

i n v e n t

**service**

## **hp** LaserJet 4200

4200n • 4200tn  
4200dtn • 4200dtns • 4200dtnsl

## **hp** LaserJet 4200L

4200Ln • 4200Lvn

## **hp** LaserJet 4300

4300n • 4300tn  
4300dtn • 4300dtns • 4300dtnsl



hp LaserJet 4200/4200L/4300 series printers

**service**

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

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

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



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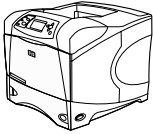
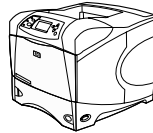
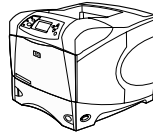
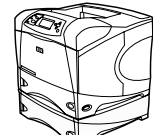

# Printer description

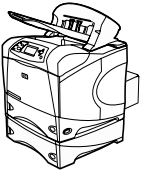
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The HP LaserJet 4200/4200L/4300 series printer is available in a total of 12 models.

**Table 1. Product configurations**

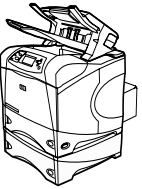
	48 MB RAM, expandable to 416 MB one 100-sheet tray and one 500-sheet tray	48 MB RAM, expandable to 288 MB one 100-sheet tray and one 500-sheet tray	64 MB RAM, expandable to 416 MB one 100-sheet tray and one 500-sheet tray
	64 MB RAM, expandable to 416 MB one 100-sheet tray and one 500-sheet tray HP Jetdirect 10/100Base-TX print server for network connection	64 MB RAM, expandable to 416 MB one 100-sheet tray and one 500-sheet tray HP Jetdirect 10/100Base-TX print server for network connection	80 MB RAM, expandable to 416 MB one 100-sheet tray and one 500-sheet tray HP Jetdirect 10/100Base-TX print server for network connection
	(not available)	64 MB RAM, expandable to 416 MB one 100-sheet tray and one 500-sheet tray Fast Ethernet print server with small and medium-sized business networking features	(not available)
	64 MB RAM, expandable to 416 MB one 100-sheet tray and two 500-sheet trays HP Jetdirect 10/100Base-TX print server for network connection	(not available)	80 MB RAM, expandable to 416 MB one 100-sheet tray and two 500-sheet trays HP Jetdirect 10/100Base-TX print server for network connection
	64 MB RAM, expandable to 416 MB one 100-sheet tray and two 500-sheet trays HP Jetdirect 10/100Base-TX print server for network connection duplexer for automatic two-sided printing	(not available)	80 MB RAM, expandable to 416 MB one 100-sheet tray and two 500-sheet trays HP Jetdirect 10/100Base-TX print server for network connection duplexer for automatic two-sided printing



64 MB RAM, expandable to 416 MB  
one 100-sheet tray and two 500-sheet trays  
HP Jetdirect 10/100Base-TX print server for network connection  
duplexer for automatic two-sided printing  
500-sheet stacker output accessory

(not available)

80 MB RAM, expandable to 416 MB  
one 100-sheet tray and two 500-sheet trays  
HP Jetdirect 10/100Base-TX print server for network connection  
duplexer for automatic two-sided printing  
500-sheet stacker output accessory



64 MB RAM, expandable to 416 MB  
one 100-sheet tray and two 500-sheet trays  
HP Jetdirect 10/100Base-TX print server for network connection  
duplexer for automatic two-sided printing  
500-sheet stapler/stacker output accessory

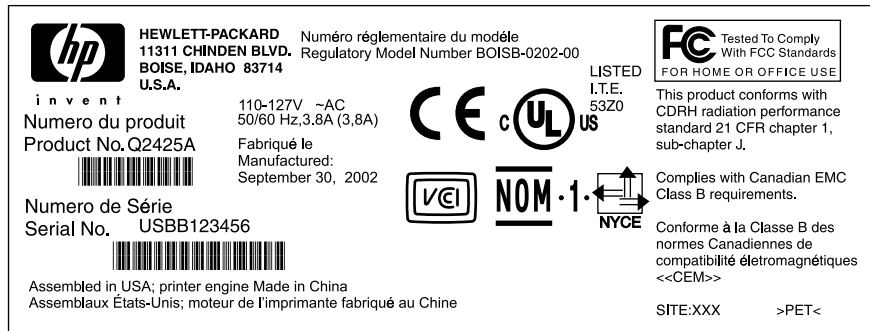
(not available)

80 MB RAM, expandable to 416 MB  
one 100-sheet tray and two 500-sheet trays  
HP Jetdirect 10/100Base-TX print server for network connection  
duplexer for automatic two-sided printing  
500-sheet stapler/stacker output accessory

The model number and printer serial number are listed on an identification label located under the top cover on the right side of the printer. The model number is alphanumeric, such as Q2431A for the HP LaserJet 4300 product.

The serial number contains information about the country/region of origin, the revision level, the production code, and the production number of the printer. An example of a serial number is USBB123456.

The label also contains power rating and regulatory information as shown in figure 1.



**Sample model and serial number label**

The following environmental specifications must be maintained to ensure the correct operation of the printer. Consider the following points before installing the printer:

Install in a well-ventilated, dust-free area.

Install on a hard, flat, continuous surface, with all four printer feet level. Do not install on carpet or other soft surfaces.

Make sure that adequate power is supplied. Printer circuit requirements are listed in . Uninterruptible power supplies (UPSs) are not recommended.

Install where temperature and humidity are stable, away from water sources, humidifiers, air conditioners, refrigerators, or other major appliances. See for temperature and humidity ranges.

Install away from direct sunlight, open flames, or ammonia fumes. If the printer is placed near a window, make sure that the window has a curtain or blind to block direct sunlight.

Install with enough space around the printer for access and ventilation.

Install away from the direct flow of exhaust from air-ventilation systems.

## **Printer specifications**

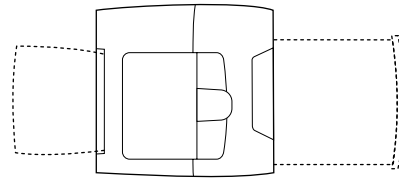
Install the printer with enough space around it to open trays and bins, install print cartridges, and perform maintenance. The printer needs 101 mm (4 inches) of ventilation space on the left side (fan side) and at the rear of the printer.

## Physical dimensions

Maximum length with trays and rear output bin open

Length and depth, all models

412 mm  
(16.2 inches)

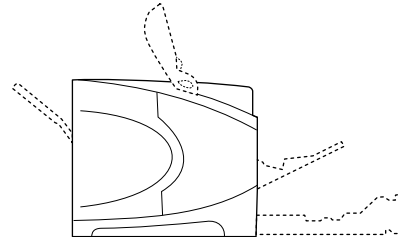


1,045 mm (41.1 inches)

Height with top cover open:

HP LaserJet 4200/4200n  
HP LaserJet 4200L/4200Ln/4200Lvn  
HP LaserJet 4300/4300n

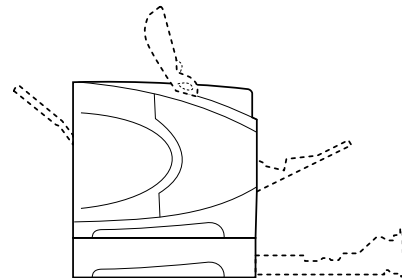
547 mm  
(21.5 inches)



Height with top cover open:

HP LaserJet 4200tn/4200dtn/  
4300tn/4300dtn

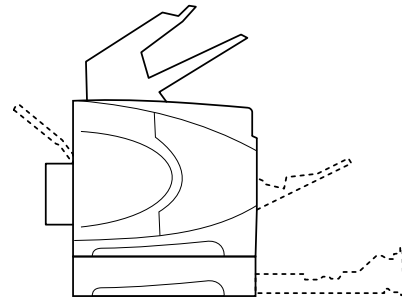
670 mm  
(26.4 inches)



Height with top cover open:

HP LaserJet 4200dtns/4200dtnsL/  
4300dtns/4300dtnsL

740 mm  
(29.1 inches)



## Printer physical dimensions

## Printer weights (without print cartridge)

**Table 2. Printer weights**

Printer	Weight
HP LaserJet 4200/4200n/4200L/4200Ln/4200Lvn printers	20 kg (45 lb)
HP LaserJet 4200tn printer	27 kg (60 lb)
HP LaserJet 4200dtn printer	30 kg (66 lb)
HP LaserJet 4200dtns printer	33 kg (73 lb)
HP LaserJet 4200dtnsL printer	34 kg (76 lb)
HP LaserJet 4300/4300n printers	21 kg (46 lb)
HP LaserJet 4300tn printer	28 kg (61 lb)
HP LaserJet 4300dtn printer	30 kg (66 lb)
HP LaserJet 4300dtns printer	33 kg (73 lb)
HP LaserJet 4300dtnsL printer	34 kg (76 lb)

## Environmental specifications

Power requirements are based on the country/region in which the printer is sold. Do not convert operating voltages. Converting operating voltages can damage the printer and void the product warranty.

**Table 3. Power consumption**

Printer model	Power consumption (average, in watts) <sup>1</sup>			
	Printing	Standby	PowerSave <sup>2</sup>	Off
HP LaserJet 4200 and 4200L printers	580 (35 ppm)	21	20.4	0.07
HP LaserJet 4200n/4200Ln/4200Lvn printers	580 (35 ppm)	22	20.7	0.07
HP LaserJet 4200tn printer	580 (35 ppm)	23	21.8	0.07
HP LaserJet 4200dtn printer	580 (35 ppm)	24	24.2	0.07
HP LaserJet 4200dtns printer	580 (35 ppm)	26	24.1	0.07
HP LaserJet 4200dtnsL printer	580 (35 ppm)	26	at least 24.2	0.07
HP LaserJet 4300 printer	685 (45 ppm)	21	21.0	0.07
HP LaserJet 4300n printer	685 (45 ppm)	23	22.7	0.07
HP LaserJet 4300tn printer	685 (45 ppm)	24	22.6	0.07
HP LaserJet 4300dtn printer	685 (45 ppm)	26	24.0	0.07
HP LaserJet 4300dtns printer	685 (45 ppm)	26	24.5	0.07
HP LaserJet 4300dtnsL printer	685 (45 ppm)	27	at least 24.9	0.07

1. Values are subject to change. See  
for current information.

2. PowerSave default activation time is 30 minutes.

or



**Table 4. Circuit requirements—HP LaserJet 4200/4200L/4300 series printers**

	110-volt models	220-volt models
Power requirements	110 to 127 volts(+/-10 percent) 50/60 Hz (+/-2 Hz)	220 to 240 volts (+/-10 percent) 50/60 Hz (+/-2 Hz)
Rated short-term current for a typical product	8.2 amps	3.3 amps

**Table 5. Acoustic ratings**

Operation	Acoustic rating
Sound power level	Declared per ISO 9296
Printing, 30 ppm (HP LaserJet 4200L series printers)	$L_{WA_d}$ = 6.8 bels (A)
Printing, 35 ppm (HP LaserJet 4200 series printers)	$L_{WA_d}$ = 6.8 bels (A)
Printing, 45 ppm (HP LaserJet 4300 series printers)	$L_{WA_d}$ = 7.0 bels (A)
PowerSave	$L_{WA_d}$ = 4.0 bels (A)
SPL-Bystander position	Declared per ISO 9296
Printing, 30 ppm (HP LaserJet 4200L series printers)	$L_{pAm}$ = 54 dB (A)
Printing, 35 ppm (HP LaserJet 4200 series printers)	$L_{pAm}$ = 54 dB (A)
Printing, 45 ppm (HP LaserJet 4300 series printers)	$L_{pAm}$ = 56 dB (A)
PowerSave	$L_{pAm}$ = 27 dB (A)
Values are subject to change.	
See	or for current information.

**Table 6. General specifications**

Description	HP LaserJet 4200	HP LaserJet 4200L	HP LaserJet 4300
Operating temperature	10° to 32° C (50° to 90° F)	10° to 32° C (50° to 90° F)	10° to 32° C (50° to 90° F)
Relative humidity	20 percent to 80 percent	20 percent to 80 percent	20 percent to 80 percent
Speed, in pages per minute (ppm)	Up to 35 ppm on letter-size paper Up to 33 ppm on A4-size paper	Up to 30 ppm on letter-size paper Up to 28 ppm on A4-size paper	Up to 45 ppm on letter-size paper Up to 43 ppm on A4-size paper
Expandable memory	Up to 416 MB total, combining standard and accessory memory DIMMs	Up to 288 MB total, combining standard and accessory memory DIMMs	Up to 416 MB total, combining standard and accessory memory DIMMs

HP LaserJet 4200/4200L/4300 printers produce excellent print quality. This printer accepts a variety of print media, such as cut-sheet paper (including recycled paper), envelopes, labels, transparencies, and custom-size paper. Paper properties such as weight, grain, and moisture content are important factors that affect printer performance and output quality.

The printer can use a variety of paper and other print media in accordance with the following guidelines. Media that does not meet these guidelines can cause the following problems:

- poor print quality
- more jams
- premature wear on the printer, requiring repair

For best results, use only high-quality media, such as HP-brand paper and print media. Hewlett-Packard Company cannot recommend the use of other brands. Because they are not HP products, HP cannot influence or control their quality. To order HP-quality papers and supplies, go to [www.hp.com/go/qualityprint](#) or visit your local HP authorized reseller.

It is possible for paper to meet all of the guidelines specified here and still not produce satisfactory results. This might be the result of improper handling, unacceptable temperature and humidity levels, or other variables over which Hewlett-Packard has no control.

Before purchasing a large quantity of media, make sure that it meets the requirements specified here and in the *HP LaserJet Printer Family Print Media Guide*. Go to [www.hp.com/go/qualityprint](#) for more information. Always test media before purchasing a large quantity.

Using media that is outside HP specifications can cause problems for the printer, requiring repair. This repair is not covered by the Hewlett-Packard warranty or service agreements.

This section provides information about media:

- supported sizes and weights of media
- supported types of paper
- guidelines for using paper
- paper weight equivalents
- labels
- overhead transparencies
- envelopes
- card stock and heavy paper

## Supported sizes and weights of media

The printer always prints at half speed from tray 1. The printer also prints at half speed from all other trays when printing on media sizes other than letter, legal, and A4.

**Table 7. Tray 1 Media specifications**

Size <sup>1</sup>	Dimensions <sup>2</sup>	Weight	Capacity <sup>3</sup>
Letter	216 by 279 mm (8.5 by 11 inches)	60 to 200 g/m <sup>2</sup> (16 to 53 lb)	100 sheets of 75-g/m <sup>2</sup> (20-lb) paper
A4	210 by 297 mm (8.3 by 11.7 inches)		
Legal	216 by 356 mm (8.5 by 14 inches)		
Executive	184 by 267 mm (7.3 by 10.5 inches)		
A5	148 by 210 mm (5.8 by 8.3 inches)		
B5 (ISO)	176 by 250 mm (6.9 by 9.8 inches)		
B5 (JIS)	182 by 257 mm (7.2 by 10.1 inches)		
Executive (JIS)	216 by 330 mm (8.5 by 13 inches)		
Double postcard (JIS)	148 by 200 mm (5.8 by 7.9 inches)		
16K	197 by 273 mm (7.8 by 10.8 inches)		
Custom <sup>3</sup>	Minimum: 76 by 127 mm (3 by 5 inches) Maximum: 216 by 356 mm (8.5 by 14 inches)	For best results with custom media, use heavier-weight media. Lighter-basis weights yield less consistent results.	
Envelope Commercial #10	105 by 241 mm (4.1 by 9.5 inches)	75 to 105 g/m <sup>2</sup> (20 to 28 lb)	10 envelopes
Envelope DL ISO	110 by 220 mm (4.3 by 8.7 inches)		
Envelope C5 ISO	162 by 229 mm (6.4 by 9.0 inches)		
Envelope B5 ISO	176 by 250 mm (6.9 by 9.8 inches)		
Envelope Monarch #7-3/4	98 by 191 mm (3.9 by 7.5 inches)		
Transparencies (for monochrome HP LaserJet printers only)	Minimum: 76 by 127 mm (3 by 5 inches) Maximum: 216 by 356 mm (8.5 by 14 inches)	Thickness: 0.099 to 0.114 mm (0.0039 to 0.0045 inch)	50 transparencies
Labels	Minimum: 76 by 127 mm (3 by 5 inches) Maximum: 216 by 356 mm (8.5 by 14 inches)	Thickness: 0.127 to 0.229 mm (0.005 to 0.009 inch)	50 labels

1. All sizes can be stacked, but only letter, legal, and A4 can be stapled.

2. The printer supports a wide range of sizes. Check the printer software for supported sizes.

3. Capacity can vary depending on media weight and thickness, as well as environmental conditions.

**Table 8. Tray 2 and 500-sheet feeder media specifications**

Size <sup>1</sup>	Dimensions <sup>2</sup>	Weight	Capacity <sup>3</sup>
Letter	216 by 279 mm (8.5 by 11 inches)	60 to 120 g/m <sup>2</sup> (16 to 32 lb)	500 sheets of 75-g/m <sup>2</sup> (20-lb) paper
A4	210 by 297 mm (8.3 by 11.7 inches)		
Executive	184 by 267 mm (7.3 by 10.5 inches)		
Legal	216 by 356 mm (8.5 by 14 inches)		
B5 (JIS)	182 by 257 mm (7.2 by 10.1 inch)		
A5	148 by 210 mm (5.8 by 8.3 inches)		
Custom	Minimum: 148 by 210 mm (5.8 by 8.3 inch) Maximum: 216 by 356 mm (8.5 by 14 inches)		

1. All sizes can be stacked, but only letter, legal, and A4 can be stapled.
2. The printer supports a wide range of sizes. Check the printer software for supported sizes.
3. Capacity can vary depending on media weight and thickness, as well as environmental conditions.

**Table 9. 1,500-sheet feeder media specifications**

Size	Dimensions	Weight	Capacity <sup>1</sup>
Letter	216 by 279 mm (8.5 by 11 inches)	60 to 120 g/m <sup>2</sup> (16 to 32 lb)	1,500 sheets of 75-g/m <sup>2</sup> (20-lb) paper
A4	210 by 297 mm (8.3 by 11.7 inches)		
Legal	216 by 356 mm (8.5 by 14 inches)		

1. Capacity can vary depending on media weight and thickness, as well as environmental conditions.

**Table 10. Duplexer media specifications**

Size	Dimensions	Weight
Letter	216 by 279 mm (8.5 by 11 inches)	60 to 120 g/m <sup>2</sup> (16 to 32 lb)
A4	210 by 297 mm (8.3 by 11.7 inches)	
Executive	184 by 267 mm (7.3 by 10.5 inches)	
Legal	216 by 356 mm (8.5 by 14 inches)	
B5 (JIS)	182 by 257 mm (7.2 by 10.1 inches)	
A5	148 by 210 mm (5.8 by 8.3 inches)	

**Table 11. Envelope feeder accessory**

Size	Dimensions	Weight	Capacity
Monarch #7-3/4	98 by 191 mm (3.9 by 7.5 inches)	75 to 105 g/m <sup>2</sup> (20 to 28 lb)	75 envelopes
Commercial #10	105 by 241 mm (4.1 by 9.5 inches)		
DL ISO	110 by 220 mm (4.3 by 8.7 inches)		
C5 ISO	162 by 229 mm (6.4 by 9.0 inches)		
B5 ISO	176 by 250 mm (6.9 by 9.8 inches)		

**Table 12. Stacker or stapler/stacker accessory**

Size <sup>1</sup>	Dimensions <sup>2</sup>	Weight	Capacity <sup>3</sup>
Stacker or stacker part of stapler/stacker only			
Letter	216 by 279 mm (8.5 by 11 inches)	60 to 120 g/m <sup>2</sup> (16 to 32 lb)	500 sheets of 75-g/m <sup>2</sup> (20-lb) paper
A4	210 by 297 mm (8.3 by 11.7 inches)		
Executive	184 by 267 mm (7.3 by 10.5 inches)		
Legal	216 by 356 mm (8.5 by 14 inches)		
B5 (JIS)	182 by 257 mm (7.2 by 10.1 inches)		
A5	148 by 210 mm (5.8 by 8.3 inches)		
Custom	Minimum: 148 by 210 mm (5.8 by 8.3 inches) Maximum: 216 by 356 mm (8.5 by 14 inches)		
Stapler part of stapler/stacker only			
Letter	216 by 279 mm (8.5 by 11 inches)	60 to 120 g/m <sup>2</sup> (16 to 32 lb)	15 sheets of 75-g/m <sup>2</sup> (20-lb) paper
A4	210 by 297 mm (8.3 by 11.7 inches)		
Legal	216 by 356 mm (8.5 by 14 inches)		

1. All sizes can be stacked, but only letter, legal, and A4 can be stapled.

2. The printer supports a wide range of sizes. Check the printer software for supported sizes.

3. Capacity can vary depending on media weight and thickness, as well as environmental conditions.

The stacker and stapler/stacker do not support card stock.

Do not use the stapler/stacker to staple envelopes, labels, card stock, or transparencies.

## Supported types of media

The printer supports the following types of paper and other print media:

plain	preprinted
letterhead	transparency
prepunched	labels
bond	recycled
color	card stock
rough	envelopes

## Guidelines for using paper

For best results, use conventional 75- to 90-g/m<sup>2</sup> (20- to 24-lb) paper. Make sure that the paper is of good quality, and free of cuts, nicks, tears, spots, loose particles, dust, wrinkles, voids, and curled or bent edges. If you are unsure what type of paper you are loading (such as bond or recycled), check the label on the package of paper.

Some paper might cause print-quality problems, jamming, or damage to the printer.

Symptom	Problem with paper	Solution
Poor print quality or toner adhesion.	Too moist, too rough, too smooth, or embossed. Ragged edges. Faulty paper lot.	Try another kind of paper, between 100 to 250 Sheffield, 4 to 6 percent moisture content. Change the fuser mode. See
Dropouts, jamming, curl.	Stored improperly.	Store paper flat in its moisture-proof wrapping.
Increased gray background shading.	Too heavy.	Use lighter paper. Use a higher toner density setting. See
	Too smooth.	Use less smooth paper.
Excessive curl. Problems with feeding.	Too moist, wrong grain direction, or short-grain construction.	Use the rear output bin. Turn the paper stack over in the tray. Use long-grain paper. Store paper in a drier environment. Change the fuser mode. See

Do not use letterhead paper that is printed with low-temperature inks, such as those used in some types of thermography.

Do not use raised letterhead.

The printer uses heat and pressure to fuse toner to the paper. Make sure that any colored media or preprinted forms use inks that are compatible with the printer's temperature of 230° C (446° F) for 0.05 second.

Avoid using media that has been damaged from being previously used in a printer or copier. (Do not print on both sides of envelopes, transparencies, or labels.)

## Paper weight equivalence table

Use the following table to determine approximate equivalent points in weight specifications other than U.S. bond weight. For example, to determine the equivalent of 20-lb U.S. bond weight paper in U.S. cover weight, locate the bond weight (in row 3, second column) and scan across the row to the cover weight (in the fourth column). The equivalent is 28 lb.

The shaded areas indicate a standard weight for that grade.

**Table 13. Paper weight equivalents**

U.S. postcard <sup>1</sup> thickness (mm)	U.S. bond weight (lb)	U.S. text/book weight <sup>2</sup> (lb)	U.S. cover weight (lb)	U.S. Bristol weight (lb)	U.S. index weight (lb)	U.S. tag weight (lb)	Metric weight (g/m <sup>2</sup> )
	16	41	22	27	33	37	60
	17	43	24	29	35	39	64
	20	50 <sup>2</sup>	28	34	42	46	75
	21	54	30	36	44	49	80
	24	60 <sup>b</sup>	33	41	50	55	90
	27	68	37	45	55	61	100
	28	70 <sup>b</sup>	39	49	58	65	105
	29	74	41	50	61	68	110
	32	80 <sup>b</sup>	44	55	67	74	120
	36	90	50	62	75	83	135
0.18	39	100	55	67	82	91	148
	40	101	55	68	83	92	150
0.20	43	110	60	74	90	100	163
	45	115	63	77	94	104	170
0.23	47	119	65	80	97	108	176
	51	128	70	86	105	117	190
	53	134	74	90	110	122	200
	54	137	75	93	113	125	203
	58	146	80	98	120	133	216
	65	165	90	111	135	150	244
	66	169	92	114	138	154	250
	67	171	94	115	140	155	253
	70	178	98	120	146	162	264
	72	183	100	123	150	166	271

1. U.S. postcard measurements are approximate. Use for reference only.

2. Text and book grades actually calculate out to 51, 61, 71, and 81, but are standardized to book/text weights of 50, 60, 70, and 80.

## Labels

Use tray 1 to print labels. Labels are multiple-layer media that typically consists of a face sheet (the printable surface), pressure-sensitive adhesive, and a liner (a carrier sheet coated with a release agent). Labels used in the HP LaserJet printer must be specifically designed for laser printers. If labels other than those compatible with laser printers are used, there is a significant risk of labels peeling or of adhesive contamination that can severely damage the printer. All materials in laser label stock must be compatible with the heat and pressure of the fusing process.

To avoid damaging the printer, use only labels that are recommended for use in laser printers.

Do not duplex labels or leave the printer default set to `DUPLEX=ON`.

Do not staple labels in the stapler/stacker.

Do not print on the same sheet of labels more than once. The printer might be damaged.

If you have problems printing labels, use tray 1 and open the rear output bin. When selecting labels, consider the quality of each component.

**Adhesives:** The adhesive material should be stable at 230° C (446° F) for 0.05 seconds (this is the printer's maximum temperature).

**Arrangement:** Use only labels with no exposed backing between them. Labels can peel off sheets that have spaces between the labels, causing serious jams.

**Curl:** Before printing, labels must lie flat with no more than 13 mm (0.5 inch) of curl in any direction.

**Condition:** Do not use labels that have wrinkles, bubbles, or other indications of separation.

## Overhead transparencies

Use tray 1 to print overhead transparencies. Overhead transparency film must be designed specifically for use with monochrome laser printers. Photocopy transparency film might not be compatible with laser printers because of higher temperature and stiffness requirements.

Overhead transparency film is very smooth and must have a topcoat to provide the proper electrical and toner adhesion properties. A transparency that is made of poor materials or that is too thin can easily melt in the fuser and damage the printer.

Overhead transparency materials must be compatible with the heat and pressure of the fusing process.

To avoid damaging the printer, use only transparencies that are recommended for use in monochrome laser printers.

Do not attempt to duplex overhead transparencies or leave the printer default set to `DUPLEX=ON`. Damage to the printer might result.

Do not staple transparencies in the stapler/stacker.

Transparencies used in the printer must be able to withstand the printer's maximum temperature of 230° C (446° F) for 0.05 seconds. Close the rear output bin to print transparencies to the top output bin. If you have problems printing transparencies, use tray 1 and print to the top output bin. Be sure to remove each transparency from the output bin as it prints to keep the transparencies from sticking together.



## Envelopes

If you do not have an optional envelope feeder, always print envelopes from tray 1. If envelopes curl or jam, try opening the rear output bin.

Do not duplex envelopes. Damage to the printer might result.

Do not send envelopes to the stacker or stapler/stacker. Damage to the stacker or stapler/stacker might result.

### Envelope construction

Envelope construction is critical. Envelope fold lines can vary considerably, not only between manufacturers, but also within a box from the same manufacturer. Successful printing on envelopes depends upon the quality of the envelopes.

When selecting envelopes, consider the following components. Many envelope manufacturers are now making envelopes optimized for laser printers.

**Weight:** The weight of the envelope paper should be 75 to 105 g/m<sup>2</sup> (20 to 28 lb) or jamming might result.

**Construction:** Before printing, envelopes should lie flat with less than 6 mm (0.25 inch) curl, and should not contain air. (Envelopes that trap air might cause problems.)

**Condition:** Make sure that envelopes are not wrinkled, nicked, or otherwise damaged.

**Sizes in tray 1:** Use standard and custom sizes from 76 by 127 mm (3 by 5 inches) to 216 by 356 mm (8.5 by 14 inches).

**Sizes in the optional envelope feeder:** Standard sizes from Monarch (98 by 191 mm, or 3.9 by 7.5 inches) to B5 (ISO) (176 by 250 mm, or 6.9 by 9.8 inches).

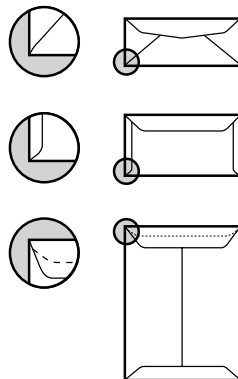
### Envelopes with double side seams

Double-side-seam construction has vertical seams at both ends of the envelope rather than diagonal seams. This style might be more likely to wrinkle. Make sure that the seam extends all the way to the corner of the envelope.

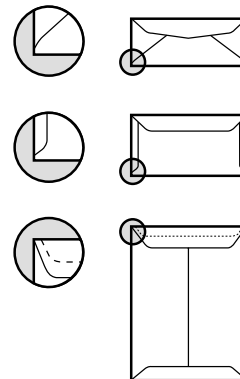
### Envelopes with adhesive strips or flaps

Envelopes that use a peel-off adhesive strip or with more than one flap that folds over to seal must use adhesives that are compatible with the heat and pressure in the printer. The extra flaps and strips might cause wrinkling, creasing, or jams.

Good construction



Poor construction



## Envelope margins

The following table gives typical address margins for a Commercial #10 or DL envelope.

Type of address	Top margin	Left margin
Return address	15 mm (0.6 inch)	15 mm (0.6 inch)
Delivery address	51 mm (2 inches)	89 mm (3.5 inches)

For the best print quality, position margins no closer than 15 mm (0.6 inch) from the edges of the envelope.

## Envelope storage

Proper storage of envelopes helps contribute to good print quality. Envelopes should be stored flat. If air is trapped in an envelope, creating an air bubble, then the envelope might wrinkle during printing.

## Card stock and heavy paper

Many types of card stock can be printed from tray 1, including index cards and postcards. Some card stock performs well because its construction is better suited for feeding through a laser printer.

For optimum printer performance, do not use paper that is heavier than 200 g/m<sup>2</sup> (53 lb) in tray 1 or 120 g/m<sup>2</sup> (32 lb) in other trays. Paper that is too heavy might cause misfeeds, stacking problems, jams, poor toner fusing, poor print quality, or excessive mechanical wear.

The stacker and stapler/stacker do not support card stock.

Do not attempt to duplex card stock or paper heavier than 120 g/m<sup>2</sup> (35 lb), or leave the printer default set to `DUPLEX=ON`. Damage to the printer might result.

Do not attempt to use the stacker or stapler/stacker with card stock.

Printing on heavier paper might be possible if the tray is not filled to capacity, and short-grain paper that has a smoothness rating of 100 to 180 Sheffield is used.

## Card stock construction

**Smoothness:** Card stock should have smoothness in the range of 100 to 180 Sheffield.

**Construction:** Card stock should lie flat with less than 5 mm (0.2 inch) of curl. It should be short-grain paper to improve feeding and reduce wear on the printer.

**Condition:** Make sure that card stock is not wrinkled, nicked, or otherwise damaged.

**Sizes:** Use only card stock within the following size ranges:

- minimum: 76 by 127 mm (3 by 5 inches)
- maximum: 216 by 356 mm (8.5 by 14 inches)

Before loading card stock in tray 1, make sure that it is regular in shape and not damaged. Also, make sure that the cards are not stuck together.

## Card stock guidelines

If cards curl or jam, try printing from tray 1 and opening the rear output bin.

Set margins at least 6 mm (0.24 inch) away from the edges of the paper.

## Types of print media to avoid

The following characteristics can affect the performance of the HP LaserJet 4200/4200L/4300 printer unless the paper or other print media used is specifically designed to work with HP LaserJet printers.

- Print media that is very rough, highly textured, or heavily embossed.

- Multipart forms.

- Print media that offsets materials or discolors.

- Print media that is damaged, curled, wrinkled, or irregularly shaped.

- Paper that is extremely shiny or glossy.

- Paper, labels, envelopes, or transparencies that produce undesirable emissions or melt when exposed to a fusing temperature of 230° C (446° F) for 0.05 second.

- Media coatings, dyes, or inks that produce undesirable emissions or melt when exposed to a fusing temperature of 230° C (446° F) for 0.05 second.

- Envelopes that have an open flap with the adhesive exposed so that closing the flap seals the envelope.

- Envelopes with clasps, snaps, tie strings, windows, or synthetic materials. These materials can severely damage the printer.

- Envelopes that are not square, straight, or constructed correctly. See

- Envelopes that have a basis weight less than 60 g/m<sup>2</sup> (16 lb) or greater than 105 g/m<sup>2</sup> (28 lb).

- Envelopes that have baggy construction or folds that are not sharply creased.

Some media types might not work in the printer because of differences in manufacturer specifications or environmental conditions.

## **Print cartridge and toner safety**

### **Handling and storage**

For information about handling and storing toner, see section 7 in the material safety data sheet (MSDS) at [www.hp.com/go/msds](#).

### **First aid measures**

For information about toner safety, see section 4 in the material safety data sheet (MSDS) at [www.hp.com/go/msds](#).

### **Clothing contact**

Toner can stain clothing. Hot water or heat (from a clothes dryer) can cause toner to melt and permanently fuse into clothing.

Clothing is best cleaned by removing as much toner as possible with a dry tissue, and then washing with cold water. Air-dry clothing.

### **Additional information**

The print cartridge Material Safety Data Sheet (MSDS) can be obtained by contacting HP at the [website](#).

### **Laser safety**

Do not open the laser scanner assembly. Avoid direct exposure to the laser beams.

Using controls, making adjustments, bypassing safety switches, or performing procedures other than those specified in this service manual can result in exposure to hazardous radiation.

### **Laser safety statement (U.S.)**

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration has implemented regulations for laser products manufactured since August 1, 1976. Compliance is mandatory for products marketed in the United States. The 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. Because radiation emitted inside the printer is completely confined within protective housings and external covers, the laser beam cannot escape during any phase of normal user operation.

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

**EMI statement (Korea)**

**VCCI statement (Japan)**

## Laser statement (Finland)

### Luokan 1 laserlaite

#### Klass 1 Laser Apparat

HP LaserJet 4200 series, 4200L series, 4300 series laserkirjoitin on käyttäjän kannalta turvallinen luokan 1 laserlaite. Normaalisissa 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 4200 series, 4200L series, 4300 series -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 this equipment is not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase separation between equipment and receiver.

