



LaserJet 3100/3150

Service Manual



HP LaserJet 3100/3150 Product

Service Manual _____

Copyright Information

© 2002 Hewlett-Packard
Company

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

Part Number: C4256-90954

Second Edition, February 2002

Warranty

The information contained in
this document is subject to
change without notice.

Hewlett-Packard makes no
warranty of any kind with
respect to this information.
HEWLETT-PACKARD
SPECIFICALLY DISCLAIMS
THE IMPLIED WARRANTY OF
MERCHANTABILITY AND
FITNESS FOR A PARTICULAR
PURPOSE

Hewlett-Packard shall not be
liable for any direct, indirect,
incidental, consequential, or
other damage alleged in
connection with the furnishing or
use of this information.

NOTICE TO U.S.
GOVERNMENT USERS:
RESTRICTED RIGHTS
COMMERCIAL COMPUTER
SOFTWARE: "Use, duplication,
or disclosure by the
Government is subject to
restrictions as set forth in
subparagraph (c)(1)(ii) of the
Rights in Technical Data Clause
at DFARS 52.227-7013."

Material scanned by this
product may be protected by
governmental laws and other
regulations, such as copyright
laws. The customer is solely
responsible for complying with
all such laws and regulations.

**This product may be serviced
only in the country for which it
was designed to be used.**

Trademark Credits

JetSuite Pro Desktop for
Hewlett-Packard is a trademark
of JetFax, Inc.

Microsoft, Windows, and
MS-DOS are U.S. registered
trademarks of Microsoft
Corporation.

Iris is a registered trademark of
the Caere Corporation.

ENERGY STAR is a U.S.
registered service mark of the
United States Environmental
Protection Agency.

CompuServe is a trademark of
CompuServe, Inc.

All other products mentioned
herein may be trademarks of
their respective companies.

Contents

1 Product Information

Chapter contents	13
Introduction	14
Product features	15
Product specifications	16
Model and serial numbers	18
Product overview	19
Regulatory information	23
Safety	23
Laser statement for Finland	24
FCC regulations	25
Telephone consumer protection act (U.S.)	27
IC CS-03 requirements	28
Declaration of conformity	29
Canadian DOC regulations	30
Environmental product stewardship program	30
Material safety data sheet	34

2 Installation and operation

Chapter contents	35
Operating environment	36
Media requirements	37
Toner cartridge information	38
Storage conditions	38
Storing opened toner cartridges	38
Toner Recycling	38
Control panel	39
Control panel messages	40
Menu tree	52

3 Maintenance

Chapter contents	55
Life expectancies of consumables	56
Cleaning and maintaining the equipment	57
Cleaning the document scanner path	58
Cleaning the print path	60
Using a cleaning page	63

4 Functional overview

Chapter contents	65
Basic functions	66
Printer functions	67
ECU/power system	68
Print engine control system	69
Power system (on ECU)	70
Formatter system	72
Central processing unit	72
Memory	72
Parallel interface	73
Control panel	73
Draft mode	73
Image formation system	74
Toner cartridge	74
Step 1: Primary charging	75
Step 2: Scanning exposure	75
Step 3: Developing	75
Step 4: Transferring	76
Step 5: Separating	76
Step 6: Drum cleaning	76
Fixing stage	76
Printer feed system	77
Paper jam detection	79
Solenoid, photosensors, and switches	80
Document scanner system	81
Basic sequence of operation (formatter-to-printer)	83

5 Removal and replacement

Chapter contents	85
Removal and replacement strategy	86
Required tools	87
Covers	88
Back cover	88
Right side cover	90
Left side cover	91
Left front cover	92
Top cover	93
RFI shield	94
Document scanner assemblies	95
Printer door	95
Document release door	98
Upper guide assembly	100
Contact image sensor	102
Document scanner assembly/motor	104
Document scanner pickup roller	106

Internal assemblies	107
LIU board	107
Formatter board	108
Metal side plate.	110
Exit roller.	111
Delivery assembly.	112
Fuser pressure plate.	114
Front casing	116
Heating element	117
Pressure roller.	119
Face-up/face-down lever	120
Fuser exit roller assembly.	121
Paper exit sensor flag	122
Laser/scanner assembly.	123
Solenoid	124
Pickup roller assembly	126
Paper feed frame	129
Transfer roller guide and transfer roller.	132
Kick plate	133
Separation pad	135
Subpads	136
Feed assembly	137
Bottom assemblies	140
Cable guide.	140
Main Motor	141
ECU	142
Feet.	146

6 Troubleshooting

Chapter contents	147
Basic troubleshooting	148
Error messages	152
Image formation troubleshooting.	157
Check the toner cartridge	157
Solving image quality problems	158
Solving paper feed problems.	165
Solving general software problems	169
Functional checks	173
Simple hardware test	173
Engine test	174
Internal reports	175
Printing all reports at once	176
Half-self test functional check	177
Drum rotation functional check	178
Heating element check	179
High-voltage power supply check	180

Paper curl	181
Paper path check	182
Troubleshooting tools	183
Paper path and components.	183
Document path and components	184
Repetitive image defect ruler	185
Document scanner recalibration	186
Main wiring	188
Service menus.	190
Control panel service menu	190
Extended service menu	191
Softswitches	197
To change the country code softswitch.	197
Firmware and software downloads	199
Hardware, software, and firmware compatibility	200
Fax trace report	201

7 Parts and diagrams

Chapter contents	209
How to use the parts lists and diagrams	210
Ordering parts.	210
Consumables and accessories	211
Ordering consumables	213
Common hardware	214
Alphabetical parts list	242
Numerical parts list	249

Appendix A Additional user notes

Document scanner separation pad replacement.	255
When to replace the document scanner separation pad	255
How to replace the document scanner separation pad.	256

Index

Figures

Figure 1.	Model and serial number label	18
Figure 2.	Document scanner path	19
Figure 3.	Printer path (1 of 2)	20
Figure 4.	Printer path (2 of 2)	21
Figure 5.	Rear view	22
Figure 6.	Control panel layout	39
Figure 7.	Basic configuration	66
Figure 8.	Printer unit functional block diagram	67
Figure 9.	ECU loads	68
Figure 10.	High-voltage power supply circuit	71
Figure 11.	Image formation block diagram	74
Figure 12.	Simplified paper path	78
Figure 13.	Solenoid, photosensors, and switches	80
Figure 14.	Simplified document path	82
Figure 15.	General timing diagram	84
Figure 16.	Back cover removal (1 of 2)	88
Figure 17.	Back cover removal (2 of 2)	89
Figure 18.	Right side cover removal	90
Figure 19.	Left side cover removal	91
Figure 20.	Left front cover removal	92
Figure 21.	Top cover removal	93
Figure 22.	RFI shield removal	94
Figure 23.	Printer door removal (1 of 3)	95
Figure 24.	Printer door removal (2 of 3)	96
Figure 25.	Printer door removal (3 of 3)	97
Figure 26.	Document release door removal (1 of 2)	98
Figure 27.	Document release door removal (2 of 2)	99
Figure 28.	Upper guide assembly removal (1 of 2)	100
Figure 29.	Upper guide assembly removal (2 of 2)	101
Figure 30.	Contact image sensor removal (1 of 2)	102
Figure 31.	Contact image sensor removal (2 of 2)	103
Figure 32.	Document scanner motor removal (1 of 2)	104
Figure 33.	Document scanner motor removal (2 of 2)	105
Figure 34.	Document scanner pickup roller removal	106
Figure 35.	LIU board removal	107
Figure 36.	Formatter board removal (1 of 2)	108
Figure 37.	Formatter board removal (2 of 2)	109
Figure 38.	Metal side plate removal	110
Figure 39.	Exit roller removal	111
Figure 40.	Delivery assembly removal (1 of 2)	112
Figure 41.	Delivery assembly removal (2 of 2)	113

Figure 42.	Fuser pressure plate removal	114
Figure 43.	Fuser pressure plate replacement	115
Figure 44.	Front casing removal	116
Figure 45.	Heating element removal (1 of 2)	117
Figure 46.	Heating element removal (2 of 2)	118
Figure 47.	Pressure roller guide removal	119
Figure 48.	Face-up/face-down lever replacement	120
Figure 49.	Fuser exit roller assembly removal	121
Figure 50.	Paper exit sensor flag replacement	122
Figure 51.	Laser/scanner assembly removal	123
Figure 52.	Solenoid removal (1 of 2)	124
Figure 53.	Solenoid removal (2 of 2)	125
Figure 54.	Pickup roller assembly removal (1 of 2)	126
Figure 55.	Pickup roller assembly removal (2 of 2)	127
Figure 56.	Paper pickup roller assembly replacement	128
Figure 57.	Paper feed frame removal (1 of 3)	129
Figure 58.	Paper feed frame removal (2 of 3)	130
Figure 59.	Paper feed frame removal (3 of 3)	131
Figure 60.	Transfer roller guide and transfer roller removal . . .	132
Figure 61.	Kick plate removal	133
Figure 62.	Kick plate spring replacement	134
Figure 63.	Separation pad removal	135
Figure 64.	Subpad removal	136
Figure 65.	Feed assembly removal (1 of 3)	137
Figure 66.	Feed assembly removal (2 of 3)	138
Figure 67.	Feed assembly removal (3 of 3)	139
Figure 68.	Cable guide removal	140
Figure 69.	Motor removal	141
Figure 70.	ECU removal (1 of 4)	142
Figure 71.	ECU removal (2 of 4)	143
Figure 72.	ECU removal (3 of 4)	144
Figure 73.	ECU removal (4 of 4)	145
Figure 74.	Feet removal	146
Figure 75.	Engine test switch location	174
Figure 76.	Toner cartridge high-voltage connection points . . .	180
Figure 77.	High-voltage connector assembly	181
Figure 78.	Overriding SW101	182
Figure 79.	Paper path and components	183
Figure 80.	Document path and components	184
Figure 81.	Repetitive image defect ruler	185
Figure 82.	General circuit diagram (1 of 2)	188
Figure 83.	General circuit diagram (2 of 2)	189
Figure 84.	Example of a successfully sent fax	206
Figure 85.	Example of a successfully received fax	207
Figure 86.	Major assembly locations	215
Figure 87.	Supports	216
Figure 88.	External covers and panels	218

Figure 89.	Printer door (1 of 2)	220
Figure 90.	Printer door (2 of 2)	222
Figure 91.	Document scanner assembly	224
Figure 92.	Internal components (1 of 3)	226
Figure 93.	Internal components (2 of 3)	228
Figure 94.	Internal components (3 of 3)	230
Figure 95.	Electrical components assembly	232
Figure 96.	Paper pickup assembly	234
Figure 97.	Feed assembly	236
Figure 98.	Separation guide assembly	238
Figure 99.	Delivery assembly	240
Figure 100.	Document scanner separation pad replacement . . .	256

Tables

Table 1.	Product features	15
Table 2.	Physical specifications	16
Table 3.	Performance specifications	16
Table 4.	Power specifications	17
Table 5.	Operating acoustical emissions specifications	17
Table 6.	Skew specifications	17
Table 7.	Environmental requirements	36
Table 8.	Media requirements	37
Table 9.	Control panel messages	40
Table 10.	Life expectancies of consumables	56
Table 11.	DC power distribution	70
Table 12.	Timing	83
Table 13.	Control panel service menu	190
Table 14.	Extended service menu tree	192
Table 15.	Extended service mode self-test failures	193
Table 16.	Extended service mode tests	194
Table 17.	Extended service mode reports	195
Table 18.	Country code softswitch sequences	198
Table 19.	Hardware, software, and firmware compatibility	200
Table 20.	Fax phase sequence	202
Table 21.	Appropriate responses	203
Table 22.	Fax abbreviations	204
Table 23.	Consumables and accessories	211
Table 24.	Common fasteners	214
Table 25.	Supports	217
Table 26.	External covers and panels	219
Table 27.	Printer door (1 of 2)	221
Table 28.	Printer door (2 of 2)	223
Table 29.	Document scanner assembly	225
Table 30.	Internal components (1 of 3)	227
Table 31.	Internal components (2 of 3)	229
Table 32.	Internal components (3 of 3)	231
Table 33.	Electrical components assembly	233
Table 34.	Paper pickup assembly	235
Table 35.	Feeder assembly	237
Table 36.	Separation guide assembly	239
Table 37.	Delivery assembly	241
Table 38.	Alphabetical parts list	242
Table 39.	Numerical parts list	249

1

Product Information

Chapter contents

Introduction	14
Product features	15
Product specifications	16
Model and serial numbers	18
Product overview	19
Regulatory information	23

Introduction

The HP LaserJet 3100/3150 product is a powerful business tool with the capabilities of a full range of office equipment. With the HP LaserJet 3100/3150 product, you can:

- **Print**—Easily print documents with the laser quality you have come to expect from an HP LaserJet printer.
- **Fax**—Use the HP LaserJet 3100/3150 product as a standalone fax machine to send and receive faxes, as well as perform advanced tasks such as forwarding faxes to other locations. Use the software to send faxes from and receive them to your computer.
- **Copy**—Make superior laser-quality copies. You can make up to 99 copies of a 30-page original. You can also enlarge, reduce, adjust contrast and collate.
- **Scan**—Scan important documents to create electronic files.
- **Use Software**—Use the software to print, fax, copy, or scan. Also use the software to store and organize scanned documents.

Product features

Table 1. Product features

Feature	Description
Print speed	6 pages per minute (ppm)
Copy speed	6 ppm
Fax transmission speed	6 seconds per page
Margins for scanned items	0.16 in (4.06 mm) at leading and trailing edges 0.12 in (3.05 mm) at sides
Margins for printed pages	0.20 in (5.08 mm) at sides 0.25 in (6.35 mm) at leading and trailing edges
Fax compatibility	International Telecommunications Union (ITU) Group 3
Fax coding schemes	MR, MMR, MH, and JBIG
Modem speed	14,400 bits per second (bps)
Speed dialing	Yes
Distinctive ring detect	Yes
Multiple copies	Up to 99 per job
Copy Reduction/ Enlargement	50% to 200%
Memory	2 megabytes (MB) (approximately 150 pages)
Printer Duty Cycle	6,000 single-sided pages per month
Document Scanner Duty Cycle	2,500 single-sided items per month

Product specifications

Table 2. Physical specifications

Category	Specification
Height	10.71 in (272 mm) without supports attached; 15.91 in (404 mm) with supports attached
Depth	15.36 in (390 mm) without supports attached; 23.55 in (598 mm) with supports attached
Width	15.12 in (384 mm)
Weight (cartridge installed)	23.37 pounds (10.6 kilograms)

Table 3. Performance specifications

Category	Specification
Print resolution	600 dots per inch (dpi)
Scan resolution	600 dpi enhanced; 300 dpi optical, with 256 levels of gray
Fax resolution	Standard: 203 by 98 dpi Fine: 203 by 196 dpi Superfine: 300 by 300 dpi (no halftone) Photo: 300 by 300 dpi (halftone enabled)
Print speed	6 ppm
Copy speed	6 ppm

Table 4. Power specifications

Category	Specification
Power requirements	100 to 127 Volts alternating current (Vac) +/-10%; 50 to 60 hertz 220 to 240 Vac +/-10%; 50 hertz
Power consumption (in continuous copy mode)	135 watts
Power consumption (idle)	9 watts
Minimum recommended circuit capacity	4.2 amps (110 volts) 2 amps (220 volts) (4.2 amps maximum pull)

Table 5. Operating acoustical emissions (per ISO 9296) specifications

Category	Specification
Sound Power Level, L_{WA_d} (1 bel = 10 decibels)	5.7 bels (B)
Sound Pressure Level, L_{pAm} (Operator Position)	52 decibels (dB)
Sound Pressure Level, L_{pAm} (Bystander Position)	43 dB

Table 6. Skew specifications

Category	Specification
Print skew—left	0.6% (1.5 mm over 250 mm in length)
Print skew—right angle accuracy	0.64% (1.2 mm over 190 mm in width)
Scan skew	1.2%

Model and serial numbers

The model number and serial number are listed on an identification label located on the back of the printer.

- HP LaserJet 3100 product Model number C3948A
- HP LaserJet 3150 product Model number C4256A

The serial number contains information about the Country of Origin, the Revision Level, the Production Code, and production number of the HP LaserJet 3100/3150 product.

The label also contains power rating and regulatory information. The label shown in Figure 1 below is a label from an HP LaserJet 3100 product.

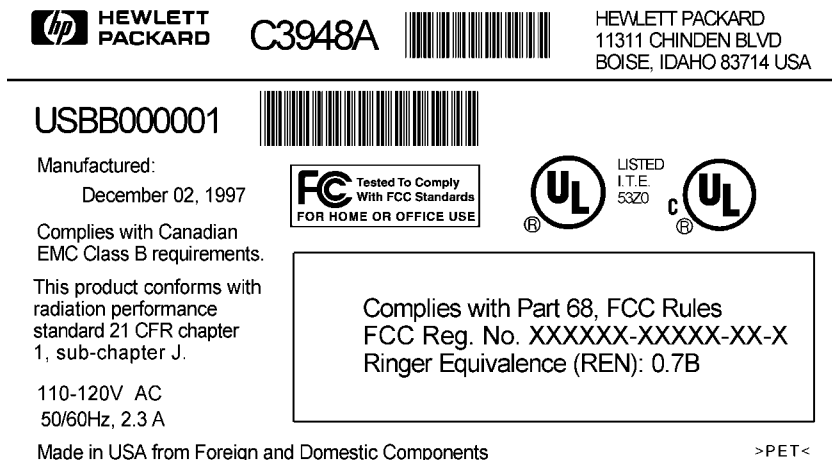


Figure 1. Model and serial number label

Product overview

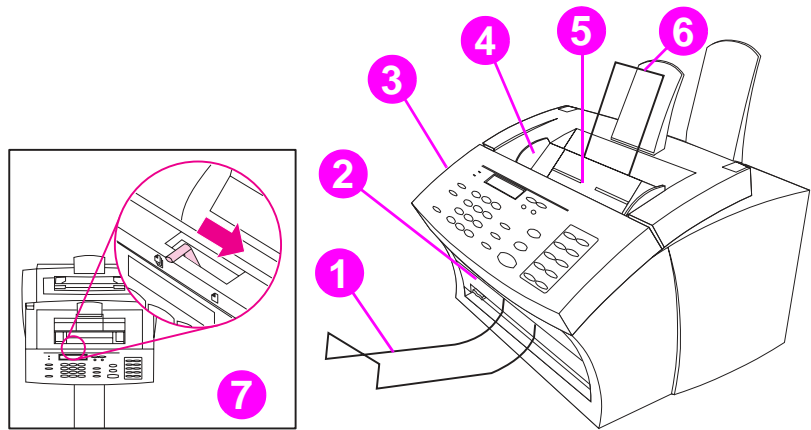


Figure 2. Document scanner path

- 1 Document output support
- 2 Document output slot
- 3 Document release door/control panel
- 4 Document feeder tray guides
- 5 Document feeder tray
- 6 Document feeder support
- 7 Special media lever

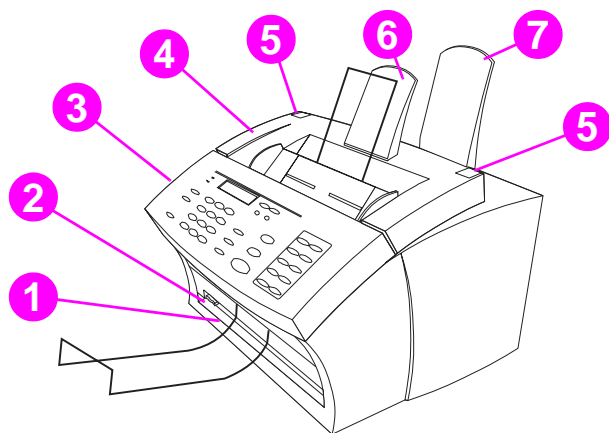


Figure 3. Printer path (1 of 2)

- 1 Front paper output
- 2 Paper path lever
- 3 Control panel
- 4 Printer door
- 5 Printer door release latches
- 6 Paper output support
- 7 Paper input support

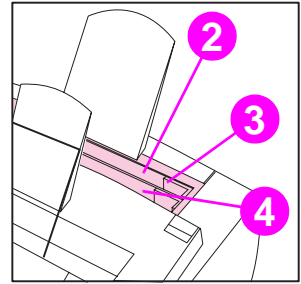
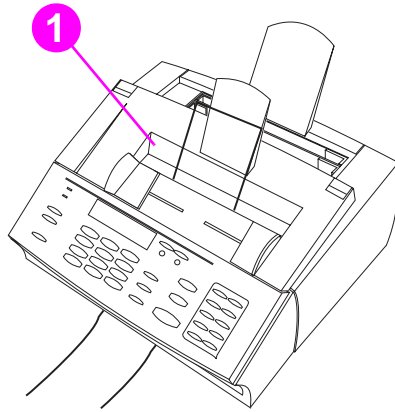


Figure 4. Printer path (2 of 2)

- 1 Output bin
- 2 Input bin
- 3 Paper guides
- 4 Single-sheet input slot

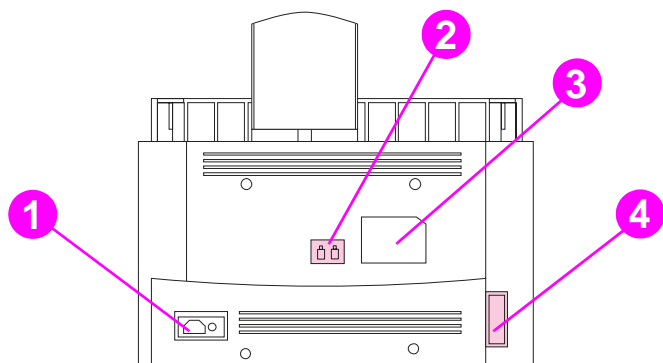


Figure 5. Rear view

- 1 Power cable connector
- 2 Phone line connector (or connectors, depending on country)
- 3 Model and serial number label
- 4 Parallel cable connector

Regulatory information

Safety

Transportation

Non-operating Magnetic Field Emissions, IATA Packaging Instructions 902

Laser safety statement

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration has implemented regulations for laser products manufactured since August 1, 1976. Compliance is mandatory for products marketed in the United States. This printer is certified as a "Class 1" laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968. Since radiation emitted inside this printer is completely confined within protective housings and external covers, the laser beam cannot escape during any phase of normal user operation.

WARNING!

Using controls, making adjustments, or performing procedures other than those specified in this manual may result in exposure to hazardous radiation.

Laser statement for Finland

Luokan 1 laserlaite

Klass 1 Laser Apparat

HP LaserJet 3100/3150 laserkirjoitin on käyttäjän kannalta turvallinen luokan 1 laserlaite. Normaalissa käytössä kirjoittimen suojakotelointi estää lasersäteen pääsyn laitteen ulkopuolelle. Laitteen turvallisuusluokka on määritetty standardin EN 60825-1 (1994) mukaisesti.

Varoitus!

Laitteen käyttäminen muulla kuin käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

Varning!

Om apparaten används på annat sätt än i bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

HUOLTO

HP LaserJet 3100/3150 -kirjoittimen sisällä ei ole käyttäjän huollettavissa olevia kohteita. Laitteen saa avata ja huoltaa ainoastaan sen huoltamiseen koulutettu henkilö. Tällaiseksi huoltotoimenpiteeksi ei katsota väriainekasetin vaihtamista, paperiradan puhdistusta tai muita käyttäjän käsikirjassa lueteltuja, käyttäjän tehtäväksi tarkoitettuja ylläpitotoimia, jotka voidaan suorittaa ilman erikoistyökaluja.

Varo!

Mikäli kirjoittimen suojakotelo avataan, olet alttiina näkymättömälle lasersäteilylle laitteen ollessa toiminnassa. Älä katso säteeseen.

Varning!

Om laserprinterns skyddshölje öppnas då apparaten är i funktion, utsättas användaren för osynlig laserstrålning. Betrakta ej strålen.

Tiedot laitteessa käytettävän laserdiodin säteilyominaisuuksista:

Aallonpituus 775-795 nm
Teho 5 mW
Luokan 3B laser

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 is not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

Note

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

Note

Use of a shielded interface cable is required to comply with the Class B limits of Part 15 of FCC rules.

FCC part 68 requirements

This equipment complies with FCC rules, Part 68. On the back of this equipment is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all, areas, the sum of the RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

This equipment uses the following USOC jacks:

RJ11C

An FCC-compliant telephone cord and modular plug is provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using a compatible modular jack which is Part 68 compliant.

This equipment cannot be used on telephone company-provided coin service. Connection to Party Line Service is subject to state tariffs.

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

If trouble is experienced with this equipment, please see the numbers in the front of this manual for repair and (or) warranty information.

If the trouble is causing harm to the telephone network, the telephone company may request you remove the equipment from the network until the problem is resolved.

The following repairs can be done by the customer:

Replace any original equipment that came with the HP LaserJet 3100/3150 product. This includes the toner cartridge, the supports for trays and bins, the power cord and the telephone cord.

It is recommended that the customer install an AC surge arrester in the AC outlet to which this device is connected. This is to avoid damage to the equipment caused by local lightning strikes and other electrical surges.

Telephone consumer protection act (U.S.)

The Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device, including fax machines, to send any message unless such message clearly contains, in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business, other entity, or individual sending the message and the telephone number of the sending machine or such business, other entity, or individual. (The telephone number provided may not be a 900 number or any other number for which charges exceed local or long-distance transmission charges.)

In order to program this information into your facsimile, please see "Setting the fax header" and "Setting the time and date" in the user guide.

IC CS-03 requirements

NOTICE: The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirement document(s). The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

The Ringer Equivalence Number (REN) of this device is 0.7.

NOTICE: The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Number of all the devices does not exceed 5.

The standard connecting arrangement code (telephone jack type) for equipment with direct connections to the telephone network is CA11A.

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 LaserJet 3100/3150 product

Model Number: CxxxxA

Product Options: ALL

conforms to the following Product Specifications:

Safety: IEC 950:1991+A1+A2+A3 / EN 60950:1992+A1+A2+A3
EN 41003:1993
IEC 825-1:1993 / EN 60825-1:1994 Class 1 (Laser/LED)

EMC: CISPR 22:1993+A1 / EN 55022:1994 Class B¹
EN 50082-1:1992
IEC 801-2:1991 / prEN 55024-2:1992-3kV CD, 8kV AD
IEC 801-3:1984 / prEN 55024-3:1991-3 V/m
IEC 801-4:1988 / prEN 55024-4:1992-0.5 kV Signal Lines
1.0 kV Power Lines
IEC 1000-3-2:1995 / EN61000-3-2:1995
IEC 1000-3-3:1994 / EN61000-3-3:1995
FCC Title 47 CFR, Part 15 Class B² / ICES-003, Issue 2
AS / NZS 3548:1995 / CISPR 22:1993 Class B¹

Supplementary Information:

The product herewith complies with the requirements of the following Directives and carries the CE-marking accordingly:

- the EMC directive 89/336/EEC
- the Low Voltage Directive 73/23/EEC

¹This product was tested in a typical configuration with Hewlett-Packard Personal Computer Systems.

²This 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.

March 25, 1997

For Compliance Information ONLY, contact:

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 130, 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)

Canadian DOC regulations

Complies with Canadian EMC Class B requirements.

Conforme à la classe B des normes canadiennes de compatibilité électromagnétiques. << CEM>>.

Environmental product stewardship program

Protecting the environment

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

This HP LaserJet printer design eliminates:

Ozone production

The printer does not use high-voltage corona wires in the electrophotographic process and therefore generates no appreciable ozone gas (O₃). Instead, this printer uses charging rollers in the toner cartridge and in the print engine.

This HP LaserJet printer design reduces:

Energy consumption

Energy usage drops to as little as 9 watts while in idle mode. Not only does this save natural resources, but it also saves money without affecting the high performance of this product. This product qualifies for the ENERGY STAR. ENERGY STAR is a voluntary program established to encourage the development of energy-efficient office products. ENERGY STAR is a U.S. registered service mark of the U.S. Environmental Protection Agency.



As an ENERGY STAR partner, Hewlett-Packard Company has determined that this product meets ENERGY STAR Guidelines for energy efficiency.

Toner consumption

Depending on the type of printer driver you have, you may be able to select a “draft” mode which uses about 50% less toner, thereby extending the life of the toner cartridge. This is only available using printer driver properties when printing or making copies from the software.

Paper use

Depending on the type of program you use, you may be able to print 2 or 4 document pages on each printed page. This “N-up” printing practice and the printer’s manual duplex capability (two-sided printing) reduce paper usage and the resulting demands on natural resources.

The design of this HP LaserJet printer facilitates the recycling of:

Plastics

Plastic parts have marking according to international standards that enhance the ability to identify plastics for recycling purposes at the end of the product’s life.

HP LaserJet Printing Supplies

In many countries, this product’s printing supplies (e.g., toner cartridge, drum, fuser) can be returned to HP through the HP Planet Partners Printing Supplies Environmental Program. An easy-to-use and free takeback program is available in more than 20 countries. Multilingual program information and instructions are included in every new HP LaserJet toner cartridge and consumables package.

HP Planet Partners Printing Supplies Environmental Program Information

Since 1990, the HP LaserJet Toner Cartridge Recycling Program has collected more than 25 million used LaserJet toner cartridges that otherwise may have been discarded in the world’s landfills. The HP LaserJet toner cartridges and consumables are collected and bulk shipped to our resource and recovery partners who disassemble the cartridge. After a thorough quality inspection, selected parts such as nuts, screws, and clips are reclaimed for use in new cartridges. Remaining materials are separated and converted into raw materials for use by other industries to make a variety of useful products.

Returns

For a more environmentally responsible return of used cartridges and consumables, HP encourages the use of bulk returns. Simply bundle two or more cartridges or consumables together and use the single, pre-paid, pre-addressed UPS label that is supplied in the package.

For more information in the U.S. or Canada, call (1) (800) 340-2445 (U.S.) or (1) (800) 387-3867. Or, visit the HP LaserJet Supplies website at the following address:

<http://www.ljsupplies.com/planetpartners/>

For more information in Mexico, call 258-40-44 (Mexico City) or (1) (800) 900-7200 (outside Mexico City). Or, visit the website at the following address:

<http://www.hp.com/latinamerica>

All other customers should call their local HP Sales and Service Office or visit the following websites for further information regarding availability of the HP Planet Partners LaserJet Toner Cartridge and Consumables Recycling Program:

Latin America: <http://www.hp.com/latinamerica>

Asia/Pacific Region: <http://www.asiapacific.hp.com/planp1>

Europe: http://www.hp.com/pays/eur_supplies/english/planetpartners

Paper

This printer is suited for the use of recycled papers when the paper meets the guidelines outlined in the HP LaserJet Printer Family Paper Specification Guide (HP part number 5040-9072). This printer is suited for the use of recycled paper according to DIN 19 309.

To ensure longevity of your HP LaserJet printer, HP provides the following:

Extended warranty

HP SupportPack provides coverage for the HP hardware product and all HP-supplied internal components. The hardware maintenance covers a three-year period from date of the HP product purchase. HP SupportPack must be purchased by the customer within 90 days of the HP product purchase. Information on HP SupportPack is available in a fax format by calling the U.S. HP FIRST (Fax Information Retrieval Support Technology) at (800) 333-1917.

After connecting, press 1, and then press 1 again. The document number is 9036. International customers can contact the nearest HP-authorized reseller about this service.

If you have access to the internet, please try the HP Support Services website about HP Support Pack at the following address:

<http://www.hp.com/ssg/serv.pack.html>

The following website contains worldwide customer service and support contact information:

<http://www.hp.com/ssg/contact/world.html>

Spare parts and consumables availability

Spare parts and consumable supplies for this product will be made available for at least five years after production has stopped.

Material safety data sheet

The Material Safety Data Sheet (MSDS) can be obtained by contacting the fax-on-demand service in the HP LaserJet Supplies website at the following address:

<http://www.hp.com/go/msds>

If you do not have access to the internet, call U.S. HP FIRST at (800) 231-9300. After connecting, press 1. Then, request document number 10164.

Non-U.S. customers should refer to the HP LaserJet 3150 product user guide for HP FIRST phone numbers and information.

2 Installation and operation

Chapter contents

Operating environment	36
Media requirements.	37
Toner cartridge information	38
Control panel.	39

Operating environment

The environmental requirements listed below must be maintained to ensure the proper operation of the HP LaserJet 3100/3150 product.

Table 7. Environmental requirements

Category	Requirement
Operating (working or standby)	Temperature: 59 to 90.5 degrees Fahrenheit (15 to 32.5 degrees Celsius) Humidity: 10 to 80 percent relative humidity (no condensation)
Non-operating	Temperature (toner cartridge): -4 to 104°F (-20 to 40°C); Temperature (product): -4 to 140°F (-20 to 60°C) Humidity: 10 to 90 percent relative humidity (no condensation)
Normal storage	Temperature: 32 to 95°F (0 to 35°C) Humidity: 35 to 85 percent relative humidity

Consider the following before installing the printer:

- Install in a well-ventilated, dust-free area.
- Install on a hard, flat, continuous surface, with all four feet level. Do not install on carpet or other soft surfaces.
- Ensure adequate power is supplied.

Note

Uninterruptible power supplies (UPS) may be used with the HP LaserJet 3100/3150 product.

- Install away from direct sunlight, open flames, or ammonia fumes. If the HP LaserJet 3100/3150 product is placed near a window, make sure the window has a curtain or blind to block direct sunlight.
- Install with enough space around the product for proper access and ventilation.
- Install away from the direct flow of exhaust from air ventilation systems.

Media requirements

Media must be in good condition. Do not use media that is torn, worn, or irregular. The table below details media requirements of the HP LaserJet 3100/3150 product.

Table 8. Media requirements

Input for paper input bin and single-sheet input slot (for printer path)

Media size	Maximum: 8.5 by 14 in (216 by 356 mm) Minimum: 3 by 5 in (76.2 by 127 mm)
Media weight	For paper output bin: 16 to 28 lb; (60 to 105 g/m ²) For front output slot: 16 to 42 lb (60 to 157 g/m ²)
Paper input bin capacity	Up to 100 sheets of media at 20 lb (75 g/m ²) weight or lighter (fewer than 100 sheets of heavier media) or up to 10 envelopes

Input for document feeder tray (for document scanner path)

Item size	Maximum width: 8.5 in (216 mm) Maximum length: 39 in (991 mm); up to 118 in (2997.2 mm) with "long pages" enabled Minimum size: 2 by 3.5 in (51 by 89 mm)
Item weight	Maximum: 28 lb (105 g/m ²) for normal use; up to 67 lb (252 g/m ²) when using special media lever Minimum: 12 lb (44 g/m ²)
Document feeder tray capacity	Up to 30 pages of an item at 20 lb (75 g/m ²) weight or lighter Fewer than 30 pages of items up to 28 lb (105 g/m ²) weight One page at a time of 12 to 67 lb (44 to 252 g/m ²) weight using special media lever

Output capacities

Paper output bin	Up to 100 sheets of 20 lb (75 g/m ²) or lighter paper
Front paper output slot	Up to 20 pages of 20 lb (75 g/m ²) or lighter paper
Document output tray	Up to 30 pages of an item at 28 lb (105 g/m ²)

Toner cartridge information

Toner cartridges contain components that are sensitive to light, temperature, and humidity. Follow the recommendations in this section to ensure the highest quality and longest life of HP toner cartridges.

Keep the HP LaserJet 3100/3150 product within the following environmental conditions for optimum performance.

Storage conditions

Toner cartridges are affected by their environment. Packaging protects toner cartridges from light and increases storage life. It is important to store cartridges in their original packaging until ready for installation.

When storing cartridges in a warehouse or work area, make sure the storage place meets the conditions specified in Table 6.

Storing opened toner cartridges

Because cartridges do not have shutters to cover the laser beam access slot, they should be kept inside the HP LaserJet 3100/3150 product until empty. Toner cartridges that have had the toner sealing tape removed are also more vulnerable to environmental extremes.

If a toner cartridge must be removed from the HP LaserJet 3100/3150 product, always store the cartridge:

- Inside the protective bag in which it was originally packaged.
- In a dark cabinet, away from direct sunlight.
- Correct side up and in a horizontal position (not standing on end).
- Away from ammonia or organic solvent fumes.

CAUTION

Never ship the HP LaserJet 3100/3150 product with a toner cartridge installed. Excessive vibration during shipping can cause toner to leak, contaminating the product and possibly damaging the drum. Never expose a cartridge to direct sunlight or to room light for more than a few minutes. Bright light can permanently damage a toner cartridge.

Toner Recycling

See recycling information in Chapter 1.

Control panel

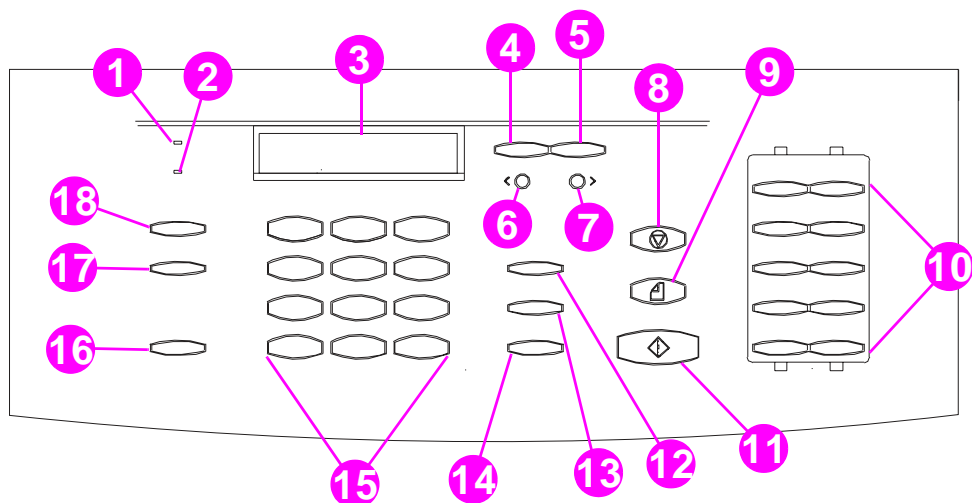


Figure 6. Control panel layout

1. Ready light	7. Forward arrow key	13. Speed-dial key
2. Error light	8. Stop/clear key	14. Redial/pause key
3. Control panel display	9. Copy key	15. Numeric keys
4. Enter/menu key	10. One-touch keys	16. Volume key
5. Backspace key	11. Start key	17. Resolution key
6. Back arrow key	12. Manual dial key	18. Contrast key

Control panel messages

These control panel messages are listed alphabetically, and are accompanied by the cause for the message and steps to take to resolve the problem.

Table 9. Control panel messages

Message	Cause	Solution
(number) is a Group Group not Allowed	The group-dial code you entered is assigned to a group, but a group cannot be dialed at this point. (Entries assigned as groups cannot be assigned into other groups.)	Enter a different one-touch key or speed-dial code that is not assigned.
Already in Group	While programming a group-dial code, you tried to add a fax number that is already in the group.	Continue by adding the next fax number you want to the group.
Blacklisted (France only)	The fax number you tried to dial has received a voice answer or no answer, was busy on the first dial and redials, or was busy with redials pending.	To clear the blacklist, unplug the fax machine's power cord from the power strip or outlet and plug it back in.
Busy	The fax line to which you sent a fax was busy. The HP LaserJet 3100/3150 product automatically redials the busy line the number of times specified.	Check the fax number and try again to send the fax. If the message appears again, try to send the fax to another fax machine or try again later.
Cancel Group Edit ENTER to Confirm	You pressed BACK SPACE while in a group-dial code in the Group Dial Setup Menu.	Press START to return to the group-dial code and continue editing. Press ENTER/MENU to go to the Group Dial Setup Menu. (Press ENTER/MENU again to choose a different group-dial code.) Press STOP/CLEAR to exit the Menu settings.

Table 9. Control panel messages

Message	Cause	Solution
Clear Document From Scanner	Your document jammed while being fed through the document feeder tray or the HP LaserJet 3100/3150 product loaded multiple sheets of the document.	Open the document release door, remove the jammed item, and then close the door.
	The special media lever was in the wrong position for the document you sent.	Remove the jammed item as detailed above. Then, check the special media lever. It should be to the left for regular-weight items or to the right for thick or light items, which must be fed one at a time.
	The control panel configuration was set incorrectly.	Check the control panel configuration for outgoing faxes, including the “send long pages” setting.

Table 9. Control panel messages

Message	Cause	Solution
Communication Error	An error occurred while trying to transmit a fax. Brief descriptions of communication errors are listed below:	Try again to send the fax. Try to send the fax to another fax machine. Make sure the telephone cord is securely connected. Then, check for a dial tone on the phone line by pressing MANUAL DIAL . Make sure the phone line is working by disconnecting the HP LaserJet 3100/3150 product, plugging in a telephone to the phone line, and making a voice call. Connect the product to a different phone line. Reset the product by pressing and holding STOP/CLEAR for seven seconds. Wait and try resending the fax later.
	60 no RTC at end of fax	
	81 memory filled up	
	82 fax was too short	
	84 power fail while receiving	
	85 failed to train	
	86 in ECM, fax data had error(s)	
	87 NEC failed to decode (T.4 or T.6 coding error)	
	88 received scan line exceeds 13 sec (T.4-3.2)	
	89 modem setup timeout	
	90 low speed command time out	
	91 bad low speed command	
	92 transmit error: no DIS	
	93 transmit error: no answer	
	94 transmit error: canceled by operator	
	95 transmit error: failed to train	
	96 transmit error: busy	
	97 transmit error: no dial tone	
	100 poll-in error: no document to poll	
	101 document jam	
	102 receive error: too many mailbox logs	
	103 receive error: had poll document but no memory for receive	
	104 transmit error: no MCF	
	105 image processing chip fell behind	
	106 transmit: modem output buffer error	
	107 PIN received	
	108 RR/RNR timeout	
	109 generic ECM error	
	110 possible missing/partial pages in ECM	
	111 T4 bit not set in DIS	
	112 wrong password	
	113 communications error in remote setup (JetFax only)	
	114 fax document was lost (JetFax only)	
	115 blacklist	
	116 SUB/PWD error	
	117 timeout waiting for image processing chip	
	118 no fax detected	
	119 remote access	
	120 caller disconnected prematurely	

Table 9. Control panel messages

Message	Cause	Solution
Configuration Err # (number 1-4)	An error was detected in the SRAM.	Unplug the power cord from the power source, wait 10 seconds, and replug in the power cord. Try plugging the power cord into a different power source. If the error persists, see Chapter 6, "Troubleshooting."
Config. Stuck Addr	In Service Mode only, SRAM stuck address test.	Unplug the power cord from the power source, wait 10 seconds, and replug in the power cord. If the error persists, see Chapter 6, "Troubleshooting."
Config. Tied Addr.	In Service Mode only, SRAM tied address test.	Unplug the power cord from the power source, wait 10 seconds, and replug in the power cord. If the error persists, see Chapter 6, "Troubleshooting."
Decoding Error # (number 1-3)	There was an error in decoding with the image processing chip.	Unplug the power cord from the power source, wait 10 seconds, and replug in the power cord. Try plugging the power cord into a different power source. If the error persists, see Chapter 6, "Troubleshooting."
Documents Were Lost START to Continue	Power to the HP LaserJet 3100/3150 product was interrupted, and documents in memory were lost.	Press START . The HP LaserJet 3100/3150 product prints a report. Check the Status column for the "Fax Document was Lost" message. The associated incoming and outgoing faxes should be resent.
Encoding Error	There was an error in encoding with the image processing chip.	Unplug the power cord from the power source, wait 10 seconds, and replug in the power cord. If the error persists, see Chapter 6, "Troubleshooting."
Errors Likely in Pages	The fax transmission was completed, but there are likely to be errors in the pages specified.	Try resending the fax or asking the sender to resend the fax to you. Try faxing to another fax number. Try connecting the product to a different phone line.

Table 9. Control panel messages

Message	Cause	Solution
Fax Document was Lost	Faxes in memory were lost as a result of a power failure.	If you set up faxes to be sent at a future time or to be polled, or if the product was set to receive faxes to memory, print a fax log to identify the lost faxes. The lost faxes should be resent.
Fax Memory Error # (number 1-5)	An error was detected in DRAM.	Unplug the power cord from the power source, wait 10 seconds, and replug in the power cord. Try a different power source or surge protector. If the error persists, see Chapter 6, "Troubleshooting."
Group is Empty, Use ONE-TOUCH/ SPEED DIAL	Appears when you are creating a group-dial code.	Begin adding fax numbers to the group-dial code. For more information, see "Programming group-dial codes from the control panel" in the user guide.
Input Limit Reached	Too many fax numbers were dialed when you tried to send to an ad-hoc group.	The maximum number of fax numbers that can be added to an ad-hoc group is 100. Resend the fax to 100 or fewer numbers.
Invalid Date or Time	An invalid time or date was entered, such as 25:99 PM or June 35	Re-enter the date and time. If the error persists, see Chapter 6, "Troubleshooting."
Keypad Test Failed	In Service Mode only, the keypad test failed.	Check the cabling connections and run the keypad test again. If the error persists, see Chapter 6, "Troubleshooting."
Long Page? START to Continue	The HP LaserJet 3100/3150 product senses a document over 39 inches (991 mm), such as a banner, may be feeding through the document feeder tray or that a paper jam has occurred.	If there is no jam, quickly press START to continue scanning. If you do not press START within a few seconds, the product assumes that a page is jammed and cancels the job. If there is a jam, remove it and restart the job. If you are sending a fax or copying a document longer than 39 inches (991 mm), you can also set the control panel to use the "Send long pages" procedure.

Table 9. Control panel messages

Message	Cause	Solution
Memory Full - Send Unscanned Pages	During the fax job the memory filled. All pages of the fax have to be in memory for a fax job to work correctly. Only the pages that fit into memory were sent.	Reload the pages that were not sent and send them.
Memory is Full	The HP LaserJet 3100/3150 product memory was completely filled during a copy or a scan.	This message should clear automatically when the next task starts (for example when you start a copy or receive a fax).
Modem Error # (number 1-3)	An error was detected with the modem.	Make sure that the telephone cord is securely connected on both ends. Unplug the power cord from the power source, wait 10 seconds, and replug in the power cord. Try a different power source or surge protector.
No Answer	You tried to send a fax, but the receiving fax line did not answer.	Check the fax number and try again to send the fax. Try to send the fax to another fax machine or try again later.
No Dial Tone	The HP LaserJet 3100/3150 product cannot detect a dial tone	Make sure that the telephone cord is securely connected on both ends. Press and hold STOP/CLEAR for seven seconds to check for a dial tone. Make sure the phone line is working by disconnecting the HP LaserJet 3100/3150 product, plugging in a telephone to the phone line, and making a voice call. Connect the product to a different phone line.
No Fax in (number) Tries	The HP LaserJet 3100/3150 product failed to connect to the receiving fax machine in the number of redials specified.	Check the fax number and try again to send the fax. If the message appears again, try to send the fax to another fax machine or try again later.

Table 9. Control panel messages

Message	Cause	Solution
No Memory for Report Erase/Print Document	<p>There is not enough memory to print a report because memory is being used to store faxes that have been received to memory.</p> <p>There is not enough memory to print a report because memory is being used to store faxes set up to be sent at a future time or to be polled.</p>	<p>Print faxes that have been received to memory.</p> <p>If you have several faxes set up to be sent at a future time or to be polled, try clearing these faxes using job status.</p>
No Modem Installed	There is a problem with the line interface unit (LIU).	<p>Unplug the power cord from the power source, wait 10 seconds, and replug in the power cord.</p> <p>Connect the product to a different power source.</p> <p>If the error persists, see Chapter 6, "Troubleshooting."</p>
No Room in Fax Log	The fax log was unable to print because of an error; for example, the product is out of paper.	Solve the error condition so that the product can print the fax log.
Not Enough Memory	There is not enough memory to complete the job indicated.	Try again to send the job. If the error persists, press and hold STOP/CLEAR for seven seconds to reset the product.
Not Enough Memory to Duplicate for COPY	The HP LaserJet 3100/3150 product does not have enough memory to complete the copy job.	<p>Divide the copy job into smaller sections and then try again to copy.</p> <p>Use the Document Assistant to complete the copy job.</p>
No Fax Pages in Memory to Reprint	The HP LaserJet 3100/3150 product attempted to execute "Reprint Last Fax" when nothing was in memory.	Wait for a fax, then as soon as a fax is in the memory, the HP LaserJet 3100/3150 product will reprint the fax.
Nov-22-93 06:30 PM (An incorrect date appears.)	The battery inside the HP LaserJet 3100/3150 product has failed, causing all Menu features to revert to the factory settings. Settings that contained alphabetic and numeric characters you entered, such as header information and speed-dial names and numbers, have been erased.	The battery should be replaced. You can continue to use the HP LaserJet 3100/3150 product without replacing the battery, but any information you enter will be erased again if power is lost.

Table 9. Control panel messages

Message	Cause	Solution
Paper Bin is Empty Please Add Paper	The paper input bin is empty.	Load paper. If paper is already loaded, remove it. Check for and remove any jammed sheets and discard them. Then, reload the paper stack in the paper input bin.
Password must be 4 Digits	An attempt was made to enter a password that was not four digits.	Re-enter four-digit password.
Paused (Memory Full)	The HP LaserJet 3100/3150 product memory is full, and the current job in the document feeder tray is paused to wait for memory to become available.	Reduce activity on the HP LaserJet 3100/3150 product, or wait for other jobs to finish so that memory will be freed. If there are faxes set up to be polled or sent at a future time, you may want to cancel these jobs to free memory.
PC Not Detected Address Invalid	If you tried to send a document to an e-mail address in a one-touch key, speed-dial code, group-dial code, or to one that you entered manually at the control panel, the product must be directly connected to a computer using a parallel cable, the computer must be on, and a compatible e-mail program must be installed on the computer.	Make sure that the parallel cable is securely connected between the computer and the HP LaserJet 3100/3150 product. Make sure that the computer is on. Make sure that a compatible e-mail program and the JetSuite Pro software are installed on the computer.
PC Print Timed Out	The print job took too long to print, and the HP LaserJet 3100/3150 product timed out.	Let the "print jobs retry" continue for five minutes. If the HP LaserJet 3100/3150 product still does not print, cancel the current print job and resend it.
Phone Number Error	Too many characters were entered when dialing a phone number.	The maximum number of characters that can be entered is 60. If you have a number longer than 60 characters, break the number into smaller chunks. Enter the first part of the number, and press REDIAL/PAUSE as the last character in the first number. Then, enter the second part of the number as if it were a second number going to a group. When the product dials, it will treat both numbers as if they are one.

Table 9. Control panel messages

Message	Cause	Solution
Polling-In Error	The HP LaserJet 3100/3150 product tried to poll another fax machine. The poll failed because there was no answer, the line was busy, or the other fax machine was not ready to be polled.	Make sure that the sender's fax machine is ready to be polled, and check the fax number. Then, set up to poll again.
Printer Comm Error	There was an error in communicating with the HP LaserJet 3100/3150 product.	Make sure that the parallel cable is securely connected between the HP LaserJet 3100/3150 product and the computer. If the problem persists, unplug the power cord from the power source for 10 seconds, and then replug it in. Try connecting the product to a different power source. If the error persists, see Chapter 6, "Troubleshooting."
Printer Comm Error ^1	In Service Mode only. There was an error in communicating with the HP LaserJet 3100/3150 product.	Make sure that the parallel cable is securely connected between the HP LaserJet 3100/3150 product and the computer. If the problem persists, unplug the power cord from the power source for 5 seconds, and then replug it in. If neither of these solutions works, see Chapter 6, "Troubleshooting."
Printer Cover Open or No Cartridge	The printer door is open or the toner cartridge is not installed properly.	Make sure that the printer door is closed. Check the toner cartridge for proper installation.
Printer Fixing Error Replace Fixing Unit	There is an error with the print engine.	Unplug the power cord from the power source for 10 seconds, and then replug it in. Try connecting the product to a different power source. If the error persists, see Chapter 6, "Troubleshooting."

Table 9. Control panel messages

Message	Cause	Solution
Printer is Busy	The HP LaserJet 3100/3150 product is temporarily unavailable for other types of printing (such as printing faxes or copies).	No action is needed. If you already started another job, such as you sent a copy job through the document feeder tray and it was scanned in or you requested a report to print, the job will be completed when the HP LaserJet 3100/3150 product becomes available.
Printer Laser Error Call for Service	The printer door is not latched securely.	Open the printer door and reclose it making sure both latches are secure.
	A problem has occurred with the print engine.	Unplug the power cord from the power source, wait 10 seconds, and replug in the power cord. Try connecting the product to a different power source. If the error persists, see Chapter 6, "Troubleshooting."
Printer Motor Error Call for Service	A problem has occurred with the print engine.	Unplug the power cord from the power source, wait 10 seconds, and replug in the power cord. Try connecting the product to a different power source. If the error persists, see Chapter 6, "Troubleshooting."
Printer Paper Jam Check Paper Path	A paper jam has occurred.	Clear the jam. The job should continue to print. If it doesn't, try reprinting the job.
Printer signal error	The printer door is not latched securely.	Open the printer door and reclose it making sure both latches are secure.
	There was an error in the HP LaserJet 3100/3150 product print unit.	Unplug the power cord from the power source, wait 10 seconds, and replug in the power cord. Try connecting the product to a different power source. If the error persists, see Chapter 6, "Troubleshooting."
Receive Error	An error occurred while the HP LaserJet 3100/3150 product was receiving a fax.	Ask the sender to resend the fax. If the error persists, see Chapter 6, "Troubleshooting."

