin paper lever

1 Remove the output bin base cover or the output bin extender. See Output bin base cover or output bin extender

2 Remove the output bin paper lever.

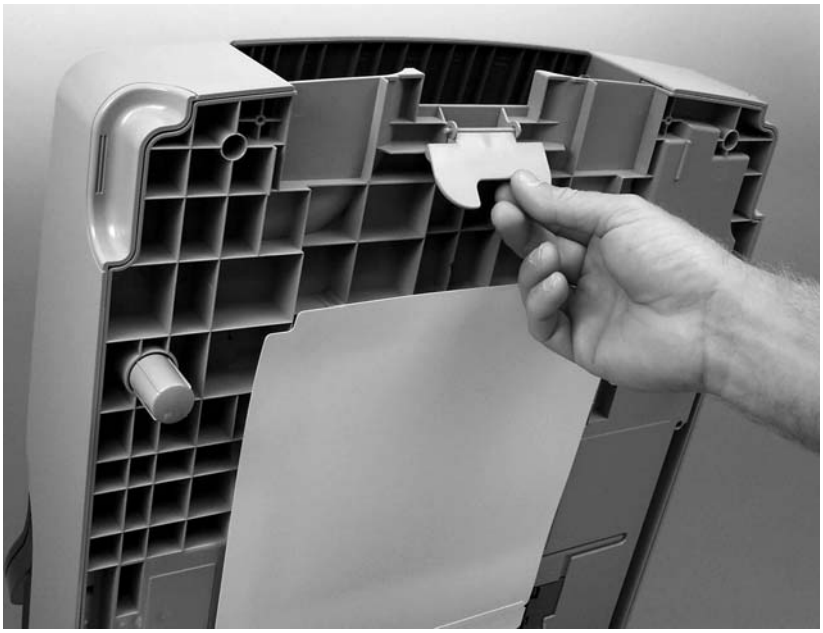


Figure 6-35 Removing the output bin paper lever

ADF right cover

1 Open the ADF top cover.

2 Remove the paper input tray. See Paper input tray

3 Remove one screw (callout 1).

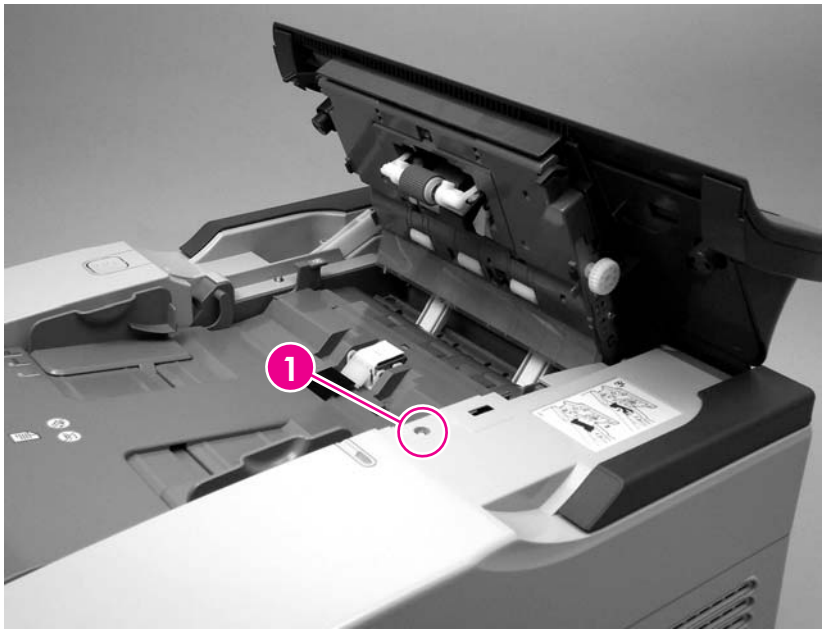


Figure 6-36 Removing the ADF right cover (1 of 2)

4 Open the ADF, remove two screws (callout 2), and release one tab (callout 3).

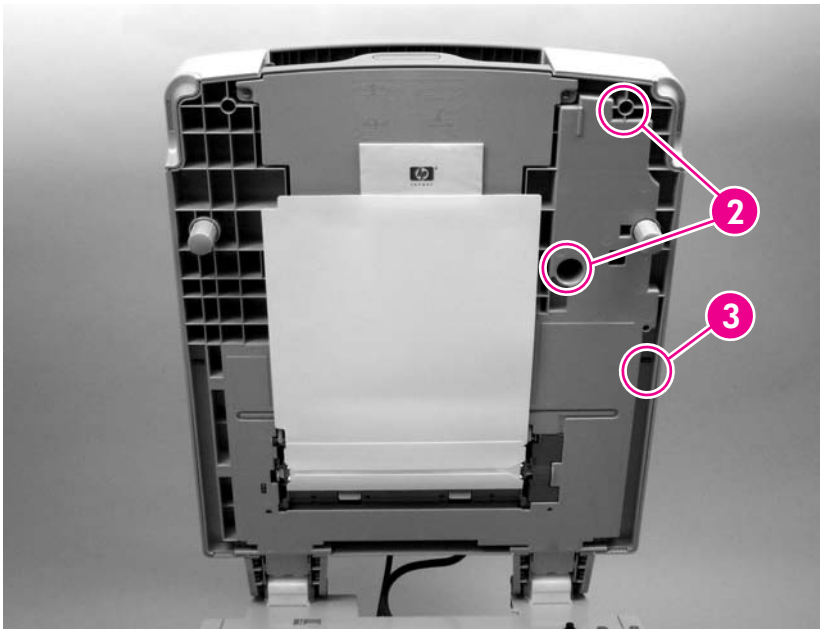


Figure 6-37 Removing the ADF right cover (2 of 2)

5 Lift off the ADF right cover.

NOTE During reinstallation make sure that the rear corner of the ADF right cover is positioned first.

ADF right corner cover

1 Remove the ADF right cover.

2 Release two tabs (callout 1).

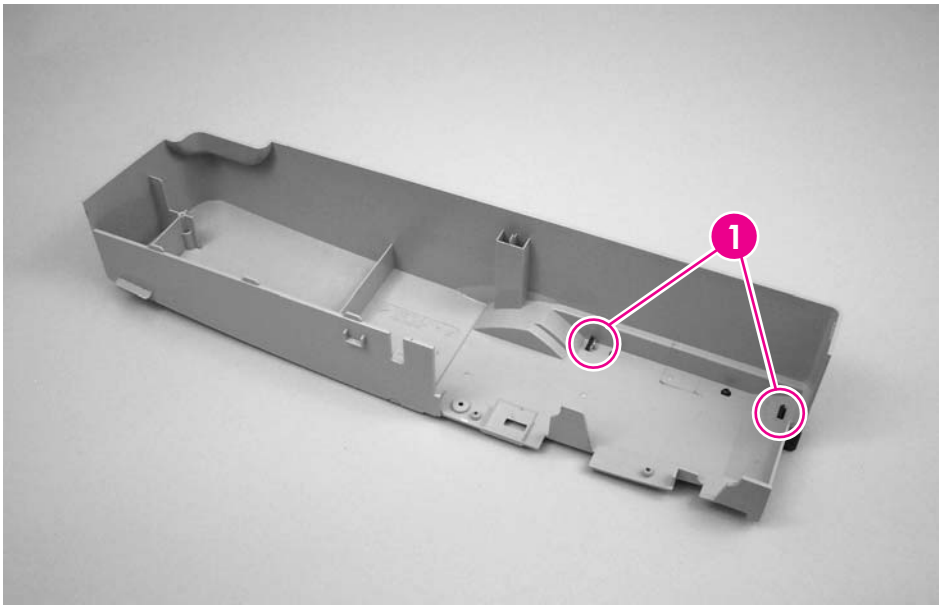


Figure 6-38 Removing the ADF right corner cover

3 Remove the ADF right corner cover.

ADF left cover

1 Open the ADF top cover.

2 Remove one screw (callout 1) and release the arm (callout 2).

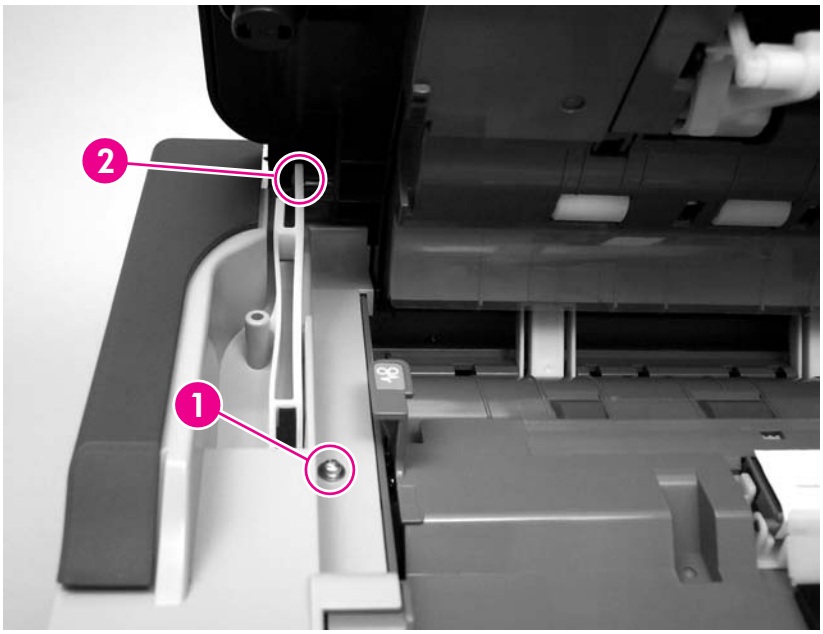


Figure 6-39 Removing the ADF left cover (1 of 2)

3 Open the ADF and remove two screws (callout 3).

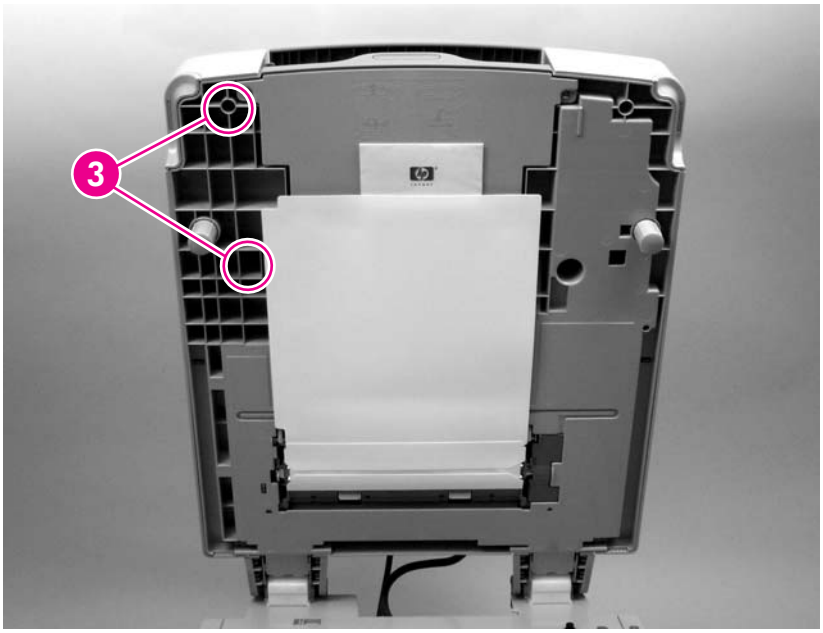


Figure 6-40 Removing the ADF left cover (2 of 2)

4 Lift off the ADF left cover.

ADF left corner cover

1 Remove the ADF left cover. See ADF left cover.

2 Release two tabs (callout 1).

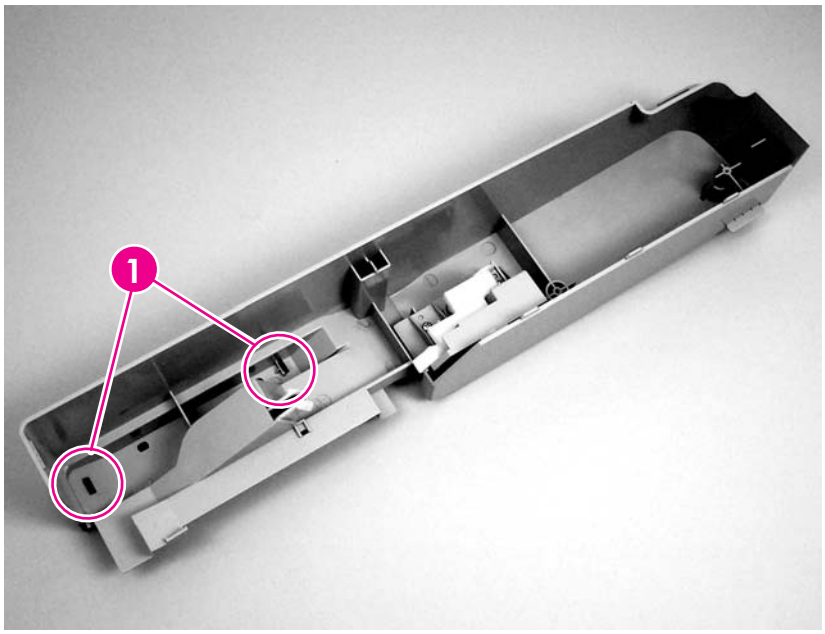


Figure 6-41 Removing the ADF left corner cover

3 Remove the ADF left corner cover.

ADF rear cover

1 Remove the following covers:

- Control panel cover assembly. See Control panel cover assembly.
- ADF left cover. See ADF left cover.
- ADF right cover. See ADF right cover.

2 Remove three screws (callout 1).

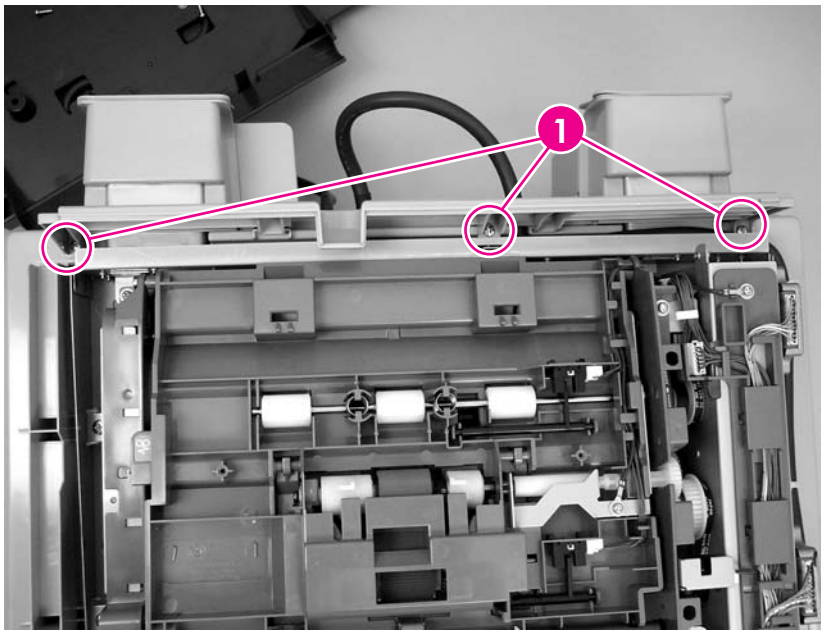


Figure 6-42 Removing the ADF rear cover

3 Remove the ADF rear cover.

Scanner right cover

1 Remove three screws (callout 1).

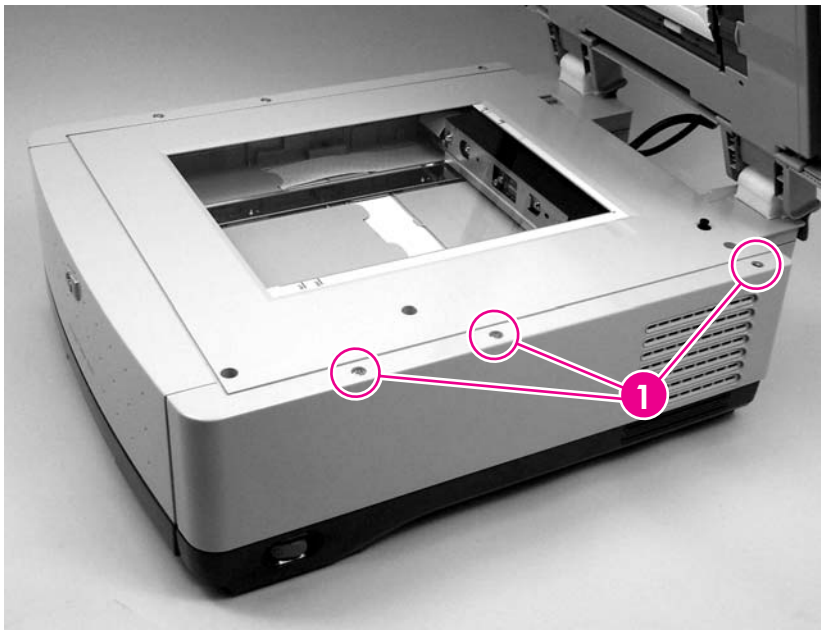


Figure 6-43 Removing the scanner right cover

2 Remove the scanner right cover.

Scanner left cover

1 Remove three screws (callout 1).

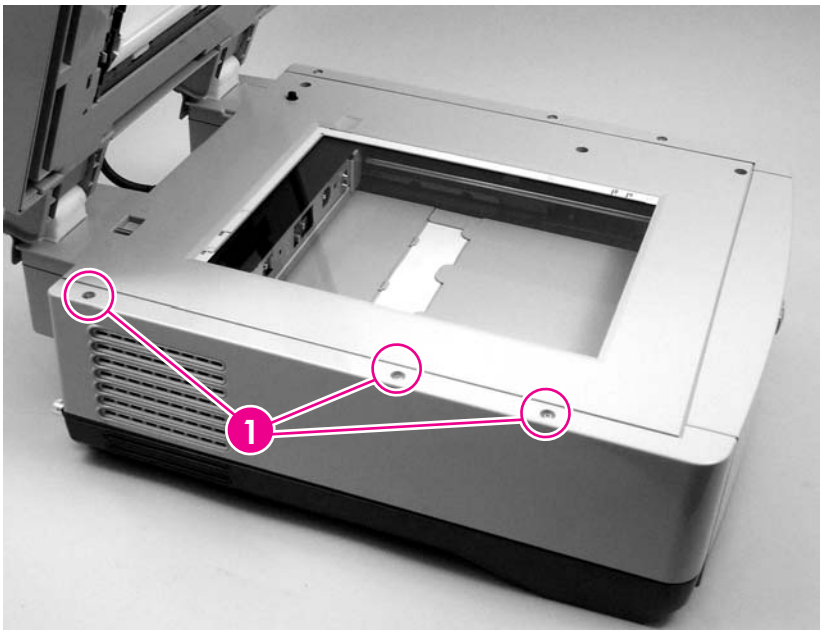


Figure 6-44 Removing the scanner left cover

2 Remove the scanner left cover.

Scanner front cover

1 Remove the following covers:

- Scanner left cover. See Scanner left cover.
- Scanner right cover. See Scanner right cover.

2 Remove three screws (callout 1).

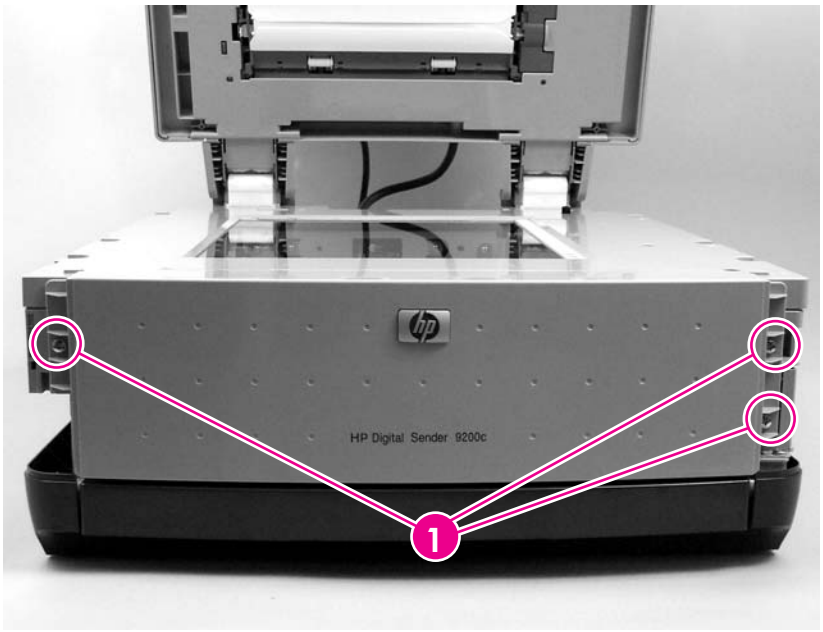


Figure 6-45 Removing the scanner front cover

3 Remove the scanner front cover.

Scanner rear cover

1 Remove one screw (callout 1).

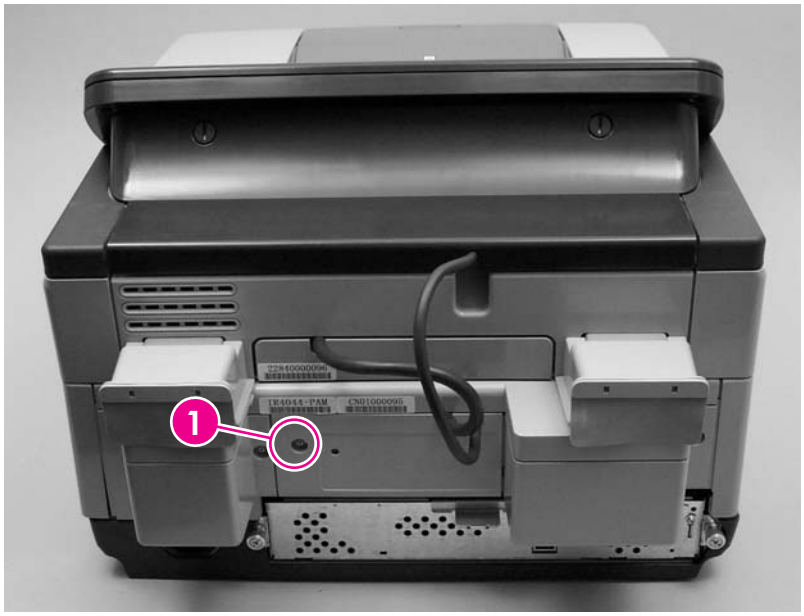


Figure 6-46 Removing the scanner rear cover

2 Remove the scanner rear cover by firmly pulling the cover toward you and slightly to the left. Slide the scanner rear cover slightly left to clear the ridge on the right side.

Right hinge cover

1 Remove the scanner rear cover. See Scanner rear cover.

2 Remove two screws (callout 1).

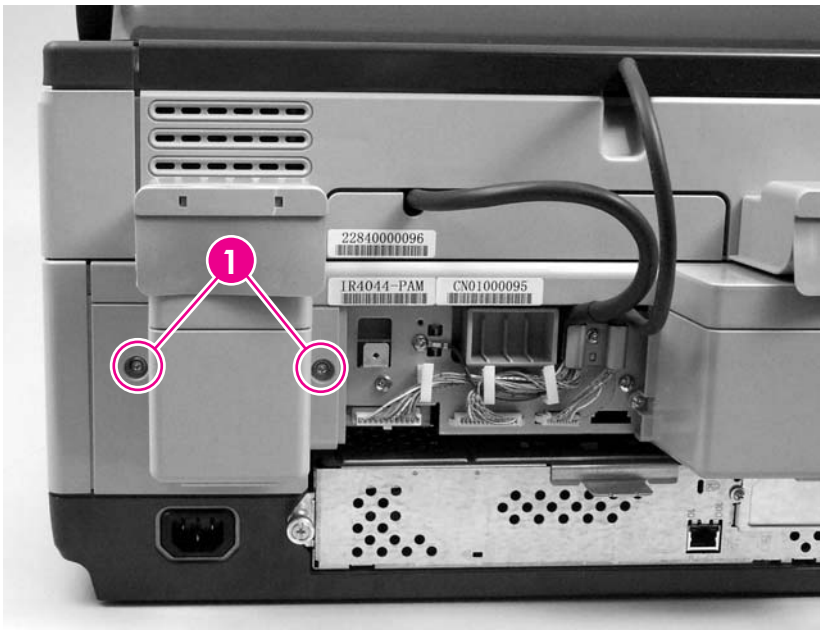


Figure 6-47 Removing the right hinge cover

3 Remove the right hinge cover.

Left hinge cover

1 Remove the scanner rear cover. See Scanner rear cover.

2 Remove two screws (callout 1).

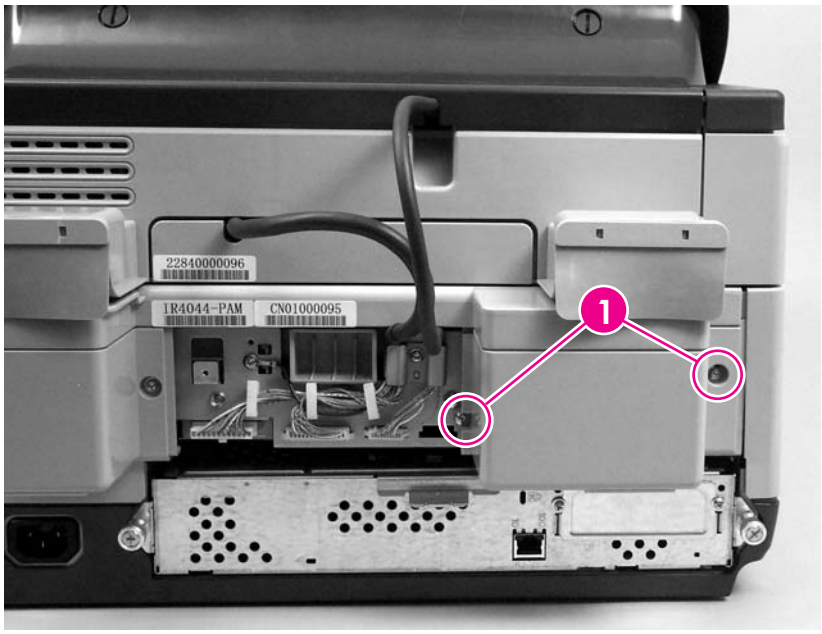


Figure 6-48 Removing the left hinge cover

3 Remove the left hinge cover.

Upper hinge cover

Firmly pry off the upper hinge cover (callout 1).

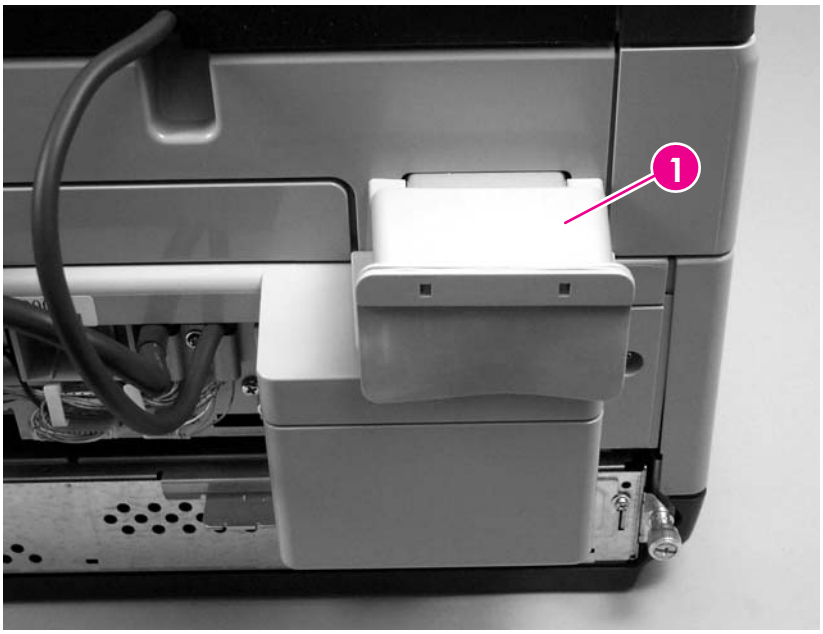


Figure 6-49 Removing the upper hinge cover

Internal components

- ADF assembly or scanner assembly
- ADF jam access latch
- Right hinge guide
- Left hinge guide
- Damper cover, left damper spring, right damper spring, or damper base cover
- White mylar backing or white mylar backing spring
- Fan filter
- ADF cable
- Separation pad case
- Clear plastic paper guide
- White scan background
- Scanner controller board
- Flatbed-unit assembly
- Power supply
- Power-switch assembly
- Scanner base fan
- Power plug
- SCB cable
- Internal control-panel cable
- Scanner glass and cover
- Carriage lock assembly
- Open sensor assembly
- Inverter
- Optical assembly
- Scanner motor
- Scanner motor belt
- Scanner lamp
- Scanner belt assembly
- Scanner motor fan

ADF assembly or scanner assembly

1 Remove the scanner rear cover. See Scanner rear cover.

2 Remove one screw (callout 1) from the metal cable-retaining bracket, and then remove the bracket.

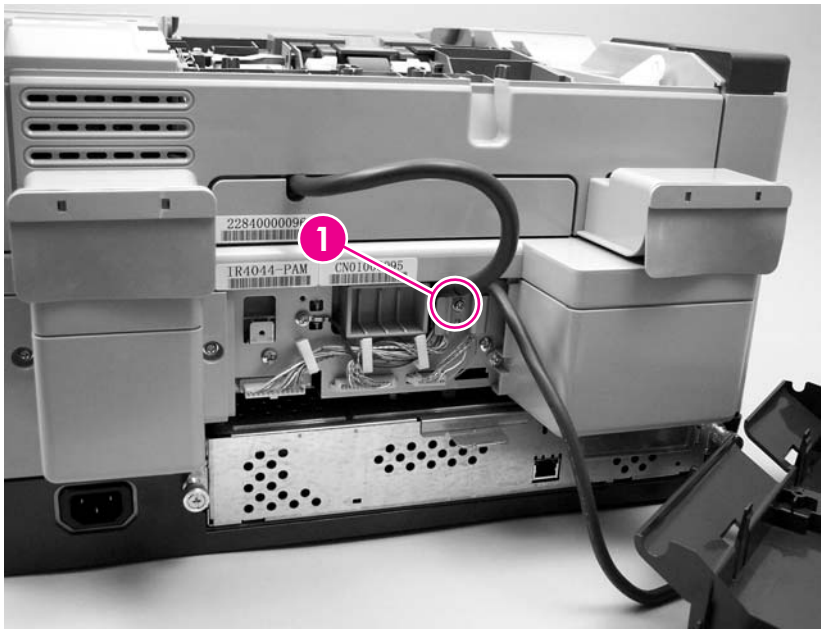


Figure 6-50 Removing the ADF assembly (1 of 3)

3 Unclip three wire clips (callout 2) and release the wires.

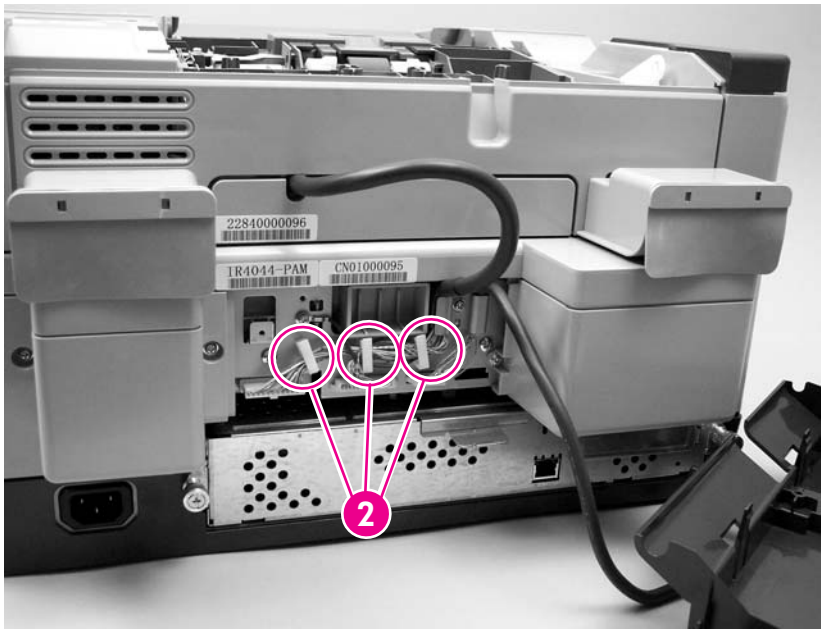


Figure 6-51 Removing the ADF assembly (2 of 3)

4 Remove one grounding screw and wire (callout 3), and disconnect three cable connectors (callout 4).

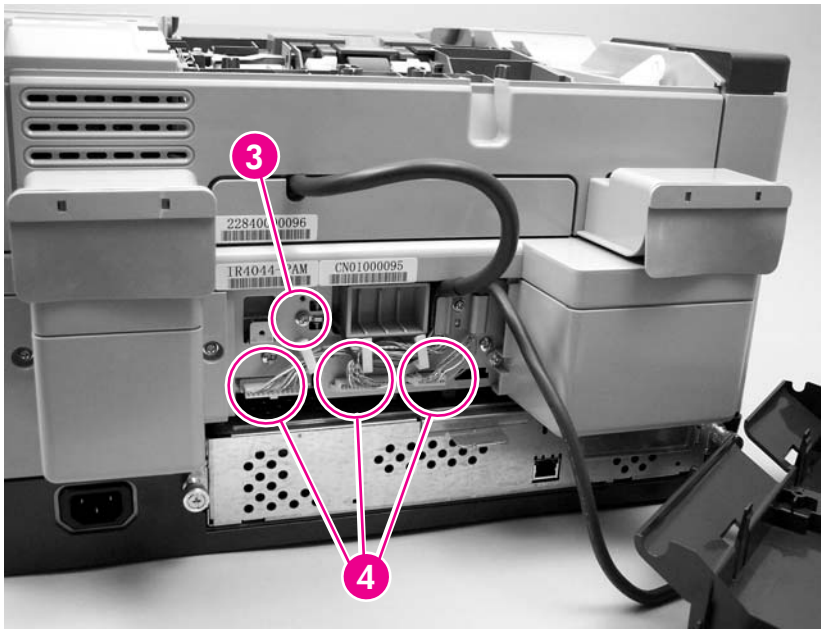


Figure 6-52 Removing the ADF assembly (3 of 3)

5 Remove the ADF assembly by lifting it up and lifting the rear hinges out of their sockets.

ADF jam access latch

1 Remove the following covers:

- Control panel cover assembly. See Control panel cover assembly.
- ADF right cover. See ADF right cover.
- ADF left cover. See ADF left cover.
- ADF rear cover. See ADF rear cover.

2 Using your fingers or a flat-blade screwdriver, separate two clips (callout 1) and shift the latch to the right so that the notches are aligned.

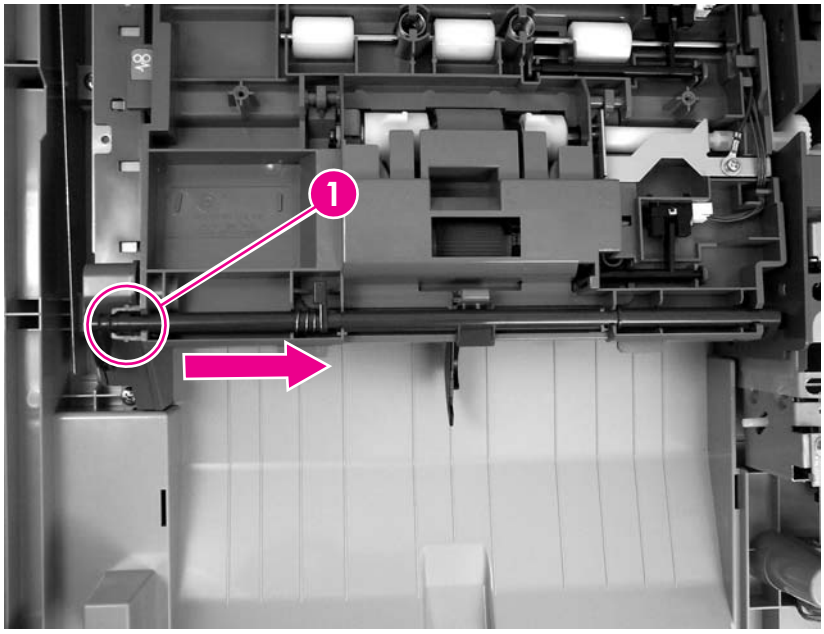


Figure 6-53 Removing the jam access latch

3 Remove the ADF jam access latch.

Right hinge guide

1 Remove the following covers:

- ADF rear cover. See ADF rear cover.
- Right hinge cover. See Right hinge cover.

2 Remove five screws (callout 1).

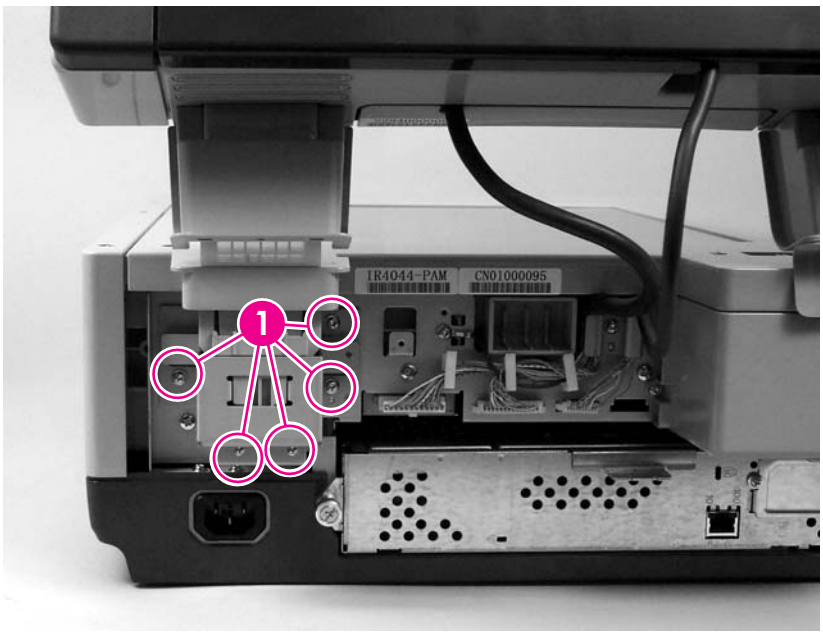


Figure 6-54 Removing the right hinge guide

3 Lift the ADF up to release the right hinge guide.

Left hinge guide

1 Remove the following covers:

- ADF rear cover. See ADF rear cover.
- Left hinge cover. See Left hinge cover.

2 Remove five screws (callout 1).

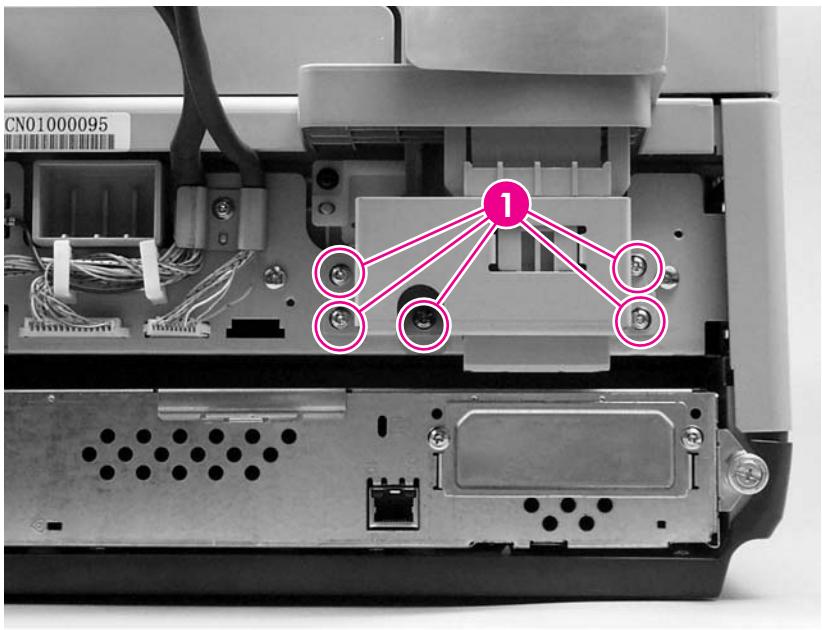


Figure 6-55 Removing the left hinge guide

3 Pull down on the left hinge guide to remove it.

Damper cover, left damper spring, right damper spring, or damper base cover

1 Remove the ADF right cover, or the ADF left cover, or both covers, depending on the removal objective. See ADF right cover or ADF left cover.