- Connect equipment to an outlet on a circuit different from that to which the receiver is located.

- Consult your dealer or an experienced radio/TV technician.

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

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

Attaching a network interface cable to the printer's LAN connector(s) changes the Class B rating to Class A. For more information see the supplementary information in the

# Environmental product stewardship program

## Protecting the environment

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

## Energy consumption

Energy usage drops while in PowerSave mode, which saves natural resources and saves money without affecting the high performance of this product. This product qualifies for ENERGY STAR®, which is a voluntary program 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. For more information, go to

## Toner consumption

EconoMode uses significantly less toner, which might extend the life of the print cartridge.

## Paper use

This product's optional automatic duplex feature (two-sided printing), and n-up printing (multiple pages printed on one page) capability can reduce paper usage and the resulting demands on natural resources.

## Plastics

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

## HP LaserJet printing supplies

In many countries/regions, this product's printing supplies (for example the print cartridge, drum, and fuser) can be returned to HP through the HP Printing Supplies Returns and Recycling Program. An easy-to-use and free take back program is available in more than 48 countries/regions. Multilingual program information and instructions are included in every new HP LaserJet print cartridge and supplies package.

## Paper

This product can use recycled papers, in accordance with DIN 19309, when the paper meets the guidelines outlined in the *HP LaserJet Printer Family Print Media Guide*.  
(See .)



## Material restrictions

This HP product does not contain added mercury.

This HP product contains lead in solder that might require special handling at end-of-life.

This HP product does not contain batteries.

For recycling information, you can contact [www.hp.com/go/recycling](#), your local authorities, or the Electronics Industries Alliance at [www.eia.org](#).

## Material Safety Data Sheet

Material Safety Data Sheets (MSDS) can be obtained by contacting the HP LaserJet Supplies website at [www.hp.com/go/laserjet](#).

## For more information

To obtain more information about the following environmental topics, visit [www.hp.com/go/environment](#) or [www.hp.com/go/recycling](#):

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

## HP Printing Supplies Returns and Recycling program information

Since 1990, the HP Printing Supplies Returns and Recycling program has collected millions of used LaserJet print cartridges that otherwise might have been discarded in the world's landfills. The HP LaserJet print cartridges and supplies are collected and bulk shipped to our resource and recovery partners who disassemble the cartridge. After a thorough quality inspection, selected parts are reclaimed for use in new print cartridges. Remaining materials are separated and converted into raw materials for use by other industries to make a variety of useful products.

### U.S. returns

For a more environmentally responsible return of used cartridges and supplies, HP encourages the use of bulk returns. Simply bundle two or more cartridges together and use the single, pre-paid, pre-addressed UPS label that is supplied in the package. For more information in the U.S., call (1) (800) 340-2445 or visit the HP LaserJet Supplies website at [www.hp.com/go/laserjet](#).

### Non-U.S. returns

Non-U.S. customers should call their local HP sales and service office or visit [www.hp.com/go/laserjet](#) for further information regarding the availability of the HP Supplies Returns and Recycling Program.

<b>Declaration of Conformity</b>		
according to ISO/IEC Guide 22 and EN 45014		
<b>Manufacturer's Name:</b>	Hewlett-Packard Company	
<b>Manufacturer's Address:</b>	11311 Chinden Boulevard Boise, Idaho 83714-1021, USA	
<b>declares that the product</b>		
<b>Product Name:</b>	HP LaserJet 4200 series HP LaserJet 4200L series HP LaserJet 4300 series	
<b>Regulatory Model Numbers:</b>	BOISB-0203-00 BOISB-0204-00	
<b>Product Options:</b>	ALL	
<b>conforms to the following Product Specifications:</b> <sup>1</sup>		
Safety:	IEC 60950:1999 / EN 60950:2000 IEC 60825-1:1993+A1 / EN 60825-1+A11 Class 1 Laser/LED Product GB4943:1995	
EMC:	CISPR 22:1993+A1+A2 / EN 55022:1994+A1+A2 Class B <sup>2</sup> EN 61000-3-2:1995 / A14 EN 61000-3-3:1995 EN 55024:1998  FCC Title 47 CFR, Part 15 Class B <sup>3</sup> / ICES-003, Issue 3 AS /NZS 3548:1995+A1+A2 GB9254:1998	
<b>Supplementary Information:</b>		
The product herewith complies with the requirements of the EMC Directive 89/336/EEC and the Low Voltage Directive 73/23/EEC, and carries the CE-Marking accordingly.		
<sup>1)</sup> The product was tested in a typical configuration with Hewlett-Packard Personal Computer Systems.		
<sup>2)</sup> The product includes LAN (local area network) options. When the interface cable is attached to LAN connectors, the product meets the requirements of EN55022 Class A in which case the following applies: Warning — This is a class A product. In a domestic environment, this product may cause radio interference in which case a user may be required to take adequate measures.		
<sup>3)</sup> This Device complies with Part 15 of the FCC Rules. Operation is subject to the following two Conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.		
	Boise, Idaho, USA 17 April 2002	
<b>For regulatory topics ONLY, contact:</b>		
Australia Contact:	Product Regulations Manager, Hewlett-Packard Australia Ltd., 31-41 Joseph Street, Blackburn, Victoria 3130, Australia	
Europe 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, P.O. 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 électromagnétique (CEM).

# Service approach

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Repair of the printer normally begins by using the printer's internal diagnostics in conjunction with the troubleshooting procedures that are described in chapter 7. When a faulty part is located, repair is generally accomplished by assembly-level replacement of field-replaceable units (FRUs) (listed in chapter 8). Some mechanical assemblies might be repaired at the subassembly level. Hewlett-Packard does not support replacement of components on printed circuit boards.

## Ordering information

Chapter 8 of this manual contains FRU and accessory part numbers. Replacement parts can be ordered from the HP Services. Go to [http://www.hp.com/go/serviceparts](#) for information about ordering service parts in your area. Go to [http://www.hp.com/go/partsurfer](#) for the online HP service parts identification tool (HP PartSurfer).

Use only the accessories that are specifically designed for this printer. Order accessories from an authorized service or support provider, or online at [http://www.hp.com/go/accessories](#) (for more information, see chapter 8).

## Related documentation and software

Order documentation and software from the sites listed in table 14.

## Support

**Table 14. Technical support websites**

<b>HP Connect Online</b> (for HP partners)	HP Connect Online is an Internet site that is created exclusively for our partners. You can easily find all the HP information that you need for your daily business. And you can get it earlier than from any other site.
<b>HP Customer Care Online</b> Software drivers, support documentation, and answers to frequently asked questions	Select your country/region in the "select a country or region" field on the Web page. Select the support block.
<b>HP Technical Training</b> Classes and schedules	U.S.: Canada: Asia: Latin America:
<b>Parts</b> Parts information	Ordering: Identifying:

Hewlett-Packard provides free telephone support during the product warranty period. When you call, you will be connected to a responsive team waiting to help you. For the number you should call in your country/region, see the support sheet that came in the box with your printer. Before calling have the following information available:

- product name (for example, HP LaserJet 4300 dtns)
- product serial number (found on the underside of the control-panel door.
- the date of purchase of your printer and a description of the problem you are experiencing

Test the software installation. Attempt to print a test page from the software program. Try reinstalling the software. If reinstalling the software does not correct the problem, see the Readme file on the CD-ROM that came with the printer, or call the phone number for your country/region (phone numbers are listed on the support sheet that came in the box with the printer). You can also find answers to frequently asked questions at the following websites:

## HP-authorized resellers and support

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

## HP service agreements

For information about HP service agreements, call (1) (800) 743-8305 in the U.S. or (1) (800) 268-1221 in Canada.

## HP PartnerCare

You can use the following information to contact HP PartnerCare:

for PartnerShip Web,  
for Connect Online,  
for Asia Pacific countries/regions,  
for Canada Partner,  
for Latin America,

## Worldwide service and support offices

For the U.S., call (1) (208) 323-2551 Monday through Friday from 6 A.M. to 6 P.M., Mountain time.

For Canada, call (1) (905) 206-4663 or (1) (800) 387-3867 Monday through Friday from 8 A.M. to 8 P.M., Mountain time.

For customers outside of North America, use the following list and call the appropriate telephone number for the country/region.

### Europe

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

## Africa and Middle East

Egypt: 202 7956222  
International English: 44 (0)207 512 52 02  
Israel: 972 (0)9 9524848  
South Africa  
Inside RSA: 086 000 1030  
Outside RSA: 27-11 258 9301

United Arab Emirates, Bahrain, Jordan, Kuwait,  
Lebanon, Oman, Palestine, Qatar, Saudi  
Arabia, and Yemen: 971 4 883 8454

## Asia-Pacific

Australia: (03) 8877 8000  
China: 86 (0)10 6564 5959  
Hong Kong SAR: 85 (2) 2802 4098  
India: 91 11 682 6035  
Indonesia: 62 (21) 350-3408  
Japan: 81 3 3335-8333  
Republic of Korea  
Seoul: 82 (2) 3270-0700  
Outside Seoul: 080 999-0700

Malaysia: 60 (3) 295 2566  
New Zealand: 64 (9) 356 6640  
Philippines: 63 (2) 867 3551  
Singapore: 65 272 5300  
Taiwan: 886 (2) 2717 0055  
Thailand: 66 (2) 661 4000  
Vietnam: 84 (0) 8 823 4530

## Latin America

Argentina: 0810-555-5520  
Brazil  
Greater Sao Paulo: (11) 3747-7799  
Outside Greater São Paulo: 0800-157751  
Chile: 800-22-5547  
Guatemala: 800-999-5305

Mexico  
Mexico City: 52-58-9922  
Outside Mexico City: 01-800-472-6684  
Peru: 0-0800-10111  
Puerto Rico: 1-877-2320-589  
Venezuela  
Caracas: 207 8488  
Outside Caracas: 800 47 777

## Print-cartridge information

The print cartridge is designed to simplify replacement of the major consumable parts. The print cartridge contains the printing drum and a supply of toner.

At 5-percent page coverage, a print cartridge prints approximately 12,000 pages (for HP LaserJet 4200 and 4200L series printers) or 18,000 pages (for HP LaserJet 4300 series printers). A print cartridge might print fewer pages if it is routinely used to print with dense ink coverage, or print more pages when it is routinely used to print pages with less ink coverage (such as short memos). If EconoMode or small media is always used, however, the toner supply might outlast the mechanical parts in the print cartridge.

## Refilled print cartridges

While Hewlett-Packard does not prohibit the use of refilled print cartridges during the warranty period or while the printer is under a maintenance contract. Using refilled cartridges is not recommended for the following reasons:

Repairs resulting from the use of refilled print cartridges are not covered under Hewlett-Packard warranty or maintenance contracts.

Hewlett-Packard has no control or process to ensure that a refilled print cartridge functions at the same high level of reliability as a new HP LaserJet print cartridge. Hewlett-Packard also cannot predict the long-term reliability effect on the printer from using the differing toner formulations that are found in refilled cartridges.

The print quality of HP LaserJet print cartridges influences the customer's perception of the printer. Hewlett-Packard has no control over the actual print quality of a refilled print cartridge.

## Recycling print cartridges

In many countries/regions this product's printing supplies (for example, the print cartridge, the drum, and the fuser) can be returned to HP through the HP printing supplies returns and recycling program. This easy-to-use, free take-back program is available in more than 48 countries/regions. Multilingual program information and instructions are included in every new HP LaserJet print cartridge and supplies package.

Since 1990, the HP printing supplies returns and recycling program has collected more than 47 million used LaserJet print cartridges that otherwise would have ended up in the world's landfills. Print cartridges and supplies are collected by HP's resource and recovery partners. After a thorough inspection, selected parts are reclaimed for use in new print cartridges. The remaining materials are separated and converted into raw materials the other industries use to make a variety of products.

## Returns

### U.S. returns

For a more environmentally responsible return of used print cartridges and supplies, HP encourages the use of bulk returns. Bundle two or more print cartridges together and use the single, prepaid, preaddress United Parcel Service (UPS) label that was included in the package. For more information in the U.S. call (1) (800) 340-2445 or visit the HP LaserJet supplies website.

### Non-U.S. returns

Customers should call the local HP sales and service office (see ) or visit the HP LaserJet supplies website for more information about the HP printing supplies returns and recycling program.

## HP PRODUCT

## DURATION OF WARRANTY

HP LaserJet 4200, 4200n, 4200tn, 4200dtn, 4200dtns, 4200dtnsL, 4200L, 4200Ln, and 4200Lvn printers

1 year from purchase date - return for repair

HP LaserJet 4300, 4300n, 4300tn, 4300dtn, 4300dtns, and 4300dtnsL printers

1 year from purchase date - return for repair

---

1. HP warrants to you, the end-user customer, that HP hardware and accessories will be free from defects in materials and workmanship after the date of purchase, for the period specified above. If HP receives notice of such defects during the warranty period, HP will, at its option, either repair or replace products which prove to be defective. Replacement products may be either new or equivalent in performance to new.
2. HP warrants to you that HP software will not fail to execute its programming instructions after the date of purchase, for the period specified above, due to defects in material and workmanship when properly installed and used. If HP receives notice of such defects during the warranty period, HP will replace the software which does not execute its programming instructions due to such defects.
3. HP does not warrant that the operation of HP products will be uninterrupted or error free. If HP is unable, within a reasonable time, to repair or replace any product to a condition as warranted, you will be entitled to a refund of the purchase price upon prompt return of the product.
4. HP products may contain remanufactured parts equivalent to new in performance or may have been subject to incidental use.
5. Warranty does not apply to defects resulting from (a) improper or inadequate maintenance or calibration, (b) software, interfacing, parts or supplies not supplied by HP, (c) unauthorized modification or misuse, (d) operation outside of the published environmental specifications for the product, or (e) improper site preparation or maintenance.
6. TO THE EXTENT ALLOWED BY LOCAL LAW, THE ABOVE WARRANTIES ARE EXCLUSIVE AND NO OTHER WARRANTY OR CONDITION, WHETHER WRITTEN OR ORAL, IS EXPRESSED OR IMPLIED AND HP SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY, AND FITNESS FOR A PARTICULAR PURPOSE. Some countries/regions, states or provinces do not allow limitations on the duration of an implied warranty, so the above limitation or exclusion might not apply to you. This warranty gives you specific legal rights and you might also have other rights that vary from country/region to country/region, state to state, or province to province.
7. HP's limited warranty is valid in any country/region or locality where HP has a support presence for this product and where HP has marketed this product. The level of warranty service you receive may vary according to local standards. HP will not alter form, fit, or function of the product to make it operate in a country/region for which it was never intended to function for legal or regulatory reasons.
8. TO THE EXTENT ALLOWED BY LOCAL LAW, THE REMEDIES IN THIS WARRANTY STATEMENT ARE YOUR SOLE AND EXCLUSIVE REMEDIES. EXCEPT AS INDICATED ABOVE, IN NO EVENT WILL HP OR ITS SUPPLIERS BE LIABLE FOR LOSS OF DATA OR FOR DIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFIT OR DATA), OR OTHER DAMAGE, WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE. Some countries/regions, states, or provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

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

This warranty might differ from country/region to country/region.



## Limited warranty for print cartridge

The following warranty applies to the print cartridge that came with this printer. This warranty supersedes all previous warranties.

The HP print cartridge is warranted to be free from defects in materials and workmanship for the life of the cartridge until the HP toner is depleted. The HP toner is depleted when the printer indicates a toner-low message. Hewlett-Packard will, at its option, either replace products that prove to be defective or refund the purchase price.

The warranty does not cover print cartridges that have been refilled, or are emptied, abused, misused, or tampered with in any way. This limited warranty gives the customer specific legal rights. The customer might have other rights which vary from state to state, province to province, and country/region to country/region.

To the extent allowed by applicable law, in no event shall Hewlett-Packard Company be liable for any incidental, consequential, special, indirect, punitive, or exemplary damages or lost profits from any break of this warranty or otherwise.



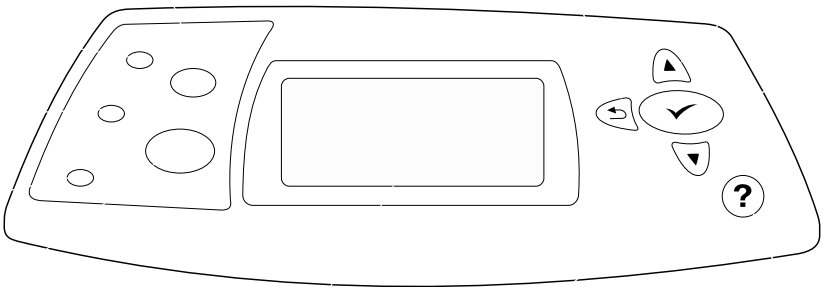
# Printer operation

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For information about the resets submenu, the diagnostics menu, and the service menu, see , , and .

# Control-panel layout

The printer control panel consists of the following features:



## Control-panel layout

# Control-panel lights

The control-panel lights provide information about printer status.






Table 15. Control-panel lights

Light	Indication
	The printer is ready to print.
	The printer is processing information.
	Action is required. See the control-panel display for more information.

## Control-panel buttons




The following table explains the function of each button on the printer control panel.


**Table 16. Control-panel buttons**

Button	Function
	Cancels the print job that the printer is processing, clears the paper path, and clears any continuable errors that are associated with the canceled job. The time that it takes to cancel depends on the size of the print job. (Press the button only once.)
	When the printer is processing a print job, pressing this button pauses the print job. When the printer is paused, pressing this button resumes printing or returns the printer to the Ready state. Closes the menus or Help.
	Opens the menus. In the menus, selects the menu item that is currently highlighted. Finishes a print job that is waiting for a form feed. Clears a continuable error, or shows the options for resolving the continuable error.
	Returns to the previous level of menus or to the previous numeric entry. Closes Help. Closes the menus if the button is pressed for one full second or more.
	Navigates to the previous item on the current menu. For numeric values, pressing and releasing this button increases the value to the next increment. If the button is held down for more than one second, the value increases rapidly. In Help, scrolls to the previous four lines of the current topic (if previous lines exist).
	Navigates to the next item on the current menu. For numeric values, pressing and releasing this button decreases the value to the previous increment. If the button is held down for more than one second, the value decreases rapidly. In Help, scrolls to the next four lines of the current topic (if previous lines exist).
	Shows additional Help for the current message. (Not all messages have additional Help topics.) Closes Help if no additional topics are available.

## Using the printer Help system

This printer features a Help system at the control panel that provides instructions for resolving most printer errors. Some Help topics include animations that appear on the printer control-panel display to show you how to resolve an error.

To view Help for a message (if one is available), press  (?). If the Help topic is longer than four lines, use the  (▲) or the  (▼) button to scroll through the entire topic.

To close the Help system, press  (?) again.

## Settings and defaults

The printer makes most printing decisions based on either temporary settings or permanent defaults.

Settings that are sent from software programs override printer defaults.

**Table 17. Settings and defaults**

Setting or default	Explanation
	A value that is set in the software program for the current print job. For example, a request from the software to print three copies instead of the control-panel default value of one copy is a temporary setting. The printer continues to use the temporary setting until it receives another software request or until it is reset.
	A value that is set at the control panel when you select a menu item. An asterisk appears next to the setting, indicating that it is the default setting. The printer retains this default when power to the printer is turned off.
	The value that is set for each menu item at the factory. Factory defaults are listed in the item column of the menu tables, starting with .

For information about the resets submenu, the diagnostics menu, and the service menu, see , and .

## Setting the control-panel display language

The control-panel display can be set to show messages in different languages. The default setting is English.

1. Press and hold the (⏏) button while turning on the printer. Continue to hold down the (⏏) button until the three control-panel LEDs are illuminated.
2. Release the (⏏) button.
3. The message `SELECT LANGUAGE` appears on the display. Use the (⬆) button or (⬇) button to scroll to the language that you want to see on the display.
4. Press the (⏏) button to save your choice. An asterisk (\*) appears next to the selected language.

## Overview

Most routine printing tasks that the printer performs originate from a computer software program or a printer driver. These two methods are the most convenient way to control the printer, and they override the printer control-panel settings. See the Help file for your program for more information.

Printer settings can also be changed by using the printer control panel. Use the control panel to gain access to printer features that are not supported by the software program or the printer driver.

The following control panel menus are available.

- Retrieve-job menu
- Information menu
- Paper-handling menu
- Configure-device menu
  - Printing submenu
    - PCL submenu
  - Print quality submenu
  - System setup submenu
  - Stapler/stacker submenu
  - I/O submenu
  - Resets menu ( )
- Diagnostics menu ( )
- Service menu ( )

## Printing and changing control-panel menus














To see the current settings for the menus and items that are available at the control panel, print a control-panel menu map. You might want to store the menu map near the printer for reference.

For a complete list of menu items and possible values, see the menu tables in . Certain menu options appear only if the associated tray or accessory is installed. For example, menus for optional trays appear only if the tray is installed.

### To print a control-panel menu map

1. Press the (✓) button to open the menus.
2. Use the (▲) button or the (▼) button to scroll to **INFORMATION**, and then press the (✓) button.
3. Use the (▲) button or the (▼) button to scroll to **PRINT MENU MAP**, and then press the (✓) button.

## To change a control-panel setting

1. Press the  button to open the menus.
2. Use the  button or the  button to scroll to the menu that you want, and then press the  button.
3. Some menus might have several submenus. Use the  button or the  button to scroll to the submenu item that you want, and then press the  button.
4. Use the  button or the  button to scroll to the setting, and then press the  button. Some settings change rapidly if the  button or the  button is held down. An asterisk (\*) appears next to the selection on the display, indicating that it is now the default.
5. Press the  button to close the menu.

Settings that are established in the printer driver and software program override control-panel settings, and software-program settings override printer-driver settings.

If you cannot gain access to a menu or item, it is either not an option for the printer or you have not enabled the associated higher-level option. See the network administrator if a function has been locked. (ACCESS DENIED MENUS LOCKED appears on the printer control-panel display.)



## Retrieve-job menu

This menu supplies a list of the jobs that are stored in the printer and provides access to the Job Storage feature. You can print or delete these jobs at the printer control panel.

If you turn the printer power off, all stored jobs are deleted unless an optional hard disk is installed.

**Table 18. Retrieve-job menu**

Item	Values	Explanation
NO STORED JOBS	No stored job.	Indicates that there are no stored jobs to print or delete.

## Information menu

This menu contains printer information pages that provide details about the printer and its configuration. To print an information page, scroll to the page that you want and press the (✓) button.

**Table 19. Information menu**

Item	Explanation
PRINT MENU MAP	The menu map shows the layout and current settings of the printer control-panel menu items. To print a menu map, see .
PRINT CONFIGURATION	The configuration page shows the current printer configuration. If an HP Jetdirect print server is installed, an HP Jetdirect configuration page will also print. To print a configuration page, see .
PRINT SUPPLIES STATUS PAGE	The supplies status page shows the levels of the supplies for the printer, calculation of the remaining number of pages that the supplies can print, and cartridge-usage information. If you are not using genuine HP supplies, some or all of the supplies information is not available (for example, the toner-supply gauge). To print a supplies status page, see .
PRINT FILE DIRECTORY	This directory appears only if a mass storage device that contains a recognized file system is installed in the printer, such as an optional flash DIMM or optional hard-disk accessory. The file directory shows information for all installed mass storage devices. For more information, see the user guide.
PRINT PCL FONT LIST	The PCL font list shows all the PCL fonts that are currently available to the printer. For more information, see the user guide.
PRINT PS FONT LIST	The PS font list shows all the PS fonts that are currently available to the printer. For more information, see the user guide.

## Paper-handling menu

If paper-handling settings are correctly configured at the printer control panel, you can print by selecting the type and size of paper in the software program or the printer driver. For more information about configuring for paper types and sizes, and information about supported paper types and sizes, see [and](#)

Some items on this menu (such as duplex and manual feed) are available in the program or printer driver (if the appropriate driver is installed). Program and printer-driver settings override control panel settings. For more information, see the user guide.

The following section lists the settings and their possible values in the Paper-handling menu. The default value for each setting is the one that has an asterisk (\*) next to it.

**Table 20. Paper-handling menu**

Item	Values	Explanation
TRAY 1 SIZE	*ANY SIZE LETTER LEGAL EXECUTIVE A4 A5 B5 (ISO) B5 (JIS) EXECUTIVE (JIS) DPOSTCARD (JIS) 16K ENVELOPE #10 ENVELOPE MONARCH ENVELOPE C5 ENVELOPE DL ENVELOPE B5 ANY CUSTOM	The value corresponds to the media size that is currently loaded in tray 1.  ANY: If both the type and size for tray 1 are set to ANY, the printer will pull media from tray 1 first if media is loaded in the tray.  A size other than ANY: The printer does not pull from tray 1 unless the type or size of the print job matches the type or size loaded in this tray.  For more information, see the user guide.
TRAY 1 TYPE	*ANY PLAIN PREPRINTED LETTERHEAD TRANSPARENCY PREPUNCHED LABELS BOND RECYCLED COLOR CARDSTOCK > 164 g/ m <sup>2</sup> ROUGH	The value corresponds to the type of paper or other print media that is currently loaded in tray 1.  ANY: If both the type and size for tray 1 are set to ANY, the printer will pull media from tray 1 first if media is loaded in the tray.  A type other than ANY: The printer does not pull from tray 1 unless the type or size of the print job matches the type or size loaded in this tray.
TRAY [N] SIZE	*LETTER LEGAL A4 EXECUTIVE A5 B5 (JIS) CUSTOM	The printer automatically detects the standard media size that is currently loaded in the specified tray, where [N] is the number of the tray.

**Table 20. Paper-handling menu (continued)**

Item	Values	Explanation
TRAY [N] TYPE	ANY *PLAIN PREPRINTED LETTERHEAD TRANSPARENCY PREPUNCHED LABELS BOND RECYCLED COLOR CARDSTOCK > 164 g/ m <sup>2</sup> ROUGH	The printer automatically detects the standard media size that is currently loaded in the specified tray, where [N] is the number of the tray.

## Configure device menu

This menu contains administrative functions in the following submenus:

Printing submenu

- PCL submenu

Print-quality submenu

System-setup submenu

Stapler/stacker submenu



I/O submenu

### Printing submenu

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

The following section lists the settings and their possible values in the Printing submenu. The default value for each setting is the one that has an asterisk (\*) next to it.

**Table 21. Printing submenu**

Item	Values	Explanation
COPIES	*1 to 32000	The default number of copies can be set to any number from 1 to 32000. Use the  button or the  button to select the number of copies. This setting applies only to print jobs in which the number of copies is not specified in the software program or the printer driver, such as an MS-DOS®, UNIX®, or Linux program.  It is best to set the number of copies in the program or printer driver. (Program and printer-driver settings override control-panel settings.)
DEFAULT PAPER SIZE	ANY *LETTER LEGAL EXECUTIVE A4 A5 B5 (ISO) B5 (JIS) EXECUTIVE (JIS) DPOSTCARD (JIS) 16K ENVELOPE #10 ENVELOPE MONARCH ENVELOPE C5 ENVELOPE DL ENVELOPE B5 CUSTOM	The default image size for media. (The item name changes from paper to envelope as you scroll through the available sizes.) This setting applies only to print jobs in which the paper size is not specified in the software program or the printer driver.  It is best to set the number of copies in the program or printer driver. (Program and printer-driver settings override control-panel settings.)
DEFAULT CUSTOM PAPER SIZE	UNIT OF MEASURE X DIMENSION Y DIMENSION	The default custom paper size for tray 1 or any 500-sheet tray. This menu appears only if the Custom-Standard switch in the selected tray is set to Custom.
PAPER DESTINATION	*STANDARD OUTPUT OPTIONAL BIN 1	Use this item to configure the output destination. Only installed bins appear on the menu.

**Table 21. Printing submenu (continued)**

Item	Values	Explanation
DUPLEX	*OFF ON	This item appears only if a duplexer is installed. Set the value to <b>ON</b> to print on both sides (duplex) or <b>OFF</b> to print on one side (simplex) of a sheet of paper.
OVERRIDE A4/ LETTER	*NO YES	Use this item to instruct the printer to print an A4-size job on letter-size media if A4-size paper is not loaded in the printer (or vice versa).
MANUAL FEED	*OFF ON	Use this item to instruct the printer that you want to manually feed media from tray 1, rather than automatically from a tray. If <b>MANUAL FEED=ON</b> and tray 1 is empty, the printer goes offline when it receives a print job. <b>MANUALLY FEED [PAPER SIZE]</b> appears on the printer control-panel display.
COURIER FONT	*REGULAR DARK	Use this item to specify the version of Courier font to use: <b>REGULAR:</b> The internal Courier font available on the HP LaserJet 4 series printers. <b>DARK:</b> The internal Courier font available on the HP LaserJet 4200/4200L/4300 series printers.
WIDE A4	*NO YES	Changes the number of characters that can be printed on a single line of A4-size paper. <b>NO:</b> Up to 78 10-pitch characters can be printed on one line. <b>YES:</b> Up to 80 10-pitch characters can be printed on one line.
PRINT PS ERRORS	*OFF ON	Use this item to tell the printer whether or not to print a PostScript® (PS) error page. <b>OFF:</b> A PS error page never prints. <b>ON:</b> A PS error page prints when PS errors occur.

## PCL sub-submenu (a submenu in the printing submenu)

The following section lists the settings and their possible values in the PCL submenu. The default value for each setting is the one that has an asterisk (\*) next to it.

**Table 22. PCL submenu**

Item	Values	Explanation
FORM LENGTH	5 to 128 (*60)	Use this item to set vertical spacing from 5 to 128 lines for the default paper size.
ORIENTATION	*PORTRAIT LANDSCAPE	Use this item to select the default page orientation.  It is best to set the page orientation in the software program or printer driver. (Program and printer-driver settings override control-panel settings.)
FONT SOURCE	*INTERNAL SOFT SLOT 1, 2, or 3	Use this item to specify the font source for print jobs. <b>INTERNAL:</b> Internal fonts. <b>SOFT:</b> Permanent soft fonts. This option is available only if it is installed. <b>SLOT 1, 2, or 3:</b> Fonts stored in one of the three DIMM slots. This option is available only if a font DIMM is installed.

**Table 22. PCL submenu (continued)**

Item	Values	Explanation
FONT NUMBER	*0 to 999	The printer assigns a number to each font and lists the numbers on the PCL Font List. The font number appears in the Font # column of the printout.
FONT PITCH	0.44 to 99.99 (*10.00)	Use this item to select the font pitch. This item might not appear, depending on the selected font.
SYMBOL SET	*PC-8 Several	Use this item to select any one of several available symbol sets at the printer control panel. A symbol set is a unique grouping of all the characters in a font. PC-8 or PC-850 is recommended for line-draw characters.
APPEND CR TO LF	*NO YES	Select YES to append a carriage return to each line feed that is encountered in backward-compatible PCL jobs (pure text, no job control). Some environments, such as UNIX, indicate a new line by using only the line-feed control code. Use this item to append the required carriage return to each line feed.

## Print-quality submenu

Some items on this menu are available in the software program or the printer driver (if the appropriate driver is installed). Program and printer-driver settings override control-panel settings. For more information, see the user guide. In general, it is best to change these settings in the printer driver, if applicable.

The following section lists the settings and their possible values in the Print-quality submenu. The default value for each setting is the one that has an asterisk (\*) next to it.


**Table 23. Print-quality submenu**

Item	Values	Explanation
SET REGISTRATION	No value available.	Use this item to shift the margin alignment to center the image on the page from top to bottom, and from left to right. You can also align the image that is printed on the front with the image that is printed on the back.
PRINT TEST PAGE	SOURCE	Use this item to select the tray from which you want to print the test page. If they are installed, optional trays appear as selections, where [N] is the number of the tray.
SOURCE	ALL TRAYS	
ADJUST TRAY [N]	TRAY 1	
X1 Shift	*TRAY 2	
X2 Shift	TRAY [N]	
Y Shift	ADJUST TRAY [N]	Use this item to set the registration for the specified tray, where [N] is the number of the tray. A selection appears for each tray that is installed, and registration must be set for each tray. X1 SHIFT: Set the registration of the image on the page from side to side, for the second side (back) of the page. X2 SHIFT: Set the registration of the image on the page from side to side, for the first side (front) of a duplexed page. Y SHIFT: Set the registration of the image on the page from top to bottom.
	X1 Shift	
	X2 Shift	
	Y Shift	
	-20 to 20 (*0)	

**Table 23. Print-quality submenu (continued)**

Item	Values	Explanation
FUSER MODES	[Paper Type]=	Use this item to configure the fuser mode that is associated with each media type.
PLAIN	NORMAL	Change the fuser mode only if you are experiencing problems when printing on certain types of media. After you select a type of media, you can select a fuser mode that is available for that type. The available selections might include some or all of the following modes:
PREPRINTED	LOW	NORMAL: Use for most types of paper.
LETTERHEAD	HIGH1	HIGH 1: Use for rough paper.
TRANSPARENCY	HIGH2	LOW: Use for transparencies.
PREPUNCHED	ENVELOPE	HIGH 2: Use for paper that has a special or rough finish.
LABELS	RESTORE MODES	The default fuser mode is <b>NORMAL</b> for all print media types except transparencies ( <b>LOW</b> ), and rough paper ( <b>HIGH 1</b> ).
BOND		Do not change the fuser mode for transparencies. Using settings other than the <b>LOW</b> setting while printing transparencies can result in permanent damage to the printer and fuser. Always select <b>Transparencies</b> as the <b>Type</b> in the printer driver and set the tray type to <b>TRANSPARENCY</b> at the printer control panel.
RECYCLED		When selected, <b>RESTORE MODES</b> resets the fuser mode for each media type back to its default setting.
COLOR		
CARDSTOCK>164		
G/M2		
ROUGH		
OPTIMIZE	HIGH TRANSFER	Set this value to <b>ON</b> if you are using highly resistive, lower-quality papers. (See and .) HP recommends using only HP paper and print media.
HIGH TRANSFER	*OFF	
LINE DETAIL	ON	
RESTORE		
OPTIMIZE	LINE DETAIL	Set this value to <b>ON</b> to improve the appearance of lines if scattered lines are appearing. (See and .)
RESOLUTION	*OFF	
	On	
	RESTORE	Use this item to return the <b>OPTIMIZE</b> submenu settings to factory defaults.
	OPTIMIZE	
	RESOLUTION	Use this item to select the resolution. All values print at the same speed.
	300	300: Produces draft print quality and can be used for compatibility with the HP LaserJet III family of printers.
	600	600: Produces high-quality text print and can be used for compatibility with the HP LaserJet 4 family of printers.
	*FASTRES 1200	FASTRES 1200: Produces near-1200-dpi print quality for fast, high-quality printing of business text and graphics.
	PRORES 1200	PRORES 1200: Produces 1200-dpi printing for the best quality in line art and graphic images.
		It is best to change the resolution in the software program or printer driver. (Program and printer-driver settings override control-panel settings.)
RET	OFF	Use the Resolution Enhancement technology (REt) setting to produce print with smooth angles, curves, and edges. The REt setting does not affect print quality if the print resolution is set to FastRes 1200. All other print resolutions benefit from REt.
	LIGHT	
	*MEDIUM	
	DARK	It is best to change the REt setting in the software program or the printer driver. (Program and printer-driver settings override control-panel settings.)