Table 9. Control panel messages

Message	Cause	Solution
Redial Failed	Attempts to redial a fax number failed.	<p>Try resending the fax. If the fax still fails to transmit, call the recipient to make sure that the fax machine is on and ready.</p> <p>Make sure that you are dialing the correct fax number.</p> <p>Disconnect the telephone cord from both the product and the wall outlet and then reconnect it.</p> <p>Press and hold down STOP/CLEAR for 7 seconds to check for a dial tone.</p> <p>Make sure the phone line is working by disconnecting the HP LaserJet 3100/3150 product, plugging in a telephone to the phone line, and making a voice call.</p> <p>Connect the product to a different phone line.</p> <p>If the error persists, see Chapter 6, "Troubleshooting."</p>
Remote Fax was Busy	The fax number dialed was busy.	Try again later.
Scan Reference Error	There was an error detected in the HP LaserJet 3100/3150 product.	Recalibrate the document scanner.
Scanner Error #1	An error has occurred in the SRAM.	<p>Press and hold down the STOP/CLEAR key for 7 seconds to reset the product.</p> <p>If the error persists, unplug the power cord from its power source for 10 seconds, and then replug it in.</p> <p>Try connecting the product to a different power source.</p> <p>If the error persists, see Chapter 6, "Troubleshooting."</p>
Scanner isn't Available	The document scanner mechanism is in use.	Wait until the document scanner has finished the current job before sending the next job.
Scanner Jam - Reload	A document has jammed in the document scanner area.	Pull open the document release door and then remove the jammed document.

Table 9. Control panel messages

Message	Cause	Solution
Speed Dial (number) is not Assigned	You tried to dial a speed-dial code that doesn't have a fax number stored in it or you assigned a non-defined one-touch key to a group.	Choose a speed-dial code to which you have already assigned a fax number.
System Error	An error has occurred.	Unplug the power cord from the power source, wait 10 seconds, and replug in the power cord. Try connecting the product to a different power source. If the error persists, record the three-digit error number in the message and see Chapter 6, "Troubleshooting."
There are No Documents in Memory	HP LaserJet 3100/3150 product tried to print faxes from memory when no faxes had been received to memory.	No action is required. There are no faxes to retrieve.
Unrecognized Format	When printing, the incorrect printer driver was selected or an error occurred on the parallel interface.	After selecting the Print command in the program from which you are printing, select the HP LaserJet 3100 or 3150 as the printer. Reprint the job. Disconnect and reconnect the parallel cable from both the product and the computer
Unsuccessful Call	The fax number entered could not be reached.	Check the fax number and try resending the fax. Try to send the fax to another fax machine or try again later.

Menu tree

The following page shows the layout of the menu settings in a hierarchical diagram. You may want to refer to this menu tree before making changes to settings and features. To see the current settings, print a configuration report. Current settings are marked with an asterisk (*).

The service menu and the extended service menu are discussed in Chapter 6, "Troubleshooting."

To print a menu tree

- 1 Press **ENTER/MENU**.
- 2 Use the **<** and **>** keys to select **Reports** and press **ENTER/MENU**.
- 3 Use the **<** and **>** keys to select **Print the Menu** and press **ENTER/MENU**.

The HP LaserJet 3100/3150 product exits the menu settings and prints the menu tree.

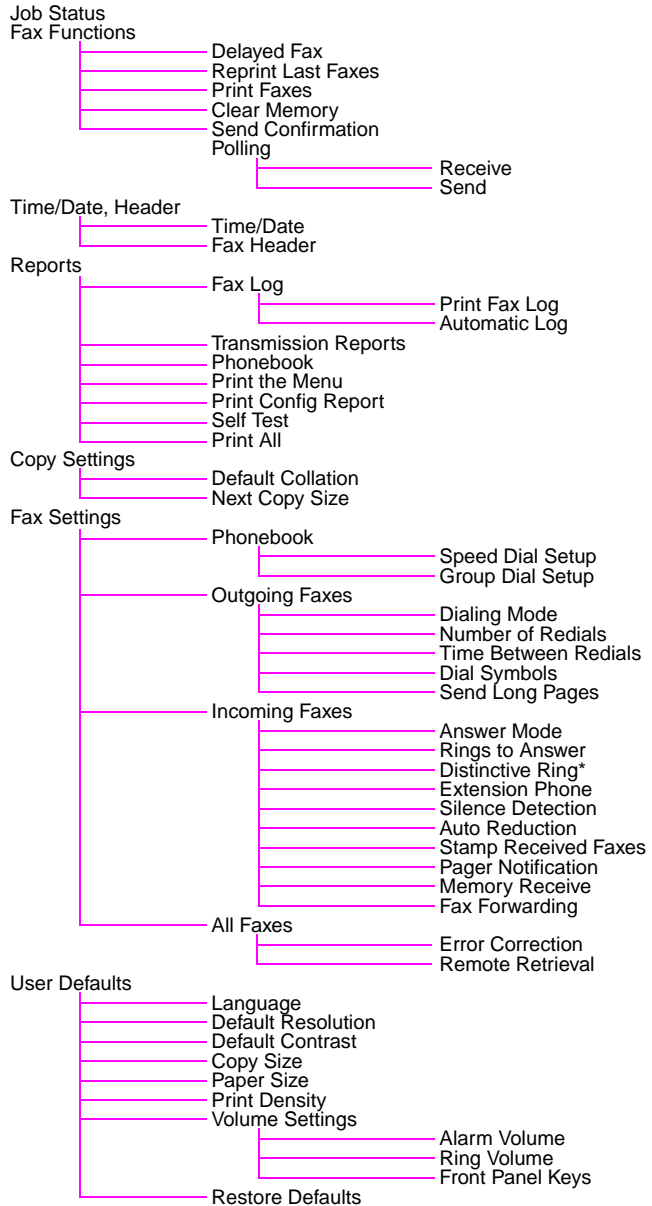
Menu tree for the HP LaserJet 3100 product

Press **ENTER/MENU** to access the Menu.

Use the **< and >** keys to select one of the choices below and press **ENTER/MENU**.

Use the **< and >** keys to select one of the choices below and press **ENTER/MENU**.

Use the **< and >** keys to select one of the choices below and press **ENTER/MENU**, or see the display.



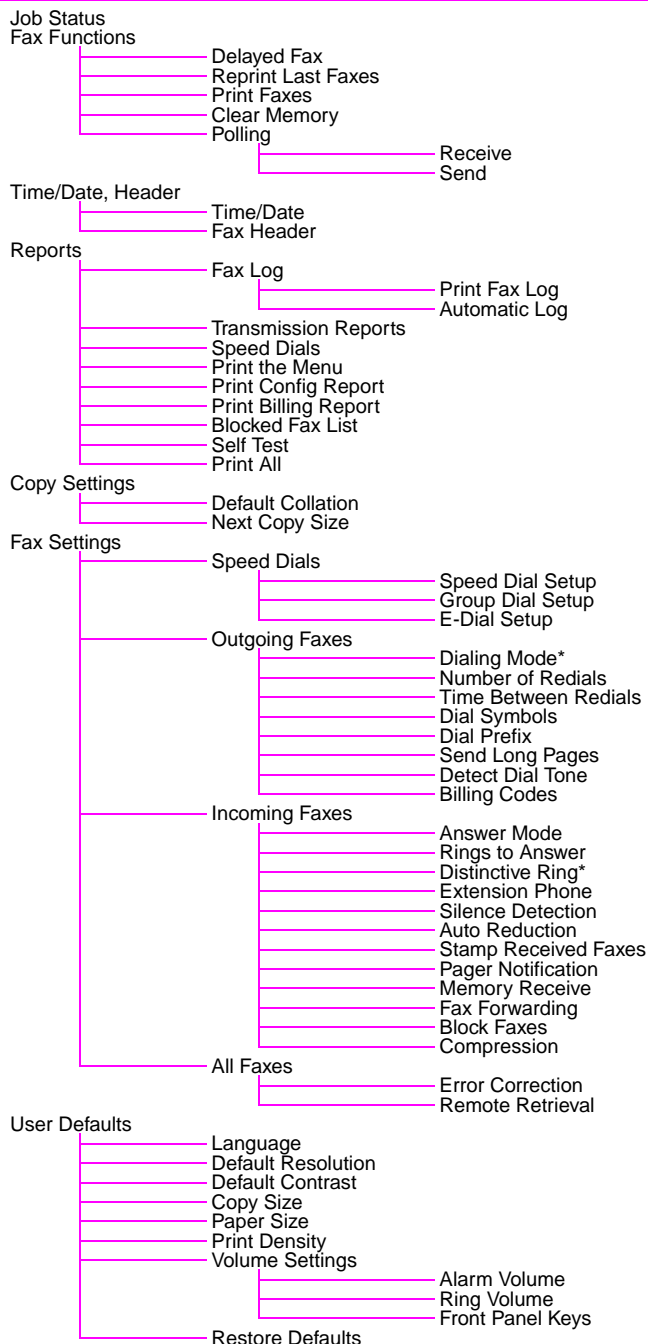
Menu tree for the HP LaserJet 3150 product

Press **ENTER/MENU** to access the Menu.

Use the **< and >** keys to select one of the choices below and press **ENTER/MENU**.

Use the **< and >** keys to select one of the choices below and press **ENTER/MENU**.

Use the **< and >** keys to select one of the choices below and press **ENTER/MENU**, or see the display.



* denotes limited availability.

3

Maintenance

Chapter contents

Life expectancies of consumables.	56
Cleaning and maintaining the equipment	57
Cleaning the document scanner path	58
Cleaning the print path	60
Using a cleaning page.	63

Life expectancies of consumables

Inspect the consumables when servicing the HP LaserJet 3100/3150. Replace consumables as needed, based on failures or wear, not strictly on usage.

The following table lists approximate schedules for replacing consumables.

Table 10. Life expectancies of consumables

Description	Part number	Estimated life (pages)	Remarks
Toner cartridge (user replaceable)	C3906A	2,500*	When print becomes faint, redistribute toner in the cartridge.
Printer transfer roller	RF5-1534-000CN	50,000	Can affect print quality and/or paper movement.
Printer pickup roller assembly	RG5-3486-040CN	50,000	Look for glazing and/or cracks.
Printer separation pad and subpads	RY7-5008-000CN	50,000	Can affect paper movement.
Heating element	RG5-4678-000CN (110V) RG5-4681-000CN (220V)	50,000	Can affect print quality and/or paper movement.
Pressure roller	RF5-2362-000CN	50,000	Look for marks on pressure roller or upper Teflon sleeve.
Document scanner pickup roller assembly	RG5-4688-000CN	25,000	Look for glazing and/or cracks.
Document scanner separation pad kit	RY7-5055-000CN	25,000	Can affect document movement.
Document scanner feed roller and document scanner delivery roller	RG5-4223-000CN (Document scanner assembly)	25,000	Can affect document movement.

* The estimated toner cartridge life is based on Letter- or A4-sized paper with an average of 5% toner coverage and a medium density setting. Toner cartridge life can be extended further by conserving toner using draft mode settings.

Cleaning and maintaining the equipment

WARNING!

Before you perform these steps, unplug the printer to avoid shock hazard.

To maintain quality, thoroughly clean the HP LaserJet 3100/3150 product:

- Any time a new toner cartridge is installed.
- After printing approximately 2,500 pages.
- Whenever print quality problems appear.

Clean the outside of the printer with a slightly water-dampened cloth. Clean the inside with only a dry, lint-free cloth (such as lens tissues).

To avoid permanent damage to the toner cartridge, do not use ammonia-based cleaners on or around the HP LaserJet 3100/3150 product.

WARNING!

When cleaning around the printer door area, avoid touching the heating element. It might be very hot and can cause burns.

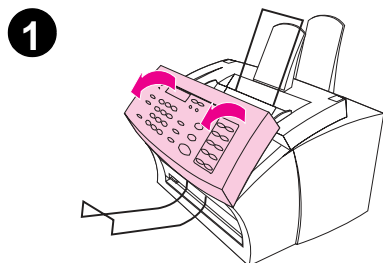
CAUTION

Do not touch the surface of the transfer roller. Contaminants on the roller can cause print quality problems.

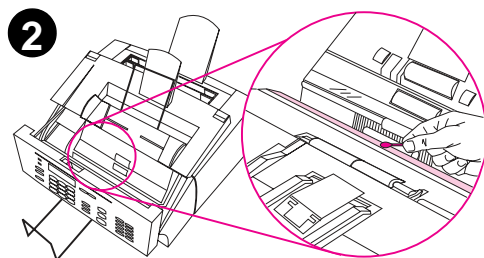
Note

Be careful not to touch the glass surface of the image sensor. If you inadvertently touch the glass, clean it according to the instructions on the following pages.

Cleaning the document scanner path

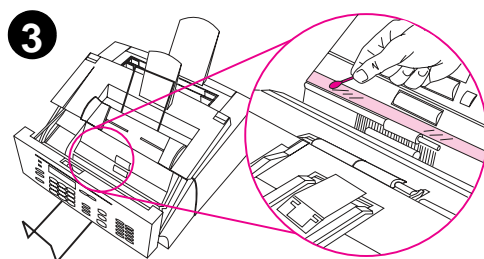


Clean parts of the document scanner if the ink on items you are scanning can be smudged with your hand, or if the parts have excessive amounts of dust or dirt on them. Also clean these parts if there are smudges, lines, or other marks on original documents, copies, or scans of documents.



WARNING!

Before cleaning the HP LaserJet 3100/3150 product, disconnect it from the power source.

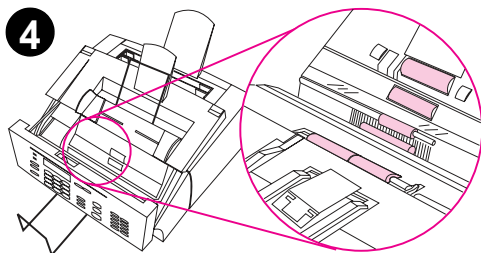


- 1 Open the document release door.
- 2 If the white sheet is dirty, clean it with a dry cotton swab. If there is still something on the white sheet, dab a swab in a small amount of isopropyl alcohol and gently clean the white sheet.

CAUTION

When you use alcohol, only use a very small amount. Exposing internal parts to dripping alcohol can damage them.

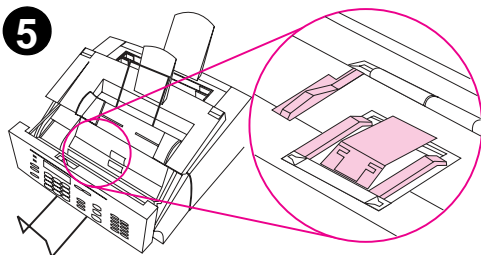
- 3 If the glass surface of the contact image sensor is dirty, clean it with a dry cotton swab. If there is still something on the glass, dab a swab in a small amount of isopropyl alcohol and gently clean the glass.



- 4 Inspect each of the six rollers in the document scanner area for dirt or debris. Using a lint-free cloth dampened with a small amount of isopropyl alcohol, wipe any dirty rollers using a side-to-side motion.

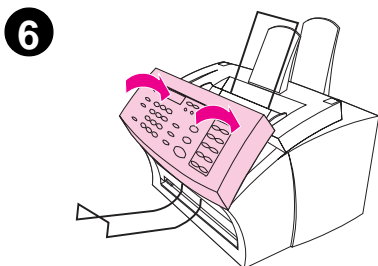
CAUTION

Do not spray alcohol or any other liquid directly into the HP LaserJet 3100/3150 product. Doing so can damage the product.



CAUTION

As much as possible, avoid touching the white sheet and the glass surface with alcohol.

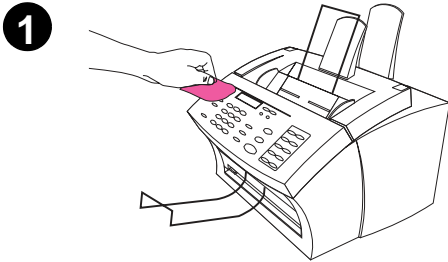


- 5 Near the top, inside edge of the document release door, inspect the three pressure feet and pad for dirt or debris. If they are dirty, clean them with a lint-free cloth dampened with a small amount of alcohol.
- 6 Close the document release door after allowing alcohol to dry.

Note

If, after cleaning the document scanner path, you still notice that copies, items scanned to the computer, or faxes you send have black or white lines running through them, see Chapter 6, "Troubleshooting," for information about recalibrating the document scanner and interpreting the calibration graph.

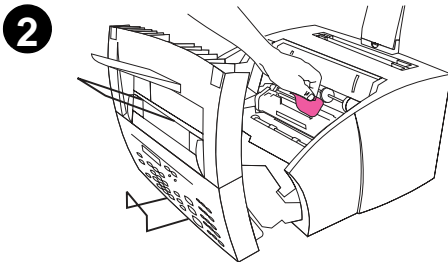
Cleaning the print path



Clean the print path to re-establish print quality if you frequently duplex or if you notice other marks on printed pages.

WARNING!

Before cleaning the HP LaserJet 3100/3150 product, disconnect it from the power source.



- 1 Clean the outside of the device with a slightly damp cloth (use only water).

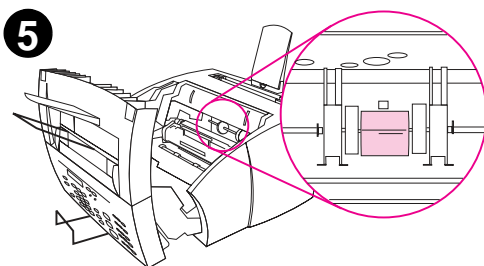
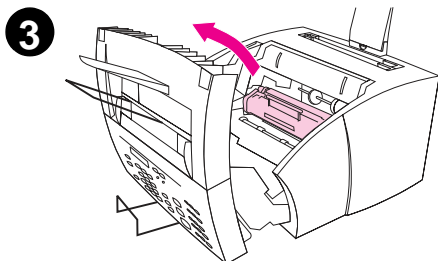
CAUTION

Using ammonia-based cleaners on or around the HP LaserJet 3100/3150 product can damage it.

- 2 Use the two latches on the printer door to open it. Clean the inside of the HP LaserJet 3100/3150 product with a dry, lint-free cloth. Remove all dust, spilled toner, and particles of paper.

CAUTION

Only use a dry, lint-free cloth to remove dust and toner. Using a vacuum or other device to clean inside the product can damage it. Also, do not touch the transfer roller. Touching it can reduce the print quality of output.



Note

If toner gets on your clothing, wipe it off with a dry cloth and wash clothing in cold water. Hot water and the heat of the dryer set toner into the fabric.

- 3 Remove the toner cartridge.

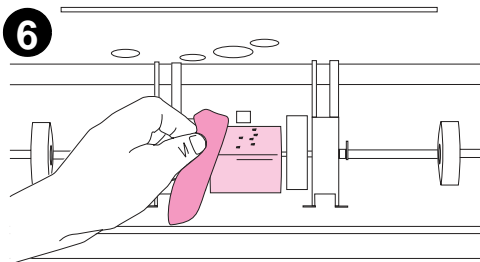
Note

If you notice excessive amounts of toner inside the HP LaserJet 3100/3150 product, the toner cartridge may be defective. Use HP LaserJet toner cartridges to ensure high-quality printing and to reduce incidence of excessive toner.

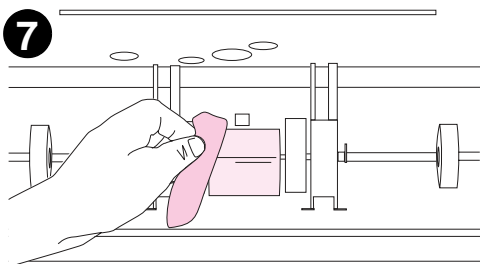
- 4 Dab a lint-free cloth in isopropyl alcohol.
- 5 Locate the light gray pickup roller near the center in the opening.

Note

Do not touch the transfer roller. Touching it can reduce the print quality of output.

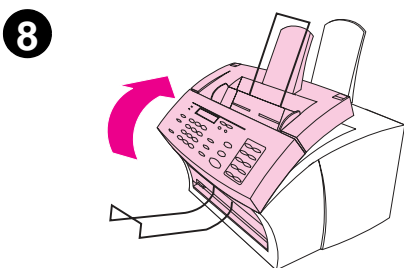


- 6** Scrub the exposed area (top and front) of the pickup roller using a side-to-side motion. Do not rotate the roller to clean the unexposed sides.

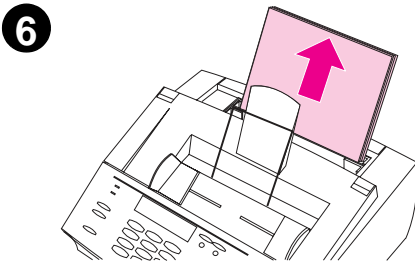
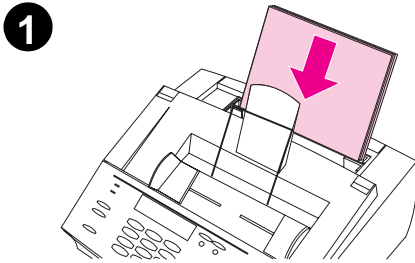


- 7** Using a dry, lint-free cloth, dry the exposed area of the pickup roller using a side-to-side motion.

- 8** After the alcohol inside the product has dried completely, replace the toner cartridge and close the printer door.



Using a cleaning page



After you have cleaned the printer parts, use this procedure to print and use a cleaning page, if needed. This cleaning page can help remove toner specks on your printed pages.

To use a cleaning page

- 1 Place a stack of plain letter- or A4-sized paper into the paper input bin. (Do not use thick or rough paper.)
- 2 For Windows 9x, open Windows Explorer.
- Or -
For Windows 3.1x, open File Manager.
- 3 Open the JetSuite folder (if the JetSuite Pro software was installed to the default location, the path is "C:\JetSuite").

Note

If you do not have access to JetSuite Pro software, a cleaning page is available from the HP web addresses:

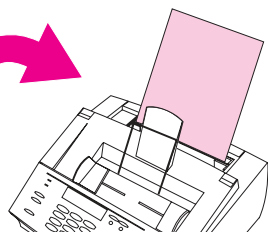
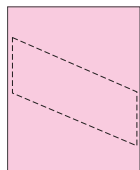
<http://www.hp.com/support/lj3100>

-or-

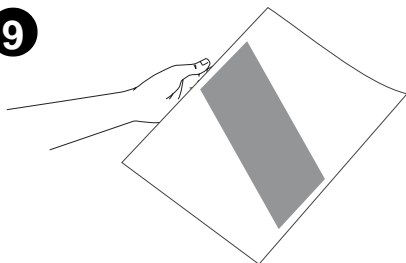
<http://www.hp.com/support/lj3150>

- 4 Double-click **CleanPg.jsd** to open the cleaning page.
- 5 When the document opens in the JetSuite Pro software, click **Print** in the link icon bar at the bottom of the dialog.
- 6 After the cleaning page has printed, remove the stack of paper from the paper input bin.

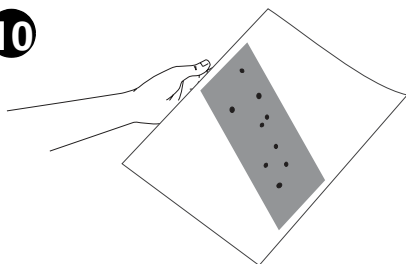
7



9



10



7 Place the cleaning page into the paper input bin, top first, face down.

8 Print a different file.

9 Inspect the page. If there are no shiny, black spots on the page's black strip, the print path is clean. Discard the page, and the procedure has been completed.

10 If there are shiny, black spots on the page's black strip, toner has been cleaned from the print path. Discard the page. Repeat steps 1 through 9 until there are no shiny, black spots on the page.

Note

If toner specks appear often and there is a frequent need to clean the print path, try using a different type of paper, and make sure the paper meets HP paper specifications. If the problem persists, see Chapter 6, "Troubleshooting," for detailed information about repetitive defects and other image quality problems.

4

Functional overview

Chapter contents

Basic functions	66
Printer functions	67
ECU/power system	68
Formatter system	72
Image formation system	74
Printer feed system	77
Document scanner system	81
Basic sequence of operation (formatter-to-printer)	83

Basic functions

This chapter presents a functional overview of the HP LaserJet 3100/3150 product's processes. The following systems are discussed:

- optical system (document scanner)
- ECU (engine controller unit) system/power system
- formatter system
- image formation system
- paper feed system (printer) and document feed system (document scanner)
- laser/scanner system
- telecommunications system/line interface unit (LIU)

The HP LaserJet 3100/3150 product consists of the printer and the document scanner. Operation sequences of the printer are controlled by the ECU. Operation sequences of the document scanner are controlled by the video controller.

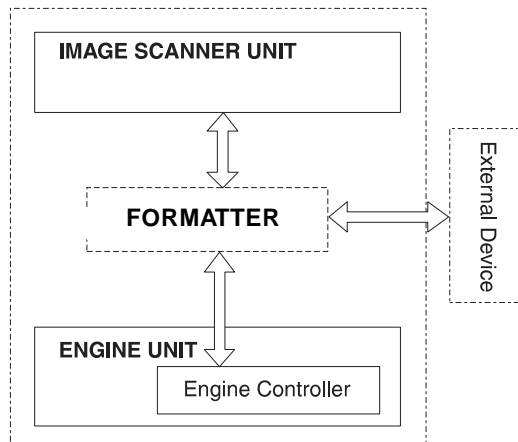


Figure 7. Basic configuration

Printer functions

Printer functions are divided into four groups:

- engine control
- image formation
- printer laser/scanner
- pickup/feed

The following figure is a block diagram of the printer unit:

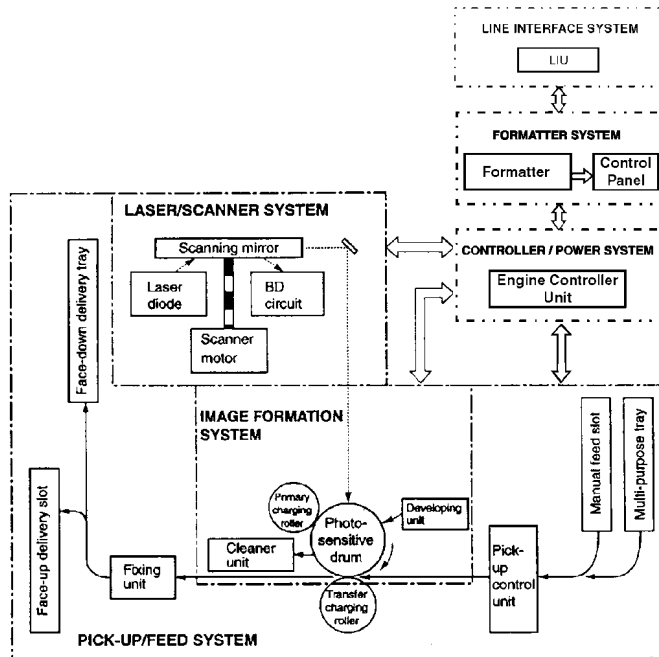


Figure 8. Printer unit functional block diagram

ECU/power system

The ECU coordinates all print engine activities, drives the laser, and coordinates print data from the formatter with the image formation process. The ECU also includes power supply and distribution circuitry. The ECU controls the following systems and functions:

- print engine control
 - laser/scanner drive
 - paper motion photosensors (paper out, paper registration, and paper exit sensors)
 - motor
- power system
 - AC power distribution
 - DC power distribution
 - overcurrent/undervoltage protection
 - high-voltage power distribution

The following figure shows the various ECU loads:

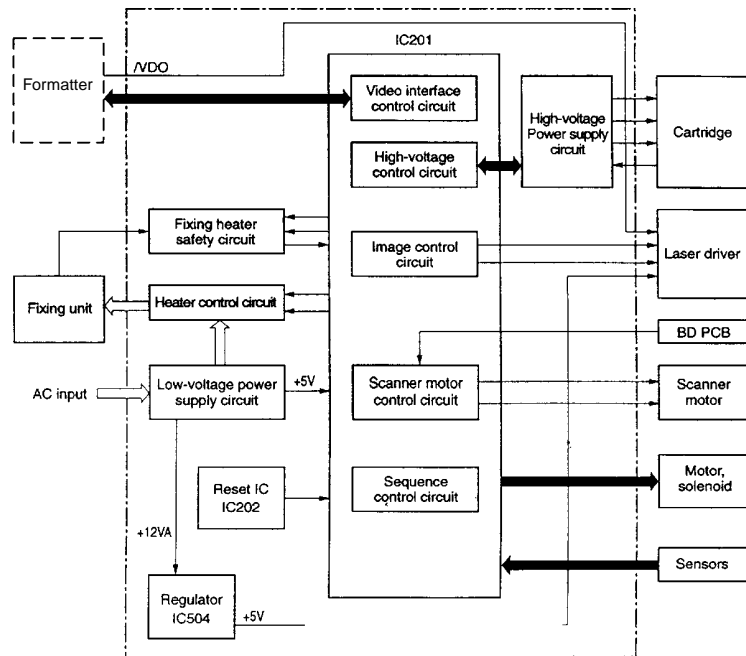


Figure 9. ECU loads

Print engine control system

Printer laser/scanner drive

Based on information received from the formatter, the ECU sends signals to the laser/scanner assembly to modulate the laser diode “on” and “off” and to drive the laser/scanner motor. For more information, see “Image formation system” later in this chapter.

Paper motion monitoring and control

The ECU controls paper motion by continuously monitoring the various paper sensors and coordinating the timing with the other print processes.

For a detailed explanation of paper movement, and the interaction of photosensors and solenoid with the paper movement process, see the “Printer feed system” section later in this chapter.

12-volt DC power shutoff switch

The 12-volt DC power shutoff switch (SW101), located on the top of the printer, is activated by the printer door. The front door must be closed before the printer can resume printing.

Engine test switch

The engine test switch (SW201), located on the ECU, is activated manually from the bottom of the HP LaserJet 3100/3150 product. The switch causes the print engine to perform a self-diagnostic which bypasses the formatter and prints a full page of black vertical lines. This test is useful for troubleshooting printer problems because it isolates the print engine from the formatter. (See the “Engine test” section of Chapter 6, “Troubleshooting,” for more information about engine tests.)

Motor

The motor is controlled by the ECU. The motor provides all of the printer's paper movement.

Power system (on ECU)

The AC, DC, and high-voltage power supply circuits are all contained within the ECU.

AC power distribution

The AC power circuitry supplies AC voltage whenever the power cord is connected to the AC power source. AC voltage is distributed to the DC power supply circuitry and to the AC driver circuitry, which controls AC voltage to the fusing assembly's heating element.

DC power distribution

The DC power distribution circuitry, located on the ECU, distributes +5 V DC and +12 V DC as follows:

Table 11. DC power distribution

+5 V DC:	Formatter Photosensors DC Controller Circuitry Laser/Beam Detect Circuitry
+12 V DC:	Motor Scanner Motor Solenoid
+12VA DC:	High Voltage Power Supply

Overcurrent/overvoltage

There are two overvoltage devices in this printer:

- Fuse F101 provides overcurrent protection for the fixing system circuitry. To check or replace the fuse requires the removal of the ECU. Fuse 102 (found only on 110V units) provides overcurrent protection to the printer DC power supply circuitry.
- In addition, the +12V DC and +5V DC power circuitry contains an overcurrent protection circuit which automatically shuts off the output voltage when an overcurrent condition occurs due to a short or abnormal voltage on the load side.

High-voltage power distribution

The high-voltage power supply PCA applies an overlap of DC and AC voltage to the primary charging roller and the developing roller. This circuit also applies a positive or negative DC voltage to the transfer roller according to the instructions from the ECU.

This circuit also controls the image density by changing the primary AC voltage and the developing AC bias according to the print density setting.

High voltage is disabled when SW101 is open (in other words, when the printer door is open).

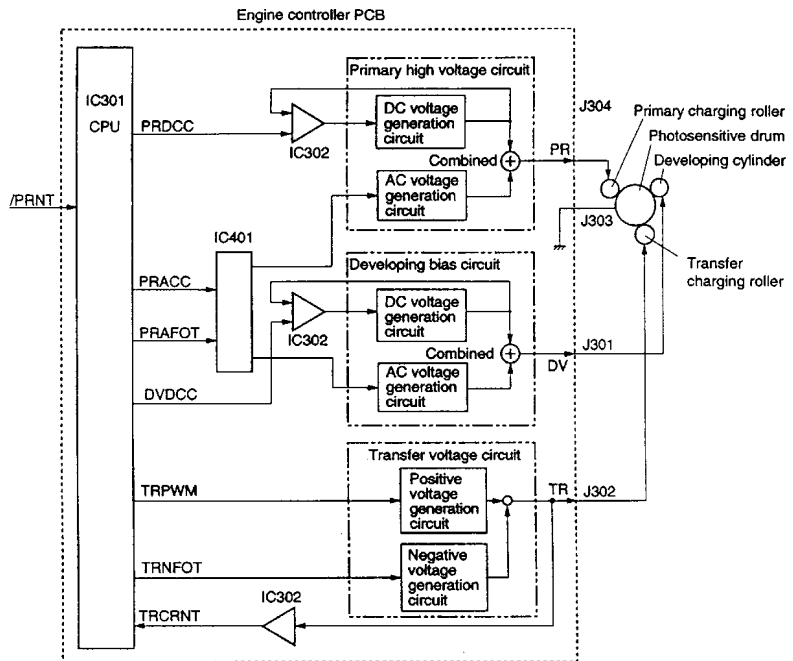


Figure 10. High-voltage power supply circuit

Formatter system

The formatter is responsible for the following:

- controlling the document scanner
- formatting and controlling faxes
- formatting and controlling copies
- receiving and processing print data from the printer interface
- monitoring the control panel and relaying printer status information
- developing and coordinating data placement and timing with the print engine
- communicating with the host computer through the bidirectional interface

The formatter receives print data from the bidirectional ECP interface and converts it into a dot image. The ECU synchronizes the image formation system with the paper feed system and signals the formatter to send the print image data. The formatter sends the print image data (dots) in the form of a video signal and the printing process begins.

Central processing unit

The formatter incorporates a Motorola 68030 custom microprocessor operating at 25.2 megahertz (MHz).

Memory

Memory can be cleared by removing the formatter board. For information about removing the formatter board, see Chapter 5, "Removal and replacement."

Read-only memory (ROM)

- Flash ROM stores the microprocessor control program.
- Masked ROM, also known as Boot ROM, stores startup sequences, commands, and the demo page.

Random-access memory (RAM)

- One bank of RAM, which is battery-backed, stores parameters. Another two banks of RAM are used for temporary storage.
- DRAM (Dynamic RAM) provides temporary storage of fax, copy, scan, and print data.

Parallel interface

The formatter receives incoming data through its bidirectional ECP interface. This interface provides high speed and two-way communication between the printer and the host, allowing the user to change printer settings and monitor printer status from the host computer.

Control panel

- two front panel status lights
- control panel keyboard
- control panel display

Draft mode

Depending on the printer driver, selecting a “draft” or “economy” mode from the printer driver allows the HP LaserJet 3100/3150 product to use approximately 50% less toner, extending the life of the toner cartridge. This is only available using printer driver properties when printing or making copies from the software.

Image formation system

Laser printing requires the interaction of several different technologies (such as electronics, optics, and electrophotographics) to provide a printed page. Each process functions independently and must be coordinated with the other printer processes. Image formation consists of six processes:

- Step 1. Primary charging
- Step 2. Scanning exposure
- Step 3. Developing
- Step 4. Transferring
- Step 5. Separating
- Step 6. Drum cleaning

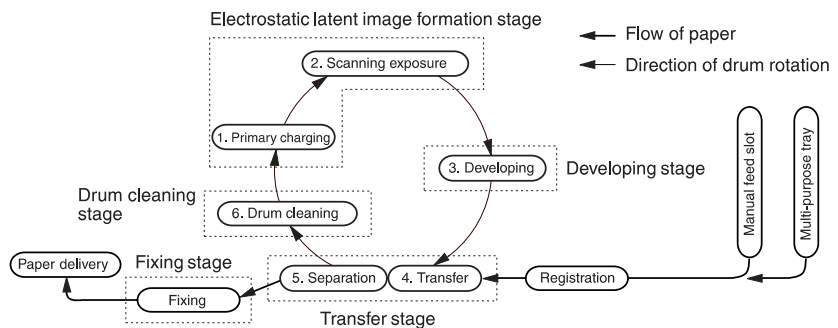


Figure 11. Image formation block diagram

Toner cartridge

As the heart of the image formation system, the toner cartridge houses the cleaning, conditioning, and developing steps of the process. The toner cartridge contains the photosensitive primary charging roller, developing station, toner cavity, and cleaning station. Including these components (which wear, degrade, or are consumed) in the replaceable toner cartridge eliminates the need for a service call when replacement is required. The special photosensitive properties of the drum allow an image to be formed on the drum surface and then transferred to paper.

CAUTION

The printer's toner cartridge does not include a light-blocking shutter. Be careful to avoid exposing the drum to light, which can permanently damage the drum. Protect the cartridge whenever removing it from the printer.

Step 1: Primary charging

This process consists of applying a uniform negative charge to the surface of the drum with the primary charging roller, located in the toner cartridge. The primary charging roller is coated with conductive rubber. An AC bias is applied to the roller to erase any residual charges from any previous image. In addition, a negative DC bias is applied by the charging roller to create a uniform negative potential on the drum surface. The amount of DC voltage is modified by the print density setting.

Step 2: Scanning exposure

During this process, a modulated laser diode projects the beam onto a rotating scanning mirror. As the mirror rotates, the beam reflects off the mirror, first through a set of focusing lenses, then off a mirror, and finally through a slot in the top of the toner cartridge, and onto the photosensitive drum. The beam sweeps the drum from left to right, discharging the negative potential wherever the beam strikes the surface. This creates a latent electrostatic image, which later is developed into a visible image.

Because the beam is sweeping the entire length of the drum and the drum is rotating, the entire surface area of the drum can be covered. At the end of each sweep, the beam strikes the beam detect lens, generating the beam detect signal (BD signal). The BD signal is sent to the ECU, where it is converted to an electrical signal used to synchronize the output of the next scan line of data.

Step 3: Developing

At this stage of the process, the latent electrostatic image is present on the drum. The toner particles obtain a negative surface charge by rubbing against the developing cylinder which is connected to a negative DC supply. The negatively charged toner is attracted to the discharged (exposed, grounded) areas of the drum, and repelled from the negatively charged (unexposed) areas.

Step 4: Transferring

During the transferring process, the toner image on the drum surface is transferred to the paper. A positive charge applied to the back of the paper by the transfer roller causes the negatively charged toner on the drum surface to be attracted to the paper. After separation, the drum is cleaned and conditioned for the next image.

Step 5: Separating

During the separating process, the paper separates from the drum. To stabilize the feed system and prevent dropouts on the printed image at low temperature and humidity, the charge on the back of the paper is reduced by the static charge eliminator.

Step 6: Drum cleaning

The cleaning blade is in contact with the surface of the drum at all times. As the drum rotates during printing, excess toner is wiped off and stored in the waste toner receptacle.

Fixing stage

During the fixing process, the toner is fused into the paper by heat and pressure to produce a permanent image. The paper passes between a heated fusing element and a soft pressure roller. This melts the toner and presses it into the paper.

Printer feed system

Both the paper input bin and the single-sheet input slot merge into one, main input area. Paper placed in either of these areas enables the paper-out sensor (PS202), which informs the ECU that paper is present.

When the printer receives a print job and is ready to print, the ECU enables the laser/scanner assembly and the motor. Paper motion begins when the ECU energizes solenoid SL1. This causes the paper pickup roller to rotate once. Two actions occur as a result of this rotation. First, the paper kick plate pushes the paper against the pickup roller. Second, the pickup roller grabs the top sheet and advances it to the feed assembly drive rollers. To ensure that only one sheet is fed, a main separation pad and two subpads hold the remainder of the stack in place.

The feed assembly drive rollers advance the paper to the paper registration photosensor (PS203). This sensor informs the ECU of the exact location of the paper's leading edge, so that the image being written on the photosensitive drum can be precisely positioned on the page. The feed assembly drive rollers then advance the paper to the transfer area where the toner image on the photosensitive drum is transferred to paper.

After the image is transferred, the paper enters the fusing assembly where heat from the fuser and pressure from the pressure roller permanently bond the toner image to paper. The paper exit sensor (PS201) determines that paper has successfully moved out of the fusing area. The fusing assembly exit rollers deliver paper to either the paper output bin or the front paper output slot, depending upon the position of the face-up/face-down lever.

The following figure shows a simplified printer paper path.

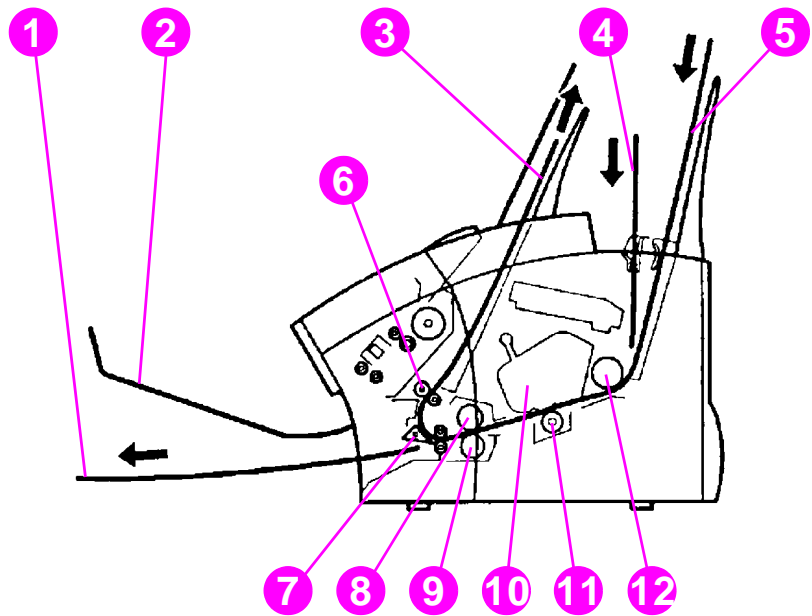


Figure 12. Simplified paper path

- 1 Face-up output path
- 2 Document output support
- 3 Face-down output path
- 4 Single-sheet input slot
- 5 Paper input bin
- 6 Delivery roller
- 7 Face-up/face-down lever
- 8 Fixing unit
- 9 Pressure roller
- 10 Toner cartridge
- 11 Transfer roller
- 12 Pickup roller

Paper jam detection

The paper out sensor (PS202), paper registration sensor (PS203), and the paper exit sensor (PS201) detect paper moving through the HP LaserJet 3100/3150 product. If a paper jam is detected, the ECU immediately stops the printing process and displays a paper jam message on the control panel.

A paper jam can be detected under any of the following conditions:

- Power-on jams. Paper is present under either PS201 or PS203 at power-on.
- Pickup jams. Paper does not reach and clear photosensor PS203 within a specified period of time. The time period begins when the Paper Pickup Solenoid (SL1) is energized.
- Delay jams. Paper does not reach or clear a specific photosensor within a specified period of time.

Solenoid, photosensors, and switches

The following figure shows the locations of the solenoid, photosensors, and switches.

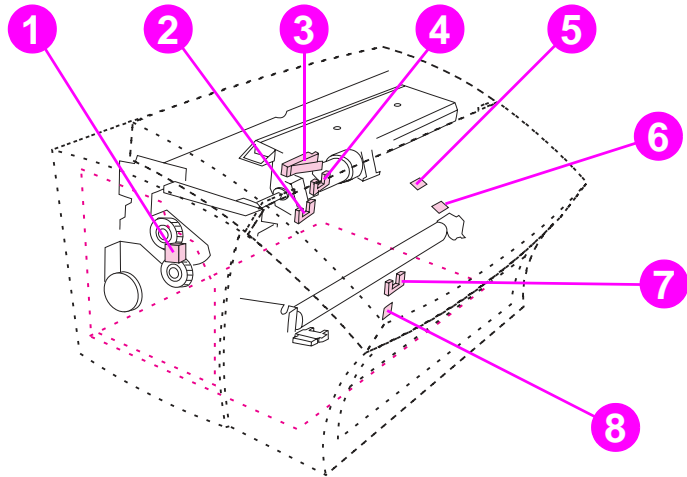


Figure 13. Solenoid, photosensors, and switches

1	Pickup solenoid (SL1).	Enables the pickup roller.
2	Paper registration sensor (PS203).	Detects the leading and trailing edges of the paper. Synchronizes the photosensitive drum and the top of the paper.
3	Door open/cartridge sensor (SW101).	Detects whether or not the printer door is closed and the toner cartridge is present. Printing cannot continue until the printer door is closed and the toner cartridge is in its correct position.
4	Paper out sensor (PS202).	If the sensor does not sense paper in the paper input bin or the single-sheet input slot, the control panel displays the paper-out message. Paper must be loaded before printing can resume.
5	Document sensor (PS801)	Detects the presence of a document in the document input bin.
6	Edge of document sensor (PS802)	Detects the leading edge of a document in the document scanner path.
7	Paper exit sensor (PS201).	Senses when paper has successfully moved out of the fixing area.
8	Engine test switch (SW201).	See Chapter 6, "Troubleshooting," for information about engine tests.

Document scanner system

The document scanner system consists of the optical system and document pickup and feed systems.

The optical system, also known as the contact image sensor, contains the following:

- light-emitting diode (LED) array
- contact glass
- rod lens array
- phototransistor array

The LED array, which emits light from two types of LEDs, is controlled by the formatter. The contact glass refracts the light to documents. Light reflected from documents passes through the rod lens array to the phototransistor array.

The phototransistor array consists of 2,574 phototransistors: 11 driver circuits that amplify the light reception output in units of 234 phototransistors. The image data is converted and sent from the driver circuits to the formatter.

The document pickup and feed systems contain a pickup roller, a feed roller, and a delivery roller, all of which are driven by the document scanner motor. There are also two photosensors in the document path. PS801 detects the presence of a document and PS802 detects the leading edge of a document.

The following figure shows a simplified Document scanner document path.

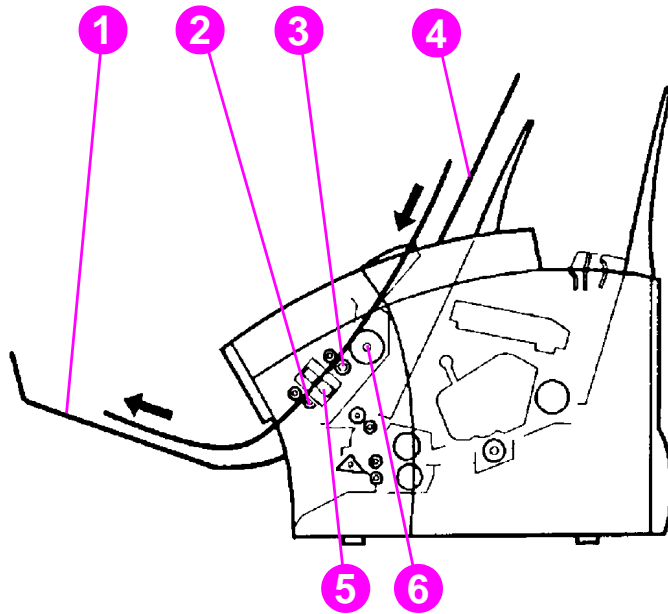


Figure 14. Simplified document path

- 1 Document output support
- 2 Document delivery roller
- 3 Document feed roller
- 4 Document input bin
- 5 Contact image sensor
- 6 Document pickup roller

Basic sequence of operation (formatter-to-printer)

The formatter and the ECU share information during printer operation. The ECU-to-formatter connector (J201) forms a link which operates as a serial data bus. This allows printer status, command information, and dot-image data to be passed between the two. The following events take place during normal printer operation:

Table 12. Timing

Period	Purpose	Remarks
WAIT (WAIT period) From power ON to the end of the initial rotation of the main motor.	To clear the drum surface of its charge and to clean the transfer charging roller.	
STBY (STANDBY) From the end of the WAIT period or the LSTR period until the input of the /PRNT signal from the video controller. Or from the end of the LSTR period until power OFF.	To maintain the printer in ready mode.	
INTR (INITIAL ROTATION period) From the input of the /PRNT signal from the video controller until the end of the APC operation.	To stabilize the photosensitive drum sensitivity in preparation for printing. Also to clean the transfer charging roller.	
PRINT (print) From the end of initial rotation until the motor stops.	To form images on the photosensitive drum based on the /VDO signal from the video controller and transfers the toner image to paper.	
LSTR (LAST ROTATION period) From when the primary high voltage (DC) goes OFF until the main motor stops.	To deliver the last page. Also to clean the transfer charging roller.	The printer enters the INTR period when the /PRNT signal is sent from the video controller.

C. Basic Sequence of Operation

• Timing chart for printing two A4-size sheets continuously

Power ON

(Unit: sec)



Figure 15. General timing diagram

5 Removal and replacement

Chapter contents

Removal and replacement strategy	86
Required tools	87
Covers	88
Document scanner assemblies	95
Internal assemblies	107
Bottom assemblies	140

Removal and replacement strategy

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

Replacement is generally the reverse of removal. Occasionally, notes are included to provide direction for difficult or critical replacement procedures.

WARNING!

Unplug the power cord from the power outlet before attempting to service the HP LaserJet 3100/3150 product. If this warning is not followed, severe injury can result. Certain functional checks must be performed during troubleshooting with power supplied to the product. However, the power supply should be disconnected during disassembly.

Never operate or service the HP LaserJet 3100/3150 product with the protective cover removed from the laser/scanner assembly. The reflected beam, although invisible, can damage your eyes.

The sheet metal edges of the HP LaserJet 3100/3150 product can be sharp. Exercise caution when working the HP LaserJet 3100/3150 product.

CAUTION

The HP LaserJet 3100/3150 product contains parts that are electrostatic discharge (ESD) sensitive. Always perform servicing at an ESD-protected workstation.

CAUTION

If possible, print the configuration report before working on the product. Removing the screws from the formatter board clears the settings in memory. Clearing the settings can render the product illegal or inoperable. The list of configuration settings can assist in restoring the settings.

Note

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

Note

Always remove the toner cartridge before removing or replacing parts.

Before performing service . . .

- ☐ Print internal reports.
- ☐ Remove all media from the product.
- ☐ Unplug all cables from the product, beginning with the power cable.
- ☐ Place the product on an ESD mat.
- ☐ Remove all supports and bins.
- ☐ Remove the toner cartridge.

After completing service . . .

- ☐ Restore the country code softswitch for the appropriate country.
- ☐ Make sure the latest firmware is installed on the product.
- ☐ Restore customer configuration settings.

Required tools

- #1 Phillips screwdriver with a magnetic tip
- #2 Phillips screwdriver with a magnetic tip
- small flatblade screwdriver
- needlenose pliers
- ESD mat

A 5.5 mm hexhead nutdriver might also prove useful, but is not required.

CAUTION

A Posidriv screwdriver will damage screw heads on the HP LaserJet 3100/3150 product. Use Phillips only.

Covers

Back cover

- 1 Unplug the power cord and phone cord(s) and remove the parallel cable from the back of the printer.
- 2 Remove all supports and bins.
- 3 Press the printer door release latches and open the printer door.
- 4 Remove the toner cartridge.
- 5 Rotate the HP LaserJet 3100/3150 product so that you face the back of the product.
- 6 Remove the four (4) screws (callout 1) from the back cover.

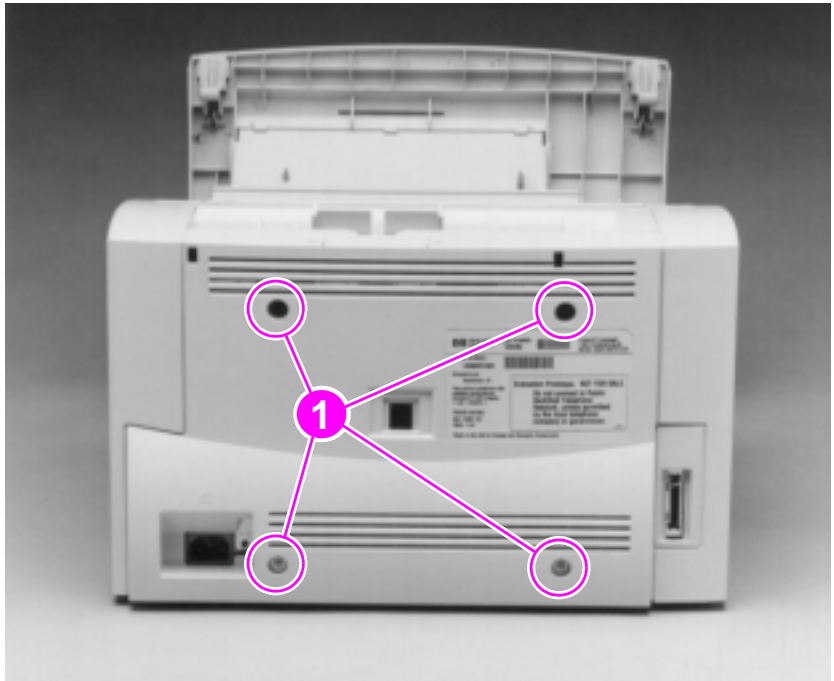


Figure 16. Back cover removal (1 of 2)

- 7 Insert the small flatblade screwdriver into the openings (callout 1) at the top of the back cover to pop the upper corners.