2 Remove two screws (callout 1).

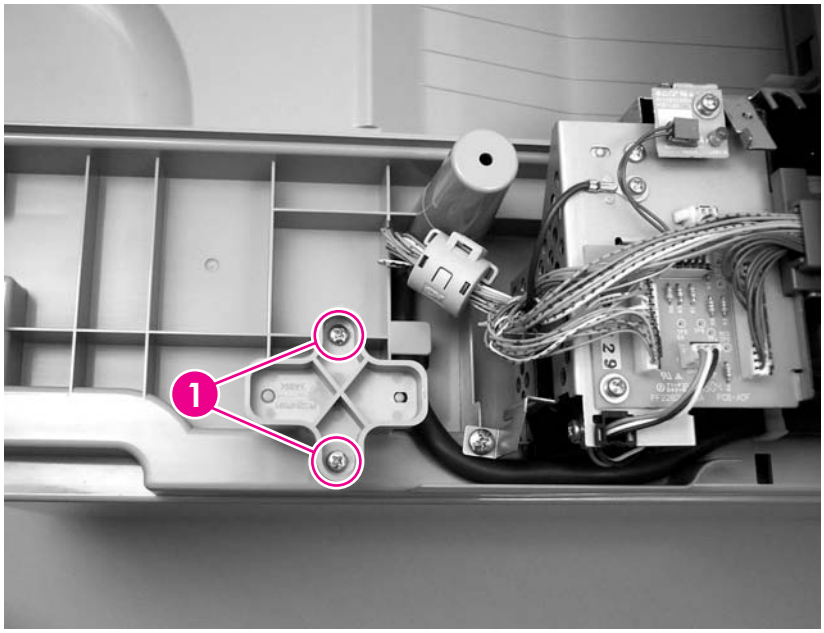


Figure 6-56 Removing the damper cover

3 Remove the damper.

NOTE Remove the damper spring cap by sliding it up through the hole.

4 Repeat steps 2 and 3 to remove the damper on the other side.

NOTE During reinstallation, make sure that the oblong hole is directed toward the rear of the ADF, as shown in the illustration above.

NOTE The left damper spring and the right damper spring are different. Make sure that the correct spring is reinstalled in the correct location.

White mylar backing or white mylar backing spring

1 Open the ADF cover.

2 Open the mylar holder assembly.

3 Push in the tab on the left side of the white mylar backing (callout 1).

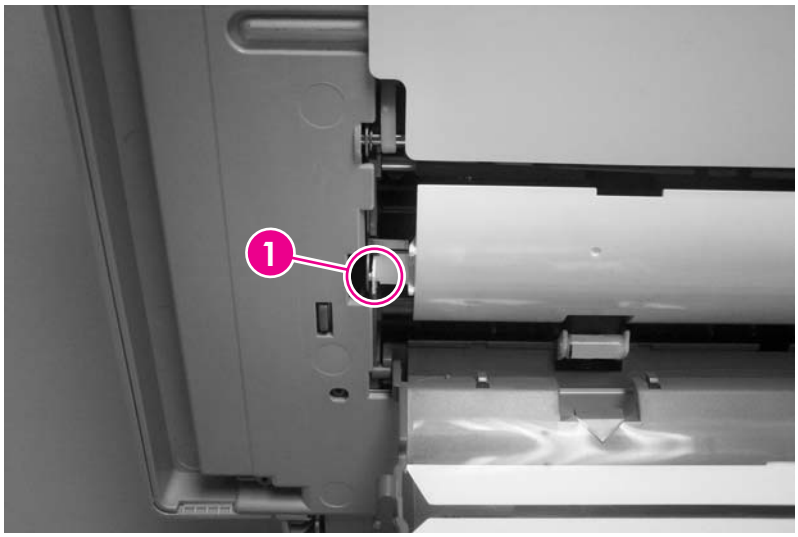


Figure 6-57 Removing the white mylar backing or white mylar backing spring

4 Remove the white mylar backing or the white mylar backing spring.

NOTE When reinstalling the white mylar backing springs, compress and twist the spring to make sure that it grips the pedestal on the back of the assembly.

Fan filter

1 Remove the scanner right cover. See Scanner right cover.

2 Remove the plastic guide.

Figure 6-58 Removing the fan filter

3 Remove the fan filter.

ADF cable

1 Remove the ADF rear cover. See ADF rear cover.

2 Remove one screw (callout 1) from the metal cable retaining bracket and then remove the bracket.

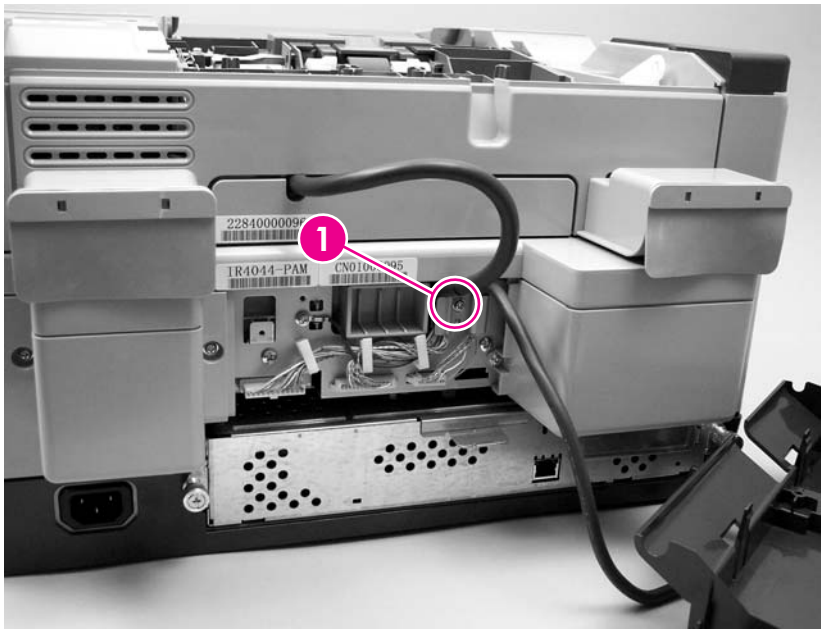


Figure 6-59 Removing the ADF cable (1 of 5)

3 Unclip three wire clips (callout 2) and release the wires.

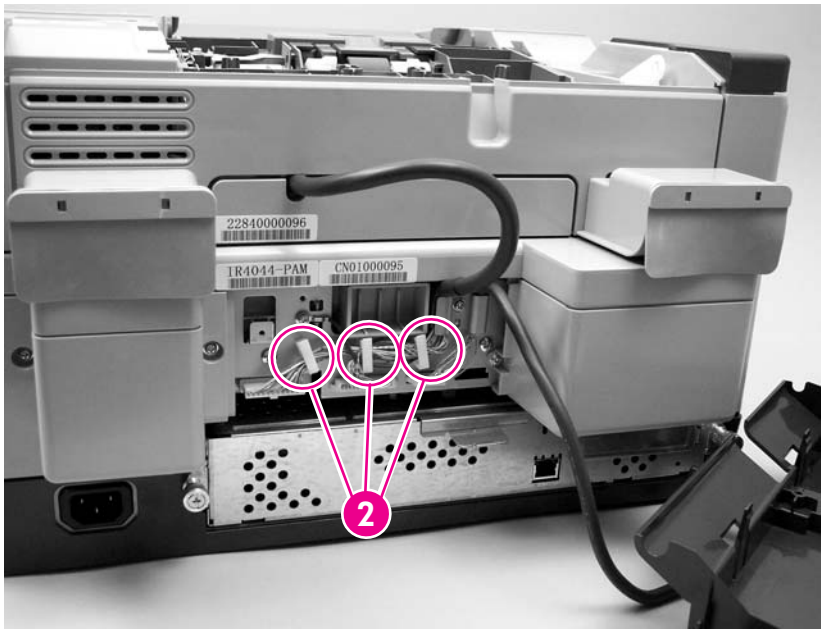


Figure 6-60 Removing the ADF cable (2 of 5)

4 Remove one grounding screw and wire (callout 3), and disconnect two connectors (callout 4).

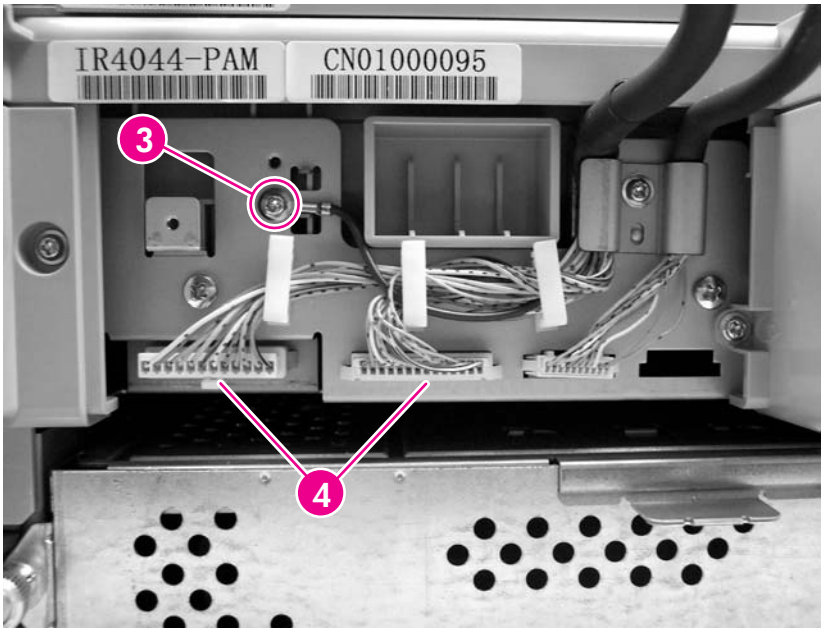


Figure 6-61 Removing the ADF cable (3 of 5)

5 Remove the ADF rear cover. See ADF rear cover.

6 Remove two screws (callout 5), unclip three wire clips (callout 6), and remove three cable covers (callout 7).

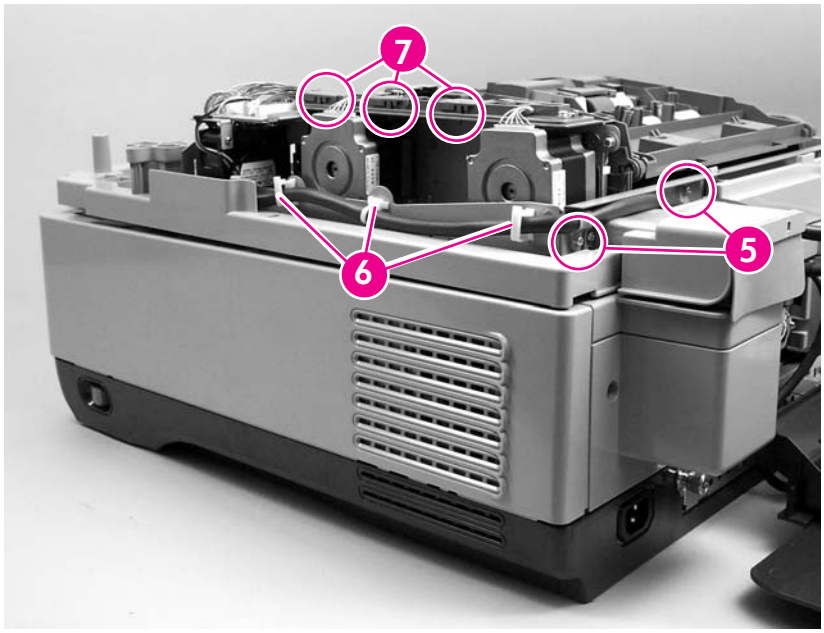


Figure 6-62 Removing the ADF cable (4 of 5)

7 Unclip one wire clip (callout 8), disconnect four connectors (callout 9) and remove one grounding screw and wire (callout 10).

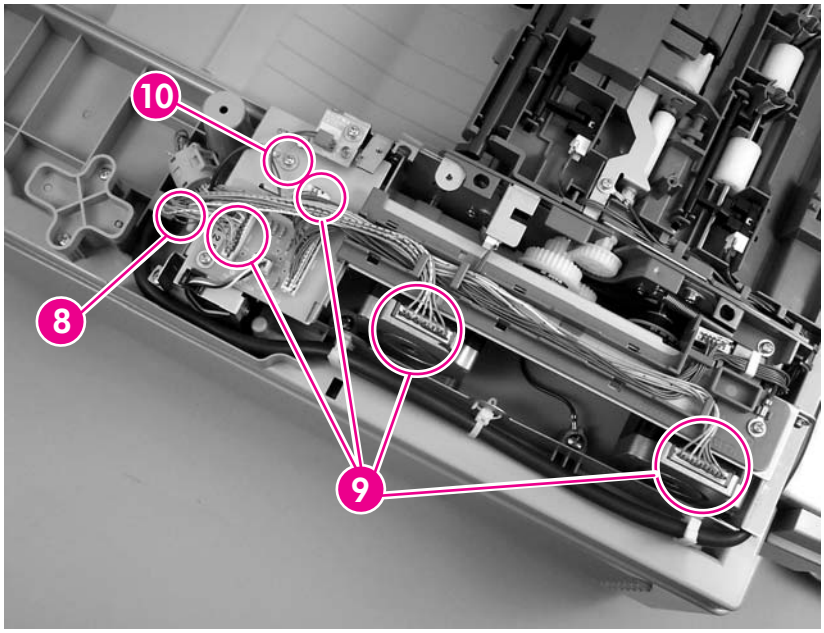


Figure 6-63 Removing the ADF cable (5 of 5)

8 Remove the ADF cable.

Separation pad case

1 Remove the following items:

- Paper input tray. See Paper input tray.
- ADF left cover. See ADF left cover.

2 Remove one screw (callout 1).

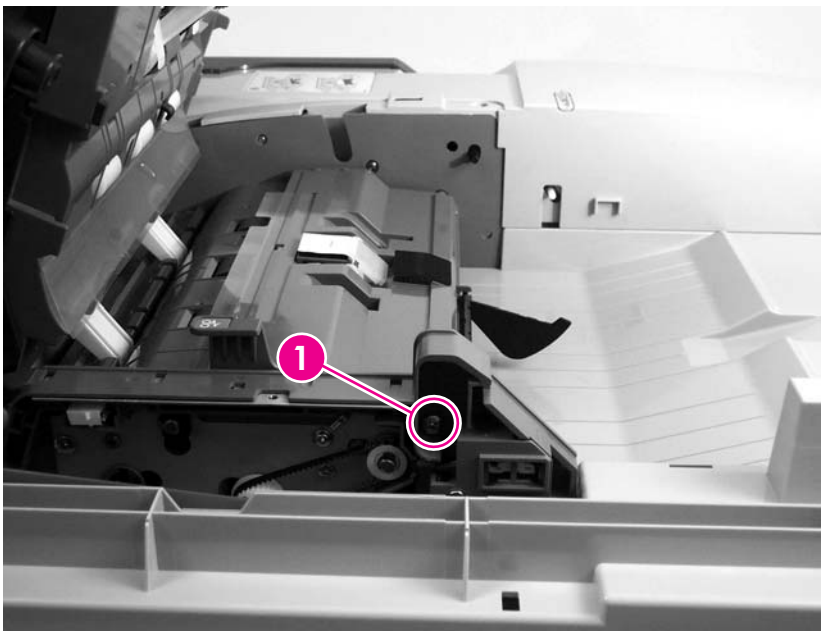


Figure 6-64 Removing the separation pad case

3 Slide the separation pad case to the right and lift up its left side in order to remove it.

Clear plastic paper guide

1 Open the ADF.

2 Peal back the clear plastic paper guide to remove it.

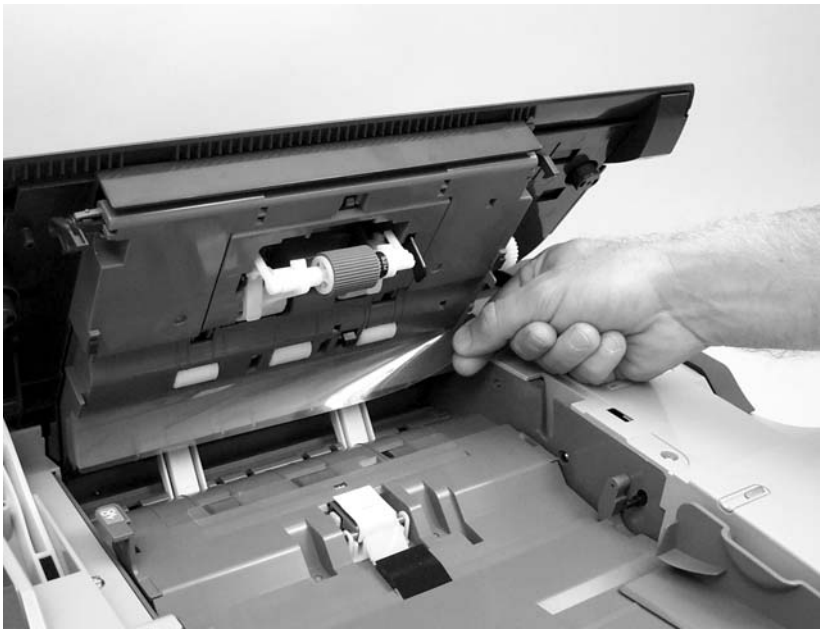


Figure 6-65 Removing the clear plastic paper guide

White scan background

1 Open the ADF cover.

2 Remove the mylar replacement kit (envelope).

3 Peal off the white scan background.

NOTE The foam backing should not tear if the white scan background is peeled back gently.

Scanner controller board

1 Remove the scanner right cover. See Scanner right cover.

2 Disconnect seven cable connectors (callout 1) and two ribbon cables (callout 2).

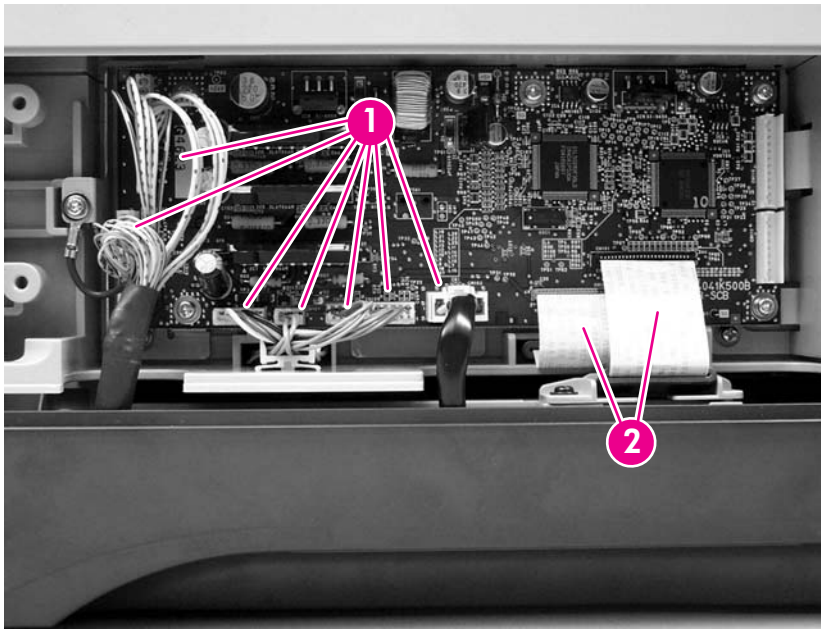


Figure 6-66 Removing the scanner controller board (1 of 2)

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

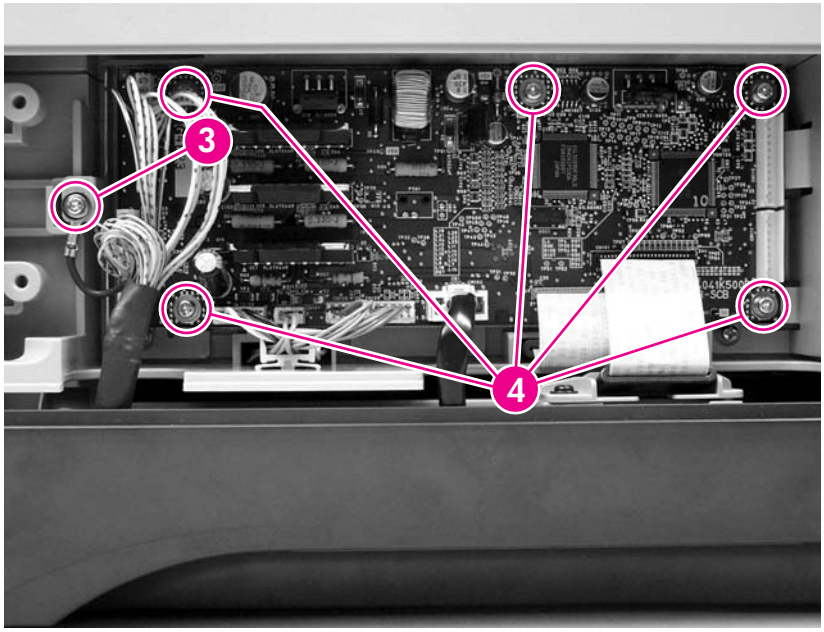


Figure 6-67 Removing the scanner controller board (2 of 2)

4 Remove the scanner controller board.

Flatbed-unit assembly

1 Remove the following items:

- ADF assembly. See ADF assembly or scanner assembly.
- Scanner left cover. See Scanner left cover.
- Scanner right cover. See Scanner right cover.
- Scanner front cover. See Scanner front cover.

2 Remove two screws (callout 1) from the right bracket (callout 2) and remove the right bracket.

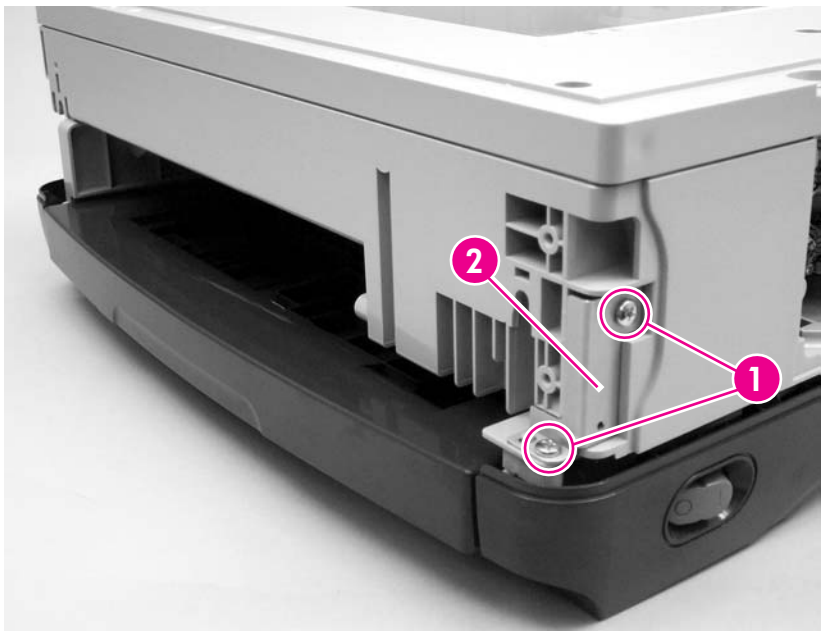


Figure 6-68 Removing the flatbed-unit assembly (1 of 4)

3 Remove one screw (callout 3) and remove the left bracket. Remove one other screw (callout 4).

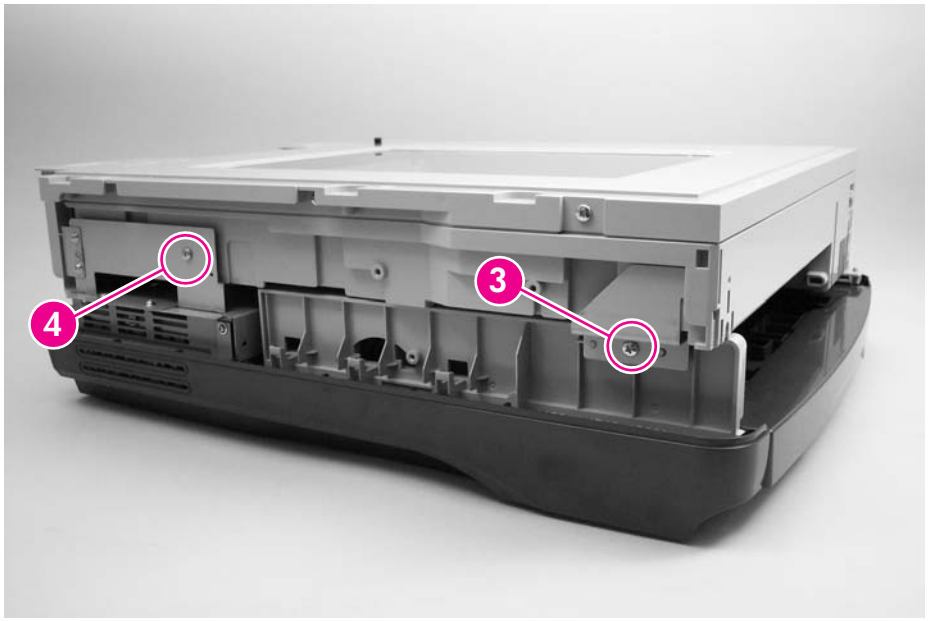


Figure 6-69 Removing the flatbed-unit assembly (2 of 4)

4 Remove the following items:

- Right hinge cover. See Right hinge cover.
- Right hinge guide. See Right hinge guide.
- Left hinge cover. See Left hinge cover.

5 Remove five screws (callout 5).

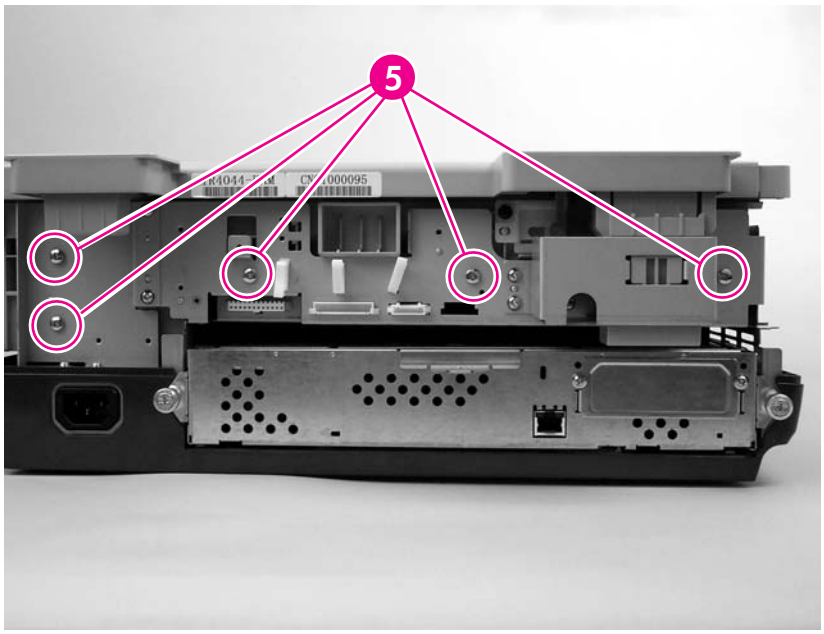


Figure 6-70 Removing the flatbed-unit assembly (3 of 4)

6 Remove one flat ribbon cable (callout 6), disconnect three connectors (callout 7), and remove one grounding screw and wire (callout 8).

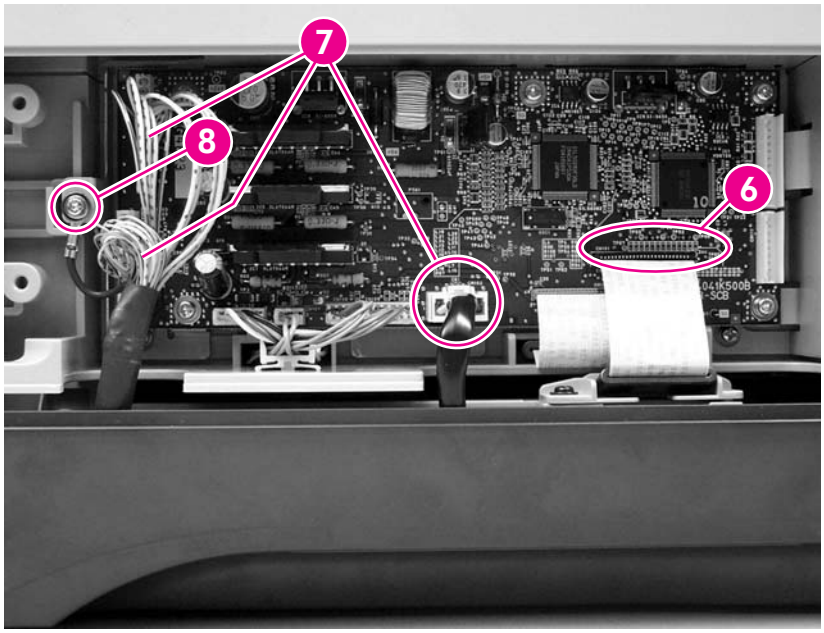


Figure 6-71 Removing the flatbed-unit assembly (4 of 4)

7 Remove the flatbed unit assembly.

Power supply

1 Remove the flatbed-unit assembly. See Flatbed-unit assembly.

2 Remove three screws (callout 1) from the upper ribbon guide. The ribbon cable will slide out when the screws are removed.

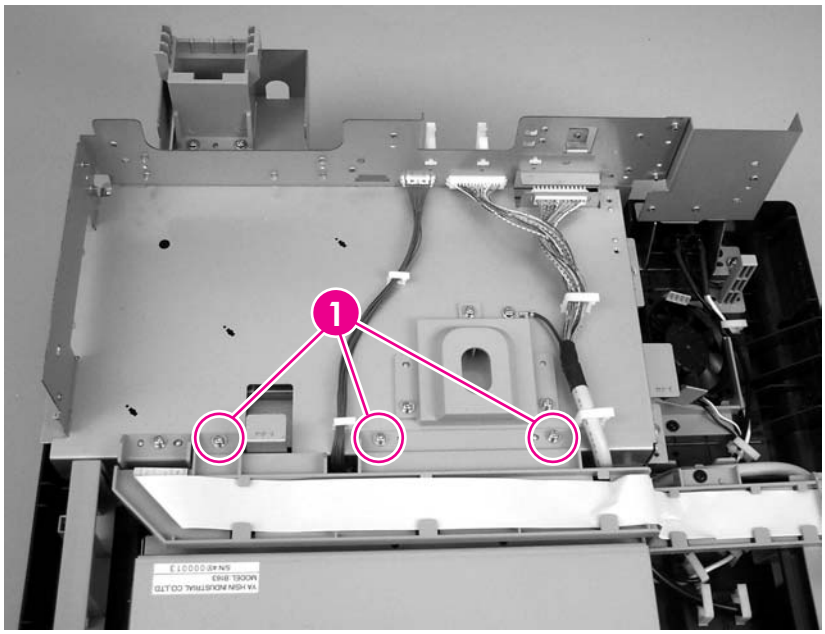


Figure 6-72 Removing the power supply (1 of 6)

3 Remove the upper flatbed ribbon guide.

4 Disconnect the middle cable connector (callout 2) from the interconnect board.

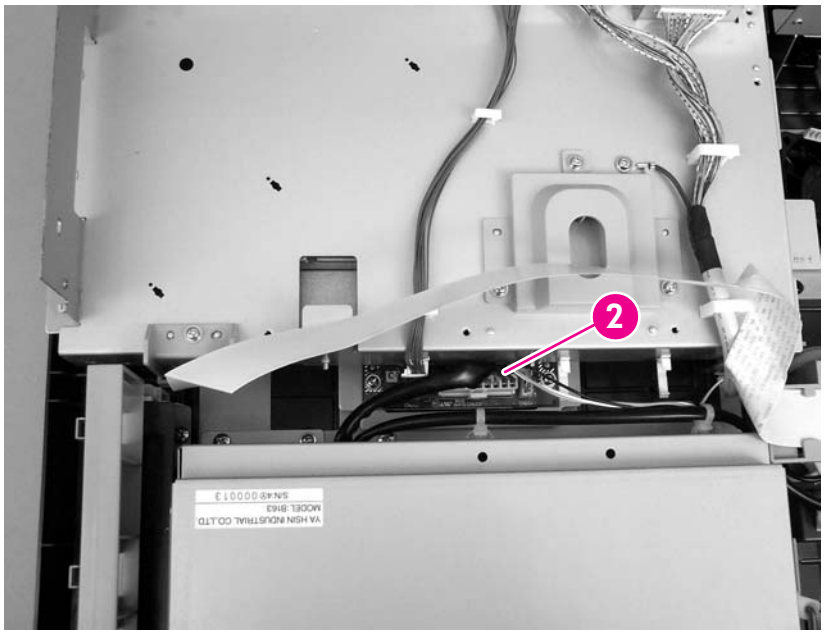


Figure 6-73 Removing the power supply (2 of 6)

5 Remove two screws (callout 3) and remove the lower flatbed ribbon cable guide (callout 4).

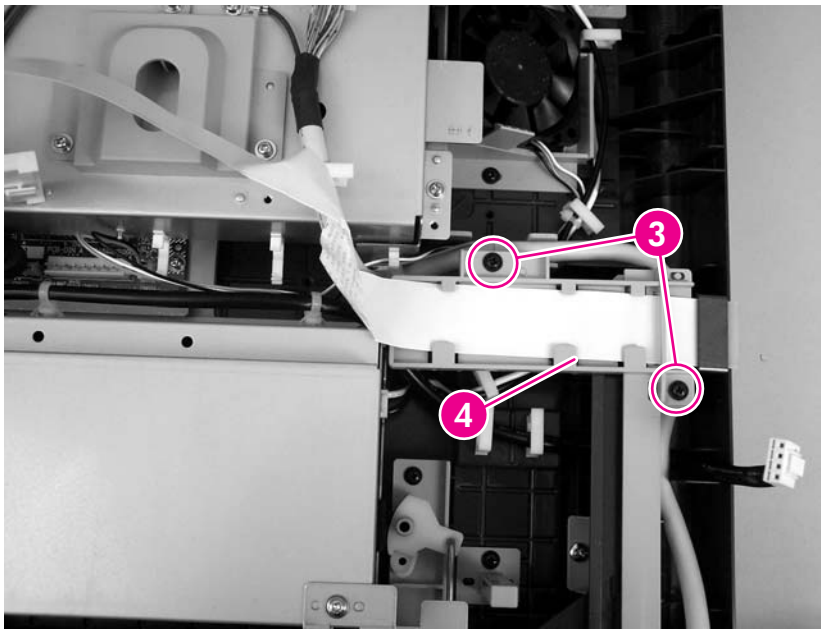


Figure 6-74 Removing the power supply (3 of 6)

NOTE When reinstalling the ribbon cable, make sure that you feed it through the ferrite.

6 Remove two screws (callout 5) from the bottom side of the device, and slide the keyboard tray out.

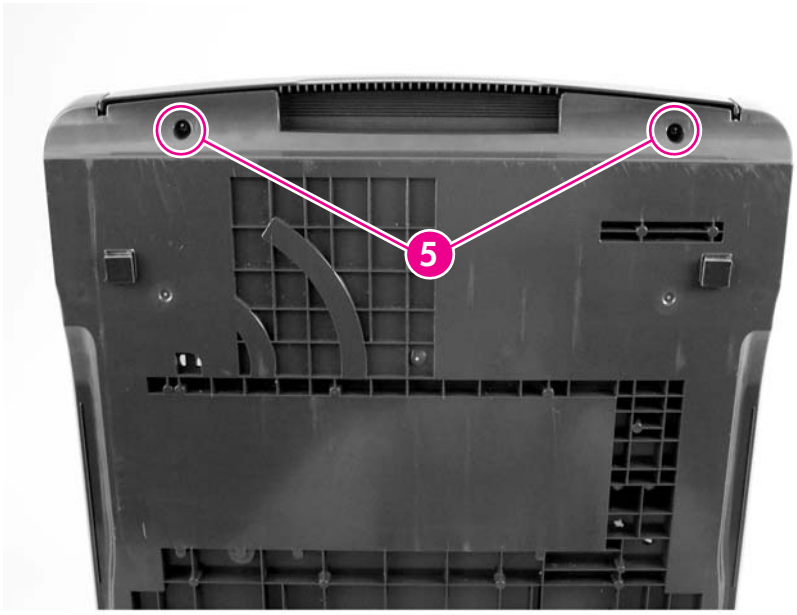


Figure 6-75 Removing the power supply (4 of 6)

7 Remove five screws (callout 6) and remove the right keyboard tray guide.

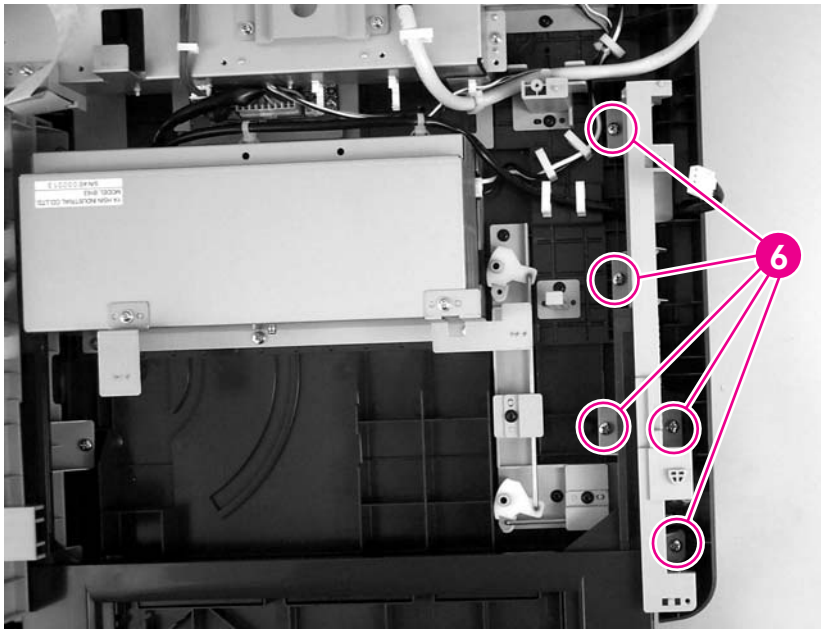


Figure 6-76 Removing the power supply (5 of 6)

8 Unclip two wire clips (callout 7), remove seven screws (callout 8), and disconnect one connector (callout 9).

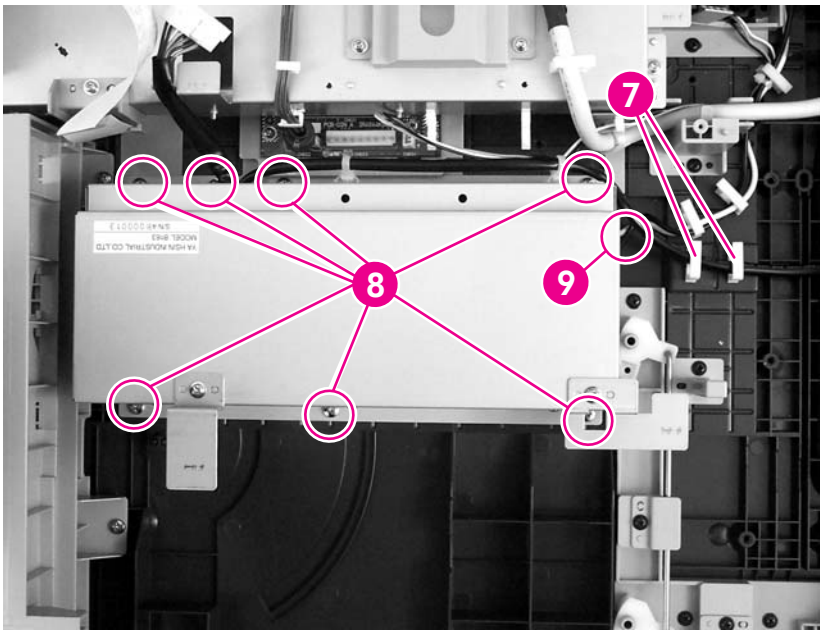


Figure 6-77 Removing the power supply (6 of 6)

9 Remove the power supply.

NOTE When reinstalling the power supply, make sure that the power-switch mechanism is seated correctly so that the external power switch can toggle the internal power switch.

Power-switch assembly

1 Remove the following items:

- Flatbed-unit assembly. See Flatbed-unit assembly.
- Lower flatbed ribbon guide. See Power supply (Step 5).
- Right keyboard tray guide. See Power supply (Step 7).

2 Remove three screws (callout 1).

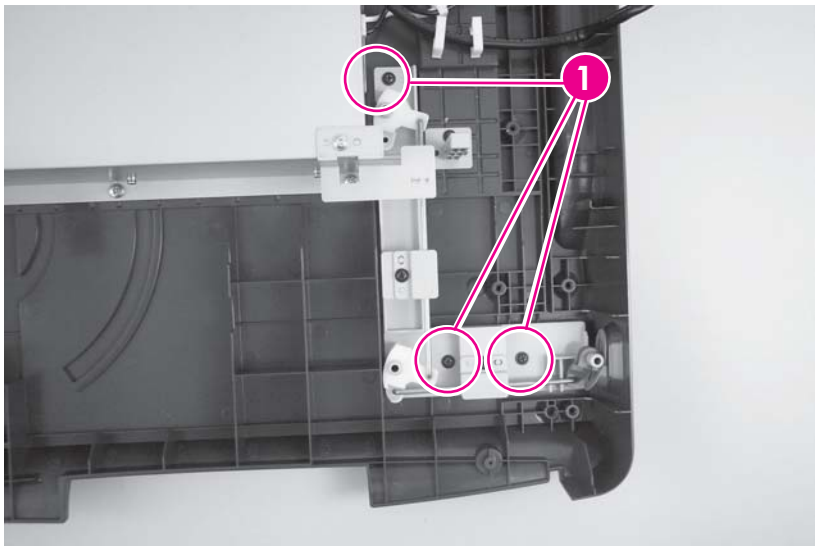


Figure 6-78 Removing the power-switch assembly

3 Remove the power switch assembly.

NOTE When reinstalling the power switch, make sure that the power switch mechanism is seated correctly and that the keyboard tray is seated into its guide before installing the keyboard tray guide.