**Table 23. Print-quality submenu (continued)**

Item	Values	Explanation
ECONOMODE	*OFF ON	<p>Turn EconoMode ON (to save toner) or OFF (for high quality). EconoMode creates draft-quality printing by reducing the amount of toner on the printed page.</p> <p>It is best to turn EconoMode on or off in the software program or the printer driver. (Program and printer driver-settings override control-panel settings.)</p> <p>HP does not recommend full-time use of EconoMode. If EconoMode is used full-time, it is possible that the toner supply will outlast the mechanical parts in the print cartridge.</p>
TONER DENSITY	1 2 *3 4 5	<p>Lighten or darken the print on the page by setting the toner density. Select a setting from 1 (light) to 5 (dark). The default setting of 3 usually produces the best results.</p> <p>It is best to change the toner density in the software program or the printer driver. (Program and printer-driver settings override control-panel settings.)</p>
CREATE CLEANING PAGE	No value available.	Press the  button to print a cleaning page manually (for cleaning toner from the fuser). Open the rear output bin. Follow the instructions on the cleaning page.




## System-setup submenu



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

The following section lists the settings and their possible values in the **System Setup** submenu. The default value for each setting is the one that has an asterisk (\*) next to it.

**Table 24. System-setup submenu**

Item	Values	Explanation
JOB STORAGE LIMIT	1 to 100 (*32)	Use this item to specify the number of quick copy jobs that can be stored on the printer. This item appears only if an optional hard-disk accessory is installed.
JOB HELD TIMEOUT	*OFF 1 HOUR 4 HOURS 1 DAY 1 WEEK	Use this item to set the amount of time that held jobs are retained before being automatically deleted from the queue.
TRAY BEHAVIOR USE REQUESTED TRAY MANUAL FEED PROMPT	USE REQUESTED TRAY Exclusively *First  MANUAL FEED PROMPT Always *Unless Loaded	Determines whether the printer tries to pull media from a tray other than the one that was selected in the printer driver.  EXCLUSIVELY: Sets the printer to pull media only from the tray that you selected and not from another tray, even if the tray that you selected is empty. FIRST: Sets the printer to pull first from the tray that you selected, but then to pull from another tray automatically if the tray that you selected is empty.  Use this item to tell the printer to show a prompt about pulling from tray 1 if the print job does not match the type or size that is loaded in any other tray. ALWAYS: Select this option if you always want to be prompted before the printer pulls from tray 1. UNLESS LOADED: Prompts you only if tray 1 is empty.
POWERSAVE TIME	1 MINUTE 15 MINUTES *30 MINUTES 60 MINUTES 90 MINUTES 2 HOURS 4 HOURS	Use this item to set how long the printer remains idle before it enters the PowerSave mode. PowerSave mode does the following: minimizes the amount of power the printer consumes when it is idle reduces wear on electronic components in the printer (turns off the display backlight, but the display is still readable) The printer automatically comes out of PowerSave mode when you send a print job, press a printer control-panel button, open a tray, or open the top cover.
PERSONALITY	*AUTO PS PCL	Use this item to select the default printer language (personality). The available values depend on which valid printer languages are installed in the printer. Normally, you should not change the printer language. If you change it to a specific printer language, the printer will not switch automatically from one language to another unless specific software commands are sent to the printer.
CLEARABLE WARNINGS	*JOB ON	The amount of time that a clearable warning is shown on the printer control-panel display. JOB: The clearable warning message appears until the end of the job that generated the message. ON: The clearable warning message appears until you press the  button.

**Table 24. System-setup submenu (continued)**

Item	Values	Explanation
AUTO CONTINUE	OFF *ON	<p>Use this item to tell the printer how to react to errors. If the printer is on a network, you probably want to turn AUTO CONTINUE to ON.</p> <p>ON: If an error occurs that prevents printing, the message appears on the printer control-panel display, and the printer goes offline for 10 seconds before returning online.</p> <p>OFF: If an error occurs that prevents printing, the message remains on the printer control-panel display, and the printer remains offline until you press the  button.</p>
CARTRIDGE LOW	STOP *CONTINUE	<p>Use this item to tell the printer how to behave if the print cartridge is low. The ORDER CARTRIDGE message first appears when about 15 percent of the toner remains in the print cartridge when printing at 5 percent coverage. (For the 12,000-page cartridge in HP LaserJet 4200 and 4200L series printers, 15 percent means that about 1,800 pages remain. For the 18,000-page cartridge in HP LaserJet 4300 series printers, 15 percent means that about 2,700 pages remain.) Good print quality is not guaranteed if you print after receiving this message.</p> <p>STOP: The printer pauses printing until you replace the print cartridge. If you do not replace the cartridge, you must press the  button before each job to print that job. The message appears until you replace the print cartridge.</p> <p>CONTINUE: The printer continues to print, but the message continues to appear until you replace the print cartridge.</p>
CARTRIDGE OUT	STOP *CONTINUE	<p>Use this item to tell the printer how to act if the print cartridge is empty.</p> <p>STOP: The printer stops printing until you replace the print cartridge.</p> <p>CONTINUE: The printer continues to print, and the REPLACE CARTRIDGE message continues to appear until you replace the print cartridge. HP does not guarantee good print quality if you select CONTINUE after a REPLACE CARTRIDGE condition. Replace the print cartridge as soon as possible to ensure good print quality.</p>
JAM RECOVERY	OFF ON *AUTO	<p>Use this item to tell the printer how to behave if a jam occurs.</p> <p>OFF: The printer does not reprint pages following a jam. Printing performance might be improved with this setting.</p> <p>ON: The printer automatically reprints pages after a jam is cleared.</p> <p>AUTO: The printer automatically selects the best mode for printer jam recovery (usually ON).</p>
RAM DISK	OFF *AUTO	<p>Use this item to configure the RAM disk.</p> <p>OFF: The RAM disk is disabled.</p> <p>AUTO: The printer determines the optimal RAM-disk size based on the amount of available memory.</p> <p>If you change the setting from OFF to AUTO, the printer automatically reinitializes when it becomes idle.</p>

**Table 24. System-setup submenu (continued)**

Item	Values	Explanation
LANGUAGE	*ENGLISH (Selections are available depending on the installed fonts.)	Selects the language for the messages that appear on the printer control-panel display.

## Stapler/stacker submenu

Use this submenu to select settings for the optional stapler/stacker, if one is installed.

Some items on this menu are available in the software program or the printer driver (if the appropriate driver is installed).

The following section lists the settings and their possible values in the **Stapler/stacker** submenu. The default value for each setting is the one that has an asterisk (\*) next to it.

**Table 25. Stapler/stacker submenu**

Item	Values	Explanation
STAPLER/STACKER	STAPLES	Use this item to specify whether or not print jobs are stapled.  NONE: Turns off stapling. ONE: Turns on stapling.  Selecting the stapler at the printer control panel changes the default setting to staple. It is possible that all print jobs will be stapled.
STAPLES	*NONE	
STAPLES OUT	ONE	
	STAPLES OUT	Use this item to tell the printer how to behave if the stapler runs out of staples, as indicated by the STAPLER OUT OF STAPLES message on the printer control-panel display.  STOP: The printer stops printing until you refill the stapler.  CONTINUE: The stapler accepts print jobs if it is out of staples, but the pages will not be stapled.  For information about ordering a new staple cartridge, see chapter 8.
	*STOP	
	CONTINUE	

## I/O submenu

Items on the I/O (input/output) menu affect the communication between the printer and the computer. The contents of the I/O submenu depend on which EIO card is installed.

The following section lists the settings and their possible values in the **I/O** submenu. The default value for each setting is the one that has an asterisk (\*) next to it.

**Table 26. I/O submenu**

Item	Values	Explanation
I/O TIMEOUT	5 to 300 (*15)	Select the I/O timeout period in seconds. Use this setting to adjust timeout for best performance. If data from other ports appear in the middle of your print job, increase the timeout value.
PARALLEL INPUT HIGH SPEED ADVANCED FUNCTIONS	HIGH SPEED NO *YES  ADVANCED FUNCTIONS  OFF *ON	Select YES to enable the printer to accept the faster parallel communications that are used for connections with newer computers.  Turn the bidirectional parallel communication on or off. The default is set for a bidirectional parallel port (IEEE-1284). The function allows the printer to send status readback messages to the computer. (Turning the parallel advanced functions on might slow language switching.)
EIO [X] JETDIRECT MENU	CFG NETWORK YES NO	The [X] represents the slot in which the optional HP Jetdirect print server is installed, if one is installed. The submenu that appears depends on the type of print server that is installed. Use this item to select CFG NETWORK = YES to gain access to the available submenus that follow.
TCP/IP ENABLE CONFIG METHOD	ENABLE OFF *ON  CONFIG METHOD *BootP DHCP MANUAL	Select whether the TCP/IP protocol stack is enabled or disabled. You can set several TCP/IP parameters.  Select the TCP/IP configuration method. For the MANUAL option, set the values for IP ADDRESS, SUBNET MASK, DEFAULT GATEWAY, SYSLOG SERVER, and IDLE TIMEOUT.
IPX/SPX ENABLE FRAME TYPE	ENABLE OFF *ON  FRAME TYPE *AUTO OFF	Select whether the IPX/SPX protocol stack (in Novell NetWare networks, for example) is enabled or disabled.  Select whether the frame type is automatically determined or turned off.
APPLETALK ENABLE	ENABLE OFF *ON	Select whether the Apple EtherTalk protocol stack is enabled or disabled.
DLC/LLC ENABLE LINK SPEED	ENABLE OFF *ON  LINK SPEED *AUTO 10T HALF 10T FULL 100TX HALF 100TX FULL	Select whether the DLC/LLC protocol stack is enabled or disabled.  Use this item to select the network link speed (10 or 100 Mbps) and the communication mode (full-duplex or half-duplex).

# Printer maintenance

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To maintain superior print quality and performance, thoroughly clean the printer and the paper-handling accessories:

every time you change the print cartridge.

after printing approximately 10,000 pages.

whenever print-quality problems occur.

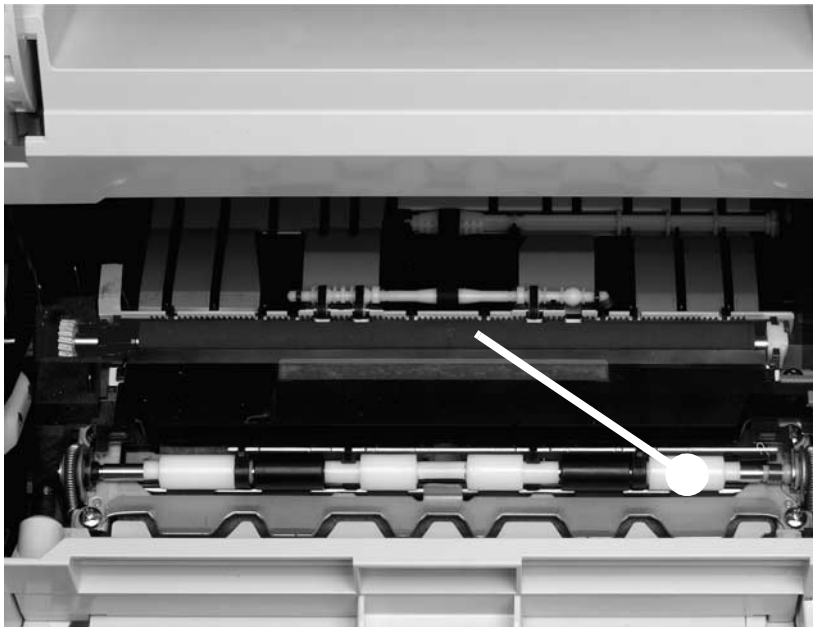
Clean the outside surfaces of the printer and accessories with a water-dampened cloth. Clean the inside parts as indicated in . Observe the following warning and caution when cleaning the printer accessories.

Before beginning the cleaning steps, turn the printer off and unplug all power cords to avoid shock hazard.

Be careful when cleaning around the fusing assembly area. It might be hot.

To prevent permanent damage to the print cartridge, do not use ammonia-based cleaners on or around the printer.

Do not touch the transfer roller (callout 1). Skin oils on the roller can cause print-quality defects. If toner gets on clothing, wipe it off with a dry cloth and wash the clothes in cold water. Hot water sets toner into fabric.



**Location of the transfer roller – *do not touch!***

**Table 27. Cleaning the printer**

Component	Cleaning method/notes
	Use a water-dampened cloth. Do not use solvents or ammonia-based cleaners.
	With a dry, lint-free cloth, wipe any dust, spilled toner, and paper particles from the paper-path area, the registration roller, and the print cartridge cavity. Do not touch the transfer roller with bare hands.
	Use a water-dampened, lint-free cloth.
	Use a dry, lint-free cloth.
	Use a dry, lint-free cloth.
	Use a dry, lint-free cloth. <i>Do not touch</i> the transfer roller.
	Use a water-dampened, lint-free cloth.

## Cleaning the fuser

Run the printer cleaning page to keep the fuser free of toner and paper particles that can sometimes accumulate. Accumulation of toner and particles can cause specks to appear on the front or back side of print jobs. See

To ensure optimum print quality, HP recommends using the cleaning page every time the print cartridge is replaced or at an automatic interval that the user establishes. If an optional duplexer is installed, then run the cleaning page manually.

The cleaning procedure takes about 2.5 minutes to complete. A message (either `CREATING CLEANING PAGE` or `CLEANING`) appears on the printer control-panel display during the cleaning processes.

See











See

## Running the cleaning page manually

In order for the cleaning page to work properly, print the page on copier-grade paper (not bond, heavy, or rough paper).

If an optional duplexer is installed, this cleaning method is the only one that can be used. Make sure that automatic cleaning option is not selected. To ensure good print quality, run the cleaning page every time the print cartridge is replaced. If the cleaning page is needed frequently, then use a different type of paper for everyday printing.

### To run the cleaning page manually

1. If a duplexer is installed, open the rear output bin.
2. Press the (  ) button to open the menus.
3. Use the (  ) button or the (  ) button to scroll to CONFIGURE DEVICE, and then press the (  ) button.
4. Use the (  ) button or the (  ) button to scroll to PRINT QUALITY, and then press the (  ) button.
5. Use the (  ) button or the (  ) button to scroll to CLEANING PAGE, and then press the (  ) button.
6. Follow the instructions on the cleaning page to complete the cleaning process.
7. If a duplexer is installed, close the rear output bin.

You might need to create and process a cleaning page more than once. When toner has been cleaned from the fuser assembly, shiny black spots appear on the page's black strip. If white spots appear on the black strip, create and process another cleaning page.



Sample cleaning page




























## Running the cleaning page automatically

Use the following procedure to set the printer to print cleaning pages automatically at a specified interval. In order for the cleaning page to run without intervention, the selected size and the plain paper type must be available in the printer. The printer will not interrupt a printing job in-process to run a cleaning page.

HP recommends that the cleaning-page interval be set at 2,000 pages (or fewer) to make sure that excess toner is removed from the printer. This ensures good print quality.

If an optional duplexer is installed, make sure that automatic cleaning option is *not* selected. Only run cleaning pages *manually*. See .

### To run the cleaning page automatically

1. Press the  button to open the menus
2. Use the  button or the  button to scroll to CONFIGURE DEVICE, and then press the  button.
3. Use the  button or the  button to scroll to PRINT QUALITY, and then press the  button.
4. Use the  button or the  button to scroll to AUTO CLEANING, and then press the  button.
5. Use the  button or the  button to scroll to ON, and then press the  button.
6. Use the  button or the  button to scroll to CLEANING INTERVAL, and then press the  button.
7. Use the  button or the  button to scroll to an interval from 1,000 to 20,000 pages that is appropriate for the printer's use cycle, and then press the  button to save the selection.
8. Use the  button or the  button to scroll to AUTO CLEANING SIZE, and then press the  button.
9. Use the  button or the  button to scroll to the paper size that the printer uses for cleaning pages (A4 or LETTER), and then press the  button to save the selection.

The printer automatically prints a cleaning page at the interval and on the page size that are selected. Discard the output page that the cleaning process creates.

The printer will not interrupt a printing job in progress to automatically run the cleaning page. The printer will run the cleaning page immediately after completing the job in which the selected cleaning interval occurred.

## Cleaning spilled toner

Defective or worn print cartridges can develop leaks. Also, after a jam has occurred, some toner might remain on the rollers and guides inside the printer. The pages that print immediately after the jam might pick up this toner.

Clean spilled toner with a cloth that has been dampened with cold water. Do not touch the transfer roller with the damp cloth or with your fingers. Do not use a vacuum cleaner unless it is equipped with a micro-fine particle filter.

Replace specific parts when the `PERFORM PRINTER MAINTENANCE` message appears on the printer control-panel display. This helps the printer maintain optimum performance.

The maintenance message appears every 200,000 pages. The message can be temporarily cleared for approximately 10,000 pages by using the `CLEAR MAINTENANCE MESSAGE` item on the **Resets** submenu. (See [Figure 28-1](#).) To check the number of pages that the printer has printed since new maintenance-kit components were installed, print either a configuration page (see [Figure 28-2](#)) or a supplies status page (see [Figure 28-3](#)).

To order the printer maintenance kit, see chapter 8. The kit includes the following components:

- fuser
- printer rollers (transfer, feed, and separation, and tray 1 pickup)
- tray 1 rollers
- rollers for two 500-sheet feeders
- rollers for one 1,500-sheet feeder
- installation instructions

The printer maintenance kit components are consumable items that are not typically covered under the original printer warranty or under most extended warranties.

## Resetting the maintenance-kit counter

After a maintenance kit is installed, the maintenance-kit counter must be reset by using the following procedure.

1. Turn the printer power off.
2. Hold down the [Power](#) button, and then turn on the printer power. Continue holding down the [Power](#) button until all three printer control-panel lights flash once and then remain on. This might take up to 10 seconds.
3. Press the [Up](#) button to scroll to `NEW MAINTENANCE KIT`.
4. Press the [Enter](#) button to reset the maintenance-kit counter.

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

**Table 28. Maintenance kit part numbers**

Part name	Part number	The maintenance kit contains user-replaceable parts and instructions for printer maintenance. The printer maintenance kit components are consumable items. (Typically the associated components are not covered under the original warranty or most extended-warranty options).
110 V maintenance kit, HP LaserJet 4200/4200L series printers	Q2429-69003	
110 V maintenance kit, HP LaserJet 4300 series printers	Q2436-69004	
220 V maintenance kit, HP LaserJet 4200/4200L series printers	Q2430-69003	
220 V maintenance kit, HP LaserJet 4300 series printers	Q2437-69004	

## Expected life of components

The following table shows the expected life of certain components in the printer. To order parts, see chapter 8.

**Table 29. Component life expectancies and part numbers**

Part name	Part number	Expected life
Tray 1 pickup roller	RL1-0019-000CN	100,000 pages
Tray 1 separation pad	RL1-0007-000CN	200,000 pages
Tray 1 solenoid	RH7-5357-000CN	200,000 pages
Pickup roller (trays 2, 3, and 4)	RM1-0036-000CN	100,000 pages
Feed and separation rollers (trays 2, 3, and 4)	RM1-0037-000CN	200,000 pages
Fuser		
HP LaserJet 4200/4200L, 110 V	Q2425-69009	200,000 pages
HP LaserJet 4300 110 V	Q2431-69011	200,000 pages
HP LaserJet 4200/4200L, 220 V	Q2425-69010	200,000 pages
HP LaserJet 4300, 220 V	Q2431-69012	200,000 pages
Transfer roller	RM1-0699-000CN	200,000 pages
Main cooling fan	RH7-1573-000CN	25,000 hours
Cooling fan (right-side; HP LaserJet 4300)	RH7-1577-000CN	25,000 hours
Duplexer exhaust fan	RH7-1443-000CN	25,000 hours
Stapler unit	RM1-0235-000CN	50,000 staple operations

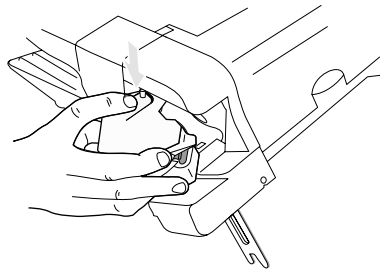
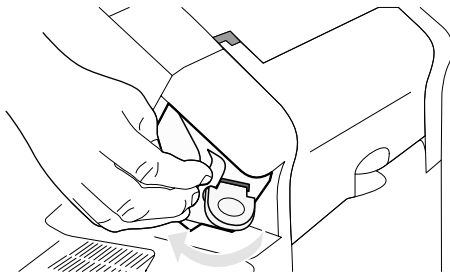
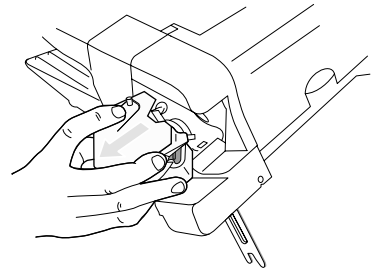
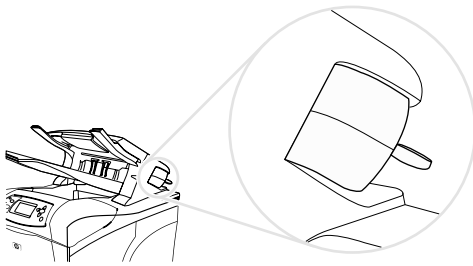
If a printer component is not listed in table 28, the component should last for the life of the printer.

## Removing and replacing the stapler unit

Use this procedure to replace a defective stapler unit in the optional stapler/stacker.

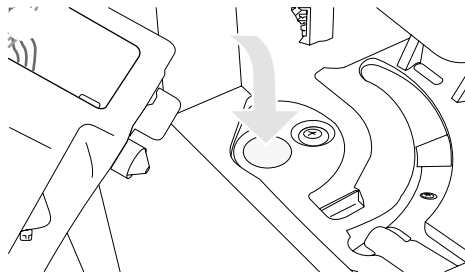
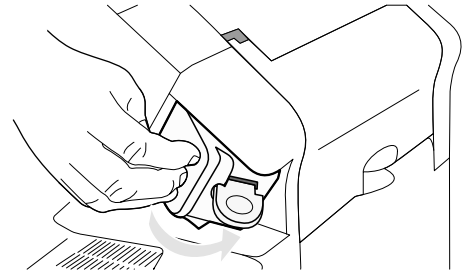
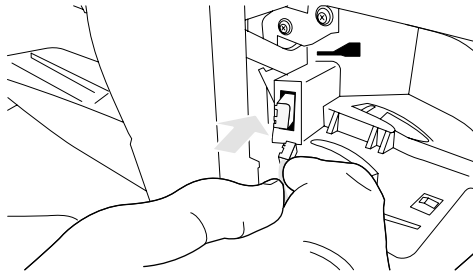
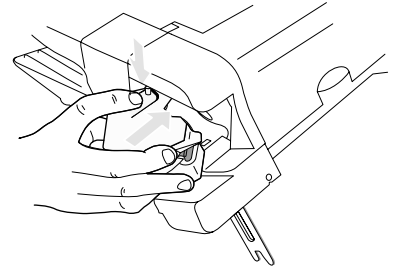
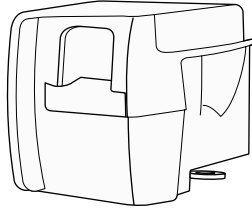
### To remove and replace the stapler unit

1. Locate the stapler unit on the right side of the stapler/stacker.
2. Rotate the stapler unit toward the front of the printer until the unit clicks. Hold the stapler unit in this open position.
3. Push down on the tab at the top of the stapler unit.
4. Hold the tab down and pull the stapler unit up and out of the stapler/stacker.
5. Disconnect the cable that connects the stapler unit to the stapler/stacker. (Only the blue part detaches.)



### Replacing the stapler unit (1 of 2)

6. Remove the new stapler unit from its packaging.
7. Connect the cable on the new stapler unit to the stapler/stacker.
8. Place the pivot pin that is located on the bottom of the new stapler unit into the hole in the stapler/stacker (located in the cavity that was created when the staple unit was removed earlier in this procedure).
9. Press down on the tab at the top of the stapler unit and push the unit into the stapler/stacker.
10. Rotate the stapler unit toward the rear of the printer until the unit clicks into place.
11. If the stapler cartridge is not installed in the stapler unit, install it now. (See .)



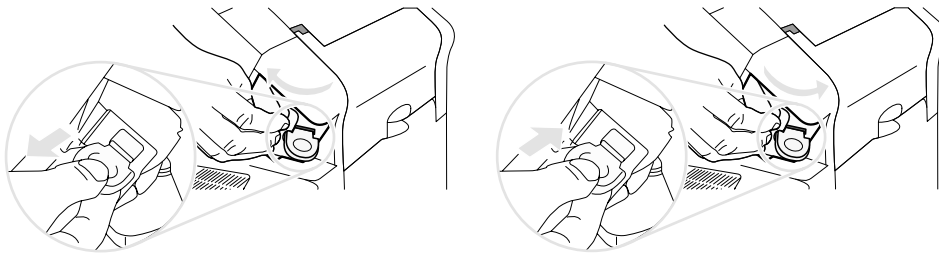
#### Replacing the stapler unit (2 of 2)

## Loading staples

Load staples if the printer control-panel display prompts you with a `STAPLER LOW ON STAPLES` message (the staple cartridge contains fewer than 70 staples) or a `STAPLER OUT OF STAPLES` message (the staple cartridge contains 15 or fewer staples). For more information see . When the stapler runs out of staples, jobs can be delivered to the stapler/stacker (if `STAPLES OUT = CONTINUE`), but they will not be stapled. For more information see

### To load staples

1. Turn the stapler unit on the right side of the stapler/stacker toward the front of the printer until the unit clicks into the open position. Grasp the blue staple-cartridge handle and pull the cartridge out of the stapler unit.
2. Insert the new staple cartridge into the stapler unit and rotate the stapler unit toward the rear of the printer until the unit snaps into place.



### Loading staples in the staple cartridge (stapler/stacker only)

A remote firmware update (RFU) can be downloaded from the following website:  
or .

The RFU file on the website is a self-extracting .exe file. Downloading an RFU is similar to downloading printing-system software and printer drivers.

These websites also feature an “E-mail me when new software is available” link. This feature sends an e-mail notification when a new RFU version is available for the printer. If the customer used HP WebReg to register the printer, an e-mail notification is sent automatically when a new RFU version is available for the printer.

The RFU process consists of three steps:

1. Determine the version of firmware that is currently installed (print a configuration page; see ). Look for the version information in the device information section of the configuration page.
2. Go to or and download the update.
3. Install the update.





# Theory of operation

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This chapter presents an overview of the relationships between major components in the printer. It also provides a general description of the following topics:

- Basic operation of the printer
- Power supply
- Laser/scanner assembly
- Image formation
- Paper pickup and feeding
- 500-sheet feeder operation
- 1,500-sheet feeder operation
- Envelope feeder
- Duplexer
- Stacker and stapler/stacker

## Basic operation of the printer

Printer operation can be divided into four systems: the control system (which includes the power supply and dc controller PCA), the pickup and feed system (which consists of various rollers and transports the media through the printer), the laser/scanner system (which forms the latent image on a photosensitive drum), and the image formation system (which transfers a toner image onto the print media).

## Printer operating sequence

The operating sequence is controlled by a microprocessor on the dc controller PCA. The table in this section describes the basic operating sequence from when the printer power is turned on until the final printed page is delivered to an output bin. For information about the timing of the basic operating sequence, see [Table 30](#) and [Figure 30](#).

**Table 30. Basic printer operating sequence**

Period (sequence)	Description
1	The period of time from when the printer power is turned on until the main motor or drum motor (HP LaserJet 4300 only) begins to rotate. During this time the transfer roller is cleaned and the microprocessor on the dc controller PCA checks to determine if a print cartridge is installed in the printer.
2	The period of time from the end of the waiting sequence <i>or</i> from the end of the last rotation until a print command is received from the host computer <i>or</i> until the printer power is turned off. The message <b>READY</b> appears on the control-panel display.
3	The period of time when the photosensitive drum is stabilized to prepare for printing.
4	The period of time from the initial rotation until the control system detects a page entering the printer (the page is detected by the top of page sensor—PS103).
5	The period of time from the completion of the print job until the main motor (or drum motor, in an HP LaserJet 4300 printer) stops. The final page of the job is delivered to an output bin and the transfer roller is cleaned. If another print job is immediately detected (sent by the host computer), then the printer returns to the initial rotation period. If no print jobs are waiting, then the printer returns to the standby period.

## **Control system overview**

The control system consists of the power supply and the dc controller PCA. It controls the pickup and feed, laser/scanner, and image formation systems. The microprocessor on the dc controller PCA controls the operating sequence of the printer.

When the printer power is in the standby sequence (see table 30 on page 67), direct current power (dc voltage) is supplied to the dc controller PCA by the power supply. When the printer is in the standby sequence (see table 30 on page 67) the microprocessor on the dc controller PCA sends signals to turn on and off various solenoids, motors, and other printer components needed to process and print the image data input by the host computer.

## **Pickup-and-feed system overview**

The pickup-and-feed system consists of a motor, various rollers, and sensors that detect the presence of media, transport the media into and through the printer, and deliver the media to an output bin.

During the transport process, if the media does not reach specific sensors in a specified time, the microprocessor on the dc controller PCA halts the motor and a jam message appears on the control-panel display.

## **Laser/scanner system overview**

The laser/scanner system forms a latent (or potential) image on a photosensitive drum according to signals sent from the microprocessor on the dc controller PCA.

The main components of the laser/scanner assembly are the laser driver PCA, the scanner motor, and a six-sided mirror. The dc controller PCA sends image data signals to the laser/scanner assembly. The laser/scanner PCA converts these data signals into a laser beam that strikes a six-sided mirror. The mirror reflects the light onto a photosensitive drum (in the print cartridge), creating a latent image on the drum.

## **Image-formation system overview**

The image-formation system uses toner in the print cartridge to transfer the latent image on the photosensitive drum to the media. Heat and pressure (from the fuser) are used to permanently bond the toner image to the media.

The photosensitive drum (in the print cartridge) receives a uniform negative primary charge. The laser beam neutralizes areas of the drum surface to create the latent image. When the areas exposed to the laser beam come in contact with toner, the toner is attracted to them.

The transfer roller applies a positive charge to the back of the media. The positive charge attracts the toner image from the photosensitive drum and transfers the image from the drum to the media.

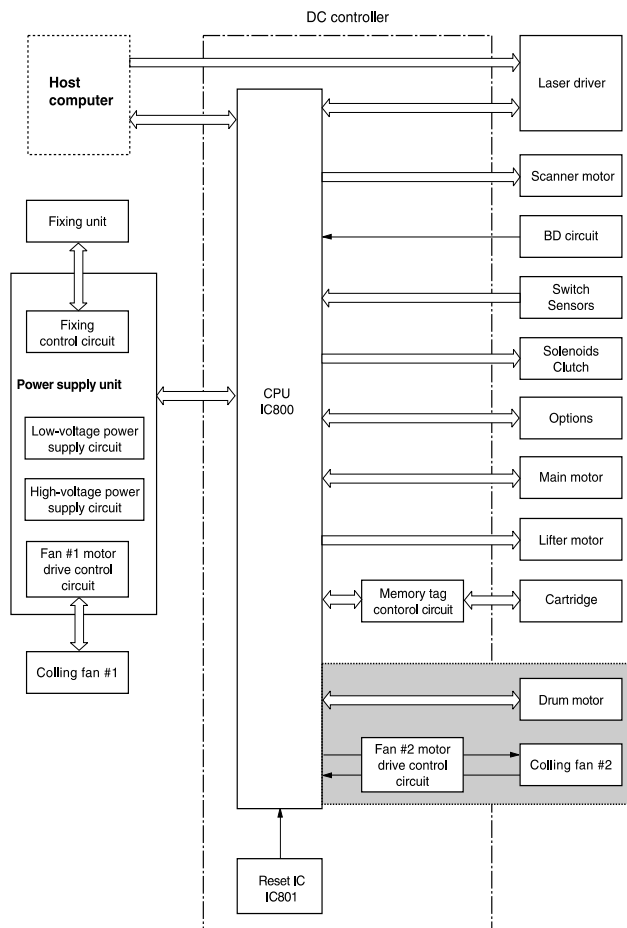
The media then passes through the fuser, where heat and pressure are applied to permanently bond the toner to the media.

This section describes the following printer components.

Dc controller PCA	500-sheet feeder
Power-supply assembly	1,500-sheet feeder
Pickup-and-feed assembly	Envelope feeder
Laser/scanner assembly	Duplexer
Image-formation system	Stacker and stapler/stacker

## Dc controller PCA

The dc controller PCA controls the operation of the printer and its components. The dc controller PCA starts printer operation when the printer power is turned on and the power supply sends dc voltage to the dc controller PCA. After the printer enters the standby sequence (see ). the dc controller PCA sends out various signals to operate motors, solenoids, and other printer components based on the print command and image data that the host computer sends. For a list of dc controller PCA connectors, see .



HP LaserJet 4300 series printers only

Dc controller PCA block diagram

## Motor and fan control

The HP LaserJet 4200 and 4200L series printers contain three dc brushless motors: the main motor, the lifter-driver motor (inside of the lifter-driver assembly), and a fan motor. The main motor is used for image formation (rotating the photosensitive drum in the print cartridge) and paper pickup and feed. The lifter motor raises the plate in the tray cassette. The fan motor rotates the fan blades.

The HP LaserJet 4300 series printers contain five dc brushless motors: the main motor, the print cartridge motor, the lifter motor, and two fan motors. The main motor is used for paper pickup and feed. The print cartridge motor rotates the photosensitive drum. The lifter motor raises the plate in the tray cassette. Two fan motors rotate the left- and right-side fans.