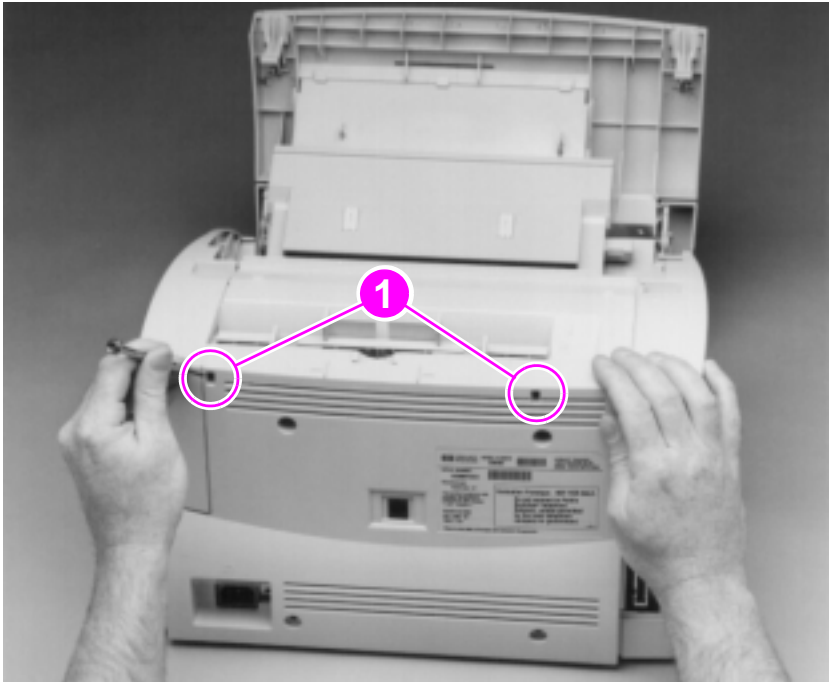


Figure 17. Back cover removal (2 of 2)

- 8 Remove the back cover by grabbing it on both sides and pulling it away.

To reinstall

After placing the back cover in its correct position, squeeze the back cover and the paper input tray together to secure the back cover.

Right side cover

- 1 Remove the back cover.
- 2 Rotate the HP LaserJet 3100/3150 product so that you face its right side.
- 3 Remove one (1) screw (callout 1) from the top of the right side cover.

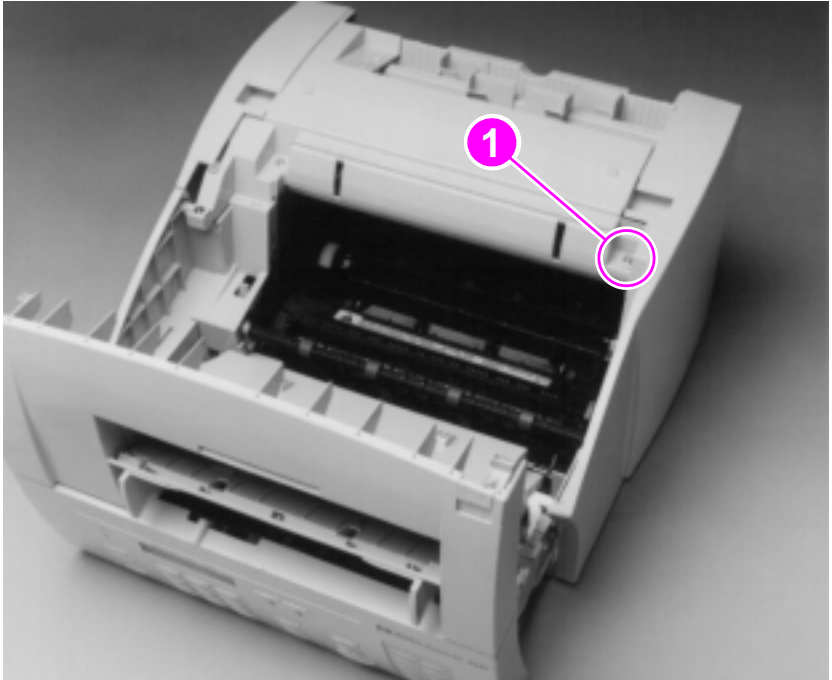


Figure 18. Right side cover removal

- 4 Pop the latches at the top of the cover.
- 5 Remove the cover by lifting it up and off the latches at the bottom of the cover.

To reinstall

Attach the cover at the bottom latches before repositioning the cover.

Left side cover

- 1 Remove the back cover.
- 2 Rotate the HP LaserJet 3100/3150 product so that you face the back of the product.
- 3 Pop the latches at the top and bottom (callout 1), at the back of the product.

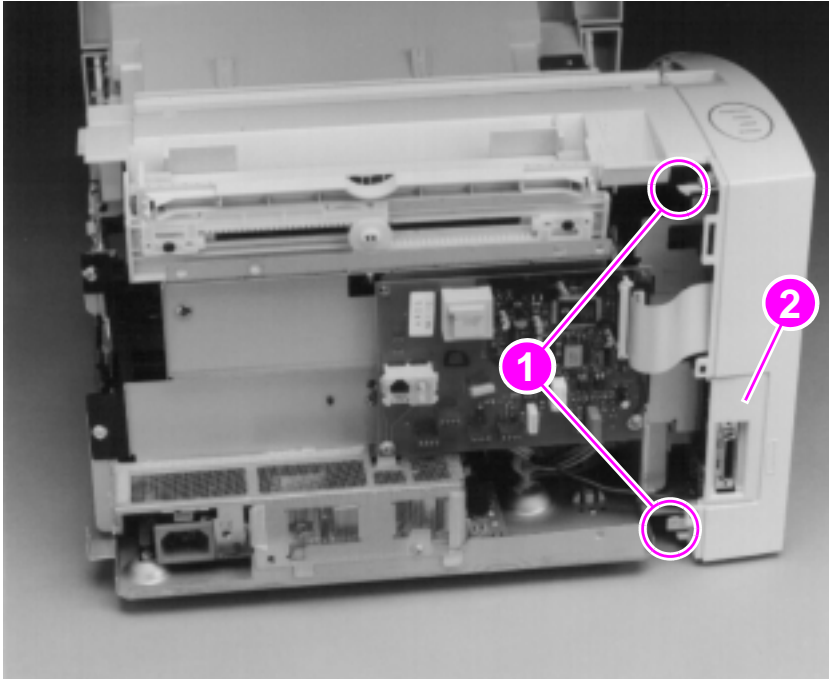


Figure 19. Left side cover removal

- 4 Remove the left side cover by rotating it away from and toward the front of the product.

The I/O bezel (callout 2) separates from the left side cover as the cover is removed.

To reinstall

Reinstall the left side cover before snapping the I/O bezel into place.

Left front cover

- 1 Remove the back cover and the left side cover.
- 2 Rotate the HP LaserJet 3100/3150 product so that you face its left side.
- 3 Remove the pressure release lever cover by inserting the small flatblade screwdriver into the slot (callout 1) to release the latch, and then pressing up from the left side of the product.
- 4 Remove one (1) screw (callout 2) from the top of the left front cover.

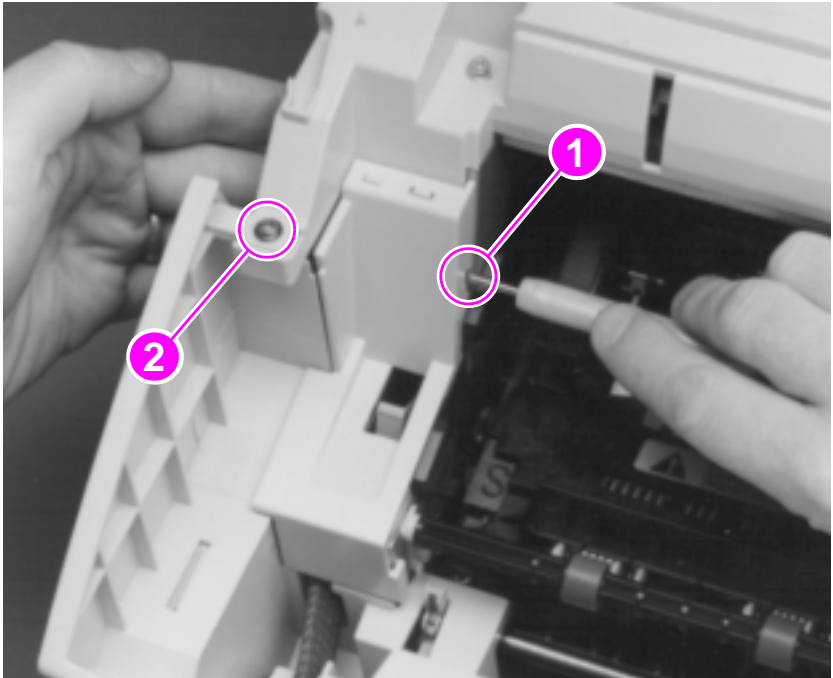


Figure 20. Left front cover removal

- 5 Remove the cover by popping the tab at the top and lifting the cover up and away from the HP LaserJet 3100/3150 product.

Top cover

- 1 Remove the back cover, the right side cover, the left side cover, and the left front cover.
- 2 Remove one (1) screw (callout 1) from the top of the top cover.

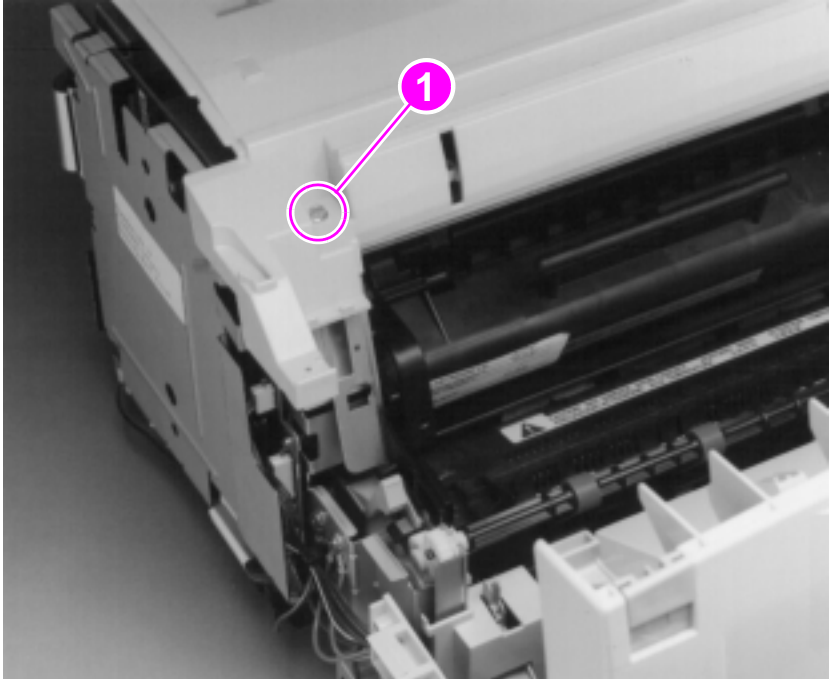


Figure 21. Top cover removal

- 3 Lift the top cover off the product.
- 4 Lift the input bin straight up and away from the product.

RFI shield

- 1 Remove all covers.
- 2 Remove four (4) screws (callout 1) from the RFI shield.

CAUTION

When step 3 below is performed, all memory is cleared from the formatter, including country-specific settings. Clearing memory can render the product illegal or inoperable. See the section in Chapter 6, "Troubleshooting," about softswitches to restore the country code.

- 3 Remove the fifth screw (callout 2) from the RFI shield.

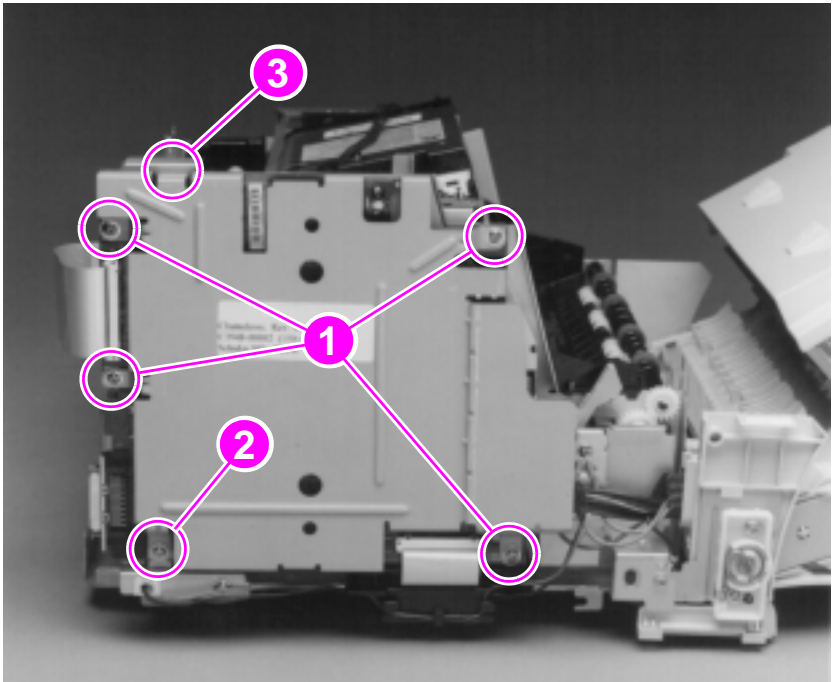


Figure 22. RFI shield removal

- 4 Remove the RFI shield by lifting the shield up and off the hook (callout 3).

Document scanner assemblies

Printer door

- 1 Press the printer door release latches and open the printer door.
- 2 Remove all covers and the RFI shield.
- 3 Pull the four (4) cables (callout 1) from the connectors aligned vertically along the right side of the formatter board, and then open tie-wrap that holds all four cables to release the cables.
- 4 Remove the three (3) grounding screws (callout 2).

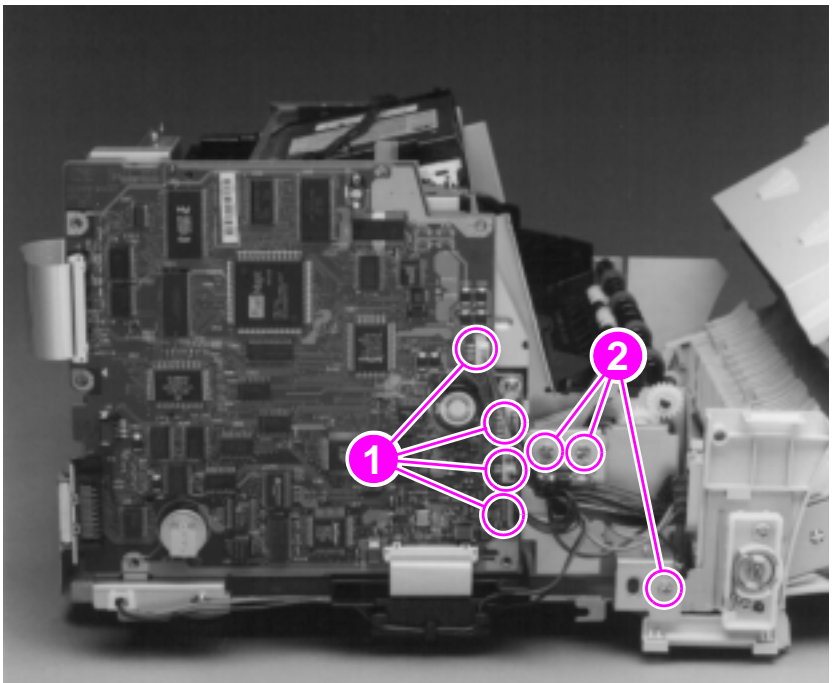


Figure 23. Printer door removal (1 of 3)

Note

Upon reinstallation, make sure that you reinstall the grounding wires to their correct locations.

- 5 Remove the printer door cable guide (callout 1) by rocking it free and lifting it out.
- 6 Remove the spacer (callout 2) by releasing the latch at one end and then lifting it out.

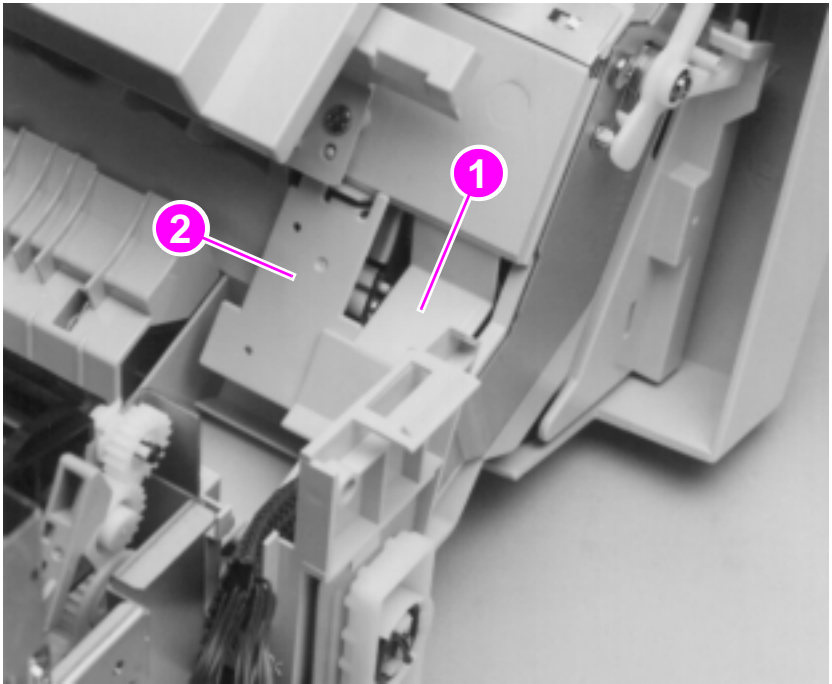


Figure 24. Printer door removal (2 of 3)

- 7** Rotate the HP LaserJet 3100/3150 product so that you face the front.

Tabs on the printer door hinge covers prevent the hinge covers from becoming dislodged. The tabs flex inward (toward the middle of the product) to release the hinge covers.

- 8** Beginning with the left hinge cover, use the small flatblade screwdriver to pry the tab inward.
- 9** When the hinge cover is released from the printer door, rotate the hinge cover up and then slide it off the hinge.



Figure 25. Printer door removal (3 of 3)

- 10** Repeat the procedure to remove the right hinge cover.
- 11** Lift the printer door off the hinges.

Document release door

Note

Although it is possible to separate the document release door from the printer door without opening or removing the printer door, HP recommends that you remove the printer door before replacing components of the document release door.

- 1 Remove the printer door from the HP LaserJet 3100/3150 product.
- 2 Release the interlocks (callout 1) on each side of the document release door and lift open the door (callout 2).

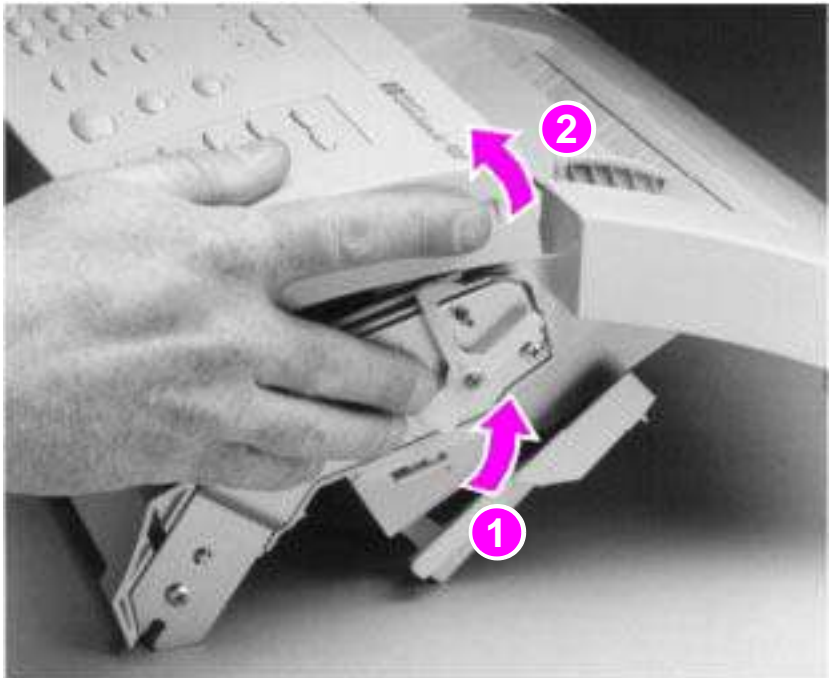


Figure 26. Document release door removal (1 of 2)

- 3 Rotate the strap on the left side of the printer door to unhook the strap.

- 4 To release the right hinge of the document release door from the printer door, use one hand to simultaneously press the right side of the document release door toward the left and pull the printer door frame to the right.



Figure 27. Document release door removal (2 of 2)

- 5 Lift out the right side of the document release door, and then slide it to the right to release the left hinge.

Upper guide assembly

- 1 Remove the three (3) screws (callout 1) from the upper guide assembly.
- 2 On some HP LaserJet 3100 products, there is a fourth screw (callout 2) to remove.
- 3 Lift up and rotate the assembly toward you.

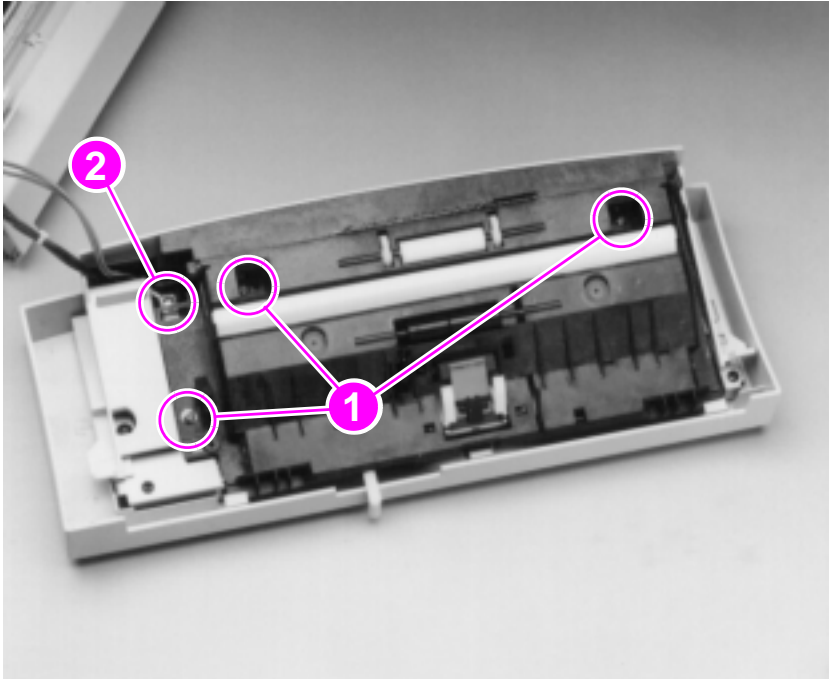


Figure 28. Upper guide assembly removal (1 of 2)

- 4 Remove the screw (callout 1) from one of the small printed circuit boards.
- 5 On all HP LaserJet 3150 products and on some HP LaserJet 3100 products, there is an additional screw (callout 2) to remove.
- 6 Release two (2) cables (callout 3) from their connectors, one on each of the small printed circuit boards.

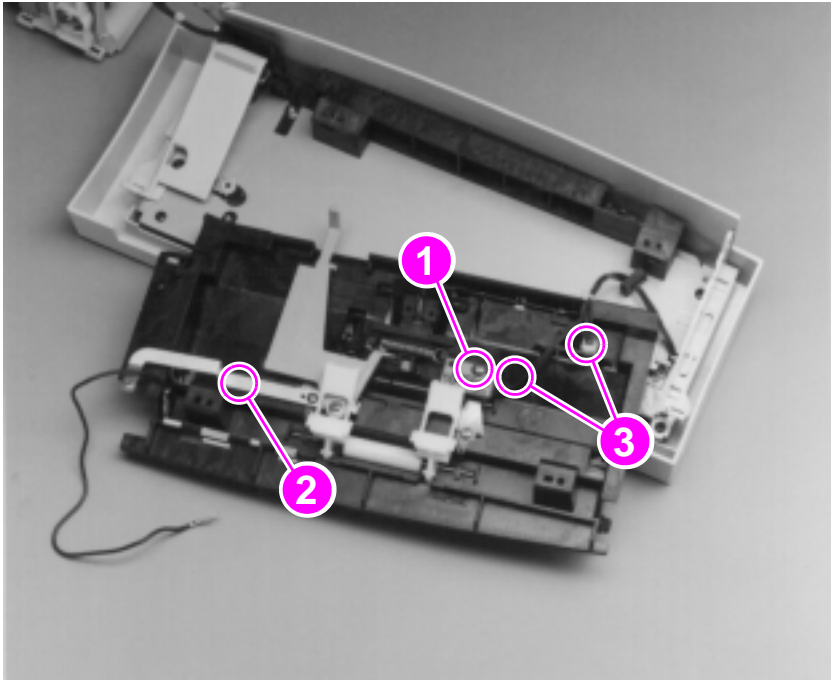


Figure 29. Upper guide assembly removal (2 of 2)

To reinstall

Make sure that the assembly is inserted correctly into the three notches.

Contact image sensor

- 1 Remove the document scanner guide by lifting it up while pressing the two tabs at the left side of the assembly.



Figure 30. Contact image sensor removal (1 of 2)

- 2 Release the contact image sensor and its mounting plate by removing the two (2) screws (callout 1) from the mounting plate.

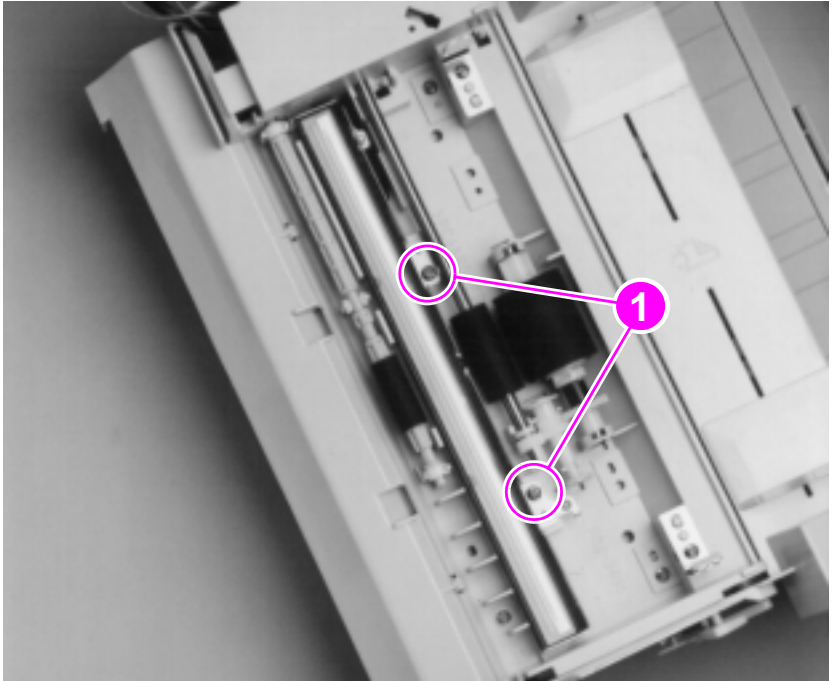


Figure 31. Contact image sensor removal (2 of 2)

- 3 Lift up the contact image sensor and its mounting plate together.
- 4 Remove the grounding screw and the cable from the bottom of the contact image sensor.

Note

Clean the scanner glass after the contact image sensor is reinstalled.

Document scanner assembly/motor

- 1 Remove the document scanner guide by lifting it up while pressing the two tabs at the left side of the assembly (see Figure 30).
- 2 Remove the two (2) screws (callout 1) from the document scanner assembly.

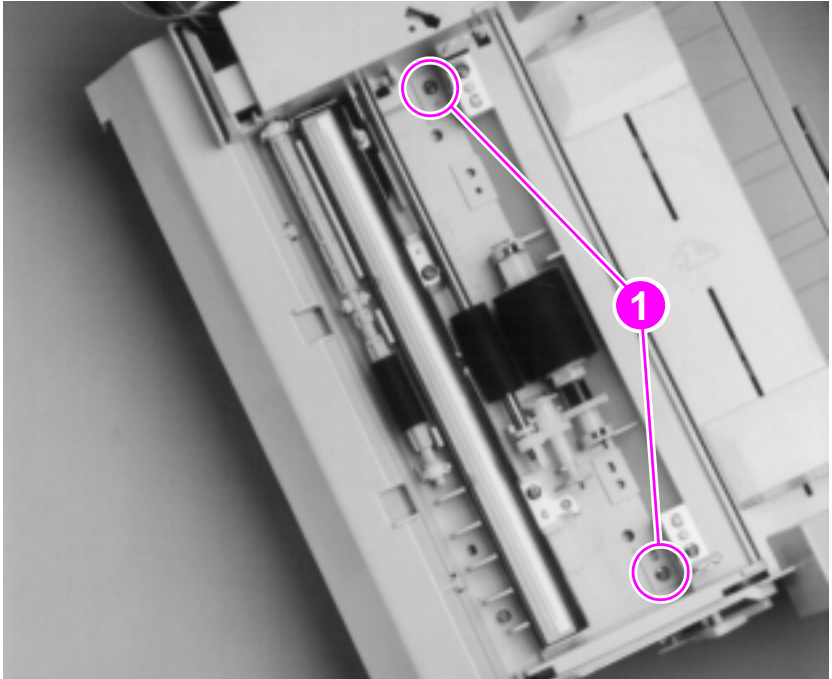


Figure 32. Document scanner assembly/motor removal (1 of 2)

- 3 Use firm pressure to lift the document scanner assembly while sliding it in the direction of the input bins to release the document scanner assembly.

The scanner motor is located on the left side of the document scanner assembly.

- 4 Remove the two (2) screws (callout 1) from the document scanner motor.

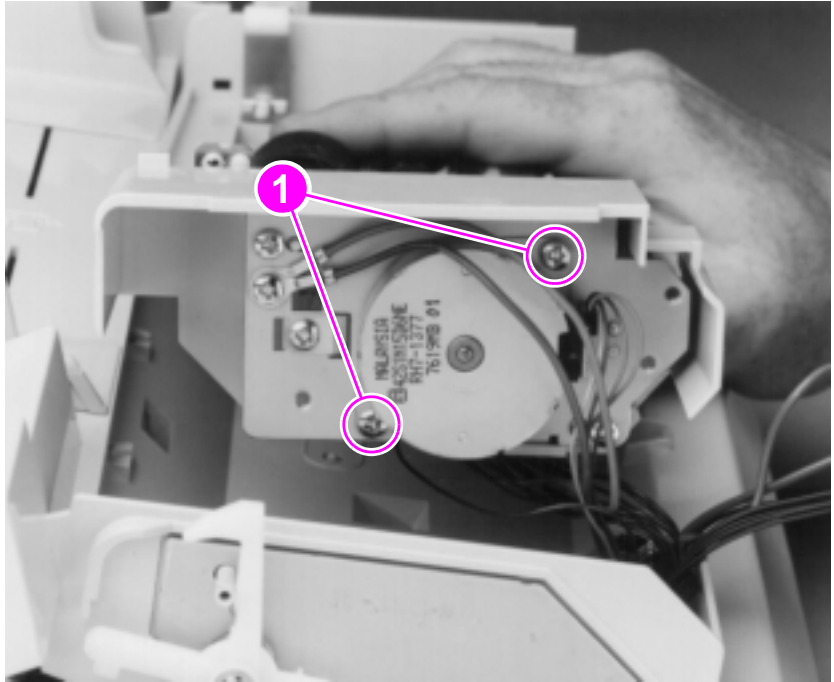


Figure 33. Document scanner assembly/motor removal (2 of 2)

- 5 Lift the document scanner motor straight out.

To reinstall

Reinstall the document scanner motor to the same position as before its removal. If the motor is not reinstalled to the same position, the cables might not reach their connectors.

Document scanner pickup roller

It is possible to remove the document scanner pickup roller without removing the document release door. However, the steps below detail pickup roller removal with the assumption that the document release door has already been removed.

- 1 Remove the document scanner guide by lifting it up while pressing the two tabs at the left side of the assembly (see Figure 30).
- 2 Use the small flatblade screwdriver to pry the right end of the pickup roller shaft from its plastic mounting.

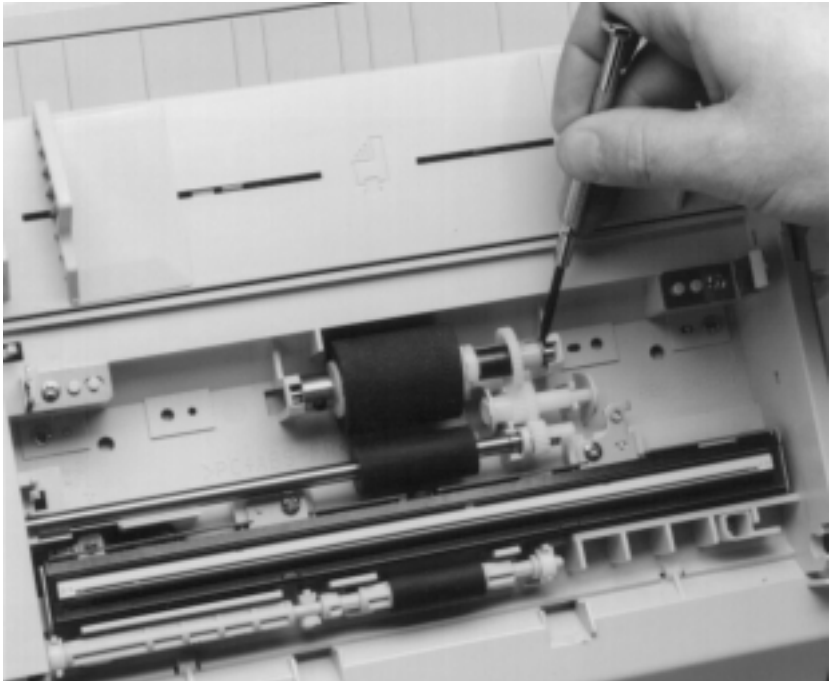


Figure 34. Document scanner pickup roller removal

- 3 Lift the right end of the pickup roller shaft out of its mounting; the left end should follow easily.

Note

Once the pickup roller shaft has been removed, parts can easily fall off of the shaft. Upon reinstallation, make sure that all of the parts have been replaced on the shaft in the correct order.

Internal assemblies

LIU board

- 1 Remove the back cover.
- 2 Pull out slightly the connector for the flat, flexible cable (callout 1) to release the cable and disconnect the cable from the LIU board.

Note

The flat, flexible cable must be reinstalled to the same orientation. Examine the cable and make notes about its orientation to make sure that you reinstall it correctly.

- 3 Remove the three (3) screws (callout 2) from the LIU board.

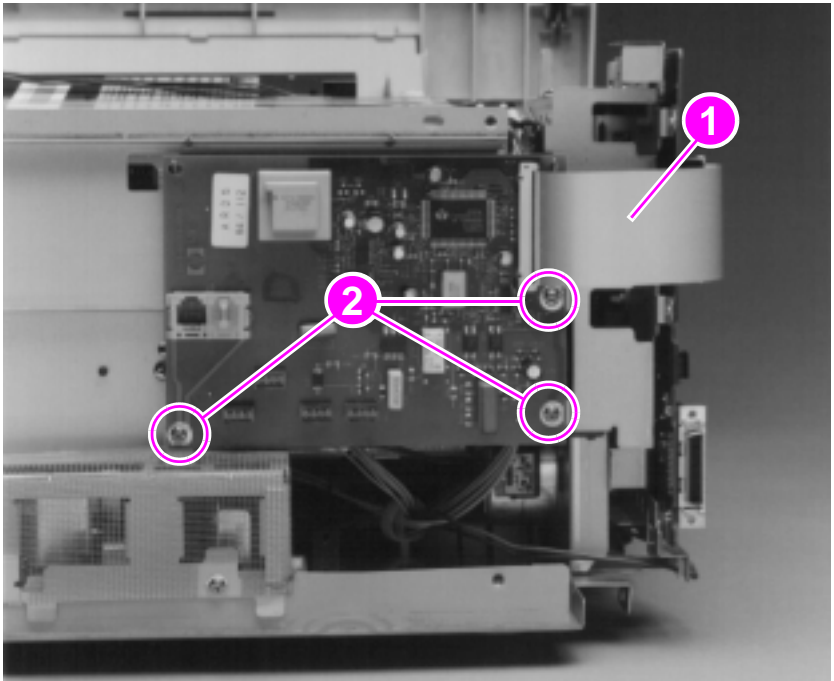


Figure 35. LIU board removal

- 4 Remove the LIU board by rotating the board up and off the hooks.

Formatter board

- 1 Remove all covers and the RFI shield.
- 2 If the LIU board has not been removed from the product, pull out slightly the connector for the flat, flexible cable (callout 1) at the left side of the formatter board to release the cable, and then disconnect the cable from the formatter board.
- 3 Pull out slightly the connector for the flat, flexible cable (callout 2) at the bottom of the formatter board to release the cable, and then disconnect the cable from the formatter board.

Note

Both flat, flexible cables must be reinstalled to the same orientation. Examine the cables and make notes about their orientations to make sure that you reinstall them correctly.

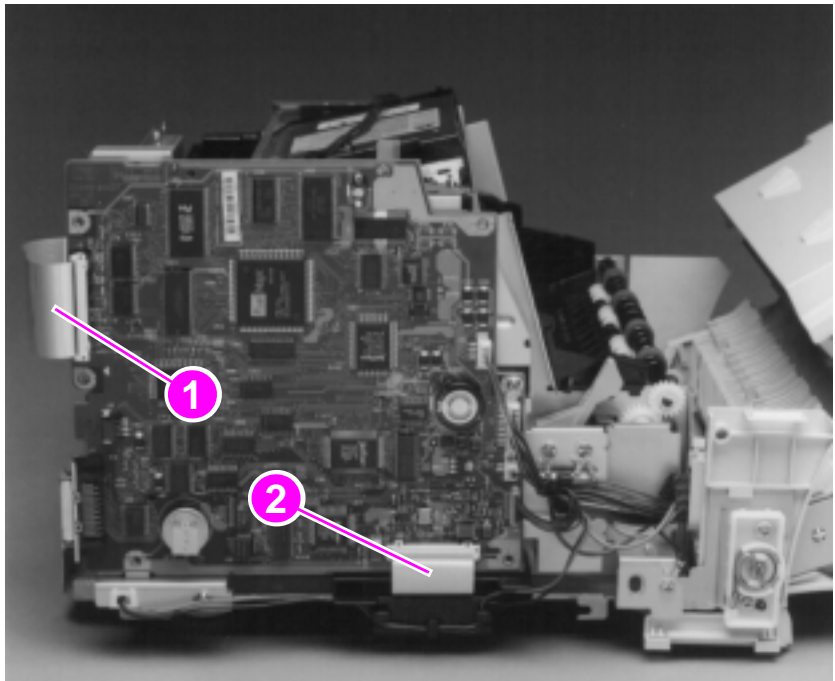


Figure 36. Formatter board removal (1 of 2)

- 4 Pull the four (4) cables from the connectors (callout 1) aligned vertically along the right side of the formatter board, and then open the tie-wrap that holds all four cables to release the cables.
- 5 Remove the remaining screw from the formatter board (callout 2).

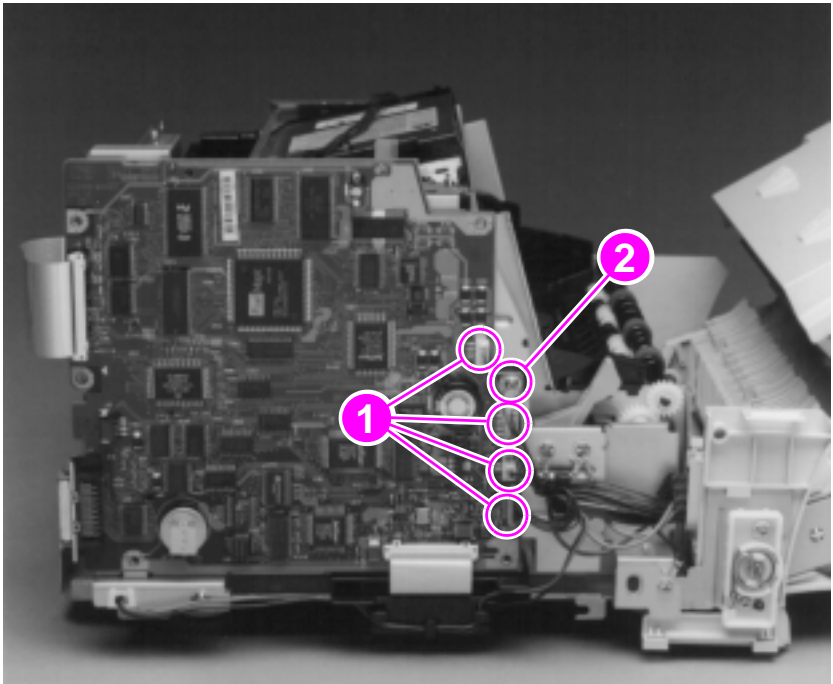


Figure 37. Formatter board removal (2 of 2)

- 6 Remove the formatter board by lifting it up and off the hooks.

CAUTION

Placing the formatter board on a conductive surface can damage the board. Place the formatter board on an ESD mat.

Note

See Chapter 6, “Troubleshooting,” for information about how to download the most recent firmware version and software program versions from the HP website (<http://www.hp.com/cposupport/>). Updating the firmware and software at the same time ensures their complete compatibility.

Metal side plate

- 1 Remove all covers, the LIU board, the RFI shield, and the formatter board.
- 2 Remove the two (2) screws (callout 1) from the grounding plate and lift the grounding plate from the product.
- 3 Remove the three (3) grounding screws (callout 2).

Note

Upon reinstallation, make sure that you reinstall the grounding wires to their correct locations.

- 4 Release the cable guide from the frame (callout 3).
- 5 Remove the remaining two (2) screws (callout 4) from the metal side plate.

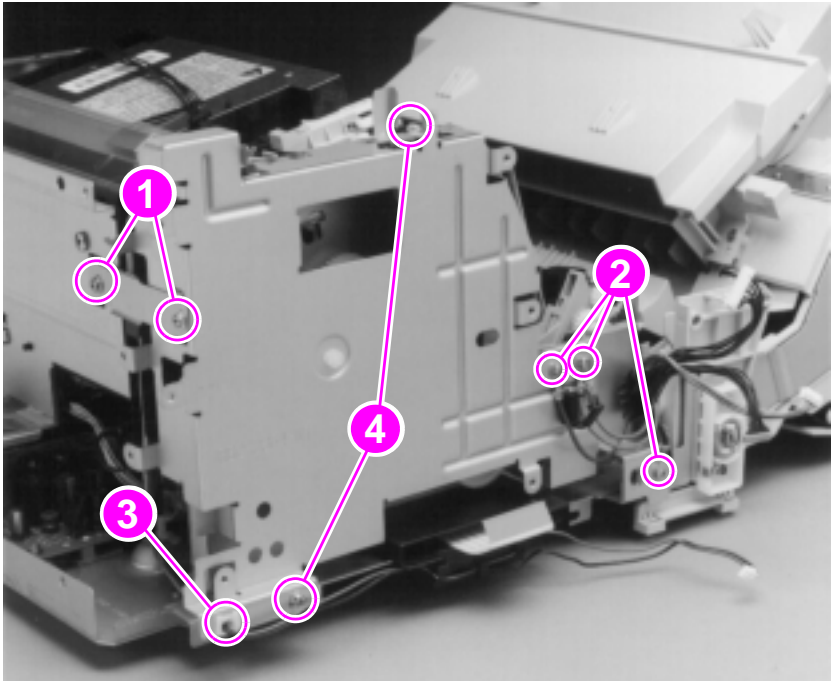


Figure 38. Metal side plate removal

- 6 Remove the metal side plate by popping the latch on top, near the back, and lifting it away.

Exit roller

- 1 Remove all covers, the RFI shield, and the printer door.
- 2 Pry in the tab at the lower end of the left exit roller bushing and pull it inward.
- 3 Release the exit roller by rotating the tab up.



Figure 39. Exit roller removal

- 4 Remove the exit roller by lifting up the left end; the right end follows easily.

Delivery assembly

- 1 Remove all covers, the RFI shield, the printer door, and the exit roller.
- 2 Remove the cartridge guide by pressing in the tab (callout 1) and sliding the guide toward the front of the HP LaserJet 3100/3150 product (callout 2).

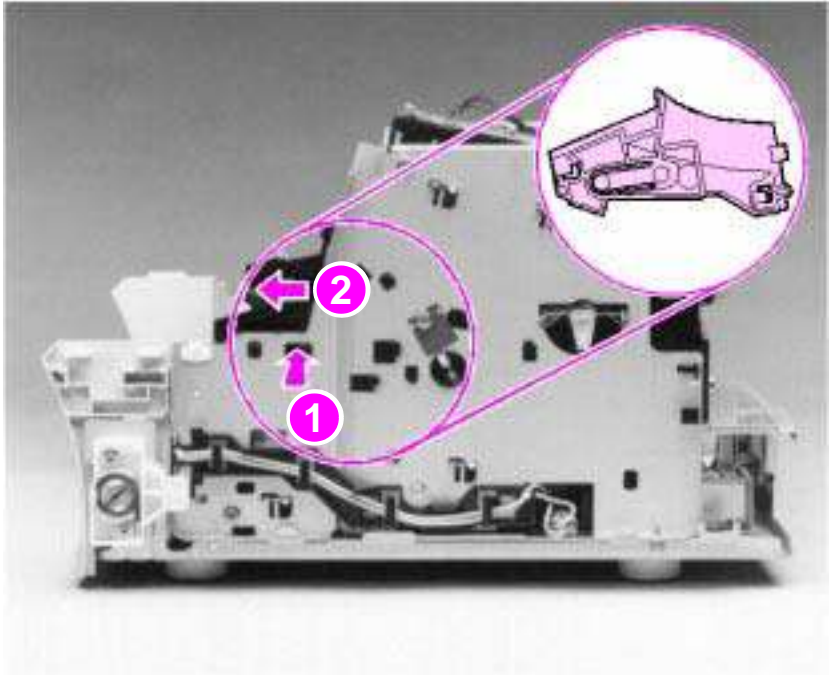


Figure 40. Delivery assembly removal (1 of 2)

- 3 Use the magnetic screwdriver to remove the two (2) screws (callout 1).

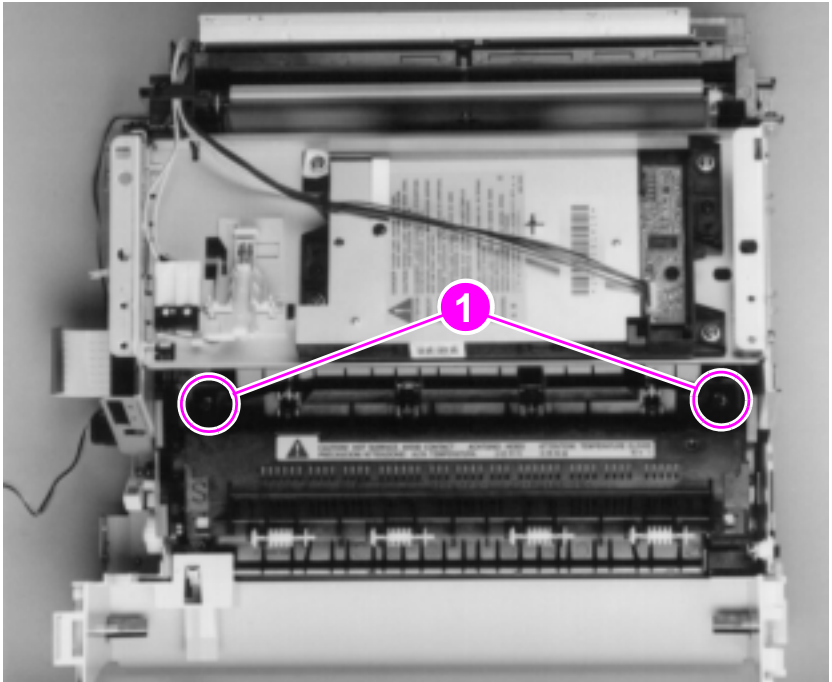


Figure 41. Delivery assembly removal (2 of 2)

- 4 Rotate the rear of the delivery assembly up and forward and lift it out of the printer.

Note

Upon reinstallation, the tabs on the front end of the delivery assembly must fit under the sheet metal fuser plate below to correctly reseat the delivery assembly.

Fuser pressure plate

- 1 Remove all covers, the RFI shield, the printer door, the exit roller, and the delivery assembly.
- 2 Remove the two (2) screws (callout 1).
- 3 Press the fuser plate retainer clips out (callout 2) to release the pressure plate.
- 4 Rotate the plate around and toward the back (callout 3) and lift up to remove it.

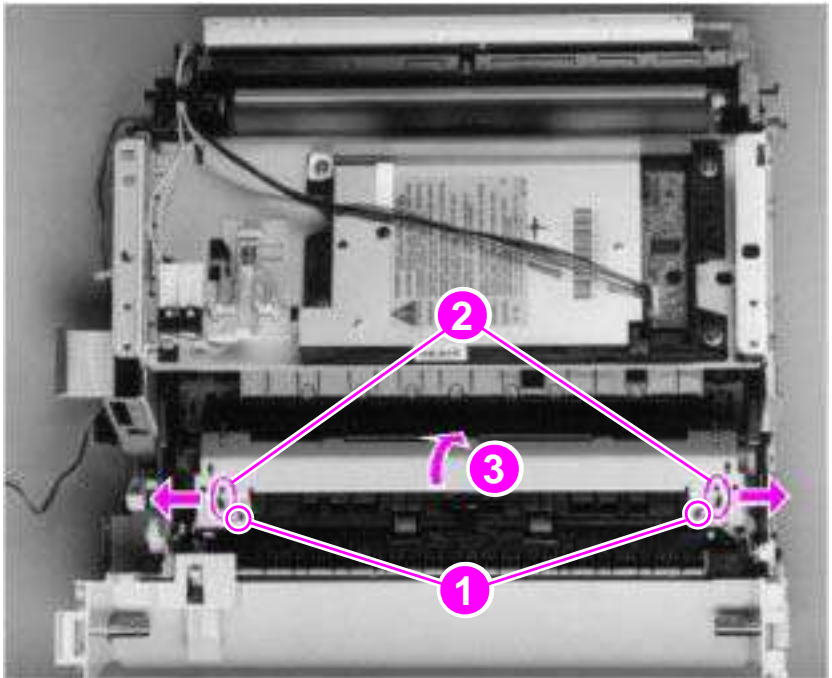


Figure 42. Fuser pressure plate removal

To reinstall

The fuser pressure plate is held in place by four locking mechanisms in each corner. Place the rear slits in the plate over the rear brackets that hold the fusing assembly (callout 1). Lower the plate over the retaining clips, pressing on both sides of the fuser pressure plate (callout 2). It is important that the spring is placed over the positioning pin (callout 3) because inadequate pressure will cause fusing problems. Replace the screws.

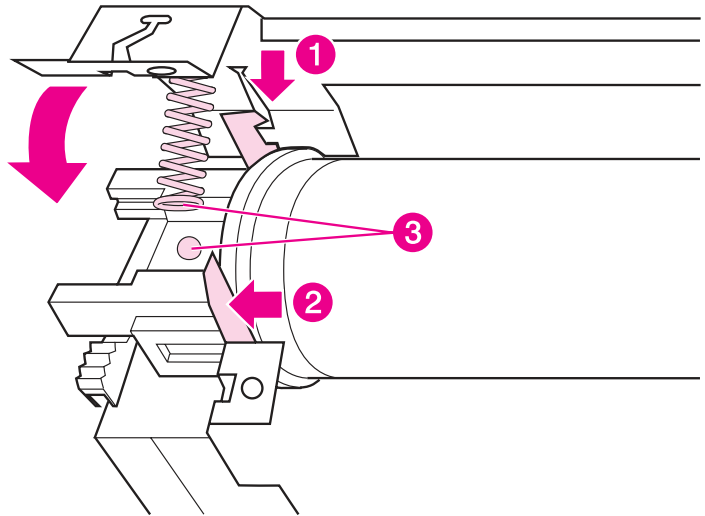


Figure 43. Fuser pressure plate replacement

Front casing

- 1 Remove all covers, the RFI shield, and the printer door.
- 2 Remove the two (2) screws (callout 1) from the right hinge holder.

Note

The lower screw on each of the hinge holders secures a small metal grounding plate. Upon reinstallation, make sure the grounding plates are in the correct position.

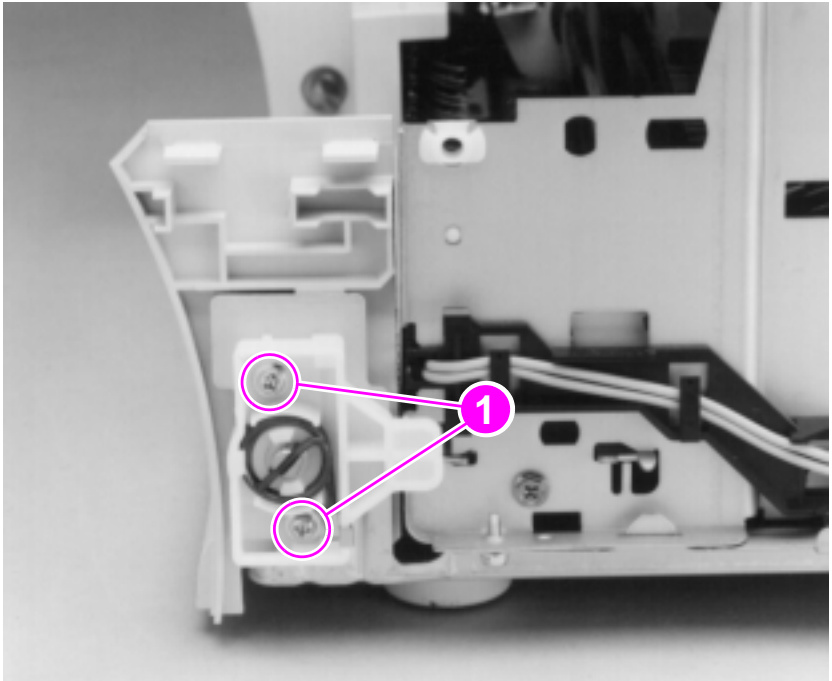


Figure 44. Front casing removal

- 3 Lift the right hinge holder from the frame.
- 4 Repeat the procedure to remove the left hinge holder.
- 5 Lift the front of the product up slightly and press the tabs at the bottom of the product to release the front casing.
- 6 Lift the front casing away from the product.