Scanner base fan

1 Remove the following items:

- Flatbed unit. See Flatbed-unit assembly.
- Upper flatbed ribbon guide. See Power supply (steps 2 and 3).

2 Disconnect the cable (callout 1) from the right side of the interconnect board.

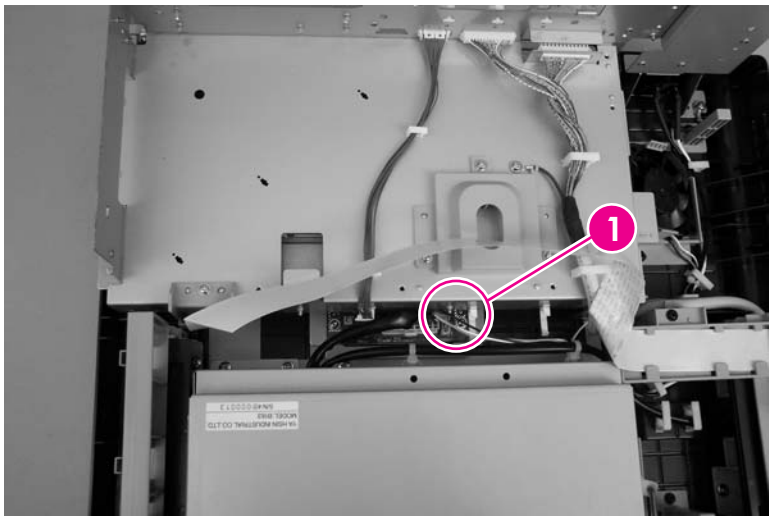


Figure 6-79 Removing the scanner base fan (1 of 2)

3 Remove four clips (callout 2) and unclip two tabs (callout 3).

NOTE You might have to cut a zip tie in order to release the wires.

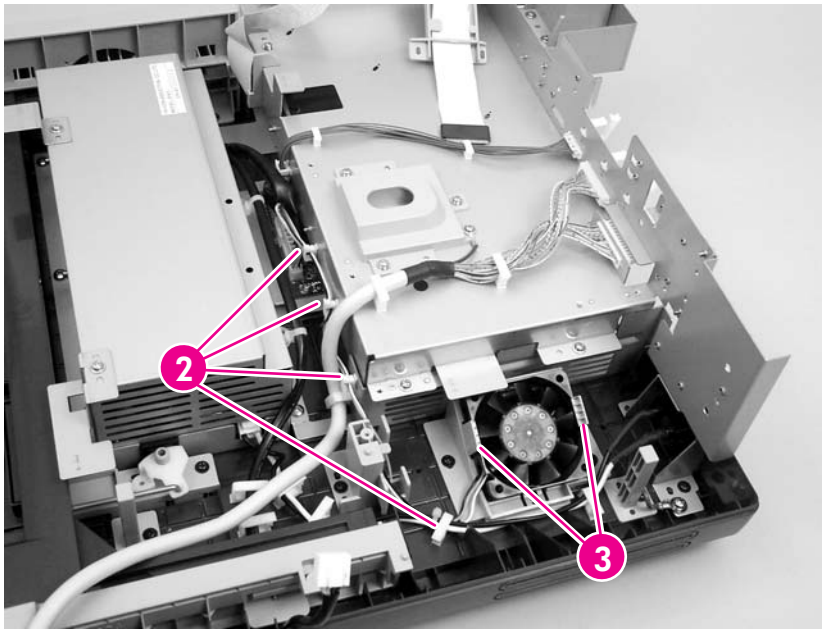


Figure 6-80 Removing the scanner base fan (2 of 2)

4 Remove the scanner base fan.

Power plug

1 Remove the flatbed unit. See Flatbed-unit assembly.

2 Remove one grounding screw and wire (callout 1), unclip four wire clips (callout 2), and disconnect one connector (callout 3).

NOTE You might have to cut a zip tie in order to release the wires.

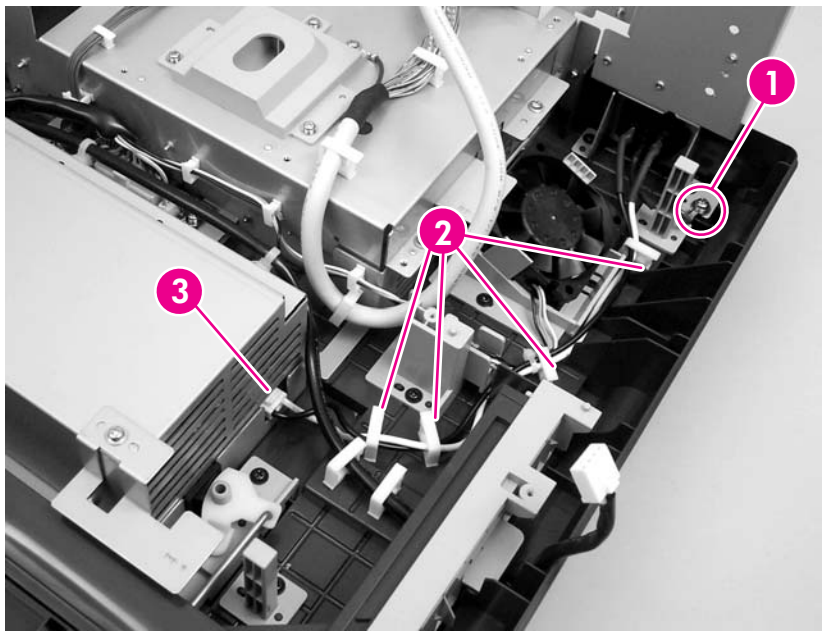


Figure 6-81 Removing the power plug (1 of 2)

3 Using a pair of pliers, depress the two tabs and remove the power plug through the hole.

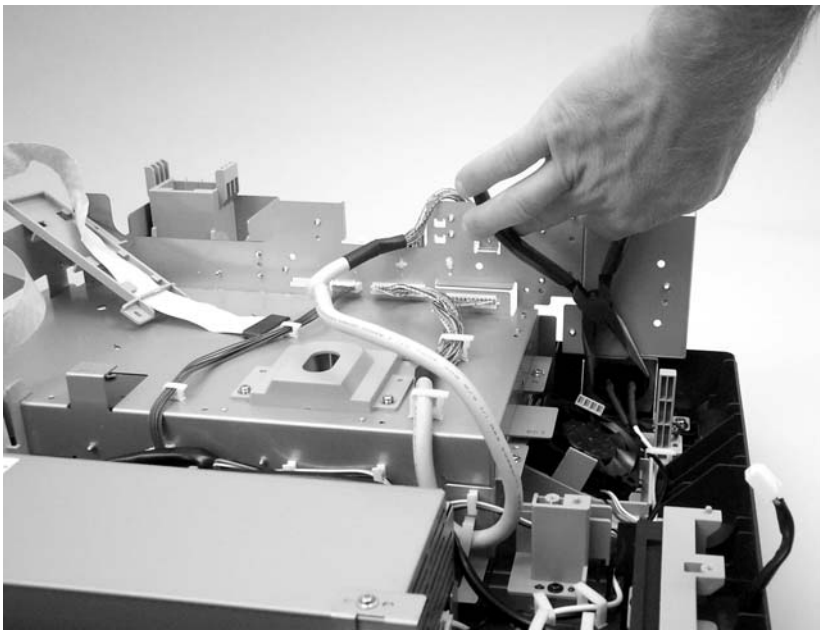


Figure 6-82 Removing the power plug (2 of 2)

SCB cable

1 Remove the flatbed unit. See Flatbed-unit assembly.

2 Use needle-nose pliers to remove two connectors (callout 1). Unclip three wire clips (callout 2) and remove one grounding screw and wire (callout 3).

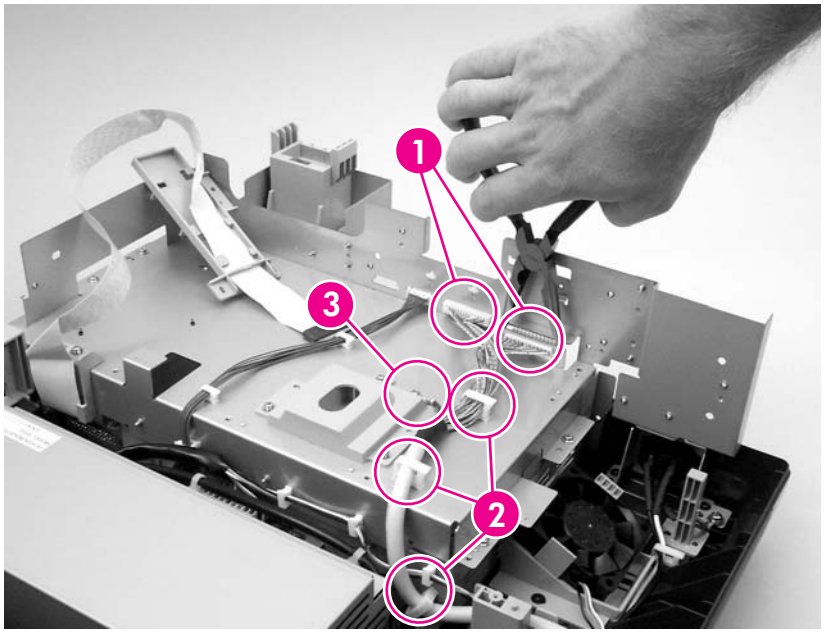


Figure 6-83 Removing the SCB cable

3 Remove the SCB cable.

Internal control-panel cable

1 Remove the following items:

- Flatbed unit. See Flatbed-unit assembly.
- Upper flatbed ribbon guide. See Power supply (steps 2 and 3).

2 Use needle nose pliers to disconnect one connector (callout 1) and unclip three wire clips (callout 2).

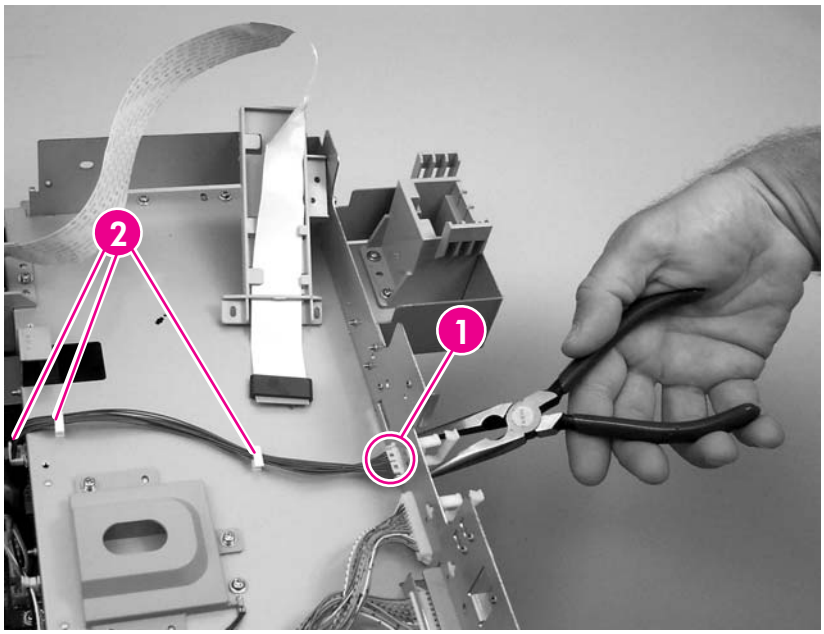


Figure 6-84 Removing the internal control-panel cable (1 of 2)

3 Disconnect the internal control-panel cable from the left side of the interconnect board (callout 3).

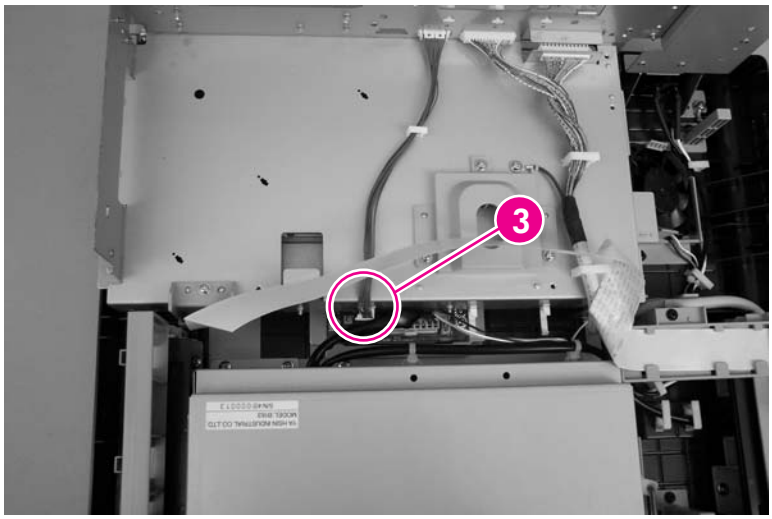


Figure 6-85 Removing the internal control-panel cable (2 of 2)

Scanner glass and cover

1 Remove the following items:

- ADF assembly. See ADF assembly or scanner assembly.
- Scanner left cover. See Scanner left cover.
- Scanner right cover. See Scanner right cover.
- Scanner front cover. See Scanner front cover.

2 Remove three screws (callout 1).

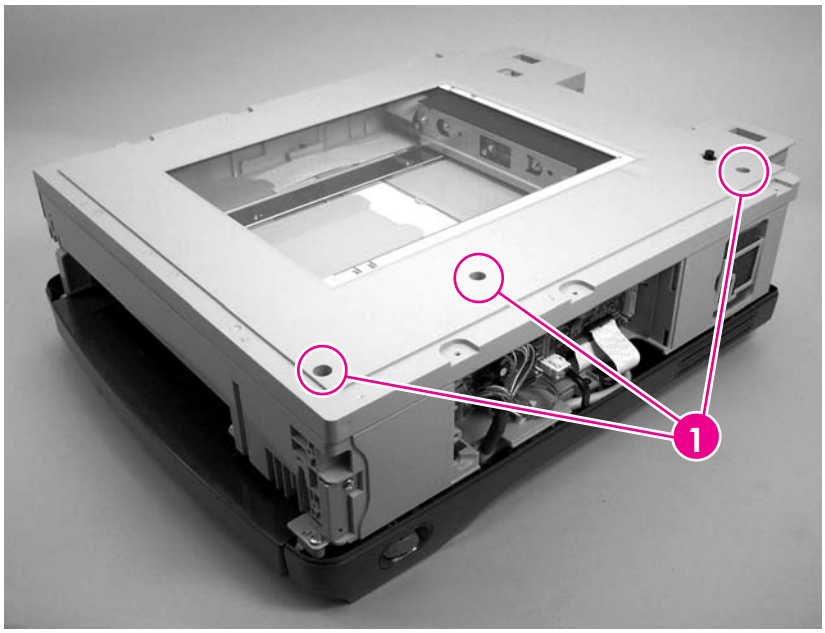


Figure 6-86 Removing the scanner glass and cover (1 of 2)

3 Remove three screws (callout 2).

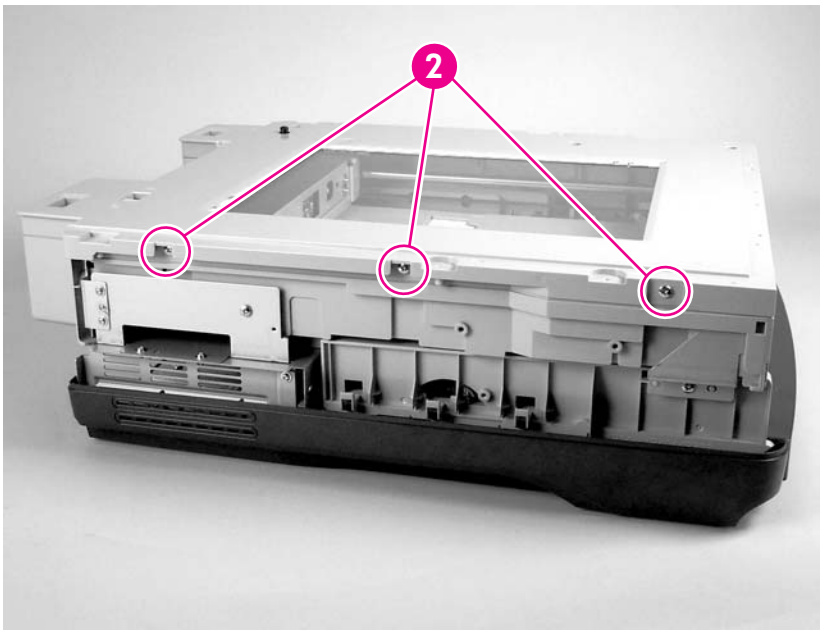


Figure 6-87 Removing the scanner glass and cover (2 of 2)

4 Remove the scanner glass and cover.

NOTE Perform a scanner calibration after replacing this part.

If streaks occur in the scanned image after replacing this part, remove the scanner glass and cover. Clean the back side of the glass and the white calibration strip by using a lint-free cloth.

If, after calibrating and cleaning, scan-quality issues still exist, replace the flatbed unit assembly.

Carriage lock assembly

1 Remove the following items:

- Scanner glass and cover. See Scanner glass and cover.
- Left hinge cover. See Left hinge cover.

2 Remove two screws (callout 1).

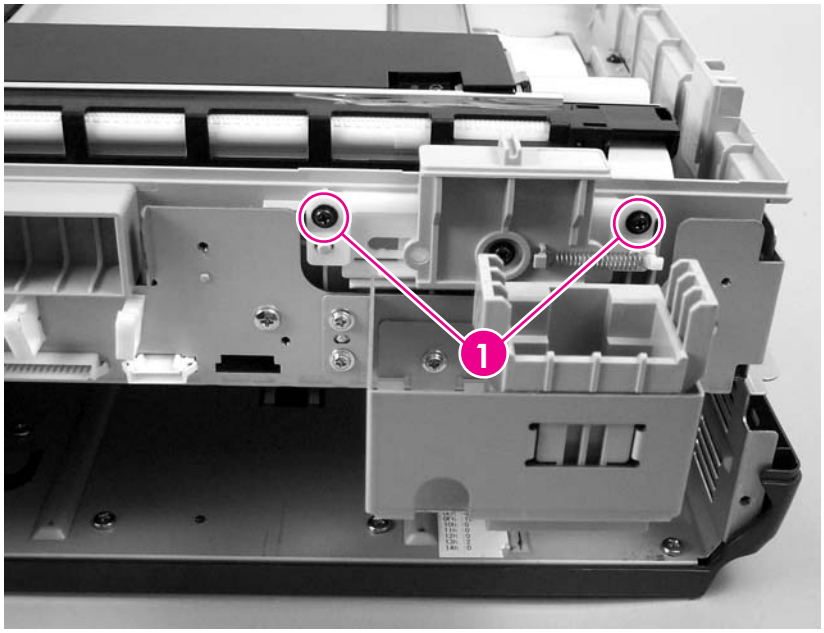


Figure 6-88 Removing the carriage lock assembly

3 Remove the carriage lock assembly.

Open sensor assembly

1 Remove the scanner glass and cover. See Scanner glass and cover.

2 Remove one screw (callout 1) and disconnect two connectors (callout 2).

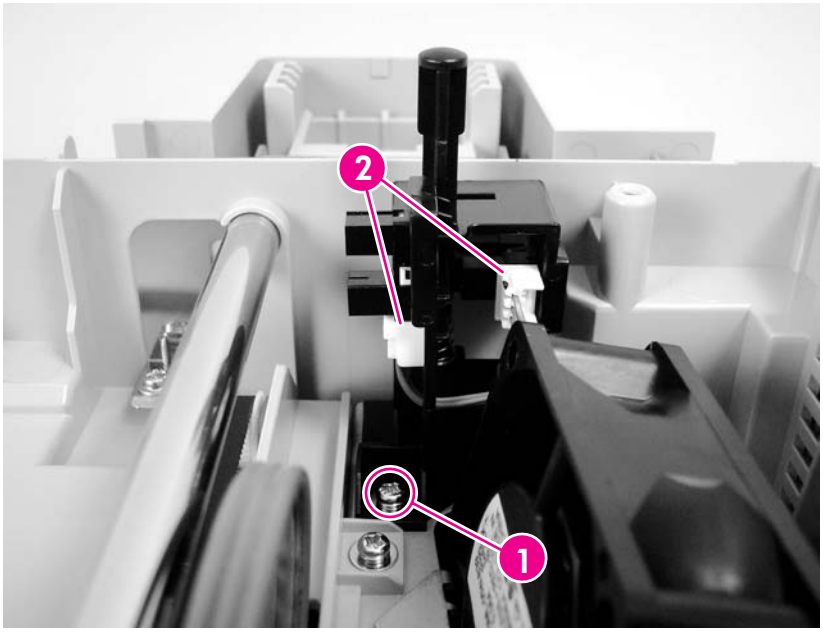


Figure 6-89 Removing the open sensor assembly

3 To remove the open sensor assembly, slide the assembly toward the front of the device and lift the assembly up.

NOTE Perform a scanner calibration after replacing this part.

If streaks occur in the scanned image after replacing this part, remove the scanner glass and cover. Clean the back side of the glass and the white calibration strip by using a lint-free cloth.

If, after calibrating and cleaning, scan-quality issues still exist, replace the flatbed unit assembly.

Inverter

1 Remove the following assemblies.

- ADF assembly. See ADF assembly or scanner assembly.
- Scanner glass and cover. See Scanner glass and cover.

2 Remove one screw (callout 1) and disconnect two connectors (callout 2).

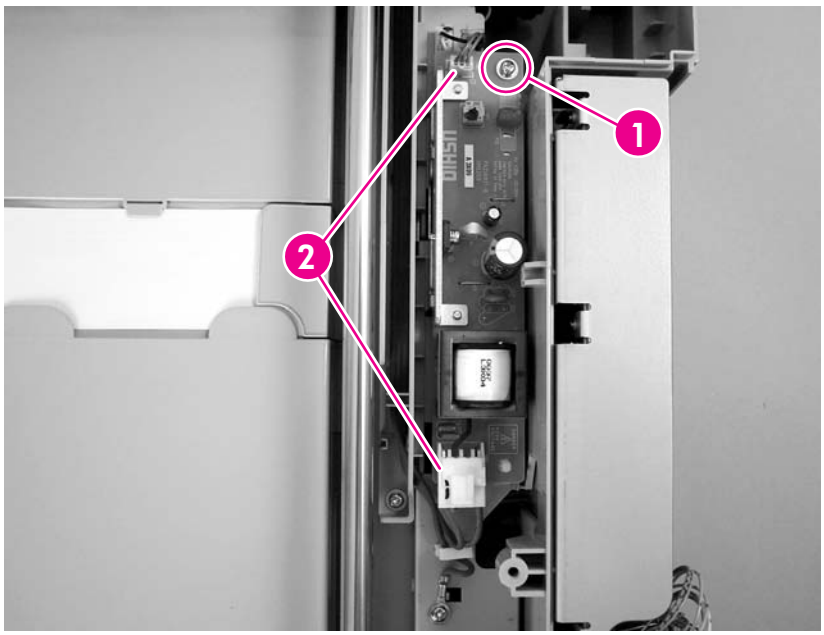


Figure 6-90 Removing the inverter (1 of 4)

3 Remove two screws (callout 3).

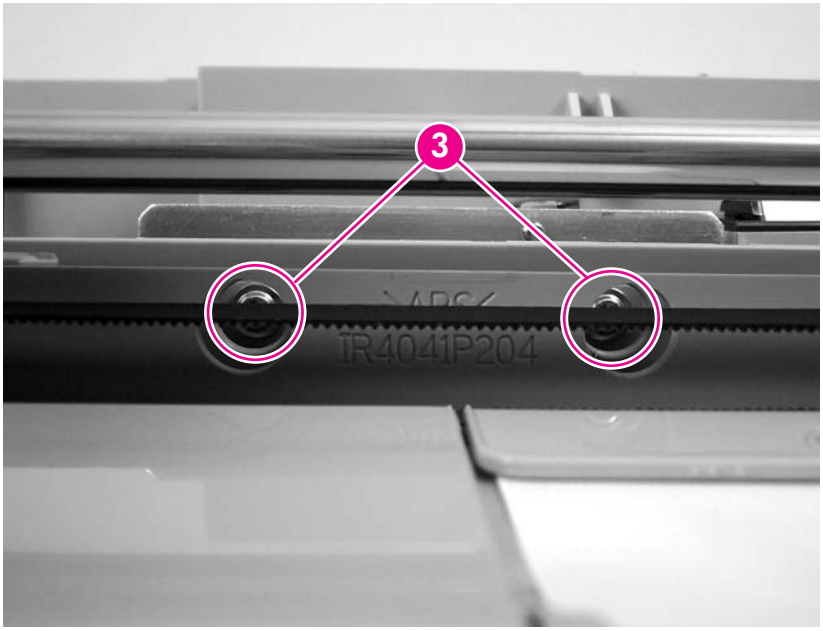


Figure 6-91 Removing the inverter (2 of 4)

NOTE Reach the two screws from the scanner carriage area through the holes in the plastic.

4 Use needle-nose pliers to squeeze the retainer, and then slightly lift the left side of the inverter.

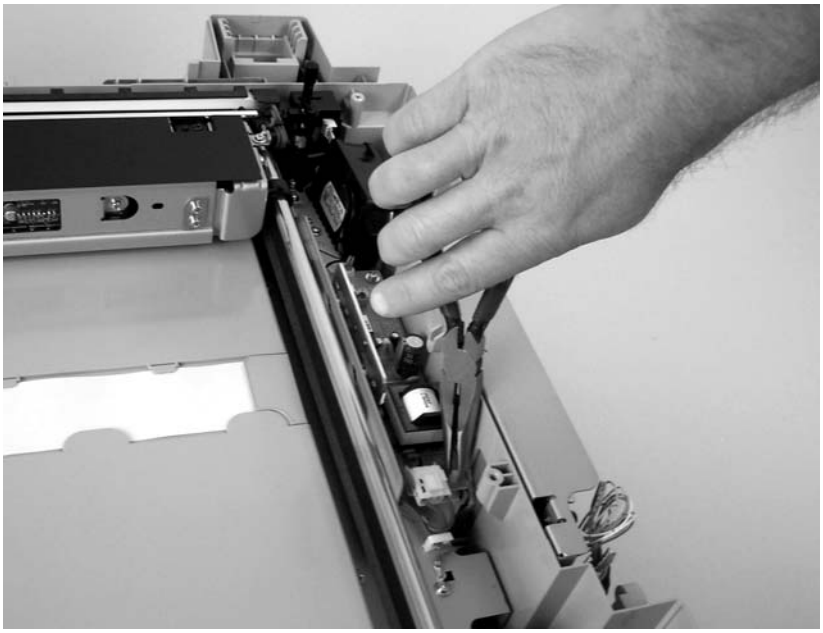


Figure 6-92 Removing the inverter (3 of 4)

5 Using a flat-blade screwdriver, release the two metal locking tabs and remove the inverter.

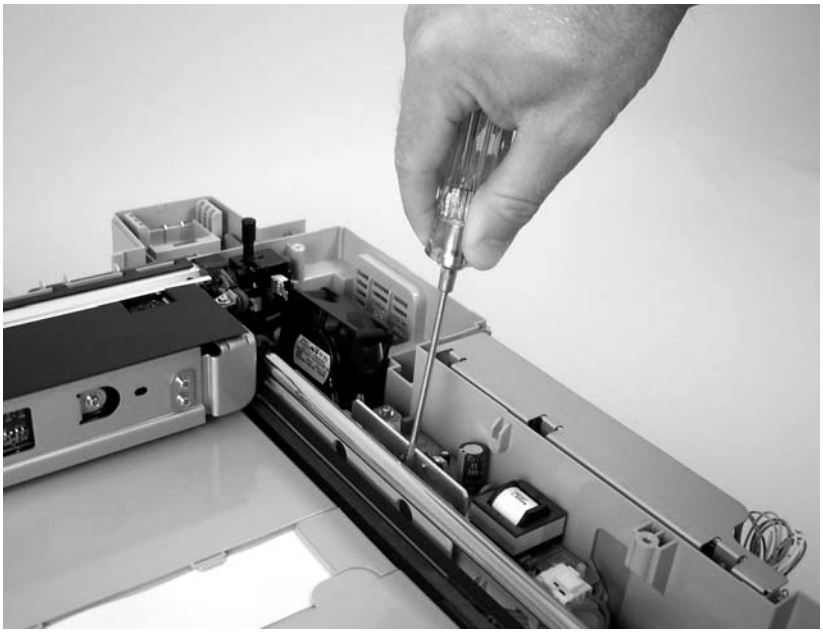


Figure 6-93 Removing the inverter (4 of 4)

Optical assembly

1 Remove the following assemblies.

- ADF assembly. See ADF assembly or scanner assembly.
- Scanner glass and cover. See Scanner glass and cover.

2 Remove one screw (callout 1) and disconnect the flat, flexible cable (FFC) (callout 2) to release the black-and-white cable retainer from the optical assembly.

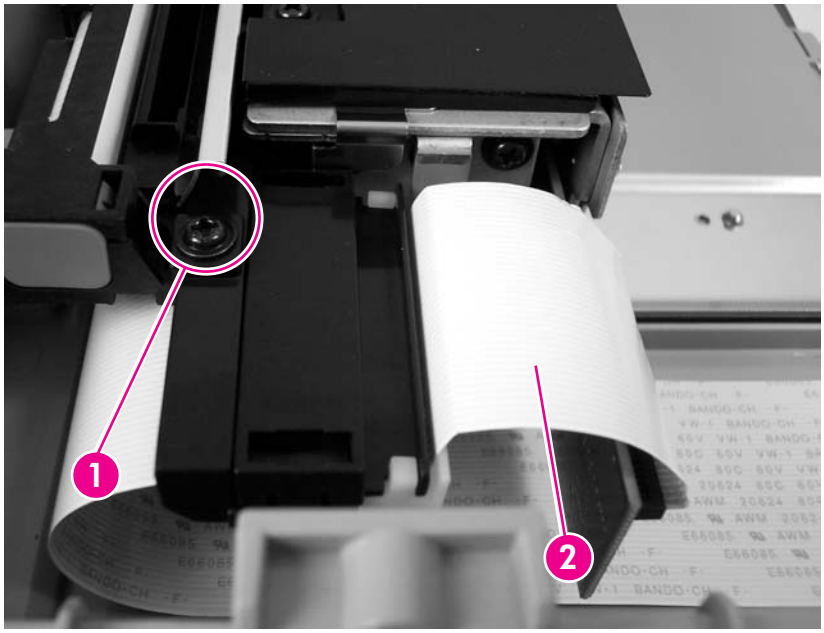


Figure 6-94 Removing the optical assembly (1 of 4)

3 Disconnect one connector (callout 3), remove one grounding screw and wire (callout 4), and unclip one wire clip (callout 5).

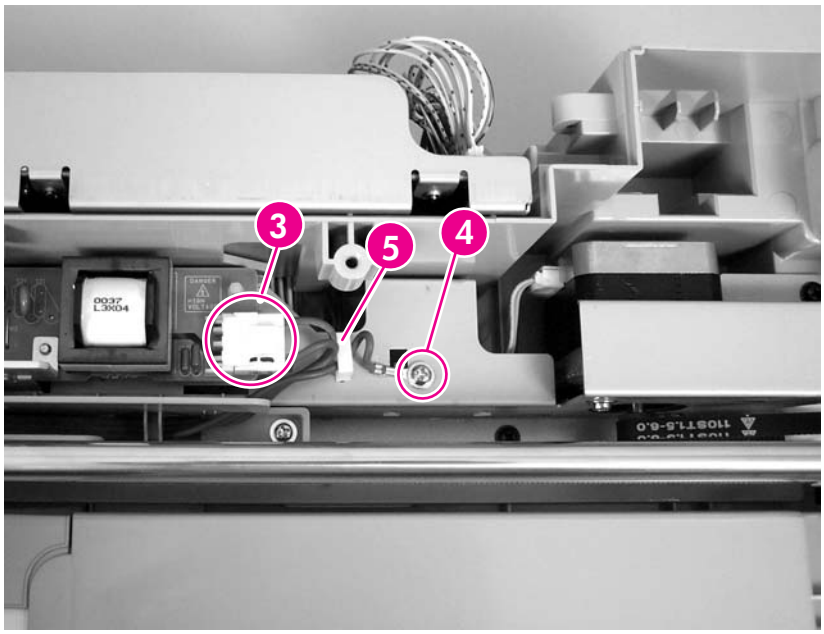


Figure 6-95 Removing the optical assembly (2 of 4)

4 Loosen one screw (callout 6) to release the tension on the drive belt.

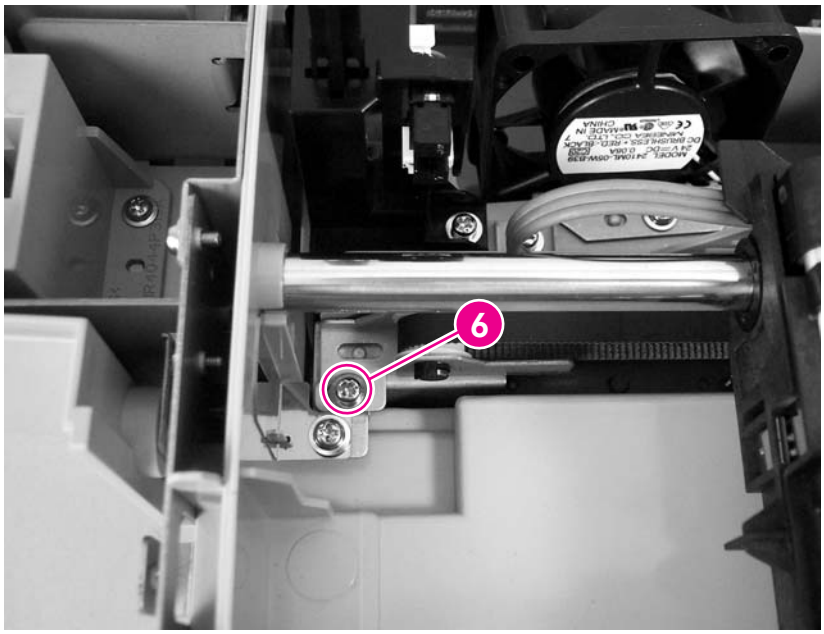


Figure 6-96 Removing the optical assembly (3 of 4)

5 Flex the right side of the scanner bed to release the right side of the optical-assembly guide-rod from the scanner chassis.

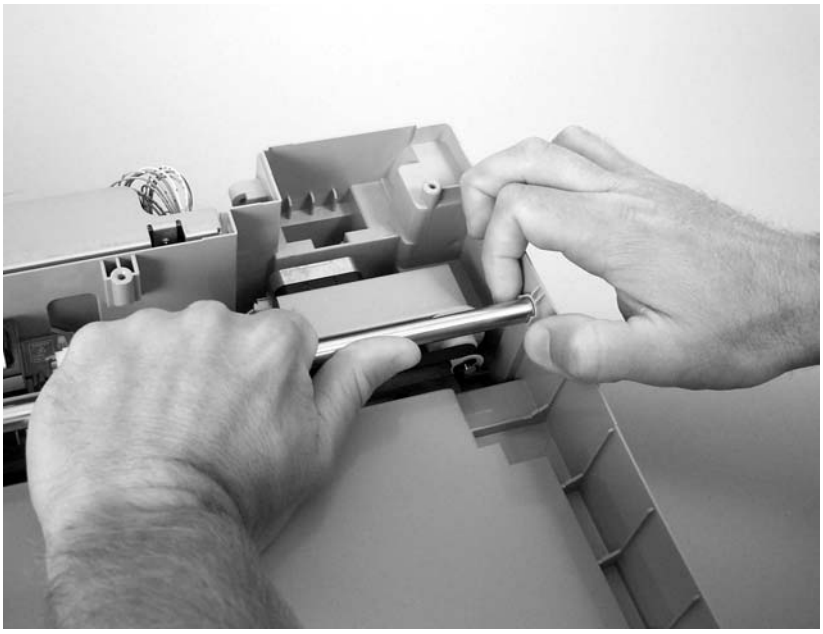


Figure 6-97 Removing the optical assembly (4 of 4)

6 Disengage the scanner belt, tilt the optical assembly up, and slide the guide-rod out of the left mounting hole.

CAUTION Make sure that the optical assembly is not in the home position when it is tilted. This might damage the home position sensor.

NOTE For reinstallation, make sure that the optical assembly is in the home position when you tighten the scanner belt.

7 Remove the rod from the optical assembly.

NOTE Perform a scanner calibration after replacing this part.

If streaks occur in the scanned image after replacing this part, remove the scanner glass and cover. Clean the back side of the glass and the white calibration strip by using a lint-free cloth.

If, after calibrating and cleaning, scan-quality issues still exist, replace the flatbed unit assembly.

Scanner motor

1 Remove the following assemblies.

- ADF assembly. See ADF assembly or scanner assembly.
- Flatbed unit assembly. See Flatbed-unit assembly.
- Scanner glass and cover. See Scanner glass and cover.
- Optical assembly. See Optical assembly.
- Scanner controller board. See Scanner controller board.

2 Remove two screws (callout 1), and slide the cable trough toward the motor and remove it.

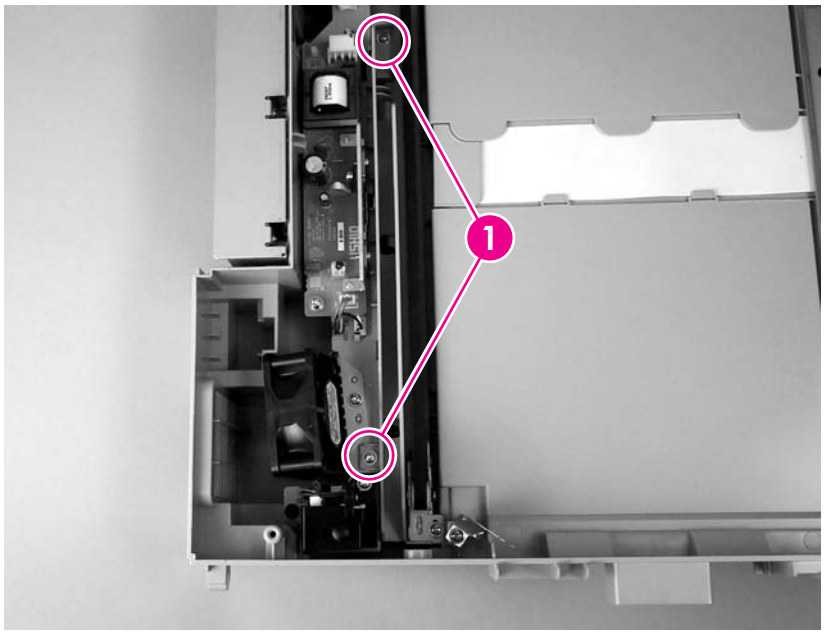


Figure 6-98 Removing the scanner motor (1 of 5)

3 Remove six screws (top, scanner bed side) (callout 2).

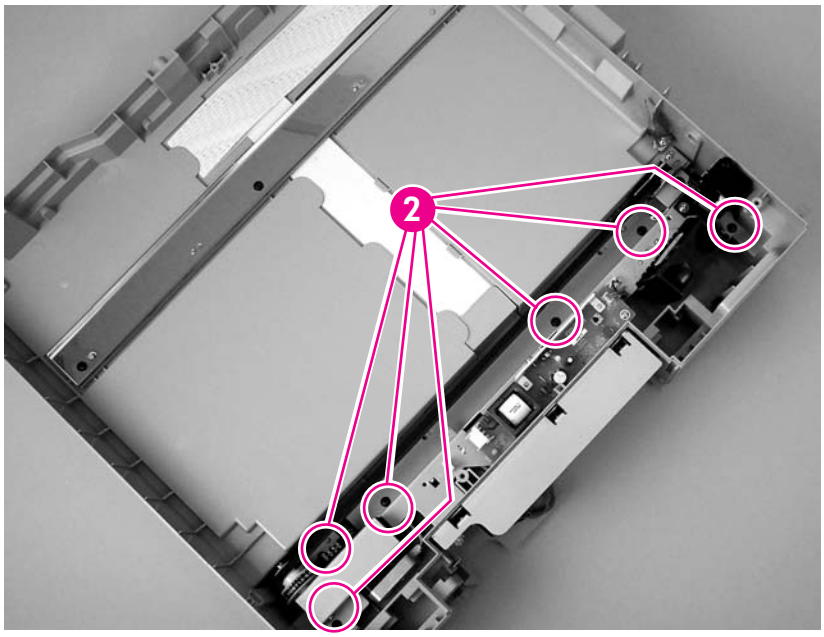


Figure 6-99 Removing the scanner motor (2 of 5)

4 Remove two grounding screws (bottom) (callout 3).

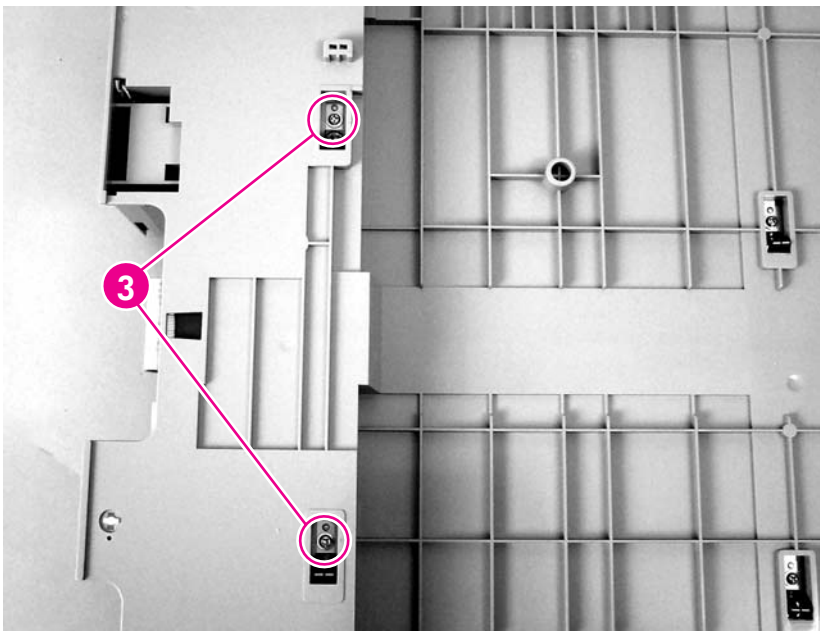


Figure 6-100 Removing the scanner motor (3 of 5)

5 Remove two screws (scanner controller board side) (callout 4), unclip one wire clip (callout 5), and feed the cables into the flatbed.