The photosensitive drum in print cartridges for HP LaserJet 4300 series printers is heavier than the drum in print cartridges for HP LaserJet 4200 and 4200L series printers and requires the additional print cartridge motor.

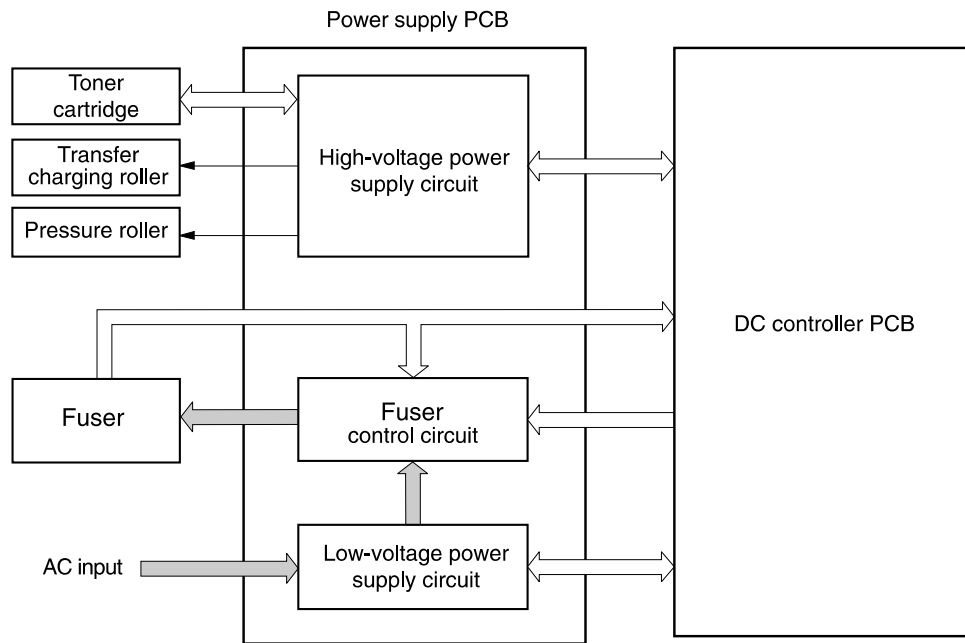
The dc controller PCA controls the operation of the motors and fans.

**Table 31. Printer fans and motors**

Motor names	Purpose	Type	Rotation	Speed	Failure detection
Main motor (M101), HP LaserJet 4200 and 4200L series printers	Drives the tray cassette pickup roller, feed/separation roller, tray 1 pickup roller, pre-transfer roller, photosensitive drum, developing cylinder, pressure roller, and output delivery roller	dc motor	Counter-clockwise	Two-speed (full and half)	Yes
Main motor (M101), HP LaserJet 4300 series printers	Drives the tray cassette pickup roller, feed/separation roller, tray 1 pickup roller pre-transfer roller, pressure roller, and output delivery roller.	dc motor	Counter-clockwise	Two-speed (full and half)	Yes
Print cartridge motor (M102), HP LaserJet 4300 series printers	Drives the transfer charging roller, photosensitive drum, and developing cylinder.	dc motor	Counter-clockwise	Two-speed (full and half)	Yes
Lifter motor (M103), all printer models	Moves the tray cassette lifting plate up and down.	dc motor	Counter-clockwise	Single-speed	Yes
Left-side cooling fan (FN101), all printer models	Cools the inside of the printer	dc motor	NA	Two-speed (full and half)	Yes
Right-side cooling fan (FN102), HP LaserJet 4300 series printers	Cools the inside of the printer.	dc motor	NA	Single-speed	Yes

## Power supply

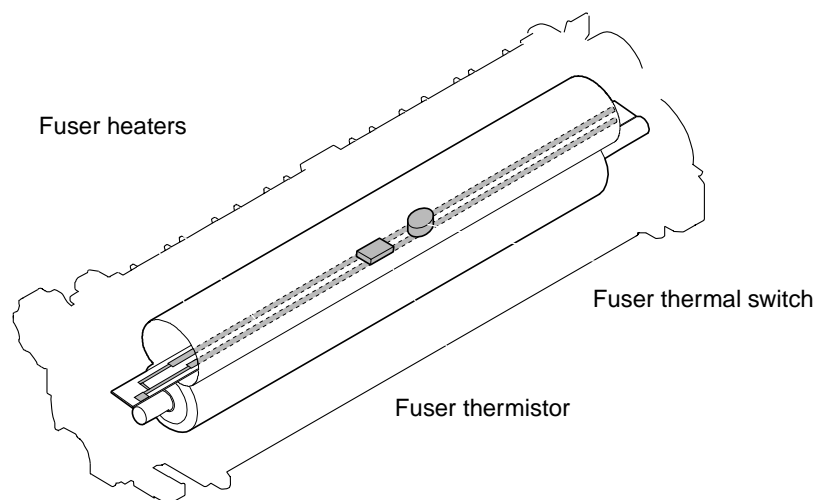
The power supply consists of the fuser-control circuit, the high-voltage circuit, and the low-voltage circuit. The fuser-control and high-voltage circuits control the temperature of the fuser and generate high-voltage according to signals from the dc controller PCA. The low-voltage circuit generates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



**Power supply block diagram**

## Fuser-control circuit

The fuser-control circuit controls the fuser's components. The two fuser heaters provide the high temperatures that cause the toner to be permanently bonded to the media. The fuser thermistor is used to monitor the fuser temperatures. The thermal switch detects abnormally high fuser temperatures and interrupts the supply of voltage to the fuser if the temperature is determined to be too high.



**Fuser components**

## Fuser over-temperature protection

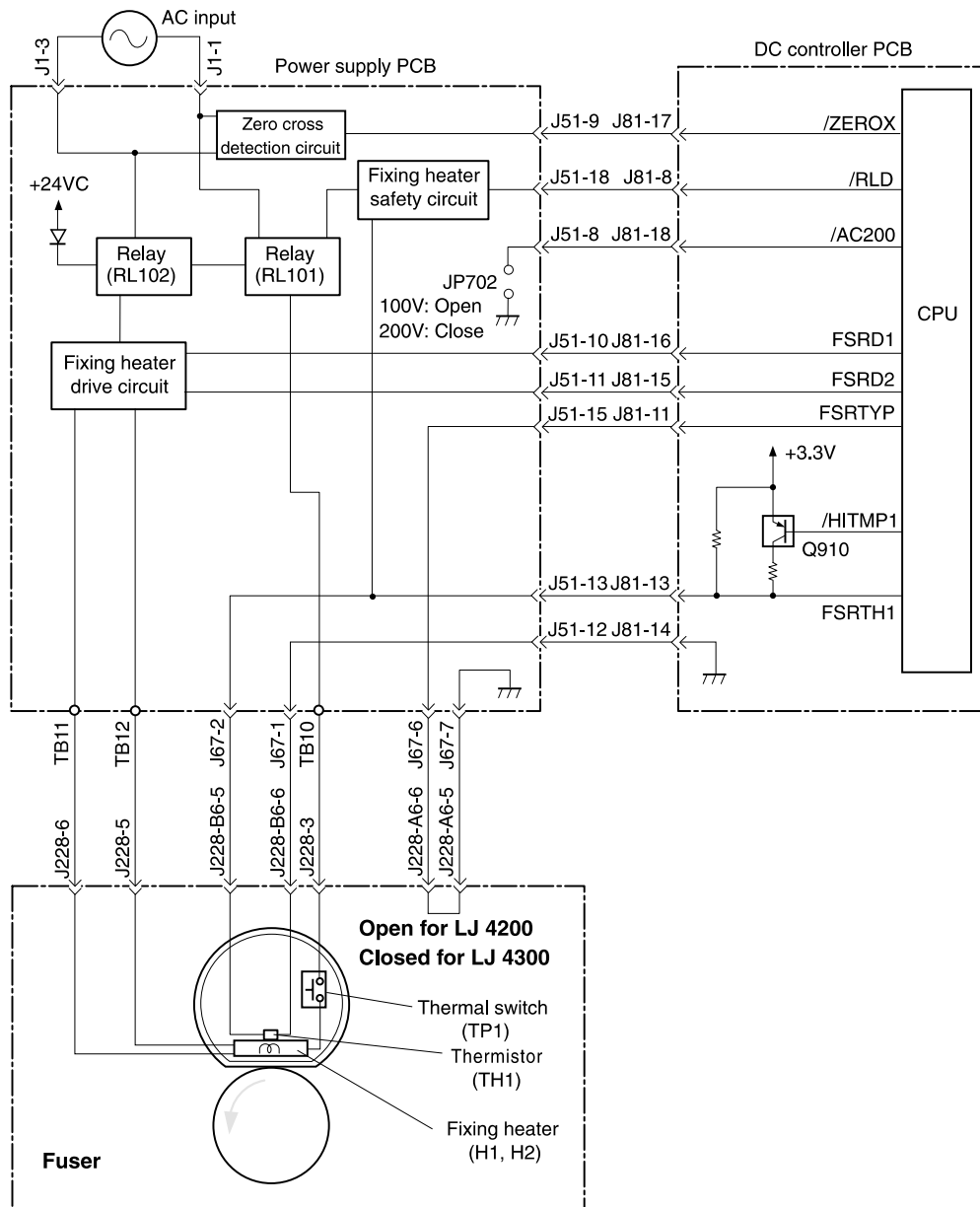
The fusing heater safety circuit is located on the power supply and constantly monitors the fusing temperature.

To protect the fuser from excessive temperatures, the printer has the following three protective functions:

The CPU monitors the voltage of the thermistor. If the fuser temperature reaches 240° C (464° F) or higher, the CPU turns off the relay (RL101) to interrupt the power to the fusing heater.

If the temperature of the fusing heater continues to rise abnormally and the temperature of the thermistor (TH1) exceeds about 250° C (482° F), the relay 1 (RL101) opens up to cut off the power supply to the fusing heater.

When the temperature of the heater exceeds about 250° C (482° F), the thermal switch (TP1) is turned off to cut off the power supply to the fusing heater

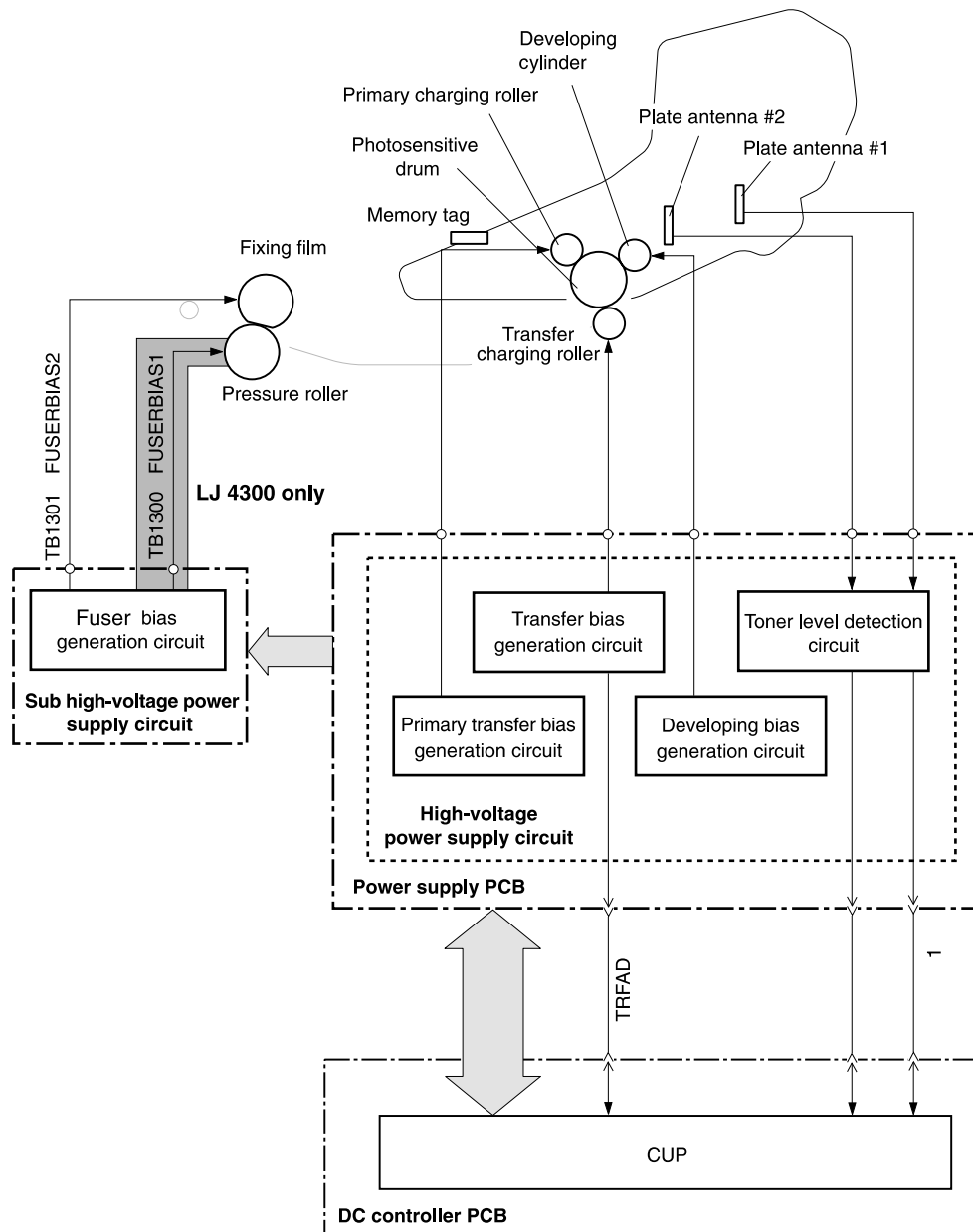


Fuser over-temperature protection circuit block diagram



## High-voltage circuit

The high-voltage circuit produces the voltage biases that are applied to the primary charging roller, the developing cylinder, the transfer charging roller, and the pressure roller.



**High-voltage circuit block diagram**

The primary charging voltage (bias) applies a uniform negative charge to the photosensitive drum in the print cartridge. Two types of primary charging bias are used: the primary charging dc negative voltage and the primary charging ac bias. The high-voltage circuit on the power supply generates both biases. These biases are superimposed on one another and then applied to the primary charging roller, which transfers the biases to the drum. The laser/scanner assembly generates the electrostatic image on the primary charged photosensitive drum. See . The electrostatic image cannot be seen until toner is deposited on the drum.

The developing voltage (bias) causes the toner to adhere to the electrostatic image that the laser/scanner assembly created on the photosensitive drum. Two types of developing biases are used: the developing dc negative bias and the developing ac bias. The high-voltage circuit on the power supply generates both biases. These biases are superimposed on one another and then applied to the primary charging roller, which transfers the biases to the drum. The biased developing cylinder picks up toner particles and deposits them onto the electrostatic image on the photosensitive drum. The image is now visible on the drum.

The transfer voltage (bias) is used to transfer the toner image on the photosensitive drum to the media. Two types of developing biases are used: the transfer dc positive bias and the dc negative bias. The high-voltage circuit on the power supply generates both biases. Transfer dc positive bias is applied to the transfer roller during the toner transfer process. Transfer dc positive bias is applied to the transfer roller during the transfer roller cleaning process. The dc positive bias attracts the toner to the media (this transfers the toner image on the photosensitive drum to the media). The dc negative bias is used to clean residual toner off of the transfer roller.

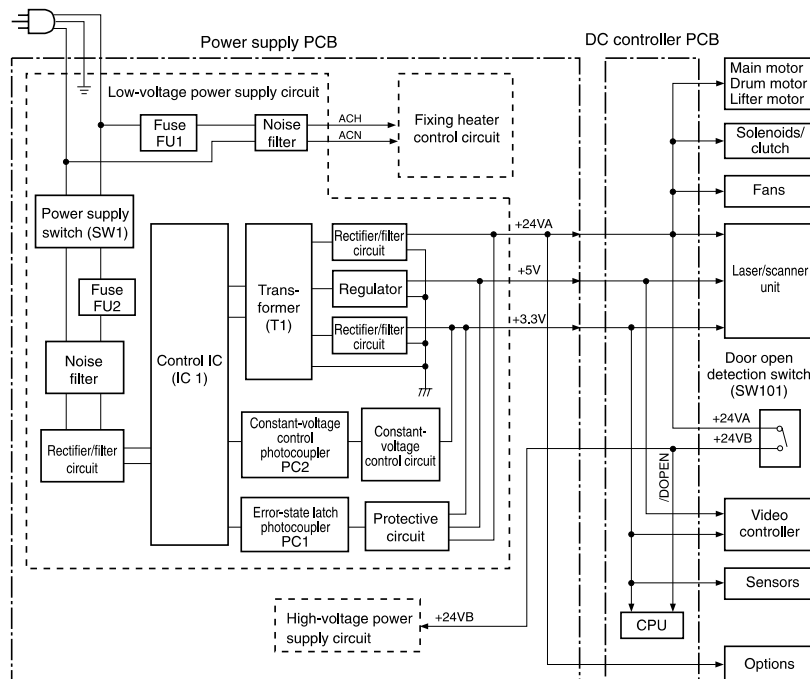
The fuser voltage (bias) prevents toner on the media from sticking to the fuser's pressure roller.

HP LaserJet 4200 and 4200L series printers use one type of fuser bias. A dc positive bias is generated by the sub high-voltage circuit on the power supply. The dc positive bias is applied to the pressure roller in the fuser.

HP LaserJet 4300 series printers use two types of fuser bias. The fuser dc positive bias and a dc negative bias. The sub high-voltage circuit on the power supply generates both biases. The dc positive bias is applied to the pressure roller in the fuser. The dc negative bias is applied to the fixing film in the fuser.

## Low-voltage circuit

The low-voltage circuit converts the ac power from the power source into the direct current voltage (Vdc) that printer components (for example, the motors and fans) use. The ac voltage is converted into +24 Vdc, +5 Vdc, and +3.3 Vdc. The +24 Vdc voltage is supplied to the main motor, laser/scanner assembly motor, solenoids, and clutches. The +5 Vdc voltage is supplied to the laser/scanner assembly. The +3.3 Vdc is supplied to the sensors and the dc controller PCA.



**Low-voltage circuit block diagram**

## Overcurrent/overvoltage protection

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

If the overcurrent or overvoltage protection system are activated and the power-supply circuit does not generate dc voltage, it is necessary to turn the power off, correct the problem, and then turn the printer on again.

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

## Toner detection

To monitor the toner level, the printer uses two plate antennas and a toner-level circuit in the high-voltage power-supply circuit (see [Figure 5-1](#)). Toner-level detection is performed by the dc controller PCA, which monitors the output signal of this circuit. The signal is fed back to the dc controller PCA from the antennas during the wait and standby operating periods (see [table 30](#) on page 67). The dc controller PCA detects toner level from 1 percent to 100 percent. If the toner is detected as being low, a message will appear on the control-panel display (see [Figure 5-2](#)).

## Cartridge detection

The presence of the cartridge is detected using information stored in plate antenna 2 and the print cartridge memory tag (see [Figure 5-3](#)). The dc controller PCA detects the presence (or lack) of the print cartridge during the wait operating sequence (see [Figure 5-4](#)).

## Cartridge memory

The cartridge memory is EEPROM built into the cartridge, so that the printer is capable of detecting the cartridge conditions.

The cartridge memory read/write is performed by the memory controller board through the antenna unit. The cartridge information that the memory controller reads is updated by the dc controller PCA and written to the memory. The memory read/write is implemented when the memory controller board receives a command from the dc controller PCA at the following timing.

### Reading timing

- when the power is turned on
- when the door is closed
- when the dc controller PCA receives a command from the formatter

### Writing timing

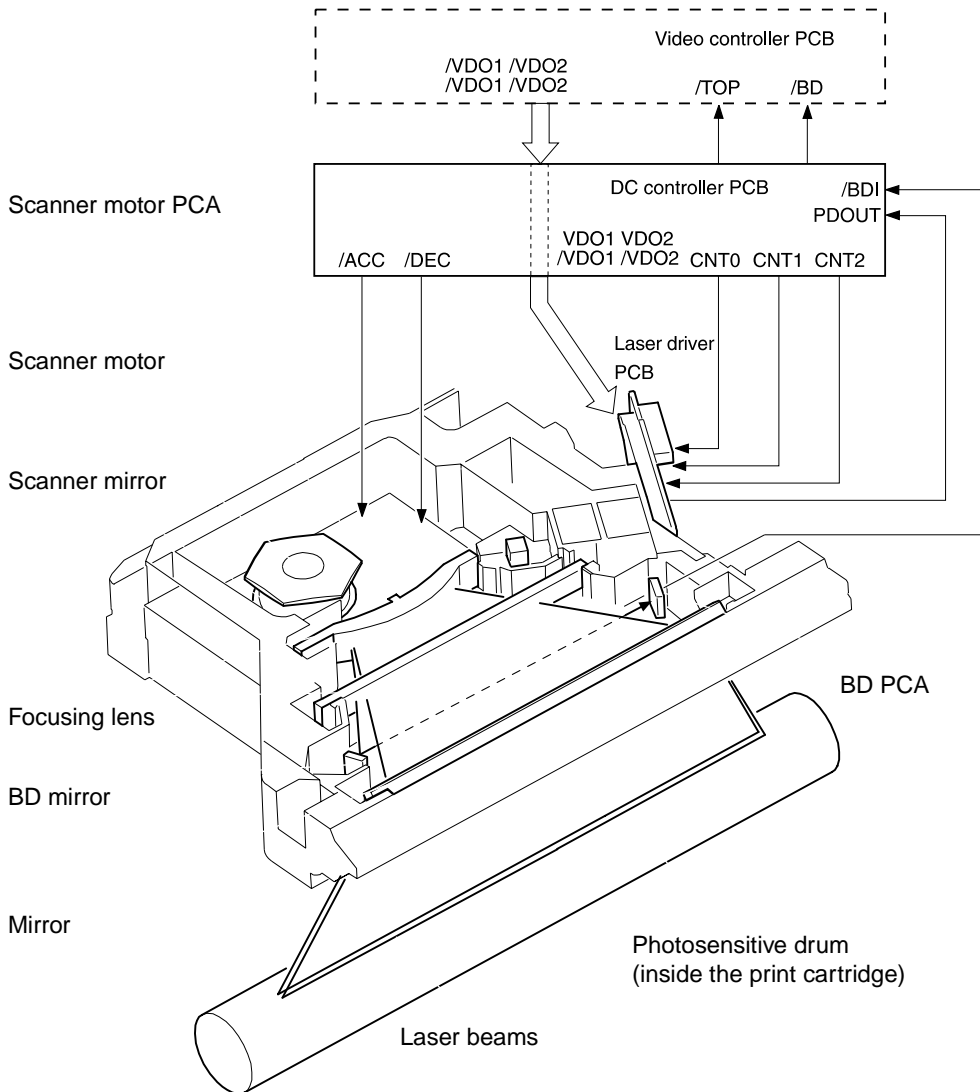
- when printing is completed
- when the dc controller PCA receives a command from the formatter

The memory data that the memory controller sends also contains the status of any error that has occurred during read/write operation. When the error status is sent, the dc controller PCA attempts to read the operation four times. If the error is not cleared after the operation, the dc controller PCA determines one of the following error conditions: sub-CPU failure, memory-data abnormality, or memory-access abnormality.

Removing the toner cartridge when the top cover interlock is overridden disables the cartridge memory.

## Laser/scanner assembly

The laser/scanner produces the latent electrostatic image on the photosensitive drum in the print cartridge. The main components of the laser/scanner assembly are the laser driver PCA, the scanner motor, various mirrors, and the focusing lenses.

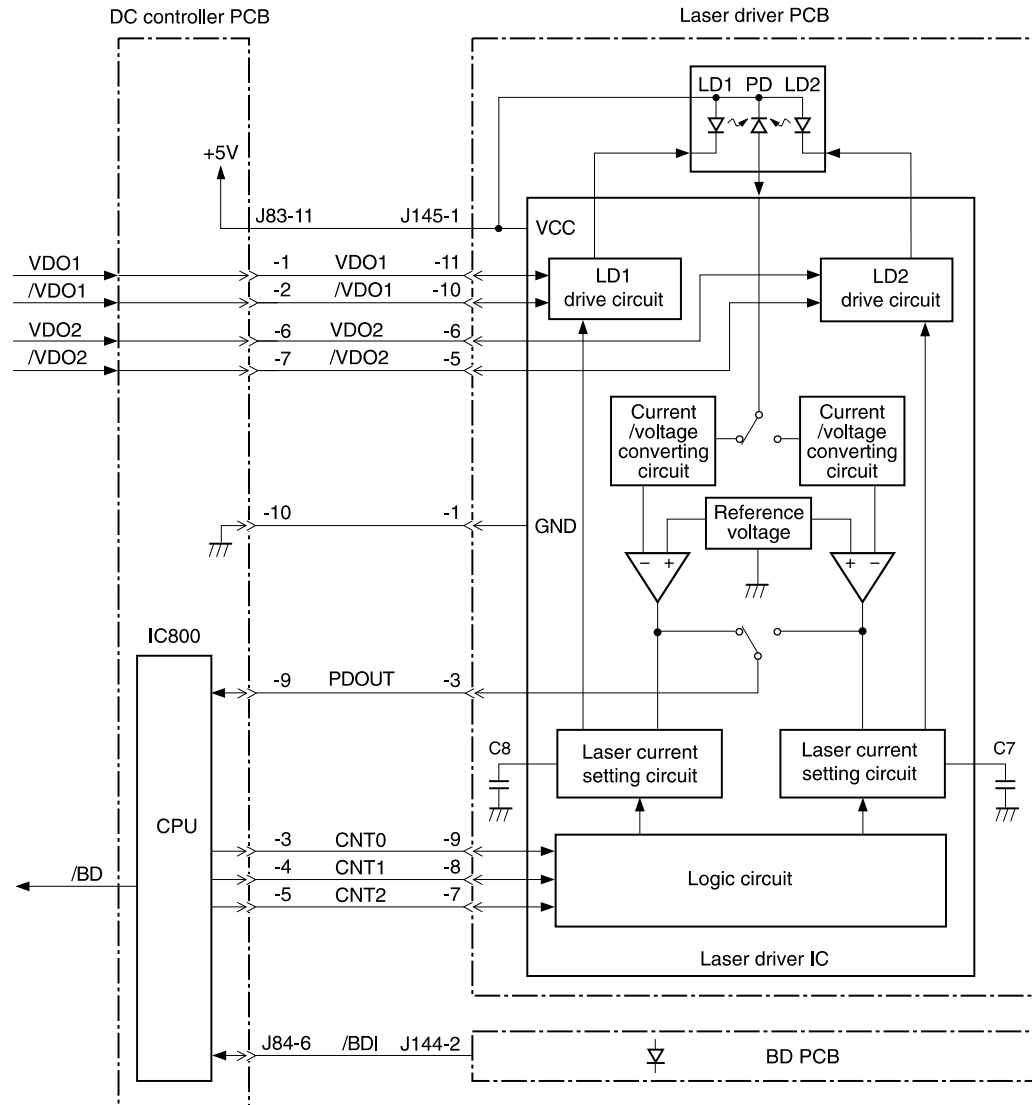


## Laser/scanner assembly

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

## Laser/scanner control

The laser/scanner-control circuit on the laser driver PCA turns the laser diodes on and off according to image-data signals that are received from the dc controller PCA. The dc controller PCA sends image-data signals VDO1/VDO1, VDO2, and /VDO2 and the laser-control signals CNT0, CNT1, and CNT2 to the logic circuit on the laser driver PCA. The laser-control signals control laser emission, automatic power control (APC), horizontal-synchronization control, and image-mask control.



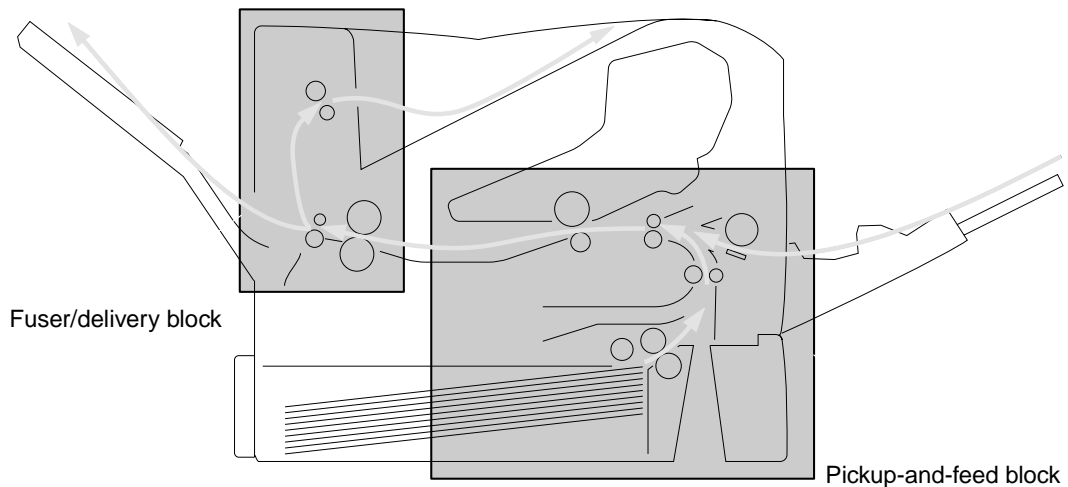
### Laser control circuit block diagram

Laser-emission control simply turns the laser diodes on and off. Automatic power control is used to limit the amount of light that the laser diodes emit. Horizontal-synchronization control is used to determine the starting position for the horizontal direction of the image. Image-mask control is used to avoid laser beam emission on the non-imaging areas of the drum (about 5 mm along the vertical edges and 8 mm at the top and bottom)



## Pickup-and-feed block

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



### Pickup-and-feed and fuser/delivery block diagram

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

- media-presence detection
- media-size detection
- detection of media entering the paper path from tray 1 or tray 2
- lifting of the tray 2 paper plate
- prevention of multiple-feeds
- correction of page skew

For information about the locations of switches, sensors, and motors in the pickup-and-feed block, see [Chapter 5](#) and [Chapter 6](#).

When it receives a print command from the host computer, the dc controller PCA turns on the main motor (M101) power. The motor drives the tray 2 pickup, feed, and separation rollers. In HP LaserJet 4300 series printers, the print cartridge motor power also is turned on. The laser/scanner motor power is turned on.

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

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

For information about the timing of these operations, see [Chapter 5](#) and [Chapter 6](#).

## Printing from tray 1

The tray 1 paper sensor (PS105) detects the presence of media in tray 1.

When the dc controller PCA receives the print command, the printer starts the initial rotation phase, which consists of main motor warm-up, scanner motor warm-up, high-voltage control sequence, and fuser warm-up. When the initial rotation phase ends, the tray 1 pickup solenoid (SL102) is activated.

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

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

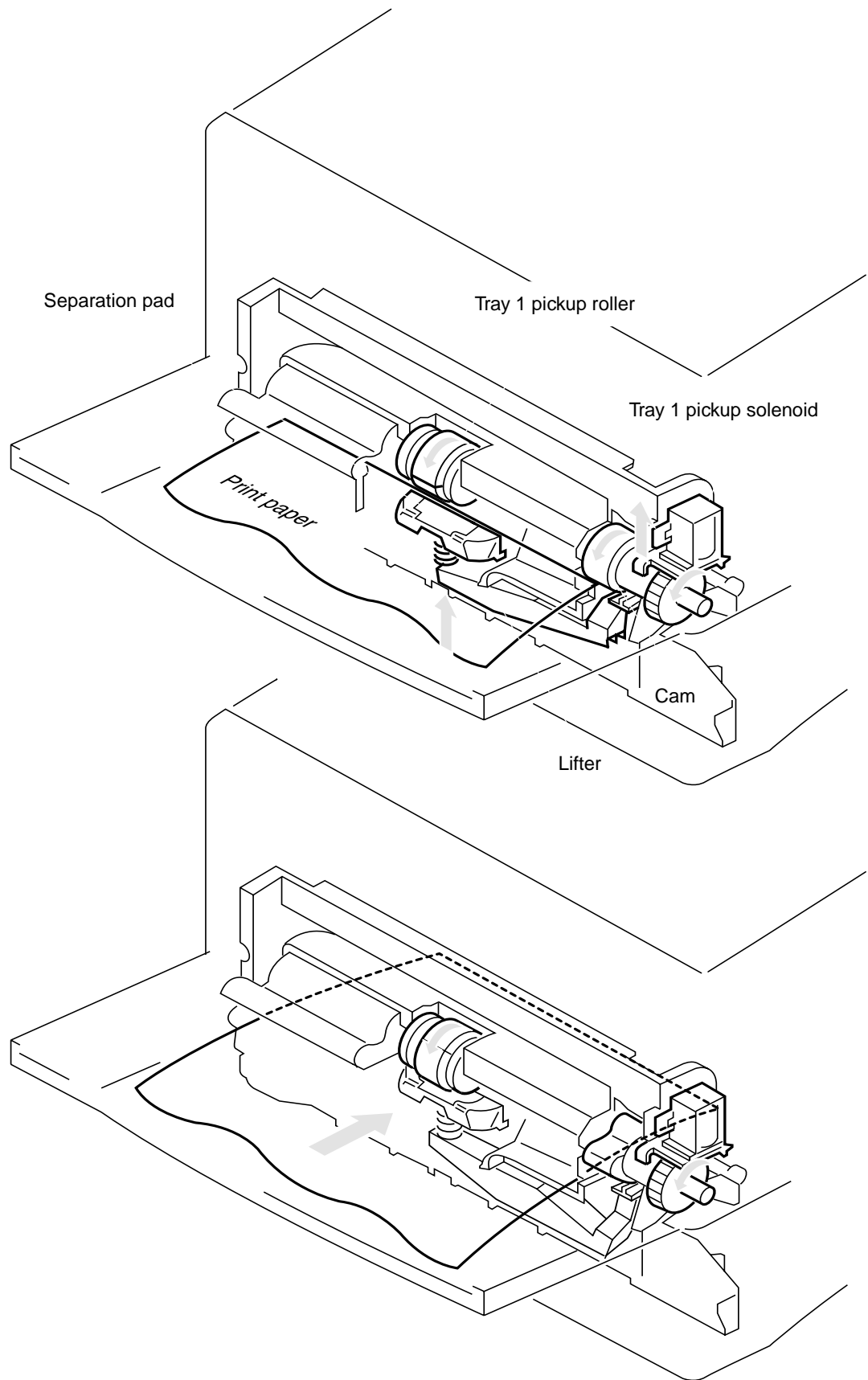
If media is removed from tray 1 after the initial rotation phase, but before the pickup roller pulls the media from the tray, the tray 1 pickup roller might continue to rotate up to six times, after which a jam detected.