To reinstall

Make sure that the paper path lever hooks into the face-up/face-down lever correctly.

Heating element

- 1 Remove all covers, the RFI shield, the printer door, the exit roller, the delivery assembly, the fuser pressure plate, and the front casing.
- 2 Disconnect the AC voltage to the heating element by releasing the connector located on the ECU. Press down on the connector release with the small flatblade screwdriver (callout 1). (Because this is a small space, it is much easier to reach the connector with a screwdriver.) Pull the connector straight out (callout 2).

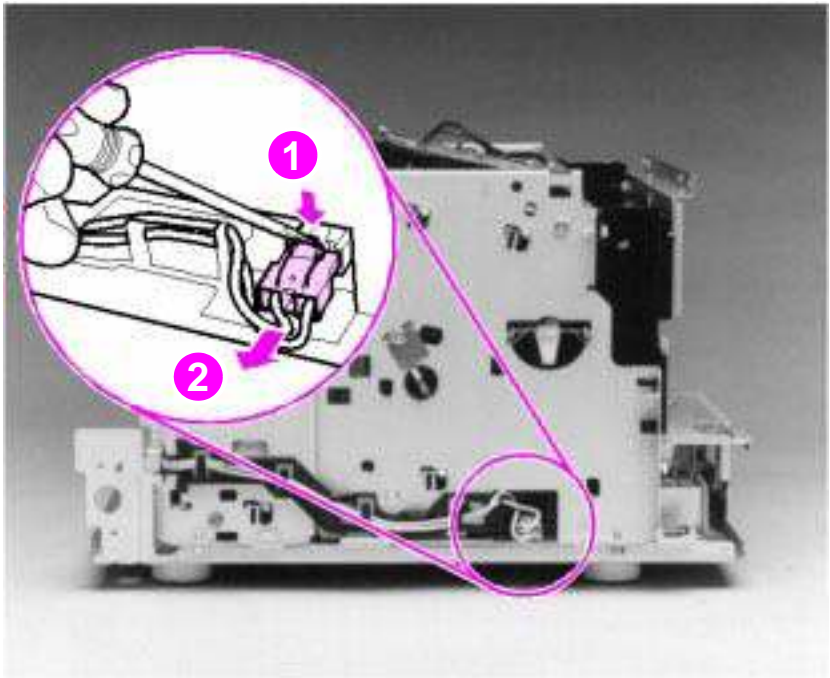


Figure 45. Heating element removal (1 of 2)

- 3 Remove the wire from the wire guides along the right side of the printer.

- 4 Disconnect the thermistor feedback connector (callout 1) in the left, front side of the fusing assembly.

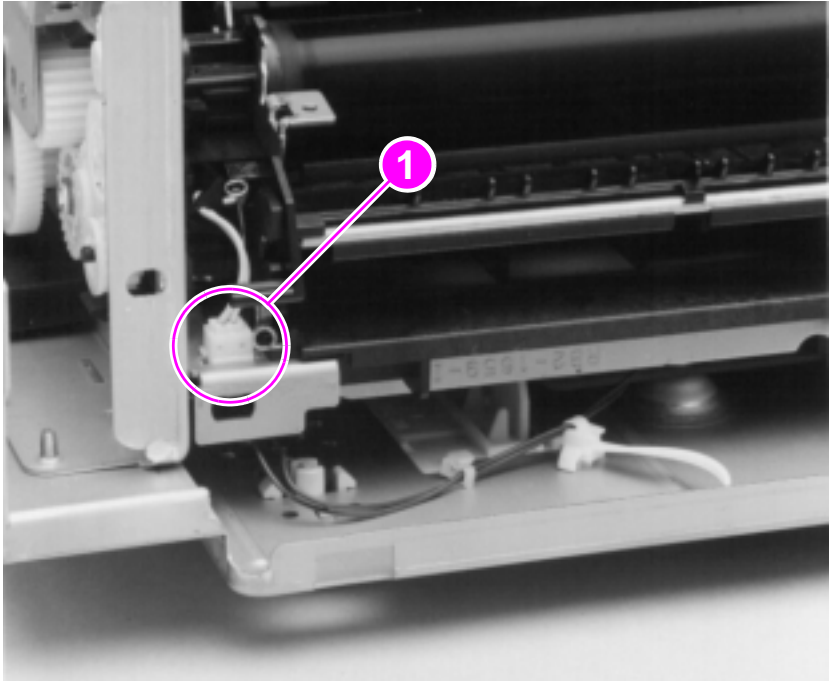


Figure 46. Heating element removal (2 of 2)

- 5 Lift the heating element out.

To reinstall

Make sure the connectors are properly reattached and that the thermistor feedback cable is routed behind the face-up/face-down lever.

Pressure roller

- 1 Remove all covers, the RFI shield, the printer door, the exit roller, the delivery assembly, the fuser pressure plate, the front casing, and the heating element.
- 2 Remove the pressure roller guide by lifting the edge (callout 1) and then rolling it gently backward (callout 2).

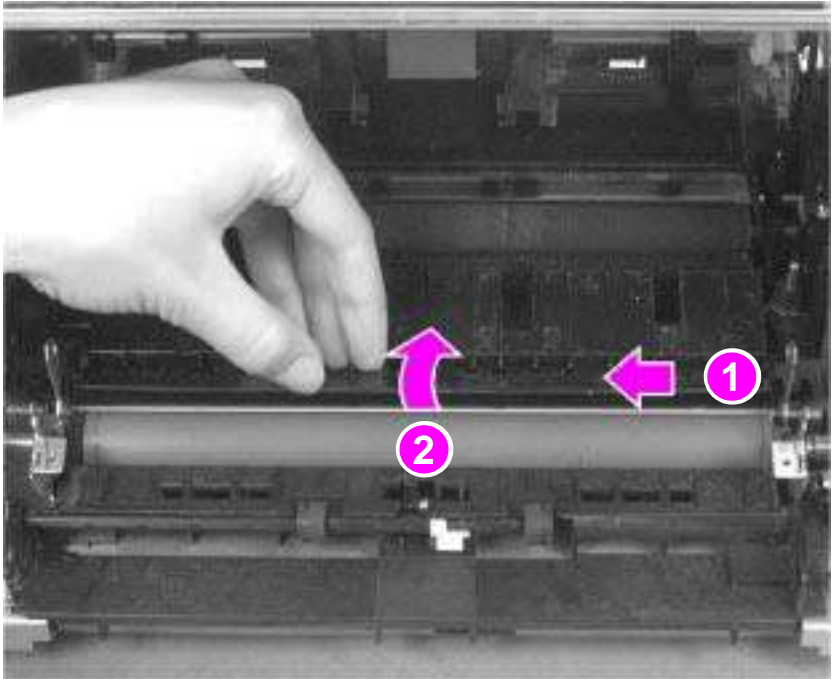


Figure 47. Pressure roller guide removal

- 3 Lift the right end of the pressure roller up and out of the printer chassis.

Note

The right end of the pressure roller is greased.

- 4 The left side will follow easily with the pressure roller gear still attached.

Note

When reinstalling the pressure roller, apply a drop of pressure roller grease to the grounding plate on the right end of the shaft. See Chapter 7, "Parts and diagrams," for information about ordering pressure roller grease.

Face-up/face-down lever

- 1 Remove all covers, the RFI shield, the printer door, the exit roller, the delivery assembly, the fuser pressure plate, the front casing, the heating element, and the pressure roller.
- 2 Rotate the lever forward 90 degrees (past the spring) and pull it straight out the front of the printer.

To reinstall

- 1 Make sure the lever arm is on the left and is initially pointing downward.
- 2 Pull the spring forward using needlenose pliers.
- 3 Slide the short, round tabs into the grooves on the separation guide assembly. The machined ridges on the lever will face you.
- 4 Release the spring so it falls in place in front of the square tab.

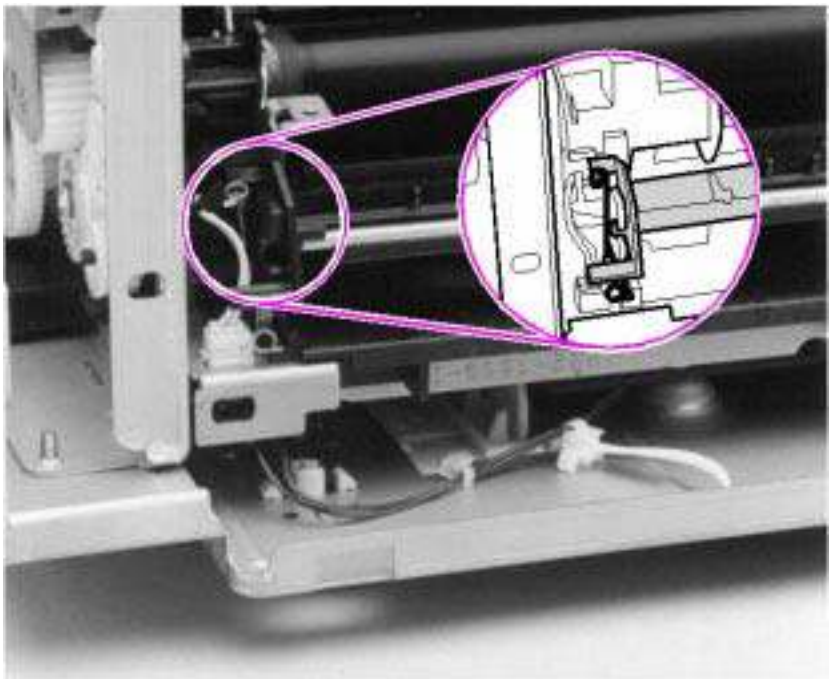


Figure 48. Face-up/face-down lever replacement

Note

You can tell when the lever is in place because there are two plastic grooves that fit precisely in front of the exit rollers, and you should be able to feel the spring's release mechanism.

Fuser exit roller assembly

- 1 Remove all covers, the RFI shield, the printer door, the exit roller, the delivery assembly, the fuser pressure plate, the front casing, the heating element, the pressure roller, and the face-up/face-down lever.
- 2 Remove the gear from the left end of the roller shaft by pressing down on the catching mechanism with the small flatblade screwdriver and pulling the gear away.
- 3 Remove the exit roller assembly by pressing the small, white tab upward (callout 1) and rotating it around (callout 2).
- 4 Slide the exit roller assembly forward and out to the right of the printer.

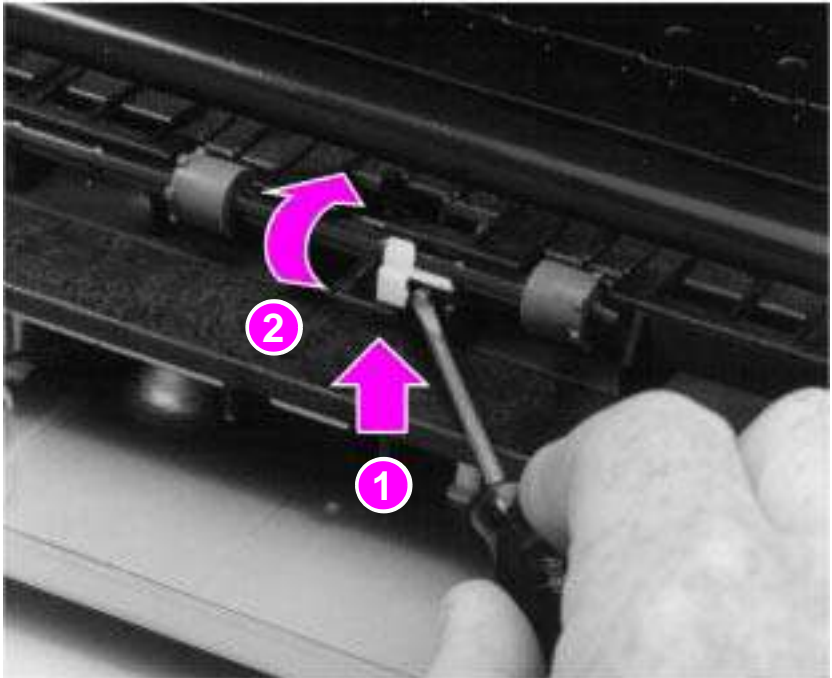


Figure 49. Fuser exit roller assembly removal

Paper exit sensor flag

- 1 Remove all covers, the RFI shield, the printer door, the exit roller, the delivery assembly, and fuser pressure plate.

Note

Before proceeding, examine the paper exit sensor flag. It is important to note the position of the spring mechanism on the flag. The spring must be reinstalled to exactly this position, because installing it incorrectly will cause a control panel error message.

- 2 Remove the paper exit sensor flag by pressing down on the left side and pulling up on the right side.

To reinstall

Place the left side of the flag in the correct position first, then slide the right side into place, making certain the spring is on top of the flag. If the spring exerts no pressure on the flag, it may require respringing by giving the spring an extra turn before reinstalling. The flag should fit snugly in place.

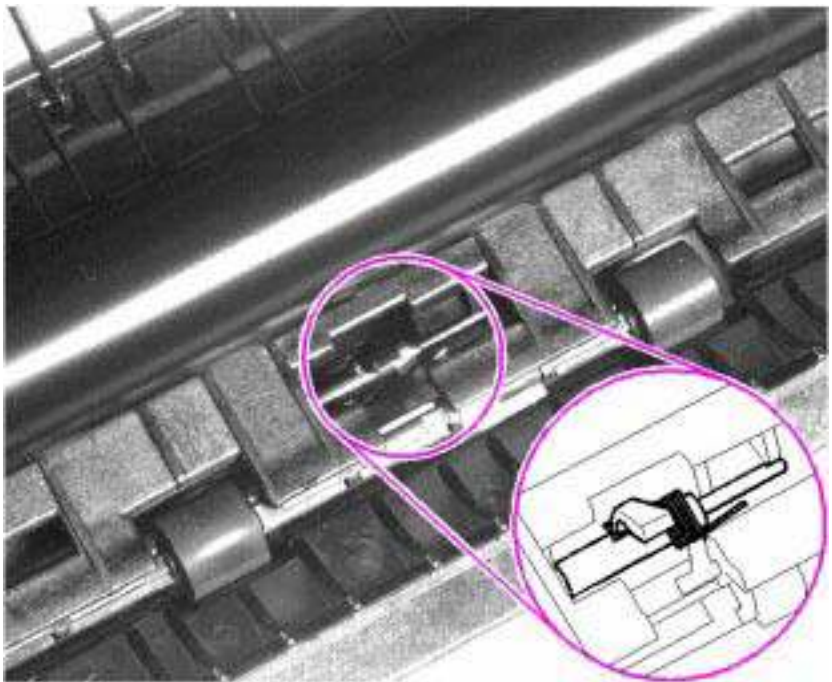


Figure 50. Paper exit sensor flag replacement

Laser/scanner assembly

- 1 Remove all covers.
- 2 Remove both laser/scanner connectors.
- 3 Remove the four (4) screws (callout 1).
- 4 Lift the assembly straight off.

Note

One of the four screws is longer than the other three. Upon reinstallation, the longer screw must be replaced in its original location.

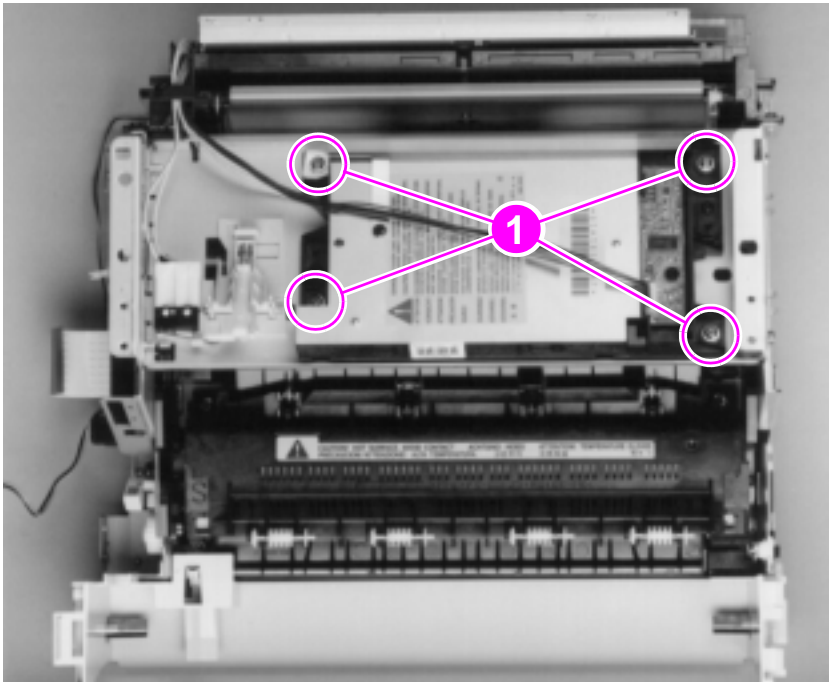


Figure 51. Laser/scanner assembly removal

Solenoid

- 1 Remove all covers, the RFI shield, the LIU board, the formatter board, and the metal side plate.
- 2 On the left side of the printer, remove the paper pickup gear (callout 1) by pressing the tabs in the center of the gear outward and pulling the gear off.

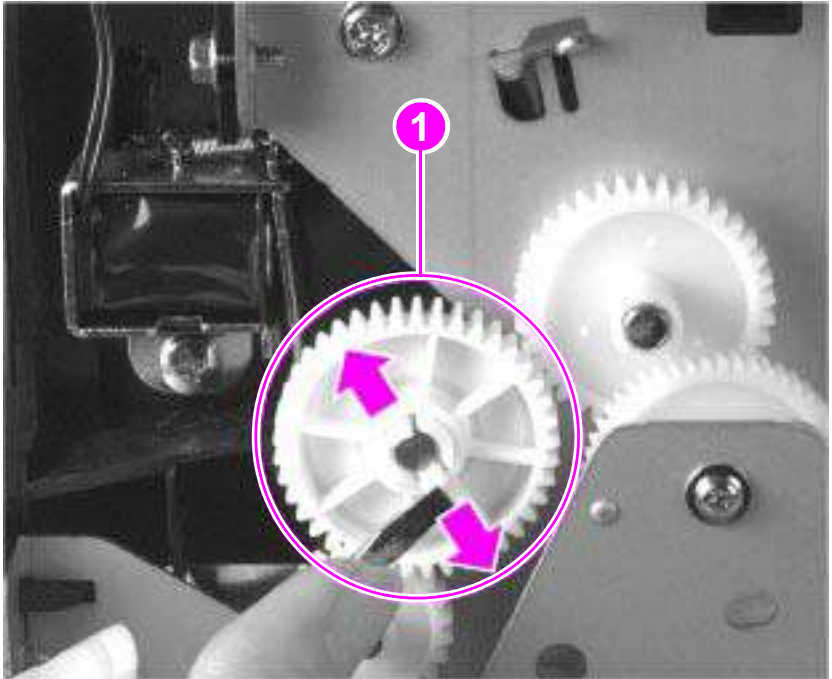


Figure 52. Solenoid removal (1 of 2)

- 3 Remove the solenoid connector (callout 1) from the ECU.
- 4 Remove the self-tapping screw (callout 2) that holds the solenoid in place.
- 5 Unthread the wires from the printer chassis.
- 6 Lift the solenoid off.

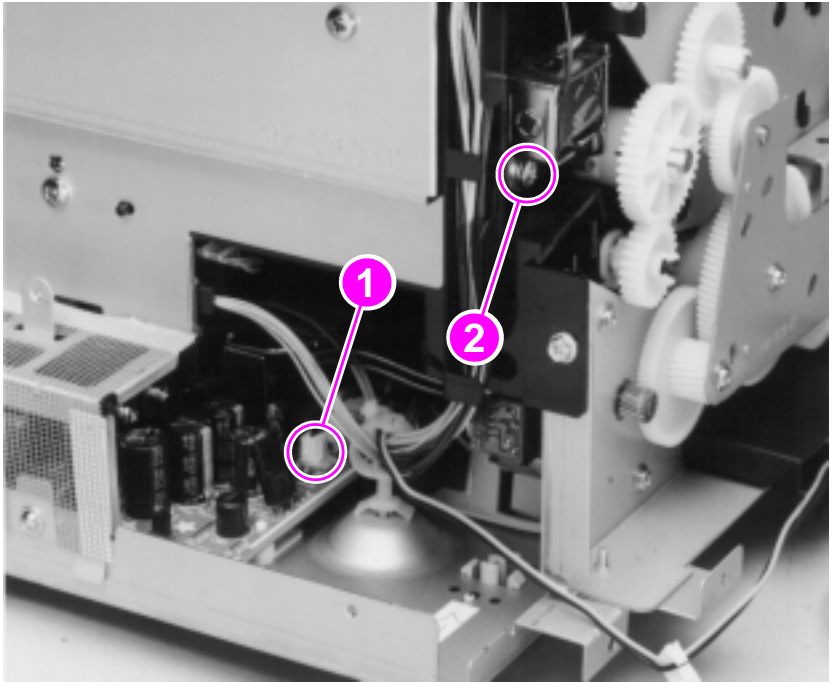


Figure 53. Solenoid removal (2 of 2)

To reinstall

The paper pickup gear is keyed to go on the shaft in only one way.

Pickup roller assembly

- 1 Remove all covers, the RFI shield, the printer door, the LIU board, the formatter board, the metal side plate, and the paper pickup gear.
- 2 Remove the pickup roller grounding clip on the right of the printer by lifting each end of the clip up and over the two metal guides and sliding the clip off.

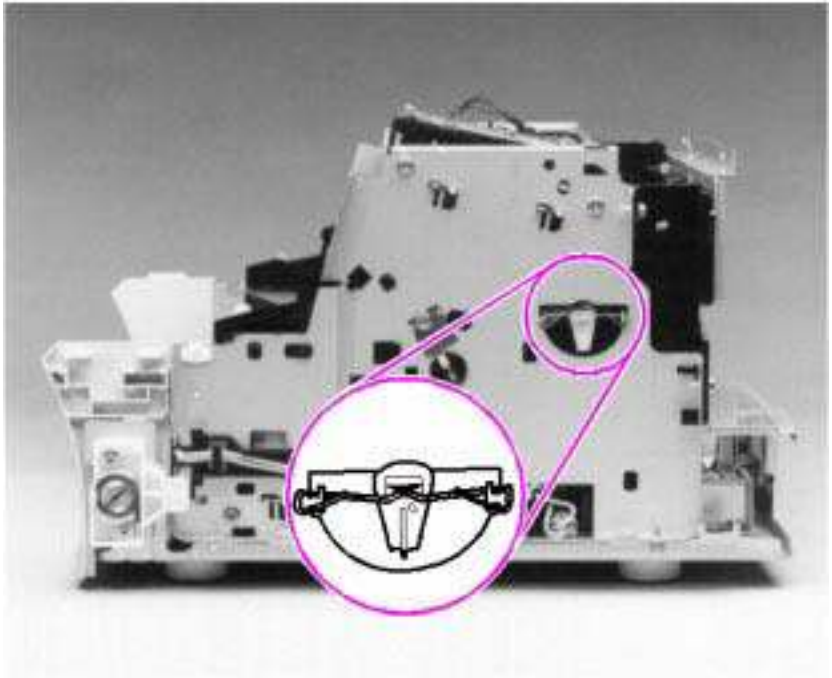


Figure 54. Pickup roller assembly removal (1 of 2)

- 3 Using needlenose pliers, pull the bottom of the bushing out (callout 1), then turn it counterclockwise (callout 2) to release it.

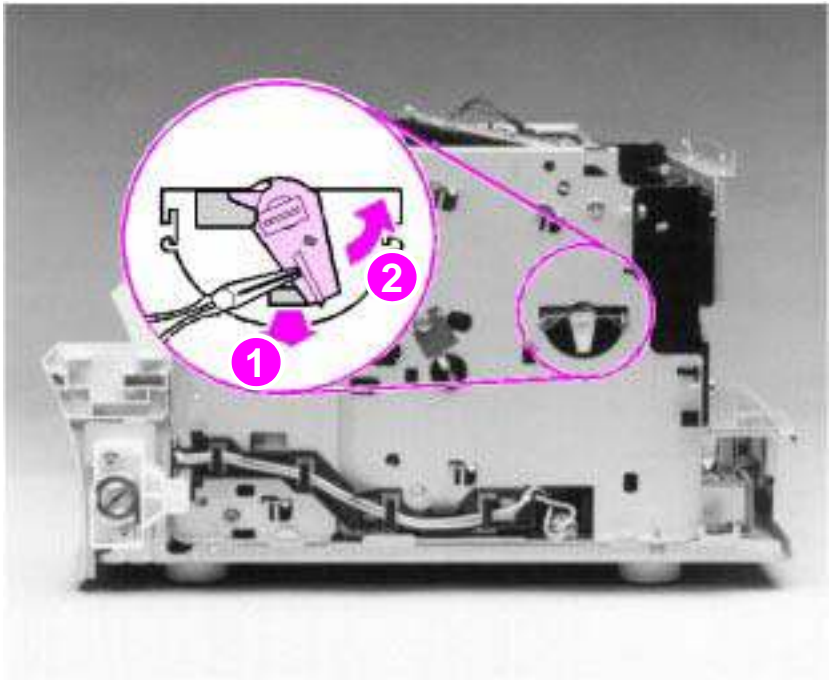


Figure 55. Pickup roller assembly removal (2 of 2)

- 4 Lift the bushing out.
- 5 From inside the front of the printer, slide the right side of the pickup roller assembly forward, then lift the left side out.

Note

If you replace the pickup roller assembly, also replace the separation pad and subpads (order a separation pad and subpads under a single order number). See the removal procedures for the separation pad and subpads later in this chapter and also see Figure 96, “Paper pickup assembly,” in Chapter 7.

To reinstall

After placing the pickup roller shaft through on the left side, line up the idler roller tabs while repositioning the right side. Rock the shaft back and forth until the pickup roller and the idler roller tabs are correctly reinstalled.

Note

It is important that the pickup roller is placed back in with the two idler roller tabs up, so that they fit into the underside of the metal chassis behind the laser/scanner assembly.

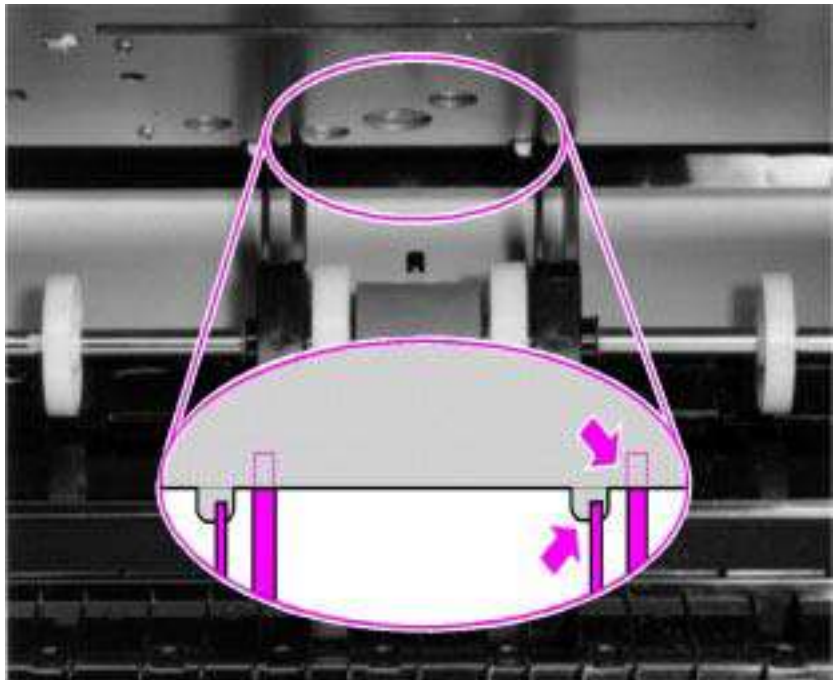


Figure 56. Paper pickup roller assembly replacement

Paper feed frame

- 1 Remove all covers, the RFI shield, the printer door, the LIU board, the formatter board, the metal side plate, the paper pickup gear, and the pickup roller assembly.
- 2 Disconnect the following:
 - Solenoid from the ECU at J204 (see Figure 53, callout 1).
 - Two connectors from the laser/scanner and the connector from SW101 (callout 1).

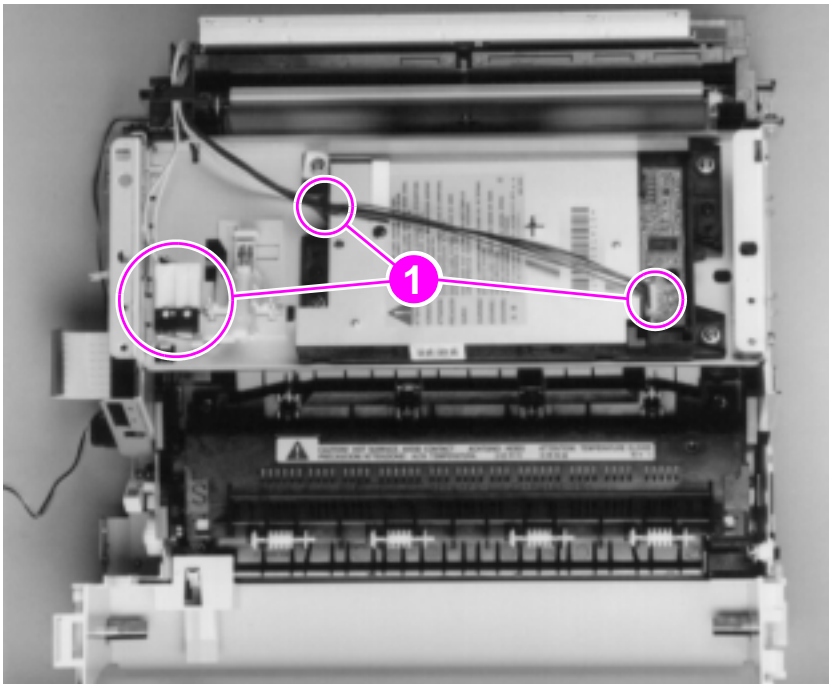


Figure 57. Paper feed frame removal (1 of 3)

- 3 Remove the four (4) screws (callout 1) from the back sheet metal plate and lift it off.
- 4 Remove the four (4) screws (callout 2) from the paper feed frame.

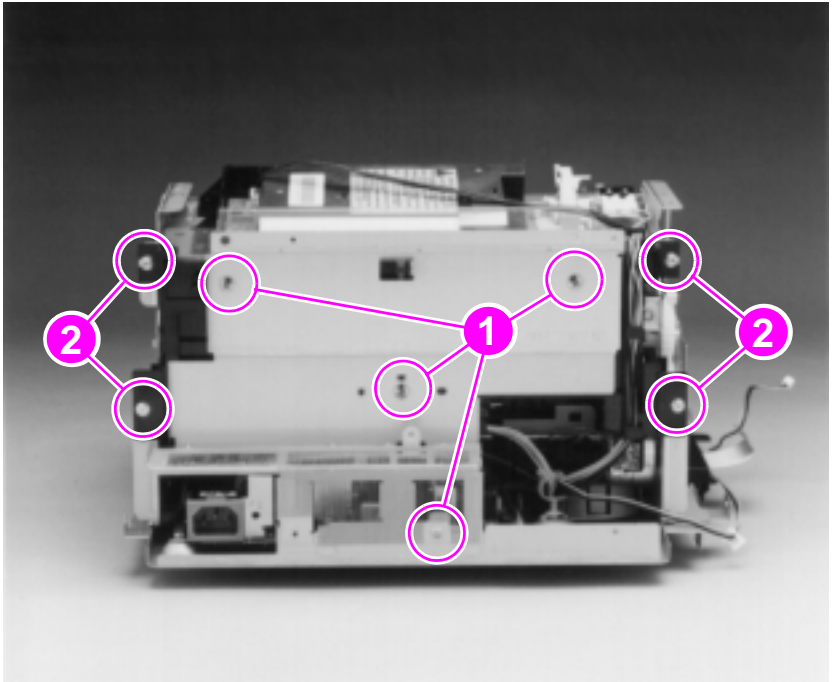


Figure 58. Paper feed frame removal (2 of 3)

- 5 Release the sensor unit connector (callout 1).

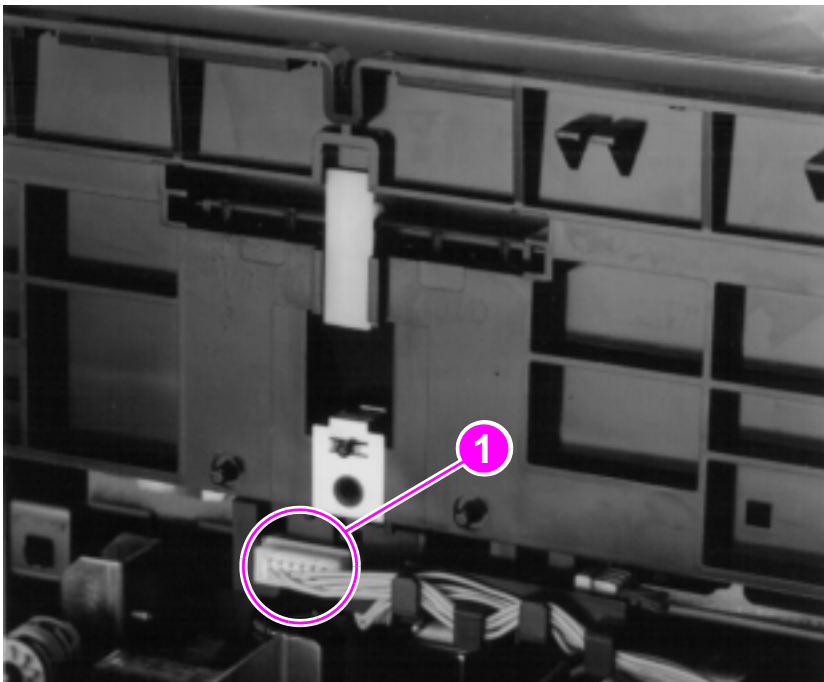


Figure 59. Paper feed frame removal (3 of 3)

- 6 Verify that all cables are clear of the frame and pull the frame straight back to remove it.

To reinstall

The paper feed frame may be easier to reinstall if you place the printer on its front, so that you can apply pressure while putting the screws back in place.

Transfer roller guide and transfer roller

- 1 Remove all covers, the RFI shield, the printer door, the LIU board, the formatter board, the metal side plate, the paper pickup gear, the pickup roller assembly, and the paper feed frame.
- 2 Looking at the back of the printer, note the two small, hook-shaped release tabs on each end of the transfer roller guide. Using the small flatblade screwdriver, carefully pry each tab outward to release it.
- 3 Roll the released portion of the guide up. To remove the transfer roller guide, pull it off each end of the transfer roller shaft. This exposes the transfer roller.

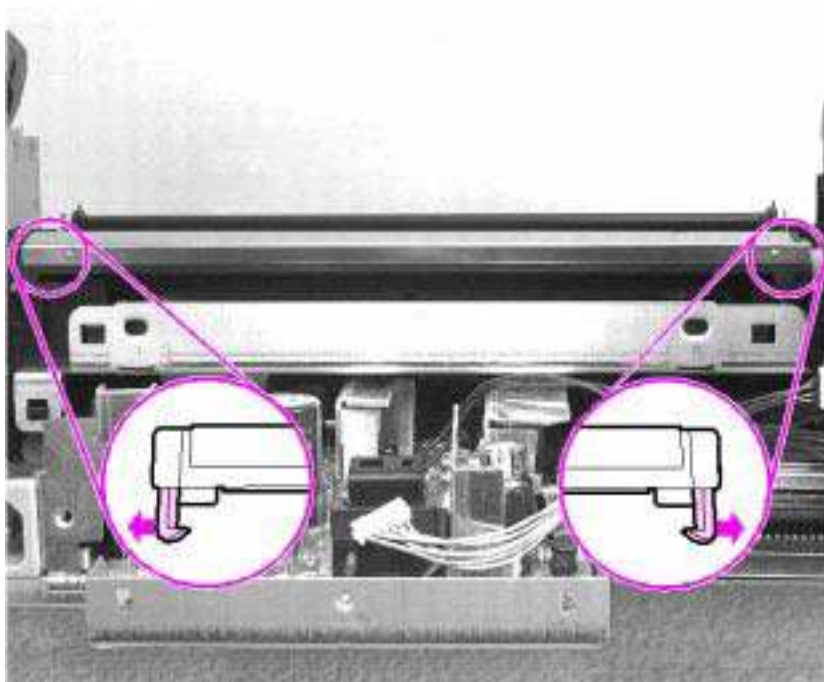


Figure 60. Transfer roller guide and transfer roller removal

CAUTION

Do not touch the transfer roller or otherwise allow it to be contaminated.

- 4 Working from the front of the printer, gently pry the gear side of the transfer roller out first, then slide the other side out of its socket.

Kick plate

CAUTION

Be careful working with the kick plate and separation pad. The spring underneath the kick plate might stay attached to the kick plate, but it is also likely to spring away from the kick plate. Place the spring aside for separation pad disassembly.

- 1 Remove all covers, the RFI shield, the printer door, the LIU board, the formatter board, the metal side plate, the paper pickup gear, and the pickup roller assembly.
- 2 Press the separation pad.
- 3 Allow the kick plate to pivot upward (a spring underneath will push it up) and lift the kick plate off its mounting pins.

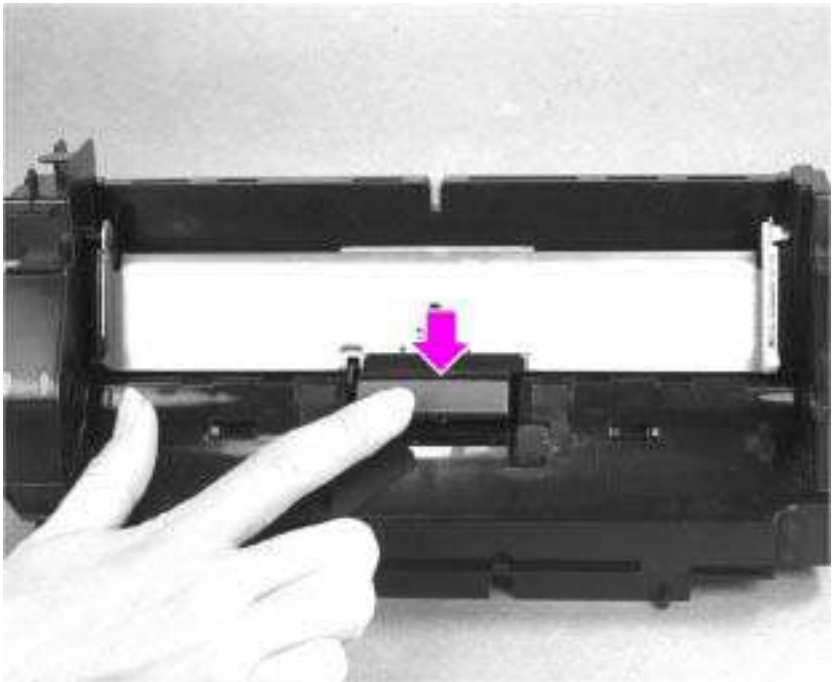


Figure 61. Kick plate removal

To reinstall

If the spring on the kick plate does not remain attached to the kick plate, replace the spring, making certain the diameter of the spring surrounds two lower pins on the kick plate and rests inside the third pin. Use needlenose pliers to place the spring correctly.

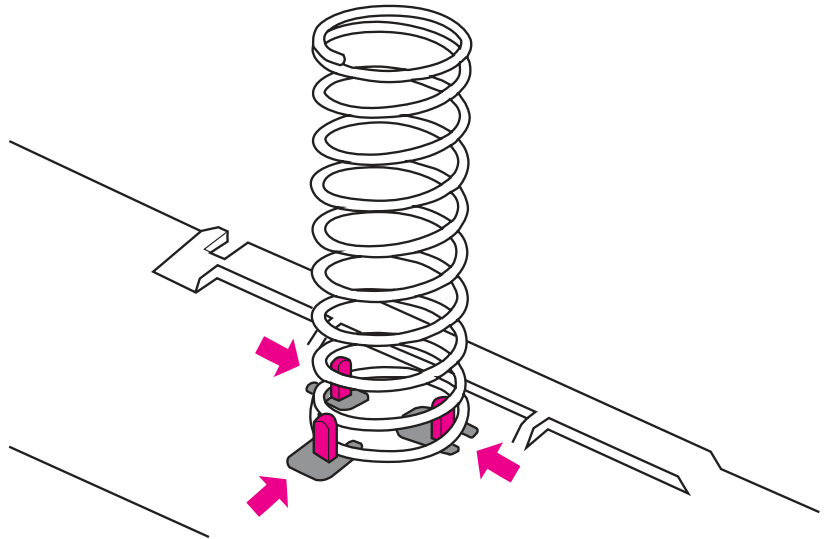


Figure 62. Kick plate spring replacement

While rotating the kick plate into place, guide the other end of the spring onto the silver grounding plate located on the paper feed frame.

Separation pad

- 1 Remove all covers, the RFI shield, the printer door, the LIU board, the formatter board, the metal side plate, the paper pickup gear, the pickup roller assembly, and the kick plate.
- 2 Lift the bottom of the white plastic tab (callout 1) on the rear of the paper feed frame up slightly and slide it up, toward the top of the paper feed frame. This will release the separation pad.
- 3 Lift the separation pad 90 degrees and slide its mounting pins out of their retainers.

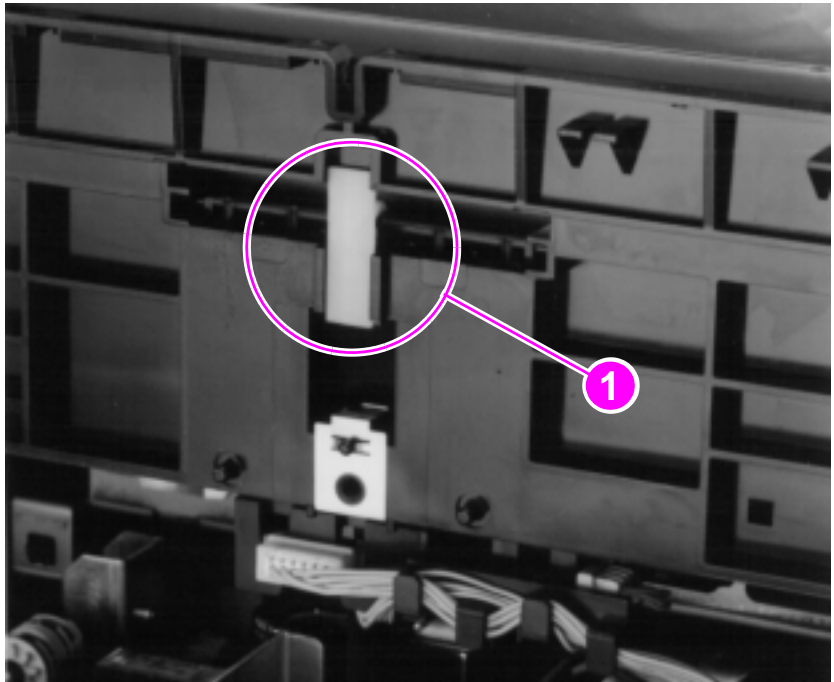


Figure 63. Separation pad removal

Note

If you replace the separation pad, also replace the pickup roller assembly and subpads. See the removal procedures for subpads on the following page and also see Figure 96, "Paper pickup assembly," in Chapter 7.

Subpads

- 1 Place your index finger on the subpad.
- 2 Press toward the top of the printer.

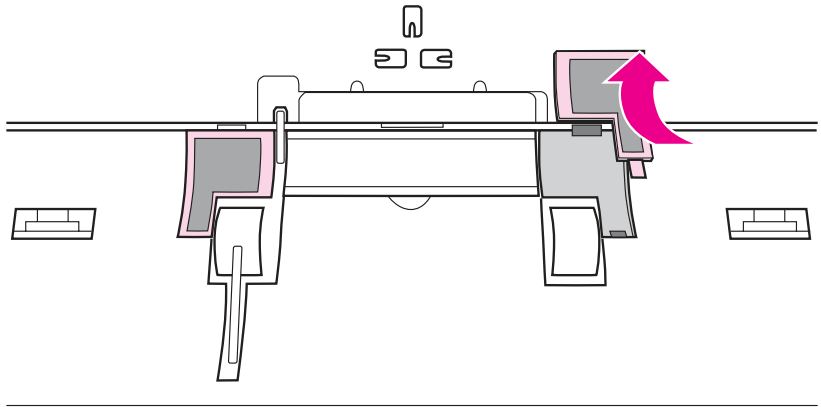


Figure 64. Subpad removal

Note

If you replace the subpads, also replace the pickup roller assembly and the separation pad. See the removal procedures for the separation pad on the previous page and also see Figure 96, "Paper pickup assembly," in Chapter 7.

Feed assembly

The feed assembly is located in the paper feed frame.

- 1 Remove all covers, the RFI shield, the printer door, the LIU board, the formatter board, the metal side plate, the paper pickup gear, the pickup roller assembly, and the paper feed frame.
- 2 Turn the paper feed frame upside down.
- 3 Remove the feed roller shaft by lifting the plastic tab up (callout 1) and sliding it out the side (callout 2) of the paper feed frame.

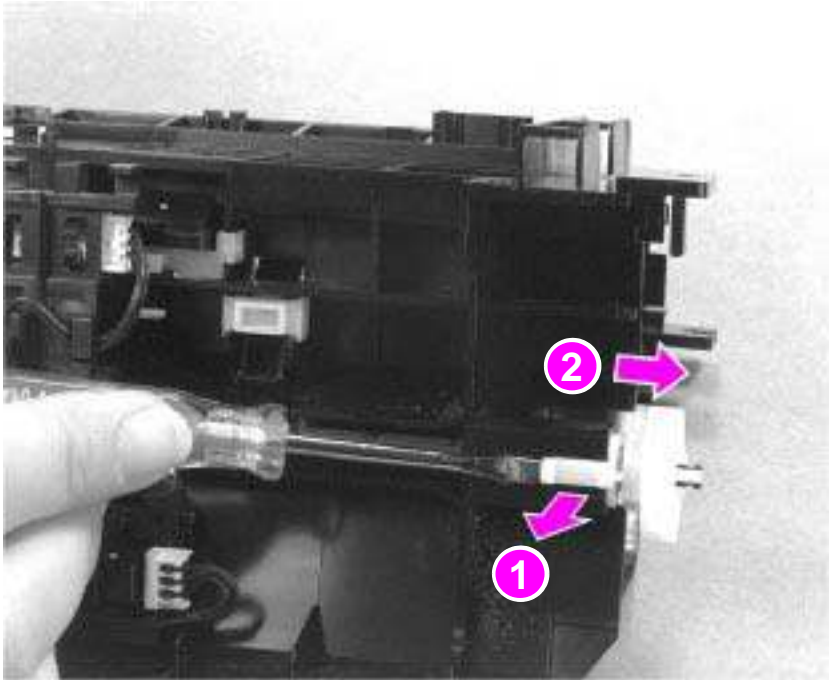


Figure 65. Feed assembly removal (1 of 3)

- 4 Remove the self-tapping screw (callout 1) that holds the feed assembly in place.

Note

Before proceeding, examine the tabs and how they fit into their slots (callout 2). The tabs must be reinstalled to exactly this position.

- 5 Remove the feed assembly.

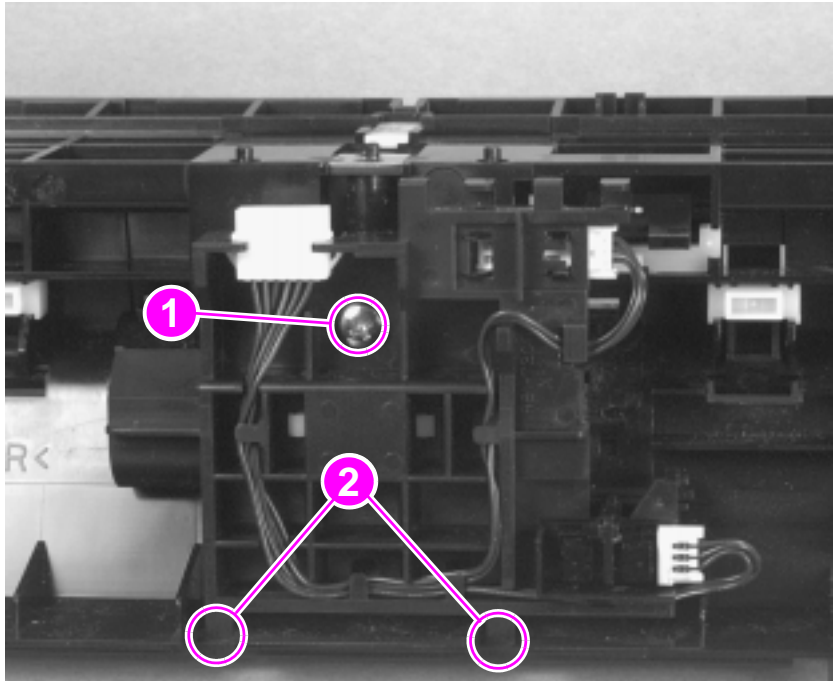


Figure 66. Feed assembly removal (2 of 3)

- 6 Turn the feed assembly over and place it in one hand with the roller-side down. Pop one of the tabs on the other side and the feed roller should fall into your hand.

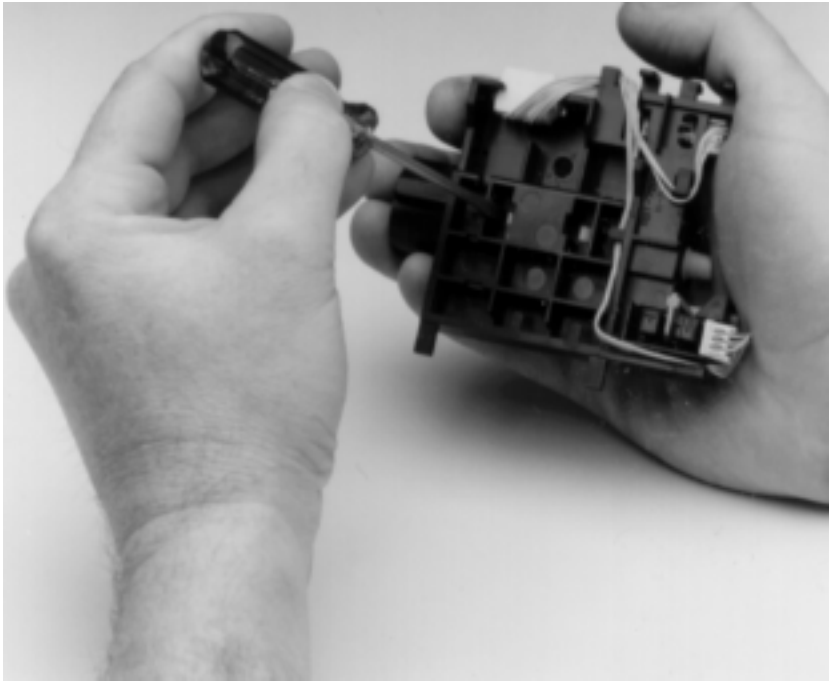


Figure 67. Feed assembly removal (3 of 3)

To reinstall

Before securing the screw, ensure the tabs on the feed assembly are positioned in their slots on the paper feed frame. Failure to do so will cause paper feed problems.

Bottom assemblies

Cable guide

- 1 Remove all covers, the RFI shield, the printer door, the LIU board, the formatter board, and the metal side plate.
- 2 Two tabs hold the cable guide on the printer chassis. Press each tab inward.
- 3 Pull the cable guide out.