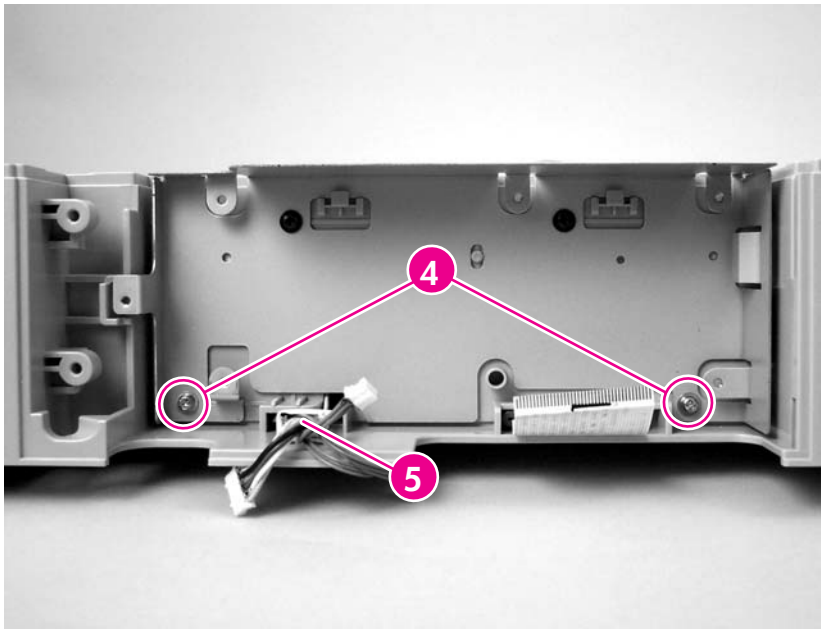


Figure 6-101 Removing the scanner motor (4 of 5)

6 Disconnect one connector (callout 6), remove two screws (motor) (callout 7), and remove the scanner motor (the belt will loosen).

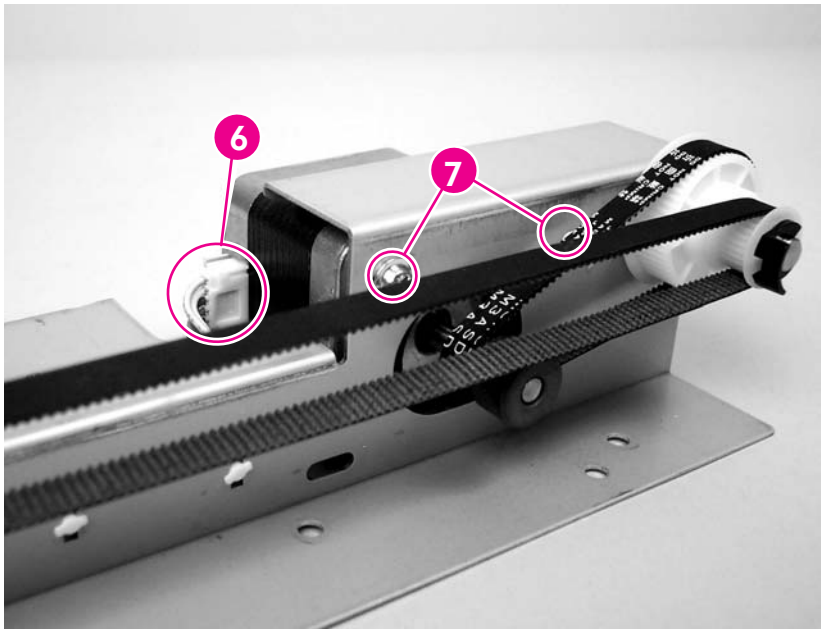


Figure 6-102 Removing the scanner motor (5 of 5)

NOTE Make sure that the motor bracket alignment pins in the flatbed are correctly positioned in the bracket.

Do not forget to install the grounding clips (bottom) when reinstalling the motor bracket.

When reinstalling the scanner motor, the grounding strip must be inside the optical guide shaft retainer.

When installing the optical assembly, make sure that the teeth on the belt face inward so that they engage the drive portion of the unit.

Scanner motor belt

1. Remove the scanner motor. See Scanner motor.
2. Remove the scanner motor belt.

Scanner lamp

1 Remove the following assemblies.

- ADF assembly. See ADF assembly or scanner assembly.
- Scanner glass and cover. See Scanner glass and cover.

2 Remove two grounding screws and wires (callout 1), disconnect one connector (callout 2), and remove one screw (callout 3).

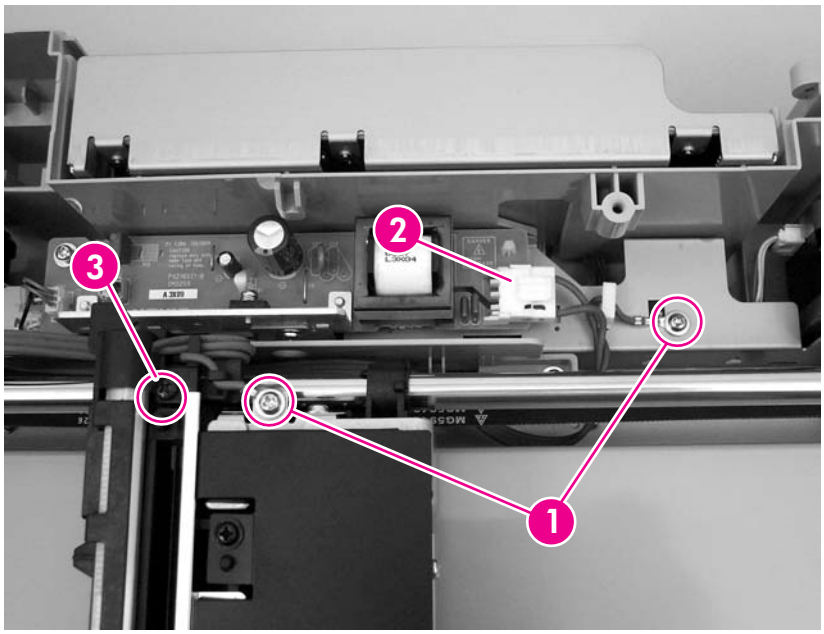


Figure 6-103 Removing the lamp

3 For better access to the lamp, release the optical assembly by loosening the tension screw, disengaging the belt, and flexing the side of the unit to release the rod.

4 Unwrap the lamp wires from the plastic wire guide.

5 Grasp the scanner lamp, and carefully slide it out of the optical unit (towards the cable end).

Scanner belt assembly

1 Remove the optical assembly. See Optical assembly.

2 Remove two screws (callout 1), and slide the cable trough toward the motor and remove it.

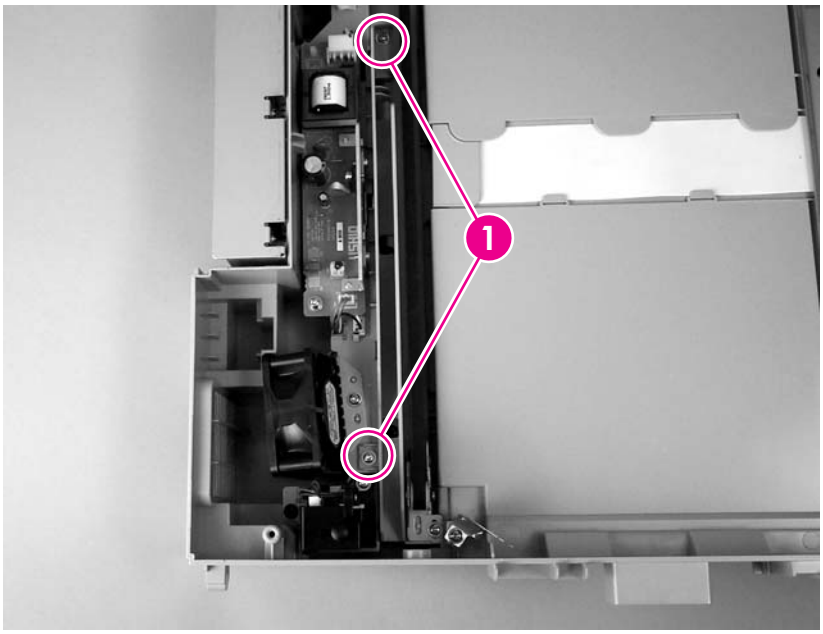


Figure 6-104 Removing the scanner belt assembly (1 of 2)

3 Remove one screw (callout 2).

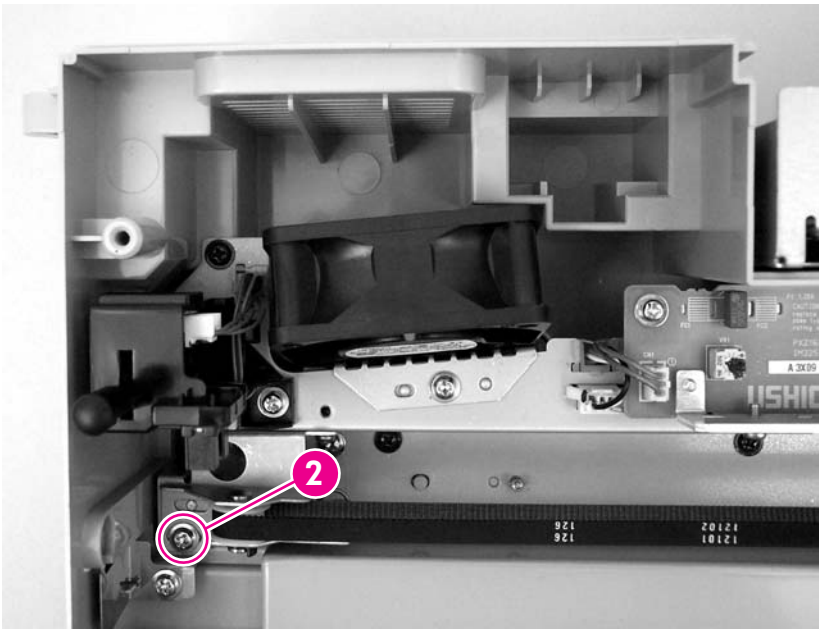


Figure 6-105 Removing the scanner belt assembly (2 of 2)

4 Remove the scanner belt assembly.

NOTE Do not remove the scanner belt assembly lower bracket unless it is damaged. If the scanner belt assembly lower bracket needs to be replaced, the entire motor bracket must be removed.

Perform a scanner calibration after replacing this part.

If streaks occur in the scanned image after replacing this part, remove the scanner glass and cover. Clean the back side of the glass and the white calibration strip by using a lint-free cloth.

If, after calibrating and cleaning, scan-quality issues still exist, replace the flatbed unit assembly.

Scanner motor fan

1 Remove the scanner glass and cover. See Scanner glass and cover.

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

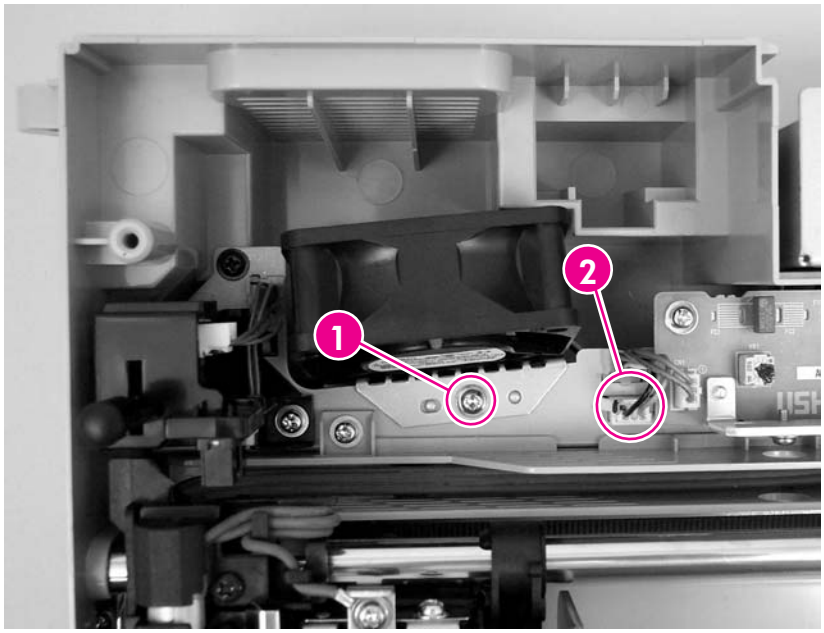


Figure 6-106 Removing the scanner motor fan

3 Remove the scanner motor fan.

7 Troubleshooting

In order to use the information in this chapter, you should have a basic understanding of the scanning and digital-sending processes. Explanations of each mechanical assembly, the device systems, and the basic theory of operation are contained in chapter 5 of this manual. Do not perform any of these troubleshooting processes unless you understand the function of each device component.

This chapter contains information about the following topics:

- Understanding the troubleshooting process
- Understanding control-panel messages
- Resolving operational issues
- Understanding digital-sender LEDs
- Clearing jams
- Solving e-mail problems
- Solving network-connectivity problems
- Using diagnostic tools
- Using the service-mode functions
- Using the Service menu
- Using the troubleshooting tools
- Using the troubleshooting diagrams

Understanding the troubleshooting process

When the digital sender malfunctions or encounters an unexpected situation, information on the control panel alerts you to the situation. This section contains an initial troubleshooting checklist that helps to eliminate many possible causes of the problem. The remainder of the chapter provides steps for correcting the problems that have been identified.

- Use the initial troubleshooting checklist to evaluate the source of the problem and to reduce the number of steps that are required to fix the problem.
- Use the troubleshooting information in this chapter to pinpoint the cause of malfunctions.

Initial troubleshooting checklist

If the digital sender is not responding correctly, complete the steps in the following checklist. If the device does not pass a step, follow the corresponding troubleshooting suggestions. If a step resolves the problem, you can stop without performing the other steps on the checklist.

Troubleshooting checklist

1. Make sure that the digital sender **Ready** LED is on. If no lights are on, see Power-on checks.
2. Check the network connection. See Solving network-connectivity problems.

Power-on checks

The basic digital-sender functions should start up as soon as the digital sender is plugged into an electrical outlet in a wall receptacle and the power switch is pushed to the *on* position. If the digital sender does not start, use the information in this section to isolate and solve the problem.

Power-on troubleshooting overview

Turn on the digital sender. If the control-panel display remains blank, random patterns appear, or asterisks remain on the display, perform power-on checks to locate the cause of the problem.

During normal operation, the main cooling fan begins to spin briefly after the digital sender power is turned on. Place your hand over the holes in the rear cover, above the formatter. If the fan is operating, you will feel a slight vibration and feel air passing into the digital sender. You can also lean close to the digital sender and hear the fan operating. When this fan is operational, the dc side of the power supply is functioning correctly.

After the fan is operating, the main motor turns on (unless the top cover is open, a jam condition is sensed, or the paper-path sensors are damaged). You should be able to visually and audibly determine if the main motor is turned on.

If the fan and main motor are operating correctly, the next troubleshooting step is to isolate the remaining problems.

If the control panel is blank when you turn on the digital sender, check the following items.

1. Make sure that the digital sender is plugged into an active electrical outlet that delivers the correct voltage.
2. Make sure that the on/off switch is in the *on* position.

3 Make sure that the fan runs briefly, which indicates that the power supply is operational.

4 Make sure that the control-panel display wire-harness is connected. See External control-panel cable.

5 Make sure that the firmware flash memory card and the formatter are seated and operating correctly. Verify that the compact flash card is in slot 1. See Compact flash card.

6 Remove any HP Jetdirect or other EIO cards, and then try to turn the digital sender on again.

7 Verify that the formatter “heartbeat” LED is blinking. See Understanding digital-sender LEDs. The heartbeat LED indicates that the formatter is fully functional. If the heartbeat LED is not blinking, reseat the compact flash card and the formatter assembly.

If the scanner base fan is not operating, verify that all connectors to the power supply and the scanner base fan are correctly seated. If the fan is still not functional, replace the components one by one until the system is functional.

NOTE It is important to have the control panel functional as soon as possible in the troubleshooting process so that the control-panel display can be used to help locate digital-sender errors.

Understanding control-panel messages

Messages appear on the control-panel display to relay the normal status of the digital sender (such as **Processing Job**), or an error condition that needs attention (such as **CLOSE TOP COVER**). Resolving control-panel messages lists messages that require attention, or that might raise questions. Messages are listed in alphabetical order, with numeric messages at the end of the list. Not all messages are listed because some (such as **Ready**) are self-explanatory.

NOTE Some messages are affected by the **AUTO CONTINUE** and **CLEARABLE WARNINGS** settings in the **CONFIGURE DEVICE** menu, **SYSTEM SETUP** submenu, on the control panel.

Using the digital sender help system

This digital sender features a help system on the control panel that provides instructions for resolving most digital-sender errors. Certain control-panel messages alternate with instructions about using the help system.

Whenever a **?** appears in an error message or a message alternates with **FOR HELP TOUCH ?**, touch the (Help) button to view the help.

To exit the help system, touch the (Help) button.

Resolving control-panel messages

Table 7-1 Control-panel messages

Control panel message	Description	Recommended action
Address book is full. To add an address, you must first delete an address.	You cannot add another address to the address book because it is full. The address book is limited to 200,000 entries.	You can delete addresses by touching the **Edit** button on the control-panel Address Book screen and then selecting the **Delete** option.
Access denied	You are trying to use a feature or access a folder that you do not have authorization to use. If you are trying to access a folder, verify that the folder is set up to be shared.	Contact the network administrator.
ADF Cover Open	The ADF cover is open.	Close the ADF cover. The ADF Cover Open sensor is located directly above the ADF Feed Motor (see figure 7-5). When the ADF cover is closed, a plastic protrusion on the underside of the cover blocks the sensor, thereby generating the cover-closed status. If the product has been recently disassembled, verify that all of the covers have been correctly reinstalled, allowing the sensor to be blocked when the cover is closed. Verify that the wiring to this sensor is firmly seated. Verify that CN105, on the scanner controller board, is seated (see figure 7-3). Use the Diagnostics Sensor test to test the ADF Cover Open sensor. See Scanner

Table 7-1 Control-panel messages (continued)

Control panel message	Description	Recommended action
		tests. Run the diagnostic program from the control panel and manually block the sensor to see if the status changes. If the status fails to change, check the sensor wiring. Clean or replace the sensor if necessary.
ADF Empty	No document is in the ADF.	You must have a document in the ADF or on the glass before you can begin a digital-send operation. The ADF Empty sensor flag is shown in figure 7-4. When media is inserted into the ADF input bin, this sensor flag moves and blocks a photo sensor. Verify that nothing is hindering the movement of this sensor flag. Use the Diagnostics Sensor test to test this sensor. See Scanner tests. Run the diagnostic program from the control panel and manually move the flag to simulate media in the ADF. If the status fails to change, check the sensor wiring. Clean or replace the sensor if necessary.
ADF Output Bin Full	Too many sheets are in the ADF output bin. The ADF output bin can hold a maximum of 50 sheets.	Under normal circumstances, clearing the output bin clears this message. If emptying the ADF output bin does not clear the message, verify the following items: ■ Verify that the movement of the ADF Bin Full sensor flag (see figure 7-5) is not being blocked or hindered. ■ Verify that the connector for the ADF Bin Full sensor is fully seated. Use the Diagnostics Sensor test to test this sensor. See Scanner tests. Run the diagnostic program from the control panel and manually move the flag to simulate a full ADF bin. If the status fails to change, verify the sensor wiring. Clean or replace the sensor if necessary.
ADF Paper Jam	Media is jammed in the ADF.	Clear the jam. Note if anything that is unusual about the source media might be causing the jam (see Media specifications). If the message persists, verify that the clear mylar sheet, the ADF pickup rollers, and the separation pad are correctly installed. If components are worn or excessively dirty, clean or replace them. Also see Solving repeated jams. Check to see whether the ADF read motor is rotating or attempting to pull paper through the paper path (see figure 7-5). Use the ADF read motor diagnostic test (see Scanner tests). If the ADF read motor is not rotating, verify that the connectors at CN103, on the scanner controller board,

Table 7-1 Control-panel messages (continued)

Control panel message	Description	Recommended action
		and at the motor are fully seated (see figure 7-3). A defective registration sensor (see figure 7-4) can also create an **ADF PAPER JAM** message. Verify that the movement of this sensor flag is not hindered. Use the Diagnostics Sensor test to test this sensor. See Scanner tests. Run the diagnostic program from the control panel and manually move the flag to see if the status changes. If the status fails to change, check the sensor wiring. Clean or replace the sensor if necessary.
ADF PICK ERROR	The ADF experienced an error while picking media.	Make sure that your original contains no more than 50 pages. Note if anything that is unusual about the source media might be causing the jam (see Media specifications). Check the status of the pickup rollers and clean or replace them if necessary. See Cleaning the digital sender. Verify that the pickup roller assembly and separation pad are correctly installed. Check to see whether the ADF read motor (see figure 7-5) is rotating and attempting to pull paper through the paper path. Use the ADF read motor diagnostic test (see Scanner tests). If the ADF read motor is not rotating, verify that the connectors at CN103, on the scanner controller board (see figure 7-3) and at the motor are fully seated.
ADF SKEW ERROR	Media has become skewed in the ADF.	Make sure that the paper guides are aligned on the sides of the originals, and that all of the originals are the same size. Remove the remaining media from the ADF and close the ADF cover. Follow the instructions in the onscreen dialog box.
Authentication information is incorrect. Please re-enter information.	A user name or password is incorrect.	Type the information again. Verify that the settings on the **Authentication** tab of the HP MFP DSS Configuration Utility are correct for the network.
AUTHENTICATION REQUIRED	Authentication has been enabled for this feature or destination. A user name and password are required.	Type the user name and password, or contact the network administrator.
Canceling send job	The device is canceling a send job. The message continues while the job is stopped and any remaining data is discarded.	Wait for the cancellation process to complete.
CHECK CABLES CHECK SCANNER LOCK To continue turn off then on	The scanner might be locked or the interface cable might be seated incorrectly.	Make sure that the scanner is unlocked and the interface cable is seated correctly.

Table 7-1 Control-panel messages (continued)

Control panel message	Description	Recommended action
		Verify that CN102 (dc power) on the scanner controller board is correctly seated (see figure 7-3). Verify that CN104 (optical head connection) on the scanner controller board is correctly seated (see figure 7-3). Verify that CN101 (formatter connection) on the scanner controller board is correctly seated (see figure 7-3). Also see the solution for the **30.1.8 SCAN FAILURE** error message.
CHECK CABLES Then turn off then on	The cable that connects the scanner to the digital sender is experiencing an error.	Make sure that the scanner is unlocked and the interface cable is seated correctly. Verify that CN102 (dc power) on the scanner controller board is correctly seated (see figure 7-3). Verify that CN104 (optical head connection) on the scanner controller board is correctly seated (see figure 7-3). Verify that CN101 (formatter connection) on the scanner controller board is correctly seated (see figure 7-3). Also see the solution for the **30.1.8 SCAN FAILURE** error message.
Check the glass and remove any paper, then press START	A digital send job has been performed from the scanner glass, but the original document needs to be removed.	Remove the original document from the scanner glass and press START.
Clearing event log	The device is clearing the event log.	Wait for the procedure to be completed.
CLOSE TOP COVER	The top cover is open.	Close the top cover.
Digital Send server is not responding Contact administrator	The digital sender cannot communicate with the HP DSS server.	Check the network connection. Verify that the HP DSS server is running. Contact the network administrator.
E-mail Gateway did not accept the job because the attachment was too large.	The scanned documents have exceeded the size limit of the server.	Send the job again by using a lower resolution, smaller file size setting, or fewer pages. See the *HP 9200c Digital Sender User Guide* to learn how to reduce the size of the attachment.
E-mail Gateway did not respond. Job failed.	A gateway has exceeded the time-out value.	Try resending. If the problem persists, verify that the SMTP server is functional. See Solving e-mail problems.
E-mail Gateway rejected the job because of the addressing information. Job failed.	One or more of the e-mail addresses is incorrect.	Double check the e-mail addresses and send the job again.
Error executing Digital Send job. Job failed.	A digital send job has failed and cannot be delivered.	Verify that you have typed the correct recipient e-mail addresses and try sending again. If this error persists, verify that the SMTP server is functioning correctly. See Solving e-mail problems.

Table 7-1 Control-panel messages (continued)

Control panel message	Description	Recommended action
Flash File System is Full	The flash disk or file system has reached maximum capacity.	Wait for all pending jobs to be sent and then try again.
Flash is Write Protected	The flash file is protected, and no new files can be written to it.	To enable writing to the flash memory, use HP Web Jetadmin to turn off write protection. To remove this message from the display, turn the device off and then on.
Flatbed Cover Open	The digital sender flatbed cover is open.	The flatbed open sensor is located in the base of the scanner assembly (see figure 7-6). A black plunger protrudes through the base of the flatbed and closes the sensor when the cover is closed. Verify that nothing is hindering or blocking the movement of this plunger, particularly if the cover has just been replaced. Use the Diagnostics Sensors test allows you to test this sensor. See Scanner tests. Run the diagnostic program from the control panel and manually move the flag to simulate paper in the ADF. If the status fails to change, verify the sensor wiring. Clean or replace the sensor if necessary.
Folder list is full. To add a folder, you must first delete a folder.	The digital sender limits the number of folders that can be established to 512.	Delete an unused folder by using the **Remove** button on the **Folders** tab in the HP MFP DSS Configuration Utility.
Found LDAP Gateway:...	This message appears in response to the **FIND SEND GATEWAYS** menu command.	No action is needed.
Found SMTP Gateway:...	This message appears in response to the **FIND SEND GATEWAYS** menu command.	No action is needed.
Gateways failed	This message appears if you execute the **TEST SEND GATEWAYS** menu item and the test fails.	Check the network connection and contact the network administrator. See Solving network-connectivity problems.
Gateways OK	This message appears if you execute the **TEST SEND GATEWAYS** menu item and the test is successful.	No action is needed.
HP Digital Sending: Delivery Error	A digital send job has failed and cannot be delivered.	Try sending the job again. If you continue to experience problems, check the network connection and contact the network administrator.
Initializing permanent storage	This message appears momentarily during power-up when the device hard disk is initializing.	No action is needed.
Internal disk not functional	The internal hard disk has failed.	Turn the device off and then on. If this message persists, replace the hard disk.
LDAP failed	This message appears if you execute the **TEST LDAP GATEWAYS** menu item and the test fails.	Verify that the network connection is functioning and that the LDAP gateway information is correct. See Solving network-connectivity problems.
LDAP Gateway OK	This message appears if you execute the **TEST LDAP GATEWAYS** menu item and the test is successful.	No action is needed.

Table 7-1 Control-panel messages (continued)

Control panel message	Description	Recommended action
LDAP Server is not responding Contact administrator	The LDAP server has exceeded the time-out value for an address request.	Verify the LDAP server address. Verify that the LDAP server is functioning. See Solving network-connectivity problems. Contact the network administrator.
Name is already added to list	You have tried to add a duplicate name in one of the digital-sender address books.	Try adding a different name.
Network connection required For Digital Sending. Contact administrator.	A digital-sending feature has been configured, but a network connection is not detected.	Verify the network connection. See Solving network-connectivity problems. Contact the network administrator.
Novell Login Required	Novell authentication has been enabled for this destination.	Enter Novell network credentials to gain access to the feature.
Password or name is incorrect. Please enter correct login.	The user name or password was typed incorrectly.	Retype the user name and password. Verify that the settings on the **Authentication** tab of the HP MFP DSS Configuration Utility are correct for your network.
Phone Book is full. To add a phone number, you must first delete a phone number.	The digital sender limits the number of phone numbers that you can add.	Delete an unused phone number to add a new one.
PIN is incorrect. Please re-enter PIN.	The PIN was typed incorrectly.	Retype the PIN.
PIN is incorrect. Please enter a 4-digit number.	The PIN format is incorrect.	Type the 4-digit PIN.
Please refine your search	Your search has returned more results than the device can show.	Try to narrow your search.
Replace Document Feeder Kit	The scan count indicates that it is time to replace the ADF maintenance kit.	Replace the ADF maintenance kit. See ADF maintenance kit.
SCAN CARRIAGE LOCKED Check lock switch, cycle power	The flatbed scanner carriage is locked for shipping.	Turn off the digital sender, unlock the scanner carriage, and turn on the digital sender.
SMTP Failed	This message appears if you execute the **TEST SMTP GATEWAY** menu item and the test fails.	Verify that the network connection is functioning and that the SMTP gateway information is correct. See Solving network-connectivity problems.
SMTP Gateway Not Responding	The SMTP gateway has exceeded a time-out value.	Try sending again. Verify that the SMTP server is functional. See Solving network-connectivity problems. Verify the e-mail server address. See Solving e-mail problems. Contact the network administrator.
SMTP Gateway OK	This message appears if you execute the **TEST SMTP GATEWAY** menu item and the test is successful.	No action is needed.
The Digital Sender is currently processing the maximum number of active jobs allowed. Please try to send your job later.	The digital sender is busy sending other jobs.	Wait and try the job in a few minutes.
The folder you have entered is not a valid folder.	The folder name was typed incorrectly, or the folder does not exist.	Type the folder name correctly, or add the folder.
Too many addresses were found to display. Please refine your search.	Your search has returned more results than the device can show.	Try to narrow your search.

Table 7-1 Control-panel messages (continued)

Control panel message	Description	Recommended action
User name or password is incorrect. Please re-enter.	The user name or password was typed incorrectly.	Retype the user name and password. Verify that the settings on the **Authentication** tab of the HP MFP DSS Configuration Utility are correct for your network.
Windows Login Required to use this feature	The digital send feature that you have selected requires a Windows login.	Provide your Windows network credentials to use the digital-sending feature.
11.XX Internal clock error To continue touch OK	The digital sender real-time clock has experienced an error.	Whenever the digital sender is turned off and then turned on again, set the time and date at the control panel. If the error persists, you might need to replace the formatter.
20 INSUFFICIENT MEMORY To continue touch OK	The scanned document contains more data than can fit in the available memory.	Press START to send the data (some data might be lost), and then try to make the scan job smaller by adjusting the resolution, number of pages, or other job attributes.
22 EIO X BUFFER OVERFLOW To continue touch OK	Too much data was sent to the EIO card in the specified slot (x). An incorrect communications protocol might be in use.	Turn the device off and then on. If this message persists, replace the EIO card.
22 EMBEDDED I/O BUFFER OVERFLOW To continue touch OK	Too much data was sent to the embedded HP Jetdirect server.	Turn the device off and then on. If this message persists, replace the formatter.
30.1.6 SCAN FAILURE	The scanner base fan was reported as non-operational	The scanner base fan (see figure 7-6) operates any time the scanner lamp is illuminated or when the scanner motor is on. It is also on during the power-up sequence. If possible, listen for fan operation during the product power-up. Verify that CN108 on the scanner controller board is correctly seated (see figure 7-3). Verify that the fan connection in the base of the scanner assembly is secure. If all connections appear to be secure and the fan is still not operating, replace the fan.
30.1.8 SCANNER FAILURE	During product power-up, the scanner assembly optical head moves from its “home position” to the calibration strip. If this does not occur, this error appears. The scanner might be locked or a cable may be seated incorrectly.	Open the ADF cover and locate the scanner lock. Visually inspect it to verify that it is in the unlocked position. Turn on the device and observer whether the optical head moves. If it does not move, you might need to remove the flatbed glass and inspect the optical assembly carriage and guide assembly to see if anything is hindering the optical assembly movement. You can manually move the guide to see if anything is impeding the movement. Verify that the scanner motor belt is correctly installed on the optical assembly.

Table 7-1 Control-panel messages (continued)

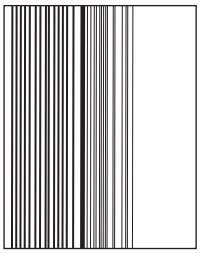
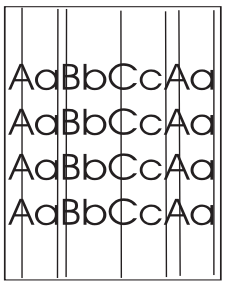
Control panel message	Description	Recommended action
		Verify that CN106 (scanner motor) on the scanner controller board is properly correctly (see figure 7-3). Verify that CN109 (home position sensor) and the connector on the scanner controller board is correctly seated. See figure 7-3.
30.1.10 SCAN FAILURE	The ADF fan was reported as non-operational.	The ADF fan (see figure 7-5) only operates during a scan process. Remove the ADF cover and observe the fan operation during the scanning process. Verify that the fan connection on the ADF intermediate PCA is fully seated. If the fan still does not rotate during the scan process, replace the ADF assembly.
30.1.18 SCAN FAILURE	There is no communication between the optical assembly and the formatter board.	Verify that CN104 (optical head) on the scanner controller board is correctly seated. If the failure persists, replace the optical assembly (see figure 7-3).
40 BAD EIO X TRANSMISSION To continue touch OK	The connection between the digital sender and the EIO card in the specified slot has been broken.	Touch **OK** to clear the error message and continue sending.
40 EMBEDDED I/O BAD TRANSMISSION To continue touch OK	The connection with the embedded HP Jetdirect network interface has failed.	Turn the digital sender off and then on again. If this message persists, replace the formatter.
52.XY ERROR To continue turn off then on	The scanner has encountered an error.	Turn the digital sender off and then on again. If this message persists, replace the flatbed unit assembly.
57.XX ERROR To continue turn off then on	The fan motor has encountered an error.	Turn the digital sender off and then on again. If this message persists, replace the scanner motor fan.
64 ERROR To continue turn off then on	A scan buffer error occurred.	Turn the digital sender off and then on again. If this message persists, replace the formatter.
68.X STORAGE ERROR SETTINGS CHANGED To continue touch OK	An error occurred in the device nonvolatile memory (NVRAM), and one or more digital sender settings are invalid and have been reset to the factory-default settings. Scanning can continue, but some unexpected functions might occur if an error occurred in the permanent storage.	Pressing START should clear the message. If this message persists, replace the formatter.
68.X PERMANENT STORAGE FULL To continue touch OK	The device NVRAM is full. Some settings that are saved in the NVRAM might have been reset to the factory defaults. Sending can continue, but some unexpected functions might result because the error occurred in permanent storage.	Pressing START should clear the message. If the message is not cleared, turn the digital sender off and then turn on again. If this message persists, replace the formatter.
68.X PERMANENT STORAGE WRITE FAIL To continue touch OK	The digital sender NVRAM is failing to write. Digital sending can continue, but	Pressing START should clear the message. If the message is not cleared, turn the digital sender off and then on again.

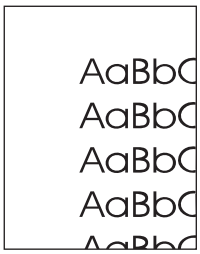
Table 7-1 Control-panel messages (continued)

Control panel message	Description	Recommended action
	some unexpected functions might occur if an error occurred in permanent storage.	If this message persists, replace the formatter.

Resolving operational issues

Use the troubleshooting instructions in the following table to deal with some basic digital sender operational issues.

Problem	Action to take
The digital sender is not working.	■ Make sure that the power cord is securely connected to the device and that it is plugged into the electrical outlet. ■ Make sure that the digital sender is turned on. ■ Verify that the network cable is securely connected to the device. ■ Clear any error messages on the control-panel display. ■ If the digital sender has successfully powered up and completed all of its internal diagnostics, the formatter LED will flash on and off approximately once every second. Verify that the formatter LED and Jetdirect LED appear to be functioning normally. See Understanding digital-sender LEDs.
The digital sender does not accept your password.	■ Verify that you are using the correct password. ■ Passwords are case-sensitive. Make sure that you type your password with the correct combination of uppercase and lowercase letters. ■ Verify that the settings on the **Authentication** tab of the HP MFP DSS Configuration Utility are correct for your network.
Scanned pages are blank or have repeated patterns when using the ADF. 	Make sure that a page is not already on the glass.
Vertical streaks appear on the scanned image. 	Clean the ADF and glass. See Cleaning the digital sender. If that does not solve the problem, replace the mylar sheet. See Replacing the mylar sheet.

Problem	Action to take
Placement of the scanned image appears to be wrong.  	■ Make sure that the document that you are trying to send is placed correctly in the ADF or on the glass. ■ The scanner might need to be recalibrated. See Calibrating the scanner for instructions.
The image-quality is poor.	■ Make sure that the document that you are trying to send is placed correctly in the ADF or on the glass. ■ Make sure that the glass is clean. If the glass is dirty, clean it with a dry, soft cloth. ■ If you are scanning from the ADF, try scanning from the glass. If the image that was scanned from the glass is better, clean the ADF. See Cleaning the digital sender for complete cleaning procedures. ■ If possible, try changing some of the scan settings, such as resolution or file type, in order to improve the image quality.
The ADF feeds multiple sheets, skews pages, or jams frequently.	■ Adjust the guides so that they are snug against the stack but do not bend the stack. ■ The maximum number of pages the ADF can hold is 50 or fewer, depending on the type of media that is being loaded. ■ The maximum number of pages the output tray can hold is 50 or fewer. Make sure that more pages are not stacking up in the output tray. ■ The type of media that is being loaded might not meet the required specifications. See Media specifications for media specifications. ■ Clean the separation pad and the rollers. See Cleaning the digital sender. ■ If the mylar sheet has recently been replaced, verify that it was correctly installed. See the documentation that came with the mylar sheets. ■ If the roller assembly or separation pad has recently been replaced, verify that it is correctly installed. See the documentation that came with the replacement part. ■ If users have been feeding unsupported items through the ADF (for example, carbon copy forms), the rollers might have accumulated a residue or been damaged. You might need to clean the rollers (see Cleaning the digital sender) or replace the rollers (see ADF maintenance kit).

Problem	Action to take
The "Find Servers" process in the HP MFP DSS Configuration Utility was not able to find an SMTP server.	■ Verify that an active SMTP server is on the network. ■ Click **Add…** on the **E-Mail** tab, and then type in the host name or IP address of the SMTP server. After typing in the address, click the **Test** button to verify that the software can contact the server. ■ If testing the server is unsuccessful, see Solving e-mail problems.
The "Find Servers" process in the HP MFP DSS Configuration Utility was not able to find an LDAP server.	■ Verify that you have a functioning LDAP server on the network. ■ Type the host name or IP address of the LDAP server into the **LDAP Server** text box on the **Authentication** tab. After typing in the address, click the **Test** button to verify that the software can contact the server. ■ If testing the server is unsuccessful, see Solving e-mail problems.
An e-mail transmission did not arrive at the destination address.	■ If you typed the e-mail address at the control panel, resend the e-mail message, making sure that you type the address correctly and that it is in the correct format (has no spaces, contains the required @ sign, and contains the required period). ■ Resend the e-mail. Make sure that you type the name in the correct format in the **From:** field so that the message is not rejected and so that you receive a message back if the e-mail transmission fails. ■ Check the activity log to see if it reflects a problem.
A fax transmission did not arrive at the destination fax machine.	■ If you typed the fax number at the control panel, resend the document, making sure that you type the fax number correctly. ■ The receiving fax machine might be turned off or experiencing an error condition (such as out of paper or toner). Contact the recipient. ■ The system might be busy sending other digital send jobs. The system might also have reached its maximum limit of pending jobs. Wait and then try again. ■ For information about the transmission, check any fax notifications that might have been returned (for example, e-mail notifications in your e-mail inbox, if these reports are available with your fax service). ■ Resend the fax. If the problem persists, check the log for the fax transport that is being used. Logs often contain information about why a fax transmission was unsuccessful.

Problem	Action to take
A document sent to a folder did not arrive at the destination folder.	■ Resend the document. ■ See if the file name was modified to resolve a duplicate-file-name error. ■ Check the activity log for error messages.
The bottom of a page that you sent is cut off.	If the document was sent from the glass, the document page might be too long. The maximum length for documents scanned from the glass is A4, or 210 x 297 mm (8.27 x 11.69 inches).
The control panel is using the wrong language.	Use the control-panel menu to set the correct language. 1 Push the MENU button. 2 Select **CONFIGURE DEVICE** on the control-panel display (the third menu item). 3 Touch **SYSTEM SETUP** (the fourth menu item). 4 Scroll down and touch **LANGUAGE** (the last menu item). 5 Touch the correct language.
Characters on the control-panel display are misaligned.	Perform the control panel calibration routine. See Calibrating the control panel.