HP LaserJet 4200	STBY	INTR	PRINT
Print command			
Main motor (M101)			
Scanner motor			
<b>Tray 1 pickup solenoid (SI102)</b>			
Top of page sensor (PS103)			

	STBY	INTR	PRINT
Print command			
Main motor (M101)			
Drum motor (M102)			
Scanner motor			
<b>Tray 1 pickup solenoid (SI102)</b>			
Top of page sensor (PS103)			

### Tray 1 timing diagrams





**Tray 1 pickup**

## Printing from tray 2

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

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

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

	STBY	INTR	PRINT
<b>HP LaserJet 4200</b>			
Print command			
Main motor (M101)			
Scanner motor			
<b>Tray 2 pickup solenoid (SI101)</b>			
Feed clutch (CL101)			
Pre-feed sensor (PS102)			
Top of page sensor (PS103)			

	STBY	INTR	PRINT
<b>HP LaserJet 4300</b>			
Print command			
Main motor (M101)			
Drum motor (M102)			
Scanner motor			
<b>Tray 2 pickup solenoid (SI101)</b>			
Feed clutch (CL101)			
Pre-feed sensor (PS102)			
Top of page sensor (PS103)			

### Tray 2 timing diagrams

## Tray 2, 500-sheet feeder, and 1,500-sheet feeder media-size detection

Three switches detect the size of media in the cassette. The switches are active when the cassette is placed in the tray 2 feeder, 500-sheet feeder, or 1,500-sheet feeder. The dc controller PCA microprocessor detects the size and presence of the media by reading the combinations of the switches.

**Table 32. Tray 2 and 500-sheet feeder media-size-switch settings**

Paper size	Media-size-switch setting		
	Upper	Center	Lower
	Off	Off	Off
	Off	Off	On
	Off	On	Off
	Off	On	On
	On	Off	Off
	On	Off	On
	On	On	Off
	On	On	On

**Table 33. 1,500-sheet feeder media-size-switch settings**

Paper size	Media-size-switch setting		
	Upper	Center	Lower
	Off	Off	Off
	On	Off	On
	Off	On	On
	On	On	Off

The tray 2 cassette can detect the media size by using the switches described; however, the user can define the media size for the tray by using the control panel (see [Table 34](#)). In this case, the printer might not detect the media size correctly if the size that the user defined does not match the tray settings.

To prevent a false size-detection, the printer measures the time it takes for the media to pass through the printer and determines the size of media that was fed from the tray. When the measured size differs from the user's defined size or from the media size switches, a message appears on the control-panel display (see [Table 35](#)).

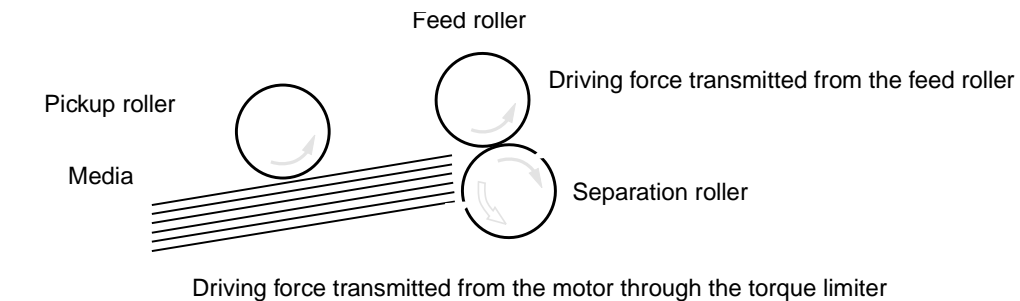
## Lifter-driver operation

The lifter driver keeps the media stack surface at a specific level in order to have a stabilized pickup operation regardless of the size of the media in the tray 2 cassette. The dc controller PCA operates the lifter-driver motor (M103) for 50 seconds. The motor stops when the paper-stack-position sensor (PS107) detects the media. If the paper-stack-position sensor does not detect any media within 8 seconds after the lifting operation has begun, the dc controller PCA determines that a lifter-driver motor failure has occurred, and a message appears on the control-panel display (see or ). The dc controller PCA stops the lifting operation if the paper-stack-position sensor detects the absence of the tray 2 cassette.

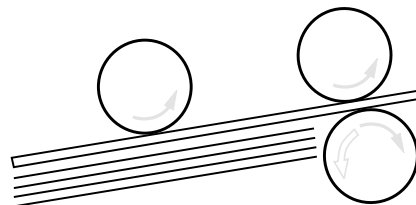
## Multiple-feed prevention

The printer uses the separation roller in tray 2 to prevent multiple-feeding. Normally, the separation roller rotates in the same direction as the feed roller. The separation roller is equipped with a torque limiter, but because the force of the feed roller exceeds that of the torque limiter, the separation roller is actually driven by the feed roller.

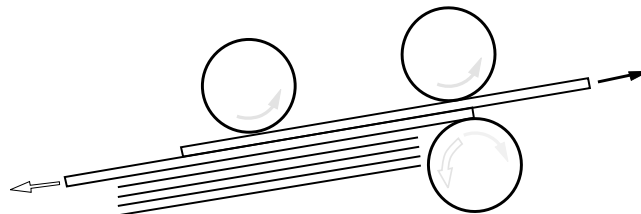
If multiple sheets of media are picked up, however, the low friction force between the sheets weakens the rotational force from the feed roller to the separation roller. Consequently, the torque limiter takes control of the separation roller, and rotates the separation roller in the reverse direction, which removes the extra sheets.



Normal



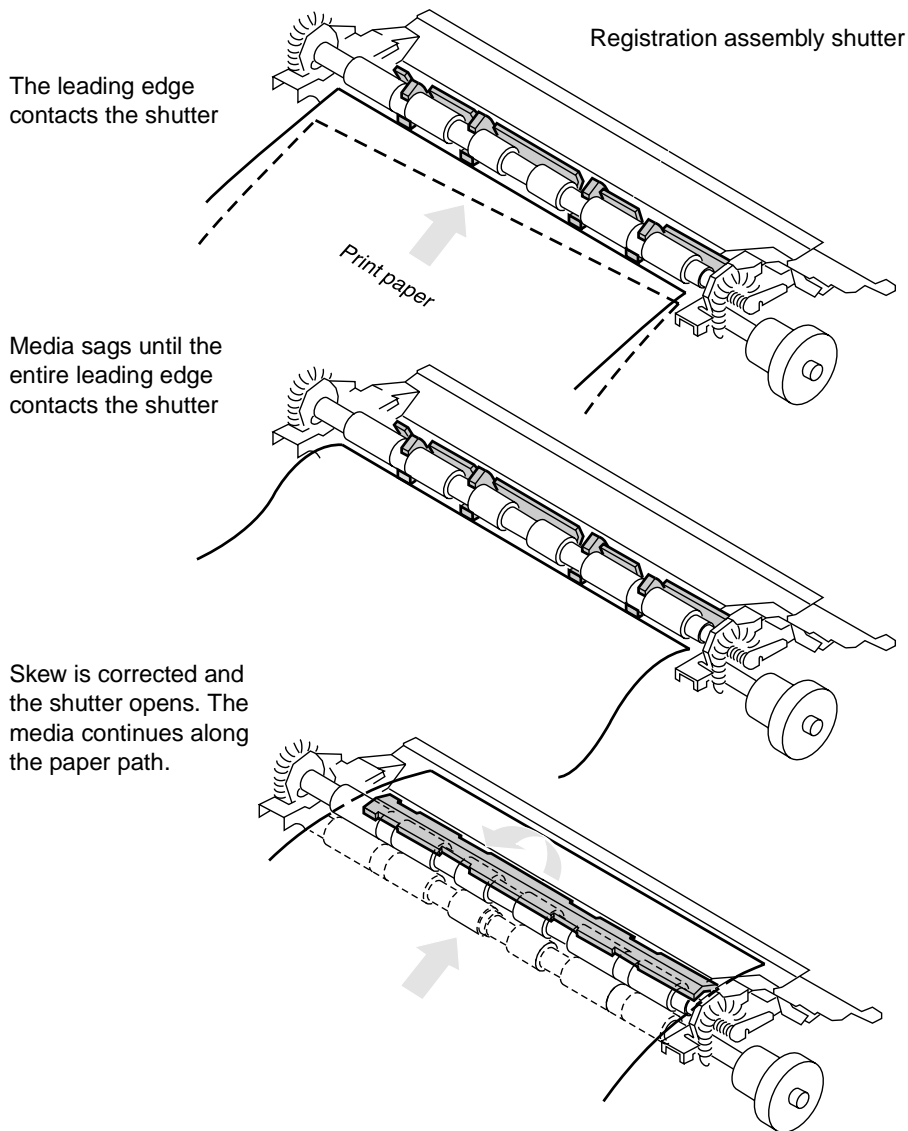
Multiple feed



Multiple-feed prevention

## Media-skew prevention

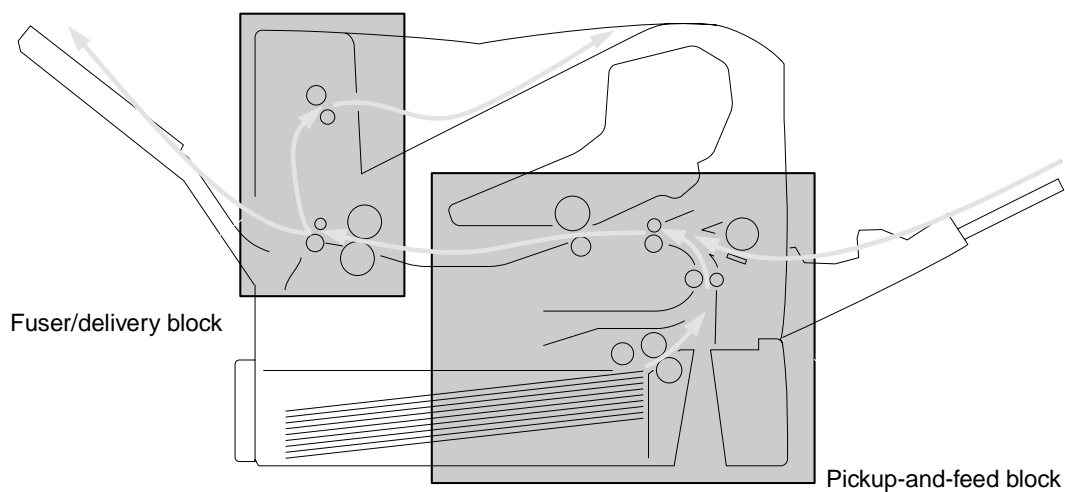
The printer uses a registration shutter on the registration assembly to prevent media from entering the printer skewed, without decreasing the throughput speed. When the leading edge of the media contacts the registration shutter, the shutter does not open. The feed roller continues to rotate and the media begins to sag. When the entire leading edge comes in full contact with the shutter, the media skew is corrected and registration shutter opens. When the shutter opens, the media can continue into the printer paper path.



### Correcting skewed media pages

## Fixing/delivery block

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



### Pickup-and-feed and fuser/delivery block diagram

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

## Jam detection

The printer uses the following sensors to detect the presence of media and to verify whether media is being fed correctly or has jammed. For information about the location of these sensors, see

- Pre-feed sensor (PS102)
- Top-of-page sensor (PS103)
- Fuser-delivery sensor (PS108)

The microprocessor on the dc controller PCA checks for media jamming by timing the media as it moves past these sensors. If the media does not pass the sensor in a specific period of time, the transport process is stopped (motors are turned off and the rollers no longer rotate) and a jam message appears on the control-panel display.

### Printer pickup delay jam from tray 1

If the top-of-page sensor (PS103) does not detect the *leading* edge of the media within a specific period of time after the media is picked up, the microprocessor on the dc controller PCA determines that a pickup jam has occurred.

The printer attempts to pick up the media several times before determining that a pickup jam exists. The number of pickup attempts depends on the source (for example, four attempts occur if tray 1 is the source).

The transport process stops and a 13.XX.YY JAM message appears on the control-panel display. For more information about jam messages, see

and

### Printer pickup delay jam from tray 2

If the pre-feed sensor (PS102) does not detect the *leading* edge of the media within a specific period of time after the media is picked up, the microprocessor on the dc controller PCA determines that a pickup jam has occurred.

The printer attempts to pick up the media several times before determining that a pickup jam exists. The number of pickup attempts depends on the source (for example, four attempts occur if tray 1 is the source).

The transport process stops and a 13.XX.YY JAM message appears on the control-panel display. For more information about jam messages, see

and

### Printer pickup stationary jam

If the top-of-page sensor (PS103) does not detect the *trailing* edge of the media within a specific period of time after the media is picked up, the microprocessor on the dc controller PCA determines that a pickup jam has occurred.

The transport process stops and a 13.XX.YY JAM message appears on the control-panel display. For more information about jam messages, see

and

## Printer delivery wrap jam when feeding regular media

Regular-size media is defined as A4, letter, legal, B5, executive or A5.

If the fuser delivery sensor (PS108) does not detect the *trailing* edge of the media after a specified fusing time, the microprocessor on the dc controller PCA determines there is a printer delivery wrap jam.

The transport process stops and a 13.XX.YY JAM message appears on the control-panel display. For more information about jam messages, see [13.XX.YY JAM](#) and [13.XX.YY JAM](#).

## Printer delivery wrap jam when feeding non-regular media

Non-regular media is defined as media that is less than 200mm (7.9 inches) in length.

If the fuser delivery sensor (PS108) does not detect the *trailing* edge of the media within a specified period of time after a printer delivery wrap jam is detected, the microprocessor on the dc controller PCA determines that a printer delivery wrap jam has occurred.

Or

If the fuser delivery sensor (PS108) does not detect the *trailing* edge of the media within a specified period of time after it has detected the *leading* edge of the media the microprocessor on the dc controller PCA determines that a printer delivery wrap jam has occurred.

The transport process stops and a 13.XX.YY JAM message appears on the control-panel display. For more information about jam messages, see [13.XX.YY JAM](#) and [13.XX.YY JAM](#).

## Printer delivery delay jam

If the fuser delivery sensor (PS108) does not detect the *trailing* edge of the media within a specified period of time after detecting the *leading* edge of the media, the microprocessor on the dc controller PCA determines that a fuser stationary jam has occurred.

The transport process stops and a 13.XX.YY JAM message appears on the control-panel display. For more information about jam messages, see [13.XX.YY JAM](#) and [13.XX.YY JAM](#).

If the fuser delivery sensor (PS108) detects the *trailing* edge (paper out) of the media within a specified period of time after it has detected the leading edge of the media, the microprocessor on the dc controller PCA determines that a delivery jam has occurred.

However, if the paper-length that the top-of-page sensor (PS103) detects does not match the media size that the printer expects from the pickup source, this jam is ignored. The top-of-page sensor (PS103) determines the length of the page by measuring the time it takes between the passing of the leading and trailing edges of the page.

The transport process stops and a 13.XX.YY JAM message appears on the control-panel display. For more information about jam messages, see [13.XX.YY JAM](#) and [13.XX.YY JAM](#).

This jam cannot be detected for pages that are less than 200 mm (7.9 inches) in length.



## Printer door open jam

If the top door is opened during printing, the top-door-open switch (SW101) is activated and the microprocessor on the dc controller PCA determines that a door-open jam has occurred.

The transport process stops and a 13.XX.YY JAM message appears on the control-panel display. For more information about jam messages, see  
and .

## Printer residual-media jam

If neither the top-of-page sensor (PS103) nor the fuser-delivery sensor (PS108) detects the *leading* edge of the media at the start of initial rotation (see table 30 on page 67), the microprocessor on the dc controller PCA identifies a residual-media jam.

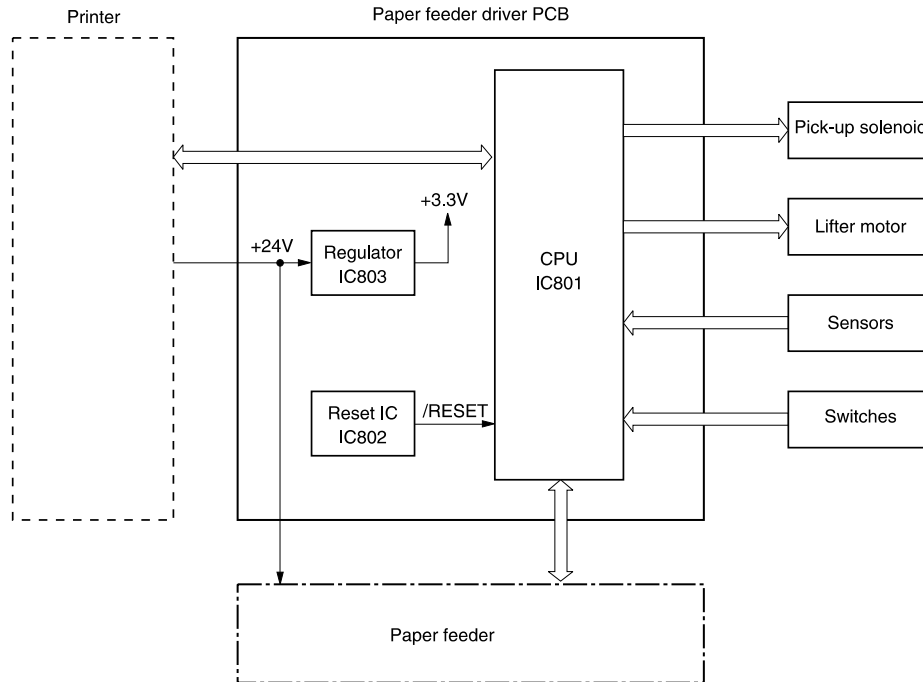
## Printing from the 500-sheet feeder

HP LaserJet 4200/4200L/4300 series printers support up to two optional 500-sheet feeders.

The paper-feeder driver controls the 500-sheet feeder operation sequences. An 8-bit microprocessor in the paper-feeder driver controls the 500-sheet feeder sequences and the communication with the dc controller PCA.

The paper-feeder driver drives the solenoid in response to the pickup command. The paper-feeder driver also reports the paper-feeder status to the dc controller PCA.

The printer delivers a charge of +24 Vdc to the paper feeder, which then generates +3.3 V for the integrated circuits.



**500-sheet feeder I/O block diagram**

### 500-sheet feeder pickup and feeding

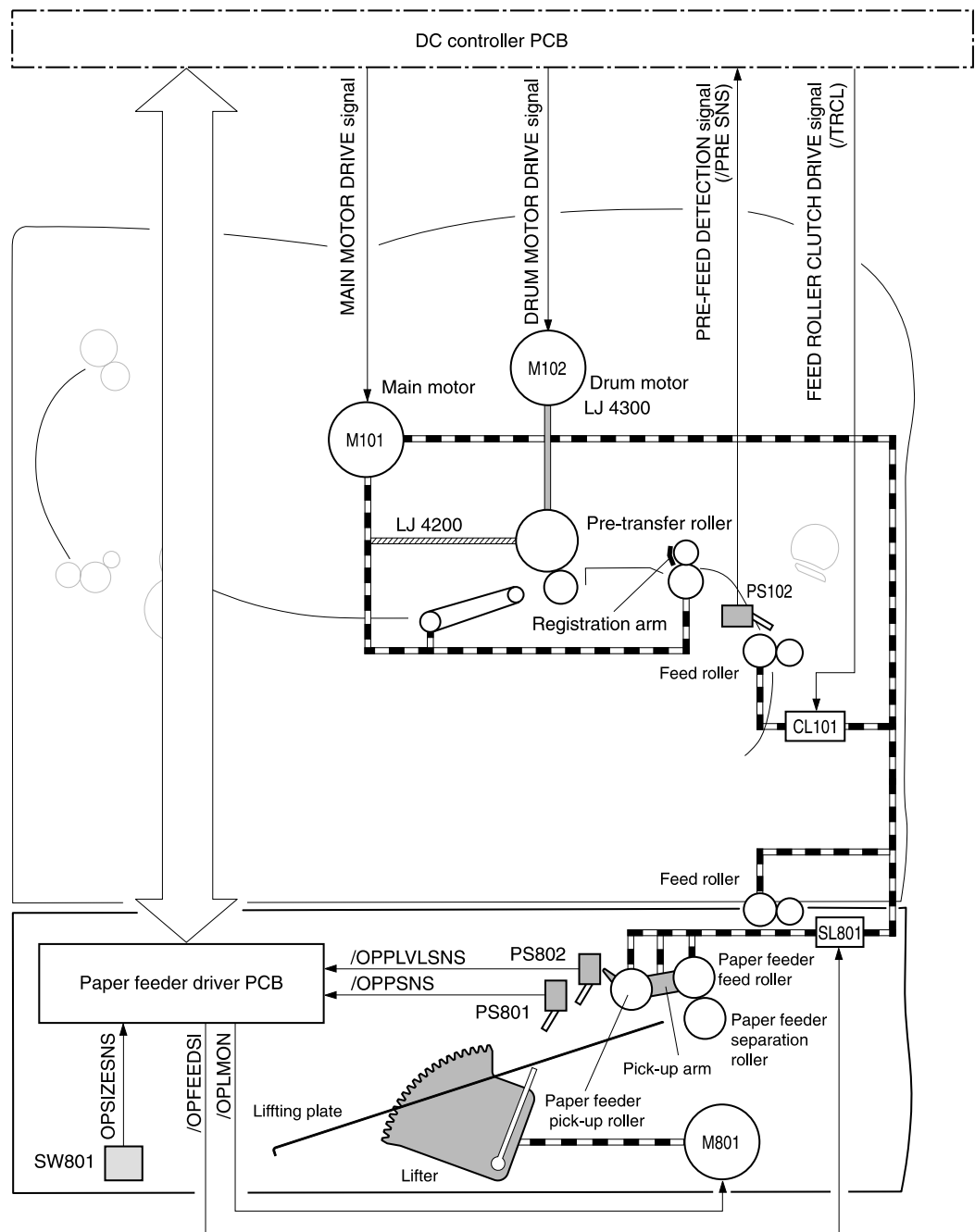
Three switches on the paper-feeder driver detect the media size and the presence of the 500-sheet tray. The relationship between the switch combinations and the paper sizes is the same as for the printer. See table 32 on page 83.

The main motor (M101) drives the paper feeder. When the dc controller PCA sends a print command, the main motor begins to rotate. When the scanner motor reaches its prescribed speed, the paper-feeder driver receives the pickup command from the dc controller PCA and activates the paper-feeder pickup solenoid. (The main motor drives the pickup roller, feed roller, and separation roller.)

The pickup roller, when the solenoid activates it, rotates once and picks up the media in the tray. The separation roller removes any additional sheets and the media travels to the pre-feed sensor (PS102).

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

The 500-sheet feeder detects pickup-and-feed jams in the same way as the printer. See



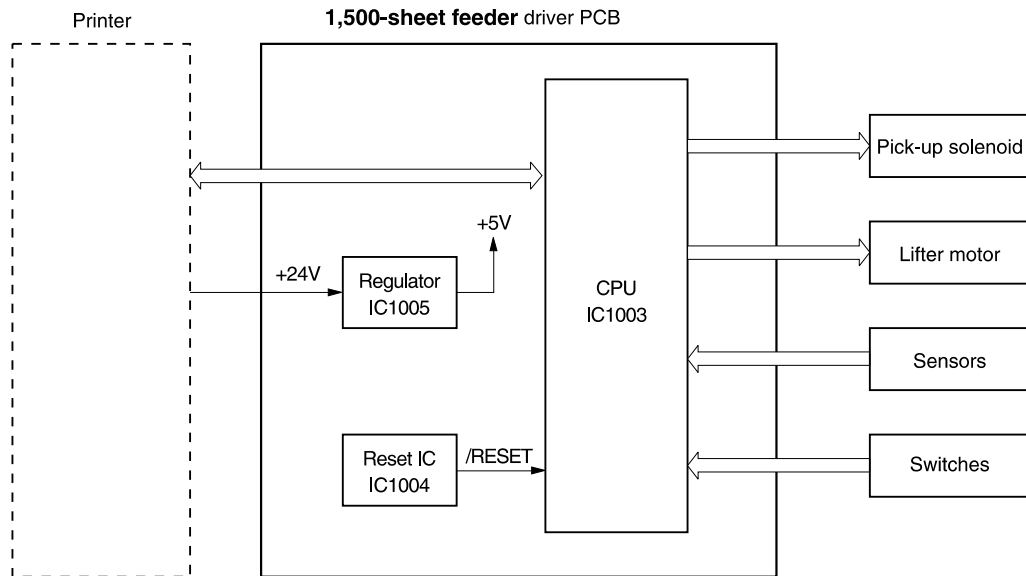
**500-sheet feeder pickup and feed diagram**

## Printing from the 1,500-sheet feeder

The paper-feeder driver controls the 1,500-sheet feeder operation sequences. An 8-bit microprocessor in the paper-feeder driver controls the 1,500-sheet feeder sequences and the communication with the dc controller PCA.

The paper-feeder driver drives the solenoid in response to the pickup command. The paper-feeder driver also reports the paper-feeder status to the dc controller PCA.

The printer delivers a charge of +24 Vdc to the 1,500-sheet feeder, which then generates +3.3 V for the integrated circuits.



### 1,500-sheet feeder I/O block diagram

#### 1,500-sheet feeder pickup and feeding

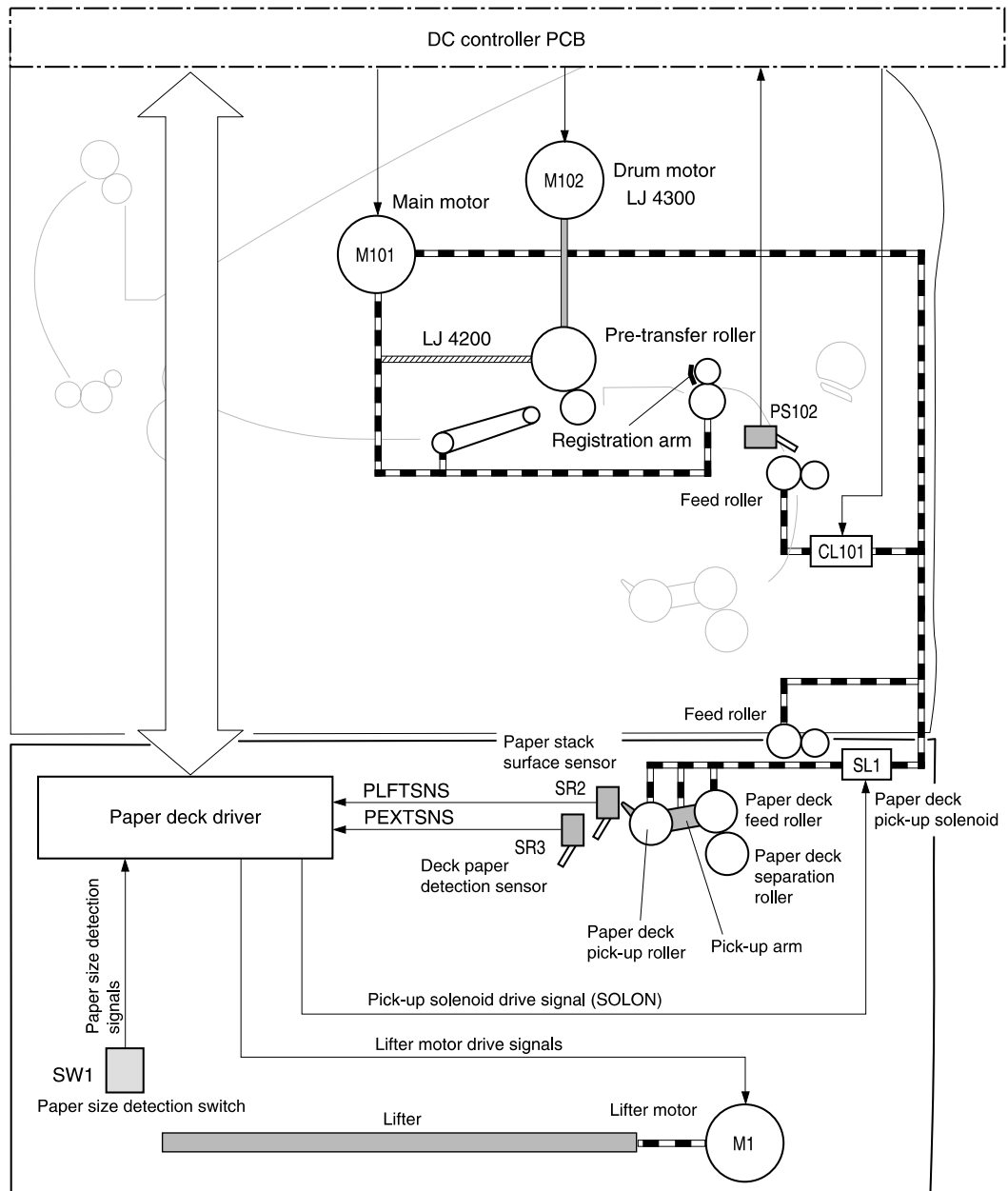
Three switches on the paper-feeder driver detect the media size and the presence of the 1,500-sheet tray. The relationship between the switch combinations and the paper sizes is the same as for the printer. See table 32 on page 83

The main motor (M101) drives the paper feeder. When the dc controller PCA sends a print command, the main motor begins to rotate. When the scanner motor reaches its prescribed speed, the paper-feeder driver receives the pickup command from the dc controller PCA and activates the paper pickup solenoid. (The main motor drives the pickup roller, feed roller, and separation roller.)

The pickup roller, when the solenoid activates it, rotates once and picks up the media in the tray. The separation roller removes any additional sheets and the media travels to the pre-feed sensor (PS102).

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

The 1,500-sheet feeder detects pickup-and-feed jams in the same way as the printer. See



PEXTSNS: Deck paper detection signal

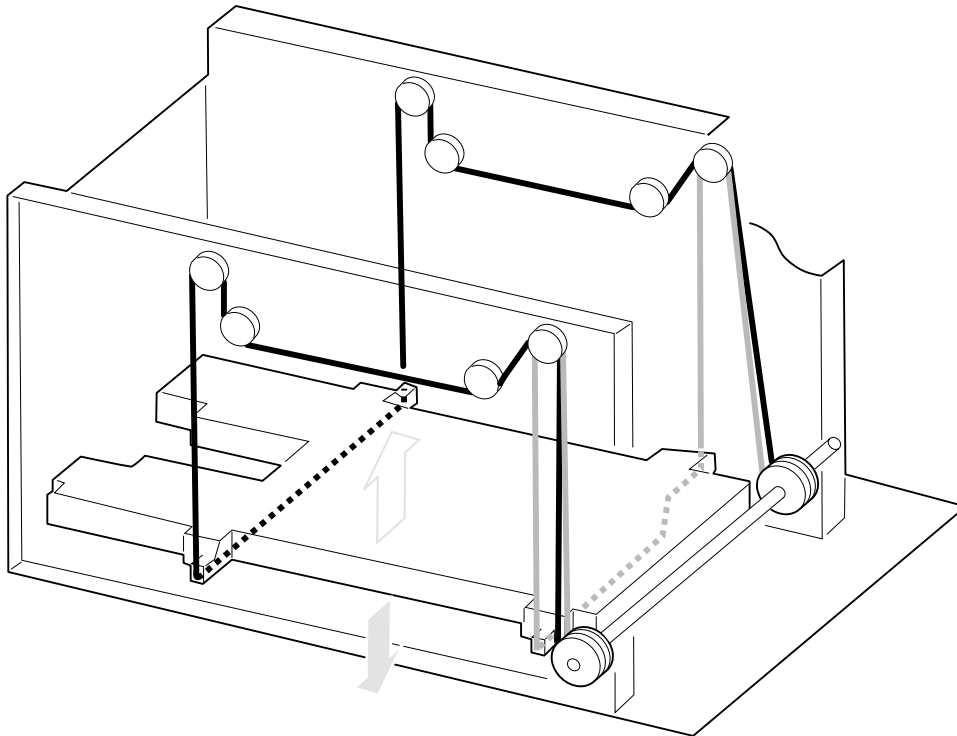
PLFTSNS: Paper stack surface detection signal

### 1,500-sheet feeder pickup and feed diagram

## 1,500-sheet feeder lifting mechanism

The lifting mechanism maintains the media stack surface at a specific position inside the 1,500-sheet feeder. This allows the feeder to perform a stabilized pickup operation regardless of the size of the media in the feeder. Two wire cables lift the lift plate inside of the feeder. A motor (M1) uses pulleys in the feeder to wind the wires. When the front door of the feeder is opened, the pulley gears and the motor gear are disengaged and the lift plate lowers under its own weight. The lifting mechanism is active (the plate is in the raised position) when the dc controller PCA sends a signal, the front door is closed, or during the print operation. The 1,500-sheet feeder control PCA driver stops the motor (M1) when the 1,500-sheet feeder paper-stack-position sensor (SR2) detects media.

If the 1,500-sheet feeder paper-stack-position sensor (SR2) does not detect media within approximately 30 seconds after the start of the lift operation, the paper-deck driver PCA detects a lifter motor failure and sends a signal to the dc controller PCA. An error message appears on the control-panel display.



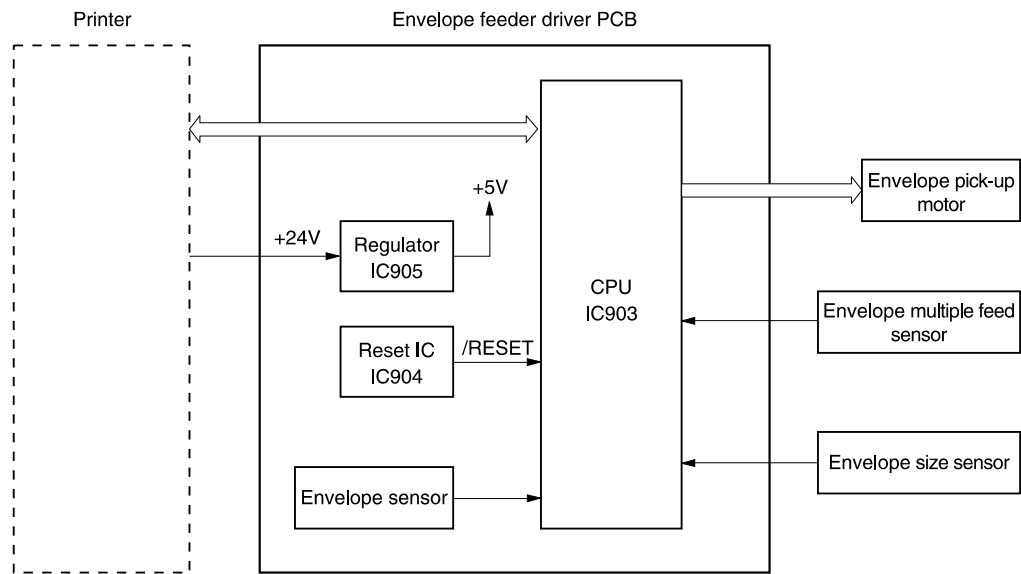
**1,500-sheet feeder lifting mechanism**

## Envelope feeder

The envelope-feeder driver controls the envelope feeder operation sequences. An 8-bit microprocessor in the envelope feeder driver controls the envelope-feeder sequence and the communication with the dc controller PCA.