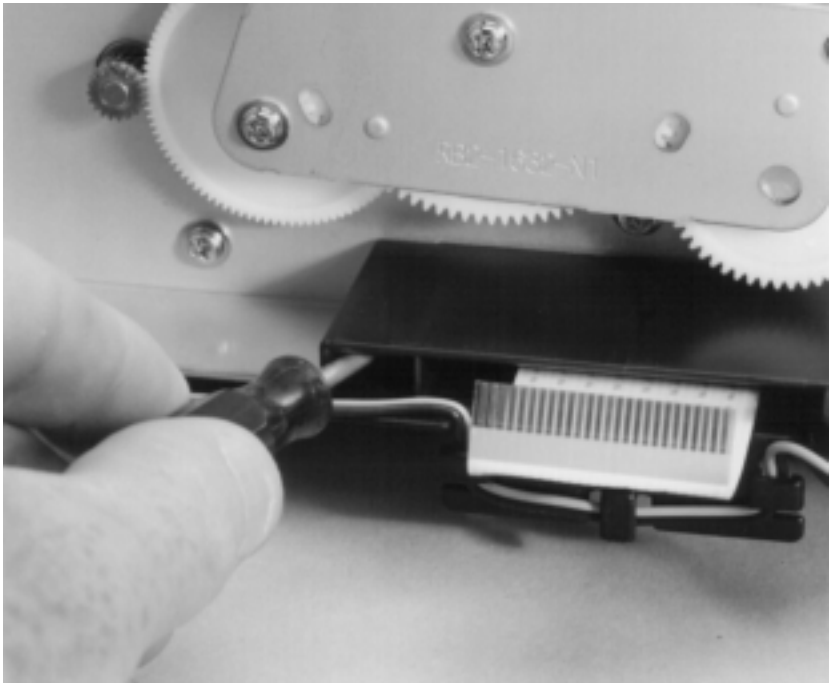


Figure 68. Cable guide removal

Main Motor

- 1 Remove all covers, the RFI shield, the printer door, the LIU board, the formatter board, and the metal side plate.
- 2 Remove the motor connector (callout 1).
- 3 Remove two (2) motor screws (callout 2).
- 4 Lift the motor out.

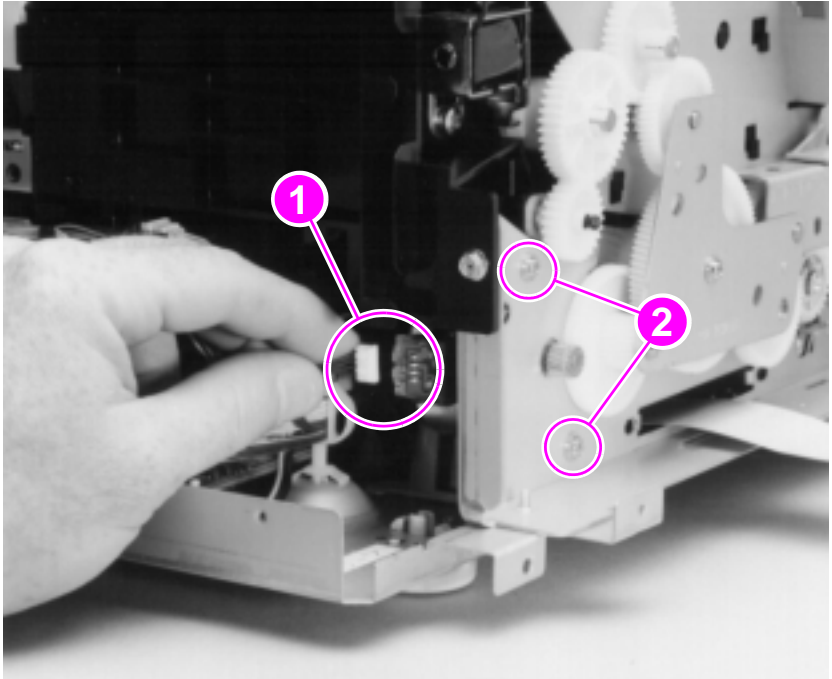


Figure 69. Motor removal

ECU

Remove all covers, the RFI shield, the printer door, the LIU board, the formatter board, the metal side plate, and the front casing.

- 1 Disconnect the motor connector from the motor.
- 2 Release all connectors from the ECU.
- 3 Tip the printer on its top, with the front facing you.
- 4 Remove the five (5) screws (callout 1) from the bottom plate.

One of the screws is a grounding screw. The location of the grounding screw is marked by a star etched into the bottom plate.

Note

Make certain when you reinstall the ECU that the grounding screw with the washer is replaced in the same location.

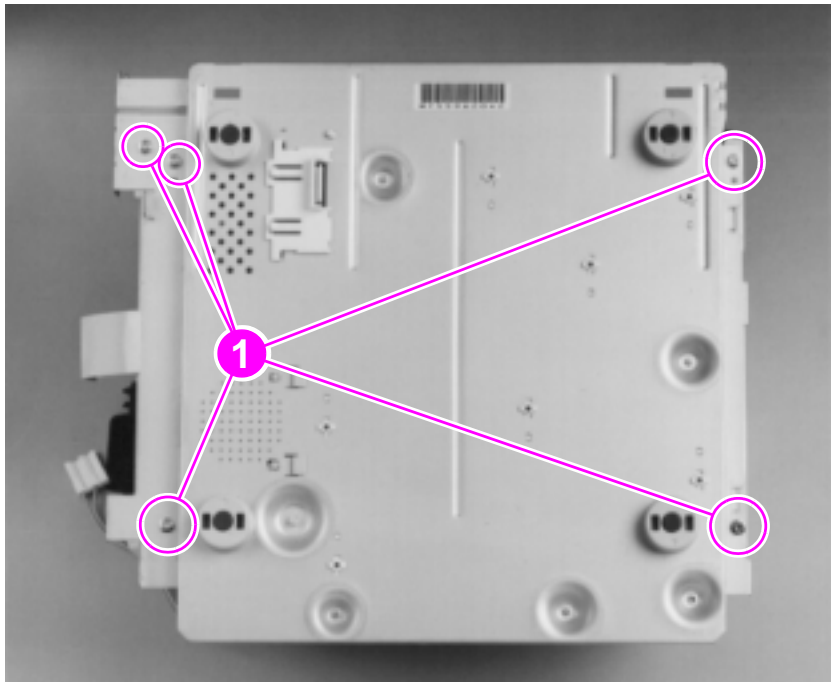


Figure 70. ECU removal (1 of 4)

- 5 Lift the bottom plate and release the fusing assembly connector (callout 1).

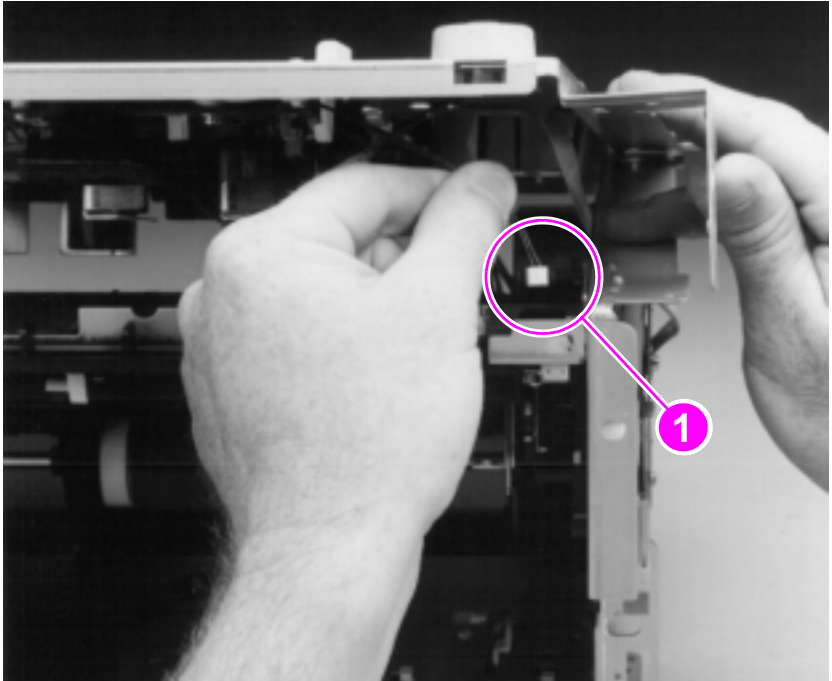


Figure 71. ECU removal (2 of 4)

- 6 Lift the bottom plate from the product and place it on its feet.

CAUTION

Placing the ECU on a conductive surface can damage the unit. Place the ECU on an ESD mat.

- 7 Squeeze the speaker cover to release it from the bottom plate and lift it off the bottom plate.

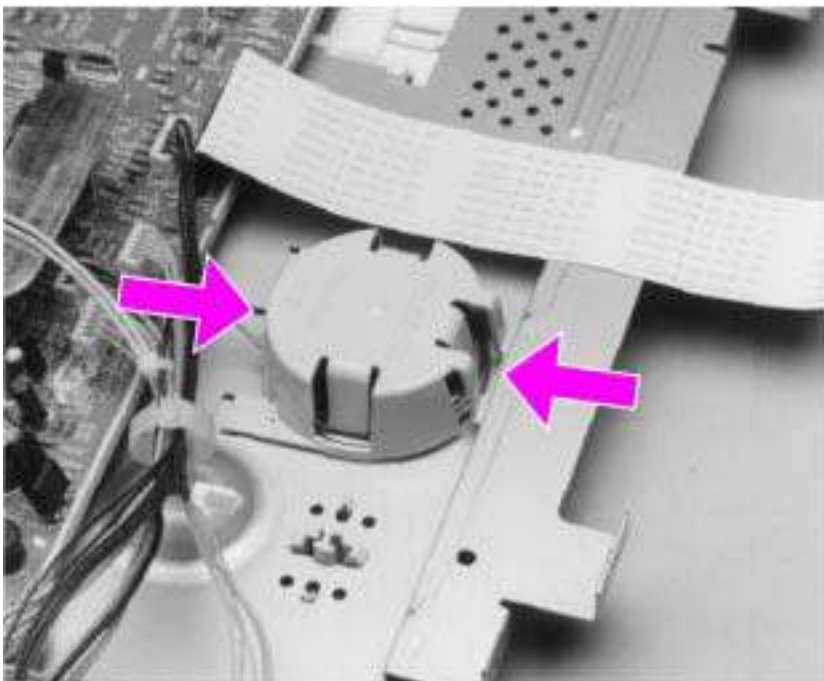


Figure 72. ECU removal (3 of 4)

Note

In Figure 73 below, the photograph shows the ECU from an HP LaserJet 3150 product. Some HP LaserJet 3100 products do not contain the protective sheet (callout 1).

- 8 Remove the (7) remaining cables (callout 2).
- 9 Remove the screws (5) that secure the ECU to the bottom plate (callout 3).

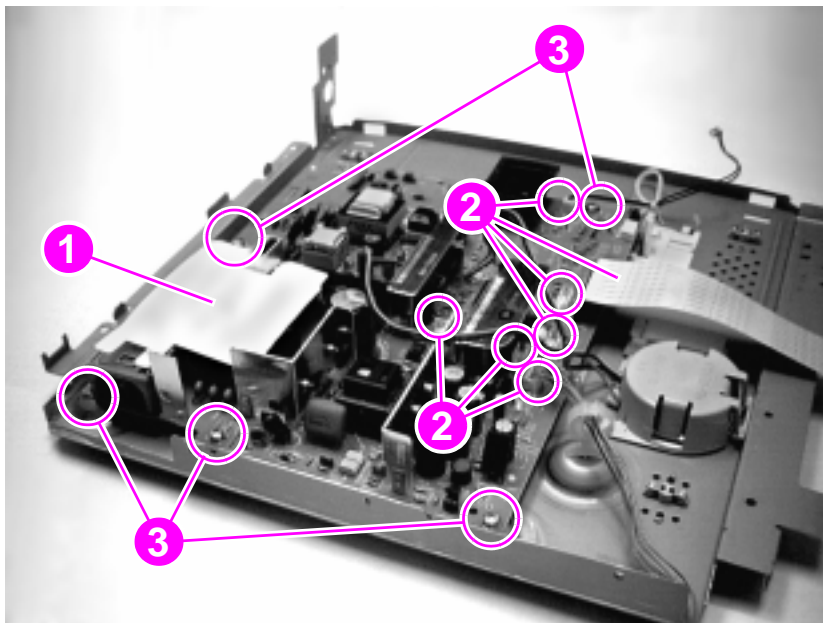


Figure 73. ECU removal (4 of 4)

- 10 Remove the ECU by lifting gently on the side opposite the formatter, then sliding it out.

Note

When ordering, the ECU does not come with any cables. Reuse the cables from the product on which you are working or see Chapter 7, "Parts and diagrams," for ordering information.

Feet

- 1 Insert the small flatblade screwdriver into the foot to release the tab.
- 2 Lift off the foot.



Figure 74. Feet removal

6

Troubleshooting

Chapter contents

Basic troubleshooting	148
Error messages	152
Image formation troubleshooting	157
Solving paper feed problems	165
Solving general software problems	169
Functional checks	173
Troubleshooting tools	183
Service menus	190
Softswitches	197
Firmware and software downloads	199
Fax trace report	201

Basic troubleshooting

Verification steps	Possible problems	Solutions
<p>Is Power On successful?</p> <p>When the product is connected to a grounded power source, the printer motor should rotate for approximately six seconds and the document scanner motor should rotate for approximately two seconds.</p>	<p>No power.</p>	<ol style="list-style-type: none"> 1. Verify that the product is plugged in. 2. Verify that the power cable is functional. 3. Verify that FU102 on the ECU is not open. 4. If all of these conditions are correct, replace the ECU.
	<p>Printer motor does not rotate.</p>	<ol style="list-style-type: none"> 1. Verify that the toner cartridge is present. 2. Verify that the printer door is closed. 3. Verify that paper is loaded in the paper input bin. 4. Verify that printer path paper sensors are functional. 5. Verify that the motor connector J1 is seated into J401 of the ECU. 6. Verify that the motor is correctly mounted to the printer chassis. 7. If all of these conditions are correct, replace the ECU. 8. If, after replacing the ECU, the printer motor still does not rotate, replace the motor.
	<p>Document scanner motor does not rotate.</p>	<ol style="list-style-type: none"> 1. Verify that the document scanner motor connector is seated in the formatter. 2. Verify that the document scanner motor is correctly mounted in the document scanner assembly. 3. If these conditions are met, replace the document scanner motor. 4. If, after replacing the motor, the document scanner motor still does not rotate, replace the formatter. 5. If, after replacing the formatter, the document scanner motor still does not rotate, replace the ECU.

Verification steps	Possible problems	Solutions
<p>Is the product ready? The control panel should function without error messages.</p>	<p>Control panel display an error message, such as "Encoding Error."</p> <p>Control panel is not functional.</p> <p>Control panel does not function correctly.</p>	<p>Consult the list of common messages later in this chapter to correct the error.</p> <p>Verify that the control panel cable is seated into both the control panel at J9 and the formatter board at J3. If the cable is connected correctly, replace the control panel.</p> <ol style="list-style-type: none"> 1. Verify that the control panel cable is seated into both the control panel at J9 and the formatter board at J3. 2. Use the extended service menu, if available, to run control panel tests. 3. If, after running control panel tests, the control panel still does not function correctly, replace the control panel. 4. If after replacing the control panel, the control panel still does not function correctly, perform an engine test, which is discussed later in this chapter. 5. If the engine test is not successful, replace the ECU. <p>-Or-</p> <p>If the engine test is successful, replace the formatter.</p>
<p>Do engine tests and internal reports print? Print an engine test, which is discussed later in this chapter. The engine test should print without paper feed problems or print quality problems. Also print internal reports (follow the instructions under "To print all reports at once" later in this chapter). The product will print a phone book report, a menu report, a fax activity report, a configuration report, and a test report. The test report contains an error log, which documents recent error messages. The error log can be helpful in verifying operation of the product. All internal reports should print without paper feed problems or print quality problems.</p>	<p>Engine test is not successful.</p> <p>Internal reports do not print.</p> <p>Poor print quality.</p> <p>Paper does not move smoothly through the printer paper path.</p> <p>Control panel displays an error message.</p>	<p>Replace the ECU.</p> <p>If the engine test is successful, but internal reports do not print, replace the formatter.</p> <p>See "Solving image defects" later in this chapter.</p> <p>Isolate printer paper path problems by performing a paper path check, which is discussed later in this chapter.</p> <p>Consult the list of common messages in Chapter 2 to correct the error.</p>

Verification steps	Possible problems	Solutions
<p>Is the copy function operational?</p> <p>Place the reports into the document scanner input bin and copy them to the printer. Reports should feed smoothly through the document scanner path and copies should print without print quality problems.</p>	<p>Poor copy quality.</p> <p>Paper does not move smoothly through the document scanner path.</p> <p>Configuration set incorrectly.</p>	<p>If the print quality from the internal reports and engine test was acceptable, but the print quality of the copies is not, clean the contact image sensor and the white sheet, and then recalibrate the document scanner. (See Chapter 3, "Maintenance," for cleaning procedures; recalibration is discussed later in this chapter.) If, after performing the maintenance, the problem persists, replace the contact image sensor.</p> <p>Clear the document scanner path of obstructions. Check photosensors PS801 and PS802 to make sure that they operate correctly. If the problem persists, replace document scanner rollers or guides as appropriate.</p> <p>Review and reset configuration.</p>
<p>Does the product send a fax?</p> <p>Connect the phone line and verify the dial tone (using a hand set, if necessary). Attempt to send a fax.</p>	<p>Telephone line is not operational or the product is not plugged into the telephone line.</p> <p>The telephone cord is plugged into the wrong connector.</p> <p>Firmware is not current.</p> <p>Product's fax settings are set incorrectly.</p> <p>The LIU is not operational.</p>	<p>Make sure that the product is plugged into a telephone line that you know works. Press MANUAL DIAL and listen for the dial tone to check the line.</p> <p>In some countries, the HP LaserJet 3100/3150 product has two connectors. Try plugging the phone cord into the other connector.</p> <p>Check the firmware version. See "Firmware and software downloads" later in this chapter.</p> <p>Review and reset the product's fax settings.</p> <p>Replace the LIU.</p>

Verification steps	Possible problems	Solutions
<p>Does the product receive a fax? Use another fax machine to send a fax to the product.</p>	<p>Too many telephone devices are plugged in, or telephone devices are not connected in the correct order.</p> <p>Firmware is not current.</p> <p>Product's fax settings are set incorrectly.</p> <p>The LIU is not operational.</p>	<p>Make the HP LaserJet 3100/3150 product the only device on the telephone line and try again to receive the fax.</p> <p>Check the firmware version. See "Firmware and software downloads" later in this chapter.</p> <p>Review and reset the product's fax settings.</p> <p>Replace the LIU.</p>
<p>Is the software installed correctly?</p>	<p>Software is not installed or an error occurred during software installation.</p>	<p>Uninstall the software. Find and delete the file named "Jetsuite.Ini." Reload the product's software. Make sure you use a bidirectional port setting.</p>
<p>Does the product print from the computer? Connect the parallel cable to the product and the computer. Use a word processing application to send a print job to the printer.</p>	<p>The parallel cable is not connected.</p> <p>An incorrect printer driver is selected.</p> <p>Other devices are connected to the parallel port.</p> <p>There is an LPT port driver problem in Windows 9x.</p>	<p>Connect the cable.</p> <p>Reset the printer driver.</p> <p>Disconnect the other devices and try again to print.</p> <p>Reset the computer's port settings.</p>
<p>Does the product scan to the computer? Initiate a scan from either the computer's basic desktop software or from the product.</p>	<p>Other devices are connected to the parallel port.</p> <p>The BIOS settings for the parallel port are set incorrectly.</p> <p>The computer's parallel port hardware is not bidirectional.</p>	<p>Disconnect the other devices and try again to scan.</p> <p>Reset the computer's port settings. If the problem persists, reset the BIOS settings in CMOS. (See the user's guide for more information about BIOS settings.)</p> <p>Check hardware documentation to see if the port configuration can be changed.</p>
<p>Does the product send a fax from the computer? Initiate a fax from the computer's basic desktop software. Initiate another fax, this time using a "print to fax" command from an application.</p>	<p>An incorrect fax driver is selected.</p>	<p>Reset the fax driver.</p>

Error messages

These control panel messages are listed alphabetically and are accompanied by the cause for the message and steps to take to resolve the problem.

Message	Cause	Solution
Configuration Err # (number 1-4)	An error was detected in the SRAM.	Unplug the power cord from the power source, wait 10 seconds, and replug in the power cord. Try connecting the product to a different power source or surge protector. If the error persists, replace the formatter.
Config. Stuck Addr	In Service Mode only, SRAM stuck address test.	Unplug the power cord from the power source, wait 10 seconds, and replug in the power cord. If the error persists, replace the formatter.
Config. Tied Addr.	In Service Mode only, SRAM tied address test.	Unplug the power cord from the power source, wait 10 seconds, and replug in the power cord. If the error persists, replace the formatter.
Decoding Error #(number 1-3)	There was an error in decoding with the image processing chip.	Unplug the power cord from the power source, wait 10 seconds, and replug in the power cord. Try connecting the product to a different power source or surge protector. If the error persists, replace the formatter.
Encoding Error	There was an error in encoding with the image processing chip.	Unplug the power cord from the power source, wait 10 seconds, and replug in the power cord. If the error persists, replace the formatter.

Message	Cause	Solution
Fax Memory Error # (number 1-5)	An error was detected in DRAM.	Unplug the power cord from the power source, wait 10 seconds, and replug in the power cord. Try connecting the product to a different power source or surge protector. If the error persists, replace the formatter.
Keypad Test Failed	In Service Mode only, the keypad test failed.	Check the cabling connections and run the keypad test again. If the error persists, replace the control panel. Run the keypad test again. If, after replacing the control panel, the error persists, replace the formatter.
Modem Error # (number 1-3)	An error was detected with the modem.	Check the cabling connections. If the error persists, unplug the power cord from the power source, wait 10 seconds, and replug in the power cord. If the error persists, replace the LIU. If, after replacing the LIU, the error persists, replace the formatter.
No Modem Installed	There is a problem in the LIU.	Unplug the power cord from the power source, wait 10 seconds, and replug in the power cord. Try connecting the product to a different power source or surge protector. If the error persists, replace the LIU. If, after replacing the LIU, the error persists, replace the formatter.
Nov-22-93 06:30 PM (or any other incorrect date that cannot be reset to the correct date)	The battery inside the HP LaserJet 3100/3150 product has failed, causing all Menu features to revert to the factory settings. Settings that contained alphabetic and numeric characters you entered, such as header information and speed-dial names and numbers, have been erased.	Replace the formatter.

Message	Cause	Solution
Printer Comm Error	There was an error in communicating with the HP LaserJet 3100/3150 product.	<p>Make sure that the parallel cable is securely connected between the HP LaserJet 3100/3150 product and the computer. Use the clips to clip the cable to its connector.</p> <p>If the error persists, unplug the power cord from the power source for 10 seconds, and then replug it in.</p> <p>Try connecting the product to a different power source or surge protector.</p> <p>If neither of these solutions works, replace the formatter.</p>
Printer Comm Error ^1	In Service Mode only. There was an error in communicating with the HP LaserJet 3100/3150 product.	<p>Make sure that the parallel cable is securely connected between the HP LaserJet 3100/3150 product and the computer. Use the clips to clip the cable to its connector.</p> <p>If the error persists, unplug the power cord from the power source for 10 seconds, and then replug it in.</p> <p>If neither of these solutions works, replace the formatter.</p>
Printer Fixing Error Replace Fixing Unit	There is an error in the print engine.	<p>Unplug the power cord from the power source for 10 seconds, and then replug it in.</p> <p>Try connecting the product to a different power source.</p> <p>Check the cabling connections to the heating element.</p> <p>Perform the "Heating element check," which is discussed later in this chapter.</p> <p>If the error persists, replace the heating element.</p> <p>If, after replacing the heating element, the error persists, replace the ECU.</p>

Message	Cause	Solution
Printer Laser Error Call for Service	The printer door is open or has been damaged.	Open the printer door and examine the door for damage. If the printer door is not damaged, close the door, making sure both of the release latches are closed correctly.
	A problem has occurred with the print engine.	Check the cabling connections to the laser/scanner. If the error persists, unplug the power cord from the power source, wait 10 seconds, and replug in the power cord. Try connecting the product to a different power source or surge protector. If the error persists, replace the laser/scanner.
Printer Motor Error Call for Service	A problem has occurred in the print engine.	Check the cabling connections to the motor. If the error persists, unplug the power cord from the power source, wait 10 seconds, and replug in the power cord. Try connecting the product to a different power source or surge protector. If the error persists, replace the motor. If, after replacing the motor, the error persists, replace the ECU.
Printer signal error	The printer door is open or has been damaged.	Open the printer door and examine the door for damage. If the printer door is not damaged, close the door, making sure both of the release latches are closed correctly.
	There was an error in the HP LaserJet 3100/3150 product print unit.	Check the cabling connections to the ECU. Try connecting the product to a different power source or surge protector. If the error persists, unplug the power cord from the power source, wait 10 seconds, and replug in the power cord. If the error persists, replace the ECU.
Scan Reference Error	There was an error detected in the HP LaserJet 3100/3150 product.	Check the cabling connections to the contact image sensor. If the error persists, follow the instructions later in this chapter to recalibrate the document scanner. If the error persists after recalibration, replace the contact image sensor.

Message	Cause	Solution
Scanner Error #1	An error has occurred in the document scanner.	<p>Press and hold down the STOP/CLEAR key for 7 seconds to reset the product. If the error persists, check the cabling connections.</p> <p>If the error persists, unplug the power cord from its power source for 10 seconds, and then replug it in.</p> <p>Try connecting the product to a different power source or surge protector.</p> <p>If none of these methods clears the error, replace the contact image sensor.</p> <p>If, after replacing the contact image sensor, the error persists, replace the formatter.</p>
System Error	An error has occurred that may require servicing.	<p>Unplug the power cord from the power source, wait 10 seconds, and replug in the power cord.</p> <p>Try connecting the product to a different power source or surge protector.</p> <p>If the error persists, replace the formatter.</p>

Image formation troubleshooting

Check the toner cartridge

Image formation defects are many times the result of toner cartridge problems. If there is any doubt, always replace the toner cartridge before troubleshooting image defects.

Use the following checklist to ensure that the toner cartridge is still operable.

- ☐ Ensure that the toner cartridge is seated properly in place.
- ☐ Inspect the toner cartridge for remaining toner.
- ☐ Check the expiration date stamped on the toner cartridge box.
- ☐ Check the toner cartridge to see if it has been disassembled or refilled.
- ☐ Inspect the cartridge to see if toner is leaking through worn seals.
- ☐ Check the surface of the photosensitive drum in the cartridge to see if it has been damaged or scratched. Touching the drum contaminates the photosensitive surface and can cause spotting and image defects.
- ☐ Blurred areas on printed pages indicate that the photosensitive drum in the cartridge has been overexposed to light. Because overexposure to light causes permanent damage to the photosensitive drum, the cartridge should be replaced.

Note



A toner cartridge weighs 730 grams (26.1 ounces) when it is full and 640 grams (22.7 ounces) when it is empty.

To redistribute toner in the cartridge

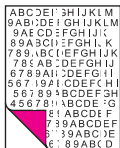
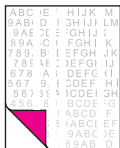
Before installing a new cartridge, or when toner begins to run low, redistribute the toner by rotating the cartridge back and forth five or six times.


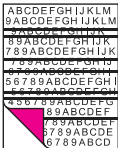
Solving image quality problems




Use the following table to help solve problems with printed pages. See also "Solving paper feed problems" in this chapter.




Problem	Cause	Solution
<p>Parts of the page around the edges aren't printing.</p> 	<p>The HP LaserJet 3100/3150 product cannot print to the edge of the paper. The HP LaserJet 3100/3150 product has minimum margins on each edge of 0.25 in (6.4 mm).</p> <p>If printing or copying, the reduction setting is set incorrectly.</p>	<p>To get the image to fit into this printable area, slightly reduce the size of the image.</p> <p>For printing, check the reduction setting in the "Print" or "Setup" window from within the program you are using. For copying, check the reduction setting on the control panel or from the auto prompt.</p>
<p>Images will not print.</p>	<p>The HP LaserJet 3100/3150 product is not plugged in.</p> <p>The parallel cable is loose.</p>	<p>Make sure that the HP LaserJet 3100/3150 product is plugged into a live wall outlet or power strip.</p> <p>Check that the parallel cable is securely connected between the HP LaserJet 3100/3150 product and the computer.</p>
<p>Faxes you send, copies, or scanned images are too light or too dark.</p> 	<p>The contrast is not set correctly.</p> <p>The original image is very light or very dark.</p> <p>The scanned image is too light or too dark because the original was on a colored paper.</p> <p>The HP LaserJet 3100/3150 product needs to be recalibrated.</p>	<p>Adjust the contrast and resolution settings from the control panel or the Document Assistant.</p> <p>Adjust the resolution and/or contrast setting(s) from the dialog box that appears after you click Scan on the Document Assistant.</p> <p>If the original was on a colored paper, including a brown recycled paper, the text may not be clear. Adjust the resolution, contrast, and/or brightness settings from the dialog box that appears after you click Scan on the Document Assistant.</p> <p>Follow the instructions later in this chapter to recalibrate the document scanner.</p>

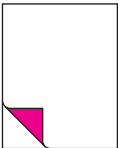
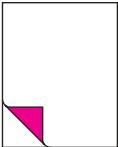

Problem	Cause	Solution
Print is faded or you notice a block of vertically aligned white streaks,	<p>The toner cartridge is getting low on toner.</p> <p>The HP LaserJet 3100/3150 product needs to be cleaned.</p> <p>The paper you are using does not meet HP's paper specifications (for example, it is too moist or too rough).</p> <p>Toner density setting is not adjusted correctly.</p> <p>A part of the HP LaserJet 3100/3150 product is damaged.</p> <p>The internal mirror or optics are contaminated.</p> <p>The laser/scanner is damaged.</p>	<p>Redistribute the toner or replace the toner cartridge.</p> <p>See the appropriate sections of Chapter 3, "Maintenance."</p> <p>Make sure that the media meets specifications detailed in HP's media specifications guide.</p> <p>Adjust the setting from the control panel.</p> <p>Follow the steps in "Basic troubleshooting" to isolate the problem.</p> <p>Clean the mirror by blowing air through the laser/scanner to remove any dust particles.</p> <p>Replace the laser/scanner.</p>
or print is not faded, but vertical white stripes appear on the page.	<p>The document scanner needs to be recalibrated.</p> <p>There is a problem in the contact image sensor.</p> <p>There is a problem in the formatter.</p>	<p>Follow the instructions later in this chapter to recalibrate the document scanner.</p> <p>Replace the contact image sensor</p> <p>Replace the formatter.</p>
Stains or smudges appear as small, round, black dots on the front or back of a page. Sometimes inconsistent stains appear.	<p>The paper you are using does not meet HP's paper specifications (for example, it is too moist or too rough).</p> <p>You are printing on the wrong side of the paper.</p> <p>The HP LaserJet 3100/3150 product needs to be cleaned.</p> <p>The toner cartridge is damaged.</p>	<p>Make sure that the media meets specifications detailed in HP's media specifications guide.</p> <p>Remove the paper from the paper input bin and turn it over. (The wrapper on many reams of paper has an arrow indicating the print side.)</p> <p>See Chapter 3, "Maintenance," for instructions on cleaning the product and using a cleaning page.</p> <p>Replace the toner cartridge if maintenance procedures do not improve print quality.</p>






Problem	Cause	Solution
<p>Vertically-aligned black streaks or smears appear on successive pages.</p> 	<p>The HP LaserJet 3100/3150 product needs to be cleaned.</p> <p>The toner cartridge is damaged.</p> <p>There is a problem in the heating element.</p>	<p>See the appropriate sections of Chapter 3, "Maintenance."</p> <p>Replace the toner cartridge if maintenance procedures do not improve print quality.</p> <p>Perform the "Heating element check," which is discussed later in this chapter.</p>
<p>If scanned images have unwanted lines through them:</p>		
	<p>There is ink, glue, white-out, or some other substance on the contact image sensor.</p> <p>Stick paper caused the document scanner trouble in scanning.</p> <p>The HP LaserJet 3100/3150 product needs to be recalibrated.</p>	<p>See the appropriate sections of Chapter 3, "Maintenance."</p> <p>Use a carrier sheet to send the item.</p> <p>Follow the instructions later in this chapter to recalibrate the document scanner.</p>
<p>Horizontally aligned black streaks or smears appear.</p> 	<p>The toner cartridge was improperly installed.</p> <p>The toner cartridge is defective.</p> <p>The HP LaserJet 3100/3150 product needs to be cleaned.</p> <p>There is a problem in the heating element.</p> <p>A gear is damaged.</p> <p>There is a problem in the laser/scanner.</p>	<p>Make sure you removed the entire length of the sealing tape from the toner cartridge before you installed it.</p> <p>Replace the toner cartridge.</p> <p>See the appropriate sections of Chapter 3, "Maintenance."</p> <p>Perform the "Heating element check," which is discussed later in this chapter.</p> <p>Perform the "Drum rotation functional check," which is discussed later in this chapter.</p> <p>Replace the laser/scanner.</p>
<p>If horizontal lines appear in margins and across entire pages on faxes you send:</p>		
	<p>The HP LaserJet 3100/3150 product needs to be cleaned.</p> <p>There is a problem in the contact image sensor.</p>	<p>See the appropriate sections of Chapter 3, "Maintenance."</p> <p>Replace the contact image sensor.</p>

Problem	Cause	Solution
<p>Light character shadows or repetitive marks appear on the page.</p> 	<p>A roller is damaged.</p> <p>The HP LaserJet 3100/3150 product needs to be cleaned.</p> <p>If you are using transparencies, they do not meet HP's specifications.</p> <p>The paper's texture is too coarse.</p> <p>The toner cartridge is damaged, causing a repetitive black flaw on every printout.</p> <p>The toner cartridge's photosensitive drum has been overexposed to bright light, causing repetitive defects (usually a fuzzy black area).</p>	<p>Use the "Repetitive image defect ruler" later in this chapter to determine which roller is damaged. Replace the roller.</p> <p>See the appropriate sections of Chapter 3, "Maintenance."</p> <p>Make sure that the media meets specifications detailed in HP's media specifications guide.</p> <p>Try changing to a paper with a smoother finish.</p> <p>Replace the toner cartridge.</p> <p>Replace the toner cartridge.</p>
<p>Character voids appear (white areas within the parts of characters that should be solid black).</p> 	<p>The paper or transparencies do not meet HP's specifications.</p> <p>You are printing on the wrong surface of the paper.</p>	<p>Make sure that the media meets specifications detailed in HP's media specifications guide.</p> <p>Remove the paper and turn it around. (The wrapper on many reams of paper has an arrow indicating the print side.)</p>
<p>Background scatter appears on a printed page.</p> 	<p>Background scatter results from bits of toner distributed on the front or back of a printed page. Background scatter often is isolated to a specific area of the page.</p> <p>Toner has spilled inside the product.</p> <p>The pickup roller is dirty.</p>	<p>Try changing the print density setting. If that doesn't work, change the paper type, weight, or surface finish. If background scatter occurs on an envelope, try moving the text to an area with no seams. Printing on seams can cause this problem.</p> <p>See the appropriate sections of Chapter 3, "Maintenance."</p> <p>See the appropriate sections of Chapter 3, "Maintenance."</p>

Problem	Cause	Solution
<p>The page is completely black.</p> 	<p>The toner cartridge was improperly installed.</p> <p>The toner cartridge is defective.</p> <p>Discontinuities exist in the high-voltage contact points.</p> <p>There is a problem in the ECU or the laser/scanner.</p>	<p>Remove the cartridge and reinstall it.</p> <p>Replace the toner cartridge.</p> <p>Perform the "High-voltage power supply check," which is discussed later in this chapter.</p> <p>Follow the steps in "Basic troubleshooting" to isolate the problem. Replace the ECU or the laser/scanner, as needed.</p>
<p>Characters are only partially printed (also referred to as dropouts).</p> 	<p>A single sheet of paper is defective.</p> <p>The print density needs to be adjusted.</p> <p>The moisture content of the paper is inconsistent or the paper has moist or wet spots on the surface.</p> <p>The paper was damaged by inconsistent manufacturing processes.</p> <p>A "draft mode" or "economy mode" is selected in the software.</p>	<p>Try reprinting the job.</p> <p>Adjust the print density from the control panel.</p> <p>Make sure that the media meets specifications detailed in HP's media specifications guide.</p> <p>Make sure that the media meets specifications detailed in HP's media specifications guide.</p> <p>Try a "normal" or "best" setting.</p>
<p>The bottom of the printed page is blank or part of a graphic's image is cut off.</p> 	<p>The page is too complex. (There is not enough memory to process the page.)</p>	<p>Set the resolution to 300 dpi through your software or printer driver. See the online help for printer driver issues.</p>

Problem	Cause	Solution
<p>Blank pages print occasionally.</p> 	<p>Page length and margins are not set correctly for the paper size.</p> <p>Your HP LaserJet 3100/3150 product is feeding two or more sheets of paper at a time because the paper is difficult to separate.</p> <p>Your software application is sending an extra page-eject command.</p>	<p>If you are printing on small paper and your page is blank, try printing on larger paper to see where the image is printing. Adjust the margins accordingly.</p> <p>Remove the paper from the paper input bin and align the edges of the paper. "Break" the ream of paper by curving it into an upside-down u-shape. Try turning the paper around to feed the other end first, or use a different type of paper.</p> <p>Clean the pickup roller and the separation pad. If the problem persists, replace the separation pad.</p> <p>Check your software's printing configuration information. If you are using a word-processing program, check for a natural page break and a forced page break that are close to each other.</p>
<p>Blank pages are always printing</p> 	<p>The toner cartridge was improperly installed.</p> <p>The toner cartridge is completely out of toner.</p> <p>Discontinuities exist in the high-voltage contact points.</p> <p>There is a problem in a part of the product.</p>	<p>Make sure you removed the entire length of the sealing tape from the toner cartridge before you installed it.</p> <p>Replace the toner cartridge.</p> <p>Perform the "High-voltage power supply check," which is discussed later in this chapter.</p> <p>Print a self-test page. If the page is blank, follow the steps in "Basic troubleshooting" to isolate the problem. Replace the laser/scanner or the ECU as needed.</p>
<p>Print is misaligned on the page (skewed pages).</p> 	<p>The paper input bin is overfilled.</p> <p>The guides are adjusted improperly.</p> <p>The paper's weight or surface finish does not meet HP's specifications.</p>	<p>Remove some of the paper.</p> <p>Be sure to center the paper with the paper guides. Also, verify that the paper guides are not adjusted too tightly or too loosely against the paper.</p> <p>Make sure that the media meets specifications detailed in HP's media specifications guide.</p>

Problem	Cause	Solution
Scanned images have black dots or streaks in top and bottom margins.	<p>There is ink, glue, white-out, or some other substance on the contact image sensor.</p> <p>There is a problem in the contact image sensor.</p>	<p>See the appropriate sections of Chapter 3, "Maintenance."</p> <p>Replace the contact image sensor.</p>
		
Scanned text is not clear.	<p>The contrast, resolution, or brightness needs to be adjusted before scanning.</p> <p>The original is on colored paper.</p>	<p>Adjust the resolution, contrast and/or brightness setting(s) from the dialog box that appears after you click Scan on the Document Assistant.</p> <p>If the original was on a colored paper, including a brown recycled paper, the text may not be clear. Try adjusting the resolution, contrast, and/or brightness settings from the dialog box that appears after you click Scan on the Document Assistant.</p>
	<p>There is a problem in the contact image sensor.</p>	<p>Replace the contact image sensor.</p>
Scanned images print at a reduced size.	The JetSuite Pro software reduced the image.	<p>If necessary, the JetSuite Pro software automatically reduces the size of the image to fit it on the page. For example, if you scan an 8.5- by 11-inch (215.9- by 279.4-mm) page, then the image in the JetSuite Pro software will be exact same size edge to edge. However, most printers cannot print right up to the edge of the paper. To get the image to fit into this printable area, you must slightly reduce the size of the image.</p>
		

Solving paper feed problems

Use the following table to solve problems related to moving paper or documents through the HP LaserJet 3100/3150 product.

Problem	Cause	Solution
Pages are coming out curled or wrinkled from the HP LaserJet 3100/3150 product.	Paper is curled or wrinkled when using the paper output bin.	Use the front paper output slot by pushing the paper path lever to the lower position.
	Paper is not stored properly.	Whenever possible, store paper in its sealed ream at room temperature.
	There is debris in the fixing unit.	See the appropriate sections of Chapter 3, "Maintenance."
Long pages stop feeding through the document scanner.	The document feeder tray guides are not set correctly, are broken, or are missing.	Check for broken or missing document feeder tray guides and replace as necessary.
	The maximum scannable page length is 39 inches (991 mm). If the page is longer, scanning stops at 39 inches (991 mm).	<p>Do not try to pull the page out because you may damage the document scanner. To remove the page, open the document release door and remove the jammed media.</p> <p>Then, rescan the page. When the document scanner reaches the 39 inches (991 mm) mark, the control panel displays Long Page? START to Continue for a few moments only. Quickly press START to continue scanning. If you do not, the message disappears and the document scanner stops scanning because it thinks the page has jammed.</p> <p>If you are sending a fax or copying a document longer than 39 inches (991 mm), you can also set the control panel configuration to "Send long pages," which ensures that long pages feed without having to monitor the task and press START before the document scanner shuts off.</p>

Problem	Cause	Solution
Print is misaligned on the page (skewed pages).	The paper input bin is overfilled.	Remove some of the paper.
	The paper guides are not set correctly, are broken, or are missing.	Be sure to center the paper with the guides. Verify that the guides are not adjusted too tightly or too loosely against the paper. Check for broken or missing paper guides and replace as necessary.
	The paper's weight or surface finish does not meet HP's specifications.	Make sure that the media meets specifications detailed in HP's media specifications guide.
Scanned items are crooked.	The document feeder tray guides are not adjusted properly.	Be sure to center the paper with the guides. Also, verify that the guides are not adjusted too tightly or too loosely against the paper. Check for broken or missing document feeder tray guides and replace as necessary.

Problem	Cause	Solution
The HP LaserJet 3100/3150 product is feeding multiple sheets or jams frequently from the paper input bin or single-sheet input slot.	Paper guides are not adjusted properly.	Slide the guides against the sides of the stack in the paper input bin or against the single sheet in the single-sheet input slot to center the paper. Make sure the guides are not adjusted too tightly.
	Paper was not removed from the paper input bin before filling the bin.	Always remove paper from the paper input bin before refilling the bin.
	The paper input bin is overfilled.	Remove some of the sheets. The paper input bin can hold up to 100 sheets of 20-lb (75g/m ²) bond weight paper (less for heavier paper) or up to 7 to 10 envelopes.
	More than one sheet was placed in the single-sheet input slot.	Place only one sheet at a time in the single-sheet input slot.
	The paper was poorly cut by the manufacturer and is sticking together.	“Break” the ream of paper by curving it into an upside-down u-shape; this may effectively decrease multifeeds. Also try turning the paper around to feed the opposite end first, or use a different type of paper.
	The paper does not meet HP’s specifications for print media.	Make sure that the media meets specifications detailed in HP’s media specifications guide.
	The output capacity was exceeded in the paper output bin or front paper output slot.	Do not allow more than 100 sheets of 20-lb (75g/m ²) bond weight paper (less for heavier paper) to fill the paper output bin. Do not allow more media to stack up in front of the front paper output slot.
	The pickup roller is dirty.	See the appropriate sections of Chapter 3, “Maintenance.”
	The pickup roller is damaged.	Replace the pickup roller.
	The separation pad is dirty.	Clean the separation pad.
	The separation pad is damaged.	Replace the separation pad.
	A sensor isn’t operating properly.	Check the sensors to make sure that none of them are jammed. If a sensor cannot be “unjammed,” replace the sensor.
	There is a problem in the paper path.	Perform the “Paper path check,” which is discussed later in this chapter, to determine which parts should be replaced.

Problem	Cause	Solution
The HP LaserJet 3100/3150 product is feeding multiple sheets or jams frequently from the document feeder tray.	The special media lever is in the incorrect position.	The special media lever should be to the left to send regular-weight documents. The lever should be to the right to send thick documents, which can only be loaded one page at a time.
	Guides are not adjusted properly.	Remove the document from the document feeder tray. Straighten the item, then reinsert it. Slide the guides against the sides of the item to center it. Make sure the guides are not adjusted too tightly.
	The document feeder tray is overfilled.	Remove some of the sheets. The document feeder tray can hold up to 30 pages, depending on the thickness of the pages.
	The item was too thick, too slick, or otherwise did not meet specifications.	Make sure that the media meets specifications detailed in HP's media specifications guide.
	The output capacity was exceeded in the document output tray.	Do not allow more than 30 pages to stack up in the document output tray.
	The document scanner pickup roller or separation pad is dirty and cannot feed the document.	See the appropriate sections of Chapter 3, "Maintenance."
	The document scanner pickup roller or separation pad is damaged or worn.	Replace the roller or pad.
	A sensor isn't operating properly.	Check the sensors to make sure that none of them are jammed. If a sensor cannot be "unjammed," replace the sensor.
Items loaded in the document feeder tray fall forward out of the tray.	There is a problem in the document scanner path.	Check the path for obstructions. Replace any damaged parts, including damaged gears.
	The item is on a very lightweight media.	Do not try to pull the page out because you may damage the document scanner. Open the document release door and remove the jammed media. Then, curl or roll the item in the direction of the printed side, unroll it, and reload the item.

Solving general software problems

Use the following table to solve problems related to the software and problems that might occur when installing the software or changing settings manually.

Problem	Cause	Solution
On a computer such as a laptop that is regularly disconnected from the product, you receive the following message: "JetSuite Fax has detected that the HP LaserJet 3150 is switched off or is not connected to the computer."	The message always appears if the software detects the product is not connected.	In the installation program, there is an option to select if you have a laptop. Rerun the installation program and select this option.
In Windows 95 or 98, the New Hardware Found dialog box re-appears each time the computer restarts.	Windows Plug and Play is continuing to detect the HP LaserJet 3150 product.	<p><i>For Windows 95:</i> If it is available, select the Do not install a driver (Windows will not prompt you again) option and click OK on the dialog box. Otherwise, when the dialog box appears, click Next and then click Finish.</p> <p><i>For Windows 98:</i> Click Next. When asked to choose Search or Display, click Search and click Next. When asked for the location to search, clear all three check boxes and click Next. Click Next again and then click Finish.</p>
When installing software, you receive this message: "Setup has determined that you do not have enough disk space on the selected drive. Please reduce the set of install components or change the install drive."	The JetSuite software requires at least 40 MB of available disk space to be installed.	After you select the JetSuite software and data directories, the installation program checks that your computer has enough available disk space. Try deleting unnecessary files or archiving older data to floppy disks or some other medium.

Problem	Cause	Solution
The software did not install (Windows 95, 98, or NT4.0)	All programs <i>except</i> Systray and Explorer should be closed.	To check in Windows 95 or 98, press CTRL+ALT+DELETE . If other programs are open, click one and click End Task . Repeat for all other open programs. Then, reinstall the software. To check in Windows NT 4.0, press CTRL+ALT+DELETE . On the Applications tab, if other programs are open, click one and click End Task . Repeat for all other open programs. Then, reinstall the software.
The computer cannot read the installation CD-ROM or floppy disks.	The correct drive may not have been specified.	Check for the proper disk drive letter. Often, it is D or E for the CD-ROM drive or A or B for the floppy disk drive.
	The CD-ROM or floppy disks may be damaged.	Contact HP Customer Care. See page 60.
You receive this message "There are not enough free COM ports on this system. You must have at least one available COM port to install this software."	The software needs at least one COM port. At least one COM port is not available.	See the documentation for your computer to free a COM port.
When the product is directly connected to your computer, you receive this message: "JetSuite Fax has detected that the HP LaserJet 3150 is either switched off or is not connected to your computer."	The parallel cable is loose or not directly connected.	Make sure the parallel cable between the computer and the HP LaserJet 3150 product is securely connected.
	The power cord is loose.	Make sure the power cord is securely connected between the HP LaserJet 3150 product and the power source.
	The parallel cable may be faulty.	If you have another "size C" parallel cable, try attaching it to the HP LaserJet 3150 product.
	The BIOS setting for your computer may not be set correctly.	Ensure that the computer has a parallel port with a bidirectional data bus. (EPP or unidirectional ports are not supported.) Change the parallel port mode setting in the computer's BIOS. HP recommends setting it to ECP or bidirectional, but other modes may also work. For instructions on changing the setting, see Appendix C in the user guide, see the computer documentation, or contact the computer manufacturer.

Problem	Cause	Solution
When the product is connected to the network using an HP JetDirect print server, you receive this message: "JetSuite Fax has detected that the HP LaserJet 3150 is either switched off or is not connected to your computer."	The power cord is loose.	Make sure the power cord is securely connected between the HP LaserJet 3150 product and the power source. Also, ensure the power cord for the HP JetDirect print server is securely connected to the power source.
	The network cord is loose.	Ensure the network cable is securely connect between the HP JetDirect print server and the wall outlet for the network. Also ensure the network cable between the computer and the wall is securely connected.
	The parallel cable is loose or not directly connected.	Make sure the parallel cable between the HP JetDirect print server and the HP LaserJet 3150 product is securely connected.
	The parallel cable may be faulty.	If you have another "size C" parallel cable, try connecting it between the HP LaserJet 3150 product and the HP JetDirect print server.
	The HP JetDirect print server may not be configured yet (TCP/IP).	Use the HP JetAdmin software, the HP WebJet Admin software, BOOTP, DHCP, or telnet to configure the HP JetDirect print server.
	HP JetDirect print server is incorrectly configured (TCP/IP).	See the documentation that came with the HP JetDirect print server for troubleshooting information.
When the product is connected to the network using an HP JetDirect print server, you receive this message: "All in One configuration cannot continue because the required protocols were not found on your computer."	The IPX/SPX or TCP/IP protocols are not installed on your computer.	Install an IPX/SPX protocol that is compatible with NW Link or a TCP/IP protocol on your computer.

Problem	Cause	Solution
<p>When the product is connected to the network using an HP JetDirect print server, you receive one of these messages:</p> <ul style="list-style-type: none"> ● “The configuration wizard did not find your HP LaserJet 3150 All in One on the network.” ● “The configuration wizard was unable to find an All in One at the specified address.” ● “The JetDirect model found at the specified address does not support All in One devices.” 	The print server you are using is not one of the HP JetDirect print servers that works with the product.	See “Connecting to a network using an HP JetDirect print server” on page 10 for a list of compatible HP JetDirect print servers.
	The power cord is loose.	Make sure the power cord is securely connected between the HP LaserJet 3150 product and the power source. Also, ensure the power cord for the HP JetDirect print server is securely connected to the power source.
	The network cord is loose.	Ensure the network cable is securely connect between the HP JetDirect print server and the wall outlet for the network. Also ensure the network cable between the computer and the wall is securely connected.
	The parallel cable is loose or not directly connected.	Make sure the parallel cable between the HP JetDirect print server and the HP LaserJet 3150 product is securely connected.
	The parallel cable may be faulty.	If you have another “size C” parallel cable, try connecting it between the HP LaserJet 3150 product and the HP JetDirect print server.
	The HP JetDirect print server may not be configured yet (TCP/IP).	Use the HP JetAdmin software, the HP WebJet Admin software, BOOTP, DHCP, or telnet to configure the HP JetDirect print server.
	HP JetDirect print server is incorrectly configured (TCP/IP).	See the documentation that came with the HP JetDirect print server for troubleshooting information.

Functional checks

Simple hardware test

A simple test of the hardware is printing and copying the demonstration page.

To perform the simple hardware test

- 1 At the product control panel, press **VOLUME+CONTRAST** simultaneously to print the demonstration page.
- 2 Copy the demonstration page by placing it in the document feeder tray, waiting for the product to load the page, and then pressing **COPY**.

Engine test

The engine test is used to verify that the print engine is functioning correctly. The formatter is bypassed during an engine test, so the engine test is useful for isolating printer problems. The engine test prints vertical lines down the entire printable area of a page and is also useful for checking and adjusting registration.

Engine test button location

The engine test switch is accessible without removing the covers. It is located on the bottom of the HP LaserJet 3100/3150 product.



Figure 75. Engine test switch location

To print an engine test

Lift the front of the product and squeeze the engine test switch. A single test page is printed.

Internal reports

Use the control panel to print configuration reports, self-test reports, and demonstration pages. The configuration report shows the settings selected from the control panel. The self-test report contains results of the completed self-test, including modem speed, number of pages printed, and recent error messages.

To print a configuration report

- 1 Press **ENTER/MENU**.
- 2 Use the **<** and **>** keys to select **Reports** and press **ENTER/MENU**.
- 3 Use the **<** and **>** keys to select **Print Config Report** and press **ENTER/MENU**.

To run a self-test and print a self-test report

- 1 Press **ENTER/MENU**.
- 2 Use the **<** and **>** keys to select **Reports** and press **ENTER/MENU**.
- 3 Use the **<** and **>** keys to select **Self Test** and press **ENTER/MENU**.

To print a demonstration page

Press **VOLUME+CONTRAST** simultaneously.

Printing all reports at once

When you print all reports at once, the following reports are printed:

- **Fax activity report**—recent faxes sent and received, and status
- **Billing log** (if enabled)—prints by billing code (HP LaserJet 3150 product only)
- **Block fax list** (if enabled)—fax numbers you have blocked (HP LaserJet 3150 product only)
- **Transmission report**—information about specific outgoing faxes
- **Configuration report**—current control panel settings, including the following sections:
 - System information
 - Reports
 - Fax settings
 - User defaults
 - Service
 - Softswitch settings
 - Page counts
- **Test report**—results of self-tests, including the following sections:
 - System information
 - Self-test results
 - Most recent error messages
 - Page counts
- **Menu report**—the control panel menu tree
- **Phonebook report**—one-touch, speed dial, and group dial report

To print all reports at once

- 1 Press **ENTER/MENU**.
- 2 Use the **<** and **>** keys to select **Reports** and press **ENTER/MENU**.
- 3 Use the **<** and **>** keys to select **Print All** and press **ENTER/MENU**.