Understanding digital-sender LEDs

Three LEDs on the formatter indicate that the digital sender is functioning correctly.

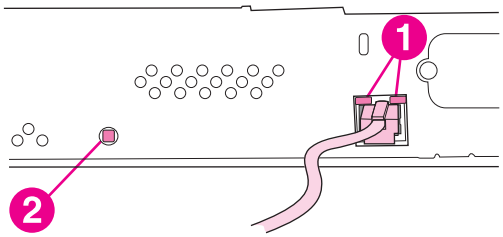


Figure 7-1 Digital-sender LEDs

1 HP Jetdirect LEDs (“link” LEDs)

2 Formatter “heartbeat” LED

HP Jetdirect LEDs

The embedded HP Jetdirect server has two LEDs, one for each possible link speed. When an LED is lit, the server is functioning correctly. A link failure is indicated when both LEDs are off.

For link failures, check all of the network cable connections. In addition, you can try to manually configure the link settings on the embedded server by using the digital sender control-panel menus.

1. Touch **Menu**.
2. Touch **CONFIGURE DEVICE**.
3. Touch **I/O**.
4. Touch **EMBEDDED JETDIRECT MENU**
5. Touch **LINK SPEED**. Select the appropriate link speed.

NOTE See Solving network-connectivity problems for more information about troubleshooting HP Jetdirect and other network issues.

Formatter LED

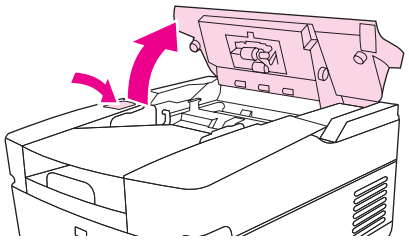
The formatter LED indicates that the formatter is functioning correctly. While the digital sender is initializing after you turn it on, the LED blinks rapidly, and then turns off. When the digital sender has finished the initialization sequence, the heartbeat LED pulses on and off.

If the formatter LED is off, the formatter might have a problem. Remove the formatter cage and re-seat the memory DIMMs and the flash memory card. Then make sure that the formatter cage is seated correctly. If the problem persists, replace the formatter. See Formatter assembly.

Clearing jams

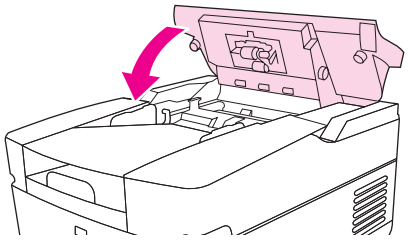
If a jam message appears on the control-panel display, follow these instructions to clear jams in the digital-sender ADF.

1 Press the release button to open the ADF cover.



2 Remove any jammed media from this area. Make sure that you have removed all of the pieces of torn media.

3 Close the ADF cover.



When clearing jams, be very careful not to tear jammed media. If a small piece of media remains in the digital sender, it could cause additional jams. If jams are a recurring problem, see Solving repeated jams.

Solving repeated jams

Try the following methods to solve repeated jams in the digital sender:

- Adjust the guides so that they are snug against the stack but do not bend the stack.
- The maximum number of pages the ADF can hold is 50 or fewer, depending on the type of media that is being loaded.
- The maximum number of pages the output tray can hold is 50 or fewer. Make sure that more pages are not stacking up in the output tray.
- The type of media that is being loaded might not meet the required specifications.
- Clean the separation pad and the rollers. See Cleaning the digital sender.
- If the mylar sheet has recently been replaced, verify that it was correctly installed. See the documentation that came with the mylar sheets.
- If the roller assembly or separation pad has recently been replaced, verify that it is correctly installed. See the documentation that came with the replacement part.

- If users have been feeding unsupported items through the ADF (for example, carbon-copy forms), the rollers might have accumulated a residue or been damaged. You might need to clean the rollers (see Cleaning the digital sender) or replace the rollers (see ADF maintenance kit).

Solving e-mail problems

During the configuration of the HP DSS program, you must locate the SMTP server and LDAP server on your network and test them to make sure that they are functional. On most standard networks, using the **Find Servers** and **Test** buttons in the HP MFP DSS Configuration Utility will successfully find and test the servers. However, in some cases, the discovery process might fail to find the SMTP or LDAP server. If this is the case, use a computer and the instructions in the following sections to find and test the server.

Finding the LDAP server address

The LDAP Find Servers function searches the network by querying DNS servers and MFPs that have been configured for LDAP. Servers that can provide LDAP functionality include e-mail servers and directory servers such as the following:

- Microsoft Exchange 5.5 and Exchange 2000 servers
- Microsoft Active Directory servers
- Novell Directory Services servers

If you have one of these types of servers on your network and know the address, use the computer keyboard and try typing it into the **LDAP Server** text box on the **Authentication** tab. Then click the **Find Settings** button to retrieve the settings.

Verifying an LDAP address

Use this procedure to verify that the LDAP server address that you are using is valid.

1. Open a Web browser.
2. Using the computer keyboard type `LDAP://[hostname or IP address of LDAP server]` into the browser address box, using the host name or IP address of the LDAP server that you are using for digital sending.
3. Press Enter on the keyboard. If the **Find People** dialog box appears, the LDAP server address is valid. If the dialog box does not appear, contact your network administrator to verify that the server is functioning.

Troubleshooting the LDAP Find Settings process

On the computer click the **Find Settings** button on the **Authentication** tab, the program uses the entries in the **Accessing the LDAP Server** and **Searching the Database** sections of the tab to find the correct settings for your LDAP server. Setting or changing these entries can affect the success of the Find Settings process. Try using the following settings:

1. Select **Anonymous** from the **LDAP Server Bind Method** drop-down list, and then delete any data from the **Search Root** text box so that it is blank.
2. Click **Find Settings**.
3. Click **Test** and type a user name and password to test the software's ability to retrieve an e-mail address. If the test succeeds, your LDAP configuration is complete. If the test fails, continue on to Step 4.

4 Select **Simple** or **Windows Negotiated (SPNEGO)** from the **LDAP Server Bind Method** drop-down list. Select **Use MFP user's credentials**.

NOTE If you are troubleshooting LDAP settings on the **Addressing** tab or in the **Configure MFP Addressing** settings, the options that appear are slightly different. If you use the Simple or Windows Negotiated bind method, you must specify a user name and password.

5 Click **Find Settings**.

6 Click **Test** and type a user name and password to test the software's ability to retrieve an e-mail address. If the test succeeds, your LDAP configuration is complete. If the test fails, consult with the network administrator.

Finding an SMTP server address

The SMTP Find Server function queries the DNS server for the Mail Exchanger (MX) record. If the Find Servers process fails, try the following steps:

1 Verify that the HP DSS server has obtained valid DNS settings by typing `ipconfig / all` at a computer command prompt.

2 If the ipconfig command returns valid DNS settings, ping the DNS server address to verify communication with the server. For example, type `ping 10.0.0.2` at a command prompt, where 10.0.0.2 is the IP address of the DNS server.

If these two tests succeed, you should have a valid SMTP server. Use the **Add** button on the **E-mail** tab to specify the host name or IP address of the SMTP server, and then use the **Test** button to test the server.

If the test process fails, verify that you have specified the correct SMTP server address. If you have specified the correct address, use a ping command to verify communication with the server. For example, type `ping 10.0.0.2` at a command prompt, where 10.0.0.2 is the IP address of the SMTP server. If the ping command fails, contact the network or mail administrator to verify the network and SMTP server functionality.

Verifying an SMTP address

Use this procedure to verify that the SMTP server address is valid.

1 On the computer, click **Start**, and then click **Run**, and then type `CMD` in the **Open** text box to open a command prompt.

2 Type `Telnet [hostname or IP address of SMTP server] 25`, using the hostname or IP address of the SMTP server you are using for digital sending.

3 Press Enter. You should see a message similar to the following:

```
220 samplemail.hp.com ESMTP Server <Microsoft Exchange Internet Mail
Service 5.5> ready.
```

If you see this message, the SMTP server address is valid. If you do not see this message, contact the network or mail administrator to verify that the server is functioning.

Solving network-connectivity problems

Embedded LAN troubleshooting

Although networking is integrated, the embedded LAN has additional features to assist in troubleshooting. These include the following features:

- The ability to turn on and turn off the embedded networking
- An internal diagnostic to check the networking hardware
- The ability to initiate communication from the digital sender to other network devices to check communication paths
- The ability to upgrade the embedded LAN separately from the digital-sender firmware
- Procedures to upgrade the embedded LAN by installing new digital sender firmware (through the networking port)
- A Save + Restore capability for formatter exchanges

Error codes

Some embedded LAN error codes are the same as those for an EIO card. In these cases, the embedded LAN is identified as EIO 4. In other cases, because the embedded LAN is part of the digital sender firmware, the LAN error codes are within the 49.X series.

If problems exist with the embedded LAN, open the **Configure Device** menu and then select the **I/O** menu. If **Embedded Jetdirect Menu** does not appear, or if the JDI is disabled or is not installed, do *not* look at the LEDs on the back of the digital sender next to the RJ-45 connector (10/100 LEDs). These LEDs are controlled by hardware and are active regardless of the state of the embedded LAN.

LAN diagnostics

Two diagnostic menus are available on the control-panel display. One of the menus is unique to the digital sender diagnostics and the other is unique to the embedded LAN in the **I/O** submenu. The following are the embedded LAN diagnostics:

- Loopback test
- Ping test
- Ping results

Loopback test

Perform a loopback test to check for hardware errors in the embedded LAN. The loopback test is designed to operate for a few hours, overnight, or during the weekend. When it is operating, the digital sender cannot accept network traffic such as digital send jobs.

Use the loopback test to help detect digital sender problems and embedded LAN problems that might be caused by hardware or basic firmware problems. This is done by eliminating the network as a variable in the troubleshooting process.

If a loopback test fails, digital sender or embedded LAN updates might be required, or the formatter might need to be replaced.

NOTE If the digital sender fails before you open the **Loopback** menu item, remove the LAN cable, perform a cold reset on the digital sender, and then perform the loopback test.

Ping test

Perform a ping test to check for network connectivity.

A ping test is designed to troubleshoot TCP/IP network connectivity issues by using key parts of the functionality from the ping utility on Microsoft Windows systems. All Jetdirect products can respond to ping requests, but the embedded LAN can initiate ping requests. All TCP/IP implementations, such as ICMP Echo Response, are required to respond to ping requests.

The following are the ping-test parameters:

- **Destination IP address**: The IP address that you want to contact
- **Packet size**: How many octets of data to send
- **Timeout**: The number of seconds to wait for a response
- **Count**: The number of packets to send

The following are the recommended settings for the ping test:

- **Destination IP address**: Use the local router and then use the remote nodes
- **Packet size**: 64 bytes and then 1,460
- **Timeout**: 1 second (more time if using a WAN connection)
- **Count**: 4

Ping results

The following information is available from the ping test:

- **Packets Sent**: The total number of ICMP packets that were sent to the remote host during the test (or during the most recent test)
- **Packets Received**: The total number of ICMP packets that were received from the remote host during the test (or during the most recent test)
- **Percent Lost**: The percentage of ICMP packets that were sent but not received from the remote host during the test (or during the most recent test)
- **RTT Min**: The minimum time (in milliseconds) from when an ICMP packet is sent until it is returned from the remote host
- **RTT Max**: The maximum time (in milliseconds) from when an ICMP packet is sent until it is returned from the remote host
- **RTT Average**: The average time (in milliseconds) from when an ICMP packet is sent until it is returned from the remote host (total time/number of packets)

The **View Ping Results** menu indicates whether a ping test is in progress. If a ping test is in progress, then the user can select a menu item to refresh the ping results. The results are not dynamically updated in most cases.

To enable or disable the LAN

1. Turn off the digital sender.
2. Turn on the digital sender
3. When the digital sender begins its memory count, press and hold the #6 key on the control panel.
4. When all three status LEDs are illuminated, release the #6 key.
5. Press the #3 key to scroll to the **ENABLE/DISABLE EMBEDDED LAN** selection.
6. Press the #6 key once to initiate the enable or disable routine. The digital sender will continue its boot-up sequence.

Hard-failure troubleshooting for the embedded LAN

If a 49, 79, or 8X error or equivalent occurs, determine if the environment outside of the digital sender is causing the problem or if the problem is in the digital sender.

NOTE Make a note of the digital-sender network configuration before starting this process.

1. Turn off the digital sender.
2. Remove the network cable.
3. Turn on the digital sender and disable the embedded LAN. (If the test fails, a hardware problem exists. If the test succeeds, go to step 4.)
4. Turn off the digital sender.
5. Turn on the digital sender and enable the embedded LAN. (If the test fails, go to step 6. If the test succeeds, go to step 8.)
6. Turn off the digital sender.
7. Turn on the digital sender and perform a cold reset. (If the test fails, a hardware problem exists. If the test succeeds, go to step 8.)
8. Select the **Embedded Jetdirect Menu** in the **I/O** submenu.
9. Select the **Diagnostics** menu, and select the **Loopback Test**.
10. In the **Loopback Test** menu, select **Execute**. This begins a continuous diagnostic that is only stopped by using a power cycle. A failure is reported with an error message on the control panel. (If the test fails, a hardware problem exists. If the test succeeds, go to step 11.)
11. Turn off the digital sender.
12. Install the network cable.
13. Turn on the digital sender.
14. Restore the network configuration (if necessary).

If the test succeeds, the problem has not been diagnosed. If the test fails, the problem might be a network-firmware issue. Perform a standard Jetdirect-firmware-troubleshooting procedure, and disable all of the unused network protocols and services.

If the digital sender fails when the embedded LAN is enabled and the network cable is unplugged, disable the embedded LAN and upgrade the digital sender by installing the .RFU file.

When enabled, the embedded LAN supports the traditional methods of upgrading a Jetdirect device (FTP, HTTP, Web Jetadmin). In addition, the .RFU is upgraded when the embedded LAN is enabled or disabled.

Connectivity problems

Use the following procedure if the digital sender and the network configuration information are correct, but the network digital sender connectivity is not working.

1. Make a note of the digital sender network-configuration information.
2. Select the **Embedded Jetdirect Menu** in the **I/O** submenu.
3. Select the **Diagnostics** menu, and select the **Loopback Test**.
4. In the **Loopback Test** menu, select **Execute**. This begins a continuous diagnostic that is only stopped by using a power cycle. A failure is reported in an error message that appears on the control panel. (If the test fails, a hardware problem exists. If the test succeeds, go to step 5.)
5. Turn off the digital sender.
6. Turn on the digital sender.
7. Reenter the network configuration information.
8. Select the **Embedded Jetdirect Menu** in the **I/O** submenu.
9. Select the **Diagnostics** menu, and select the **Ping Test**.
10. Specify the destination IP address (the default is 127.0.0.1).
11. Specify the packet size (64 to 2,048, with a default of 64).
12. Specify the count (0 to 100, with a default of 4).
13. Specify the timeout (1 to 100 seconds, with a default of 1).

NOTE Use different IP addresses to test the network connectivity. Results are obtained by opening the **Ping Results** menu and selecting the individual menu items.

The embedded Jetdirect and EIO cards can work together simultaneously. Or, if necessary as part of troubleshooting, the embedded Jetdirect can be disabled and an EIO card can be installed.

Save + Restore

When you exchange the formatter as part of the troubleshooting process, make sure that you move the compact flash card from the old formatter to the new formatter. Do *not* perform a cold reset when the new formatter is installed with the previous compact flash card. By not using a cold reset, the embedded LAN code can work to modify the network configuration and make it compatible with the new formatter. When a new formatter is installed, the Ethernet MAC address changes because the

MAC address is stored as part of the formatter and not stored in the compact flash card. Some network reconfiguration might be necessary.

Verifying communication over the network

If the HP Jetdirect configuration page shows an IP address for the digital sender, use this procedure to verify that the digital sender is communicating with other devices on the network.

To verify communication over the network

1. On a computer open a command prompt. Click **Start**, click **Run**, and then type `cmd`. An MS-DOS command prompt opens.
2. Type `ping` followed by the IP address. For example, type `ping XXX.XXX.XXX.XXX` where "XXX.XXX.XXX.XXX" is the IP address that appears on the HP Jetdirect configuration page. If the digital sender is communicating over the network, the response is a list of replies from the digital sender.
3. Verify that the IP address is not a duplicate address on the network by using the address resolution protocol (arp -a) command. At the prompt, type `arp -a`. Find the IP address in the list and compare its physical address to the hardware address that is listed on the HP Jetdirect configuration screen in the section called HP Jetdirect Configuration. If the addresses match, all network communications are valid.
4. If you cannot verify that the digital sender is communicating over the network, contact the network administrator.

Using diagnostic tools

Diagnostic tests can be run from the control panel to validate the hardware operation.

Scanner tests

The following diagnostic tests are available for the scanner. They can be found in the **DIAGNOSTICS** menu on the control panel.

- Lower lamp-This test turns on the lamp and a “Lower Lamp (scanner) is on” message appears on the control panel. The user must verify that the lamp is on.
- Sensors-This tests the ADF Empty, Register, ADF Jam Cover, ADF Output Bin Full, and Flatbed Cover Open sensors. The user must manually activate the sensors to verify them.
- ADF input motor-This test turns on the ADF input motor and a “ADF Input Motor is on” message appears on the control panel. The user must verify that the motor is on.
- ADF input reverse-This test turns on the ADF input motor and a “ADF Input Motor is on” message appears on the control panel. The user must verify that the motor is on.
- Flatbed motor-This test turns on the flatbed motor and a “ADF Output Motor is on” message appears on the control panel. The user must verify that the motor is on.
- ADF read motor-This test turns on the ADF read motor and a “ADF Read Motor is on” message appears on the control panel. The user must verify that the motor is on.
- ADF read motor reverse-This test turns on the ADF read motor and a “ADF Read Motor is on” message appears on the control panel. The user must verify that the motor is on.
- ADF duplex solenoid
- ADF LED indicator

Control panel tests

In addition to the scanner tests in the **DIAGNOSTICS** menu, the following diagnostic tests are available for the control panel.

LED test

Follow these instructions to test the functionality of the control-panel LEDs.

1. Press the MENU button on the control panel and select the **DIAGNOSTICS** menu.
2. Select **CONTROL PANEL**, and then select the **LEDs** test. The LEDs test turns each LED on and off in order to verify its functionality.

Display test

Follow these instructions to test the functionality of the control-panel display.

1. Press the MENU button on the control panel and select the **DIAGNOSTICS** menu.
2. Select **CONTROL PANEL**, and then select the **DISPLAY** test. The display test shows test patterns on the control-panel display.

Buttons test

Follow these instructions to test the functionality of the control-panel buttons.

1. Press the MENU button on the control panel and then select the **DIAGNOSTICS** menu.
2. Select **CONTROL PANEL**, and then select the **BUTTONS** test. The buttons test directs you to press each control-panel button to test its functionality.

Touchscreen test

Follow these instructions to test the functionality of the control-panel touchscreen.

1. Press the MENU button on the control panel and touch the **DIAGNOSTICS** menu.
2. Touch **CONTROL PANEL**, and then touch **TOUCHSCREEN**. The touchscreen test divides the screen into a grid and then asks you to touch each section of the grid to test its functionality.

Using the service-mode functions

The following routines are available for resetting the digital sender.

Cold reset

A cold reset resets the values of permanent storage variables back to factory default. Often this is necessary for clearing the HP MFP Digital Sending Server IP address.

The following items are cleared during a cold reset:

- Embedded Jetdirect IP address
- SMTP IP address
- LDAP IP address
- Embedded Web server password
- All control-panel configurable items

The following items are *NOT* cleared during a cold reset:

- Local address book e-mail addresses
- Real-time clock (date and time)
- Page counts and maintenance counts
- Product serial number and formatter number
- Service ID
- Event log

To perform a cold reset

1. Turn off the digital sender.
2. Turn on the digital sender.
3. While the product is performing its memory count, hold down the #6 key. When the three status LEDs are illuminated, release the #6 key.
4. Press the #3 key four times until the display shows **COLD RESET**.
5. Press the #6 key once to initiate the cold reset. The product will continue its boot-up sequence.

NVRAM initialization

The NVRAM initialization (partial) deletes the stored values in the digital sender. The following items are preserved after a partial NVRAM initialization:

- Model number
- Serial number
- Usage data

- Event-log data
- Service ID

NOTE Make a note of the digital sender configuration information before performing an NVRAM initialization. Some configuration information will be lost.

To perform a partial NVRAM initialization

1. Turn off the digital sender.
2. Turn on the digital sender.
3. While the product is performing its memory count, hold down the #9 key. When the three status LEDs are illuminated, release the #9 key.
4. Press the #3 key one time and then press START.
5. Press the #3 key two times until the display reads **NVRAM INIT**.
6. Press the #6 key once to initiate the NVRAM initialization. The product will continue its boot-up sequence.

Disk initialization

The disk-initialization routine reformats each of the read-write file systems on the product hard disk drive. The procedure does not destroy the contents of the permanent storage variables (critical values such as serial numbers, page counts, IP addresses, and maintenance counts).

The following items are deleted during a disk initialization:

- Local address books
- Downloaded Java™ applet files

To perform a disk initialization

1. Turn off the digital sender.
2. Turn on the digital sender.
3. While the product is performing its memory count, hold down the right-hand side of the control-panel START key. When the three status LEDs are illuminated, release the key.
4. Press the #5 key one time until **INITIALIZE DISK** appears.
5. Press the #6 key one time to initiate the disk initialization. The digital sender reboots.

Using the Service menu

The following items are available on the control-panel **Service** menu. The PIN code for access to the **Service** menu is **11920004**.

- Clear Event Log
- Maintenance Kit Count
- Maintenance Kit Interval
- Document Feeder Kit Count
- Document Feeder Kit Interval
- ADF Count
- Flatbed Count
- ADF Simplex Count
- ADF Duplex Count
- Send Scan Count
- Scanner Settings

NOTE The Scanner Settings are used for factory adjustments and should not be used by service personnel. Use the scanner calibration routine to adjust the scanner settings if necessary. (See Calibrating the scanner.)

- Serial Number
- Service ID
- Cold Reset Paper

Using the troubleshooting tools

Using the embedded Web server

The digital sender is equipped with an embedded Web server (EWS), which provides access to information about digital sending and network activities. When a Web server is "embedded," it resides on a hardware device (such as a digital sender) in the firmware, rather than as software that is loaded on a network server. The advantage of an embedded Web server is that it provides an interface to the device that anyone who has a network-connected computer and a standard Web browser can use. You do not need to install or configure any special software.

Features

Use the EWS to view the digital sender and network status and to manage digital sending functions from your computer. With the EWS, you can complete the following tasks:

- View digital-sender status information
- Determine the remaining life on the ADF maintenance kit
- View the control-panel menu configuration
- View device configuration reports
- Receive notification of digital-sender events
- Add or customize links to other Web sites
- Select the language in which to show the embedded Web server pages
- View and change network configuration

To view the EWS Web pages

To view the EWS Web pages, you need to have the IP address for the digital sender. You can find the IP address in one of the two following ways:

- Go to the digital sender and look at the upper-left corner of the touchscreen. The IP address should appear next to the word **Ready**.
- If the IP address does not appear on the touchscreen, press the MENU button on the control panel. Touch the **INFORMATION** menu, and then touch **CONFIGURATION**. The digital-sender configuration information appears on the touchscreen. Touch the **Next** button to see the Jetdirect data. Scroll through the information until you find the IP address.

On a computer, open a Web browser and type the digital sender IP address into the **Address** box to open the EWS Web page.

NOTE You can gain access to the embedded Web server from any operating system that supports the TCP/IP protocol and a Web browser, preferably either Netscape Navigator 4.7x or Microsoft Internet Explorer 5.0x or later. You cannot view the embedded Web server pages from outside a firewall.

Information pages

The pages on the **Information** tab of the embedded Web server provide status information for the digital sender.

- **Device Status page** - This page shows the status message that currently appears on the device control panel.
- **Configuration page** - The digital-sender Configuration page lists device information that includes the serial number, and other information about the device. It also has an **Options** list that lists options that are installed in each DIMM slot, CompactFlash slot, and EIO slot. The **Memory** section of the page lists the digital-sender memory (RAM) information, and the **Security** section lists the status of the security features.
- **Supplies Status page** - This page shows the status of the ADF maintenance kit, and indicates how soon it needs to be replaced.
- **Usage page** - This page shows how many pages the device has scanned and how many of those have been scanned with the ADF and with the flatbed.
- **Device Information page** - This page lists the device name for network management needs, and shows the IP address for the device.

  NOTE The device name can be edited on the **Settings** tab.

- **Control Panel page** - The Control Panel page shows a snapshot of the current state of the control panel. Click the Refresh Image button to refresh the snapshot.

Settings pages

The pages on the **Settings** tab of the EWS contain a variety of digital-sender settings.

- **Configure Device page** - The options on this page are the same as some of the menus on the device control panel. Use this page to configure some of the digital-sending options.
- **E-mail Server page** - Use this page to set up the SMTP server that should be used to send digital sender e-mail alerts (set up on the Alerts page).
- **Alerts page** - Use this page to set up e-mail alerts for many digital-sender events. These alerts can be sent to a list of up to 20 e-mail, mobile device, or Web site destinations.
- **AutoSend page** - Use the AutoSend screen to send product-configuration and usage information periodically to your service provider. This feature establishes a relationship with Hewlett-Packard Company or another service provider to provide services that include support agreements and usage tracking.
- **Security page** - Use the Security page to set up a password to prevent unauthorized users from gaining access to device configuration settings. After a password has been set, any user who opens the EWS Web page only sees the **Information** tab. To view the other tabs, click the Log In link in the upper-right corner of the screen and log in by using the password.

  NOTE For security reasons, it is strongly recommended that you set up a password to protect the digital sender EWS. This prevents unauthorized users from making configuration changes. See Security features for more information about security.

- **Edit Other Links page** - Use this page to add links to the Other Links box, which appears in the lower-left corner of the EWS Web pages.
- **Device Information page** - Use this page to change the device name, asset number, and company contact information.
- **Language page** - Use this page to specify the language that the EWS Web pages use.
- **Date and Time page** - Use this page to set the correct date and time for the device.
- **Wake Time page** - The Wake Time can be set to wake the product up at a certain time on a daily basis. You can have only one wakeup setting per day; however, each day can have a different wakeup time. The sleep mode delay can also be set on this page.

Digital sending pages

You do not have access to any of the configuration settings on the **Digital Sending** tab of the EWS if the digital sender is using the HP DSS service. The pages on the **Digital Sending** tab control the configuration of the digital sending features. Because the digital sender uses the HP DSS service to carry out its digital sending tasks, it must be configured by using the HP MFP DSS Configuration Utility. This centralizes the configuration tasks and helps control security.

Networking pages

The pages on the **Networking** tab of the EWS provide information about the digital sender HP Jetdirect Inside embedded network connection and contain tools that you can use to configure some specific network settings.

Using HP Web Jetadmin software

HP Web Jetadmin is a server-based online tool that system administrators can use to configure all of the ERS and digital senders on their network. If you have a number of HP digital senders and printers, this is a useful tool for controlling and configuring them as a group rather than one by one. For supported host systems and available languages, and to download the software, go to http://www.hp.com/go/webjetadmin.

Using the troubleshooting diagrams

Digital-sender wiring diagram

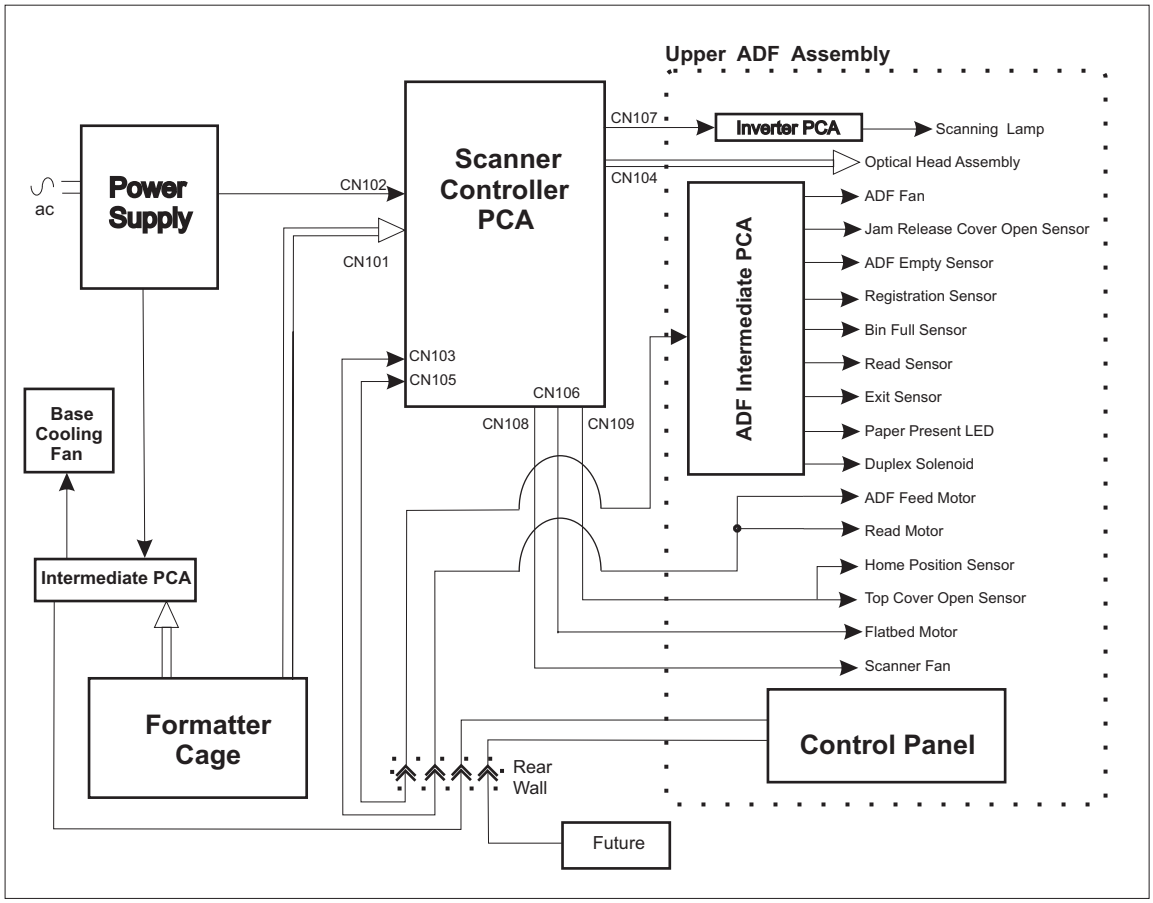


Figure 7-2 Digital sender wiring diagram

Scanner controller board diagram

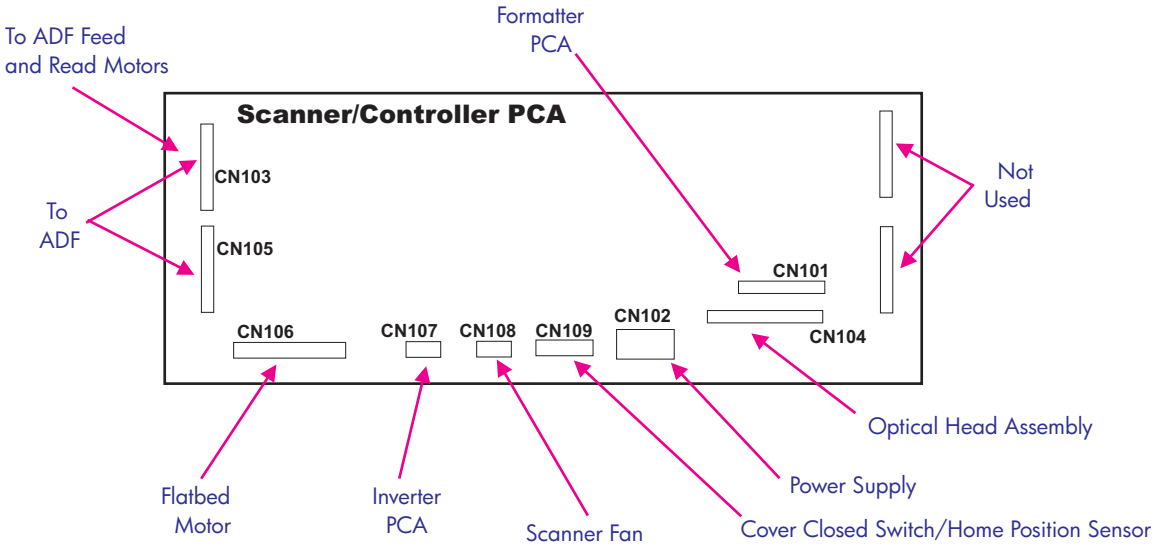


Figure 7-3 Scanner controller board

Parts used in troubleshooting

The following illustrations show the locations of parts that have been mentioned in the troubleshooting procedures.

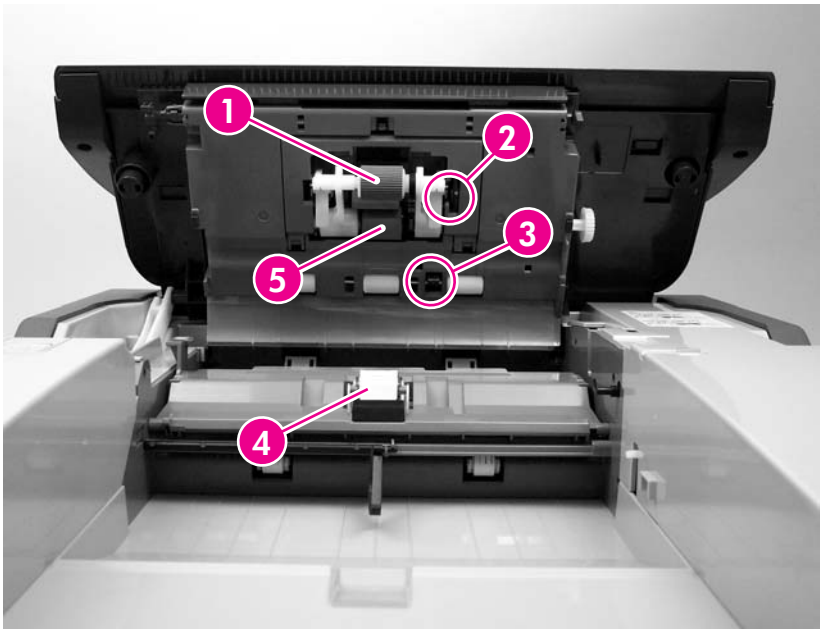


Figure 7-4 ADF troubleshooting parts

1 ADF pickup roller

2 ADF empty sensor flag

3 Registration sensor flag

4 Separation pad

5 ADF separation roller

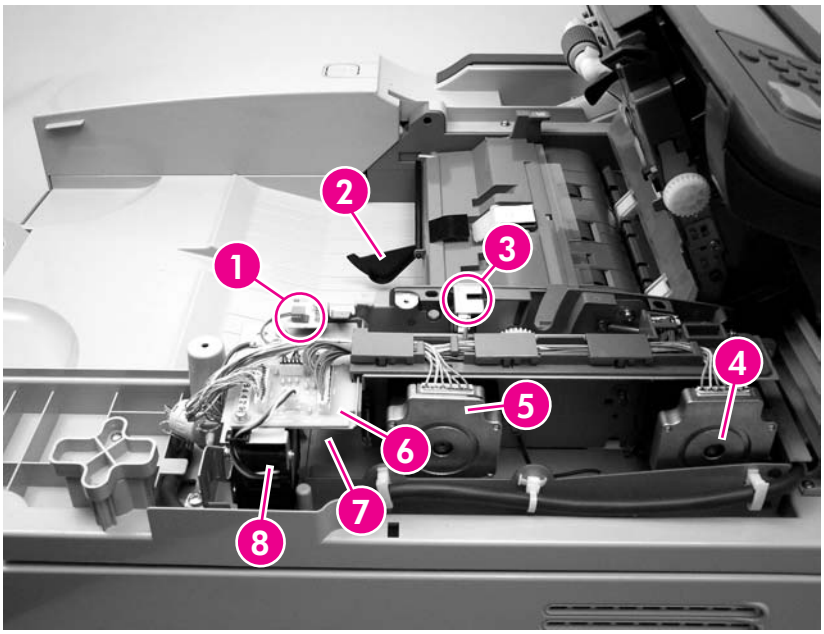


Figure 7-5 ADF internal troubleshooting parts

1 Paper present LED

2 Bin full sensor flag

3 Jam release cover open sensor

4 ADF read motor

5 ADF feed motor

6 ADF intermediate PCA

7 Duplex solenoid (beneath the PCA)

8 ADF cooling fan

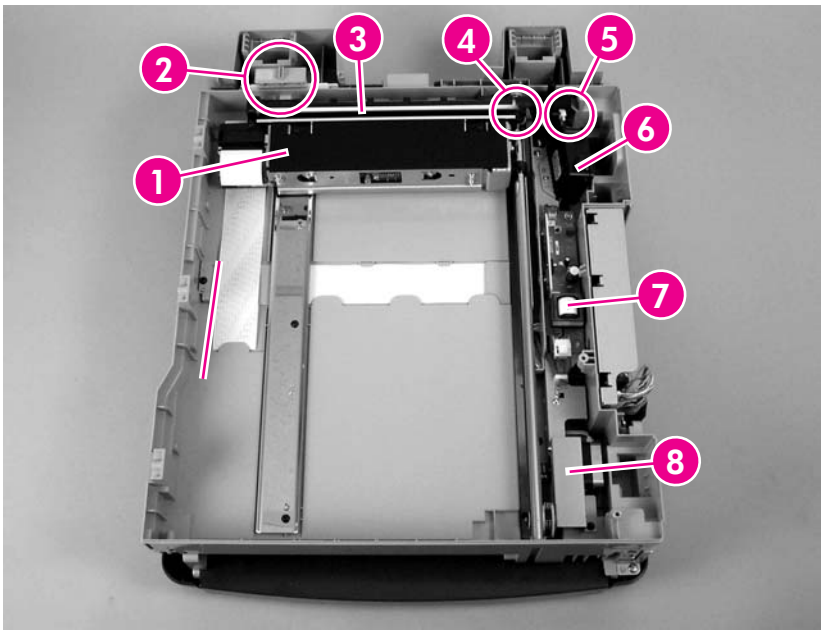


Figure 7-6 Flatbed internal troubleshooting parts

1 Optical assembly

2 Carriage lock assembly

3 Lamp

4 Home position sensor

5 Top cover open sensor

6 Scanner motor fan

7 Inverter

8 Scanner motor

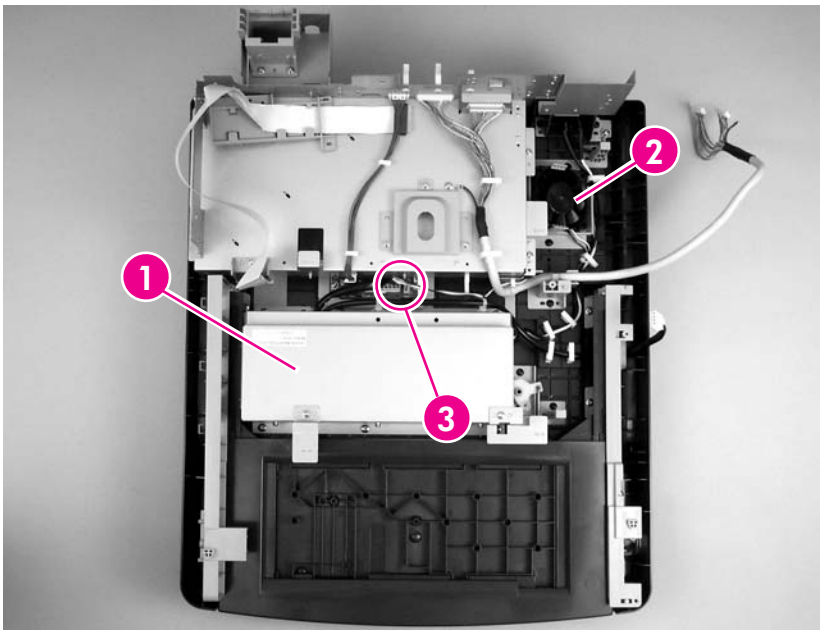


Figure 7-7 Flatbed base troubleshooting parts

1 Power supply

2 Scanner base fan

3 Intermediate PCA

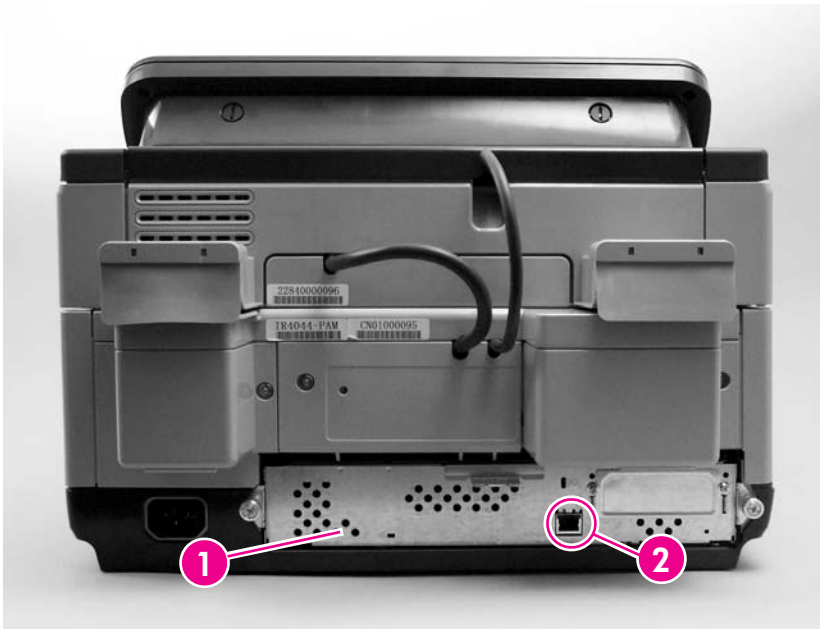


Figure 7-8 Rear troubleshooting parts

1 Formatter cage

2 Embedded Jetdirect I/O port

8 Parts and diagrams

This chapter contains information about the following topics:

- Ordering parts and supplies
- How to use the parts diagrams and lists
- Screws that are used in the digital sender
- Related documentation and software
- Customer replaceable components
- ADF components
- Scanner components
- Alphabetical parts list
- Numerical parts list

Ordering parts and supplies

All standard part numbers that are listed in this chapter can be ordered from the HP Customer Services and Support Organization. To search for HP product parts by using the HP product name, the model number, or the part number, go to www.partsurfer.hp.com. You can also choose the HP product from a list.