The dc controller PCA sends the pickup command to the envelope-feeder driver with the necessary timing. The envelope-feeder driver activates the solenoid in response to the command.

The printer delivers a charge of +24 Vdc to the envelope feeder, which then generates +5 v for the integrated circuits.



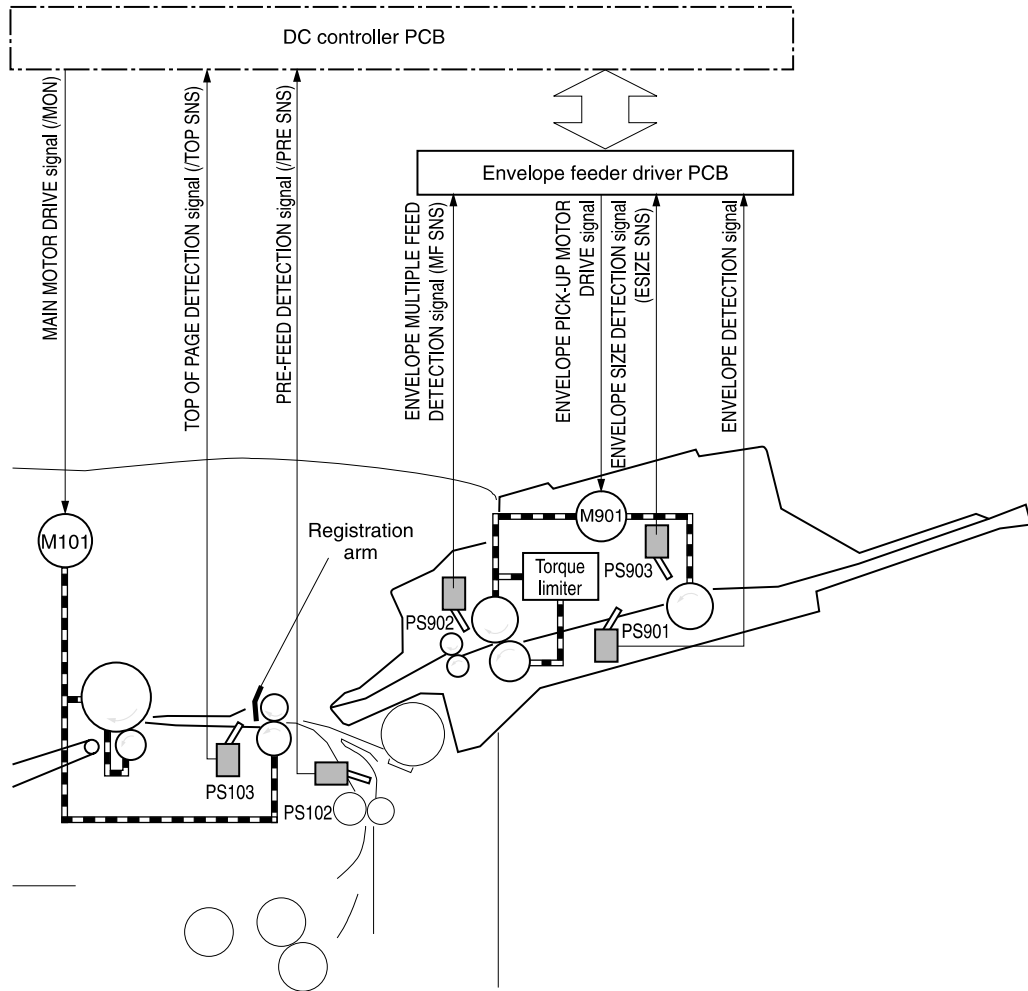
**Envelope feeder I/O block diagram**

## Envelope feeder pickup and feeding

In the envelope feeder, the envelope sensor (PS901) detects the presence of envelopes and the envelope-size sensor (PS903) detects the width of the envelope. The envelope pickup motor (M901) drives all of the rollers in the envelope feeder.

When the dc controller PCA sends a print command, the main motor (M101) begins to rotate. After the main motor initial rotation phase is completed, the scanner motor begins to rotate. As the scanner motor rotates, the envelope pick-up motor (M901) begins to rotate to drive the pickup roller, feed roller, and separation roller, and an envelope is picked up.

The separation roller removes any additional envelopes and a single envelope travels to the printer. The registration assembly corrects any skew. The envelope travels through the printer paper path and is delivered to the output bin.



Envelope feeder pickup and feed diagram



## Envelope feeder jam detection

The envelope feeder uses the envelope multiple-feed sensor (PS902) along with sensors in the printer to detect the presence of media and to determine whether the media is feeding correctly or is jamming.

If a jam occurs in the envelope feeder, the error message 13.XX.YY appears on the control-panel display. For more information see .

## Envelope feeder pickup delay jam

If the pickup sensor (PS103) does not detect the *leading* edge of the envelope within a specified period of time after the envelope is picked up, it attempts to pick up the media several times before determining that a pickup jam has occurred.

If the pre-feed sensor inside of the printer (PS102) does not detect the *leading* edge of the envelope within a specific amount of time after the re-pick operation stops, the microprocessor on the dc controller PCA determines that a jam has occurred.

The transport process stops and a 13.XX.YY message appears on the control-panel display. For more information about jam messages, see .

## Envelope feeder pickup stationary jam

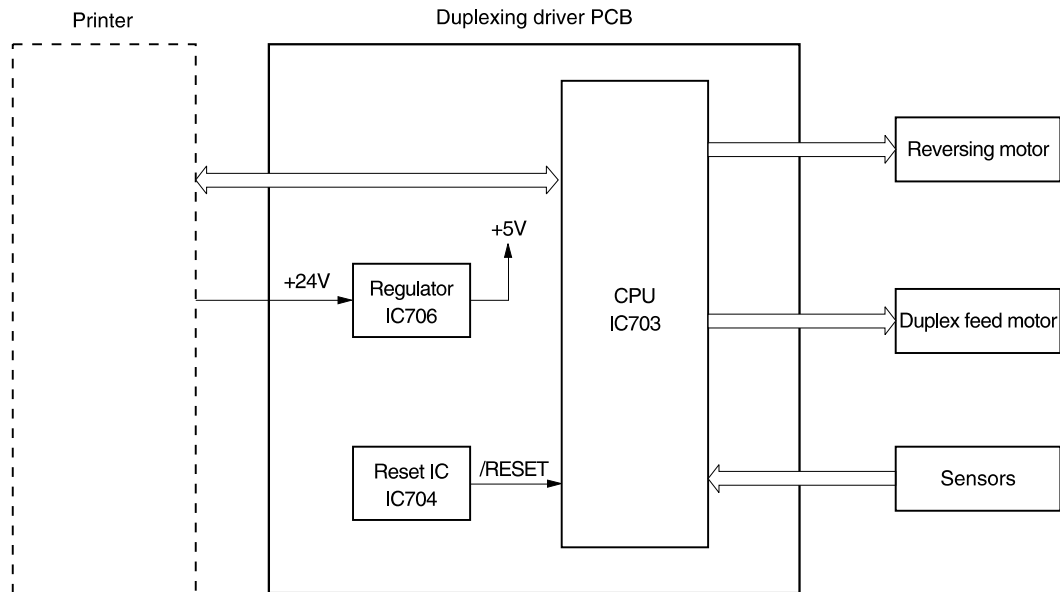
If the envelope multiple-feed sensor (PS902) detects multiple envelopes after the pickup operation begins The transport process stops and a 13.XX.YY message appears on the control-panel display. For more information about jam messages, see .

## Duplexer

The duplexer driver controls the duplexer operation. An 8-bit microprocessor in the duplexer driver controls the duplexer sequence and the communication with the dc controller PCA.

The duplexer driver drives the solenoid, motors, and fan according to commands that the dc controller PCA sends to the duplexer. The duplexer also communicates its status to the dc controller PCA.

The printer delivers a charge of +24 Vdc to the duplexer, which then generates +5 V for the integrated circuits.



**Duplexer I/O block diagram**

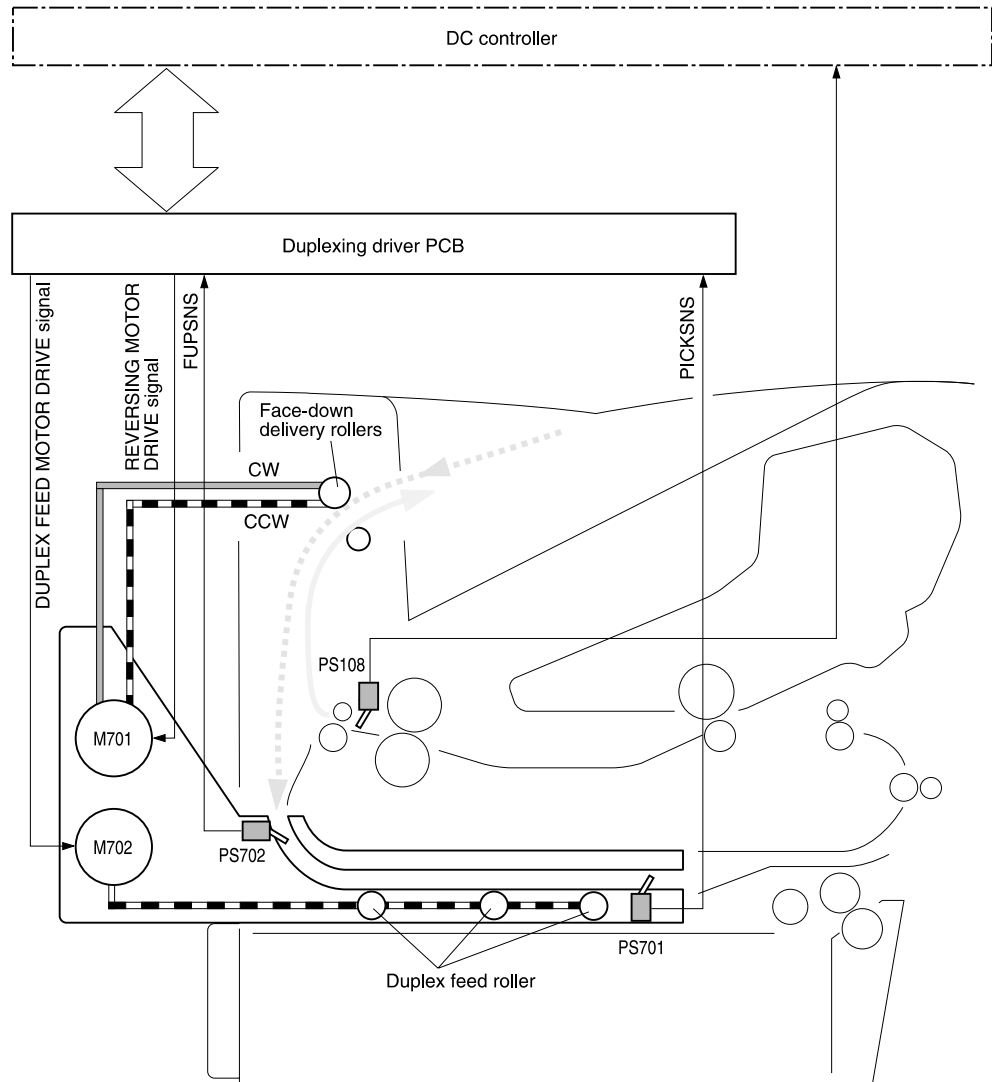
## Reversing and duplexer pickup

The duplexer has two stepping motors: the reversing motor (M701) and the duplex-feed motor (M702). The duplexer driver controls forward and reverse motor rotations.

The duplexer solenoid controls the face-up output tray diverter, which feeds paper to the duplexer.

The duplexer cannot be used if the face-up tray is open.

When the trailing edge of the media passes the reverse sensor (PS703), the reversing motor changes direction. The oblique roller and feed roller then move the media so that its edge makes contact with the left panel to correct skew.



PS108 : Fixing delivery sensor (printer)  
PS701 : Duplexing unit pick-up sensor  
PS702 : Face-up sensor  
M701 : Reversing motor  
M702 : Duplex feed motor

PICKSNS : DUPLEXING UNIT PICK-UP DETECTION signal  
FUSNS : FACE-UP DETECTION signal

## Duplexer pickup and reversing diagram

## Duplexer jam detection

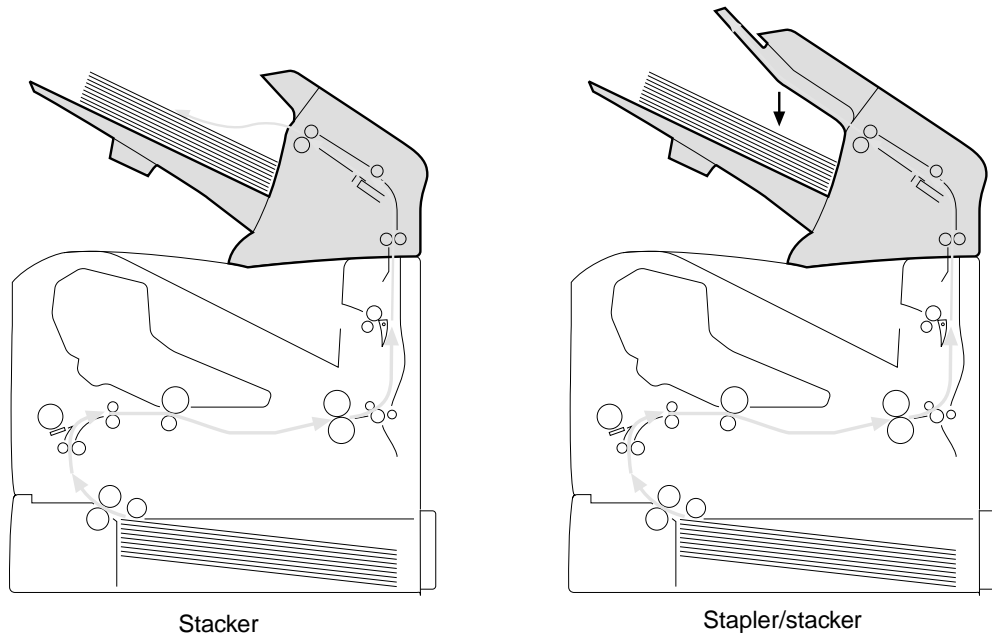
The following paper sensors detect whether or not the print media is present and is feeding normally.

- tray 2 paper sensor (PS101)
- 0re-feed sensor (PS102)
- top-of-page sensor (PS103)
- face-down tray paper-full sensor (PS104)
- tray 1 (multipurpose tray) paper sensor (PS105)
- paper-width sensor (PS106)
- fuser delivery sensor 1 (PS108)

The microprocessor on the dc controller PCA detects a jam by using the sensor to check for media presence at a specific timing that is stored in the memory.

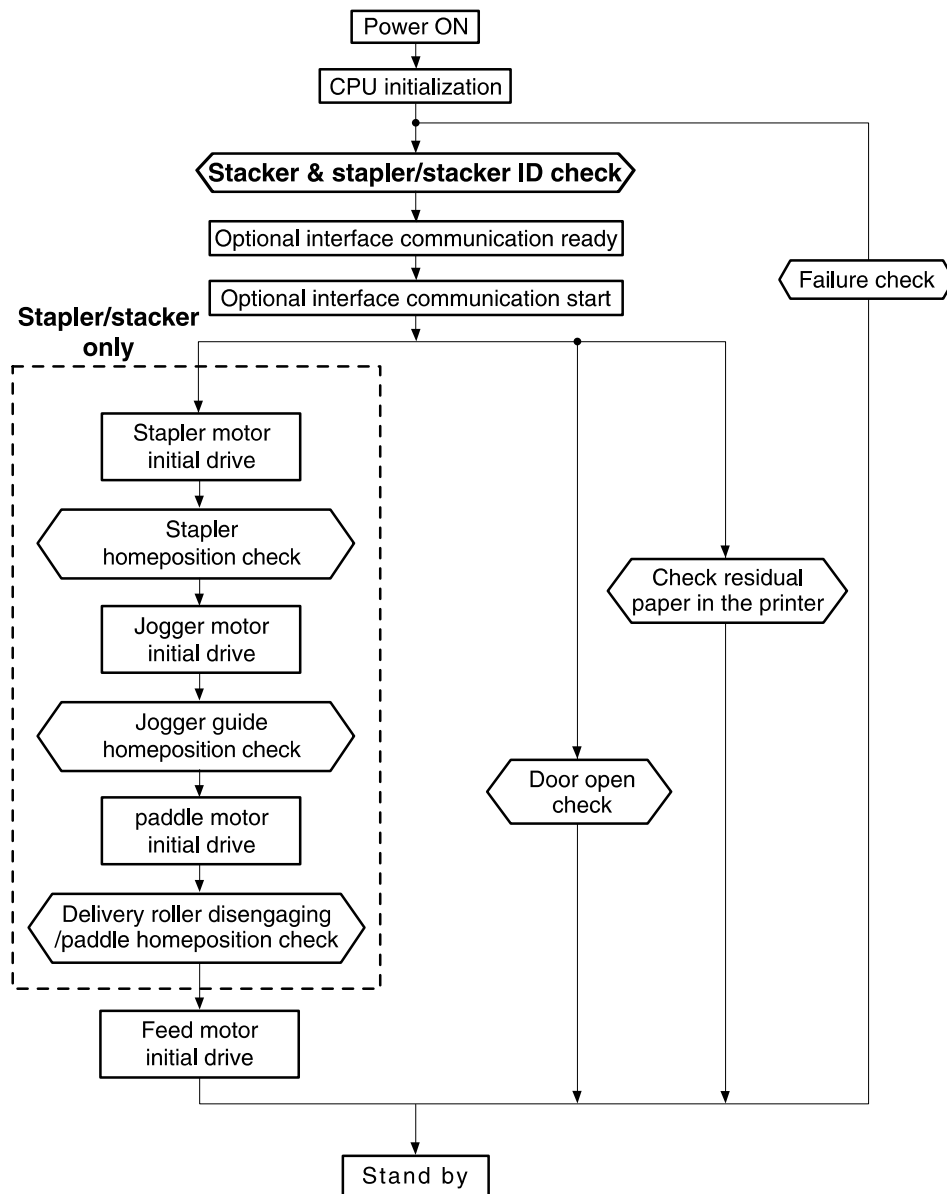
If the dc controller PCA detects that a jam has occurred, it stops print operation and an error message appears on the control-panel display. See  
and .

The stacker delivers media from the printer to the stacker delivery bin. The stapler/stacker also delivers media from the printer to the stacker delivery bin, but can staple the media together before delivering it to the stapler/stacker delivery bin. The dc controller PCA controls the stacker and stapler/stacker. When the stacker or stapler/stacker is in use, the dc controller PCA sends page information (for example, the paper size or whether the page is the first or last page of the job) to the stacker or stapler/stacker.



**Stacker and stapler/stacker paper path**

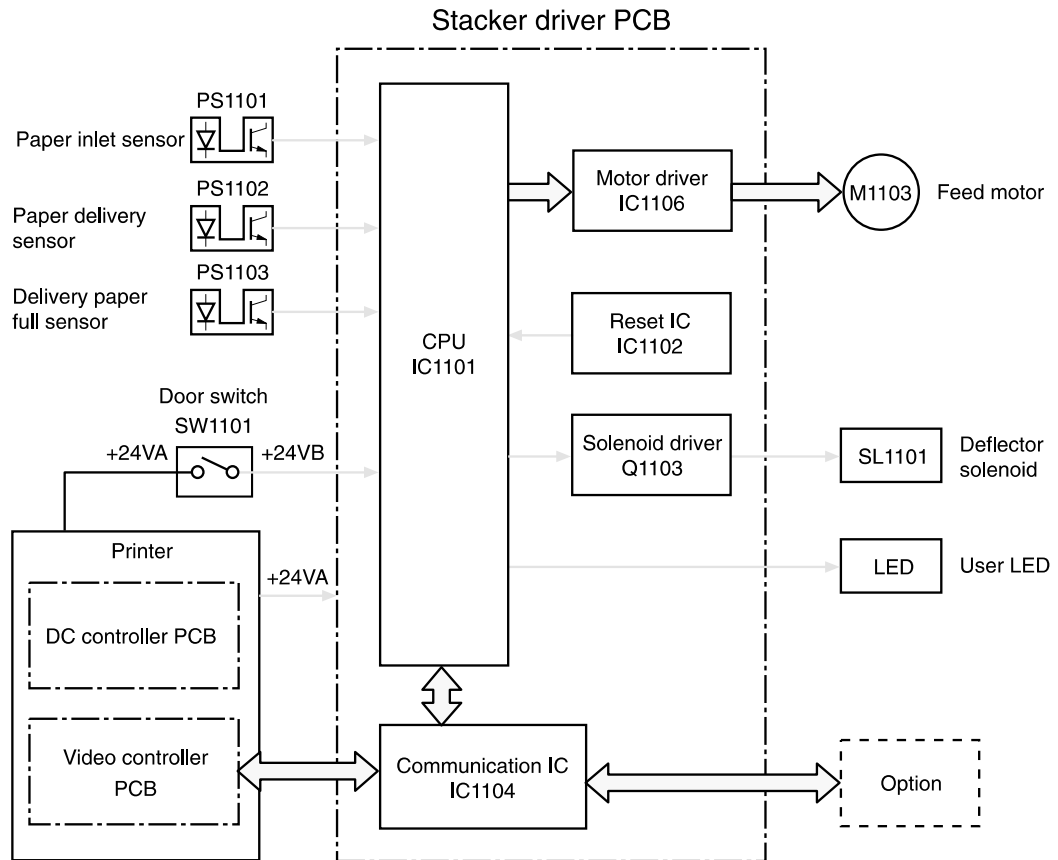
The following diagram illustrates the power-on sequence for the stacker and stapler/stacker.



**Power-on sequence for the stacker and stapler/stacker**

## Stacker

The dc controller PCA controls the stacker and sends signals to the stacker-driver PCA. The stacker-driver PCA then controls the operation of the stacker components like the stacker motor, solenoid, and sensors. When the printer power is turned on, dc power from the printer's low-voltage supply circuit is supplied to the stacker. The stacker performs the power-on sequence (see figure 35 on page 102) and enters the standby mode. When it receives a signal from the dc controller PCA, the stacker-driver PCA activates the motors and solenoids as needed to perform the stack operation.



**Stacker-driver PCA block diagram**

## Stacker feed and delivery

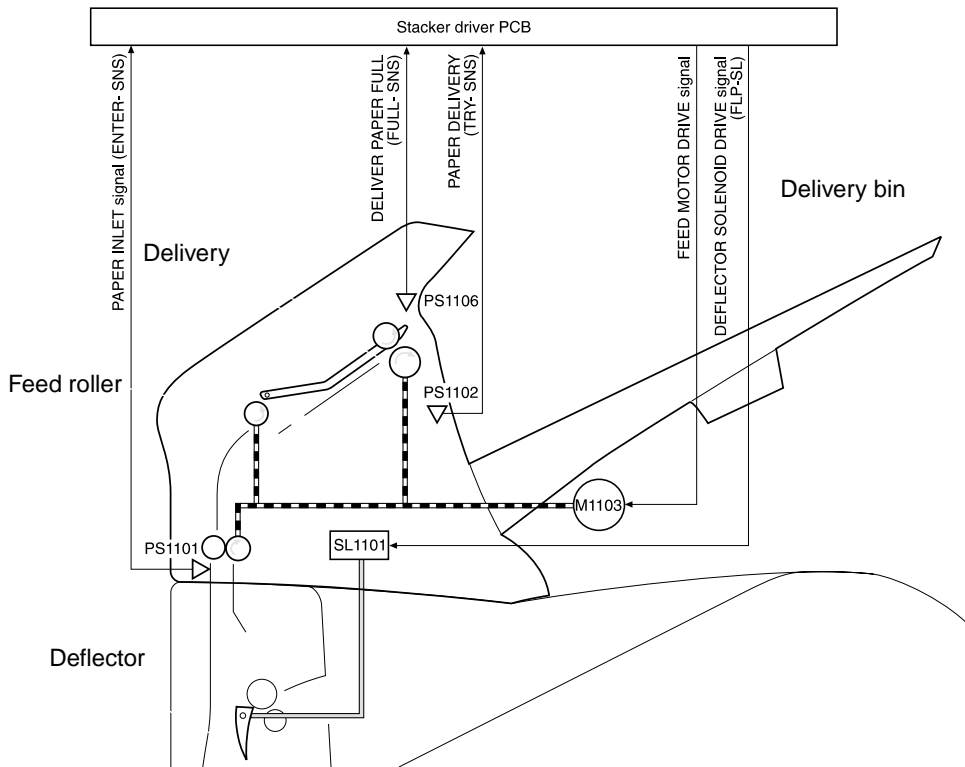
The stacker feed and delivery system consists of several feed rollers and guides that the stacker motor and solenoids drive. Sensors along the stacker paper path detect the arrival and passing of media and confirm the position of the jogger guide. The jogger guide helps to align the pages before placing them in the delivery bin.

**Table 34. Stacker components**

Component	Purpose
Feed motor (M103)	Rotates the feed and delivery roller
Deflector solenoid (SL1101)	Operates the delivery deflector
Paper inlet sensor (PS1101)	Used for jam detection
Paper delivery sensor (PS1102)	Used for jam detection
Delivery paper full sensor (PS1106)	Detects that the delivery bin is full
Door open switch (SW1101)	Detects an open door

After the *leading* edge of the media reaches the fixing delivery sensor (PS108) in the printer, the dc controller PCA sends a signal to the stacker-driver PCA. The stacker-driver PCA activates the deflector solenoid (SL101) for a specific amount of time to move the delivery deflector into place to route the media to the stacker rather than to the top output bin. The stacker-driver PCA also activates the stacker motor (which rotates at the same speed as the printer main motor) to rotate the feed and delivery rollers.

The feed roller moves the media into the stacker. If the dc controller PCA sends a following-page signal (which indicates that the job contains another page), the stacker-driver PCA activates the deflector solenoid (SL101) again. The delivery roller moves the media into the delivery bin.



**Stacker feed delivery diagram**



## Stacker jam detection

The stacker uses the following sensors to detect the presence of media and to verify whether the media is feeding correctly or is jamming. For information about the location of these sensors, see

paper-inlet sensor (PS1101)  
paper-delivery sensor (PS102)

### Stacker feed jam

If the paper inlet sensor (PS1101) does not detect the *leading* edge of the media within a specified period of time after the stacker driver has received the paper-delivery signal, the dc controller PCA determines that a stacker feed delay jam has occurred.

The transport process stops and a 13.XX.YY JAM message appears on the control-panel display. For more information about jam messages, see  
and

### Stacker feed stationary jam

If the paper inlet sensor (PS1101) does not detect the *trailing* edge of the media within a specified period of time after the paper-inlet sensor (PS1101) detected the *leading* edge of the media, the dc controller PCA determines that a stacker feed delay jam has occurred.

The transport process stops and a 13.XX.YY JAM message appears on the control-panel display. For more information about jam messages, see  
and

### Stacker residual media jam

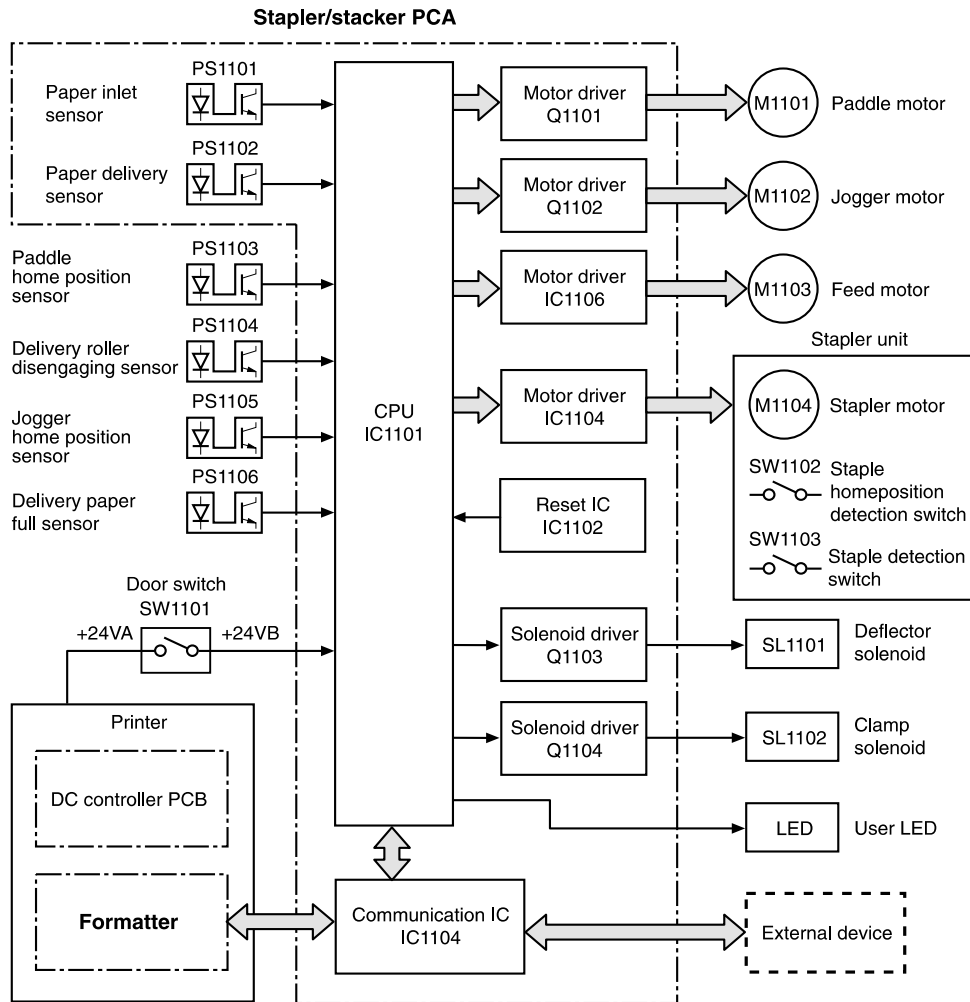
If the paper-inlet sensor (PS1101) or the paper delivery sensor (PS1102) detects media during the initial drive period, the dc controller PCA determines that a stacker residual media jam has occurred.

The transport process stops and a 13.XX.YY JAM message appears on the control-panel display. For more information about jam messages, see  
and

This jam *only* occurs if the paper-delivery sensor (PS1102) detects media at the *start* of the initial drive.

## Stapler/stacker

The dc controller PCA controls the stapler stacker by sending signals to the stapler/stacker-driver PCA. The stapler/stacker PCA controls the stapler/stacker motor, solenoids, sensors, and the stapler unit. When the printer power is turned on, dc power from the printer's low-voltage supply circuit is supplied to the stapler/stacker. The stapler/stacker performs the power-on sequence (see figure 35 on page 102) and enters the standby mode. When the dc controller PCA sends a signal, the stapler/stacker-driver PCA activates the motors and solenoids as needed to perform the staple-and-stack operation.



**Stapler/stacker-driver PCA block diagram**

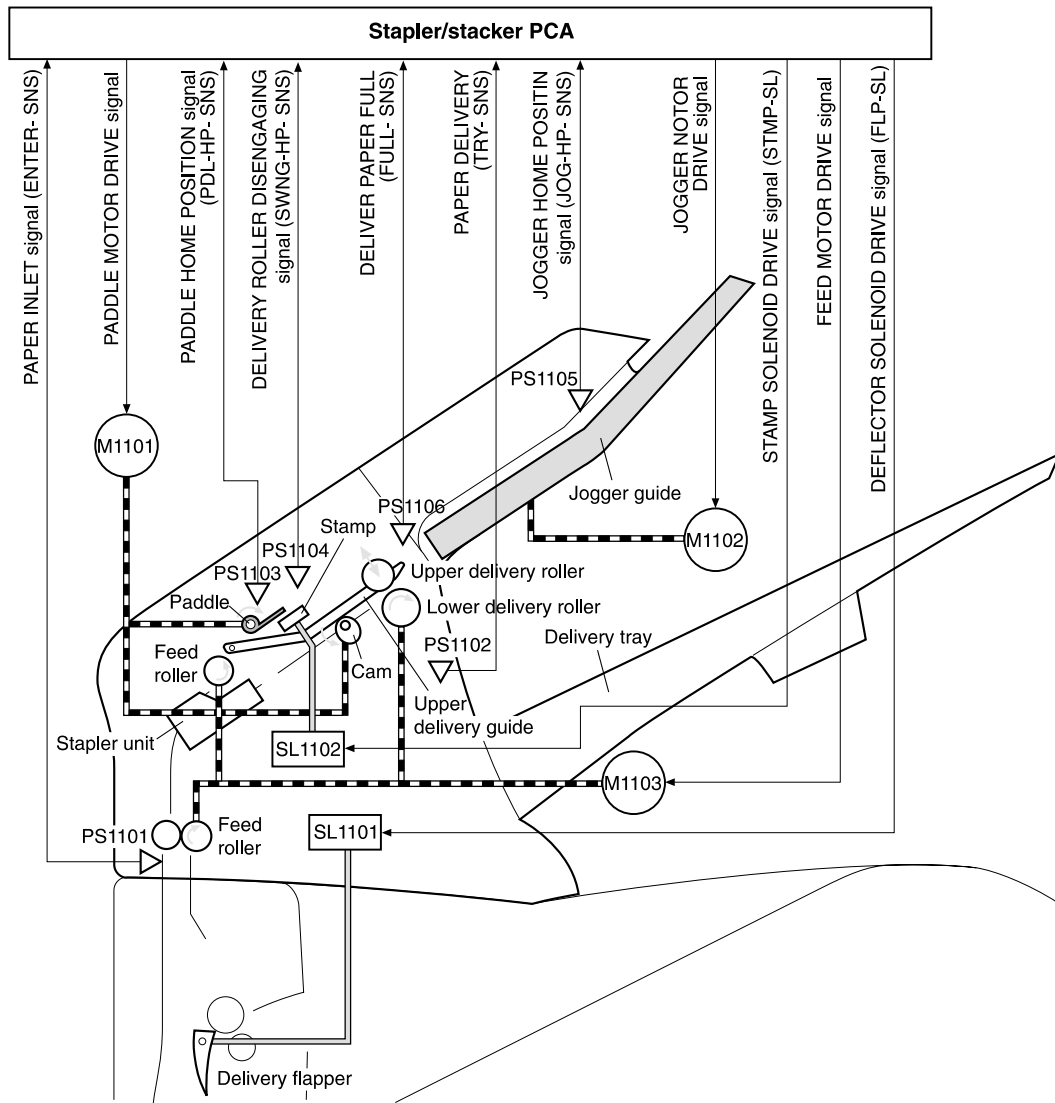
## Stapler/stacker feed and delivery

The stapler/stacker feed and delivery system consists of several feed rollers and guides that the stapler/stacker motors and solenoids drive. Sensors along the stapler/stacker paper path detect the arrival and passage of media and confirm the position of the jogger guide. The jogger guide helps to align the pages before stapling and dropping them into the delivery bin.