Half-self test functional check

The electrophotographic process can be subdivided into the following stages:

- Image formation stage (charges the drum and writes a latent image to the drum with the laser)
- Development stage (forms a toner image on the drum)
- Transfer stage (transfers the image to paper)
- Cleaning stage (removes excess toner from the drum)
- Fixing stage (applies heat and pressure to make the image on paper permanent)

The purpose of the half-self test check is to determine which process is malfunctioning. Perform the test as follows:

- 1 Initiate a self test.
- 2 Open the printer door after the paper advances half-way through the printer (about 8 seconds after the motor begins rotation). The leading edge of the paper should have advanced past the toner cartridge.
- 3 Remove the toner cartridge.
- 4 Open the toner cartridge drum shield to view the drum surface. If a dark and distinct toner image is present on the drum surface, assume that the first two functions of the electrophotographic process are functioning (image formation and development). Troubleshoot the failure as a transfer or fixing problem.

If there is no image on the photosensitive drum, perform the following functional checks:

- 1 Make sure you have removed the entire length of the sealing tape from the toner cartridge before you installed the cartridge.
- 2 Perform a drum rotation functional check.
- 3 Perform a high-voltage power supply check.

Drum rotation functional check

The photosensitive drum, located in the toner cartridge, must rotate for the print process to work. The photosensitive drum receives its drive from the main drive assembly. To verify that the drum is rotating:

- 1 Open the printer door.
- 2 Remove the toner cartridge.
- 3 Mark the drive gear on the cartridge with a felt-tipped marker. Note the position of the mark.
- 4 Install the toner cartridge and close the printer door. The start-up sequence should rotate the drum enough to move the mark.
- 5 Open the printer and inspect the gear that was marked in step 3. Verify that the mark moved.

If the mark did not move, inspect the main drive assembly to make sure that it is meshing with the toner cartridge gears. If the drive gears appear functional and the drum does not move, replace the toner cartridge.

Note

This test is especially important if refilled toner cartridges have been used.

Heating element check

- 1 Paper passes between the heating element and a soft pressure roller to fuse toner to the paper. To verify that the heating element is functioning correctly:
- 2 Unplug the HP LaserJet 3100/3150 product for at least ten minutes.
- 3 Verify that the thermistor connector (see Figure 46) is seated into both the printer chassis and J206 of the ECU.
- 4 Remove the heating element connector (see Figure 45) from the ECU. To measure the continuity of the heating element, measure the resistance between pins one and two of the cable.

Note

Normal resistance is 30 ohms +/- 10 ohms.

- 5 If no resistance is measured, replace the heating element.
- 6 Remove the thermistor connector (see Figure 46) and measure the resistance between pins one and two.

Note

Normal resistance is 440K ohms +/- 30K ohms at 68° F (20° C).

- 7 If no resistance is measured, replace the heating element.

High-voltage power supply check

The high-voltage power supply PCA provides the necessary voltages for the electrophotographic processes.

Checking the toner cartridge connection points

Visually inspect the three connection points on the underside, right end of the toner cartridge: charging (callout 1), drum ground (callout 2), and developing roller (callout 3). If they are dirty or corroded, clean the connections, or, if they are damaged, replace the toner cartridge.

Note

Use only alcohol to clean the connections.

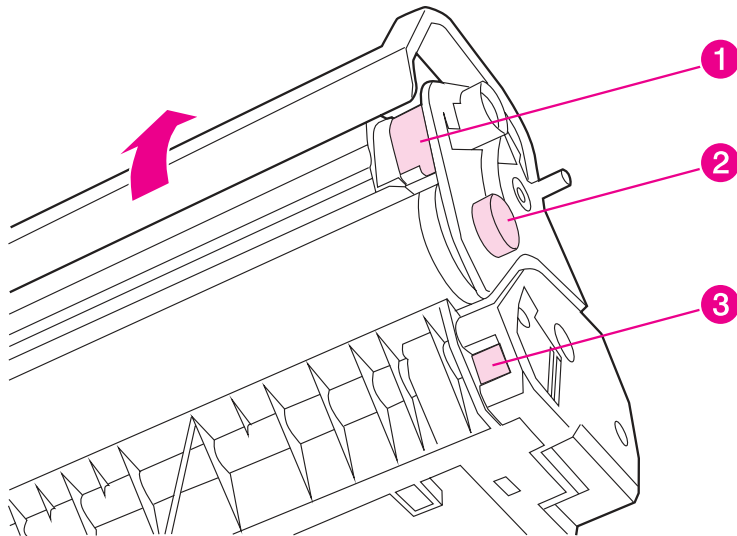


Figure 76. Toner cartridge high-voltage connection points

Checking the high-voltage connector assembly

The assembly uses three spring-loaded pins to contact the toner cartridge: charging (callout 1), drum ground (callout 2), and developing roller (callout 3). Verify that the pins are not dirty or corroded and that the spring-loading action is functional. If the pins are dirty, clean them using alcohol only. If they are damaged, replace the high voltage connector assembly.

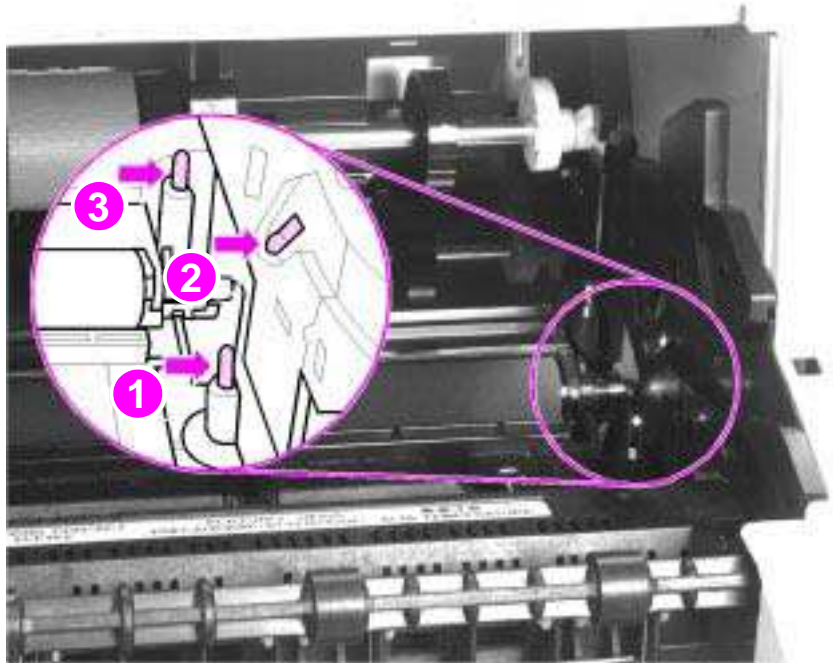


Figure 77. High-voltage connector assembly

Paper curl

Paper curl is inherent to the laser printing processes, and occurs when paper is subjected to heat. Paper curl tends to relax as the paper cools while resting on a flat surface. The specification for maximum paper curl when the paper is lying flat before print is 0.2 inches (5 mm).

Paper path check

If paper is not being picked up or is not moving through the paper path, you may want to observe all of the paper motion activities. Overriding SW101 allows you to observe:

- Motor rotation
- Solenoid action
- Kick plate motion
- Paper pickup roller motion
- Drive roller, transfer roller, fuser roller and gear, and delivery roller motion

To override SW101

- 1 Remove the covers.
- 2 Press SW101 (callout 1).

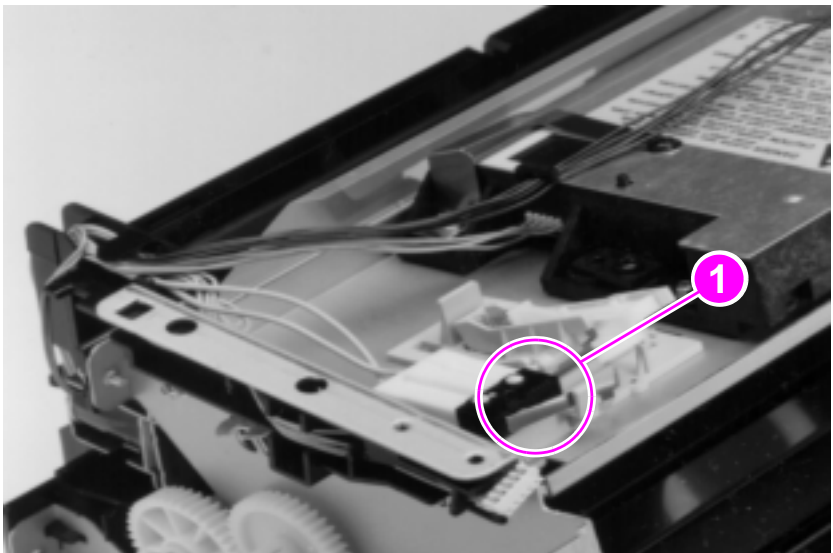


Figure 78. Overriding SW101

- 3 While SW101 is engaged, perform an Engine Test to observe paper motion. (See procedures earlier in this chapter.)

Paper path and components

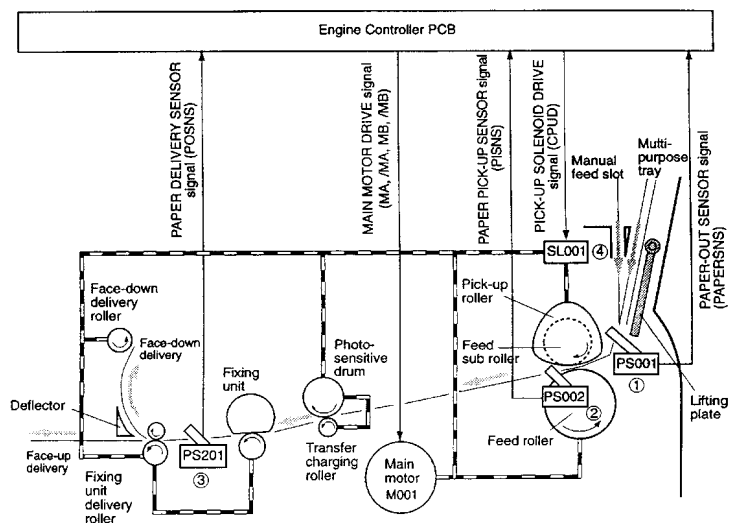


Figure 79. Paper path and components

Document path and components

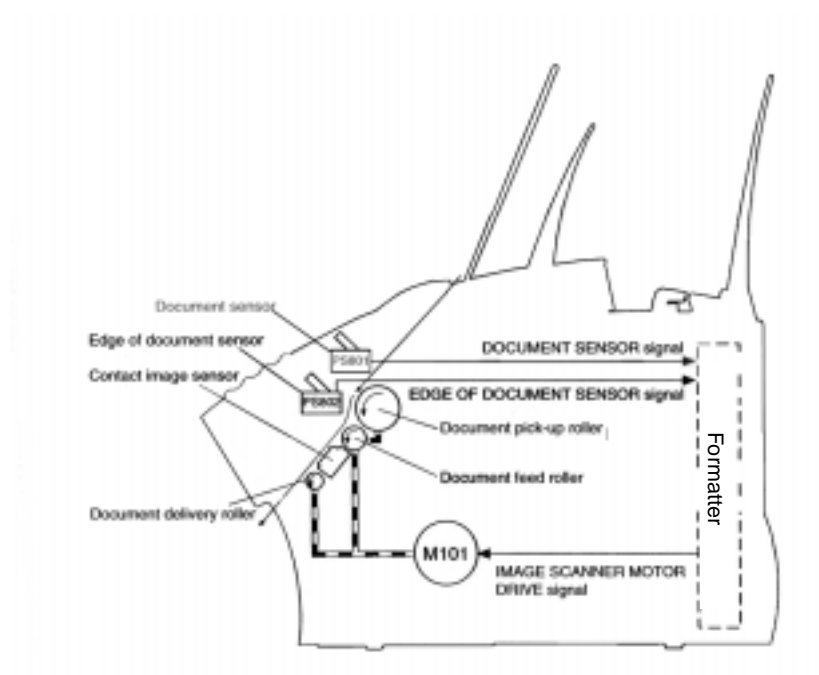


Figure 80. Document path and components

Repetitive image defect ruler

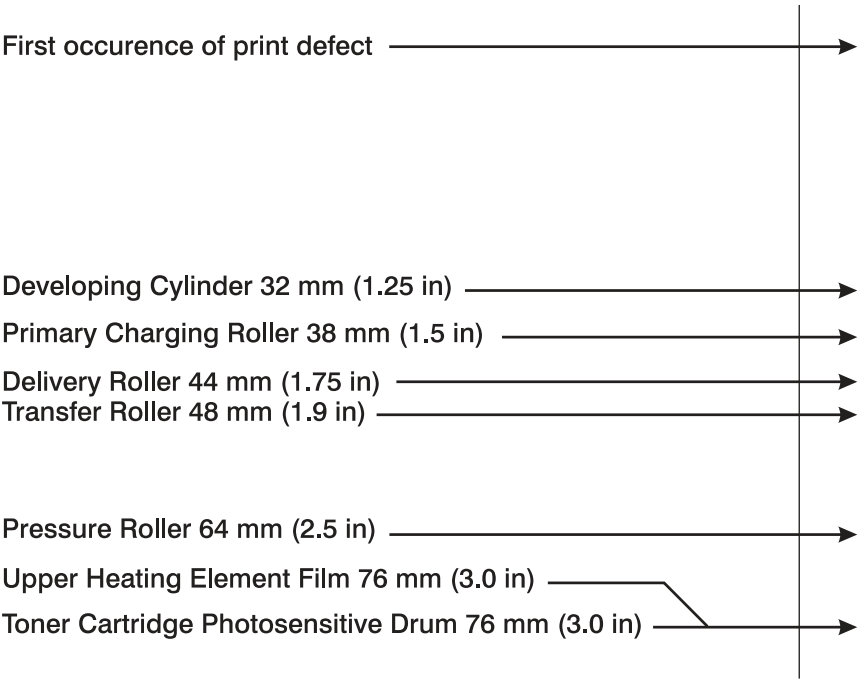
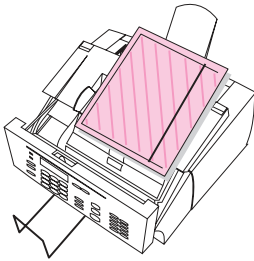


Figure 81. Repetitive image defect ruler

Document scanner recalibration

2



If copies, items scanned to the computer, or faxes you send have vertical black or white lines running through them, recalibration might be necessary.

Recalibrating the document scanner produces a calibration graph. Successful interpretation of the calibration graph is key to solving vertical black or white lines on scanned images.

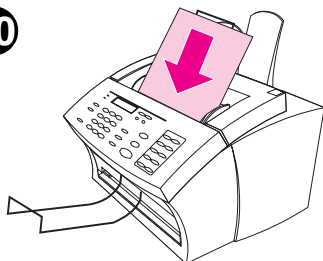
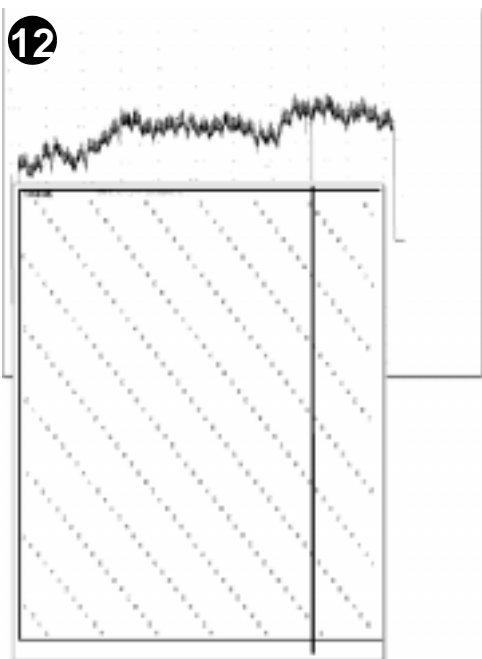
To recalibrate the document scanner and interpret the calibration graph

- 1 Clean the HP LaserJet 3100/3150 product as detailed in Chapter 3, "Maintenance."
- 2 Before recalibrating the document scanner, open the document scanner and place a page that contains the black or white lines between the guides, just above the contact image sensor glass. The black or white line points to a portion of the glass that requires extra attention.
- 3 Clean the contact image sensor glass at the point indicated by the black or white line.

Note

If toner is the contaminant, you might have to scrape it off of the glass. Be careful not to scratch the glass.

- 4 Print a demonstration page by pressing **VOLUME+CONTRAST** simultaneously.
- 5 Copy the demonstration page.

10**12**

- 6 If the vertical black or white line appears on the copy of the demonstration page, continue with steps 7 through 12 below.
- 7 On the control panel, press **ENTER/MENU**.
- 8 Press **<** once to display **Service** and press **ENTER/MENU**.
- 9 Use the **<** and **>** keys to select **Scan Correction** and press **ENTER/MENU**.
- 10 Insert a blank, bright white piece of letter-sized paper into the document feeder tray. The HP LaserJet 3100/3150 product pulls the piece of paper through and then prints a calibration graph.
- 11 Examine the calibration graph. A dip in the calibration graph can indicate an image defect.

Note

Dips at the ends of the calibration graph are normal.

- 12 Line up the calibration graph with a newly copied page. If the dip in the calibration graph corresponds to the black or white line, the contaminant is likely internal and the contact image sensor assembly should be replaced.

Main wiring

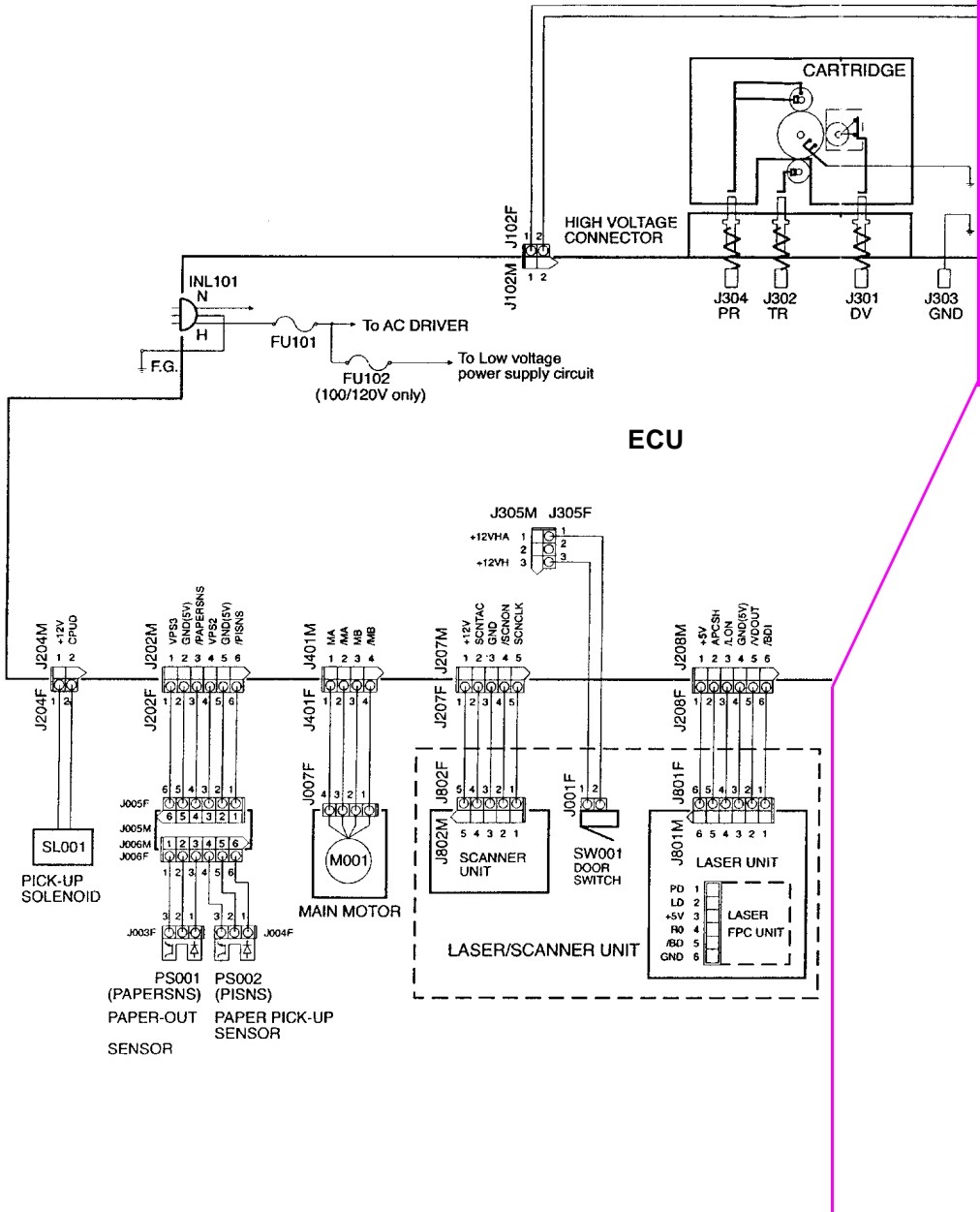


Figure 82. General circuit diagram (1 of 2)



Service menus

Control panel service menu

Use the control panel menu, under “service,” to set up remote servicing and to recalibrate the document scanner.

The service portion of the control panel menu is shown below in a hierarchical diagram:

Table 13. Control panel service menu

Press ENTER/MENU to access the control panel menu.	Use the < and > keys to select “Service” and press ENTER/MENU .	Use the < and > keys to select one of the choices below and press ENTER/MENU .	Use the < and > keys to select one of the choices below and press Enter/Menu , or see the display.
<hr/>			
	Service		
	Remote test		
	Remote setup		
		Receive setup	
		Send setup	
	T.30 protocol trace		
	Scan correction		
<hr/>			

Tests in control panel service mode

Brief explanations of tests in the control panel service mode are shown below:

- Remote test sets up the product to test through the fax line.
- Remote setup, followed by Receive setup or Send setup allows for softswitch settings to be sent or received through the fax line.
- T.30 Protocol trace allows you to set how often the test is run.

Extended service menu

Use the extended service mode to run various self-tests and to change softswitch settings, such as the country code softswitch setting.

The following page shows the layout of the extended service menu settings in a hierarchical diagram.

Table 14. Extended service menu tree

Press BACKSPACE#** to access the extended service menu.	Use the < and > keys to select one of the choices below and press ENTER/MENU .	Use the < and > keys to select one of the choices below and press ENTER/MENU .	See the display for further instructions. Notes about some of the menu choices are shown below:
	Reports	<ul style="list-style-type: none"> Help T.30 protocol trace SRAM dump Scanner plots Log debug report Task stacks Translations Printer fonts 	Help prints a menu report for the product.
	Memory/softswitch	<ul style="list-style-type: none"> Softswitches Clear memory Check documents Edit SRAM SRAM dump version 	See "To change the country code softswitch" on the following pages.
	Control panel	<ul style="list-style-type: none"> Keypad test LCD test Control panel test Sensor states Speaker test All LCD characters 	Various tests under Control panel can assist in troubleshooting the product.
	Scanner	<ul style="list-style-type: none"> Scanner plots Scanner LED ADF feed test ADF motor test Do TWAIN scan White ref summary 	<p>Scanner LED is the contact image sensor light bar test.</p> <p>ADF feed test runs the document feeder pickup rollers once.</p> <p>ADF motor test runs the document scanner motor.</p>
	Self test	<ul style="list-style-type: none"> Burn-in Individual diag System reset 	Burn-in prints a report after running the following tests: Program test, Configuration test #1, Fax memory test #2, Modem test #2, Scanner test #1, Scanner LED.
	Modem/PTT	<ul style="list-style-type: none"> Modem tone Modem modulation Modem type 	

Self-test in extended service mode

If you perform a self-test from the extended service menu, the printed report will also show firmware revision number and details.

Note

Print the internal reports before performing extended service mode tests. The reports contain a record of all settings and can assist you in restoring the product to its settings.

The table below lists the tests that are performed during a self-test and the actions to take when tests fail:

Table 15. Extended service mode self-test failures

Test	If the test fails, take these actions:
Configuration test #1	Replace the formatter.
Fax memory test #1	
Program test #1	<ol style="list-style-type: none">1. Cycle power by unplugging the power cord from the power source, waiting 10 seconds, and plugging in the power cord.2. If the test fails again, clear all memory (see the extended service menu tree).3. If the test fails again, replace the formatter.
Configuration test #2	
Configuration test #3	
Configuration test #4	
Fax memory test #2	
Fax memory test #3	
Fax memory test #4	
Fax memory test #5	
Modem 1 test #1	
Modem 1 test #2	
Modem 1 test #3	
Modem 1 dial tone detect	<ol style="list-style-type: none">1. Make sure that the telephone cable is plugged into the correct connector on the product and that the telephone line is operational (use a telephone to test the line).2. If the test fails again, check the configuration settings in the control panel.3. If the test fails again, replace the LIU.
Scanner test #1	<p>This test fails under normal conditions if the document scanner is busy. If the document scanner is not busy:</p> <ol style="list-style-type: none">1. Cycle power by unplugging the power cord from the power source, waiting 10 seconds, and plugging in the power cord.2. If the test fails again, clear all memory (see the extended service menu tree).3. If the test fails again, replace the formatter.

Other tests in extended service mode

The chart below shows tests that can be performed in extended service mode and a brief explanation of each test:

Table 16. Extended service mode tests

Test	Explanation
Keypad test	Tests all keypad keys by pressing in sequence.
LCD test	Tests the control panel display.
Control panel test	Tests the control panel lights
Sensor states	Shows current detector activation levels. The control panel display shows the percentage of time each detector is activated.
All LCD characters	Scrolls through the full list of control panel display characters.
Scanner plots	Tests and recalibrates the document scanner.
Scanner LED	After selecting this menu item, lift the document release door and verify that all of the LEDs in the contact image sensor are lit.
ADF feed test	Runs the document scanner pickup rollers once.
ADF motor test	Runs the document scanner motor.
Individual diagnostics	Run individual tests from the self-test sequence (see Table 15).
Modem tone	Generates tones with various frequencies from 300 Hz to 2425 Hz.
Modem modulation	Generates various fax identification signals.

Reports in extended service mode

The chart below shows reports that can be printed from extended service mode and a brief explanation of each report:

Table 17. Extended service mode reports

Report	Explanation
T.30 protocol trace	Prints a report of the G3 protocol transmissions and receptions. See the section about fax trace reports later in this chapter for detailed information about the report.
SRAM dump	Prints SRAM address values in an address range you select.
Scanner plots	Prints the calibration page.
Log debug report	Prints detailed fax and memory address information. Fax information includes job number, start time used, fax ID, transmission type, pages, communication mode, and status.
Task stacks	Prints address locations of various tasks.
Translations	Prints text strings used in the display, beginning with the number you select. These text strings are printed in the language currently in use by the product. You can compare the numbers in this report to the numbers in an English report to translate non-English messages on the display.
Printer fonts	Prints all characters of fonts available in memory.
Firmware version (under "memory/ softswitch")	Shows firmware revision information on the control panel display.
White reference summary (under "scanner")	Displays average, minimum, and maximum white reference values.

Clear memory in extended service mode

CAUTION

Clearing memory clears all parameters, which can render the product illegal or inoperable. Print the internal reports before clearing memory in extended service mode. The reports contain a record of all settings and can assist you in restoring the product to its settings.

To perform a system reset, use extended service mode to choose Memory/softswitch, and then choose Clear memory. Use the < and > keys to select the memory you want to clear:

- Documents (and log) deletes all documents stored in memory and all log information.
- Phonebook deletes all numbers stored in the phonebook.
- Configuration resets all menu settings printed in the configuration report to their defaults.
- Softswitches resets all softswitches but the country code softswitch to their defaults.
- Counters resets all page counts except the total number of pages printed. These page counts are printed at the end of the configuration report.
- Everything deletes and resets all of the above. Information retained includes white reference curve, total page count, country code, and serial number.

Softswitches

Any time the RFI shield is removed from the product, or when softswitches are reset to defaults, the country code softswitch must be reset.

Extended service mode allows you to change softswitches on the product. A softswitch is a set of one to eight bits (a sequence of eight 1's and 0's), as needed. See the software technical reference for a complete list of softswitches.

To change the country code softswitch

- 1 Enter **Backspace#**** to access the extended service menu.
- 2 Press **<** or **>** until **Memory/Softswitches** appears below **Service** on the control panel.
- 3 Press the **Enter/Menu**.
- 4 If **Softswitches** does not appear below **Memory/Softswitches** on the control panel, press **<** or **>** until it appears.
- 5 Press **Enter/Menu**.
- 6 Use the keypad to enter **101** (the "country code" softswitch).
- 7 Press **Enter/Menu**.

- 8 Use the keypad to enter the sequence that corresponds to the country/region in which the product is used, according to the table below:

Table 18. Country/region code softswitch sequences

Australia	00001011 (0B hex)	Malaysia	00100000 (20 hex)
Austria	00011001 (19 hex)	Mexico	00101011 (2B hex)
Belgium	00001110 (0E hex)	Netherlands	00001101 (0D hex)
Canada	00101001 (29 hex)	New Zealand	00001111 (0F hex)
China	00010100 (14 hex)	Norway	00000101 (05 hex)
Denmark	00001100 (0C hex)	Poland	00011011 (1B hex)
Eire (Ireland)	00000010 (02 hex)	Russia	00011101 (1D hex)
Finland	00001000 (08 hex)	Singapore	00010001 (11 hex)
France	00000111 (07 hex)	Spain	00011000 (18 hex)
Germany	00000110 (06 hex)	Sweden	00000100 (04 hex)
Hong Kong SAR	00010011 (13 hex)	Switzerland	00000011 (03 hex)
Hungary	00010010 (12 hex)	Ukraine	00101110 (2E hex)
Israel	00010110 (16 hex)	United Kingdom	00000001 (01 hex)
Italy	00001010 (0A hex)	United States	00000000 (00 hex)

- 9 Press **Enter/Menu** to complete the softswitch change.
- 10 Press **Stop/Clear**.
- 11 Enter **Backspace#**** to exit the extended service menu.

Note

If you do not complete step 11 above, the product will exit extended service mode within a few minutes.

Firmware and software downloads

Newer versions of the firmware and software for the HP LaserJet 3100/3150 product can be downloaded to the product from the following websites:

- <http://www.hp.com/support/lj3100/>
- <http://www.hp.com/support/lj3150/>

After you connect to the site, click “Drivers and Software.” Locate and click the firmware or software you want to download, and then click “Download Now.”

Note

Write down the path and default directory to which the firmware or software file is downloaded; you will have to access the file once downloading is complete.

Detailed instructions for how to install the newer firmware and software are available at the website, including instructions for manual installation.

Hardware, software, and firmware compatibility

The table below shows software and firmware compatibility with HP LaserJet 3100 and 3150 product formatters and control panels.

Table 19. Hardware, software, and firmware compatibility

If you have:	with:	and you have:			
		LJ 3100 software with:		LJ 3150 software with:	
		3100 firmware	3150 firmware	3100 firmware	3150 firmware
LJ 3100 formatter	LJ 3100 control panel	Recommended configuration.	Not recommended; "garbage" characters might appear on the control panel.	Not recommended; software is incompatible.	Not recommended; "garbage" characters might appear on the control panel.
	LJ 3150 control panel	Not recommended; "garbage" characters might appear on the control panel.	Not recommended; "garbage" characters might appear on the control panel.	Not recommended; "garbage" characters might appear on the control panel.	Not recommended; "garbage" characters might appear on the control panel.
LJ 3150 formatter	LJ 3100 control panel	Not recommended; "garbage" characters might appear on the control panel.	Not recommended; "garbage" characters might appear on the control panel.	Not recommended; "garbage" characters might appear on the control panel.	Not recommended; "garbage" characters might appear on the control panel.
	LJ 3150 control panel	Not recommended; "garbage" characters might appear on the control panel.	Not recommended; software is incompatible.	Not recommended; "garbage" characters might appear on the control panel.	Recommended configuration.

It is easy to see from the table above that the only way to ensure complete compatibility is to have either:

- HP LaserJet 3100 product components with no HP LaserJet 3150 product components
- or
- HP LaserJet 3150 product components with no HP LaserJet 3100 product components.

Fax trace report

Use the control panel service menu to choose **T.30 Protocol Trace** and then select **At the end of each call**. Configure another fax machine, preferably another HP LaserJet 3100 or 3150 product, to the same (or similar) settings.

Send a fax from the product or receive a fax to the product from the other fax machine. The fax trace report prints after the fax prints.

Explanations of some of the report's column heading follow:

- **Start time** is the time the fax begins. Match it with the fax log of errors.
- **Type** is the type of fax activity, send or receive.
- **Mode** is the transmission mode. If it begins with "EC," error correction was turned on. The set of three numbers is the BAUD rate divided by 100. For example, "EC144" in the mode column means that error correction was on and the transmission speed was 14,400 bps.
- **Status** explains the status of the fax:
 - "Completed" means that the fax was successful.
 - "Pending" faxes are in memory or are printing.
 - Error numbers and their meanings appear in the user guide.

Translating the fax trace report

Print a fax log report (see the user guide for instructions). The fax log report contains information about the product's interpretation of the problem.

Read the time sequences, looking for abnormal activity on the fax trace report. See Table 20, Fax phase sequence, and Table 21, Appropriate responses, to separate normal from abnormal activity. Fax abbreviations appear in Table 22.

Identify the phase in which the error occurred.

Note

??? is an unidentified command.

Examples of a successfully sent fax and a successfully received fax appear after the tables.

Table 20. Fax phase sequence

Sequence	Calling station	Called station
Phase A—Call setup sequence		
1	Ring signal	
2	CNG tone beep, 1100Hz 1 second	
3		Transmit CED, 3 seconds, 2100 Hz
4		Transmit NSF
5		Transmit CSI
6		Transmit DIS
7	DIS detected	
Phase B—Pre-message procedure (negotiate compatible format/protocol)		
8	Transmit TSI	
9	Transmit DCS, select mode	
10		DCS detected
11	Transmit TCF/training	
12	Transmit FSK	
13		Training (synchronize signals), check for errors
14		Transmit CFR
15	Detect CFR	
Phase C—Message transmission (page/scan transmission)		
16	Transmit message (FSK, followed by date)	
17		Receive message (SCAN), check for errors
18	Transmit FSK	
19	At end of message, send one of the following: <ul style="list-style-type: none">● EOM● EOP● MPS● PRI-Q● PPS-NULL● PPS-MPS● PPS-EOM● PPS-EOP● PPS-PRI-Q	
Phase D—Post-message transmission (next page/end of transmission)		
20		Detect EOM, EOP, MPS, PRI-Q, PPS-NULL, PPS-MPS, PPS-EOM, PPS-EOP, or PPS-PRI-Q
21		Transmit MCF response to confirmation signals of post-message responses
Phase E—Call release (hangup sequence)		
21	Transmit DCN	
22		Station hangs up

Table 21. Appropriate responses

Commands	Comments	Appropriate responses
(NSF) (CSI) DIS	Identifying capabilities: from a manual receiver or an auto-answer unit	(NSC) (CIG) DTC (TSI) DCS (NSF) (CSI) DIS (CRP) (TSI) (NSS) (PWD) (SEP) (CIG) DTC (PWD) (SUB) (TSI) DCS
(NSC) (CIG) DTC	Mode setting command: from calling unit	(TSI) DCS (NSF) (CSI) DIS
(PWD) (SEP) (CIG) DTC	Poll operation	(CRP) (TSI) (NSS)
(TSI) DCS (TSI) (NSS)	Mode setting command: from manual transmitter or automatic receiver	CFR FTT (NSC) (CIG) DTC
(PWD) (SUB) (TSI) DCS	This command is always followed by phasing/training.	(NSC) (CIG) DTC
CTC	Mode setting command: from the transmitter to the receiver	(CTR) (CRP)
(EOR-NULL)	Indicates the next block transmission from the transmitter to the receiver	(ERR) (RNR) (CRP)
Any one of the following: ● (EOR-EOP) ● (EOR-EOM) ● (EOR-PRI-MPS) ● (EOR-PRI-EOP) ● (EOR-PRI-EOM)	The receiver	(ERR) (RNR) PIN (CRP)
Any one of the following: ● MPS ● EOP ● EOM ● (PRI-MPS) ● (PRI-EOP) ● (PRI-EOM)	Post-message commands	MCF RTP RTN PIP PIN (CRP)
(PPS-NULL)	Post-message command for a partial page from the transmitter to the receiver	(PPR) MCF (RNR) (CRP)
Any one of the following: ● (PPS-MPS) ● (PPS-EOP) ● (PPS-EOM) ● (PPS-PRI-MPS) ● (PPS-PRI-EOP) ● (PPS-PRI-EOM)	Post-message commands for a complete page from the transmitter to the receiver	(PPR) MCF (RNR) PIP PIN (CRP)
(RR)	Ask for the status of the receiver: from the transmitter to the receiver	(RNR) (ERR) MCF PIP PIN (CRP)
DCN	Phase E command	None

Table 22. Fax abbreviations

Abbreviation	Function	Signal format (“X”= any #)
CED	Called station identification	2100 Hz
CFR	Confirmation to receive	X010 0001 1850 or 1650 Hz for 3 seconds
CIG	Calling subscriber identification	1000 0010
CNG	Calling tone	1100 Hz for 500 ms
CRP	Command repeat	X101 1000
CSI	Called subscriber identification	0000 0010
CTC	Continue to correct	X100 1000
CTR	Response to continue to correct	X010 0011
DBM	-dBm signal strength detected from sending station (number is deviation from average value)	Range in -10 to -43 (-43 is a weak signal; see explanation below Figure 85, Example of a successfully received fax)
DCN	Disconnect	X101 1111
DCS	Digital command signal	X100 0001
DIS	Digital identification signal	0000 0001
DTC	Digital transmit command	1000 0001
DOM	End of message	X111 0001 1100 Hz
EOP	End of procedure	X111 0100
EOR	End of retransmission	X111 0011
EQM	Eye quality monitor—a measure of the modem signal quality, lower numbers indicate better signals	0-99
ERR	Response for end of retransmission	X011 1000
ECD	Facsimile coded date	0110 0000
FCF	Facsimile	
FCS	Frame check sequence	
FDM	File diagnostics message	X011 1111
FIF	Facsimile information field	
FSK	Frequency shift key. Low-speed command identifier separating commands/scans; precedes command mode.	
FTT	Failure to train. The 1.5 seconds of the Training Check Frame (TCF) indicates line conditions are not good enough for this modulation.	X010 0010
GC	Group command	1300 Hz for 1.5 to 100 seconds 2100 Hz for 1.5 to 100 seconds
GI	Group identification	1650 or 1850 Hz
HDLC	High-level data link control	
LCS	Line conditioning signals	1100 Hz

Table 22. Fax abbreviations

Abbreviation	Function	Signal format ("X"= any #)
MCF	Message confirmation	X011 0001 1650 or 1850 Hz
MSG	Message received high speed data	
MPS	Multi-page signal	X111 0010
NSF	Non-standard facilities command	1000 0100
NSF	Non-standard facilities	0000 0100
NSS	Non-standard setup	X100 0100
PID	Procedure interrupt disconnect	X011 0110
PIN	Procedural interrupt negative	X011 0100
PIP	Procedural interrupt positive	X011 0101
PIS	Procedural interrupt signal	462 Hz for 3 seconds
PPS	Partial page signal	X111 1101
PPS-EOM	Partial page signal—end of message	X111 1101
PPS-EOP	Partial page signal—end of procedure	X111 1101
PPS-MPS	Partial page signal—multi-page signal	X111 1101
PPS-NULL	Partial page signal—null	X111 1101
PPR	Partial page request	X011 1101
PRI-EOM	Procedure interrupt—end of message	X111 1001
PRI-EOP	Procedure interrupt—end of procedure	X111 1100
PRI-MPS	Procedure interrupt—multi-page signal	X111 1010
RCP	Return to control for partial page	0110 0001
RNR	Receive not ready	X011 0111
RR	Receive ready	X111 0110
RTC	Return to control mode	Six EOLs
RTN	Retrain negative	X011 0010
RTP	Retrain positive	X011 0011
TCF	Training check	Zeroes for 1 5 5
TSI	Transmitting subscriber identification	X100 0010
PWD	Password (for polling	1000 0011
PWD	Password (for transmission	X100 0101
SCAN	Data packets or scan line count	
SEP	Selective polling	1000 0101
SUB	Sub-address	X100 0011
V.xx	Protocol version used (Group 3 only)	V.27 = 4800/2400 V.29 = 9600/7200 V.33 = 14400/12000 V.17 = 14400/12000/9600/7200
XID	Exchange identification procedure	
???	Unidentified command sequence	

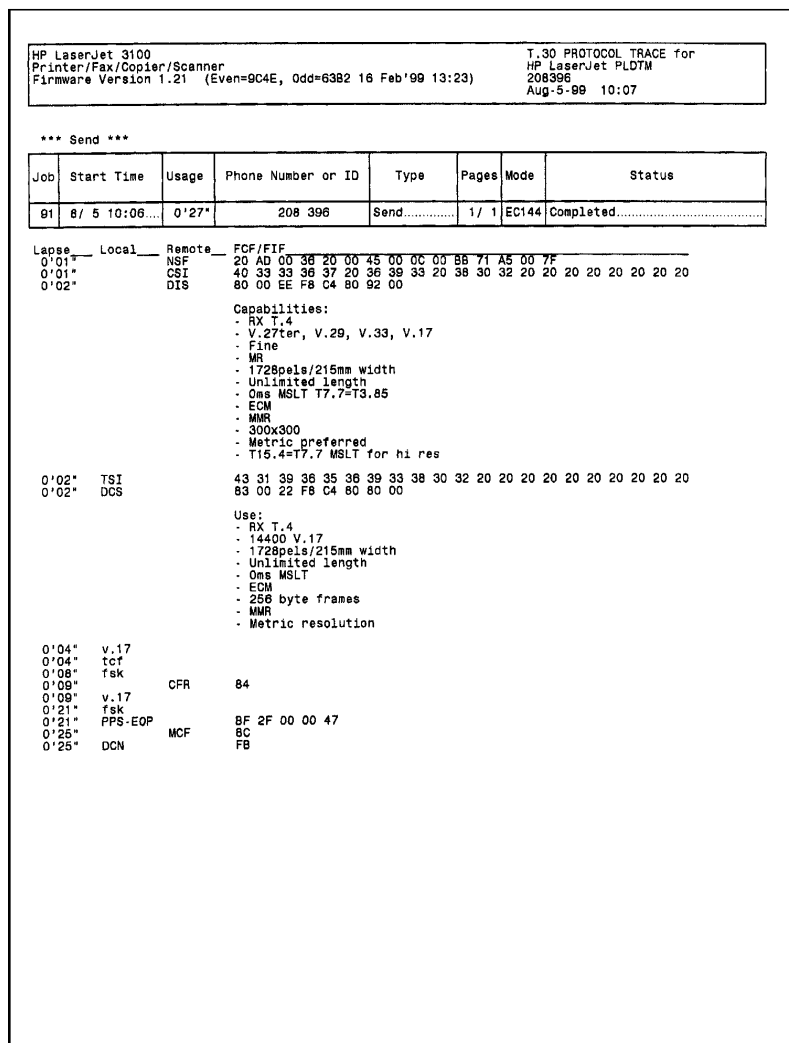


Figure 84. Example of a successfully sent fax

Note

Phase A, call establishment, does not show up on a trace report. Phase C is the phase in which faxed pages are transferred.

HP LASERJET 3150
 PRINTER/FAX/COPIER/SCANNER
 FIRMWARE VERSION 0016W (EVEN=2A8D, ODD=D573 22 JUL'99 13:13)
 TELECOM VERSION 1.01

T.30 PROTOCOL TRACE FOR
 HP TECHNICAL MARKETING-MM
 208 396
 AUG-5-99 10:02AM

*** RECEIVE ***

JOB	START TIME	USAGE	PHONE NUMBER/ADDRESS	TYPE	PAGES	MODE	STATUS
3	8/ 5 10:02AM	0'30"	208396	RECEIVE.....	1	EC144	PENDING.....

LAPSE____LOCAL____REMOTE____

FCF/FIF_____

0'02" NSF 20 AD 00 36 20 00 45 00 0C 00 BB 71 A5 00 7F

0'02" CSI 40 33 33 36 37 20 36 39 33 20 38 30 32 20 20 20 20 20 20

0'02" DIS 80 00 EE F8 C4 80 92 00

CAPABILITIES:
 - RX T.4
 - V.27TER, V.29, V.33, V.17
 - FINE
 - MR
 - 1728PELS/215MM WIDTH
 - UNLIMITED LENGTH
 - OMS MSLT T7.7-T3.85
 - ECM
 - MMR
 - 300X300
 - METRIC PREFERRED
 - T15.4=T7.7 MSLT FOR HI RES

0'07" TSI
 0'08" DCS

43 31 39 36 35 36 39 33 38 30 32 20 20 20 20 20 20 20 20
 83 00 22 F8 C4 80 80 00

USE:
 - RX T.4
 - 14400 V.17
 - 1728PELS/215MM WIDTH
 - UNLIMITED LENGTH
 - OMS MSLT
 - ECM
 - 256 BYTE FRAMES
 - MMR
 - METRIC RESOLUTION

0'08" V.17
 0'08" TCF
 0'10" DBM*
 0'10" ECM
 0'11" FSK
 0'11" CFR
 0'12" V.17
 0'24" FSK
 0'25" PPS-EOP
 0'27" SCAN
 0'27" MCF
 0'30" DCN

14.4
 34
 01
 84
 14.4
 8F 2F 00 00 47
 00 04 37
 8C
 FB

Figure 85. Example of a successfully received fax

Explanation of DBM

-dBm values shown on the fax trace report are hexadecimal numbers. Convert the value to a base-10 number and then divide by 5 to check signal strength. Using the example above, where DBM=34:

$$34 \text{ (hex)} = 52 \text{ (decimal)} \quad \text{and} \quad 52/5 = 10.4$$

Assuming a negative value, -10.4 falls into the range of -10 to -43 (with -43 being a weak signal). -10.4 is, therefore, a strong signal.

7

Parts and diagrams

Chapter contents

How to use the parts lists and diagrams	210
Consumables and accessories	211
Common hardware	214
Alphabetical parts list	242
Numerical parts list	249

How to use the parts lists and diagrams

The figures in this chapter illustrate the major subassemblies in the printer and their component parts. A table (material list) follows each exploded assembly diagram. Each table lists the reference designator, the associated part number for the item, and a description of the part.

While looking for a part number, pay careful attention to the voltage listed in the description column to make sure that the part number selected is for the correct model of printer.

Ordering parts

All standard part numbers listed are stocked and may be ordered from HP's Support Materials Organization (SMO), or Support Materials, Europe (SME).

- Hewlett-Packard Co.
Support Materials Organization
8050 Foothills Blvd.
Roseville, CA 95678
Parts Direct Ordering: (800) 227-8164 (U.S. Only)
- Hewlett-Packard Co.
Support Materials, Europe
Wolf-Hirth Strasse 33
D-7030 Boblingen, Germany

The website <http://www.hpisis.com/> can be used by HP partners only; a login and password are required.

You can also contact Hewlett-Packard at (916) 783-0804 to find out part numbers for the HP LaserJet 3100/3150 product. Contact a local HP Parts Coordinator for other local phone numbers.

Consumables and accessories

The following items are available through a local authorized HP dealer. To find a dealer near you (or if your dealer is temporarily out of stock), call the HP Customer Information Center at (800) 752-0900.

Table 23. Consumables and accessories

Item	Product number	Description
Toner cartridge	C3906A	Replacement toner cartridge
HP LaserJet size C Printer Parallel cables (IEEE-1284)	8120-8668	2-meter, A to C
	C2946A (8182-0004)	3-meter, A to C
	C2947A	10-meter, A to C
Phone cables and adapters	5040-9078	Phone cable—Canada, Mexico, U.S.
	C3948-60126	Phone cable—Austria
	C3948-60121	Phone cable—Belgium
	C3948-60105	Phone cable—Denmark
	C3948-60115	Phone cable—France
	C3948-60118	Phone cable—Germany
	C3948-60113	Phone cable—Hong Kong SAR, New Zealand, United Kingdom
	C3948-60114	Phone cable—Netherlands
	C3948-60103	Phone cable—Norway/Finland
	C3948-60104	Phone cable—Sweden
	5040-9208	RJ-11 phone cable—Australia, China, Hungary, Ireland, Israel, Italy, Malaysia, Poland, Russia, Singapore, Spain, Switzerland, Ukraine
	C3948-60106	T-adaptor—Australia, China, Hungary, Ireland, Israel, Italy, Malaysia, Poland, Russia, Singapore, Spain, Switzerland, Ukraine

Table 23. Consumables and accessories

Item	Product number	Description
Power cables	8120-6810	Power cable—Australia, New Zealand
	8120-6811	Power cable—Austria, Belgium, Finland, France, Germany, Hungary, Italy, Netherlands, Norway, Poland, Russia, Spain, Sweden, Ukraine
	8120-6812	Power cable—Canada, Mexico, U.S.
	8120-8707	Power cable—China
	8120-6814	Power cable—Denmark
	8120-8706	Power cable—Hong Kong SAR
	8120-6809	Power cable—Ireland, United Kingdom
	8120-6800	Power cable—Israel
	8120-8454	Power cable—Malaysia, Singapore
	8120-6815	Switzerland

Ordering consumables

The consumables and accessories listed in Table 23 may be ordered from Hewlett-Packard.

The phone numbers are:

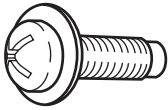
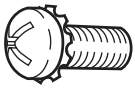
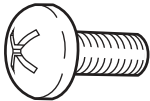
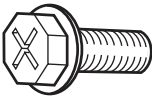
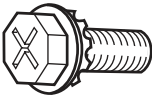
- U.S.: (800) 538-8787
- Canada: (800) 387-3154 (Toronto: (516) 671-8383)
- United Kingdom: 0734-441212
- Germany: 0130-3322

Contact a local HP Parts Coordinator for other local phone numbers.

Parts that have no reference designator or part number are not field replacement parts and cannot be ordered through SMO.