To order parts, go to www.hp.com/buyparts.

How to use the parts diagrams and lists

The figures in this chapter illustrate the major field replaceable unit (FRU) assemblies and sub assemblies in the HP 9200c Digital Sender. A table (parts number list) follows each exploded assembly diagram. The tables list a reference number for each specific part, the part number, and a brief description of the part.

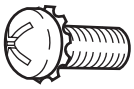
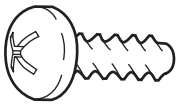
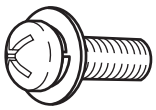
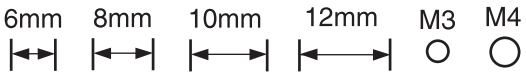
NOTE Parts that do not have a reference number, or part numbers that are not FRUs, cannot be ordered as individual replacement parts. However, all serviceable parts should be available as part of a larger orderable subassembly.

Screws that are used in the digital sender

This table describes the screws used in the digital sender and provides guidelines to help determine where each type of screw is used. The screws can vary in length depending on the thickness of the material that is being fastened. Always note where each type of screw is located and replace each one in its original location.

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

Table 8-1 Common fasteners used in this MFP

Drawing and description	Purpose
 Phillips machine screw with captive star washer	This screw is used to fasten metal to metal when good electrical contact is needed. This screw also provides high resistance to loosening.
 Phillips screw with self-tapping threads	This screw is used to fasten sheet metal or plastic to plastic frames (the deep, coarsely spaced threads provide an increased holding capability while decreasing the possibility of stripping the target hole). **NOTE** To install a self-tapping screw, first turn it counterclockwise to align it with the existing thread pattern, and then carefully turn it clockwise to tighten it. You will feel resistance and hear the screw click when it engages the existing threads in the hole. Do not overtighten the screw. If a self-tapping screw-hole becomes stripped, repair the screw-hole or replace the affected assembly.
 Phillips washer-head machine screw with a broad, flat washer attached to the screw head	This screw is used to fasten sheet metal parts to the sheet metal chassis. It spans large clearance holes and distributes the load by increasing the bearing surface.
Screw measurement guide 	

Related documentation and software

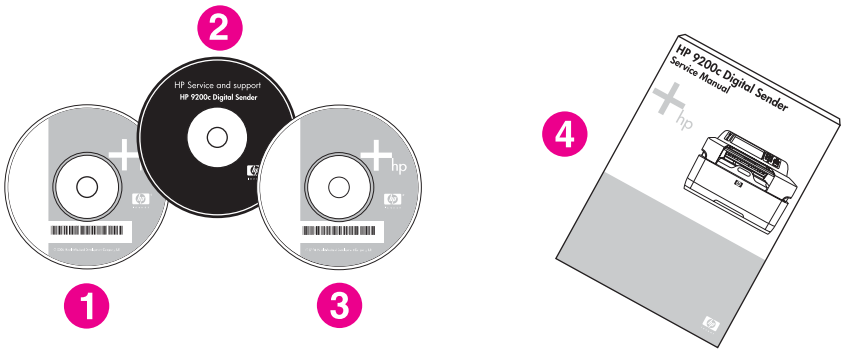


Figure 8-1 Related documentation and software

Table 8-2 Related documentation and software

Reference	Description	Part Number	Quantity
1	HP DSS CD - Trial version 4.0 Software	MKTNG-00472	
2	Service CD	Q5916–60125	
3	Documentation CD	Q5916-60104	
4	HP 9200c DS Service Manual	Q5916–90908	

Customer replaceable components

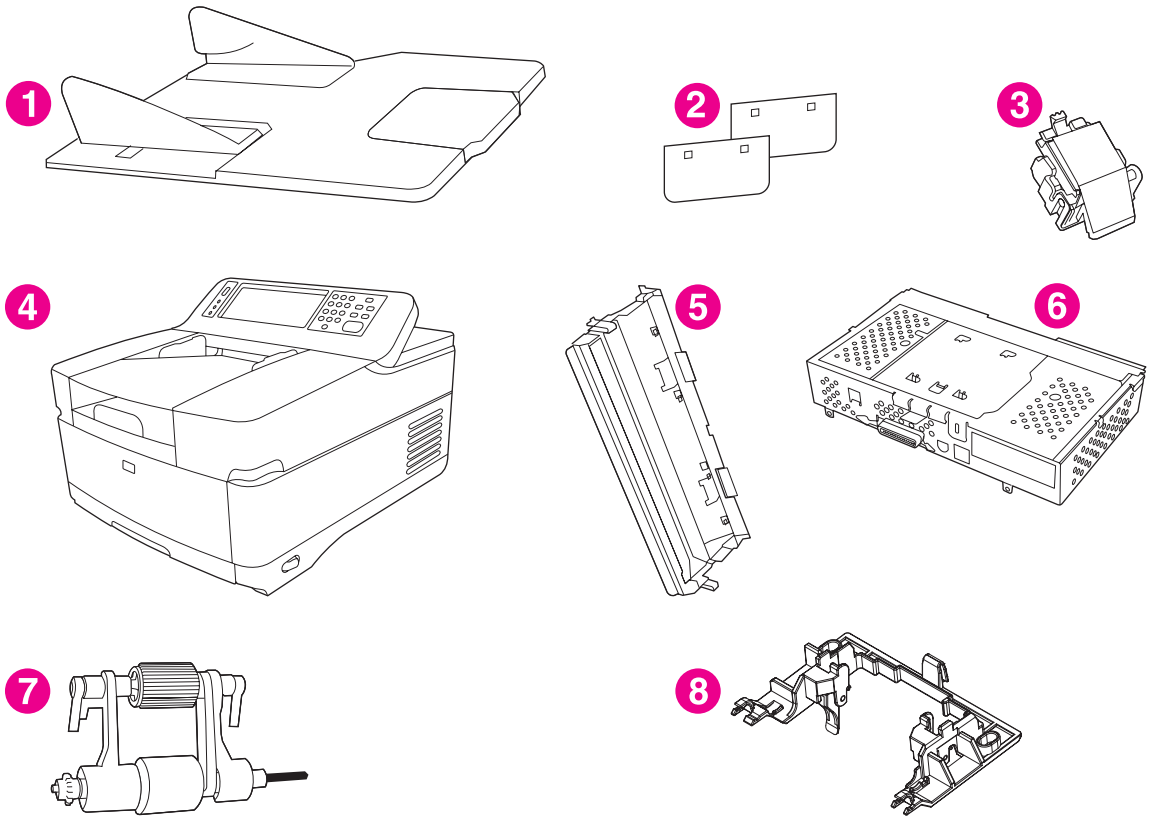


Figure 8-2 Internal components

Table 8-3 Internal components

Reference	Description	Part Number	Quantity
1	Paper input tray, ADF	PF2284K042NI	1
2	Hinge flaps	PF2282K043NI	2
3	Separation pad	PF2282K035NI	1
4	Engine assembly - DS 9200C, Product replacement	Q5916–60103	1
5	Mylar holder assembly	PF2282K043NI	1
6	Formatter assembly	Q5916–67901	1
7	Pickup roller assembly	PF2282K039NI	1
8	Pickup roller cover	PF2282K040NI	1

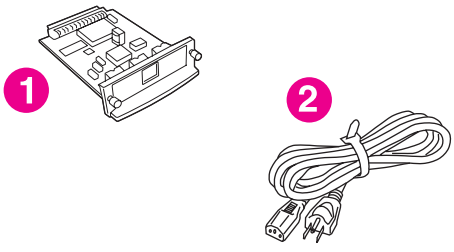


Figure 8-3 Cables and interfaces

Table 8-4 Cables and interfaces

Reference	Description	Part Number	Quantity
1	HP Jetdirect 620n fast Ethernet (10/100 Base-TX) Print server (optional)	J7934A	1
2	Europe Pwr Cord Opt. 902	8121–0516	1
2	UK/HK/Sing Pwr Cord Opt.900	8121–0517	1
2	Danish Pwr Cord Opt.912	8121–0518	1
2	Swiss Pwr Cord Opt.906	8121–0519	1
2	PWR-CORD OPT-917 3–COND 1.9–M-LG	8121–0520	1
2	PWR-CORD OPT-922 3–COND 2.3–M-LG	8120–8707	1
2	PWR-CORD OPT-901 3–COND 1.9–M-LG	8121–0836	1
2	Israel Pwr Cord Opt.919	8121–0521	1
2	Power Cord Option-923 3–Cond 2.3–M-LG	8121–0780	1
2	OPT-903 18–AWG 3–COND 72–IN-LG	8120–8382	1

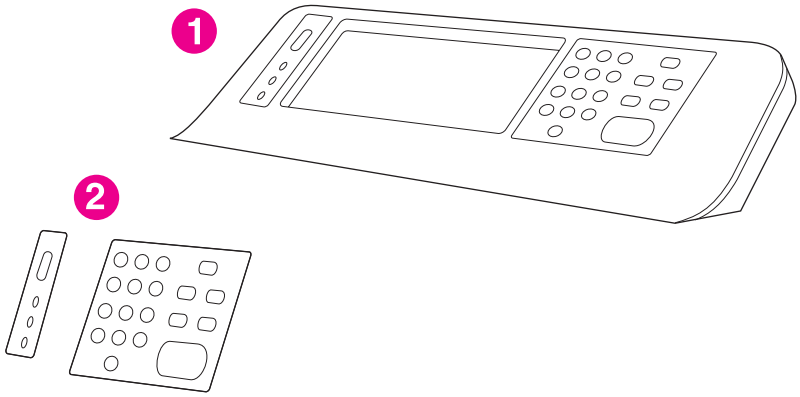


Figure 8-4 Control-panel overlays

Table 8-5 Control-panel overlays

Reference	Description	Part Number	Quantity
1	Assembly - Control Panel	Q5916–60102	1
2	CPO Kit - EN, English Control panel cover	Q5916-60105	1
2	CPO Kit - CS, Czech control panel cover	Q5916-60106	1
2	CPO Kit - DA, Danish control panel cover	Q5916-60107	1
2	CPO Kit - NL, Dutch control panel cover	Q5916-60108	1
2	CPO Kit - FI, Finnish control panel cover	Q5916-60109	1
2	CPO Kit - FR, French control panel cover	Q5916-60110	1
2	CPO Kit - DE, German control panel cover	Q5916-60111	1
2	CPO Kit - HU, Hungarian control panel cover	Q5916-60112	1
2	CPO Kit - IT, Italian control panel cover	Q5916-60113	1
2	CPO Kit - NO, Norwegian control panel cover	Q5916-60114	1
2	CPO Kit - PL, Polish control panel cover	Q5916-60115	1
2	CPO Kit - PT, Portuguese control panel cover	Q5916-60116	1
2	CPO Kit - RU, Russian control panel cover	Q5916-60117	1
2	CPO Kit - ES, Spanish control panel cover	Q5916-60118	1
2	CPO Kit - SV, Swedish control panel cover	Q5916-60119	1
2	CPO Kit - TR, Turkish control panel cover	Q5916-60120	1
2	CPO Kit - KO, Korean control panel cover	Q5916-60121	1
2	CPO Kit - ZHCN, Simplified Chinese control panel cover	Q5916-60122	1
2	CPO Kit - ZHTW, Traditional Chinese control panel cover	Q5916-60123	1

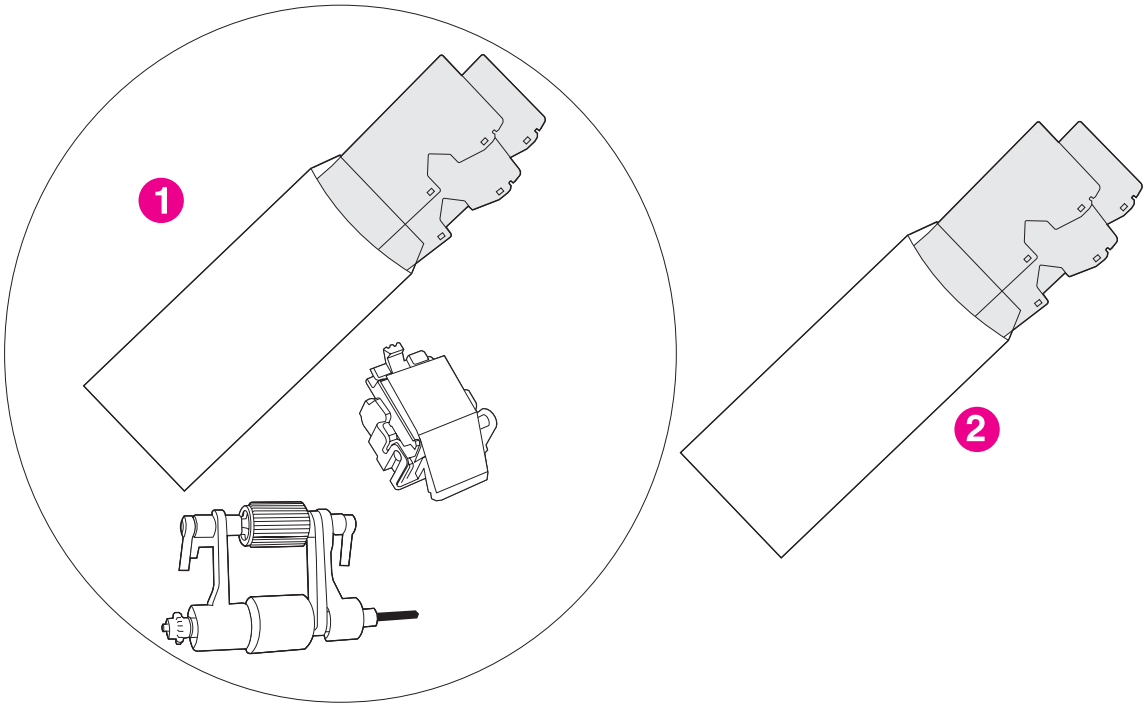


Figure 8-5 Maintenance kits

Table 8-6 Maintenance kits

Reference	Description	Part Number	Quantity
1	ADF maintenance kit	Q5997–67901	1
2	Mylar replacement kit	Q6496–67901	1

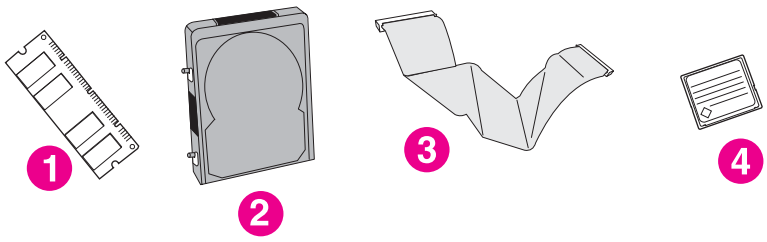


Figure 8-6 Memory

Table 8-7 Memory

Reference	Description	Part Number	Quantity
1	DIMM-256MB DDR 100pin SDRAM Bulk	Q2626–67951	1
2	Hard Disk Drive	J7948–61001	1
3	Hard Disk Drive cable	5851–1827	1
4	DS 9200C Card-32MB Flash xx.xxx.xx	Q2635–67908	1

ADF components

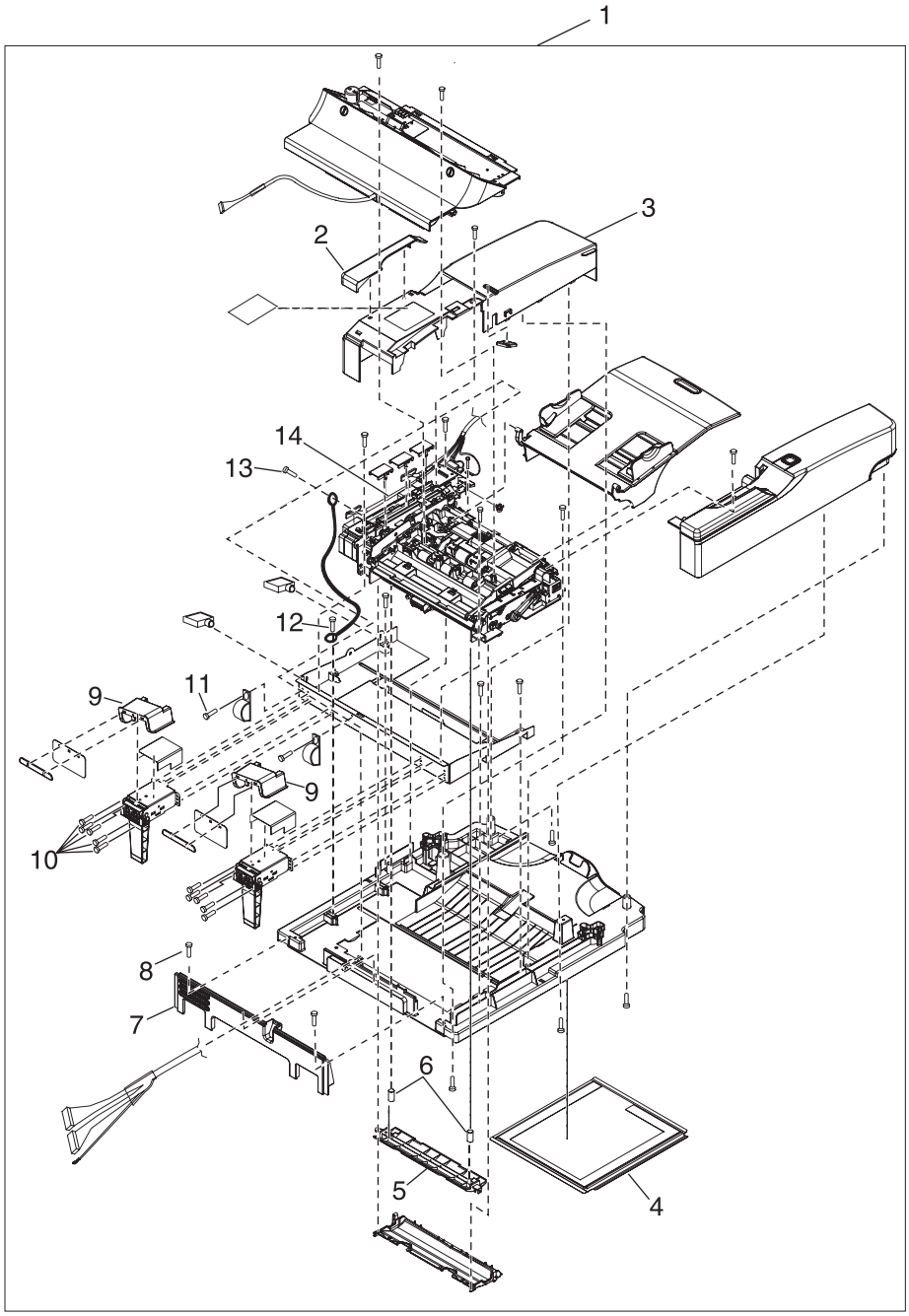


Figure 8-7 ADF Assembly

Table 8-8 ADF Assembly

Reference	Description	Part Number	Quantity
1	ADF Assembly	PF2284–SVPNI	1
2	ADF right cover corner	PF2284P079NI	1
3	ADF right cover	PF2284P044NI	1
4	White scan background	PF2282P339NI	1
5	White mylar backing	PF2282P025NI	1
6	White mylar backing springs	PF2282P343NI	2
7	ADF rear cover	PF2284P086NI	1
8	Screw, ADF, wave 3x10	NS-SCR-00027NI	40
9	Upper hinge cover	PF2284P088NI	2
10	Screw, ADF, 03T060SR-W	NS-SCR00016NI	17
11	Screw, ADF	030080FWWSNI	4
12	Screw, ADF, wave 4x10	NS-SCR-00056NI	7
13	Screw, ADF	030060FWWSNI	18
14	ADF cable	PF2284K500NI	1

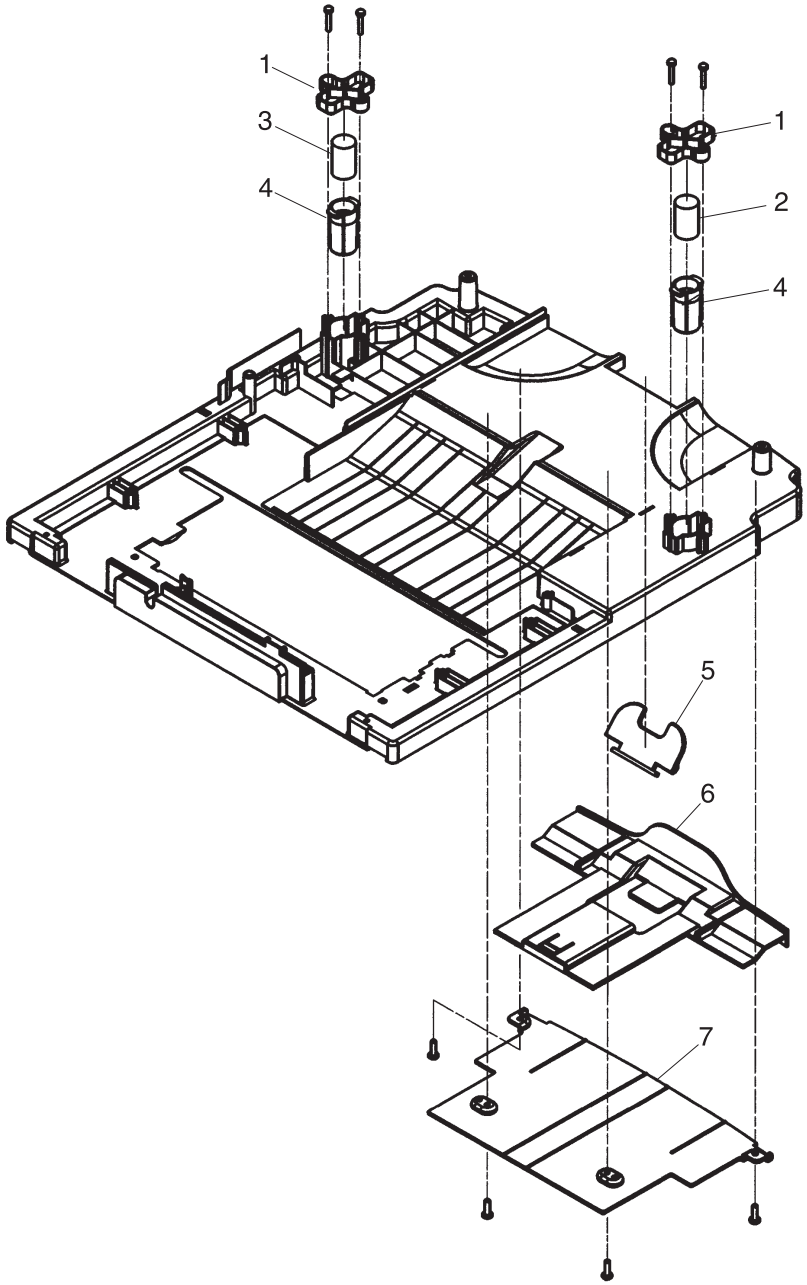


Figure 8-8 ADF base assembly

Table 8-9 ADF base assembly

Reference	Description	Part Number	Quantity
1	Damper base cover	PF2284P091NI	2
2	Left damper spring	PF2284P375NI	2
3	Right damper spring	PF2284P376NI	1
4	Damper cover	PF2284P090NI	2
5	Output bin paper lever	PF2284P089NI	1
6	Output bin extender	PF2284P061NI	1
7	Output bin base cover	PF2284P060NI	1

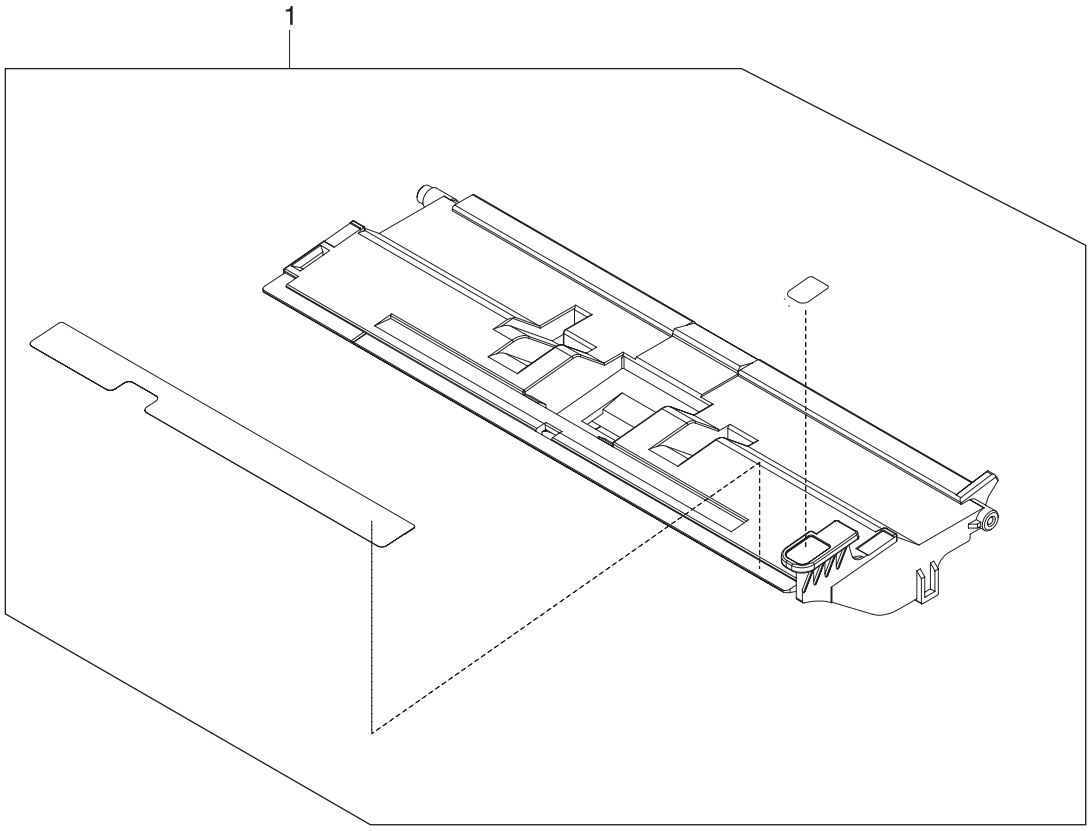


Figure 8-9 Separation pad case

Table 8-10 Separation pad case

Reference	Description	Part Number	Quantity
1	Separation pad case	PF2282K034NI	1

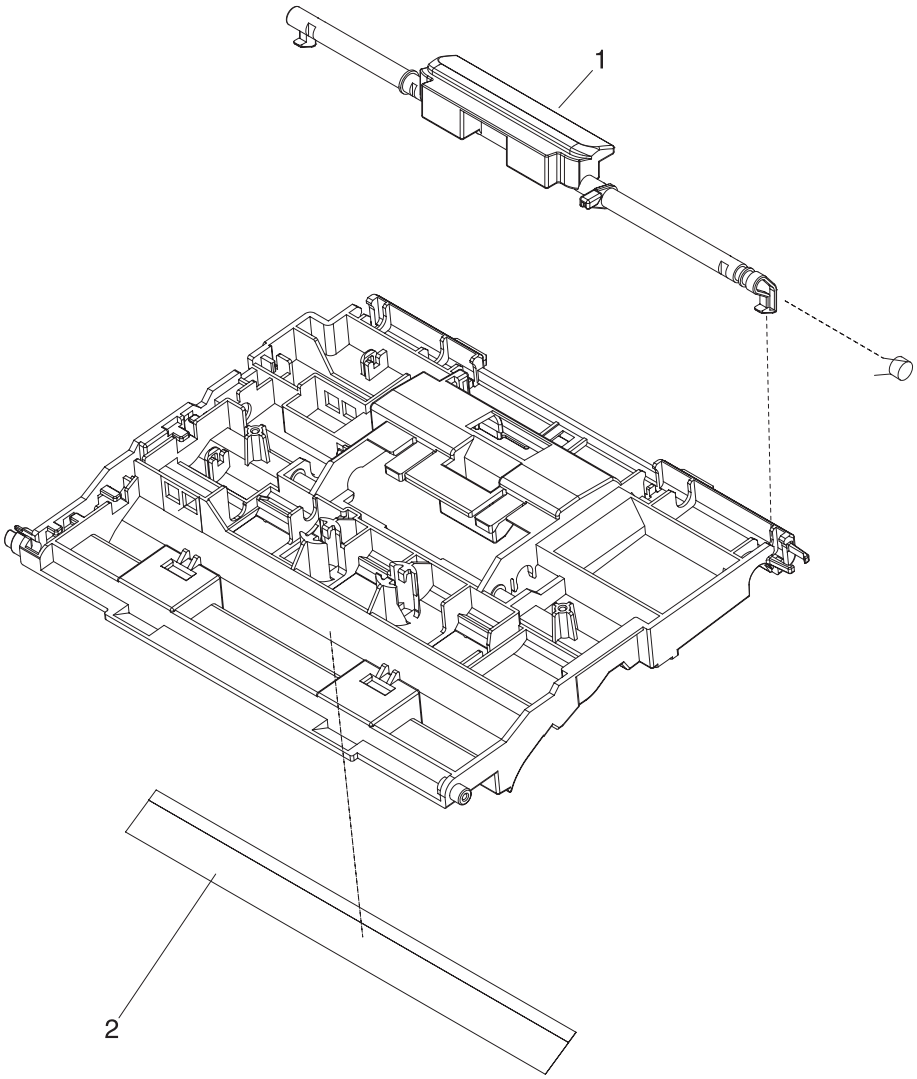


Figure 8-10 Pickup roller assembly

Table 8-11 Pickup roller assembly

Reference	Description	Part Number	Quantity
1	ADF jam access latch	PF2284K151NI	1
2	Clear plastic paper guide	PF2284K152NI	1

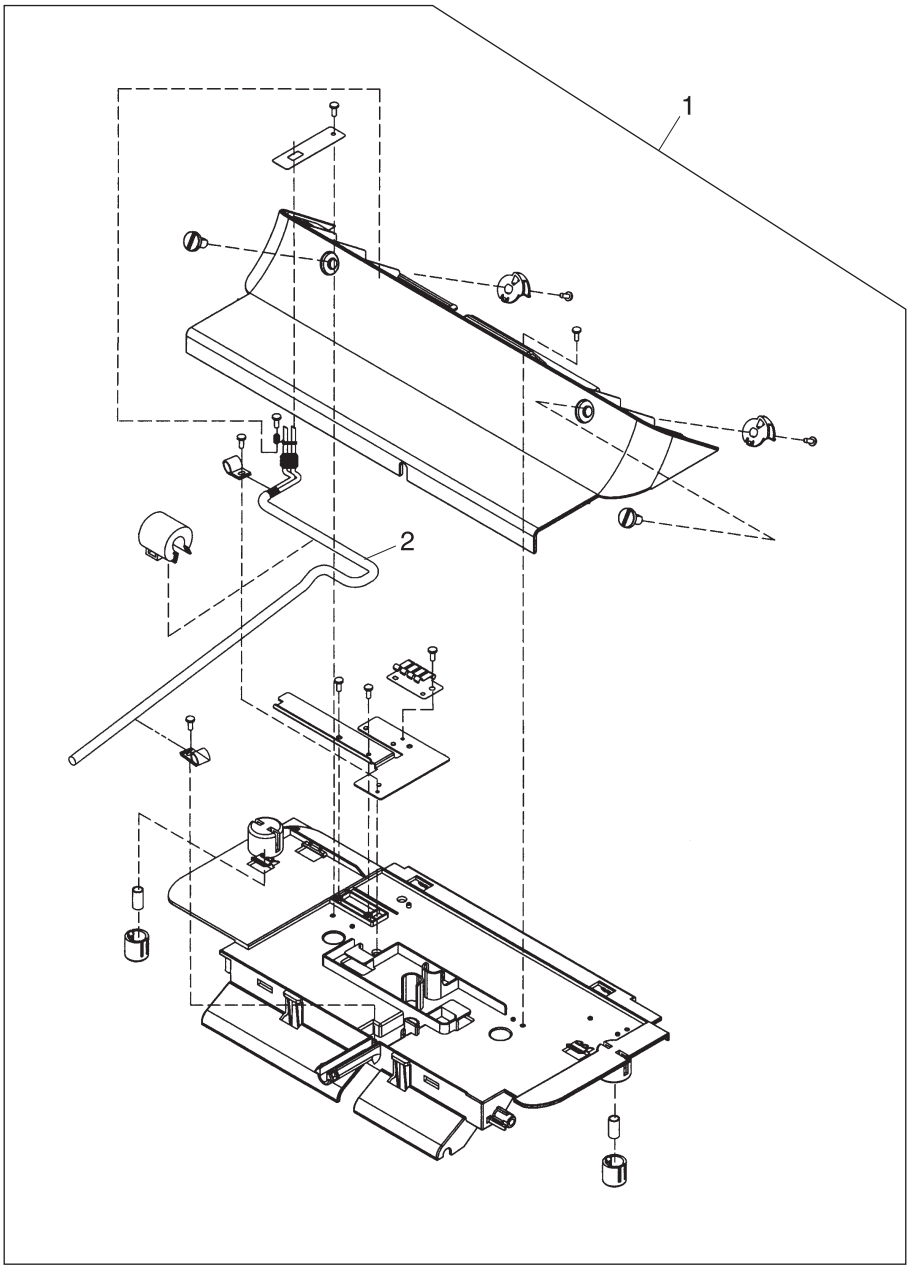


Figure 8-11 Control panel cover assembly

Table 8-12 Control panel cover assembly

Reference	Description	Part Number	Quantity
1	Control panel cover assembly	PF2284K015NI	1
2	External control panel cable	PF2284K501NI	1

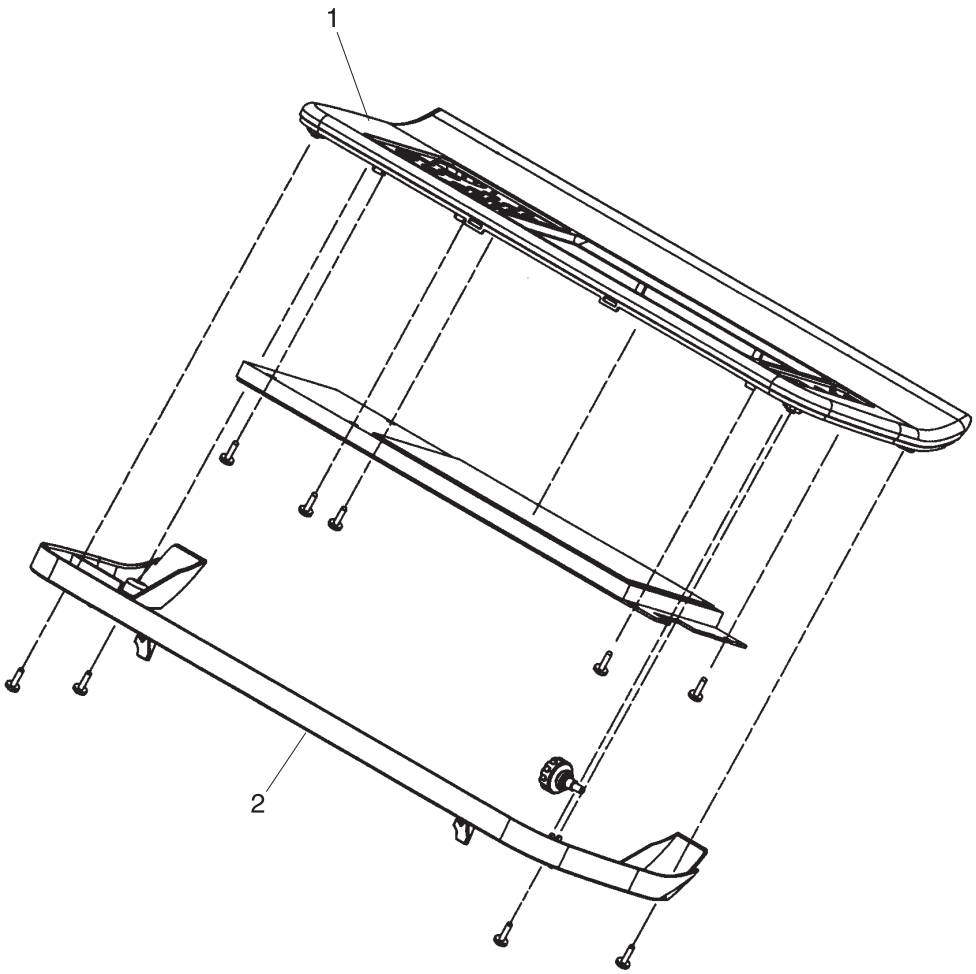


Figure 8-12 Control panel assembly

Table 8-13 Control panel assembly

Reference	Description	Part Number	Quantity
1	Control panel upper cover	PF2284P072NI	1
2	Control panel lower cover	PF2284P073NI	1

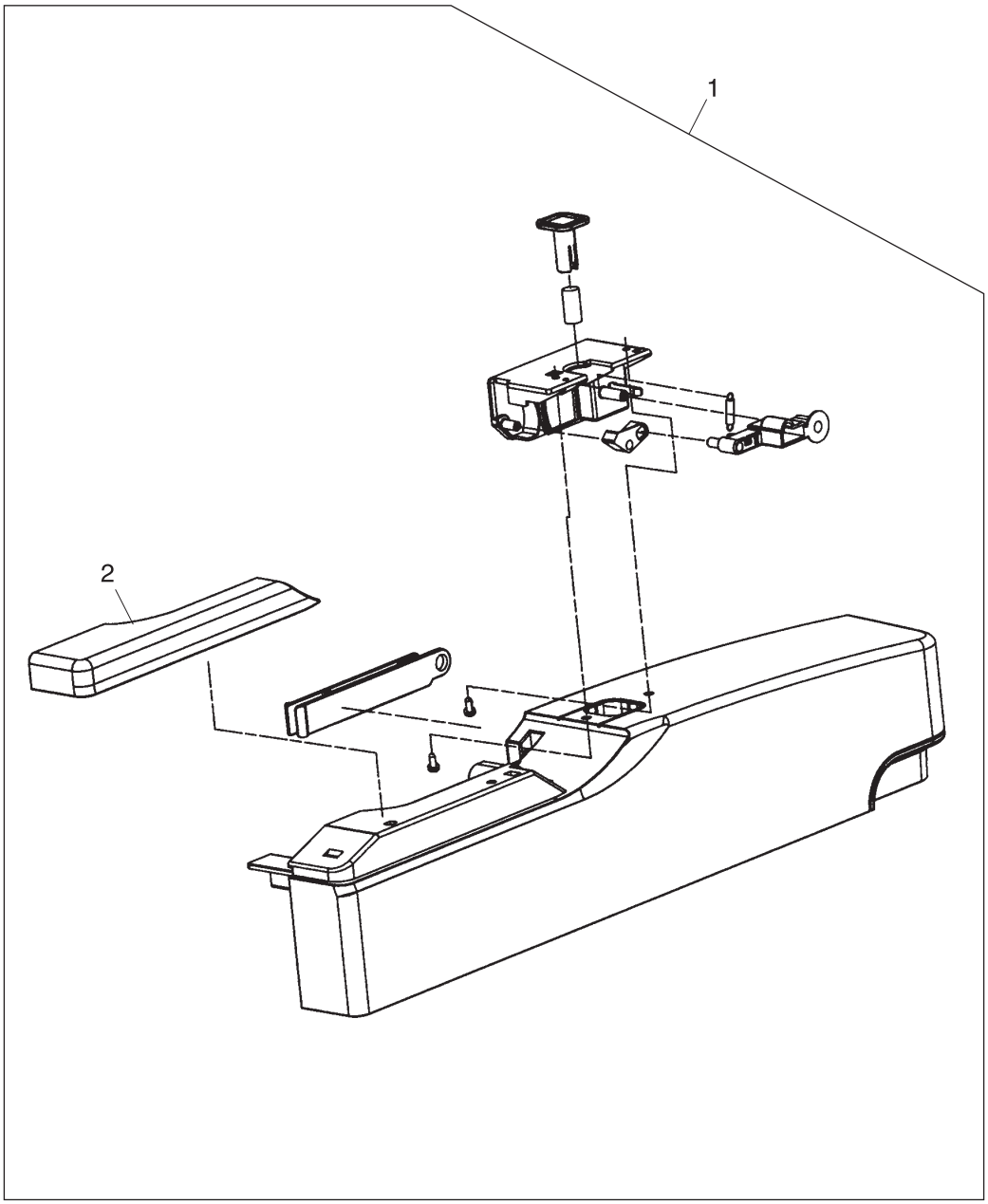


Figure 8-13 ADF left cover

Table 8-14 ADF left cover

Reference	Description	Part Number	Quantity
1	ADF left cover	PF2284K012NI	1
2	ADF left corner cover	PF2284P080NI	1