The stapler/stacker has two modes. The staple mode staples sheets together and drops them into the delivery bin. The stack mode drops the sheets directly into the delivery bin without stapling them together.

**Table 35. Stapler/stacker components**

Component	Purpose
Paddle motor (M1101)	Rotates the paddle (clockwise) Disengages the delivery roller (counterclockwise)
Jogger motor (M1102)	Shifts the jogger guide. Widens the jogger guide (clockwise) Narrows the jogger guide (counterclockwise)
Feed motor (M103)	Rotates the feed and delivery rollers
Stapler motor (M1104)	Rotates the staple cam
Deflector solenoid (SL1101)	Operates the delivery deflector
Clamp solenoid (SL1102)	Operates the stapler clamp
Paper-inlet sensor (PS1101)	Detects jams
Paper-delivery sensor (PS1102)	Detects jams
Paddle home-position sensor (PS1103)	Detects whether the paddle is in the home position
Delivery roller disengaging sensor (PS1104)	Detects the disengaging the delivery roller
Jogger home-position sensor (PS1105)	Determines whether the jogger guide is in the home position
Delivery paper-full sensor (PS1106)	Detects a full delivery bin
Door-open switch (SW1101)	Detects an open door
Staple-presence switch (SW1102)	Detects the presence of staples in the stapler cartridge
Staple home-position switch (SW1103)	Determines whether the stapler cam is in the home position



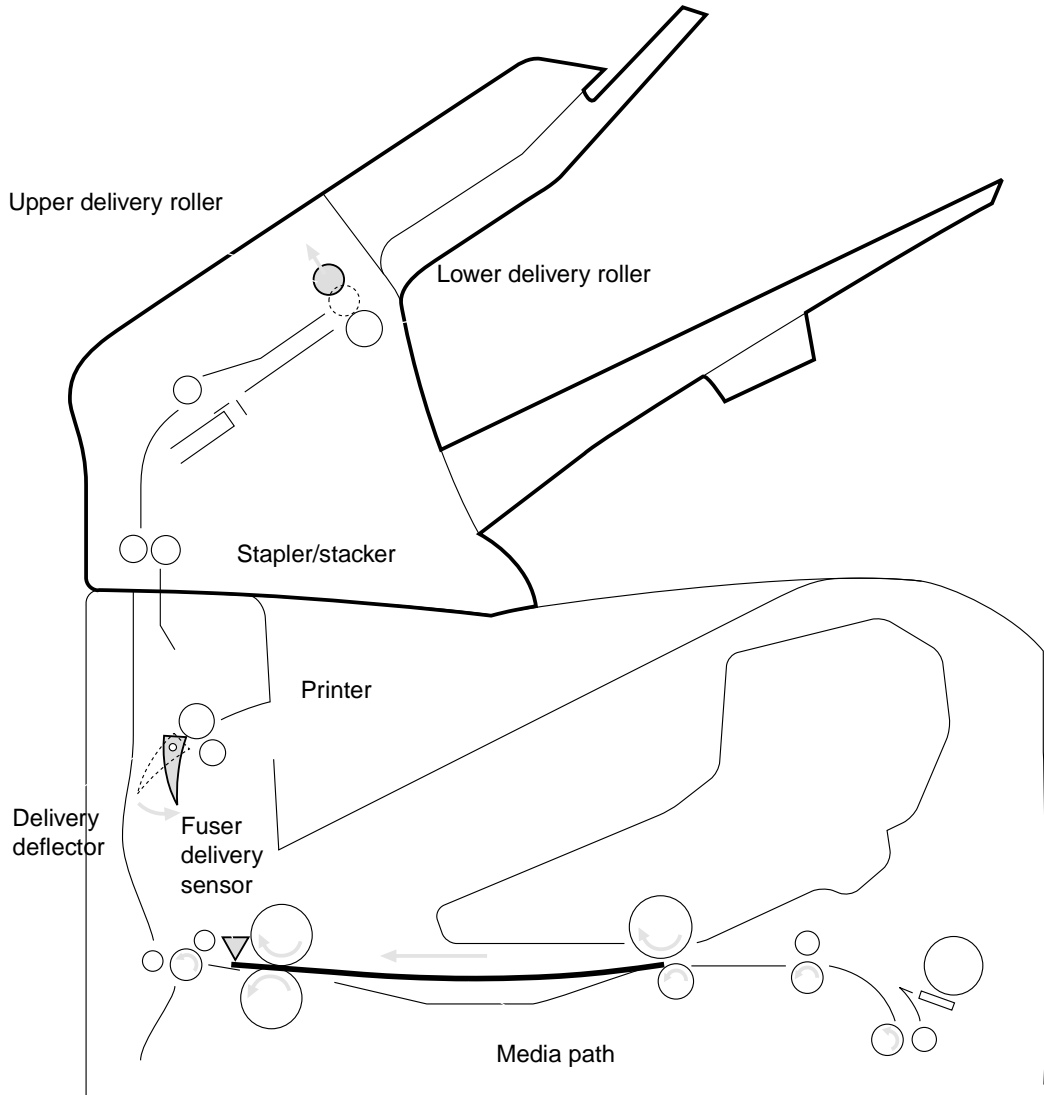
**Stapler/stacker motors, solenoids, and sensors block diagram**

## Staple-mode feed and delivery

In this mode, 2 to 15 pages of media are stapled into one set and the stacks are then delivered to the delivery bin.

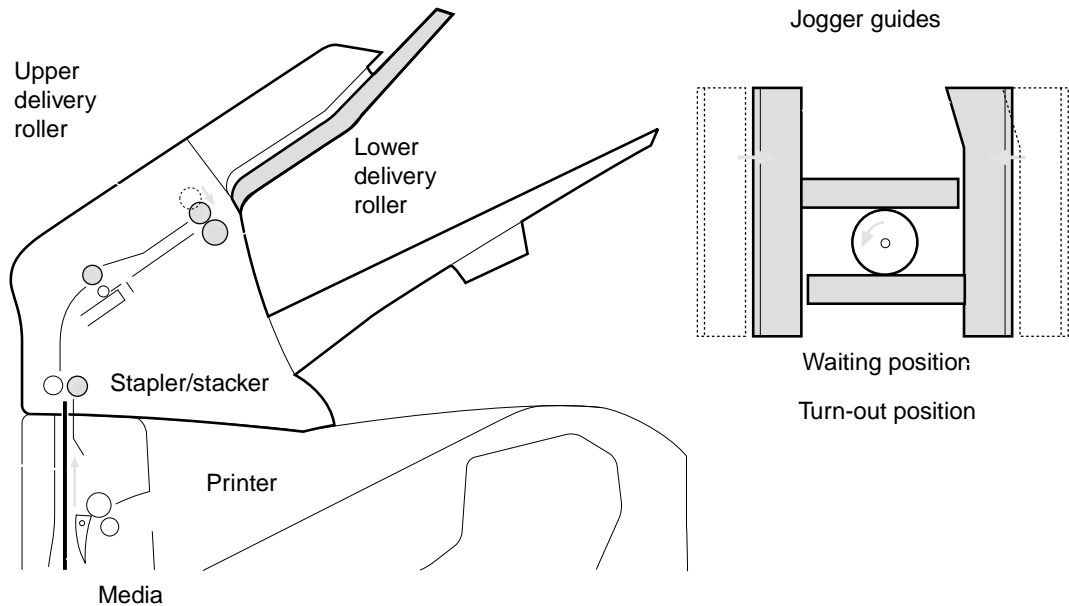
After the leading edge of the media reaches the fixing-delivery sensor (PS108) in the printer, the dc controller PCA sends a signal to the stapler/stacker-driver PCA. The stapler/stacker-driver PCA activates the deflector solenoid (SL101) for a specific amount of time to move the delivery deflector into place, which routes the media to the stapler/stacker rather than to the top output bin.

The stapler/stacker-driver PCA activates the paddle motor (M1101) to rotate (counterclockwise) the upper and lower delivery rollers to disengage them. It also activates the stacker motor (which rotates at the same speed as the printer main motor) to rotate the feed and delivery rollers.



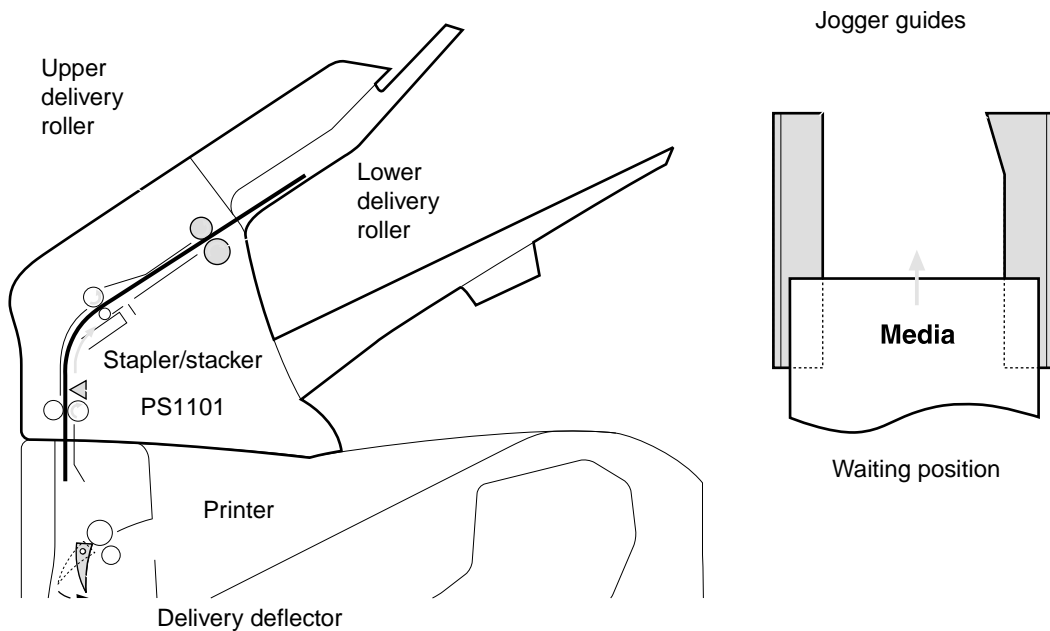
Staple mode feed and delivery diagram (1 of 6)

The jogger guide motor (M1101) moves the jogger guides to the waiting position, and the stapler/stacker-driver PCA again activates the paddle motor (M1101) counterclockwise to engage the upper and lower delivery rollers.



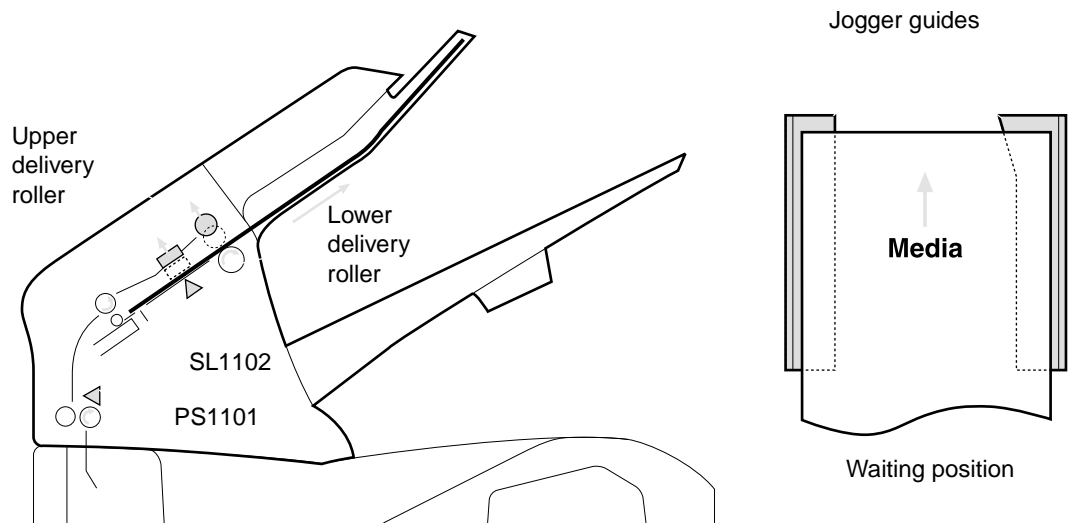
#### Staple mode feed and delivery diagram (2 of 6)

At a specific time after the paper inlet sensor (PS1101) detects the *leading edge* of the media, the stapler/stacker PCA changes the speed of the feed motor (M1103) to synchronize the feed rollers with the speeds of the other stapler/stacker motors and rollers. The stapler/stacker PCA then activates the paddle motor (M1101) counterclockwise to again disengage the upper and lower delivery rollers. The delivery deflector returns to its normal position.



#### Staple mode feed and delivery diagram (3 of 6)

At a specific time after the paper-inlet sensor (PS1101) detects the *trailing* edge of the media, the stapler/stacker-driver PCA activates the clamp solenoid (SL1102). The clamp keeps the page from being pushed out of position by the pages that follow.

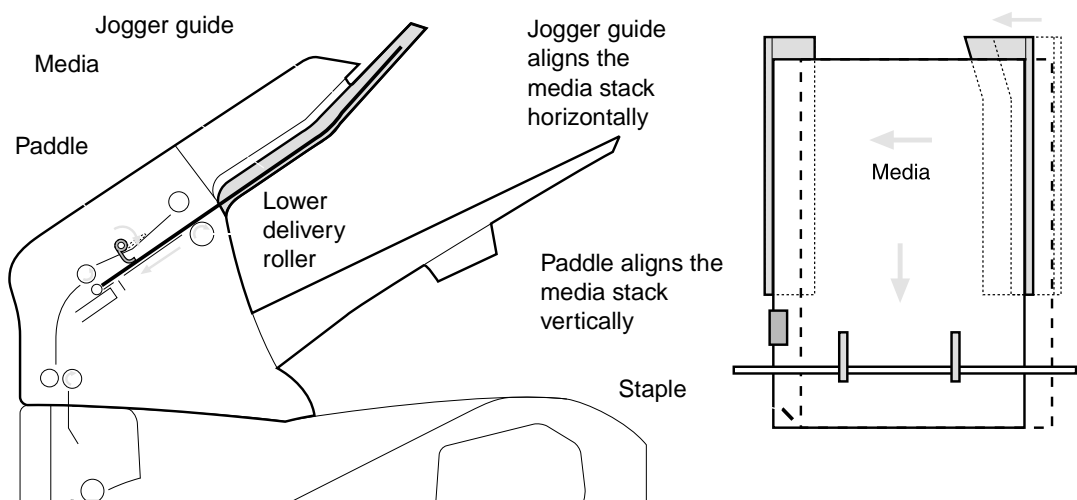


#### Staple mode feed and delivery diagram (4 of 6)

Stapler/stacker operation depends on whether it detects the final page in the staple job.

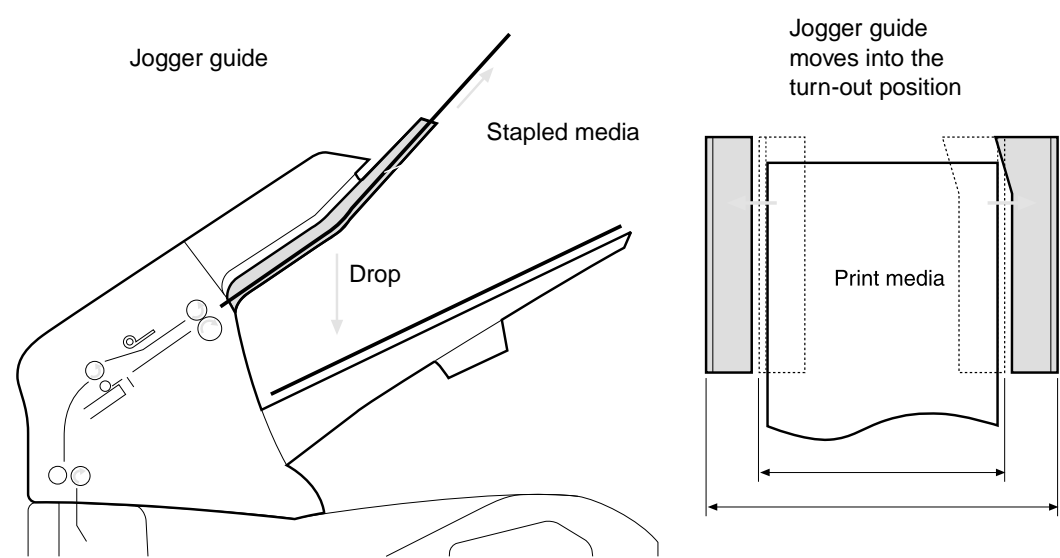
**No.** The feed motor (M1101) changes speed and another page enters the stapler/stacker. The stapler/stacker-driver PCA activates the jogger motor and the jogger guide moves to align the media stack horizontally. The stapler/stacker-driver PCA activates the paddle motor and the paddle pushes the page up against a guide to align the media stack vertically. The delivery deflector moves into position to allow the next page to enter the stapler/stacker.

**Yes.** The feed motor (M1101) turns off. The stapler/stacker-driver PCA activates the jogger motor and the jogger guides move inward to align the media stack horizontally. The stapler/stacker-driver PCA activates the paddle motor and the paddle pushes the page up against a guide to align the media stack vertically. Then the pages are stapled.

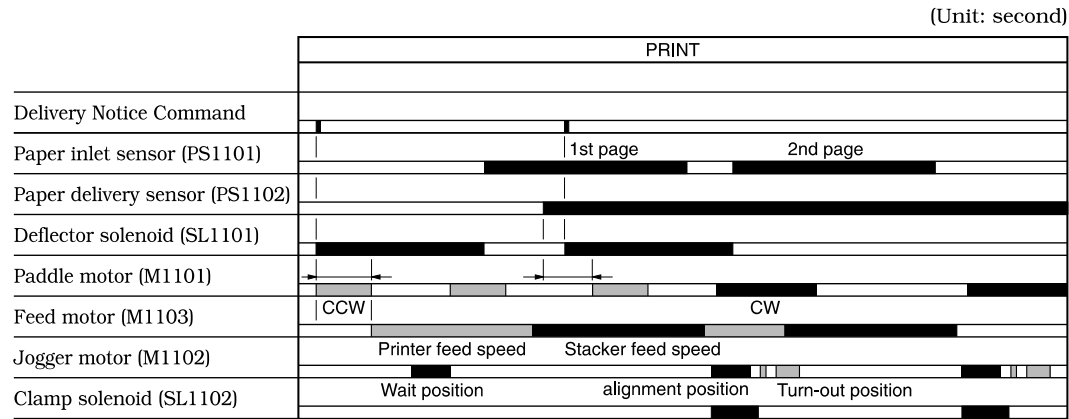


#### Staple mode feed and delivery diagram (5 of 6)

After the pages are stapled, the stapler/stacker-driver PCA activates the feed motor (M1103; counterclockwise) to again engage the upper and lower delivery rollers. The stapled stack is moved all of the way out onto the jogger guides. The stapler/stacker-driver PCA activates the jogger motor (M1102) to move the jogger guide into the turn-out position and allow the stack to drop into the delivery bin.



Staple mode feed and delivery diagram (6 of 6)

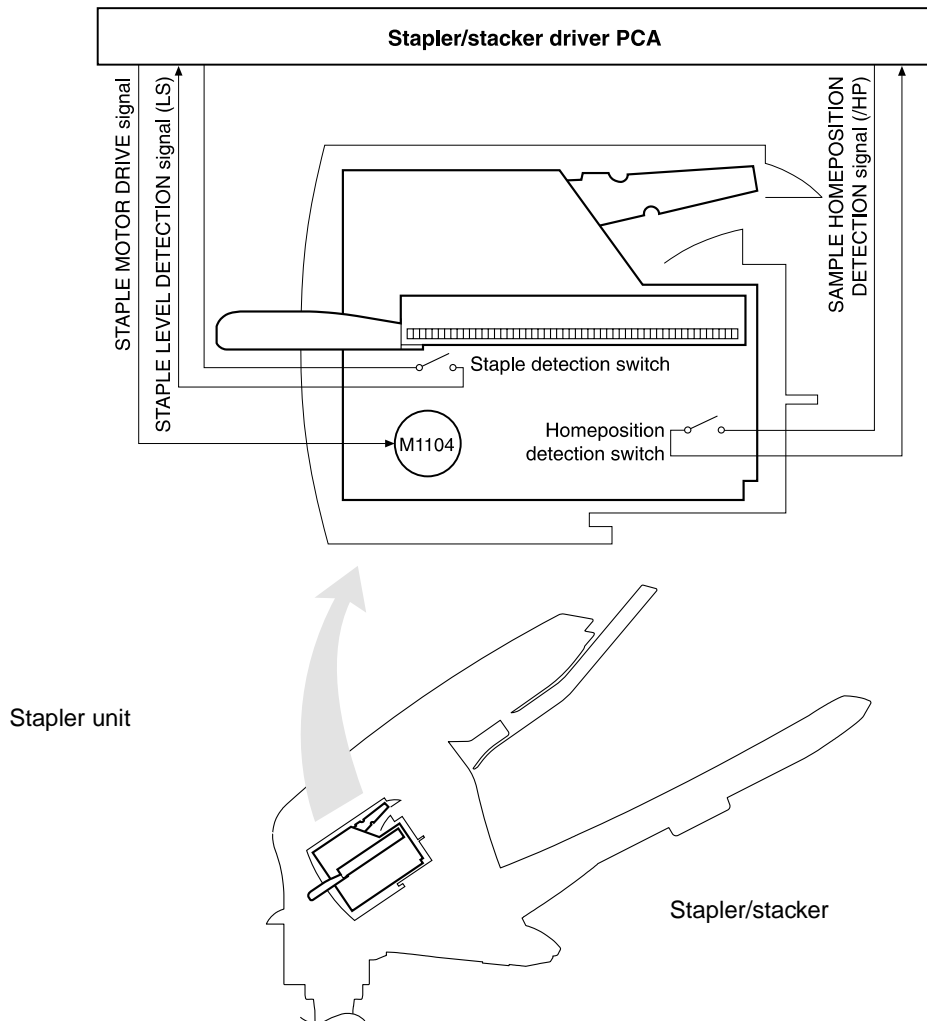


Staple mode timing diagram



## Stapler unit

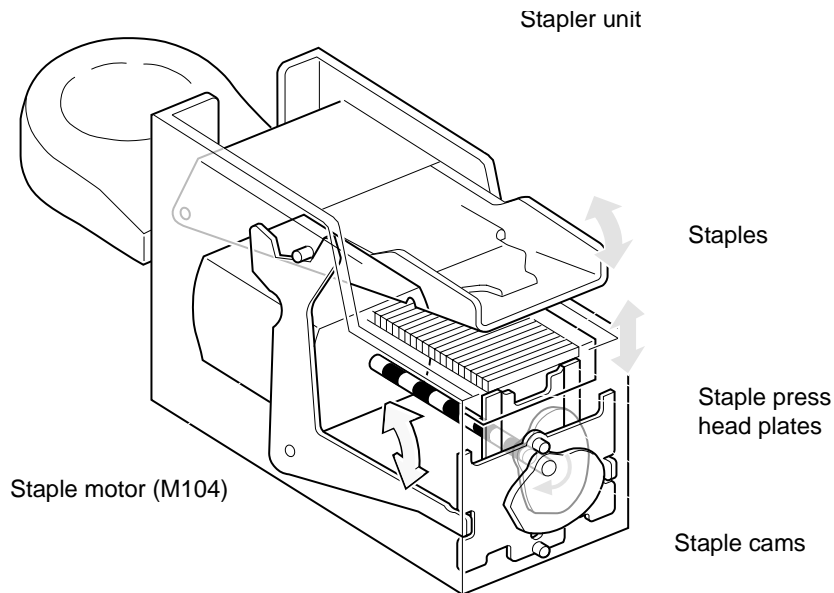
The major components of the stapler unit are the stapler motor (M104), the staple cartridge, the staple-detection switch, and the staple-module home-position switch. The staple cartridge holds a maximum of 1,000 staples. The stapler/stacker-driver PCA controls the stapler unit.



Stapler unit I/O block diagram

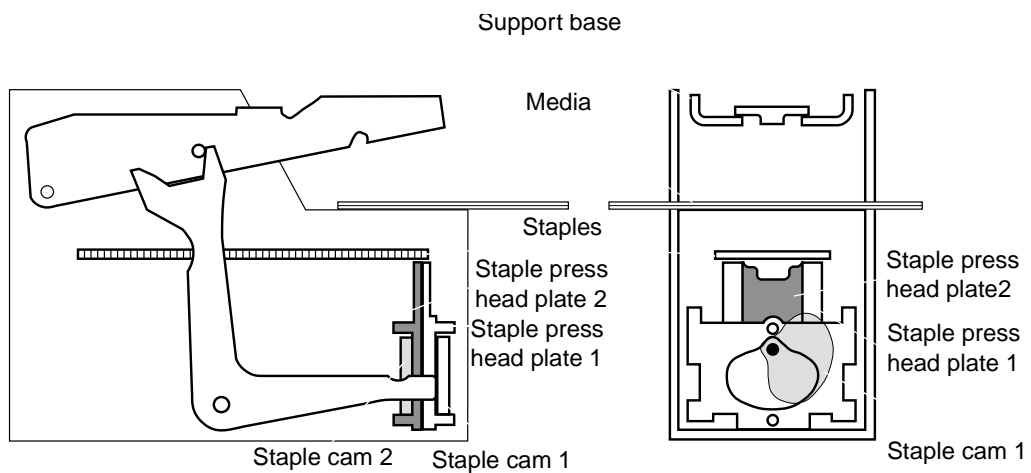
## Stapler unit operation

The stapler unit uses the stapler unit motor (M104), staple cam, staple press head plates, staple arm, and support base to staple media together. The staple mode is enabled by using the printer settings (see ). The stapling procedure begins when media enters the staple guide and the dc controller PCA sends the end-of-job signal to the stapler/stacker-driver PCA.



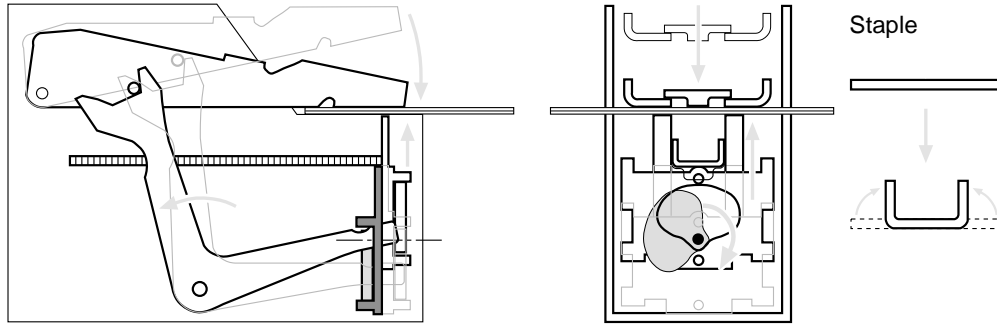
### Stapler unit

After the paddle and jogger guides align the edges of the media, the stapler/stacker PCA activates the stapler unit motor (M104). The two staple cams begin to rotate.



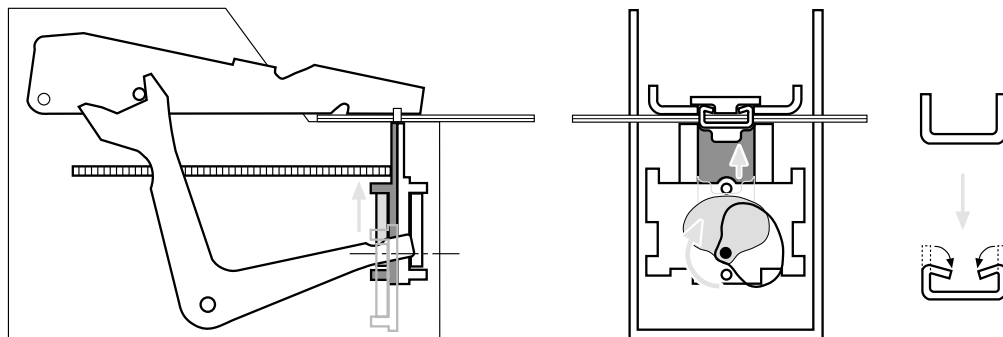
### Staple operation (1 of 3)

As staple cam 1 rotates, it raises the staple press head plate 1. This forms the flat staple into a “u” shape. While this is happening, the staple arm raises the swing guide.



### **Staple operation (2 of 3)**

As staple cam 2 rotates, it raises staple press head plate 2. This pushes the staple up and through the media. The staple arm raises the back end of the support base, bringing its front end in contact with the staple legs that protrude through the media and folding them to complete the staple operation.



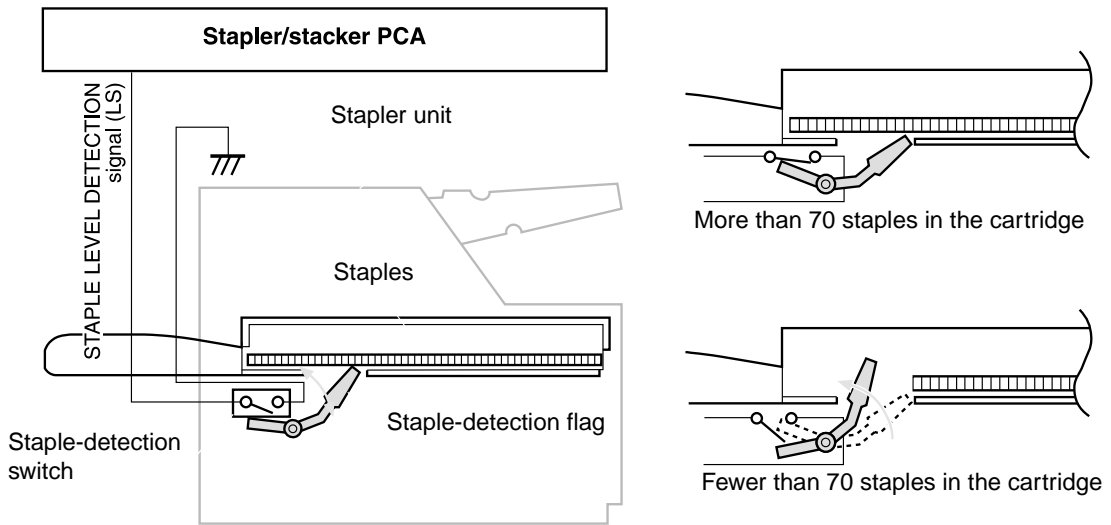
### **Staple operation (3 of 3)**

## Staple-level detection

The stapler/stacker-driver PCA uses the staple-detection switch to detect the presence and number of staples in the stapler unit. A spring on the staple-detection switch holds the staple-detection flag in the raised position. When this flag is fully raised, the switch is open.

There is a slot cutout in the bottom of the staple cartridge. If the staple cartridge is mostly full of staples, the staples block the staple-detection flag's movement so that it cannot move to its raised position. The staple-detection switch is closed, and the stapler/stacker-driver PCA determines that at least 70 staples remain in the cartridge. When fewer than 70 staples remain in the cartridge, the staple-detection flag is no longer blocked and moves to the raised position. The staple-detection switch opens, and the stapler/stacker-driver PCA identifies a low-staple condition.

A low-staple message appears on the control-panel display. After the stapler/stacker PCA sends the staple command 70 more times, a staple-out message appears on the control-panel display. See



## Staple-level detection

## Stack-mode feed and delivery

In this mode, media is stacked in the delivery bin without being stapled.

After the *leading* edge of the media reaches the fixing-delivery sensor (PS108), the dc controller PCA sends a signal to the stacker-driver PCA. The stacker-driver PCA activates the deflector solenoid (SL101) for a specific amount to move the delivery deflector into place, which routes the media to the stacker rather than to the top output bin. The stacker-driver PCA also activates the stacker motor (which rotates at the same speed as the printer main motor) to rotate the feed and delivery rollers.

The feed roller moves the media into the stacker. If the dc controller PCA sends a following-page signal (indicating that the job contains another page), the stacker-driver PCA again activates the deflector solenoid (SL101). The delivery rollers move the media to the delivery bin.

## Stapler/stacker jam detection

The following sensors detect the presence of media in the stapler/stacker and determine whether the media is feeding correctly or jamming. For information about the location of these sensors, see

- paper-inlet sensor (PS1101)
- paper-delivery sensor (PS102)

### Stapler/stacker feed jam

If the paper-inlet sensor (PS1101) does not detect the *leading* edge of the media within a specified period of time after the stacker driver has received the paper delivery signal, the dc controller PCA determines that a stapler/stacker feed delay jam has occurred.

The transport process stops and a 13.XX.YY JAM message appears on the control-panel display. For more information about jam messages, see

and

### Stapler/stacker feed stationary jam

If the paper-inlet sensor (PS1101) does not detect the *trailing* edge of the media within a specified period of time after the paper inlet sensor (PS1101) detected the *leading* edge of the media, the dc controller PCA determines that a stapler/stacker feed delay jam has occurred.