Common hardware

Table 24. Common fasteners

Example	Description
	Screw, machine, truss head
	Screw, star
	Screw, self-tapping
	Screw, hex-head
	Screw, hex-head, star

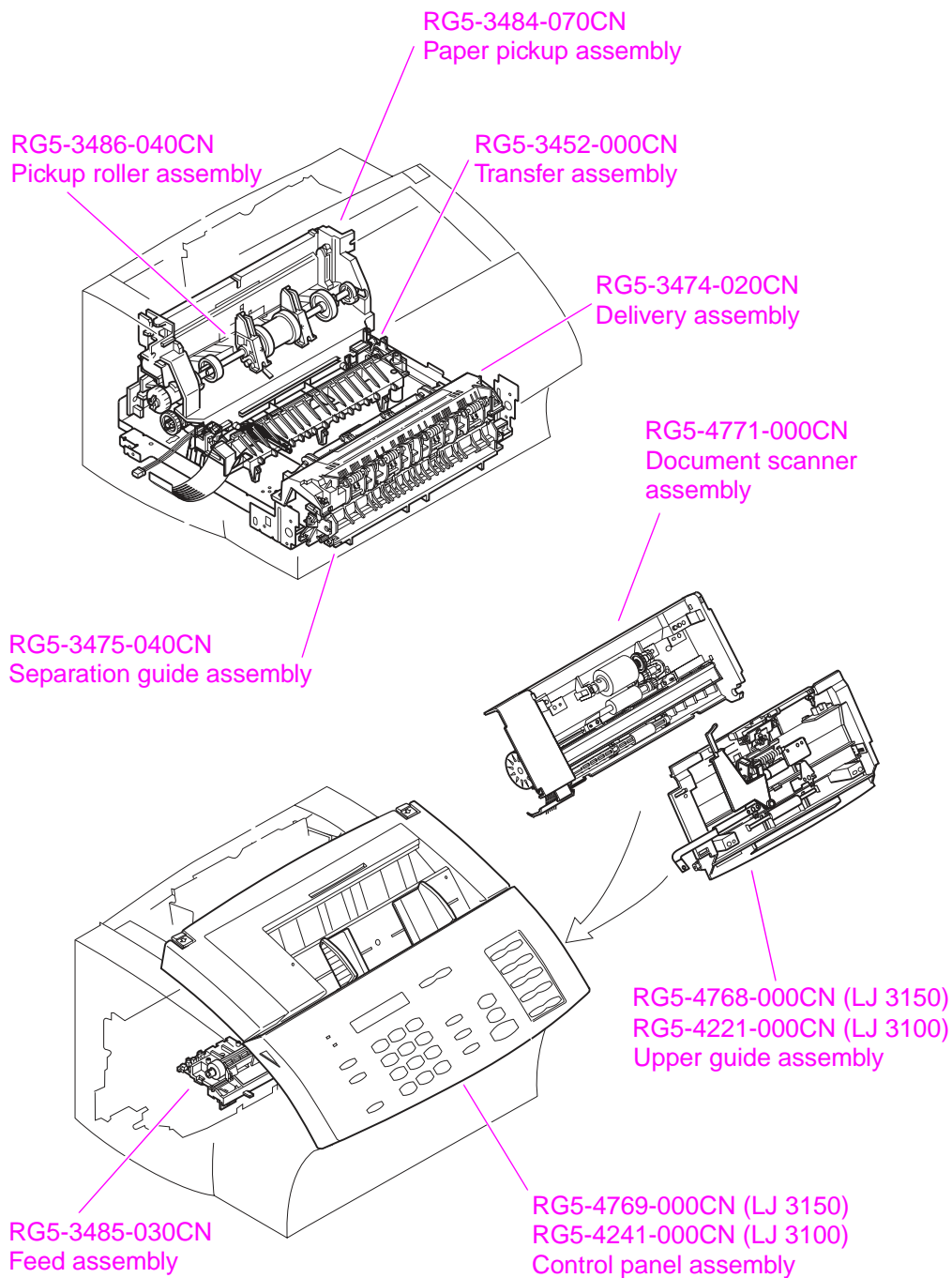


Figure 86. Major assembly locations

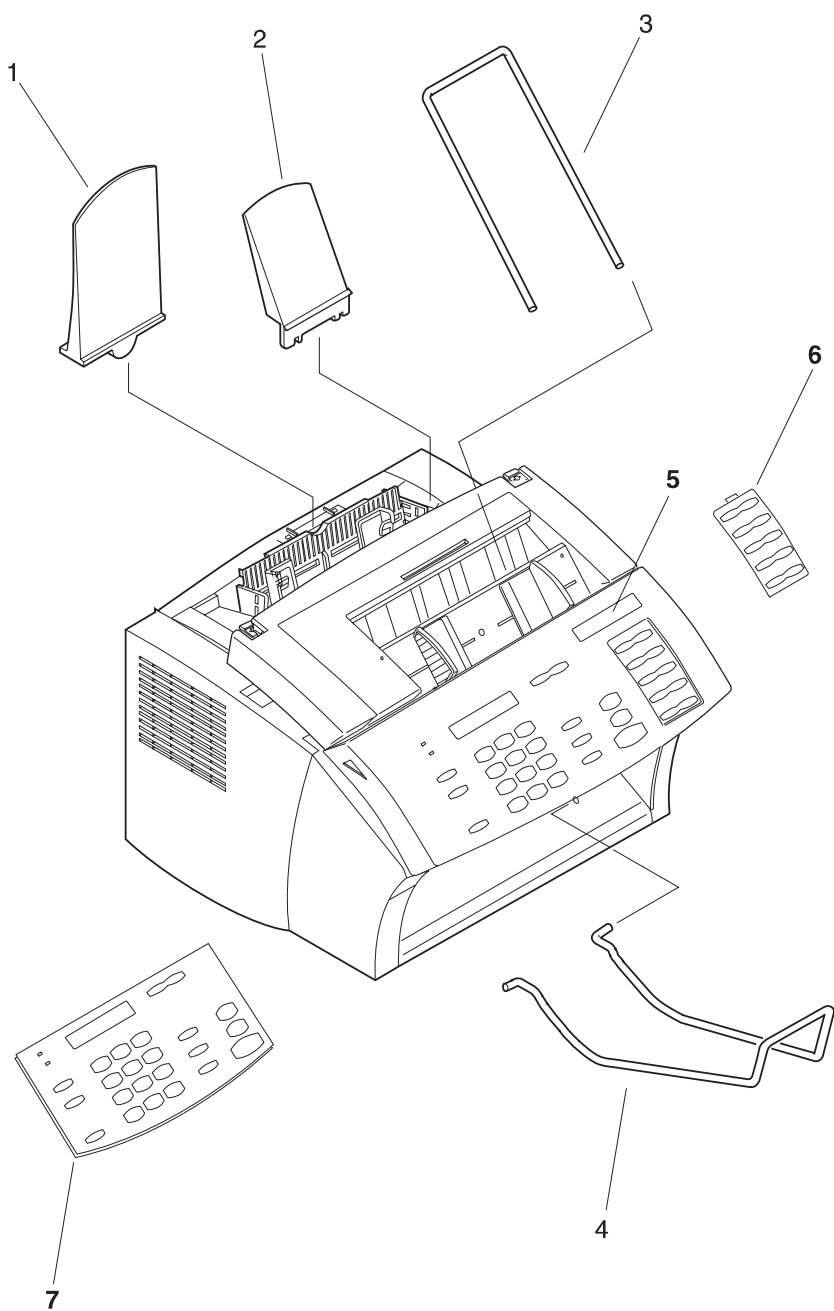


Figure 87. Supports

Table 25. Supports

Reference	Part number	Description
1	RB2-3362-000CN	Paper input support
2	RB2-3410-000CN	Paper output support
3	RB2-3455-000CN	Document feeder support
4	RB2-3470-000CN	Document output support
5	C4256-40001	Nameplate—LJ 3150
6	RB2-3393-000CN	One-touch pad overlay sheet
7	C3948-00019	Control panel overlay—Danish
	C4256-00036	Control panel overlay—Dutch
	C4256-00020	Control panel overlay—Finnish
	C4256-00037	Control panel overlay—French
	C3948-00010	Control panel overlay—German
	C4256-00038	Control panel overlay—Hungarian
	C3948-00038	Control panel overlay—Israel/Hebrew
	C4256-00034	Control panel overlay—Italian
	C4256-00021	Control panel overlay—Norwegian
	C4256-00006	Control panel overlay—Polish
	C4256-00035	Control panel overlay—Russian
	C4256-00007	Control panel overlay—Simplified Chinese
	C4256-00033	Control panel overlay—Spanish
	C3948-00022	Control panel overlay—Swedish
	C3948-00037	Control panel overlay—Traditional Chinese

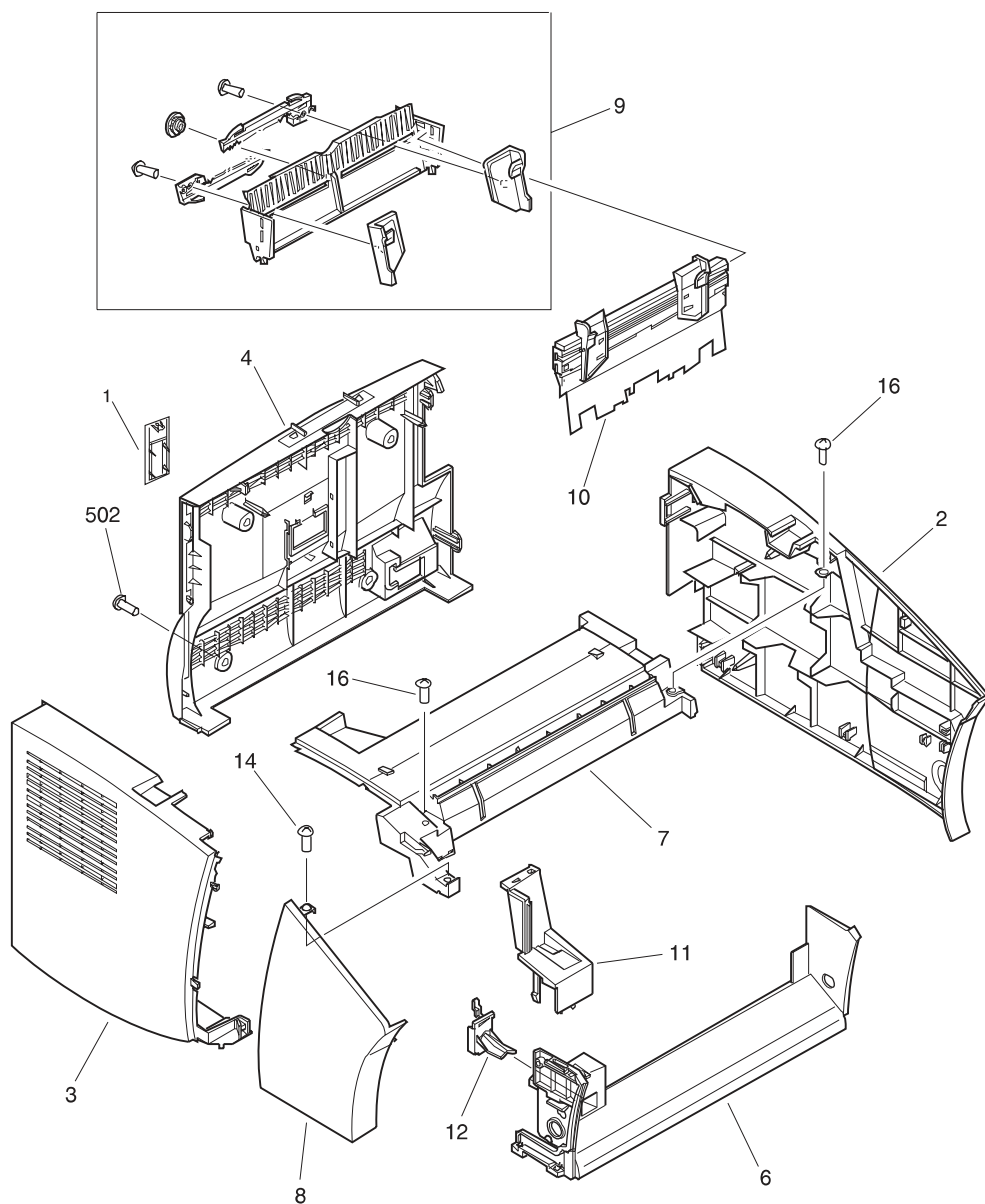


Figure 88. External covers and panels

Table 26. External covers and panels

Reference	Part number	Description
1	C3948-40010	I/O bezel
2	RB2-3341-000CN	Right cover
3	RB2-3360-000CN	Left cover
4	RB2-3361-000CN	Rear cover
6	RB2-3449-000CN	Front casing
7	RB2-3450-000CN	Top cover
8	RB2-3451-000CN	Left front cover
9	RG5-3488-000CN	Input bin assembly
10	RG5-4763-000CN	Single-sheet input slot assembly
11	RB2-3452-000CN	Pressure release lever cover
12	RB2-3448-000CN	Paper path lever—LJ 3150 (darker in color)
	RB2-3453-000CN	Paper path lever—LJ 3100 (lighter in color)
14	XA9-0476-000CN	Screw, TP, M3X8
16	XA9-0724-000CN	Screw, M3X8 (2)
502	XA9-0497-000CN	Screw, M4X6 (4)

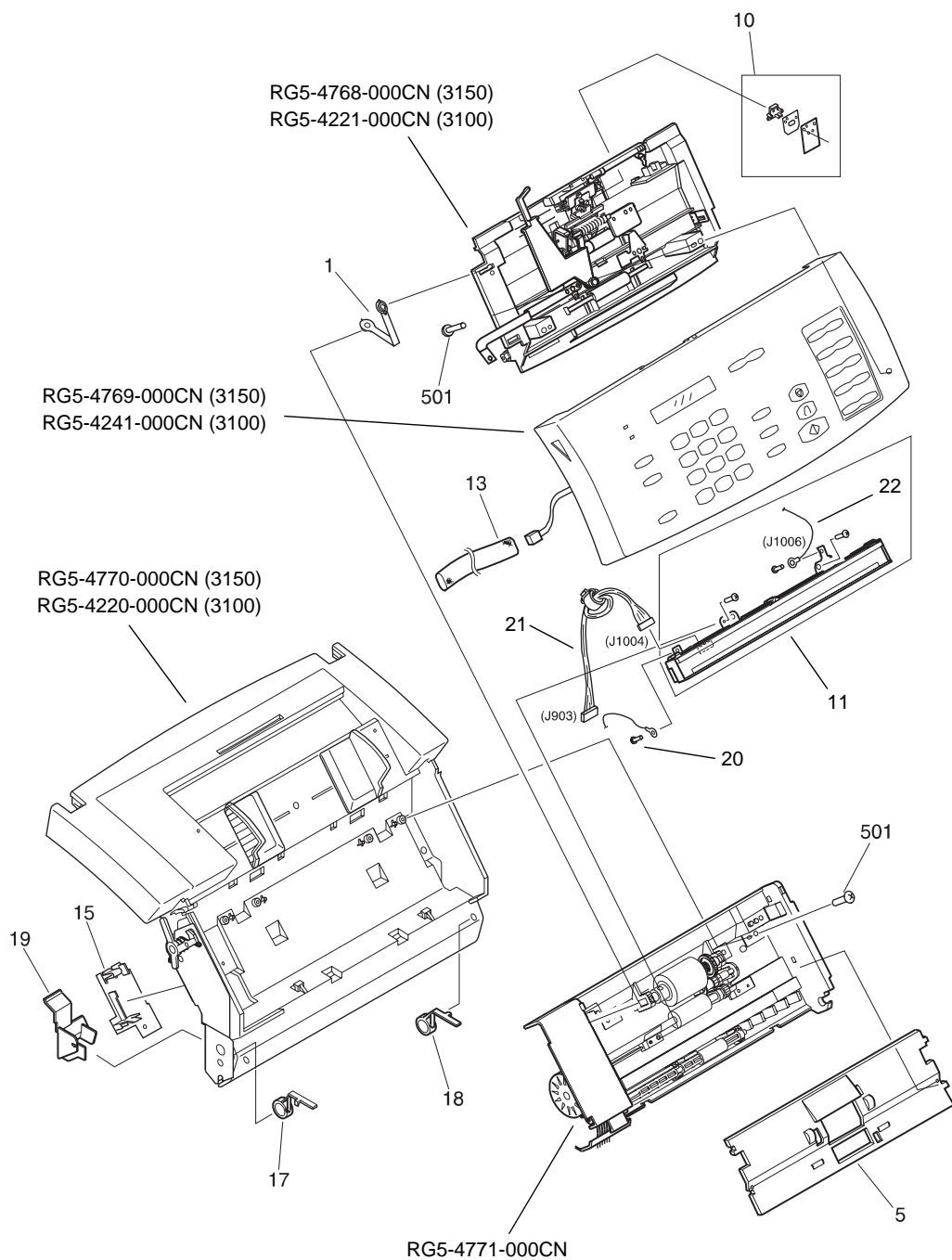


Figure 89. Printer door (1 of 2)

Table 27. Printer door (1 of 2)

Reference	Part number	Description
	RG5-4770-000CN	Printer door assembly—LJ 3150
	RG5-4220-000CN	Printer door assembly—LJ 3100
	RG5-4768-000CN	Upper guide assembly—LJ 3150
	RG5-4221-000CN	Upper guide assembly—LJ 3100
	RG5-4771-000CN	Document scanner assembly
	RG5-4769-000CN	Control panel assembly—LJ 3150
	RG5-4241-000CN	Control panel assembly—LJ 3100
1	RB2-3354-000CN	Strap
5	RB2-3436-000CN	Document scanner guide
10	RY7-5055-000CN	Separation pad kit for document scanner path
11	RG5-4239-000CN	Contact image sensor assembly
13	RB2-3351-000CN	Cable tube
15	RB2-3454-000CN	Spacer
17	RB2-3468-000CN	Left hinge cover
18	RB2-3469-000CN	Right hinge cover
19	RB2-3409-000CN	Cable guide
20	FA9-1449-000CN	Screw—LJ 3100
	XA9-0779-000CN	Screw—LJ 3150
21	RG5-4233-000CN	Cable, contact image sensor (J1004 to J903)
22	RG5-4238-000CN	Cable, CIS grounding
501	XB4-7300-807CN	Screw, tapping, truss head, M3X8 (7)

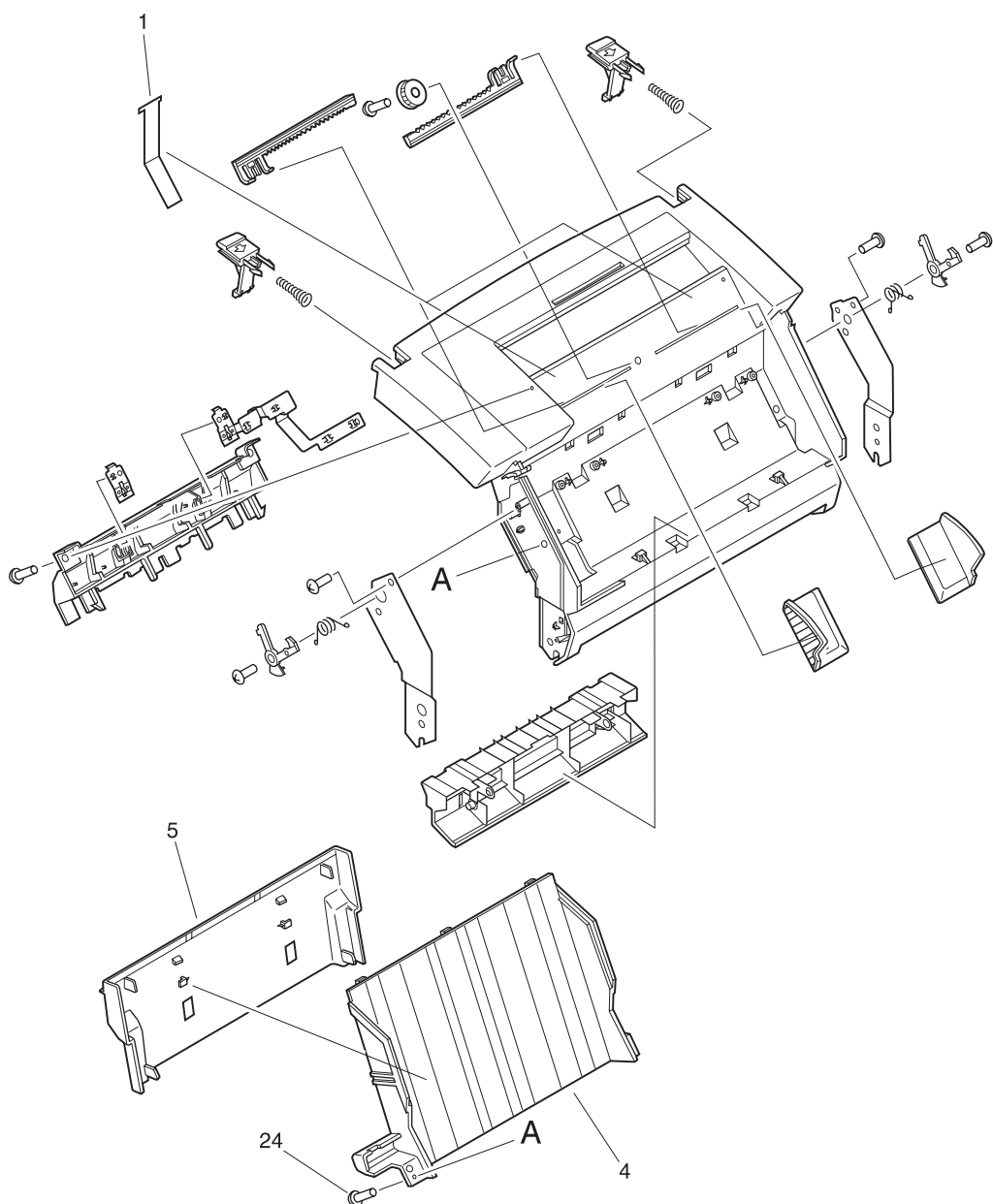


Figure 90. Printer door (2 of 2)

Table 28. Printer door (2 of 2)

Reference	Part number	Description
	RG5-4770-000CN	Printer door assembly—LJ 3150
	RG5-4220-000CN	Printer door assembly—LJ 3100
1	RB2-3365-000CN	Sheet, arching (2)
4	RB2-3401-000CN	Duct, 1
5	RB2-3402-000CN	Duct, 2
24	XA9-0614-000CN	Screw, M3X8 (4)

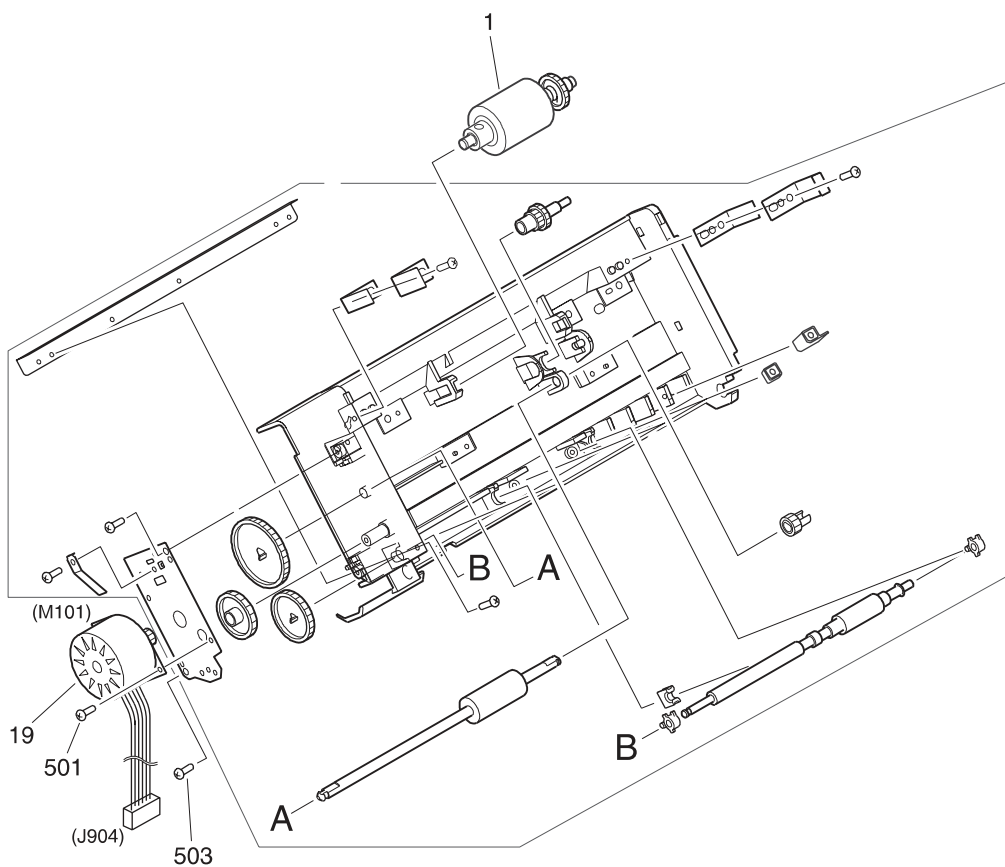


Figure 91. Document scanner assembly

Table 29. Document scanner assembly

Reference	Part number	Description
	RG5-4771-000CN	Document scanner assembly
1	RG5-4772-000CN	Pickup roller assembly, document scanner
19	RH7-1376-000CN	Motor, AC 1.08W
503	XB4-7300-807CN	Screw, M3X8

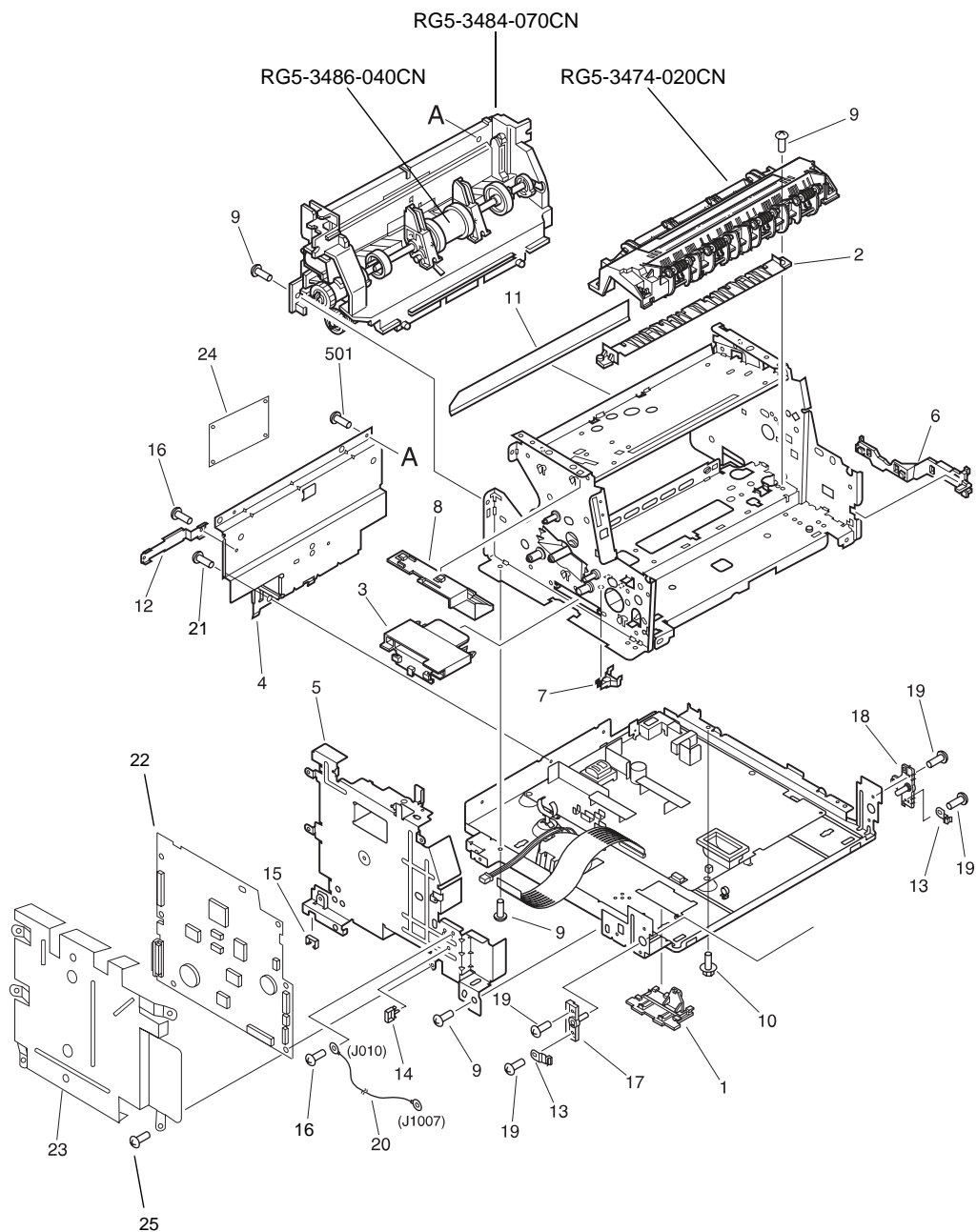


Figure 92. Internal components (1 of 3)

Table 30. Internal components (1 of 3)

Reference	Part number	Description
	RG5-3484-070CN	Paper pickup assembly
	RG5-3486-040CN	Pickup roller assembly
	RG5-3474-020CN	Delivery assembly
1	RB2-3345-000CN	Cap
2	RB1-7247-000CN	Paper guide
3	RB2-3350-000CN	Cable guide, formatter
4	RF5-2664-000CN	Reinforcement plate
5	RB2-3364-000CN	Metal plate
6	RB1-7130-020CN	Cable guide
7	RB1-7234-000CN	Cap
8	RB2-3366-000CN	Cable guide holder, formatter
9	XA9-0724-000CN	Screw M3X8 (11)
10	XA9-0855-000CN	Screw, RS, with washer, M3X8
11	RB1-7176-000CN	Guide sheet
12	RB2-4118-000CN	Grounding plate
13	RB2-3467-000CN	Grounding plate (2)
14	WT2-5178-000CN	Cable guide, control panel
15	WT2-5300-000CN	Cable guide, frame
16	XA9-0779-000CN	Screw
17	RB2-3465-000CN	Left hinge holder
18	RB2-3466-000CN	Right hinge holder
19	XA9-0434-000CN	Screw, TP, M3X4 (4)
20	RG5-4237-000CN	Cable, grounding, document scanner motor
21	XA9-0267-000CN	Screw
22	C3949-60001	Formatter—LJ 3100
	C3949-69001	Formatter—LJ 3100 (exchange)
	C3949-60002	Formatter—LJ 3150
	C3949-69002	Formatter—LJ 3150 (exchange)
23	C3948-00002	RFI shield
24	C3948-60001	LIU board (U.S.)
24	C3948-60002	LIU board (worldwide)
25	0515-2672	Screw, M3X6 (9)
501	XB4-7400-807CN	Screw, tapping, truss head, M4X8 (3)

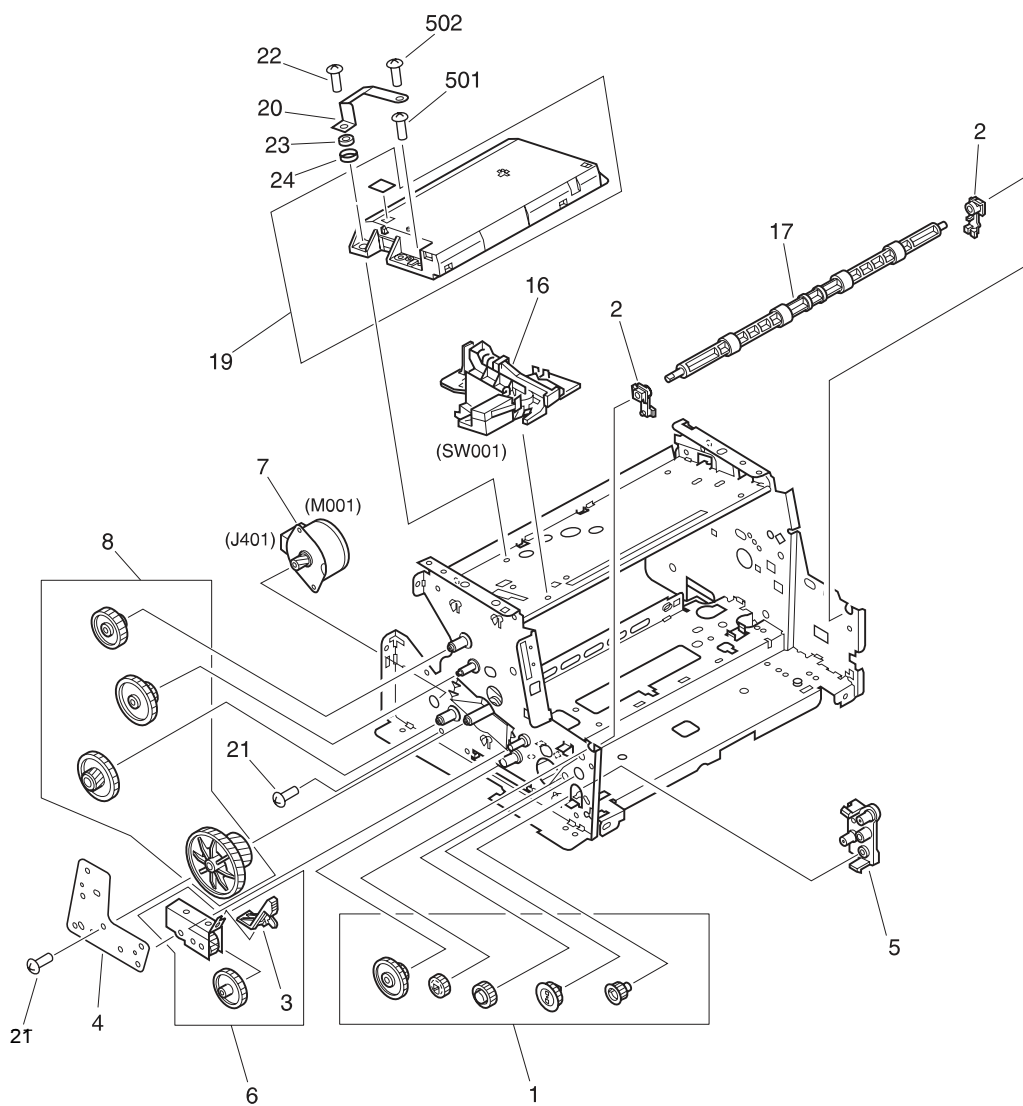


Figure 93. Internal components (2 of 3)

Table 31. Internal components (2 of 3)

Reference	Part number	Description
1	RY7-5005-000CN	Gear kit #1
2	RB1-7288-020CN	Bushing (2)
3	RB1-7105-000CN	Pressure release lever
4	RB2-1632-000CN	Gear support plate
5	RB1-7107-000CN	Gear holder
6	RY7-5007-000CN	Fuser release kit
7	RH7-1320-000CN	Motor, DC 12V
8	RY7-5036-000CN	Gear kit #2
16	RG5-3453-000CN	Switch lever assembly
17	RF5-2367-000CN	Exit roller
Note: The Following two parts (ref. 19 and 20) must both be replaced if replacing either one.		
19	RG5-3497-050CN	Laser/scanner assembly
20	RB1-7385-020CN	Grounding spring
21	XA9-0267-000CN	Screw, TP, M3X6 (2)
22	XA9-0382-000CN	Screw, TP, M3X12
23	WE8-5192-000CN	Ferrite ring core
24	RB9-0227-000CN	Spacer
501	XB6-7300-807CN	Screw, TP, M3X8 (5)
502	XB4-7300-809CN	Screw, tapping, truss head, M3X8

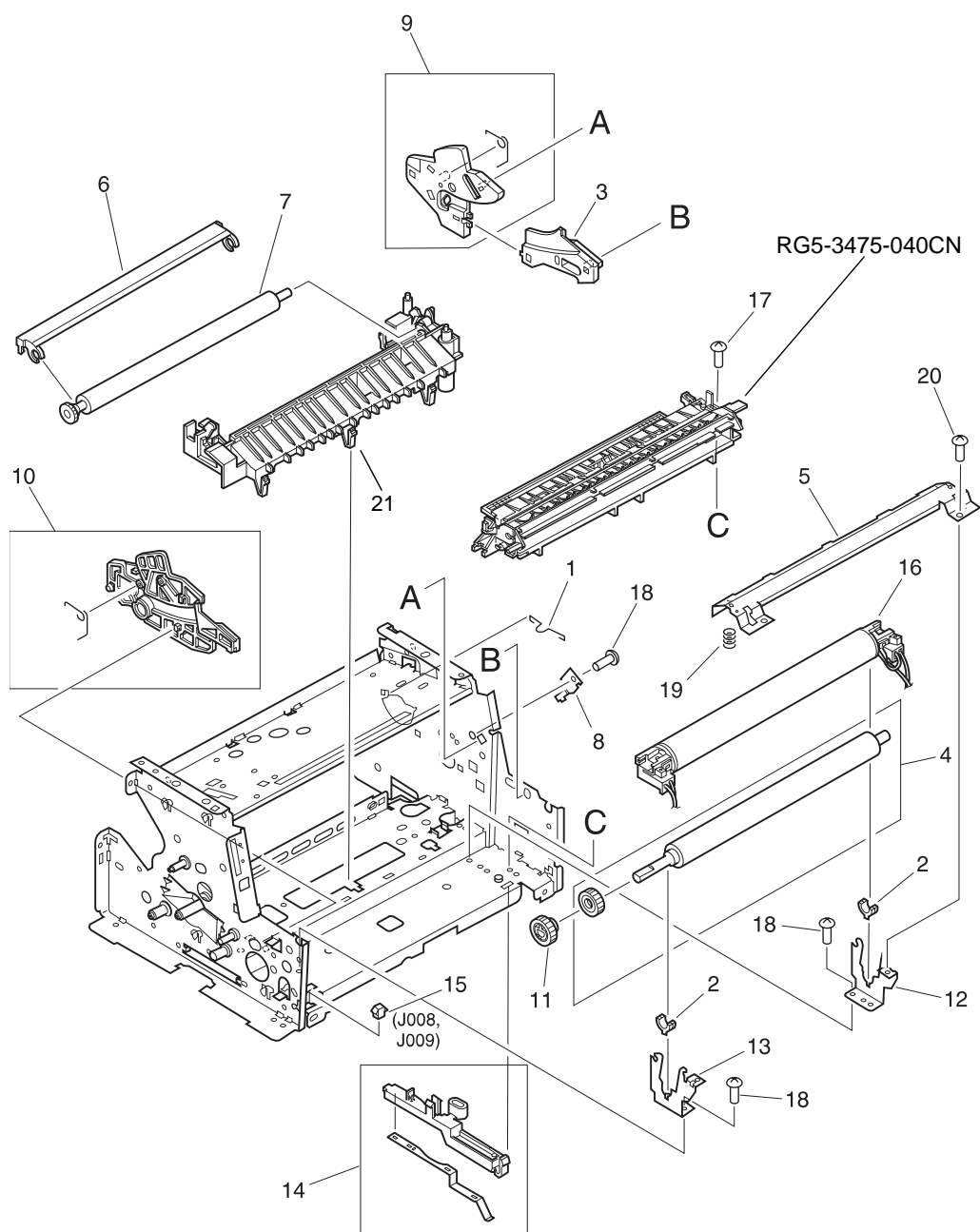


Figure 94. Internal components (3 of 3)

Table 32. Internal components (3 of 3)

Reference	Part number	Description
	RG5-3475-040CN	Separation guide assembly
1	RB1-7223-000CN	Grounding clip
2	RB1-7246-000CN	Bushing (2)
3	RB1-7341-030CN	Right cartridge guide #1
4	RF5-2364-000CN	Pressure roller
5	RF5-1517-020CN	Pressure plate
6	RF5-2358-000CN	Transfer guide
7	RF5-1534-000CN	Transfer roller
8	RB1-7129-000CN	Grounding metal
9	RF5-1515-020CN	Right cartridge guide #2
10	RF5-1514-020CN	Left cartridge guide
11	RS5-0796-000CN	Pressure roller gear (27T)
12	RB1-7256-000CN	Right side plate
13	RB1-7255-000CN	Left side plate
14	RF5-1533-000CN	Pressure roller ground guide
15	VS1-5057-002CN	Fuser connector (2P)
16	RG5-4678-000CN	Fixing assembly, 110 V
16	RG5-4681-000CN	Fixing assembly, 220 V
17	XA9-0724-000CN	Screw, M3X8
18	XA9-0686-000CN	Screw, M3X6
19	RS5-2508-000CN	Spring, compression
20	XA9-0824-000CN	Screw, RS, M3X10
21	RG5-3452-000CN	Transfer guide assembly
	CK-8006-000CN	Pressure roller grease

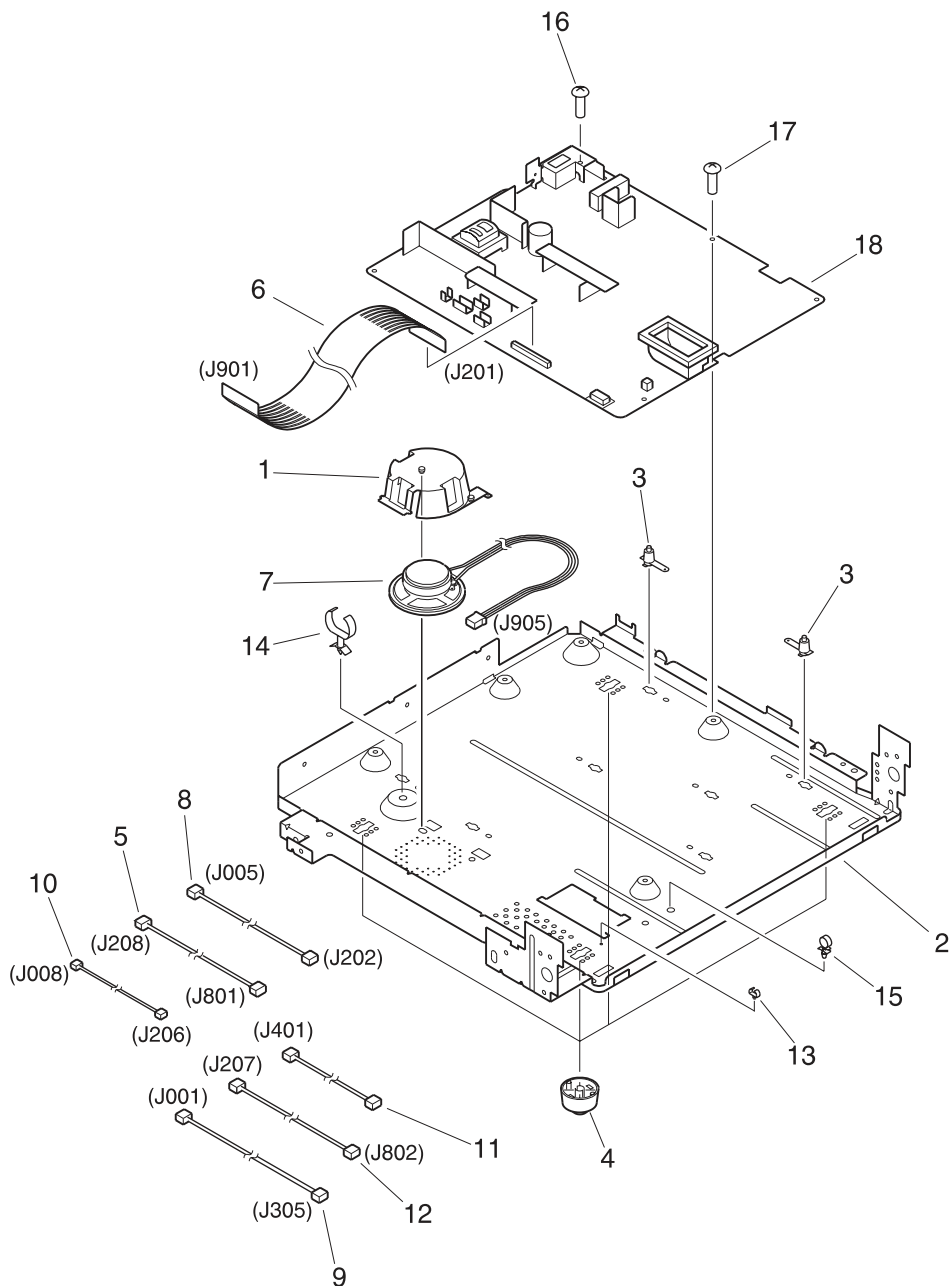


Figure 95. Electrical components assembly

Table 33. Electrical components assembly

Reference	Part number	Description
1	RB2-3346-000CN	Speaker mount
2	RB2-3342-000CN	Bottom plate
3	RB2-3347-000CN	Spacer, PCB (7)
4	RF5-2663-000CN	Foot (4)
5	RG5-2035-000CN	Cable, laser
6	RH2-5346-000CN	Cable, formatter
7	RH6-3845-000CN	Speaker
8	RG5-2029-000CN	Cable, paper pickup
9	RG5-3662-000CN	Cable, door switch
10	RG5-2032-000CN	Cable, thermistor
11	RG5-2033-000CN	Cable, motor
12	RG5-3661-000CN	Cable, scanner
13	WT2-0276-000CN	Clamp, wire
14	WT2-0367-000CN	Clamp, cable
15	WT2-5178-000CN	Clamp, cable
16	XA9-0828-000CN	Screw, with star washer, M3X4
17	XA9-0890-000CN	Screw, with washer, M3X6 (4)
18	RG5-4690-000CN	ECU, 110 V
18	RG5-4691-070CN	ECU, 220 V
	C3948-60102	Cable, LIU

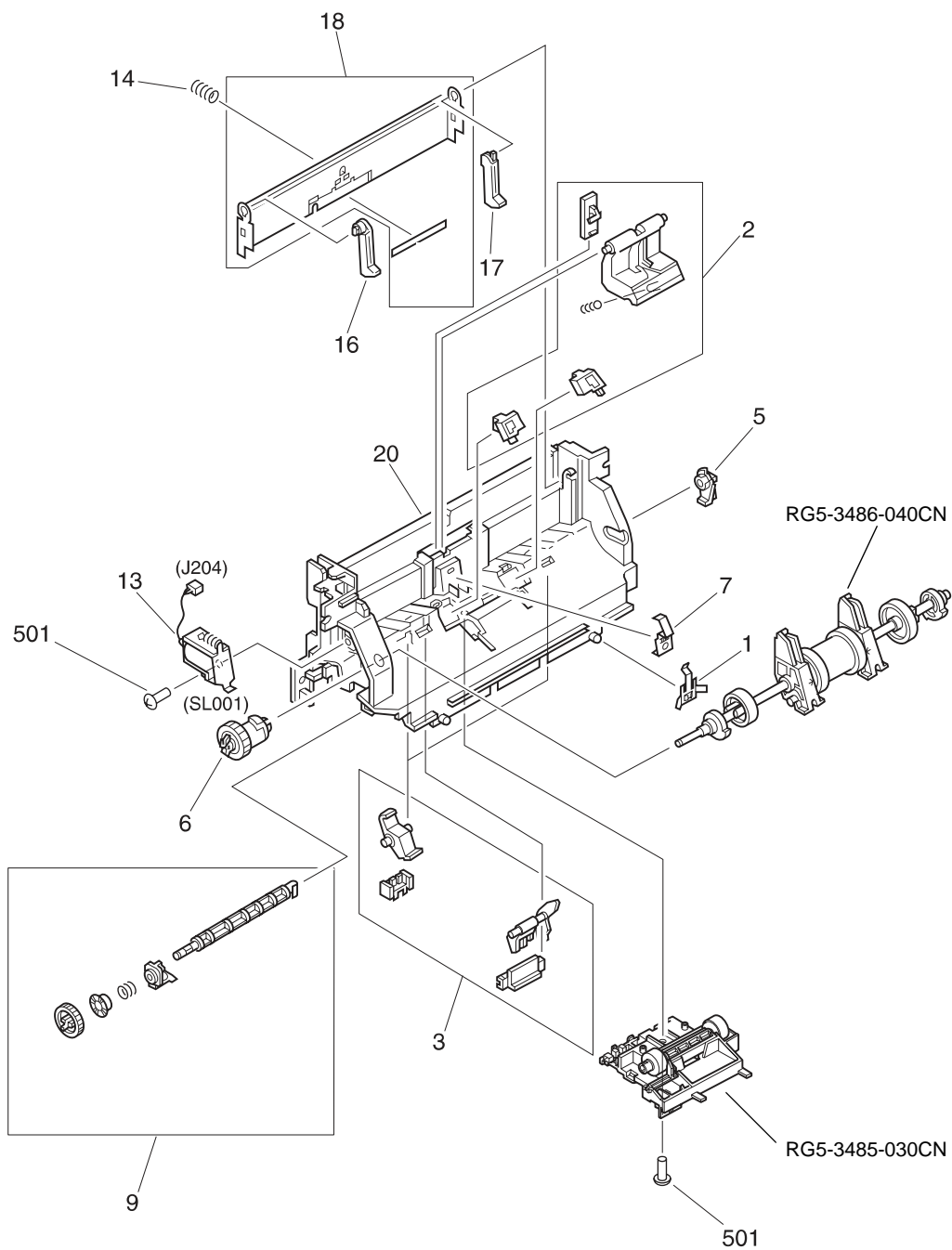


Figure 96. Paper pickup assembly

Table 34. Paper pickup assembly

Reference	Part number	Description
	RG5-3484-070CN	Paper pickup assembly
	RG5-3485-030CN	Feed assembly
	RG5-3486-040CN	Pickup roller assembly (Note: if replacing this part, also replace the separation pad kit, part number RY7-5008-000CN)
1	RB1-7172-000CN	Spring, grounding
2	RY7-5008-000CN	Separation pad kit (Note: if replacing this part, also replace the pickup roller assembly, part number RG5-3486-040CN)
3	RY7-5009-000CN	Input sensor assembly
5	RB1-7184-000CN	Bushing
6	RB1-7197-020CN	Clutch
7	RB1-7199-000CN	Spring, grounding
9	RG5-1947-000CN	Paper feed drive assembly
13	RH7-5139-000CN	Solenoid
14	RS5-2501-000CN	Spring, compression
16	RB1-7185-000CN	Arm, plate, left
17	RB1-7186-000CN	Arm, plate, right
18	RF5-2372-000CN	Plate, middle
20	RB1-7177-000CN	Frame, paper feed
501	XB4-7401-000CN	Screw, tapping, pan head, M4X10 (2)

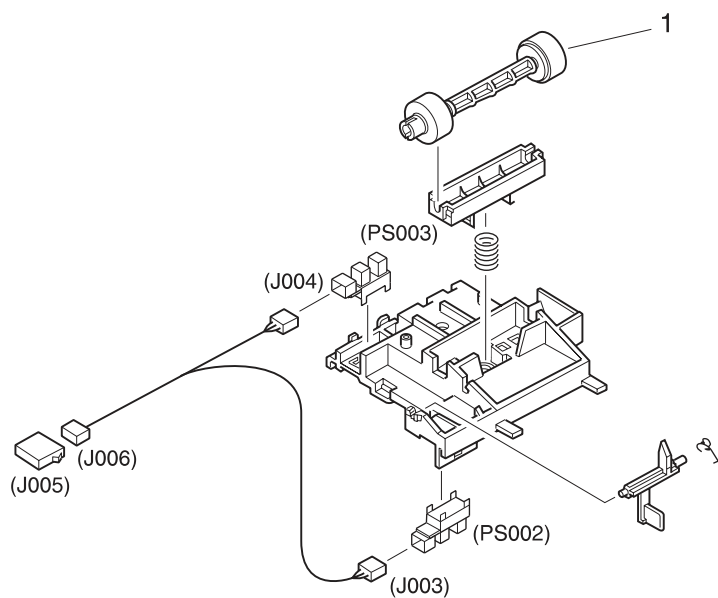


Figure 97. Feed assembly

Table 35. Feeder assembly

Reference	Part number	Description
	RG5-3485-030CN	Feed assembly
1	RB2-1699-000CN	Feed roller

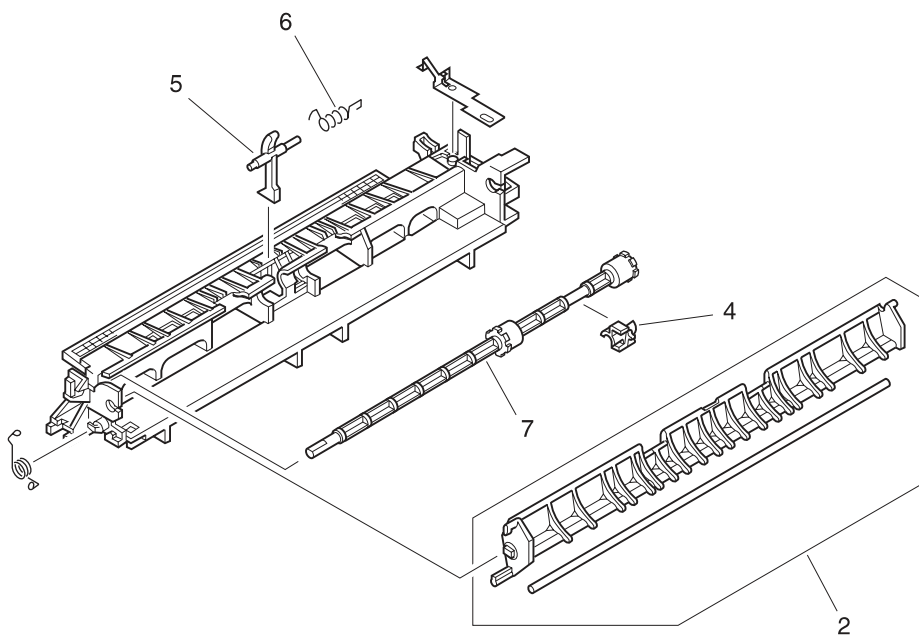


Figure 98. Separation guide assembly

Table 36. Separation guide assembly

Reference	Part number	Description
	RG5-3475-040CN	Separation guide assembly
2	RG5-3476-000CN	Face-up/face-down lever
4	RB2-1690-000CN	Fuser roller bushing
5	RB1-7293-000CN	Lever, sensor
6	RB1-7294-000CN	Spring, torsion
7	RF5-2368-000CN	Fuser exit roller assembly

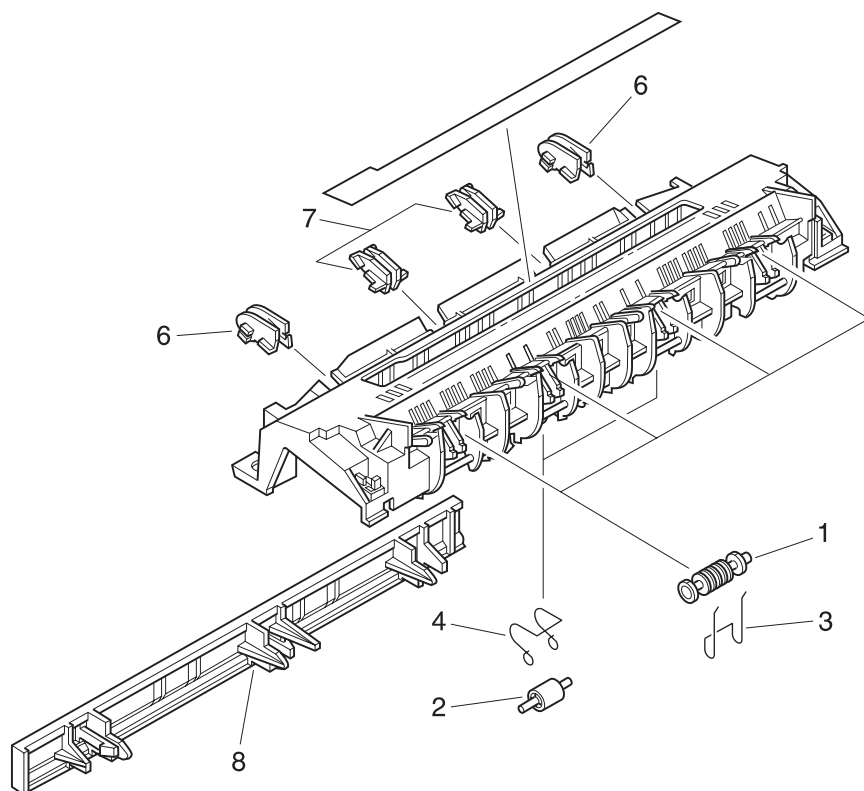


Figure 99. Delivery assembly

Table 37. Delivery assembly

Reference	Part number	Description
	RG5-3474-020CN	Delivery assembly
1	RB1-7284-020CN	Delivery roller #1 (4)
2	RB2-1685-000CN	Delivery roller #2 (2)
3	RB1-7286-000CN	Delivery spring #1 (4)
4	RB1-7287-000CN	Delivery spring #2 (2)
6	RG5-3479-000CN	Spur assembly outside (2)
7	RG5-3478-000CN	Spur assembly inside (2)
8	RB1-7334-000CN	Jammed paper protector