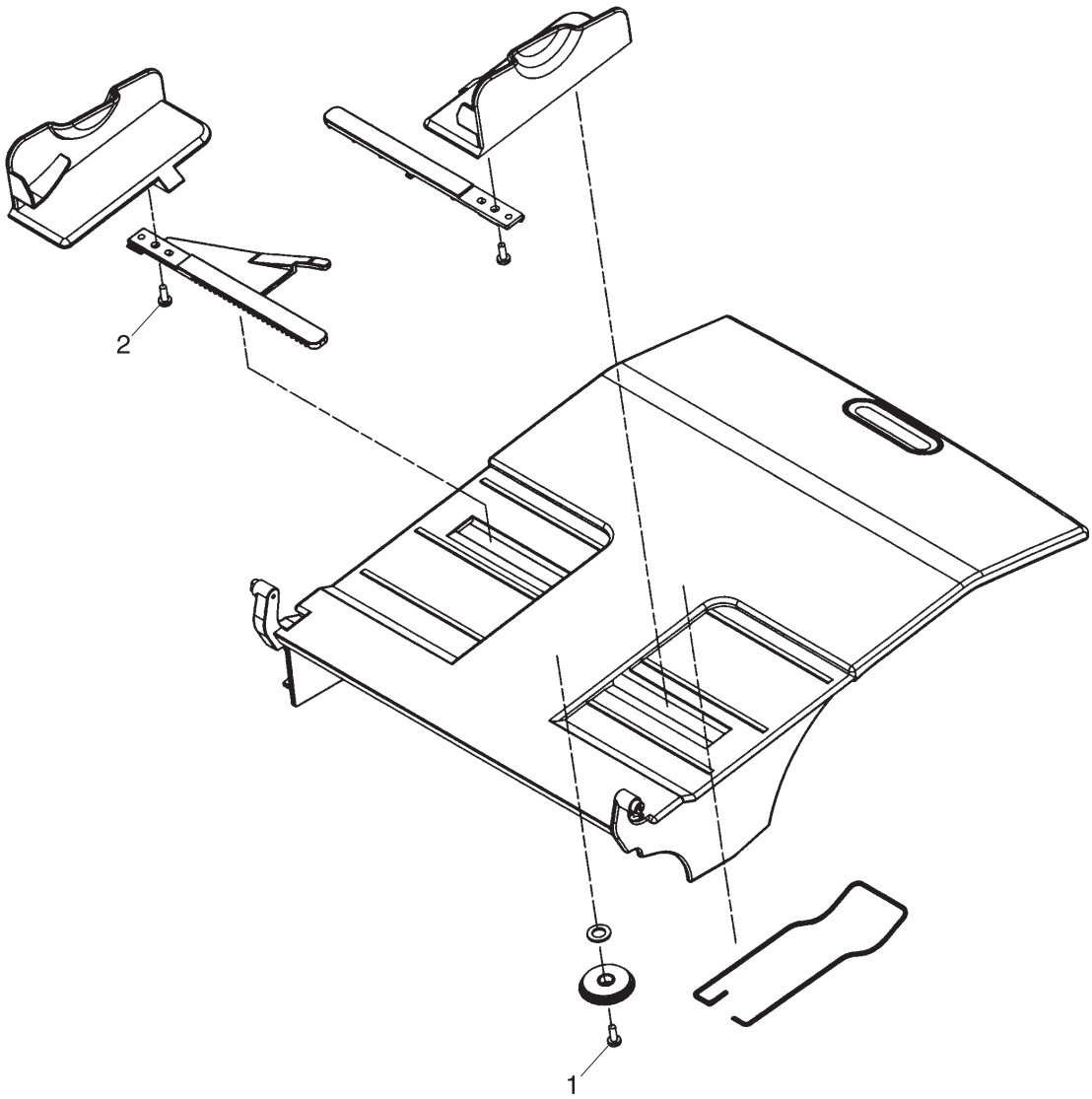


Figure 8-14 ADF input tray assembly

Table 8-15 ADF input tray assembly

Reference	Description	Part Number	Quantity
1	Screw, BTN, M3x8	IR4041P021NI	1
2	Screw, wave 3x8	030080FNBBNI	2

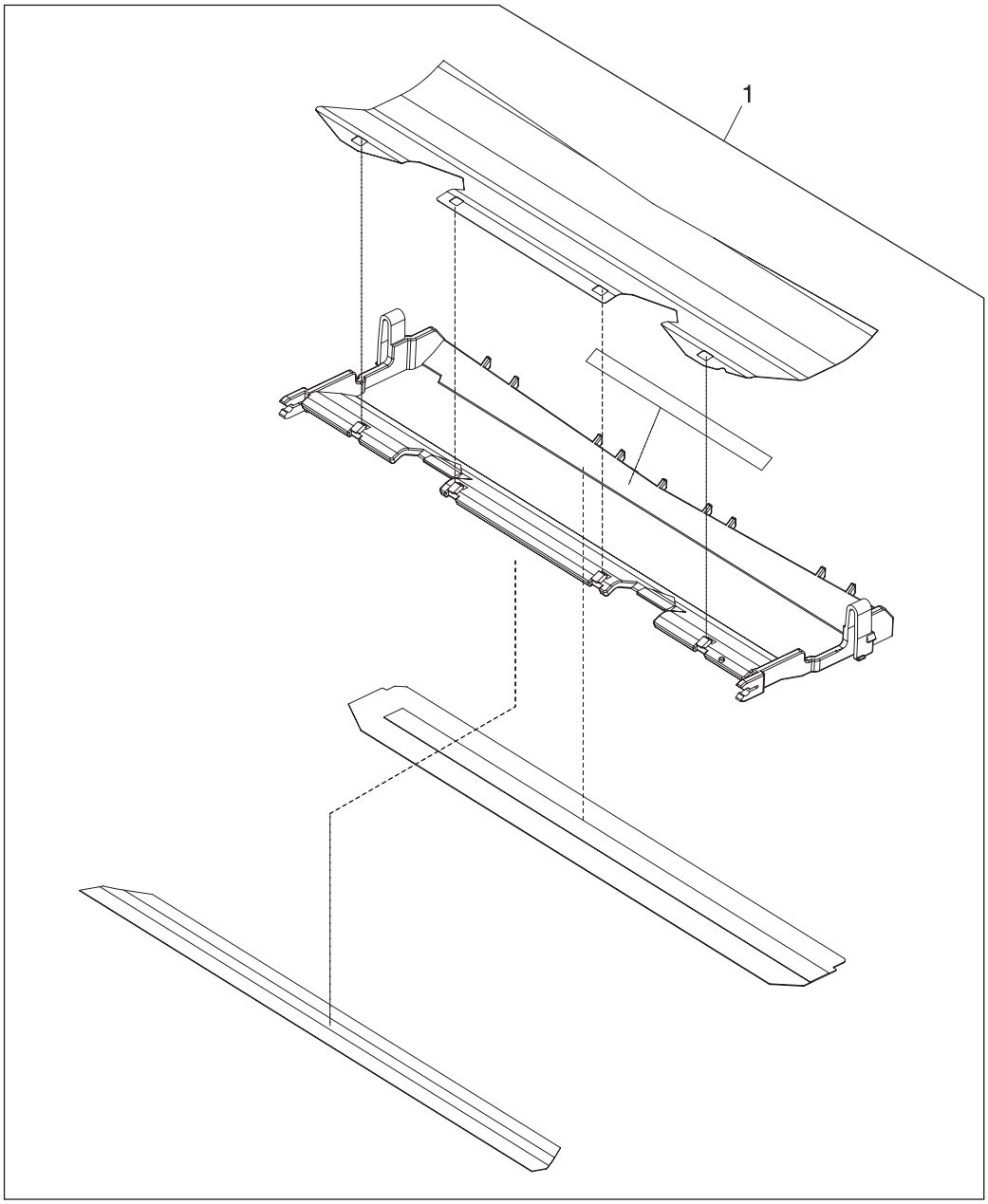


Figure 8-15 Mylar holder assembly

Table 8-16 Mylar holder assembly

Reference	Description	Part Number	Quantity
1	Mylar holder assembly	PF2282K043NI	1

Scanner components

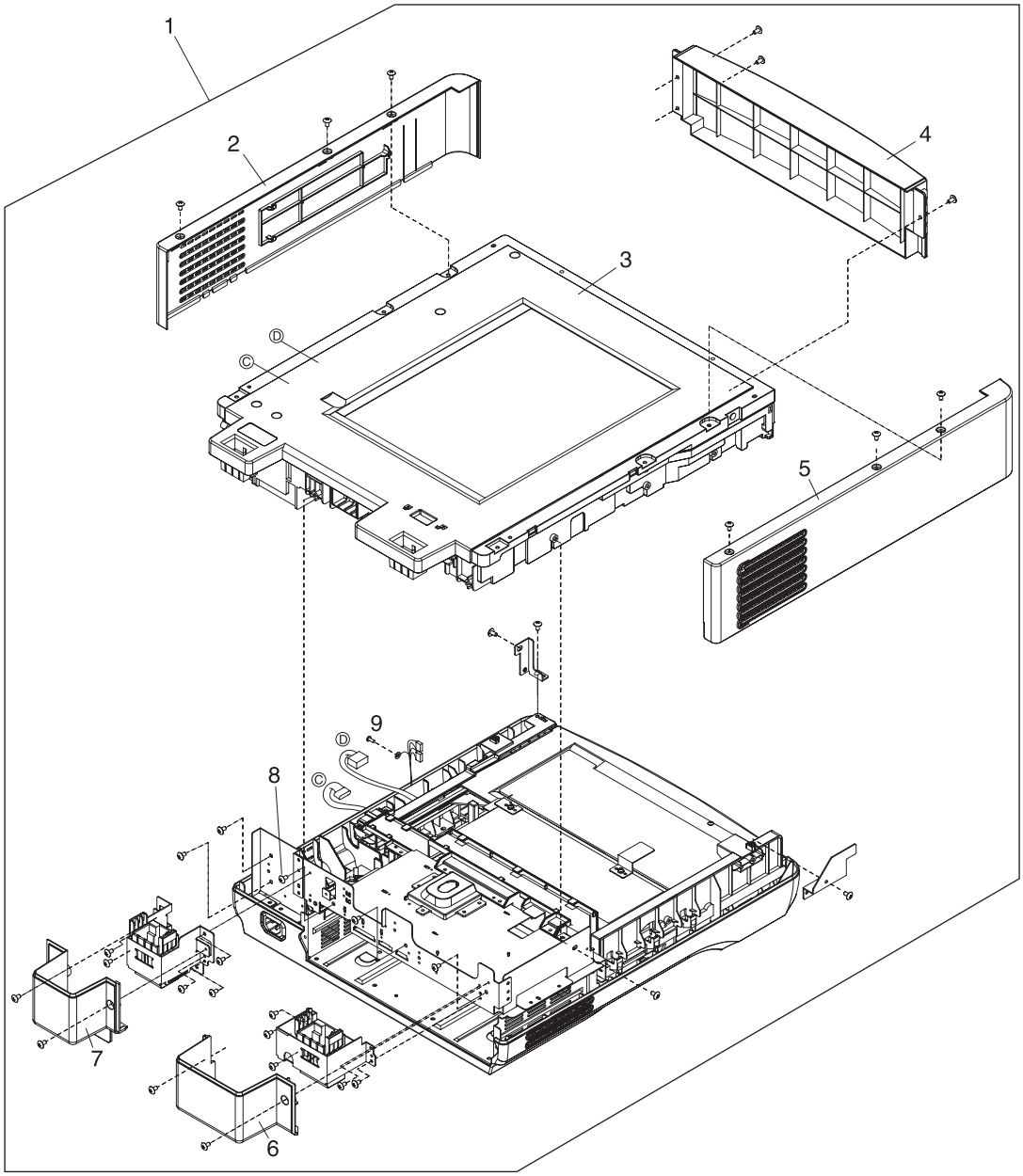


Figure 8-16

Table 8-17

Reference	Description	Part Number	Quantity
1	Complete scanner assembly	IR4044–SVPNI	1
2	Scanner right cover	IR4044P313NI	1
3	Flatbed unit assembly	IR4044–SVPNI	1
4	Scanner front cover	IR4044P311NI	1
5	Scanner left cover	IR4044P312NI	1
6	Left hinge cover	IR4044P325NI	1
7	Right hinge cover	IR4044P326NI	1
8	Screw, scanner flatbed	040100FNBBNI	45
9	Screw, scanner motor	030060FNITNI	41

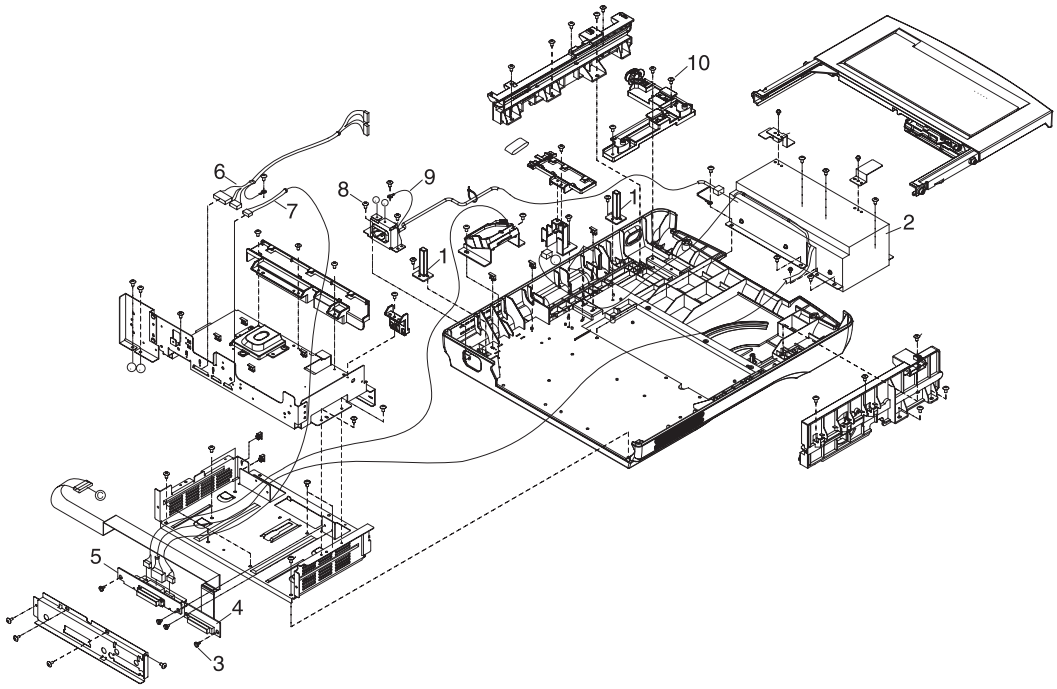


Figure 8-17 Bottom unit assembly

Table 8-18 Bottom unit assembly

Reference	Description	Part Number	Quantity
1	Scanner base support	IR4044P337NI	2
2	Power supply	IR4044P525NI	1
3	Screw, DANBISU	IR4044P200NI	4
4	Formatter flat ribbon connector	IR4044K560NI	1
5	Intermediate PCA and connector	IR4044K103NI	1
6	SCB cable	IR4044K538NI	1
7	Internal control-panel cable	IR4044K537NI	1
8	Screw M3x8	IR4041P021NI	64
9	Screw	040060FNWSNI	1
10	Power switch assembly	IR4044K107NI	1

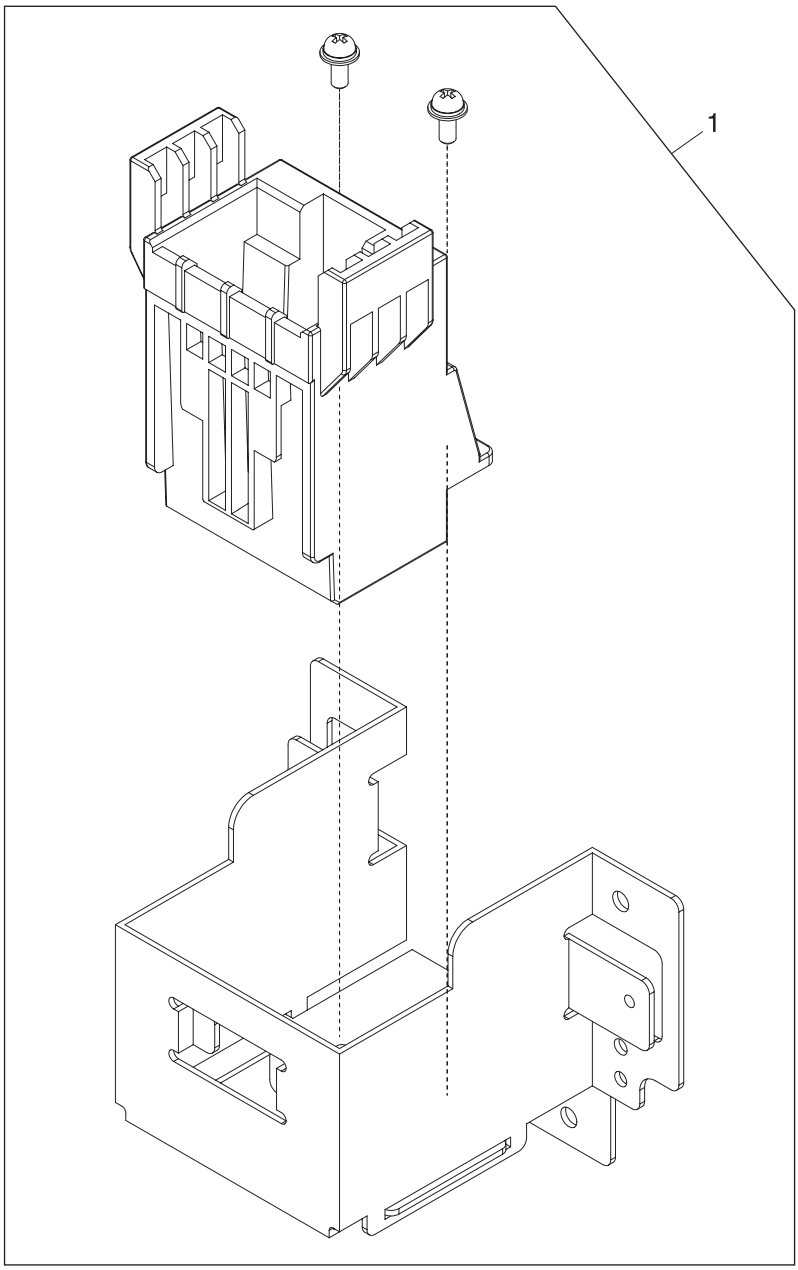


Figure 8-18 Right hinge guide

Table 8-19 Right hinge guide

Reference	Description	Part number	Quantity
1	Right hinge guide	IR4044P319NI	1

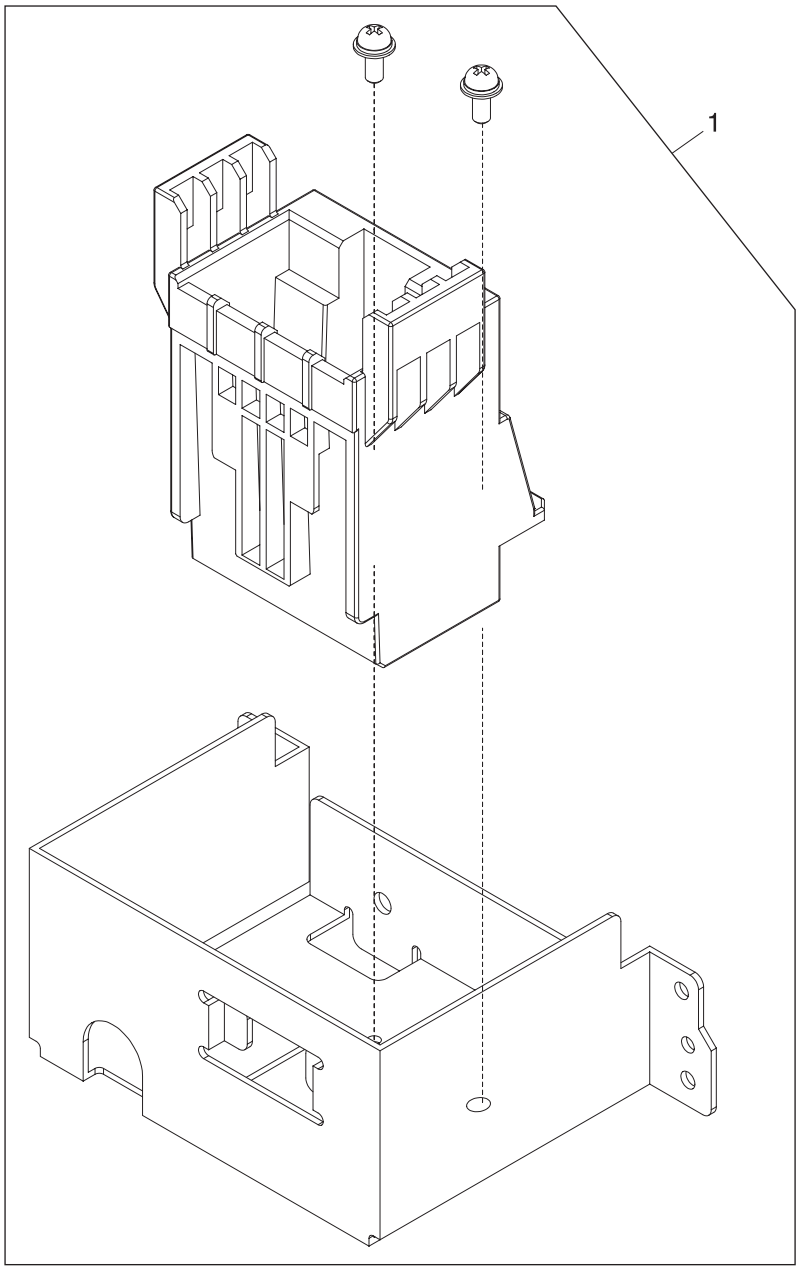


Figure 8-19 Left hinge guide

Table 8-20 Left hinge guide

Reference	Description	Part Number	Quantity
1	Left hinge guide	IR4044P318NI	1

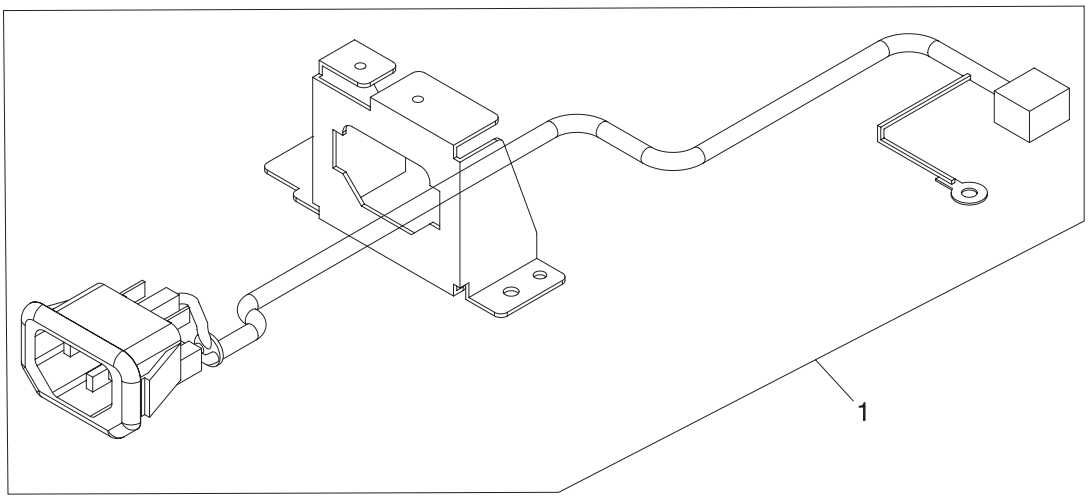


Figure 8-20 Power plug

Table 8-21 Power plug

Reference	Description	Part Number	Quantity
1	AC power plug	IR4044K535NI	

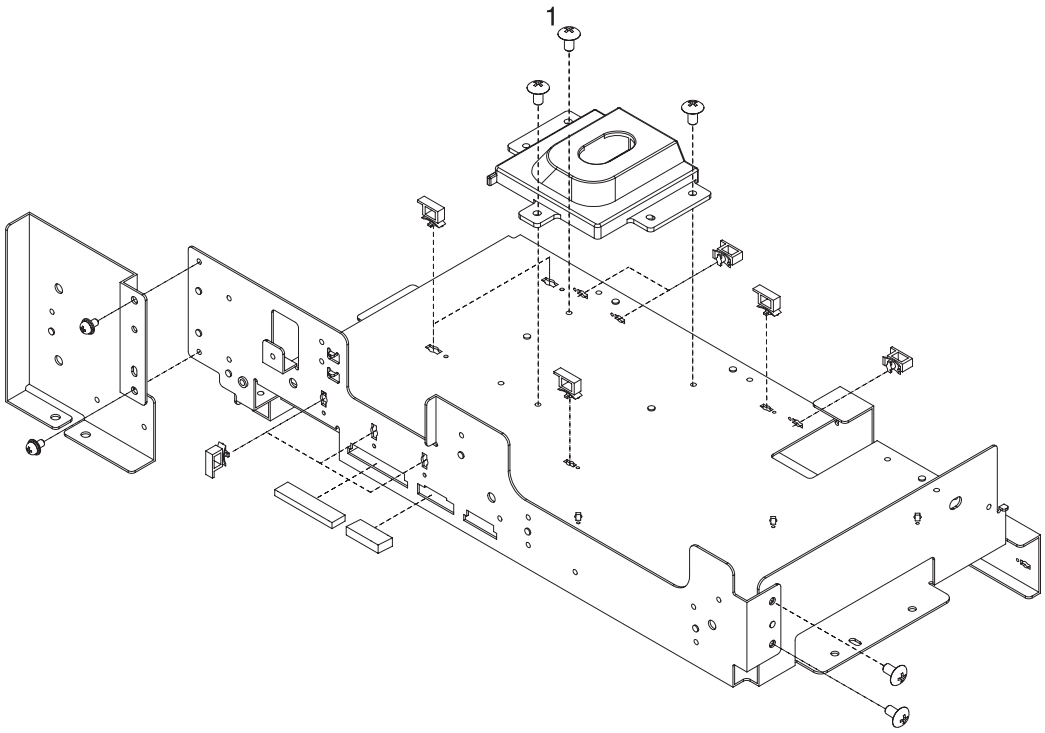


Figure 8-21 Top formatter

Table 8-22 Top formatter

Reference	Description	Part Number	Quantity
1	Screw	030060FNWSNI	13

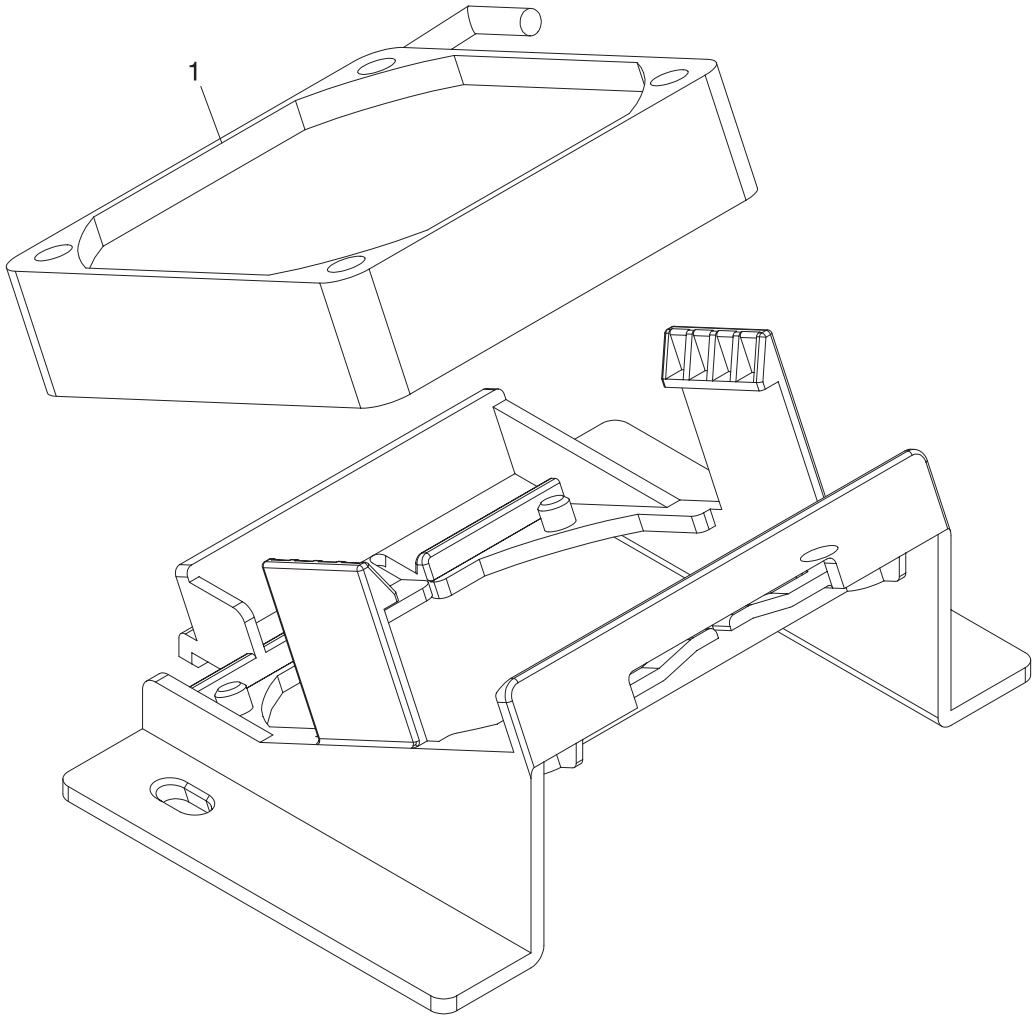


Figure 8-22 Fan assembly

Table 8-23 Fan assembly

Reference	Description	Part Number	Quantity
1	Scanner base fan	IR4044P524NI	1

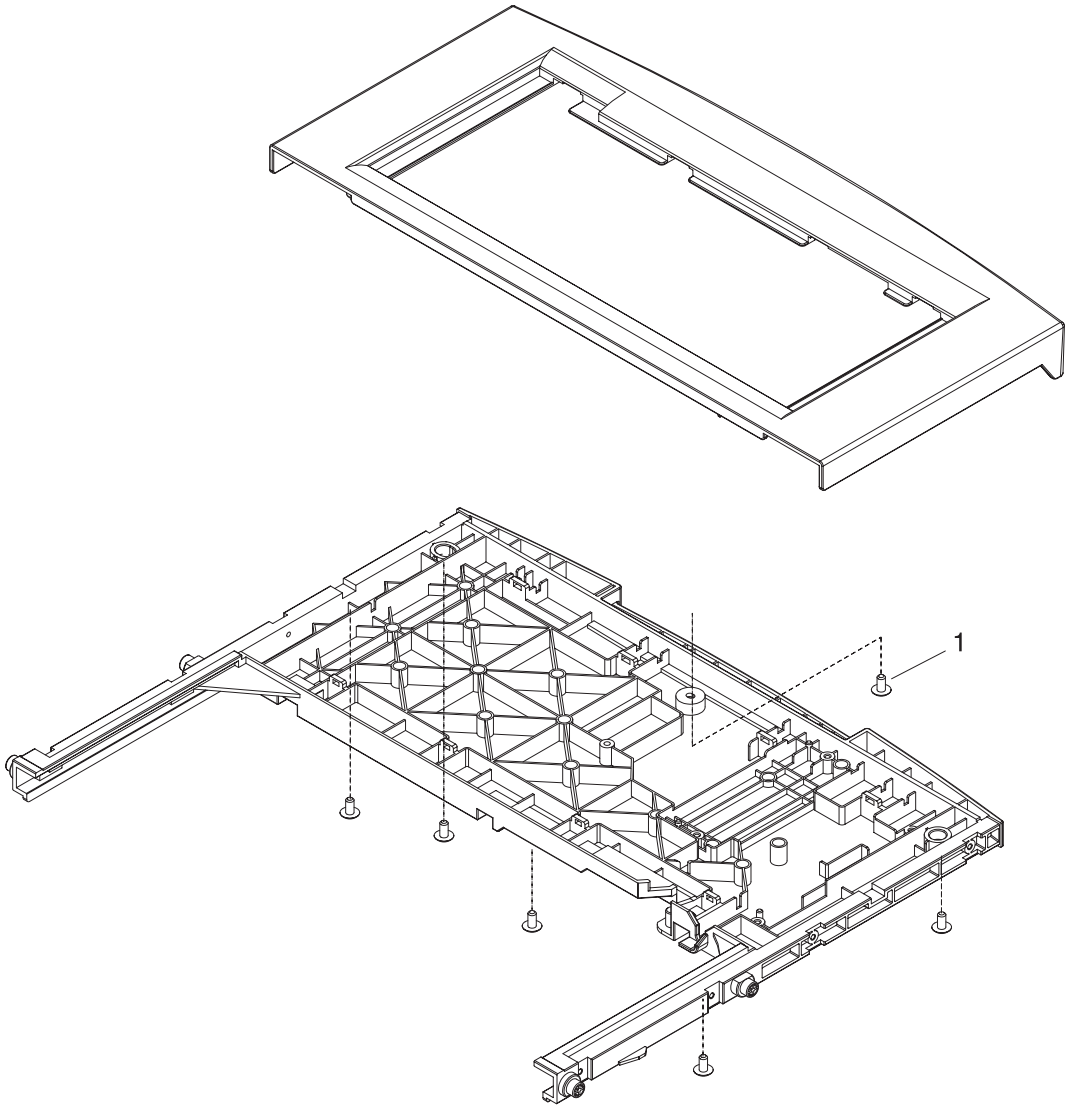


Figure 8-23 Keyboard assembly

Table 8-24 Keyboard assembly

Reference	Description	Part Number	Quantity
1	Screw, wane 3x10	NS-SCR-00027NI	4

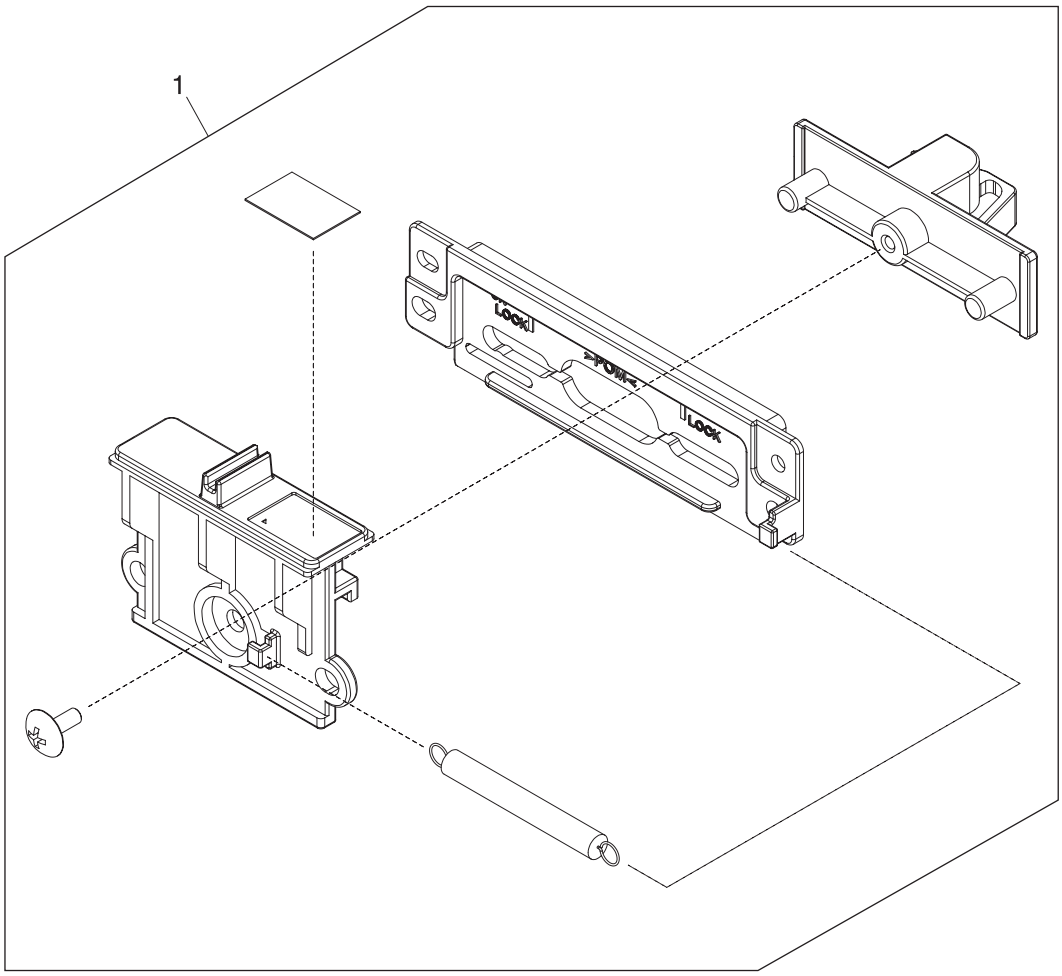


Figure 8-24 Carriage lock assembly

Table 8-25 Carriage lock assembly

Reference	Description	Part Number	Quantity
1	Carriage lock assembly	IR4041K102NI	1

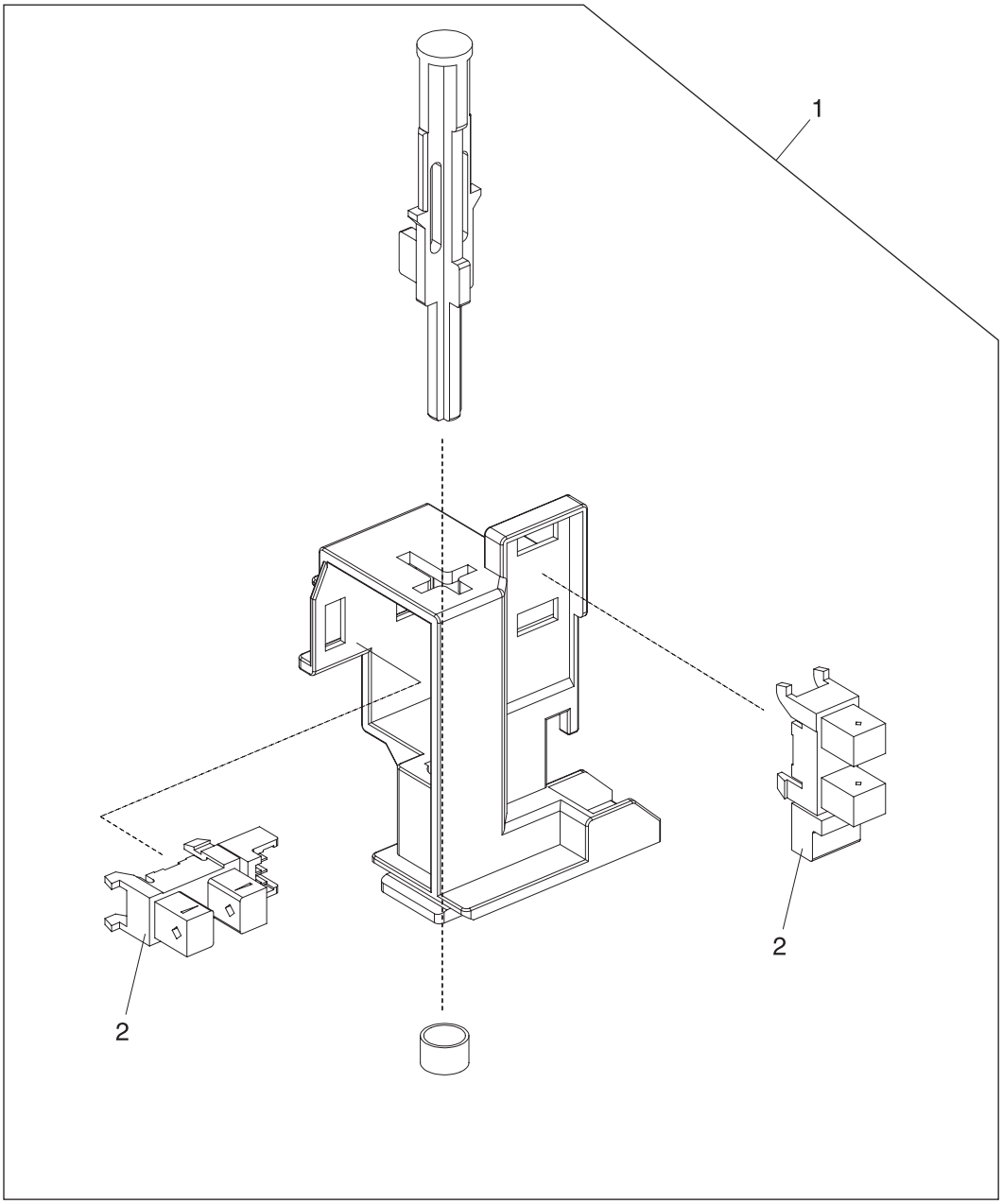


Figure 8-25 Open sensor assembly

Table 8-26 Open sensor assembly

Reference	Description	Part Number	Quantity
1	Open sensor assembly	IR4041K105NI	1
2	Sensor	E314000619NI	1