Alphabetical parts list

Table 38. Alphabetical parts list

Part name	Part number	Figure #	Reference
Arm, plate, left	RB1-7185-000CN	96	16
Arm, plate, right	RB1-7186-000CN	96	17
Bottom plate	RB2-3342-000CN	95	2
Bushing	RB1-7184-000CN	96	5
Bushing (2)	RB1-7246-000CN	94	2
Bushing (2)	RB1-7288-020CN	93	2
Cable guide	RB1-7130-020CN	92	6
Cable guide	RB2-3409-000CN	89	19
Cable guide holder, formatter	RB2-3366-000CN	92	8
Cable guide, control panel	WT2-5178-000CN	92	14
Cable guide, formatter	RB2-3350-000CN	92	3
Cable guide, frame	WT2-5300-000CN	92	15
Cable tube	RB2-3351-000CN	89	13
Cable, CIS grounding	RG5-4238-000CN	89	22
Cable, contact image sensor (J1004 to J903)	RG5-4233-000CN	89	21
Cable, door switch	RG5-3662-000CN	95	9
Cable, formatter	RH2-5346-000CN	95	6
Cable, grounding, document scanner motor	RG5-4237-000CN	92	20
Cable, laser	RG5-2035-000CN	95	5
Cable, LIU	C3948-60102	95	
Cable, motor	RG5-2033-000CN	95	11
Cable, paper pickup	RG5-2029-000CN	95	8
Cable, scanner	RG5-3661-000CN	95	12
Cable, thermistor	RG5-2032-000CN	95	10
Cap	RB1-7234-000CN	92	7
Cap	RB2-3345-000CN	92	1
Clamp, cable	WT2-0367-000CN	95	14
Clamp, cable	WT2-5178-000CN	95	15

Table 38. Alphabetical parts list

Part name	Part number	Figure #	Reference
Clamp, wire	WT2-0276-000CN	95	13
Clutch	RB1-7197-020CN	96	6
Contact image sensor assembly	RG5-4239-000CN	89	11
Control panel assembly—LJ 3100	RG5-4241-000CN	89	
Control panel assembly—LJ 3150	RG5-4769-000CN	89	
Control panel overlay—Danish	C3948-00019	87	7
Control panel overlay—Dutch	C4256-00036	87	7
Control panel overlay—Finnish	C4256-00020	87	7
Control panel overlay—French	C4256-00037	87	7
Control panel overlay—German	C3948-00010	87	7
Control panel overlay—Hungarian	C4256-00038	87	7
Control panel overlay—Israel/Hebrew	C3948-00038	87	7
Control panel overlay—Italian	C4256-00034	87	7
Control panel overlay—Norwegian	C3948-00021	87	7
Control panel overlay—Polish	C4256-00006	87	7
Control panel overlay—Russian	C4256-00035	87	7
Control panel overlay—Simplified Chinese	C4256-00007	87	7
Control panel overlay—Spanish	C4256-00033	87	7
Control panel overlay—Swedish	C3948-00022	87	7
Control panel overlay—Traditional Chinese	C3948-00037	87	7
Delivery assembly	RG5-3474-020CN	92, 99	
Delivery roller #1 (4)	RB1-7284-020CN	99	1
Delivery roller #2 (2)	RB2-1685-000CN	99	2
Delivery spring #1 (4)	RB1-7286-000CN	99	3
Delivery spring #2 (2)	RB1-7287-000CN	99	4
Document feeder support	RB2-3455-000CN	87	3
Document output support	RB2-3470-000CN	87	4
Document scanner assembly	RG5-4771-000CN	89, 91	
Document scanner guide	RB2-3436-000CN	89	5
Duct, 1	RB2-3401-000CN	90	4
Duct, 2	RB2-3402-000CN	90	5

Table 38. Alphabetical parts list

Part name	Part number	Figure #	Reference
ECU, 110 V	RG5-4690-000CN	95	18
ECU, 220 V	RG5-4691-070CN	95	18
Exit roller	RF5-2367-000CN	93	17
Face-up/face-down lever	RG5-3476-000CN	98	2
Feed assembly	RG5-3485-030CN	96, 97	
Feed roller	RB2-1699-000CN	97	1
Ferrite ring core	WE8-5192-000CN	93	23
Fixing assembly, 110 V	RG5-4678-000CN	94	16
Fixing assembly, 220 V	RG5-4681-000CN	94	16
Foot (4)	RF5-2663-000CN	95	4
Formatter—LJ 3100	C3949-60001	92	22
Formatter—LJ 3100 (exchange)	C3949-69001	92	22
Formatter—LJ 3150	C3949-60002	92	22
Formatter—LJ 3150 (exchange)	C3949-69002	92	22
Frame, paper feed	RB1-7177-000CN	96	20
Front casing	RB2-3449-000CN	88	6
Fuser connector (2P)	VS1-5057-002CN	94	15
Fuser exit roller assembly	RF5-2368-000CN	98	7
Fuser release kit	RY7-5007-000CN	93	6
Fuser roller bushing	RB2-1690-000CN	98	4
Gear holder	RB1-7107-000CN	93	5
Gear kit #1	RY7-5005-000CN	93	1
Gear kit #2	RY7-5036-000CN	93	8
Gear support plate	RB2-1632-000CN	93	4
Grounding clip	RB1-7223-000CN	94	1
Grounding metal	RB1-7129-000CN	94	8
Grounding plate	RB2-4118-000CN	92	12
Grounding plate (2)	RB2-3467-000CN	92	13
Grounding spring	RB1-7385-020CN	93	20
Guide sheet	RB1-7176-000CN	92	11
I/O bezel	C3948-40010	88	1

Table 38. Alphabetical parts list

Part name	Part number	Figure #	Reference
Input bin assembly	RG5-3488-000CN	88	9
Input sensor assembly	RY7-5009-000CN	96	3
Jammed paper protector	RB1-7334-000CN	99	8
Laser/scanner assembly	RG5-3497-050CN	93	19
Left cartridge guide	RF5-1514-020CN	94	10
Left cover	RB2-3360-000CN	88	3
Left front cover	RB2-3451-000CN	88	8
Left hinge cover	RB2-3468-000CN	89	17
Left hinge holder	RB2-3465-000CN	92	17
Left side plate	RB1-7255-000CN	94	13
Lever, sensor	RB1-7293-000CN	98	5
LIU board (U.S.)	C3948-60001	92	24
LIU board (worldwide)	C3948-60002	92	24
Metal plate	RB2-3364-000CN	92	5
Motor, AC 1.08W	RH7-1376-000CN	91	19
Motor, DC 12V	RH7-1320-000CN	93	7
Nameplate—LJ 3150	C4256-40001	87	5
One-touch pad overlay sheet	RB2-3393-000CN	87	6
Paper feed drive assembly	RG5-1947-000CN	96	9
Paper guide	RB1-7247-000CN	92	2
Paper input support	RB2-3362-000CN	87	1
Paper output support	RB2-3410-000CN	87	2
Paper path lever—LJ 3100 (lighter in color)	RB2-3453-000CN	88	12
Paper path lever—LJ 3150 (darker in color)	RB2-3448-000CN	88	12
Paper pickup assembly	RG5-3484-070CN	92, 96	
Pickup roller assembly	RG5-3486-040CN	92, 96	
Pickup roller assembly, document scanner	RG5-4772-000CN	91	1
Plate, middle	RF5-2372-000CN	96	18
Pressure plate	RF5-1517-020CN	94	5
Pressure release lever	RB1-7105-000CN	93	3
Pressure release lever cover	RB2-3452-000CN	88	11

Table 38. Alphabetical parts list

Part name	Part number	Figure #	Reference
Pressure roller	RF5-2364-000CN	94	4
Pressure roller gear (27T)	RS5-0796-000CN	94	11
Pressure roller grease	CK-8006-000CN	94	
Pressure roller ground guide	RF5-1533-000CN	94	14
Printer door assembly—LJ 3100	RG5-4220-000CN	89, 90	
Printer door assembly—LJ 3150	RG5-4770-000CN	89, 90	
Rear cover	RB2-3361-000CN	88	4
Reinforcement plate	RF5-2664-000CN	92	4
RFI shield	C3948-00002	92	23
Right cartridge guide #1	RB1-7341-030CN	94	3
Right cartridge guide #2	RF5-1515-020CN	94	9
Right cover	RB2-3341-000CN	88	2
Right hinge cover	RB2-3469-000CN	89	18
Right hinge holder	RB2-3466-000CN	92	18
Right side plate	RB1-7256-000CN	94	12
Screw	XA9-0267-000CN	92	21
Screw	XA9-0779-000CN	92	16
Screw—LJ 3100	FA9-1449-000CN	89	20
Screw—LJ 3150	XA9-0779-000CN	89	20
Screw M3X8 (11)	XA9-0724-000CN	92	9
Screw, M3X6 (9)	0515-2672	92	25
Screw, M3X6	XA9-0686-000CN	94	18
Screw, M3X8	XA9-0724-000CN	94	17
Screw, M3X8	XB4-7300-807CN	91	503
Screw, M3X8 (2)	XA9-0724-000CN	88	16
Screw, M3X8 (4)	XA9-0614-000CN	90	24
Screw, M4X8 (4)	XA9-0497-000CN	88	502
Screw, RS, M3X10	XA9-0824-000CN	94	20
Screw, RS, with washer, M3X8	XA9-0855-000CN	92	10
Screw, tapping, pan head, M4X10 (2)	XB4-7401-000CN	96	501
Screw, tapping, truss head, M3X8	XB4-7300-809CN	93	502

Table 38. Alphabetical parts list

Part name	Part number	Figure #	Reference
Screw, tapping, truss head, M3X8 (7)	XB4-7300-807CN	89	501
Screw, tapping, truss head, M4X8 (3)	XB4-7400-807CN	92	501
Screw, TP, M3X12	XA9-0382-000CN	93	22
Screw, TP, M3X4 (4)	XA9-0434-000CN	92	19
Screw, TP, M3X6 (2)	XA9-0267-000CN	93	21
Screw, TP, M3X8	XA9-0476-000CN	88	14
Screw, TP, M3X8 (5)	XB6-7300-807CN	93	501
Screw, with star washer, M3X4	XA9-0828-000CN	95	16
Screw, with washer, M3X6 (4)	XA9-0890-000CN	95	17
Separation guide assembly	RG5-3475-040CN	94, 98	
Separation pad kit	RY7-5008-000CN	96	2
Separation pad kit for document scanner path	RY7-5055-000CN	89	10
Sheet, arching (2)	RB2-3365-000CN	90	1
Single-sheet input slot assembly	RG5-4763-000CN	88	10
Solenoid	RH7-5139-000CN	96	13
Spacer	RB2-3454-000CN	89	15
Spacer	RB9-0227-000CN	93	24
Spacer, PCB (7)	RB2-3347-000CN	95	3
Speaker	RH6-3845-000CN	95	7
Speaker mount	RB2-3346-000CN	95	1
Spring, compression	RS5-2501-000CN	96	14
Spring, compression	RS5-2508-000CN	94	19
Spring, grounding	RB1-7172-000CN	96	1
Spring, grounding	RB1-7199-000CN	96	7
Spring, tension	RB1-7294-000CN	98	6
Spur assembly inside (2)	RG5-3478-000CN	99	7
Spur assembly outside (2)	RG5-3479-000CN	99	6
Strap	RB2-3354-000CN	89	1
Switch lever assembly	RG5-3453-000CN	93	16
Top cover	RB2-3450-000CN	88	7

Table 38. Alphabetical parts list

Part name	Part number	Figure #	Reference
Transfer guide	RF5-2358-000CN	94	6
Transfer guide assembly	RG5-3452-000CN	94	21
Transfer roller	RF5-1534-000CN	94	7
Upper guide assembly—LJ 3100	RG5-4221-000CN	89	
Upper guide assembly—LJ 3150	RG5-4768-000CN	89	

Numerical parts list

Table 39. Numerical parts list

Part number	Part name	Figure #	Reference
0515-2672	Screw, M3X6 (9)	92	25
C3948-00002	RFI shield	92	23
C3948-00010	Control panel overlay—German	87	7
C3948-00019	Control panel overlay—Danish	87	7
C3948-00021	Control panel overlay—Norwegian	87	7
C3948-00022	Control panel overlay—Swedish	87	7
C3948-00037	Control panel overlay—Traditional Chinese	87	7
C3948-00038	Control panel overlay—Israel/Hebrew	87	7
C3948-40010	I/O bezel	88	1
C3948-60001	LIU board (U.S.)	92	24
C3948-60002	LIU board (worldwide)	92	24
C3948-60102	Cable, LIU	95	
C3949-60001	Formatter—LJ 3100	92	22
C3949-60002	Formatter—LJ 3150	92	22
C3949-69001	Formatter—LJ 3100 (exchange)	92	22
C3949-69002	Formatter—LJ 3150 (exchange)	92	22
C4256-00006	Control panel overlay—Polish	87	7
C4256-00007	Control panel overlay—Simplified Chinese	87	7
C4256-00020	Control panel overlay—Finnish	87	7
C4256-00033	Control panel overlay—Spanish	87	7
C4256-00034	Control panel overlay—Italian	87	7
C4256-00035	Control panel overlay—Russian	87	7
C4256-00036	Control panel overlay—Dutch	87	7
C4256-00037	Control panel overlay—French	87	7
C4256-00038	Control panel overlay—Hungarian	87	7
C4256-40001	Nameplate—LJ 3150	87	5
CK-8006-000CN	Pressure roller grease	94	
FA9-1449-000CN	Screw—LJ 3100	89	20
RB1-7105-000CN	Pressure release lever	93	3
RB1-7107-000CN	Gear holder	93	5

Table 39. Numerical parts list

Part number	Part name	Figure #	Reference
RB1-7129-000CN	Grounding metal	94	8
RB1-7130-020CN	Cable guide	92	6
RB1-7172-000CN	Spring, grounding	96	1
RB1-7176-000CN	Guide sheet	92	11
RB1-7177-000CN	Frame, paper feed	96	20
RB1-7184-000CN	Bushing	96	5
RB1-7185-000CN	Arm, plate, left	96	16
RB1-7186-000CN	Arm, plate, right	96	17
RB1-7197-020CN	Clutch	96	6
RB1-7199-000CN	Spring, grounding	96	7
RB1-7223-000CN	Grounding clip	94	1
RB1-7234-000CN	Cap	92	7
RB1-7246-000CN	Bushing (2)	94	2
RB1-7247-000CN	Paper guide	92	2
RB1-7255-000CN	Left side plate	94	13
RB1-7256-000CN	Right side plate	94	12
RB1-7284-020CN	Delivery roller #1 (4)	99	1
RB1-7286-000CN	Delivery spring #1 (4)	99	3
RB1-7287-000CN	Delivery spring #2 (2)	99	4
RB1-7288-020CN	Bushing (2)	93	2
RB1-7293-000CN	Lever, sensor	98	5
RB1-7294-000CN	Spring, torsion	98	6
RB1-7334-000CN	Jammed paper protector	99	8
RB1-7341-030CN	Right cartridge guide #1	94	3
RB1-7385-020CN	Grounding spring	93	20
RB2-1632-000CN	Gear support plate	93	4
RB2-1685-000CN	Delivery roller #2 (2)	99	2
RB2-1690-000CN	Fuser roller bushing	98	4
RB2-1699-000CN	Feed roller	97	1
RB2-3341-000CN	Right cover	88	2
RB2-3342-000CN	Bottom plate	95	2
RB2-3345-000CN	Cap	92	1

Table 39. Numerical parts list

Part number	Part name	Figure #	Reference
RB2-3346-000CN	Speaker mount	95	1
RB2-3347-000CN	Spacer, PCB (7)	95	3
RB2-3350-000CN	Cable guide, formatter	92	3
RB2-3351-000CN	Cable tube	89	13
RB2-3354-000CN	Strap	89	1
RB2-3360-000CN	Left cover	88	3
RB2-3361-000CN	Rear cover	88	4
RB2-3362-000CN	Paper input support	87	1
RB2-3364-000CN	Metal plate	92	5
RB2-3365-000CN	Sheet, arching (2)	90	1
RB2-3366-000CN	Cable guide holder, formatter	92	8
RB2-3393-000CN	One-touch pad overlay sheet	87	6
RB2-3401-000CN	Duct, 1	90	4
RB2-3402-000CN	Duct, 2	90	5
RB2-3409-000CN	Cable guide	89	19
RB2-3410-000CN	Paper output support	87	2
RB2-3436-000CN	Document scanner guide	89	5
RB2-3448-000CN	Paper path lever—LJ 3150 (darker in color)	88	12
RB2-3449-000CN	Front casing	88	6
RB2-3450-000CN	Top cover	88	7
RB2-3451-000CN	Left front cover	88	8
RB2-3452-000CN	Pressure release lever cover	88	11
RB2-3453-000CN	Paper path lever—LJ 3100 (lighter in color)	88	12
RB2-3454-000CN	Spacer	89	15
RB2-3455-000CN	Document feeder support	87	3
RB2-3465-000CN	Left hinge holder	92	17
RB2-3466-000CN	Right hinge holder	92	18
RB2-3467-000CN	Grounding plate (2)	92	13
RB2-3468-000CN	Left hinge cover	89	17
RB2-3469-000CN	Right hinge cover	89	18
RB2-3470-000CN	Document output support	87	4
RB2-4118-000CN	Grounding plate	92	12

Table 39. Numerical parts list

Part number	Part name	Figure #	Reference
RB9-0227-000CN	Spacer	93	24
RF5-1514-020CN	Left cartridge guide	94	10
RF5-1515-020CN	Right cartridge guide #2	94	9
RF5-1517-020CN	Pressure plate	94	5
RF5-1533-000CN	Pressure roller ground guide	94	14
RF5-1534-000CN	Transfer roller	94	7
RF5-2358-000CN	Transfer guide	94	6
RF5-2364-000CN	Pressure roller	94	4
RF5-2367-000CN	Exit roller	93	17
RF5-2368-000CN	Fuser exit roller assembly	98	7
RF5-2372-000CN	Plate, middle	96	18
RF5-2663-000CN	Foot (4)	95	4
RF5-2664-000CN	Reinforcement plate	92	4
RG5-1947-000CN	Paper feed drive assembly	96	9
RG5-2029-000CN	Cable, paper pickup	95	8
RG5-2032-000CN	Cable, thermistor	95	10
RG5-2033-000CN	Cable, motor	95	11
RG5-2035-000CN	Cable, laser	95	5
RG5-3452-000CN	Transfer guide assembly	94	21
RG5-3453-000CN	Switch lever assembly	93	16
RG5-3474-020CN	Delivery assembly	92, 99	
RG5-3475-040CN	Separation guide assembly	94, 98	
RG5-3476-000CN	Face-up/face-down lever	98	2
RG5-3478-000CN	Spur assembly inside (2)	99	7
RG5-3479-000CN	Spur assembly outside (2)	99	6
RG5-3484-070CN	Paper pickup assembly	92, 96	
RG5-3485-030CN	Feed assembly	96, 97	
RG5-3486-040CN	Pickup roller assembly	92, 96	
RG5-3488-000CN	Input bin assembly	88	9
RG5-3497-050CN	Laser/scanner assembly	93	19
RG5-3661-000CN	Cable, scanner	95	12
RG5-3662-000CN	Cable, door switch	95	9

Table 39. Numerical parts list

Part number	Part name	Figure #	Reference
RG5-4220-000CN	Printer door assembly—LJ 3100	89, 90	
RG5-4221-000CN	Upper guide assembly—LJ 3100	89	
RG5-4233-000CN	Cable, contact image sensor (J1004 to J903)	89	21
RG5-4237-000CN	Cable, grounding, document scanner motor	92	20
RG5-4238-000CN	Cable, CIS grounding	89	22
RG5-4239-000CN	Contact image sensor assembly	89	11
RG5-4241-000CN	Control panel assembly—LJ 3100	89	
RG5-4678-000CN	Fixing assembly, 110 V	94	16
RG5-4681-000CN	Fixing assembly, 220 V	94	16
RG5-4690-000CN	ECU, 110 V	95	18
RG5-4691-070CN	ECU, 220 V	95	18
RG5-4763-000CN	Single-sheet input slot assembly	88	10
RG5-4768-000CN	Upper guide assembly	89	
RG5-4769-000CN	Control panel assembly—LJ 3150	89	
RG5-4770-000CN	Printer door assembly—LJ 3150	89, 90	
RG5-4771-000CN	Document scanner assembly	89, 91	
RG5-4772-000CN	Pickup roller assembly, document scanner	91	1
RH2-5346-000CN	Cable, formatter	95	6
RH6-3845-000CN	Speaker	95	7
RH7-1320-000CN	Motor, DC 12V	93	7
RH7-1376-000CN	Motor, AC 1.08W	91	19
RH7-5139-000CN	Solenoid	96	13
RS5-0796-000CN	Pressure roller gear (27T)	94	11
RS5-2501-000CN	Spring, compression	96	14
RS5-2508-000CN	Spring, compression	94	19
RY7-5005-000CN	Gear kit #1	93	1
RY7-5007-000CN	Fuser release kit	93	6
RY7-5008-000CN	Separation pad kit	96	2
RY7-5009-000CN	Input sensor assembly	96	3
RY7-5036-000CN	Gear kit #2	93	8
RY7-5055-000CN	Separation pad kit for document scanner path	89	10

Table 39. Numerical parts list

Part number	Part name	Figure #	Reference
VS1-5057-002CN	Fuser connector (2P)	94	15
WE8-5192-000CN	Ferrite ring core	93	23
WT2-0276-000CN	Clamp, wire	95	13
WT2-0367-000CN	Clamp, cable	95	14
WT2-5178-000CN	Cable guide, control panel	92	14
WT2-5178-000CN	Clamp, cable	95	15
WT2-5300-000CN	Cable guide, frame	92	15
XA9-0267-000CN	Screw	92	21
XA9-0267-000CN	Screw, TP, M3X6 (2)	93	21
XA9-0382-000CN	Screw, TP, M3X12	93	22
XA9-0434-000CN	Screw, TP, M3X4 (4)	92	19
XA9-0476-000CN	Screw, TP, M3X8	88	14
XA9-0497-000CN	Screw, M4X8 (4)	88	502
XA9-0614-000CN	Screw, M3X8 (4)	90	24
XA9-0686-000CN	Screw, M3X6	94	18
XA9-0724-000CN	Screw, M3X8 (11)	92	9
XA9-0724-000CN	Screw, M3X8	94	17
XA9-0724-000CN	Screw, M3X8 (2)	88	16
XA9-0779-000CN	Screw	92	16
XA9-0779-000CN	Screw—LJ 3150	89	20
XA9-0824-000CN	Screw, RS, M3X10	94	20
XA9-0828-000CN	Screw, with star washer, M3X4	95	16
XA9-0855-000CN	Screw, RS, with washer, M3X8	92	10
XA9-0890-000CN	Screw, with washer, M3X6 (4)	95	17
XB4-7300-807CN	Screw, M3X8	91	503
XB4-7300-807CN	Screw, tapping, truss head, M3X8 (7)	89	501
XB4-7300-809CN	Screw, tapping, truss head, M3X8	93	502
XB4-7400-807CN	Screw, tapping, truss head, M4X8 (3)	92	501
XB4-7401-000CN	Screw, tapping, pan head, M4X10 (2)	96	501
XB6-7300-807CN	Screw, TP, M3X8 (5)	93	501

A

Additional user notes

Document scanner separation pad replacement

The document scanner separation pad is a user-replacable part that is ordered as part of a kit for either the HP LaserJet 3100 product and HP LaserJet 3150 product.

The “separation pad kit for document scanner path”—part number RY7-5055-000CN—contains three pieces:

- Document scanner separation pad
- Separation mylar
- Pad holder

When the HP LaserJet 3100 product was introduced, the three pieces were ordered separately, with separate part numbers.

When to replace the document scanner separation pad

Replace the document scanner separation pad when the document scanner feeds multiple sheets at once through the scanner path (double-feeds or multi-feeds). Recurring multi-feed problems indicate that the document scanner separation pad is worn.

How to replace the document scanner separation pad

- 1 Lift open the document release door.
- 2 Rotate the strap on the left side of the printer door to unhook the strap.
- 3 Grasp the separation pad and mylar sheet together (callout 1, below) and lift them straight away from the document release door. This action should also release the pad holder (callout 2).

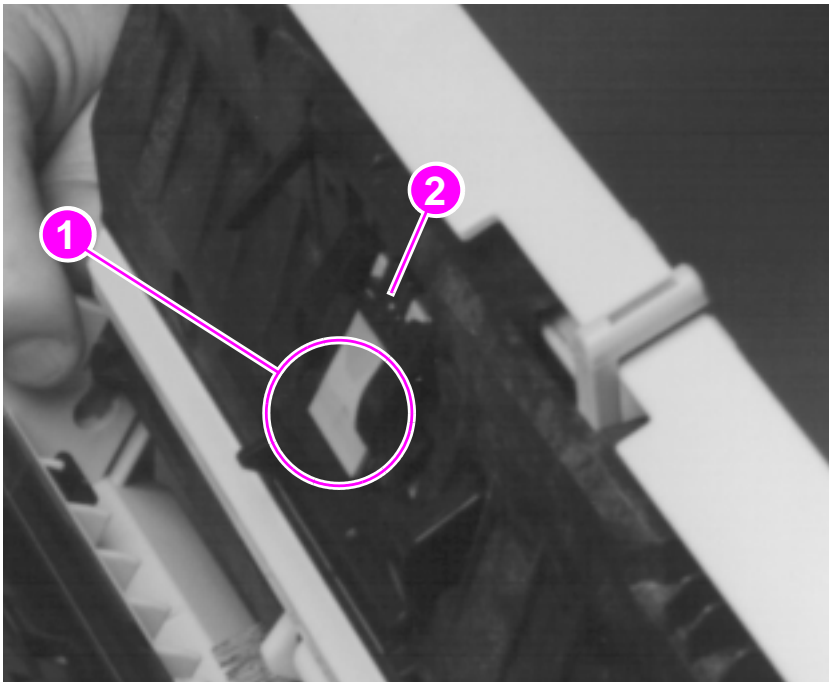


Figure 100. Document scanner separation pad replacement

- 4 Press the new pad holder, with pad and mylar attached, into position. It should snap into place.
- 5 Rehook the strap and close the document release door.

Index

A

- abbreviations, fax 204
- AC power distribution 70
- accessories and consumables
 - availability 33
 - life expectancies 56
 - list 211
 - ordering 213
 - part numbers 56
 - replacement schedule 56
- acoustical emissions 17
- adjusting registration 174
- amperage 17
- appropriate responses, fax 203
- assemblies
 - cable guide 140
 - contact image sensor 102
 - delivery 112, 240
 - document release door 98
 - document scanner 104
 - document scanner motor 104
 - document scanner pickup roller 106
 - document scanner, illustration 225
 - electrical 233
 - exit roller 111
 - face-up/face-down lever 120
 - feed 137
 - feed, illustration 237
 - feed, part numbers and descriptions 237
 - feet 146
 - front casing 116
 - fuser exit roller 121
 - fuser pressure plate 114
 - fusing 77
 - heating element 117
 - high-voltage connector 181
 - kick plate 133
 - laser/scanner 123
 - LIU (line interface unit) board 107
 - major locations 215
 - metal side plate 110
 - motor 141
 - paper exit sensor flag 122
 - paper feed frame 129
 - paper pickup 235
 - pickup roller 126
 - pressure roller 119
 - printer door 95

- RFI shield 94
- separation guide 238
- separation pad 135
- solenoid 124
- speaker 144
- transfer roller guide and transfer roller 132
- upper guide 100
- assemblies, document scanner
 - part numbers and descriptions 225
- assembly diagrams 210
- authorized dealers 211
- available disk space, not enough 169

B

- battery failure 46
- bidirectional
 - ECP interface 73
 - parallel cable, ordering 211
- bidirectional communication
 - not established 170, 171, 172
- bins
 - input 21, 82
 - input capacity 37
 - media requirements 37
 - media weight requirements 37
 - output 21
 - output capacity 37
 - paper input 78
- bits per second (bps) modem speed 15
- black
 - dots on pages 159
 - dots on scanned images 164
 - pages 162
 - streaks on page 160
- blacklist 40
- blank
 - areas on page 161
 - bottom of page or graphic 162
 - pages 163
- board assembly, line interface unit (LIU) 107
- boot ROM (read-only memory) 72
- bottom of page or graphic cut off 162
- bps (bits per second) modem speed 15
- busy
 - fax number 40
 - line 48

C

- cable guide assembly 140
- cables
 - parallel 22, 211
 - phone 22
 - power 22
- Canadian requirements 28, 30
- capacity
 - circuit 17
 - document feeder tray 37
 - media input bin 37
 - output 37
 - paper output bin 37
- cartridge sensor (SW101) 80
- cartridges, toner. *See* toner cartridges
- CD-ROM
 - damaged 170
 - unable to read 170
- central processing unit (CPU) 72
- characters partially printed 162
- charging the drum 75
- checking registration 174
- checks
 - drum rotation 178
 - half-self test 177
 - high-voltage power supply 180
- circuit
 - capacity 17
 - diagram 188
 - driver 81
- circuitry
 - high-voltage 71
 - power 70
- cleaning
 - equipment 57
 - glass surface 57
 - image sensor 57
 - page 63
 - photosensitive drum process 76
 - print path 60
 - rollers 58, 61, 62
 - toner cartridge connection points 180
 - toner from clothing 61
 - transfer charging roller 83
- code
 - country 197
- COM ports not available 170
- communication error 42, 48
- communication not established 170, 171, 172
- compatibility, fax 15
- components
 - document path 184
 - paper path 183
 - warranty 32
- components, electrical
 - illustration 233
 - part numbers and descriptions 233
- components, internal
 - illustrations 226, 228, 230
 - part numbers and descriptions 227, 229, 231
- configuration
 - error 43
 - reports 175
 - settings 52
- configuration test 193
- conformity, declaration of 29
- connection points for toner cartridge 180
- connectors
 - ECU-to-formatter 83
 - parallel cable 22
 - phone line 22
 - power cable 22
- conserving toner 73
- consumables and accessories
 - availability 33
 - life expectancies 56
 - list 211
 - ordering 213
 - part numbers 56
 - replacement schedule 56
- consumer protection act, telephone 27
- consumption
 - energy 30
 - paper 31
 - toner 31
- contact image sensor 81, 82
- contact image sensor assembly 102
- contrast
 - default 53, 54
 - key on control panel 39
- control panel
 - description 73
 - illustration 19, 20
 - messages 40
- control panel service menu 190
- control panel test 194
- control, paper motion 69
- copy
 - key on control panel 39
 - reduction and enlargement 15
 - settings 53, 54
 - size default 53, 54
 - speed 15, 16
- cords
 - parallel 22
 - phone 22
 - power 22
- country code 197

- covers
 - back 88
 - illustrations 218, 220
 - left front 92
 - left side 91
 - part numbers and descriptions 219
 - RFI shield 94
 - right side 90
 - top 93
- CPU (central processing unit) 72
- crooked pages 166
- curled
 - pages 165
 - paper 181
- Customer Information Center 211
- customer support
 - ordering parts 210
 - Support Materials Europe (SME) 210
 - Support Materials Organization (SMO) 210
- cycle, duty
 - printer 15
 - scanner 15
- D**
- damaged CD-ROM or floppy disks 170
- dark
 - faxes 158, 160
 - scanned images 158
- date/time
 - incorrect 46
 - invalid 44
 - setting 53, 54
 - toner cartridge expiration 157
- DC power distribution 70
- dealers 211
- declaration of conformity 29
- decoding error 43
- defaults
 - restoring 53, 54
 - settings 52
- defect ruler for images 185
- defects on page 161
- delivery assembly 112, 240
- delivery roller
 - illustration 78
 - motion 182
- density default, print 53, 54
- depth of unit 16
- detect, distinctive ring 15
- developing process 75
- diagrams
 - assembly 210
 - timing 84
- dial key on control panel 39
- dialing
 - manual 39
 - speed 15, 39
- disk space
 - not enough 169
- disks, floppy
 - cannot read 170
 - damaged 170
- distinctive ring detect 15
- distribution of power 70
- document
 - control panel 19
 - delivery roller 82
 - feed roller 82
 - feeder support 19
 - feeder tray capacity 37
 - feeder tray input requirements 37
 - input bin 82
 - jammed 41
 - output slot 19
 - output support 19, 78, 82
 - output tray capacity 37
 - pickup roller 82
 - release door 19
 - release door assembly 98
 - too long 44
- document feeder tray
 - illustration 19
 - input media requirements 37
 - media input requirements 37
- document path
 - components 184
- document scanner
 - assembly/motor 104
 - pickup roller assembly 106
- document scanner assembly
 - illustration 225
 - part numbers and descriptions 225
- document scanner feed test 194
- document scanner motor test 194
- document sensor (PS801) 80
- documents
 - fall out of feeder tray 168
 - lost 43
- door open sensor (SW101) 80
- door release latches, printer 20
- doors
 - document release 98
 - printer 20, 95
- dots
 - on pages 159
 - on scanned images 164
- dots per inch (dpi) resolution. *See* dpi (dots per inch) resolution
- download, firmware 199
- dpi (dots per inch) resolution 16

- draft mode 73
- DRAM (dynamic random-access memory) 73
- driver
 - circuits 81
 - roller motion 182
- dropouts in characters 162
- drum rotation functional check 178
- drum, photosensitive
 - charging 75
 - cleaning process 76
 - troubleshooting 157
- duty cycle
 - printer 15
 - scanner 15
- dynamic random-access memory (DRAM) 73

E

- ECP interface 73
- ECU (engine controller unit)
 - description 68
 - loads 68
- edge of document sensor (PS802) 80
- edge of paper, not printing to 158
- electrical components
 - illustration 233
 - part numbers and descriptions 233
- electrophotographic process 177
- electrostatic discharge (ESD). *See* ESD (electrostatic discharge)
- element, heating
 - estimated life 56
 - when cleaning 57
- emissions, acoustical 17
- encoding error 43
- energy consumption 30
- ENERGY STAR program 30
- engine control function 67
- engine controller unit (ECU). *See* ECU (engine controller unit)
- engine test 174
- engine test switch (SW201) 69, 80
- enlargement, copy 15
- envelopes, input capacity 37
- environmental
 - product stewardship program 30
 - requirements 36
- EPP ports 170
- equipment, cleaning 57
- errors
 - communication 42, 48
 - configuration 43
 - decoding 43
 - encoding 43
 - fax memory 44

- light on control panel 39
- memory full 45
- messages on control panel 40
- modem 45
- polling 48
- printer fixing 48
- scanner 50
- system 51
- ESD (electrostatic discharge)
 - caution 86
 - mat 87
- estimated life of consumables 56
- exit roller assembly 111
- exit rollers 77
- expiration date of toner cartridges 157
- extended service menu tree 192
- extended service mode reports 195
- extended service mode self-test 193
- extended service mode tests 194
- extended warranty 32

F

- face-down output path 78
- face-up output path 78
- face-up/face-down lever 78
- face-up/face-down lever assembly 120
- faded print 159
- failure, battery 46
- faint printing 56
- fasteners, common 214
- fax
 - abbreviations 204
 - appropriate responses 203
 - coding schemes 15
 - compatibility 15
 - memory error 44
 - phase sequence 202
 - redial failure 50
 - resolution 16
 - settings 53, 54
 - transmission lost 44
 - transmission speed 15
- fax log
 - on menu tree 53, 54
 - unable to print 46
- fax memory test 193
- fax trace report
 - using 201
- faxes
 - light or dark 158, 160
 - lost 43
- FCC regulations 25
- features, product 15
- feed assembly 137
 - illustration 237
 - part numbers and descriptions 237

- feed assembly drive rollers 77
- feed functions 67
- feeder support, document 19
- feeder tray, document 19
 - capacity 37
 - input media requirements 37
 - media input requirements 37
- feeding problems 167, 168
- feet assembly 146
- fine resolution 16
- Finland laser statement 24
- firmware download 199
- firmware version 195
- fixing
 - printer error 48
 - process 76
 - unit 78
- flag, paper exit sensor 122
- flash ROM (read-only memory) 72
- floppy disks
 - cannot read 170
 - damaged 170
- formatter 72
- front casing assembly 116
- front paper output slot capacity 37
- functional checks
 - drum rotation 178
- fuser
 - exit roller assembly 121
 - gear motion 182
 - pressure plate assembly 114
 - roller motion 182
- fuses 70
- fusing
 - assembly 77
 - element 76

G

- glass, cleaning 57
- graphic, bottom cut off 162
- guide assembly
 - cable 140
 - separation 238
- guides, document feeder tray 19
- guides, paper 21

H

- half-self test 177
- halftone resolution 16
- hardware
 - common 214
 - maintenance 32
- heating element
 - assembly 117
 - estimated life 56
 - when cleaning 57

- height of unit 16
- high-voltage
 - connector assembly 181
 - power distribution 71
 - power supply check 180
- HP authorized dealers 211
- HP Customer Information Center 211
- HP FIRST fax service 32
- HP Planet Partners LaserJet Toner
 - Cartridge and Consumables Recycling Program 31
- HP SupportPack 32
- humidity requirements 36

I

- IC (Industry Canada) CS-03 requirements 28
- identification numbers 18, 22
- image defect ruler 185
- image fixing process 76
- image formation
 - function 67
 - system 74
 - troubleshooting 157
- image sensor, cleaning 57, 58
- images
 - lines on page 160
 - print at reduced size 164
 - too light or dark 158
- individual diagnostics 194
- Industry Canada (IC) CS-03 requirements 28
- initial rotation period 83
- input
 - bins 21
 - fax number limit 44
 - media requirements 37
 - media weight requirements 37
 - single-sheet slot 21
 - support 20
- input bins 37
- installation requirements 36
- installing self-tapping screws 86
- interruptions in power 43
- ISO 9296 specifications 17

J

- jammed document 41
- JBIG fax coding scheme 15
- job status 53, 54

K

- keypad test 44, 194

- kick plate
 - assembly 133
 - motion 77, 182
 - spring 133
- L**
 - label, product 18, 22
 - language setting 53, 54
 - laser safety statement 23, 24
 - laser/scanner assembly for printer 123
 - last rotation period 83
 - latches, printer door release 20
 - LCD characters test 194
 - LCD test 194
 - LED (light-emitting diode) array 81
 - levers
 - face-up/face-down 78, 120
 - paper path 20
 - special media 19
 - life expectancies of consumables 56
 - light
 - faxes 158, 160
 - printing 159
 - scanned images 158
 - light-emitting diode (LED) array 81
 - line interface unit (LIU). *See* LIU (line interface unit)
 - lines
 - on scanned images 160
 - phone 22
 - LIU (line interface unit)
 - board assembly 107
 - log debug report 195
 - log, fax
 - on menu tree, fax 53, 54
 - unable to print 46
 - lost
 - documents 43
 - fax transmission 44
- M**
 - magnetic field emissions 23
 - main motor assembly 141
 - manual dial key on control panel 39
 - margins
 - for printed pages 15
 - for scanned items 15
 - masked ROM (read-only memory) 72
 - material safety data sheet (MSDS) 34
 - maximum media size 37
 - measurements of unit 16
 - media
 - requirements 37
 - special lever 19
 - megahertz rating 72

- memory
 - boot ROM (read-only memory) 72
 - DRAM (dynamic random-access memory) 73
 - fax error 44
 - flash ROM (read-only memory) 72
 - full 45, 47
 - masked ROM (read-only memory) 72
 - not enough 46
 - RAM (random-access memory) 73
 - ROM (read-only memory) 72
 - specifications 15
- menu tree
 - control panel service 190
 - extended service 192
 - HP LaserJet 3100 product 53
 - HP LaserJet 3150 product 54
 - printing 52
- messages, control panel 40
- metal side plate assembly 110
- MH fax coding scheme 15
- MHz rating 72
- minimum media size 37
- misaligned print 163
- missing bottom of page or graphic 162
- MMR fax coding scheme 15
- mode, draft 73
- model number 18, 22
- modem
 - error 45
 - speed 15
- modem dial tone test 193
- modem modulation test 194
- modem test 193
- modem tone test 194
- monitoring paper motion 69
- motion control 69
- motor
 - description 69
 - document scanner 104
 - rotation 182
- motor, main 141
- MR fax coding scheme 15
- MSDS (material safety data sheet) 34
- multiple pages feeding 167, 168
- N**
 - no answer 40, 45, 48
 - no dial tone 45
 - not enough disk space 169
 - numbers
 - model and serial 18, 22
 - part 56
 - product 211
 - Ringer Equivalence Number (REN) 28

O

- OCR (optical character recognition)
 - troubleshooting 169
- operating environment 36
- optical system 81
- ordering
 - accessories and consumables 213
 - parts 210
- output
 - bin 21
 - bin capacity 37
 - document support 78
 - front paper 20
 - slot, document 19
 - support 19, 20
 - tray capacity 37
- overcurrent 70
- overview of processes 66
- overvoltage 70
- ozone production 30

P

- pads
 - separation 56, 77, 135
 - sub 56, 77, 136
- page
 - cleaning 63
 - engine test 174
- pages
 - blank print 163
 - bottom cut off 162
 - completely black 162
 - crooked 166
 - curled or wrinkled 165
 - long stop feeding 165
 - multiple feeding 167, 168
 - per minute 15, 16
 - skewed 163, 166
- panel, control 19, 20
- paper
 - consumption 31
 - curl 181
 - feed problems 165
 - guides 21
 - jammed 41
 - motion 77
 - not being picked up 182
 - not moving through path 182
 - not printing to edge 158
 - output bin capacity 37
 - recycling 32
 - size default 53, 54
- paper exit sensor (PS201) 77, 79, 80
- paper exit sensor flag assembly 122
- paper feed frame assembly 129

- paper input bin 78
 - media requirements 37
 - media weight requirements 37
- paper jams 167, 168
- paper motion control 69
- paper out sensor (PS202) 77, 79, 80
- paper path
 - check 182
 - components 183
 - lever 20
- paper pickup assembly 235
- paper registration sensor (PS203) 77, 79, 80
- parallel cable
 - connector 22
 - ordering 211
- part numbers 56
- partially printed characters 162
- parts
 - lists 210
 - numbers 210
 - ordering 210
 - recycling 31
 - spare 33
- path
 - face-down output 78
 - face-up output 78
 - printer 20, 21, 78
 - scanner 19, 37, 82
 - scanner, cleaning 58
- path, document
 - components 184
- path, paper
 - check 182
 - cleaning 60
 - components 183
- pause key on control panel 39
- paused printing 47
- performance
 - specifications 16
 - toner cartridge 38
- phase sequence, fax 202
- phone line connector 22
- phone. *See* telephone
- phonebook report 53, 54
- photo resolution 16
- photosensitive drum
 - charging 75
 - cleaning process 76
 - troubleshooting 157
- photosensors. *See* sensors
- phototransistor array 81
- pickup roller assembly 126
 - estimated life 56
 - motion 182

- pickup rollers
 - document scanner 106
 - estimated life 56
 - illustration 78
 - pickup/feed functions 67
 - plates
 - fuser pressure 114
 - kick 77, 133, 182
 - metal side assembly 110
 - pliers required for servicing 87
 - polling error 48
 - ports
 - EPP 170
 - not available 170
 - unidirectional 170
 - power
 - AC distribution 70
 - cable connector 22
 - consumption 17
 - DC distribution 70
 - high-voltage distribution 71
 - interruptions 43
 - rating and regulatory information 18
 - requirements 17
 - shutoff switch 69
 - supply check 180
 - system description 68, 70
 - uninterruptible supply 36
 - pressure roller
 - estimated life 56
 - illustration 78
 - pressure roller assembly 119
 - primary charging 75
 - print
 - density default 53, 54
 - misaligned 166
 - path 60
 - resolution 16
 - skew specification 17
 - skewed 166
 - speed 15, 16
 - print engine control system 69
 - printer
 - door 20
 - door assembly 95
 - door release latches 20
 - duty cycle 15
 - feed system 77
 - functions 67
 - isolating problems 174
 - laser/scanner assembly 123
 - laser/scanner functions 67
 - path 20, 21, 78
 - pickup roller assembly 56
 - separation pad 56
 - sequence of operation 83
 - printer door
 - illustrations 220, 222
 - part numbers and descriptions 221, 223
 - printer fonts report 195
 - printing
 - configuration report 52
 - engine test page 174
 - faded 159
 - faint 56
 - menu tree 52
 - misaligned 163
 - paused 47
 - timeout 47
 - to edge of paper 158
 - won't print 158
 - problems. *See* errors; troubleshooting
 - product
 - block diagram 67
 - description 14
 - dimensions 16
 - environmental stewardship program 30
 - features 15
 - illustrations 19, 20, 21, 22
 - label 18, 22
 - model and serial numbers 18, 22
 - numbers 211
 - overview of processes 66
 - specifications 23
 - weight 16
 - program test 193
 - protection, overcurrent 70
- R**
- RAM (random-access memory) 73
 - random-access memory (RAM) 73
 - read-only memory (ROM) 72
 - recycling 31
 - toner cartridges 31
 - redial
 - failure 50
 - key on control panel 39
 - reduced scanned images 164
 - reduction
 - copy 15
 - registration checking and adjusting 174
 - regulations
 - Canadian 28, 30
 - FCC 25
 - laser safety 23, 24
 - transportation 23
 - release door 19
 - REN (Ringer Equivalence Number) 28

- repetitive
 - image defect ruler 185
 - marks on page 161
 - reports
 - configuration 52, 175
 - extended service mode 195
 - fax log 53, 54
 - fax trace 201
 - internal 175
 - log debug 195
 - menu settings 52
 - phonebook 53, 54
 - printer fonts 195
 - self-test 53, 54
 - SRAM dump 195
 - T.30 protocol trace 195, 201
 - task stacks 195
 - translations 195
 - transmission 53, 54
 - requirements
 - Canadian 28, 30
 - environmental 36
 - media 37
 - operating 36
 - storage 36
 - toner cartridge storage 38
 - reset
 - country code 197
 - resolution
 - default 53, 54
 - fax 16
 - fine 16
 - halftone 16
 - key on control panel 39
 - photo 16
 - print 16
 - scan 16
 - standard 16
 - superfine 16
 - RFI shield assembly 94
 - ring detect
 - distinctive 15
 - Ringer Equivalence Number (REN) 28
 - rod lens array 81
 - rollers
 - cleaning 58, 61, 62
 - delivery 78
 - document delivery 82
 - document feed 82
 - document pickup 82
 - document scanner pickup 106
 - exit 77, 111
 - feed assembly drive 77
 - fuser exit 121
 - motion 182
 - pickup 78, 126
 - pressure 56, 78, 119
 - printer pickup, estimated life 56
 - scanner pickup 56
 - transfer 56, 78, 132
 - transfer guide 132
 - ROM (read-only memory) 72
 - rotation period
 - initial 83
 - last 83
 - rotation, drum 178
 - ruler, repetitive image defect 185
- S**
- safety statement, laser 23, 24
 - scan
 - process 75, 177
 - resolution 16
 - skew 17
 - scanned images
 - lines on page 160
 - print at reduced size 164
 - too light or dark 158
 - scanned text unclear 164
 - scanner
 - duty cycle 15
 - error 50
 - media requirements for input path 37
 - path 19, 58, 82
 - pickup roller 56
 - separation pad 56
 - system 81
 - scanner LED test 194
 - scanner plots test 194
 - scanner test 193
 - scanning
 - troubleshooting 169
 - scattered toner on page 161
 - schedule for replacing consumables 56
 - schemes, fax coding 15
 - screwdrivers required for servicing 87
 - screws
 - common 214
 - installing 86
 - self-tapping 86
 - seconds per page 15
 - self-tapping screws, installing 86
 - self-test
 - procedure 175
 - report 53, 54, 175
 - sensor states test 194
 - sensors
 - contact image 81, 102
 - document 80
 - document leading edge 81
 - document presence 81
 - door open 80

- edge of document 80
- image 57
- location and function 80
- paper exit 80
- paper exit (PS201) 77, 79
- paper out (PS202) 77, 79, 80
- paper registration (PS203) 77, 79, 80
- toner cartridge 80
- separating process 76
- separation guide assembly 238
- separation pad assembly 135
- separation pads
 - description 77
 - estimated life 56
 - scanner 56
- serial number 18, 22
- service and support
 - HP Customer Information Center 211
 - ordering parts 210
 - Support Materials Europe (SME) 210
 - Support Materials Organization (SMO) 210
- settings
 - lost due to battery failure 46
 - menu 52
- shadows on characters on page 161
- shield, RFI 94
- shutoff switch 69
- single-sheet input slot 21, 78
 - media weight requirements 37
- size
 - copy default 53, 54
 - media 37
 - paper default 53, 54
 - scanned images print at reduced 164
- skew
 - specifications 17
- skewed
 - pages 166
 - print 163
- slots
 - document output 19
 - media requirements 37
 - output capacity 37
 - single-sheet input 21, 78
- SME (Support Materials Europe) 210
- smears on page 160
- SMO (Support Materials Organization) 210
- smudges on page 159
- softswitches 197
- solenoid 80
- solenoid assembly 124, 182
- sound
 - control panel volume key 39
 - emissions 17
 - power level 17
 - pressure level 17
 - volume setting 53, 54
- spare parts 33
- speaker 144
- special media lever 19
- specifications, product 23
- specks from toner on paper 64
- speed
 - copy 15, 16
 - dial key on control panel 39
 - dialing 15
 - fax transmission 15
 - modem 15
 - print 15, 16
- speed-dial
 - key on control panel 39
- springs, kick plate 133, 134
- SRAM dump report 195
- stains on page 159
- standard resolution 16
- standby period 83
- statement, laser safety 23, 24
- stewardship program 30
- storage
 - requirements 36
 - toner cartridge 38
- streaks
 - on pages 160
 - on scanned images 164
- stripes on page, white 159
- subassembly diagrams 210
- subpad assembly 136
- subpads
 - description 77
 - estimated life 56
- summary of processes 66
- superfine resolution 16
- support and service
 - HP Customer Information Center 211
 - ordering parts 210
 - Support Materials Organization (SMO) 210
 - Support Materials Europe (SME) 210
 - Support Materials Organization (SMO) 210
- SupportPack 32
- supports
 - document feeder 19
 - document output 19, 82
 - illustration 216
 - input 20
 - output 20
 - part numbers and descriptions 217

- switches
 - engine test (SW201) 69, 80
 - location and function 80
 - power shutoff 69
- system error 51
- T**
 - T.30 protocol trace
 - report 195
 - using 201
 - task stacks report 195
 - telephone
 - consumer protection act 27
 - temperature requirements 36
 - test
 - engine switch (SW201) 69, 80
 - keypad 44
 - page for engine 174
 - tests
 - all LCD characters 194
 - configuration 193
 - control panel 194
 - document scanner feed 194
 - document scanner motor 194
 - engine 174
 - extended service mode 194
 - fax memory 193
 - half-self 177
 - individual diagnostics 194
 - keypad 194
 - LCD 194
 - modem 193
 - modem dial tone 193
 - modem modulation 194
 - modem tone 194
 - program 193
 - scanner 193
 - scanner LED 194
 - scanner plots 194
 - self 175
 - sensor states 194
 - text, scanned, unclear 164
 - time/date
 - incorrect 46
 - invalid 44
 - setting 53, 54
 - timeouts, printing 47
 - timing diagram 84
 - toner
 - cleaning from clothing 61
 - consumption 31
 - draft mode for conserving 73
 - excessive amount inside 61
 - scattered on page 161
 - specks on paper 64
 - toner cartridges
 - checking 157
 - checking and cleaning connection points 180
 - description 74
 - estimated life 56
 - expiration date 157
 - in paper path 78
 - ordering 211
 - photosensitive drum 157
 - recycling 31
 - sensor 80
 - storage conditions 38
 - tips for optimum performance 38
 - weight when full and empty 157
 - tools
 - servicing 87
 - troubleshooting 182
 - transfer process 76, 177
 - transfer roller
 - estimated life 56
 - illustration 78
 - motion 182
 - transfer roller assembly 132
 - transfer roller guide assembly 132
 - translations report 195
 - transmission
 - error 42
 - report 53, 54
 - speed 15
 - transportation regulations 23
 - trays
 - document feeder 19
 - documents fall out 168
 - input media requirements 37
 - media input requirements 37
 - output capacity 37
 - troubleshooting
 - drum rotation 178
 - error messages 40
 - image formation 157
 - paper feed problems 165
 - process malfunctions 177
 - scanning problems 169
 - tools 182
- U**
 - unidirectional ports 170
 - uninterruptible power supply (UPS) 36
 - upper guide assembly 100
 - UPS (uninterruptible power supply) 36
 - user defaults
 - restoring 53, 54
 - settings 53, 54

V

- ventilation requirements 36
- video controller 81
- void areas on page 161
- voltage
 - distribution 70
 - high 71
 - over 70
 - power supply check 180
 - protection 70
- volume
 - default setting 53, 54
 - key on control panel 39

W

- wait period 83
- warranty 32
- wattage 17
- weight
 - media requirements 37
 - of unit 16
 - toner cartridge when full and empty 157
- white
 - areas on page 161
 - stripes on page 159
- white reference summary 195
- width of unit 16
- wiring diagram 188
- wrinkled pages 165



Copyright© 2002
Hewlett-Packard Co.
Printed in USA

Manual Part No.
C4256-90954



Printed on at least
50% Total Recycled Fiber with
at least 10% Post-Consumer Paper



C4256-90954