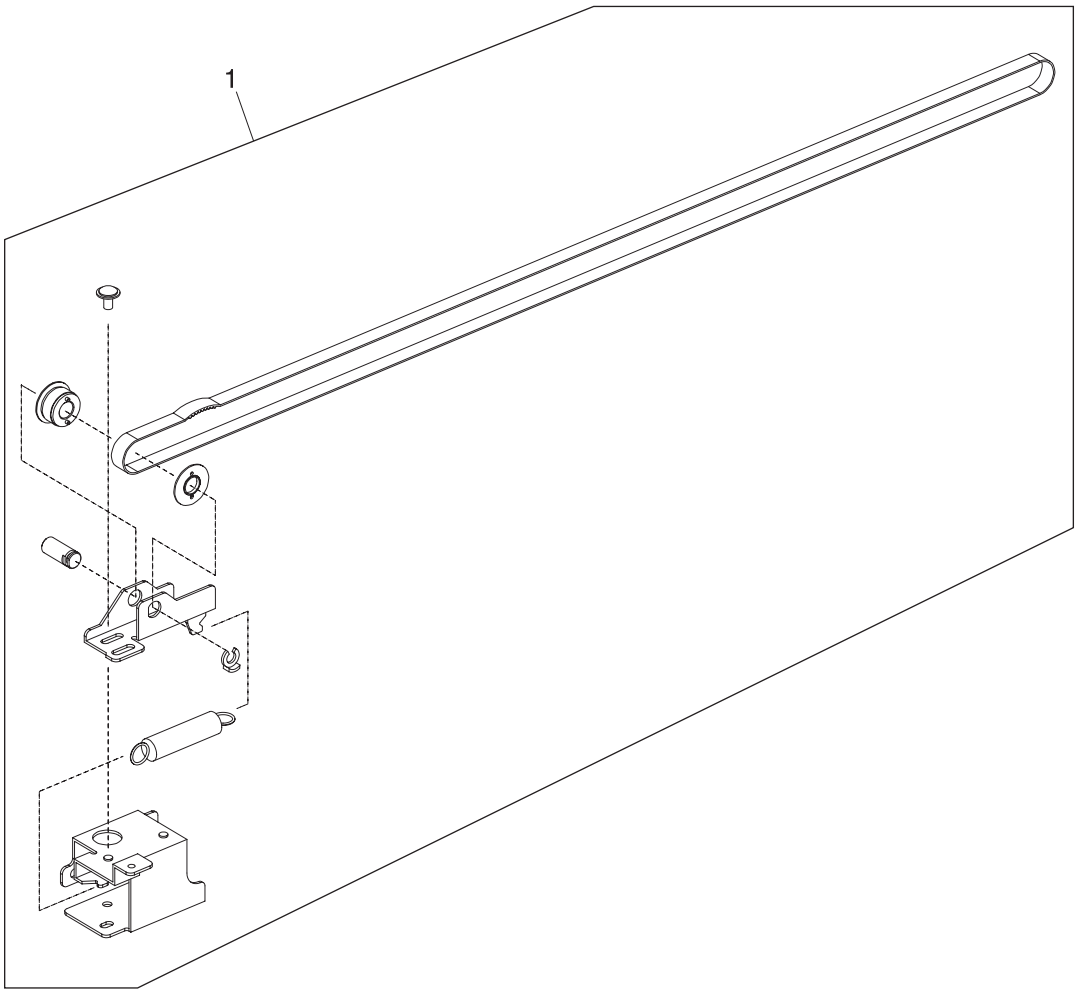


Figure 8-26 Scanner belt assembly

Table 8-27 Scanner belt assembly

Reference	Description	Part Number	Quantity
1	Scanner belt assembly	IR4041K107NI	1

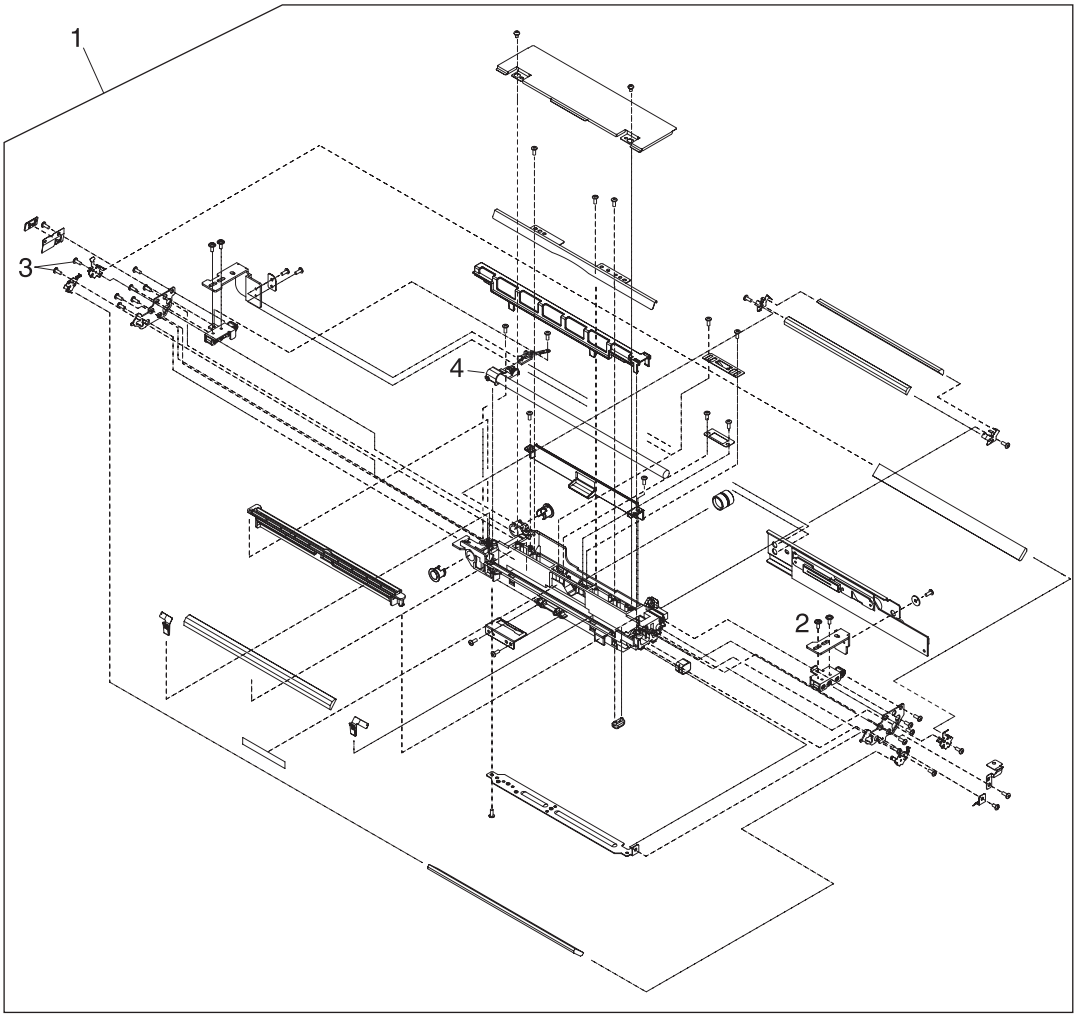


Figure 8-27 Optical assembly

Table 8-28 Optical assembly

Reference	Description	Part Number	Quantity
1	Optical assembly	IR4041K121NI	1
2	Screw, optical assembly	NS-SCR00206NI	2
3	Screw, optical assembly	030080FDBBNI	11
4	Lamp	IR4041K151NI	1

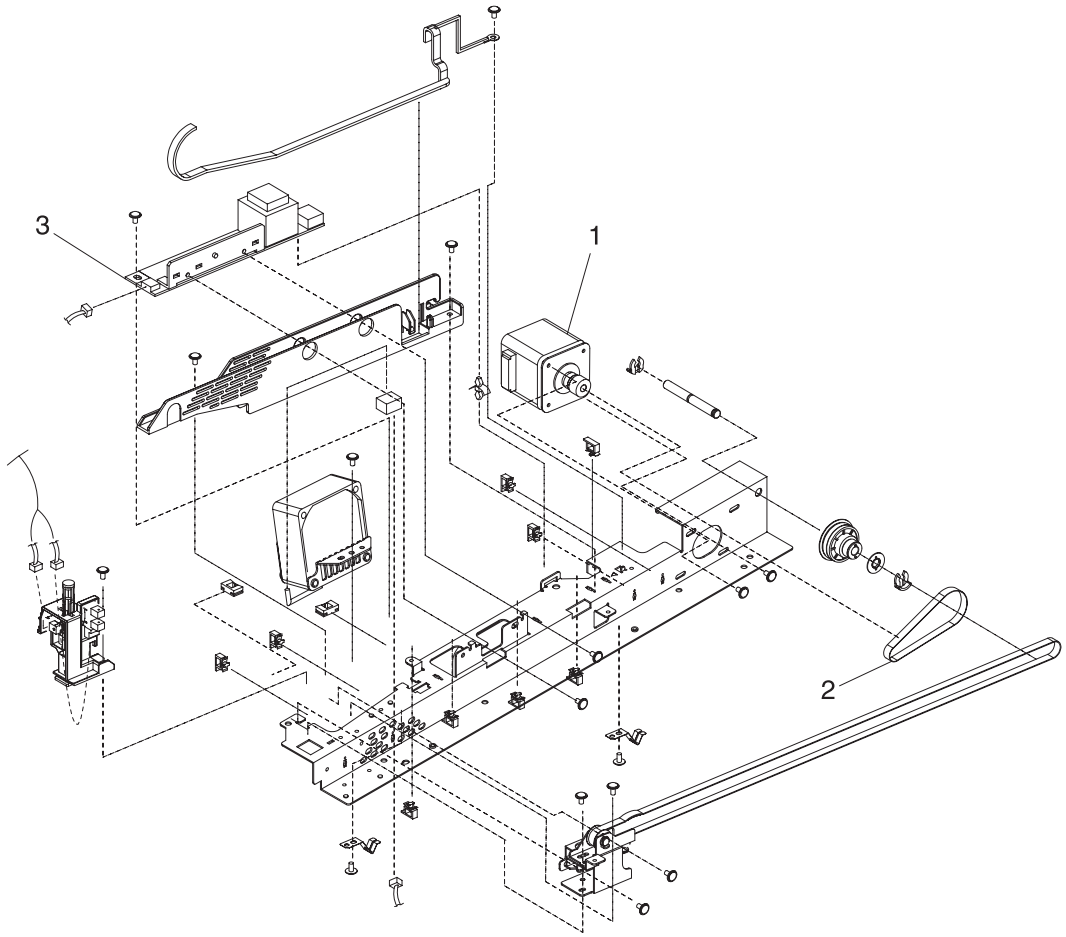


Figure 8-28

Table 8-29

Reference	Description	Part Number	Quantity
1	Scanner motor	IR4041K520NI	1
2	Scanner motor belt	NS-BLT00290NI	1
3	Inverter	IR4041P522NI	1

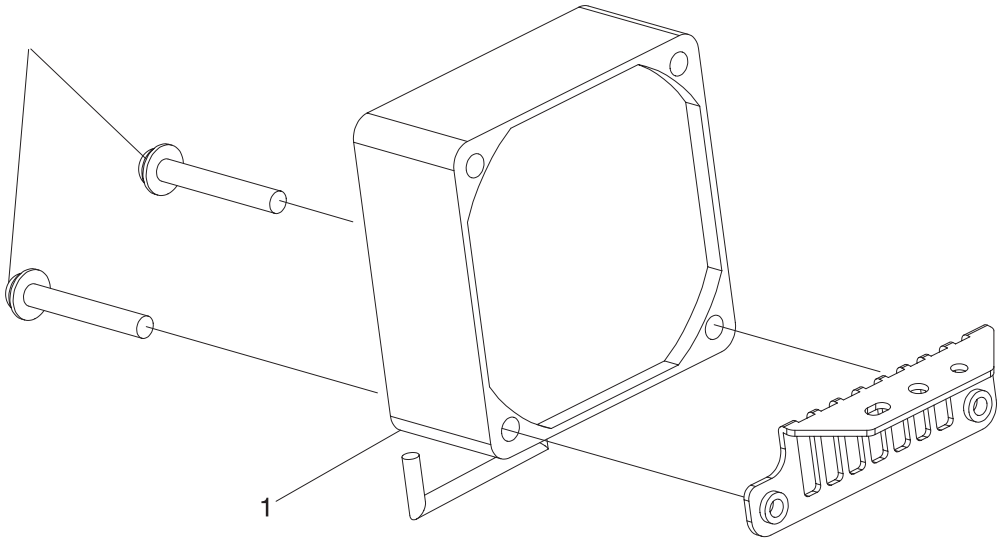


Figure 8-29 Scanner motor fan

Table 8-30 Scanner motor fan

Reference	Description	Part Number	Quantity
1	Scanner motor fan	IR4041P521NI	1

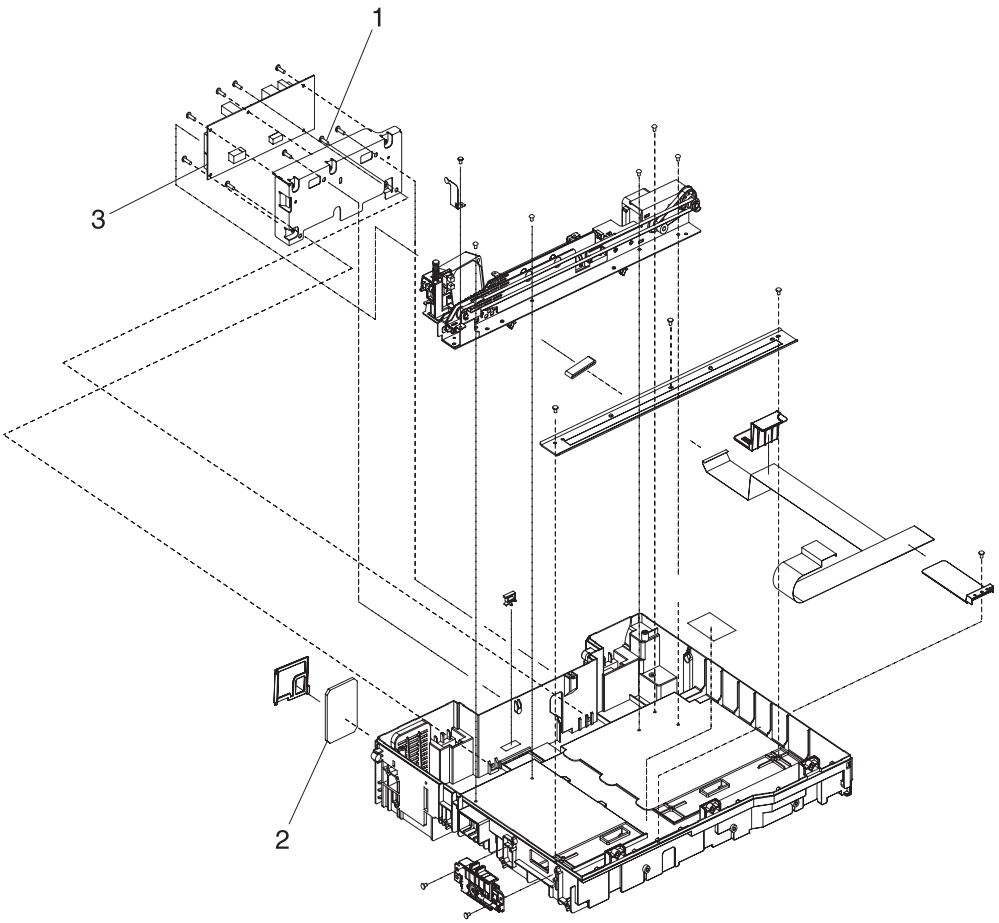


Figure 8-30 Lower cover assembly

Table 8-31 Lower cover assembly

Reference	Description	Part Number	Quantity
1	Screw, 030–120	030120FNWSNI	3
2	Fan filter	IR4041P007NI	1
3	Scanner control board	IR4041K512NI	1

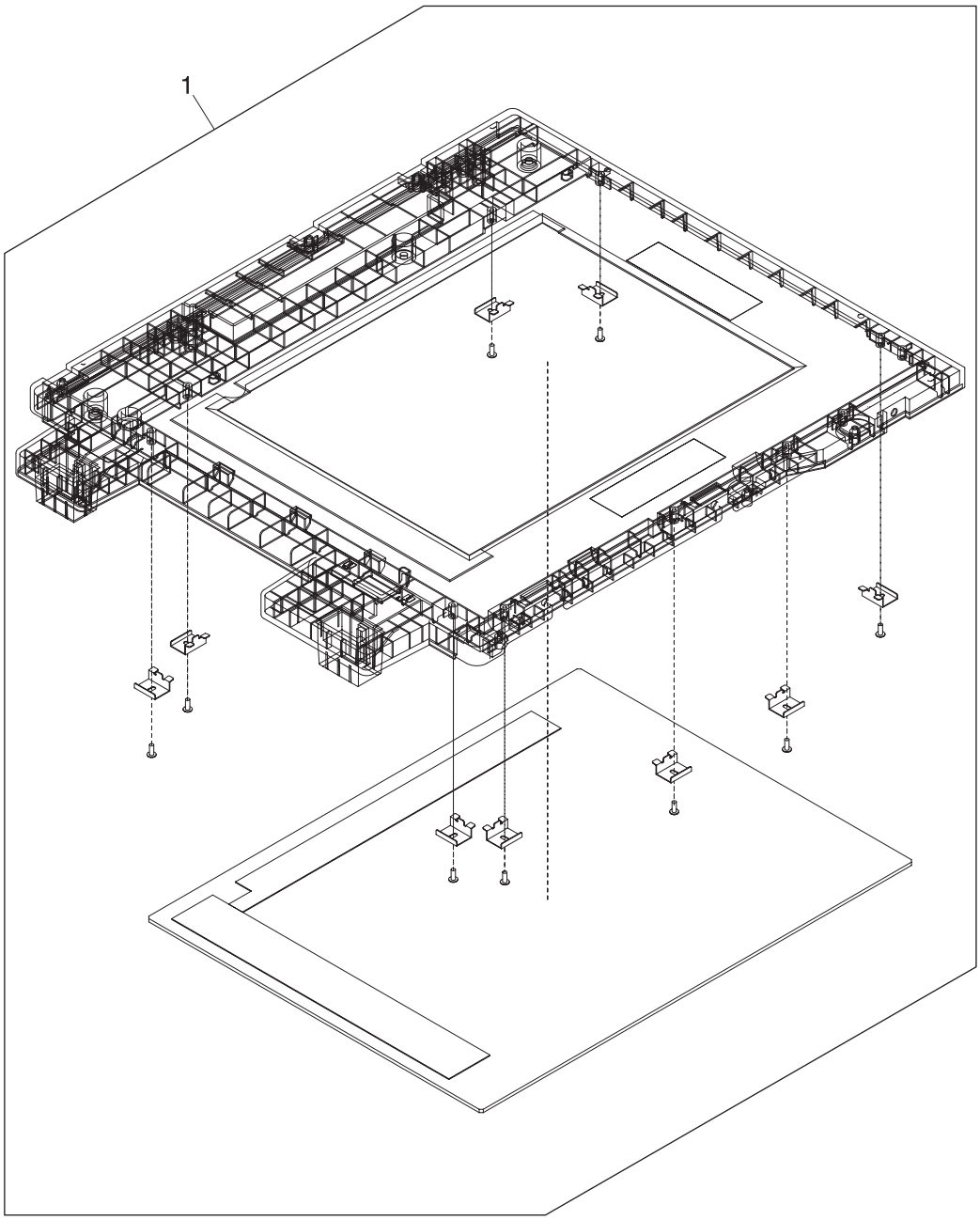


Figure 8-31 Scanner glass and cover

Table 8-32 Scanner glass and cover

Reference	Description	Part Number	Quantity
1	Scanner glass and cover	IR4044K108NI	1

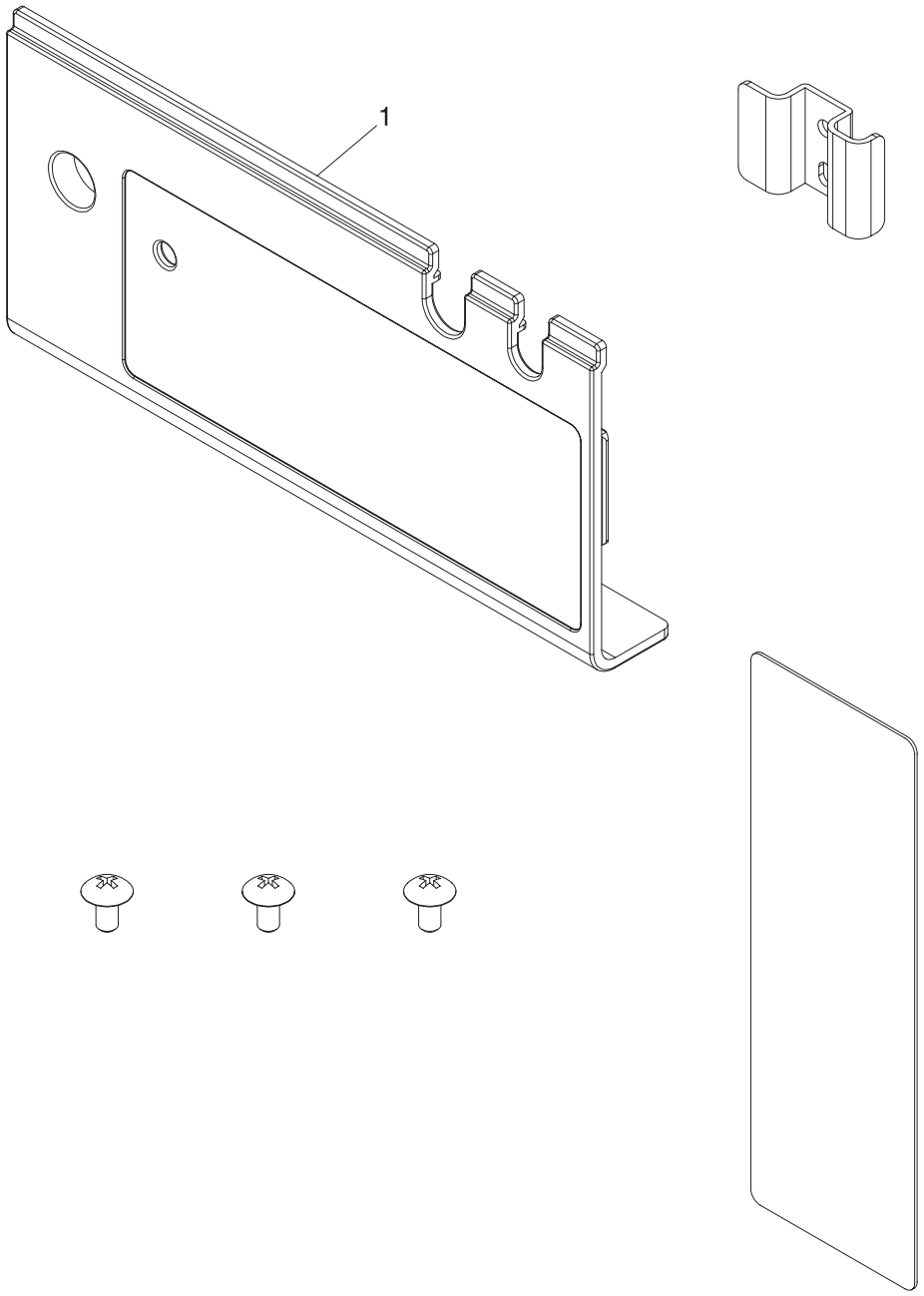


Figure 8-32 Scanner rear cover

Table 8-33 Scanner rear cover

Reference	Description	Part Number	Quantity
1	Scanner rear cover	IR4044P314NI	1

Alphabetical parts list

Table 8-34 Alphabetical parts list

Description	Part number	Table and page
AC power plug	IR4044K535NI	Power plug
ADF Assembly	PF2284–SVPNI	ADF Assembly
ADF cable	PF2284K500NI	ADF Assembly
ADF jam access latch	PF2284K151NI	Pickup roller assembly
ADF left corner cover	PF2284P080NI	ADF left cover
ADF left cover	PF2284K012NI	ADF left cover
ADF maintenance kit	Q5997–67901	Maintenance kits
ADF rear cover	PF2284P086NI	ADF Assembly
ADF right cover	PF2284P044NI	ADF Assembly
ADF right cover corner	PF2284P079NI	ADF Assembly
Assembly - Control Panel	Q5916–60102	Control-panel overlays
Carriage lock assembly	IR4041K102NI	Carriage lock assembly
Clear plastic paper guide	PF2284K152NI	Pickup roller assembly
Complete scanner assembly	IR4044–SVPNI	
Control panel cover assembly	PF2284K015NI	Control panel cover assembly
Control panel lower cover	PF2284P073NI	Control panel assembly
Control panel upper cover	PF2284P072NI	Control panel assembly
CPO Kit - CS, Czech control panel cover	Q5916-60106	Control-panel overlays
CPO Kit - DA, Danish control panel cover	Q5916-60107	Control-panel overlays
CPO Kit - DE, German control panel cover	Q5916-60111	Control-panel overlays
CPO Kit - EN, English Control panel cover	Q5916-60105	Control-panel overlays
CPO Kit - ES, Spanish control panel cover	Q5916-60118	Control-panel overlays
CPO Kit - FI, Finnish control panel cover	Q5916-60109	Control-panel overlays
CPO Kit - FR, French control panel cover	Q5916-60110	Control-panel overlays
CPO Kit - HU, Hungarian control panel cover	Q5916-60112	Control-panel overlays
CPO Kit - IT, Italian control panel cover	Q5916-60113	Control-panel overlays
CPO Kit - KO, Korean control panel cover	Q5916-60121	Control-panel overlays
CPO Kit - NL, Dutch control panel cover	Q5916-60108	Control-panel overlays
CPO Kit - NO, Norwegian control panel cover	Q5916-60114	Control-panel overlays
CPO Kit - PL, Polish control panel cover	Q5916-60115	Control-panel overlays
CPO Kit - PT, Portuguese control panel cover	Q5916-60116	Control-panel overlays

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
CPO Kit - RU, Russian control panel cover	Q5916-60117	Control-panel overlays
CPO Kit - SV, Swedish control panel cover	Q5916-60119	Control-panel overlays
CPO Kit - TR, Turkish control panel cover	Q5916-60120	Control-panel overlays
CPO Kit - ZHCN, Simplified Chinese control panel cover	Q5916-60122	Control-panel overlays
CPO Kit - ZHTW, Traditional Chinese control panel cover	Q5916-60123	Control-panel overlays
Damper base cover	PF2284P091NI	ADF base assembly
Damper cover	PF2284P090NI	ADF base assembly
Danish Pwr Cord Opt.912	8121–0518	Cables and interfaces
DIMM-256MB DDR 100pin SDRAM Bulk	Q2626–67951	Memory
Documentation CD	Q5916-60104	Related documentation and software
DS 9200C Card-32MB Flash xx.xxx.xx	Q2635–67908	Memory
Engine assembly - DS 9200C, Product replacement	Q5916–60103	Internal components
Europe Pwr Cord Opt. 902	8121–0516	Cables and interfaces
External control panel cable	PF2284K501NI	Control panel cover assembly
Fan filter	IR4041P007NI	Lower cover assembly
Flatbed unit assembly	IR4044–SVPNI	
Formatter assembly	Q5916–67901	Internal components
Formatter flat ribbon connector	IR4044K560NI	Bottom unit assembly
Hard Disk Drive	J7948–61001	Memory
Hard Disk Drive cable	5851–1827	Memory
Hinge flaps	PF2282K043NI	Internal components
HP DSS CD - Trial version 4.0 Software	MKTNG-00472	Related documentation and software
HP Jetdirect 620n fast Ethernet (10/100 Base-TX) Print server (optional)	J7934A	Cables and interfaces
HP 9200c DS Service Manual	Q5916–90908	Related documentation and software
Intermediate PCA and connector	IR4044K103NI	Bottom unit assembly
Internal control-panel cable	IR4044K537NI	Bottom unit assembly
Inverter	IR4041P522NI	
Israel Pwr Cord Opt.919	8121–0521	Cables and interfaces
Lamp	IR4041K151NI	Optical assembly
Left damper spring	PF2284P375NI	ADF base assembly
Left hinge cover	IR4044P325NI	
Left hinge guide	IR4044P318NI	Left hinge guide

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
Mylar holder assembly	PF2282K043NI	Internal components
Mylar holder assembly	PF2282K043NI	Mylar holder assembly
Mylar replacement kit	Q6496–67901	Maintenance kits
Open sensor assembly	IR4041K105NI	Open sensor assembly
OPT-903 18–AWG 3–COND 72–IN-LG	8120–8382	Cables and interfaces
Optical assembly	IR4041K121NI	Optical assembly
Output bin base cover	PF2284P060NI	ADF base assembly
Output bin extender	PF2284P061NI	ADF base assembly
Output bin paper lever	PF2284P089NI	ADF base assembly
Paper input tray, ADF	PF2284K042NI	Internal components
Pickup roller assembly	PF2282K039NI	Internal components
Pickup roller cover	PF2282K040NI	Internal components
Power Cord Option-923 3–Cond 2.3–M-LG	8121–0780	Cables and interfaces
Power supply	IR4044P525NI	Bottom unit assembly
Power switch assembly	IR4044K107NI	Bottom unit assembly
PWR-CORD OPT-901 3–COND 1.9–M-LG	8121–0836	Cables and interfaces
PWR-CORD OPT-917 3–COND 1.9–M-LG	8121–0520	Cables and interfaces
PWR-CORD OPT-922 3–COND 2.3–M-LG	8120–8707	Cables and interfaces
Right damper spring	PF2284P376NI	ADF base assembly
Right hinge cover	IR4044P326NI	
Right hinge guide	IR4044P319NI	Right hinge guide
Scanner base fan	IR4044P524NI	Fan assembly
Scanner base support	IR4044P337NI	Bottom unit assembly
Scanner belt assembly	IR4041K107NI	Scanner belt assembly
Scanner control board	IR4041K512NI	Lower cover assembly
Scanner front cover	IR4044P311NI	
Scanner glass and cover	IR4044K108NI	Scanner glass and cover
Scanner left cover	IR4044P312NI	
Scanner motor	IR4041K520NI	
Scanner motor belt	NS-BLT00290NI	
Scanner motor fan	IR4041P521NI	Scanner motor fan
Scanner rear cover	IR4044P314NI	Scanner rear cover
Scanner right cover	IR4044P313NI	
SCB cable	IR4044K538NI	Bottom unit assembly

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
Screw	040060FNWSNI	Bottom unit assembly
Screw	030060FNWSNI	Top formatter
Screw M3x8	IR4041P021NI	Bottom unit assembly
Screw, 030–120	030120FNWSNI	Lower cover assembly
Screw, ADF	030080FWWSNI	ADF Assembly
Screw, ADF	030060FWWSNI	ADF Assembly
Screw, ADF, 03T060SR-W	NS-SCR00016NI	ADF Assembly
Screw, ADF, wave 3x10	NS-SCR-00027NI	ADF Assembly
Screw, ADF, wave 4x10	NS-SCR-00056NI	ADF Assembly
Screw, BTN, M3x8	IR4041P021NI	ADF input tray assembly
Screw, DANBISU	IR4044P200NI	Bottom unit assembly
Screw, optical assembly	NS-SCR00206NI	Optical assembly
Screw, optical assembly	030080FDBBNI	Optical assembly
Screw, scanner flatbed	040100FNBBNI	
Screw, scanner motor	030060FNITNI	
Screw, wane 3x10	NS-SCR-00027NI	Keyboard assembly
Screw, wave 3x8	030080FNBBNI	ADF input tray assembly
Sensor	E314000619NI	Open sensor assembly
Separation pad	PF2282K035NI	Internal components
Separation pad case	PF2282K034NI	Separation pad case
Service CD	Q5916–60125	Related documentation and software
Swiss Pwr Cord Opt.906	8121–0519	Cables and interfaces
UK/HK/Sing Pwr Cord Opt.900	8121–0517	Cables and interfaces
Upper hinge cover	PF2284P088NI	ADF Assembly
White mylar backing	PF2282P025NI	ADF Assembly
White mylar backing springs	PF2282P343NI	ADF Assembly
White scan background	PF2282P339NI	ADF Assembly

Numerical parts list

Table 8-35 Numerical parts list

Part number	Description	Table and page
030060FNITNI	Screw, scanner motor	
030060FNWSNI	Screw	Top formatter
030060FWWSNI	Screw, ADF	ADF Assembly
030080FDBBNI	Screw, optical assembly	Optical assembly
030080FNBBNI	Screw, wave 3x8	ADF input tray assembly
030080FWWSNI	Screw, ADF	ADF Assembly
030120FNWSNI	Screw, 030–120	Lower cover assembly
040060FNWSNI	Screw	Bottom unit assembly
040100FNBBNI	Screw, scanner flatbed	
5851–1827	Hard Disk Drive cable	Memory
8120–8382	OPT-903 18–AWG 3–COND 72–IN-LG	Cables and interfaces
8120–8707	PWR-CORD OPT-922 3–COND 2.3–M-LG	Cables and interfaces
8121–0516	Europe Pwr Cord Opt. 902	Cables and interfaces
8121–0517	UK/HK/Sing Pwr Cord Opt.900	Cables and interfaces
8121–0518	Danish Pwr Cord Opt.912	Cables and interfaces
8121–0519	Swiss Pwr Cord Opt.906	Cables and interfaces
8121–0520	PWR-CORD OPT-917 3–COND 1.9–M-LG	Cables and interfaces
8121–0521	Israel Pwr Cord Opt.919	Cables and interfaces
8121–0780	Power Cord Option-923 3–Cond 2.3–M-LG	Cables and interfaces
8121–0836	PWR-CORD OPT-901 3–COND 1.9–M-LG	Cables and interfaces
E314000619NI	Sensor	Open sensor assembly
IR4041K102NI	Carriage lock assembly	Carriage lock assembly
IR4041K105NI	Open sensor assembly	Open sensor assembly
IR4041K107NI	Scanner belt assembly	Scanner belt assembly
IR4041K121NI	Optical assembly	Optical assembly
IR4041K151NI	Lamp	Optical assembly
IR4041K512NI	Scanner control board	Lower cover assembly
IR4041K520NI	Scanner motor	
IR4041P007NI	Fan filter	Lower cover assembly
IR4041P021NI	Screw, BTN, M3x8	ADF input tray assembly
IR4041P021NI	Screw M3x8	Bottom unit assembly

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
IR4041P521NI	Scanner motor fan	Scanner motor fan
IR4041P522NI	Inverter	
IR4044K103NI	Intermediate PCA and connector	Bottom unit assembly
IR4044K107NI	Power switch assembly	Bottom unit assembly
IR4044K108NI	Scanner glass and cover	Scanner glass and cover
IR4044K535NI	AC power plug	Power plug
IR4044K537NI	Internal control-panel cable	Bottom unit assembly
IR4044K538NI	SCB cable	Bottom unit assembly
IR4044K560NI	Formatter flat ribbon connector	Bottom unit assembly
IR4044P200NI	Screw, DANBISU	Bottom unit assembly
IR4044P311NI	Scanner front cover	
IR4044P312NI	Scanner left cover	
IR4044P313NI	Scanner right cover	
IR4044P314NI	Scanner rear cover	Scanner rear cover
IR4044P318NI	Left hinge guide	Left hinge guide
IR4044P319NI	Right hinge guide	Right hinge guide
IR4044P325NI	Left hinge cover	
IR4044P326NI	Right hinge cover	
IR4044P337NI	Scanner base support	Bottom unit assembly
IR4044P524NI	Scanner base fan	Fan assembly
IR4044P525NI	Power supply	Bottom unit assembly
IR4044–SVPNI	Complete scanner assembly	
IR4044–SVPNI	Flatbed unit assembly	
J7934A	HP Jetdirect 620n fast Ethernet (10/100 Base-TX) Print server (optional)	Cables and interfaces
J7948–61001	Hard Disk Drive	Memory
MKTNG-00472	HP DSS CD - Trial version 4.0 Software	Related documentation and software
NS-BLT00290NI	Scanner motor belt	
NS-SCR-00027NI	Screw, ADF, wave 3x10	ADF Assembly
NS-SCR-00027NI	Screw, wane 3x10	Keyboard assembly
NS-SCR-00056NI	Screw, ADF, wave 4x10	ADF Assembly
NS-SCR00016NI	Screw, ADF, 03T060SR-W	ADF Assembly
NS-SCR00206NI	Screw, optical assembly	Optical assembly
PF2282K034NI	Separation pad case	Separation pad case

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
PF2282K035NI	Separation pad	Internal components
PF2282K039NI	Pickup roller assembly	Internal components
PF2282K040NI	Pickup roller cover	Internal components
PF2282K043NI	Hinge flaps	Internal components
PF2282K043NI	Mylar holder assembly	Internal components
PF2282K043NI	Mylar holder assembly	Mylar holder assembly
PF2282P025NI	White mylar backing	ADF Assembly
PF2282P339NI	White scan background	ADF Assembly
PF2282P343NI	White mylar backing springs	ADF Assembly
PF2284K012NI	ADF left cover	ADF left cover
PF2284K015NI	Control panel cover assembly	Control panel cover assembly
PF2284K042NI	Paper input tray, ADF	Internal components
PF2284K151NI	ADF jam access latch	Pickup roller assembly
PF2284K152NI	Clear plastic paper guide	Pickup roller assembly
PF2284K500NI	ADF cable	ADF Assembly
PF2284K501NI	External control panel cable	Control panel cover assembly
PF2284P044NI	ADF right cover	ADF Assembly
PF2284P060NI	Output bin base cover	ADF base assembly
PF2284P061NI	Output bin extender	ADF base assembly
PF2284P072NI	Control panel upper cover	Control panel assembly
PF2284P073NI	Control panel lower cover	Control panel assembly
PF2284P079NI	ADF right cover corner	ADF Assembly
PF2284P080NI	ADF left corner cover	ADF left cover
PF2284P086NI	ADF rear cover	ADF Assembly
PF2284P088NI	Upper hinge cover	ADF Assembly
PF2284P089NI	Output bin paper lever	ADF base assembly
PF2284P090NI	Damper cover	ADF base assembly
PF2284P091NI	Damper base cover	ADF base assembly
PF2284P375NI	Left damper spring	ADF base assembly
PF2284P376NI	Right damper spring	ADF base assembly
PF2284–SVPNI	ADF Assembly	ADF Assembly
Q2626–67951	DIMM-256MB DDR 100pin SDRAM Bulk	Memory
Q2635–67908	DS 9200C Card-32MB Flash xx.xxx.xx	Memory

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
Q5916-60104	Documentation CD	Related documentation and software
Q5916-60105	CPO Kit - EN, English Control panel cover	Control-panel overlays
Q5916-60106	CPO Kit - CS, Czech control panel cover	Control-panel overlays
Q5916-60107	CPO Kit - DA, Danish control panel cover	Control-panel overlays
Q5916-60108	CPO Kit - NL, Dutch control panel cover	Control-panel overlays
Q5916-60109	CPO Kit - FI, Finnish control panel cover	Control-panel overlays
Q5916-60110	CPO Kit - FR, French control panel cover	Control-panel overlays
Q5916-60111	CPO Kit - DE, German control panel cover	Control-panel overlays
Q5916-60112	CPO Kit - HU, Hungarian control panel cover	Control-panel overlays
Q5916-60113	CPO Kit - IT, Italian control panel cover	Control-panel overlays
Q5916-60114	CPO Kit - NO, Norwegian control panel cover	Control-panel overlays
Q5916-60115	CPO Kit - PL, Polish control panel cover	Control-panel overlays
Q5916-60116	CPO Kit - PT, Portuguese control panel cover	Control-panel overlays
Q5916-60117	CPO Kit - RU, Russian control panel cover	Control-panel overlays
Q5916-60118	CPO Kit - ES, Spanish control panel cover	Control-panel overlays
Q5916-60119	CPO Kit - SV, Swedish control panel cover	Control-panel overlays
Q5916-60120	CPO Kit - TR, Turkish control panel cover	Control-panel overlays
Q5916-60121	CPO Kit - KO, Korean control panel cover	Control-panel overlays
Q5916-60122	CPO Kit - ZHCN, Simplified Chinese control panel cover	Control-panel overlays
Q5916-60123	CPO Kit - ZHTW, Traditional Chinese control panel cover	Control-panel overlays
Q5916–60102	Assembly - Control Panel	Control-panel overlays
Q5916–60103	Engine assembly - DS 9200C, Product replacement	Internal components
Q5916–60125	Service CD	Related documentation and software
Q5916–67901	Formatter assembly	Internal components
Q5916–90908	HP 9200c DS Service Manual	Related documentation and software
Q5997–67901	ADF maintenance kit	Maintenance kits
Q6496–67901	Mylar replacement kit	Maintenance kits

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