The transport process stops and a 13.XX.YY JAM message appears on the control-panel display. For more information about jam messages, see

and

### Stapler/stacker delivery jam

If the paper-delivery sensor (PS1102) does not detect the *trailing* edge of the media within a specified period of time after the feed motor has been activated following the completion of the stapling operation, the dc controller PCA determines that a stapler/stacker feed delay jam has occurred.

The transport process stops and a 13.XX.YY JAM message appears on the control-panel display. For more information about jam messages, see

and

### Stapler/stacker residual media jam

If the paper-inlet sensor (PS1101) or the paper delivery sensor (PS1102) detects media during the initial drive period, the dc controller PCA determines that a stapler/stacker feed delay jam has occurred.

The transport process stops and a 13.XX.YY JAM message appears on the control-panel display. For more information about jam messages, see

and

This jam *only* occurs if the paper-delivery sensor (PS1102) detects media at the *start* of the initial drive.

The image-formation system is the main system in the printer. It consists of five stages:

Electrostatic latent (potential) image formation

During this operation a uniform negative charge is applied to the surface of the photosensitive drum in the print cartridge. The drum is then exposed to the laser beam from the laser/scanner which neutralizes portions of the drum to create an invisible electrostatic latent image.

Developing the image

Toner from the print cartridge is applied to the drum. The image is now visible.

Transferring the image

The toner is transferred to the media and the media is separated from the photosensitive drum.

Fusing the image

Heat and pressure are applied to the media to permanently bond toner to the media.

Cleaning the transfer charging roller and photosensitive drum

Residual (left over) toner is cleaned off of the transfer charging roller (this toner is transferred to the photosensitive drum) and then off of the photosensitive drum.

When the dc controller PCA receives the print signal, it drives the main motor, which rotates the photosensitive drum (the HP LaserJet 4300 uses a separate print cartridge motor to rotate the drum), the developing cylinder, the primary charging roller, the transfer charging roller, and the fuser pressure roller.

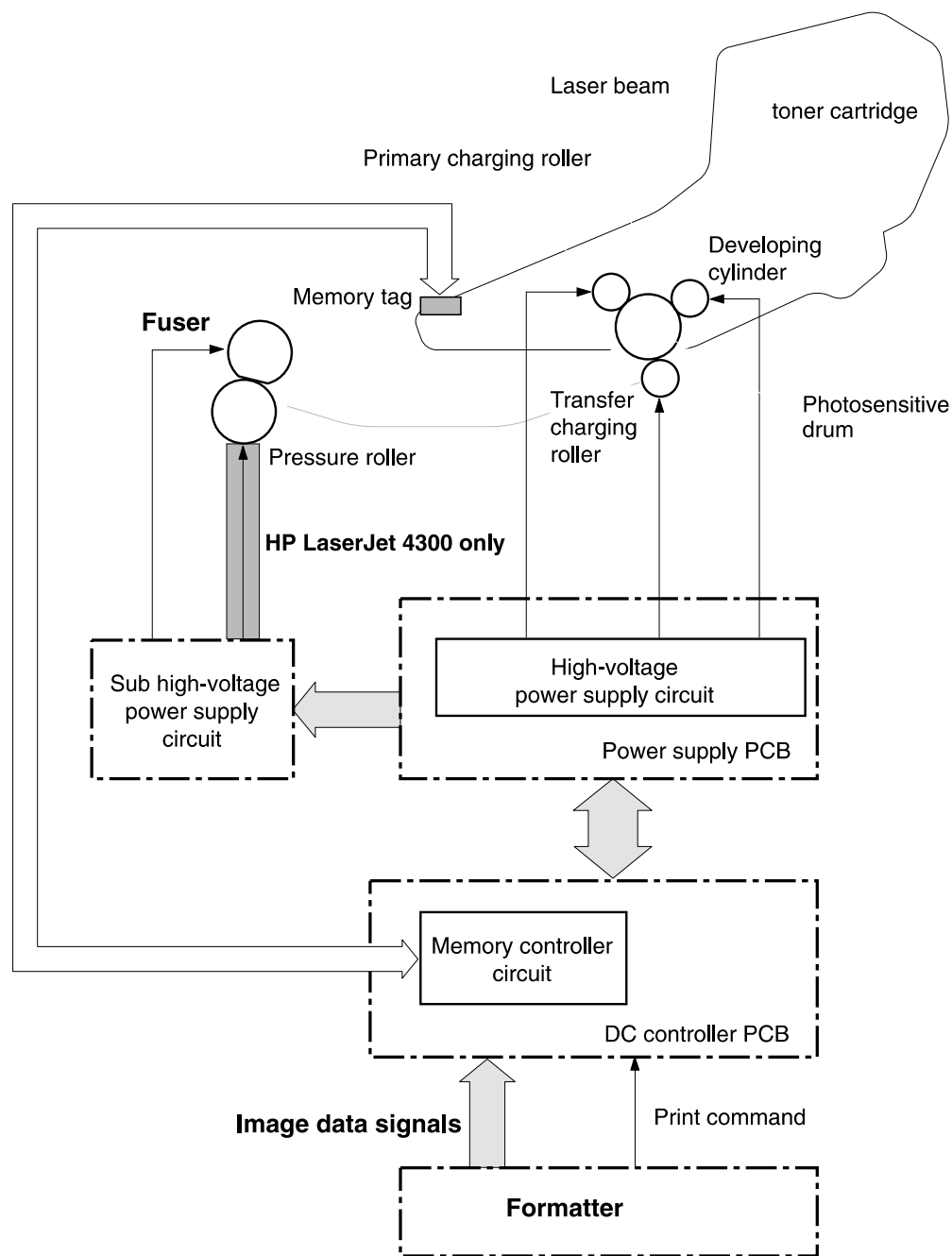
The primary charging roller places a uniform negative charge on the surface of the photosensitive drum. Modulated laser beams strike the drum to form an electrostatic latent image.

The latent image that is formed on the photosensitive drum changes to a visual image when toner on the developing cylinder is transferred to the drum. The transfer charging roller transfers the image to the media. The fuser applies heat and pressure to permanently bond the image on the media. Then, residual toner on the photosensitive drum surface is scraped off with the cleaning blade.

The cartridge has a toner sensor that detects the presence of the cartridge and the remaining toner level.

If the toner in the cartridge becomes lower than a specific level, or if the printer contains no print cartridge, an error message appears on the control-panel display. See

or



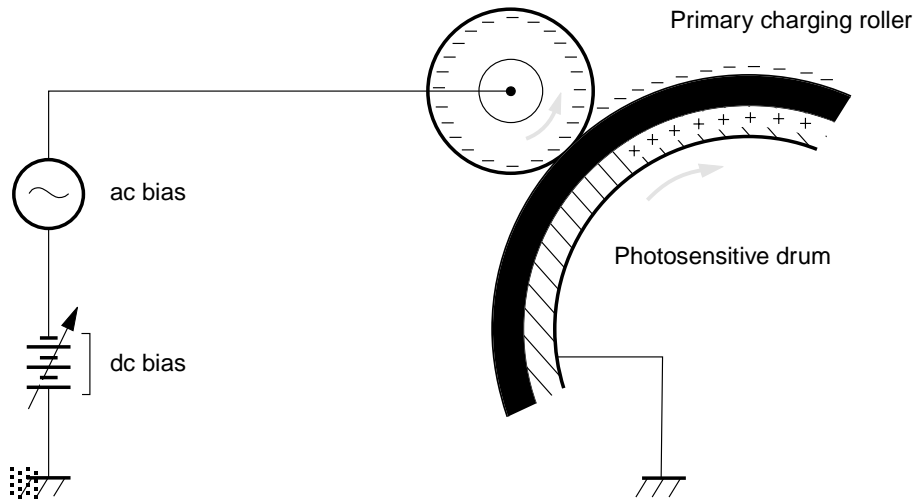
**Image-formation block diagram**

## Electrostatic latent-image formation

Forming the electrostatic latent image on the photosensitive drum requires applying a uniform negative charge (bias) to the surface of the drum and then exposing it to the laser beam. The laser beam neutralizes the section of the drum that will it attract toner during the developing operation.

### Primary charging

The conditioning process consists the primary charging roller applying a uniform negative charge on the surface of the drum. The primary charging roller is coated with conductive rubber that has an ac bias applied. This erases any residual charges and maintains a constant drum-surface charge. The print density setting modifies the amount of dc voltage.

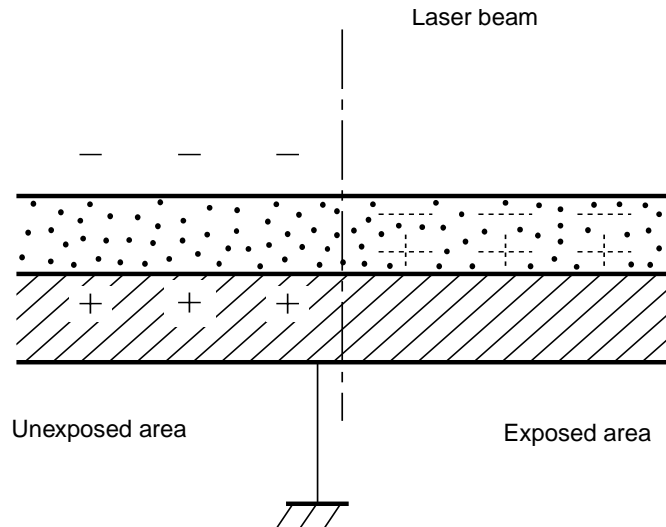


Primary charging of the photosensitive drum



## Writing the image

The laser/scanner contains two diodes in the laser unit. During the writing process, the modulated laser diodes project two beams onto the rotating six-sided scanning mirror. As the mirror rotates, the beams reflect off the mirror, through a set of focusing lenses, through a slot in the top of the toner cartridge, and onto the photosensitive drum. The beams sweep the drum from left to right, discharging the negative potential wherever the beams strike the surface. This creates a latent electrostatic image, which later is developed into a visible image.



## Writing the image to the photosensitive drum

Because the beams are sweeping the entire length of the drum and the drum is rotating, the entire surface area of the drum can be covered. The speed of the scanner motor (which turns the scanning mirror) and the speed of the main motor (which turns the drum) are synchronized, and each successive sweep of a beam is offset by 1/1200th of an inch. The beams can be turned on and off to place a dot of light every 1/1200th of an inch. This is how the printer achieves its true 1200 by 1200 dpi resolution. After the writing process, the drum surface has an invisible (latent) electrostatic image.

At the beginning of each sweep, the beams strike the beam-detect mirror and PCB, generating the beam-detect (BD) signal. The BD signal is sent to the dc controller PCA, where it is converted to an electrical signal this is used to synchronize the output of video data for one sweep (two scan lines) and to diagnose problems that exist in the laser diode or scanner motor.

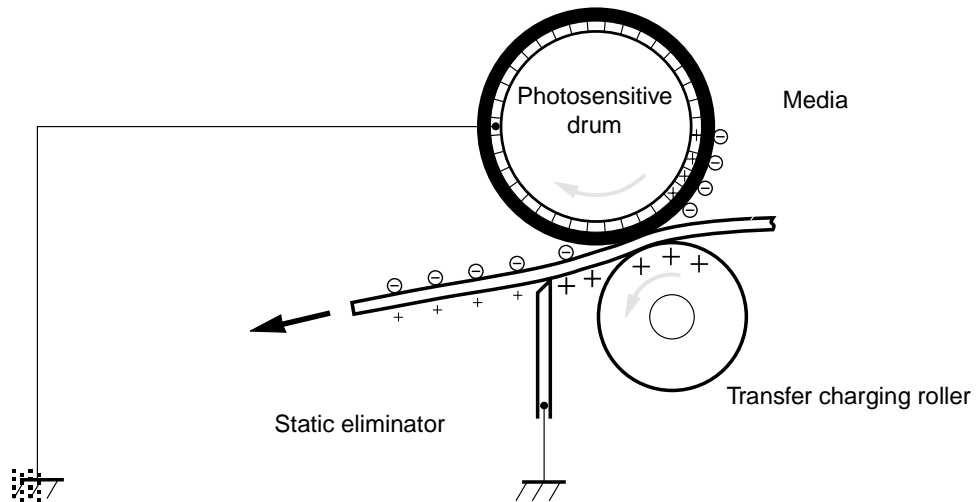
The developing process makes the latent electrostatic image a visible image on the drum. The developing unit consists of a metallic cylinder that rotates around a fixed magnetic core inside the toner cavity. Toner is a powdery substance made of black plastic resin bound to iron particles, which is uniformly attracted to the magnetic core of the cylinder.



## Transferring the image

During the transferring process the toner image on the drum surface is transferred to the paper. A positive charge that the transfer roller applies to the back of the media causes the negatively charged toner on the drum surface to be attracted to the sheet of media.

The small diameter of the drum, combined with the stiffness of the paper, causes the paper to peel away from the drum. The static-eliminator teeth also help separate the paper from the drum. The static-eliminator teeth weaken the attractive forces between the negatively charged drum surface and the paper.



Transferring the image

## Fusing the image

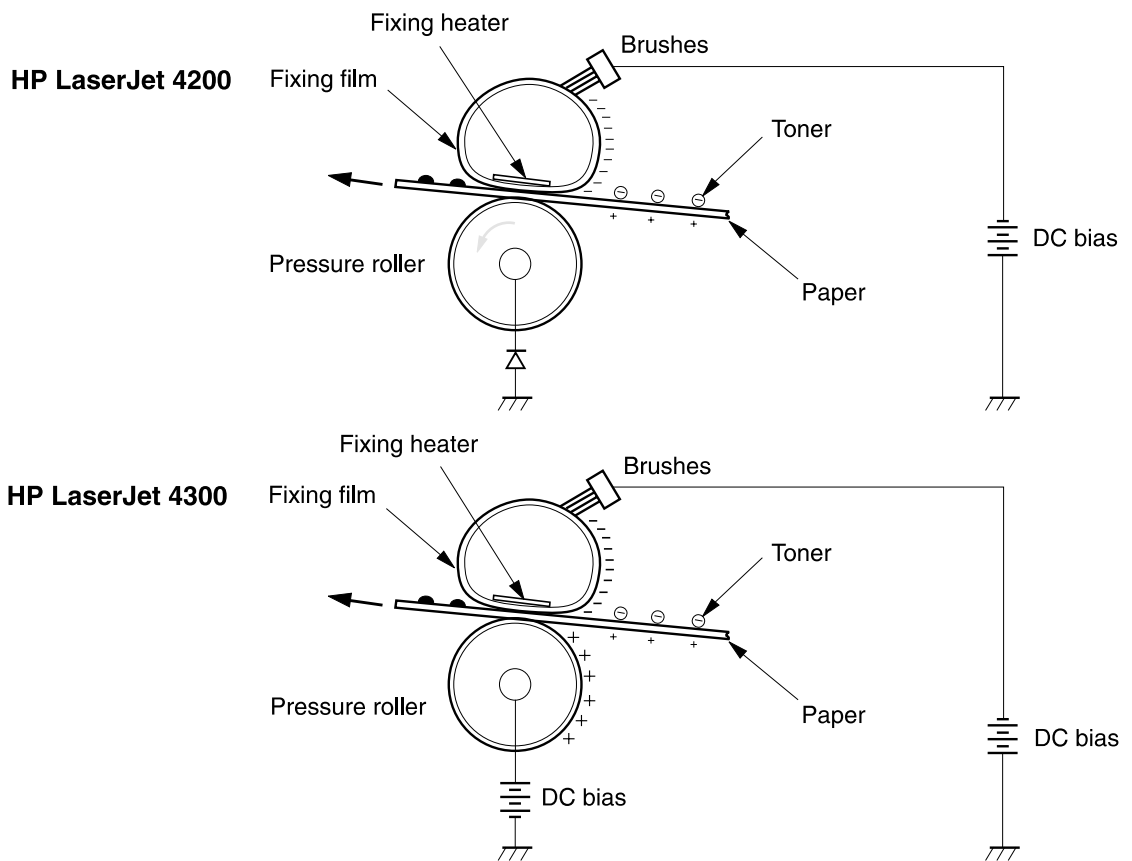
The image is only held in place by electrostatic attraction when it is transferred from the drum to the media. The lightest touch will smear it. During the fusing process, heat and pressure fuse the image to the media to produce a permanent image. The media passes between a heated fusing roller and a soft pressure roller. This melts the toner and presses it into the media.

This printer utilizes an on-demand fusing method. This method has fast temperature-rising time, which shortens the wait time (the time it takes to heat the fuser to its operating temperature). No power is supplied to the fuser heater during the standby mode, which conserves energy.

For the HP LaserJet 4200 and 4200L, a dc negative bias (charge) is applied to the fixing film. This stabilizes the toner so that it does not scatter over the media and produce a blurred image.

For the HP LaserJet 4300, a dc negative bias (charge) is applied to the fixing film and a dc positive bias (charge) is applied to the pressure roller. This stabilizes the toner so that it does not scatter over the media and produce a blurred image.

To prevent offset images, the surface of the fixing film is coated with fluorine.



## Fusing the image

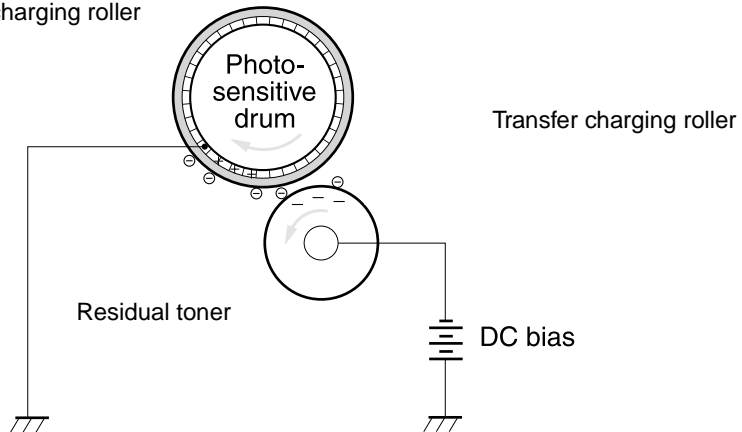
## Cleaning the transfer charging roller and photosensitive drum

Residual (leftover) toner is cleaned off of the transfer charging roller and photosensitive drum so that subsequent images are crisp and clear. Because not all of the toner is attracted to the media when the image is transferred from the drum, some toner remains on the drum. Toner can also remain on the transfer roller if a jam occurs and the transfer of toner to the media is not completed.

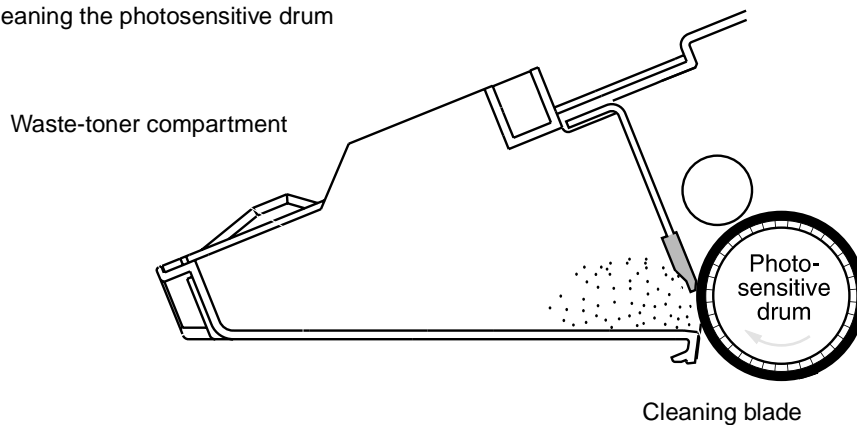
A dc negative bias (charge) is applied to the transfer charging roller that is opposite the photosensitive drum, which causes the residual toner to be attracted to the drum.

A cleaning blade is in contact with the surface of the drum at all times. As the drum rotates during printing, excess toner from the transfer charging roller and drum are scraped off and stored in the waste-toner receptacle.

Cleaning the transfer charging roller



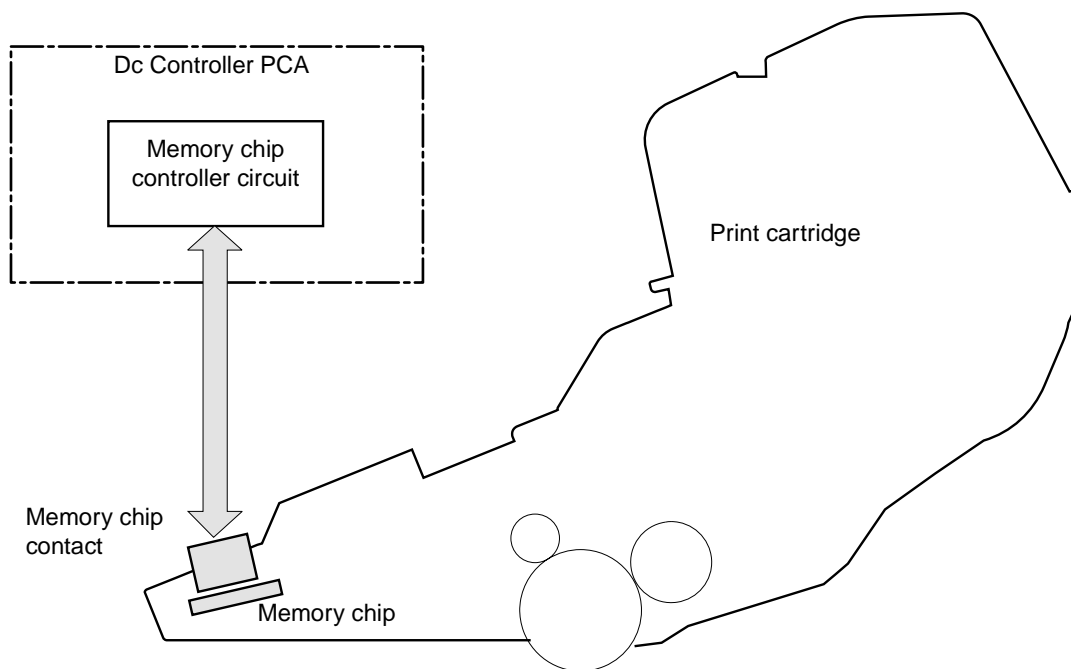
Cleaning the photosensitive drum



## Cleaning the transfer charging roller and photosensitive drum

## Print cartridge memory chip

The print cartridge memory chip is a non-volatile memory device that is built into the print cartridge. It stores information about the cartridge. The dc controller PCA reads and writes memory data to the memory chip to monitor the print cartridge usage and condition. The dc controller PCA reads and writes to the memory chip at specific times. If the read-write process fails four times in a row, the dc controller PCA detects a print-cartridge memory failure and a 10.00.00 SUPPLIES MEMORY ERROR error message appears on the control-panel display (see ).



## Print cartridge memory chip

The formatter is responsible for the following procedures:

- controlling the PowerSave mode
- receiving and processing print data from the various printer I/Os
- monitoring control panel functions and relaying printer status information (through the control panel and the bidirectional I/O)
- developing and coordinating data placement and timing with the dc controller PCA
- storing font information
- communicating with the host computer through the bidirectional interface

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

The formatter also provides the electrical interface and mounting locations for two EIO cards, additional memory DIMMs, the hard-disk accessory, and the optional HP Fast Infrared Receiver.

## **PowerSave**

This feature in the configuration menu conserves power after the printer has been idle for an adjustable period of time. When the printer is in PowerSave mode, the control panel backlight is turned off, but the printer retains all printer settings, downloaded fonts, and macros. The default setting is `POWERSAVE=ON`, with a 30-minute idle time. PowerSave can also be turned `OFF` from the resets menu on the control panel.

The printer exits PowerSave mode and enters the warm-up cycle when any of the following occurs:

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

Printer error messages override the PowerSave message. The printer enters PowerSave mode at the appropriate time, but the error message continues to appear.

## **Resolution Enhancement technology**

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

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

## EconoMode

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

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

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

## Input/output

### Parallel interface

The formatter receives incoming data through its bidirectional interface (IEEE-1284). The I/O 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. The user can configure the HIGH SPEED item on the control panel. The default setting (YES) makes it possible for the I/O to run at the higher speeds that are supported by most newer computers. When set to NO, the parallel interface runs at the slower mode that is compatible with older computers. The user can also configure the ADVANCED FUNCTIONS item. The default setting (ON) accommodates two-way parallel communications. The OFF mode disables the advanced functionality. The I/O is compatible with the bidirectional parallel interface standard.

### Expanded I/O

The optional expanded I/O (EIO) card can be installed in the slots that are provided on the formatter. It provides automatic I/O switching between multiple computers or networks that are connected to the printer.

Only one slot is available on HP LaserJet 4300L printers.

### Flash

Optional flash is available in 2 MB and 4 MB flash memory DIMMs for storing forms, fonts, and signatures.

### Hard-disk accessory

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

### CPU

HP LaserJet 4200/4200L series printer formatters incorporate a 300 MHz RISC processor.

HP LaserJet 4300 series printer formatters incorporate a 350 MHz RISC processor.



## Printer memory

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

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

## Read-only memory

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

## Random-access memory

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

## DIMM slots

The DIMM slots can be used to add memory, fonts, or firmware upgrades.

## Firmware DIMM

To replace the printer firmware DIMM, insert a new firmware DIMM in DIMM slot 1 (the uppermost slot) inside the formatter assembly. See [Figure 5-1](#).

The firmware DIMM *must* be installed in slot 1 (formatter PCA location J1; top-most slot).

Firmware can also be updated by downloading a remote firmware update (RFU). For more information about RFUs, see [Chapter 6](#).

## Nonvolatile memory

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

## Memory Enhancement technology

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

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

## **PJL overview**

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

Two-way communication with the host computer through a bidirectional parallel connection. The printer can tell the host about such things as the control panel settings, and it allows the control panel settings to be changed from the host.

Dynamic I/O switching. The printer uses this switching to be configured with a host on each I/O. The printer can receive data from more than one I/O simultaneously, until the I/O buffer is full. This can occur even when the printer is offline.

Context-sensitive switching. The printer can automatically recognize the personality (PS or PCL) of each job and configure itself to serve that personality.

Isolation of print environment settings from one print job to the next. For example, if a print job is sent to the printer in landscape mode, the subsequent print jobs print in landscape only if they are formatted for landscape printing.

## **PML**

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

## **Control panel**

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

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This chapter describes how to remove, replace, and reassemble the major assemblies of the printer. Replacement is generally the reverse of removal. *To identify the left side and right side of the printer, face tray 1 on the front of the unit.*

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



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

## Required tools

- #2 Phillips screwdriver
- small flat-blade screwdriver
- needle-nose pliers
- ESD mat (if available; see the ESD caution above)
- penlight (optional)
- tape (optional)

A PoziDriv screwdriver will damage screw heads on the product. Use a #2 Phillips screwdriver.

## Before performing service

If possible, print a menu map and configuration page. See [page 100](#) and [page 101](#).

Remove all of the accessories and print media, the print cartridge, and tray 2 from the product.

Unplug the power cord from the power outlet at the wall receptacle.

Place the product on an ESD mat, if one is available. If an ESD-protected workstation is not available, discharge body static by grasping the printer chassis before touching an ESD-sensitive component. Ground the printer chassis *before* servicing the product.

## After completing service

Reinstall the print cartridge (remove the print cartridge prior to transporting the printer back to the customer).

Reconnect all cables to the product.

Replace all of the accessories and load the media.

Print a configuration page and verify that the latest firmware is installed on the printer. See [page 100](#) and [page 101](#).

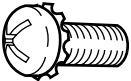
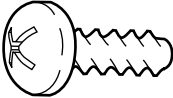
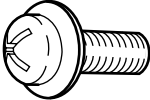
## Screws used in the printer

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







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

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

**Table 36. Common fasteners used in this product**

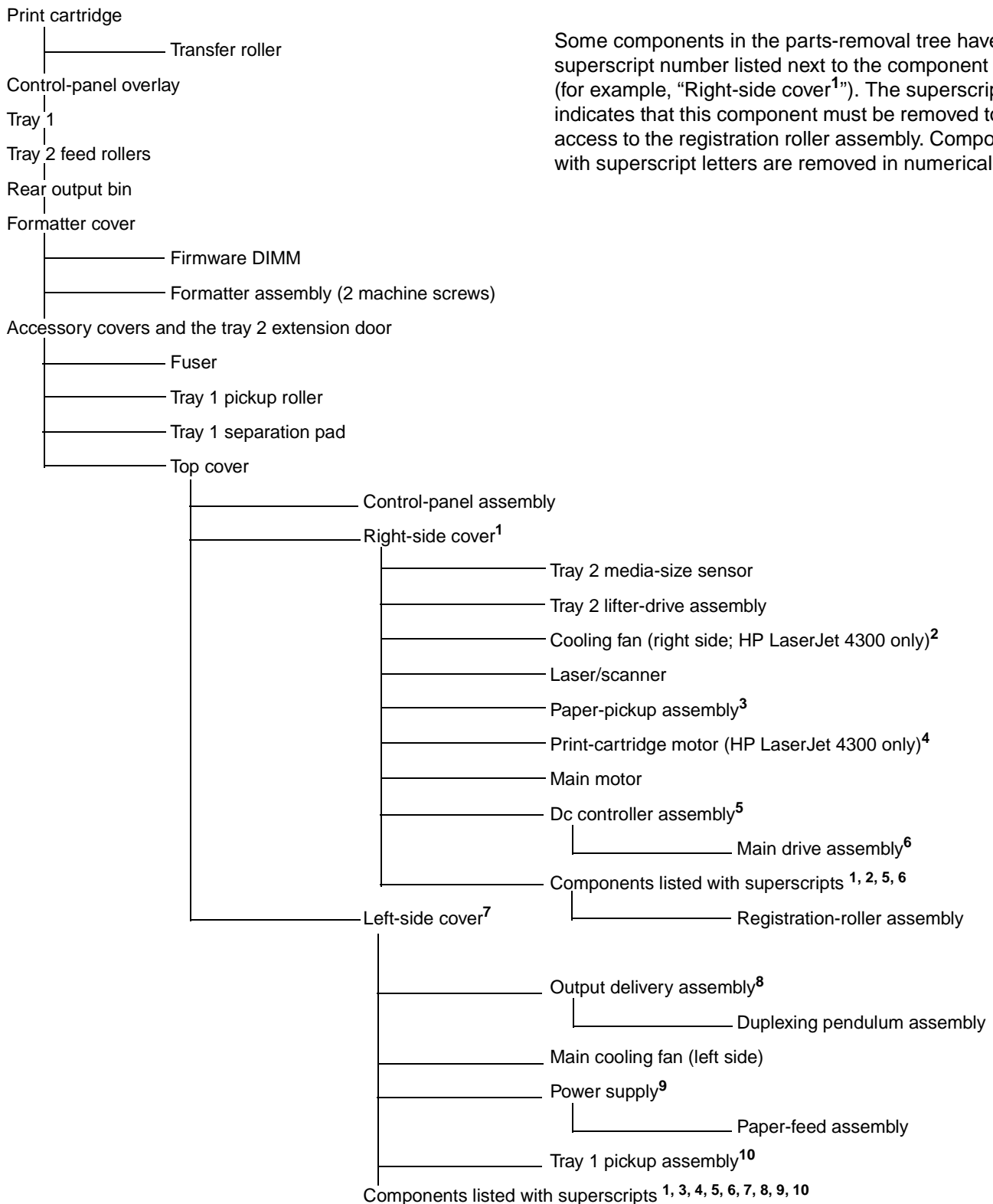
Drawing and description	Purpose
	This screw is used to fasten metal to metal when good electrical contact is needed. This screw also provides high resistance to loosening.
	<p>This screw is used to fasten sheet metal or plastic to plastic frames (the deep, coarsely spaced threads provide an increased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

### Screw measurement guide

6mm	8mm	10mm	12mm	M3	M4
					

# Parts-removal tree

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

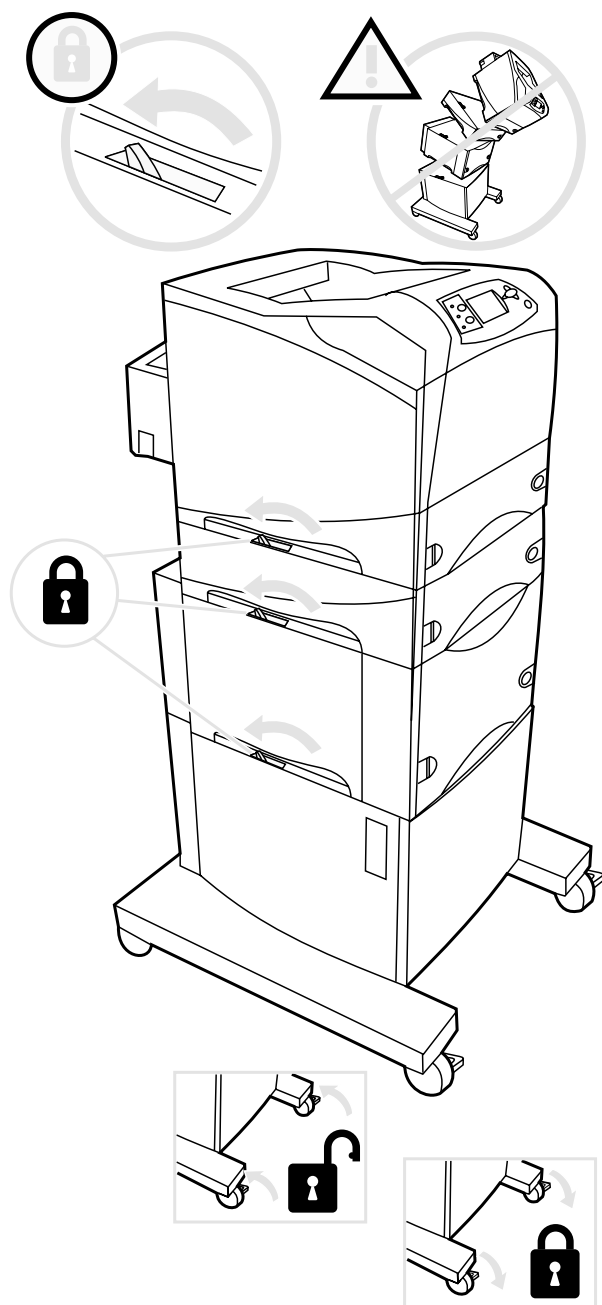


The formatter assembly and fuser are only listed once, but they must be removed to gain access to some of the other components.

## Printer input tray, and cabinet wheel locks

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

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



**Location of printer, input trays, and cabinet wheel locks**



## Print cartridge

1. Open the control-panel door.



### Print cartridge (1 of 2)

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

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



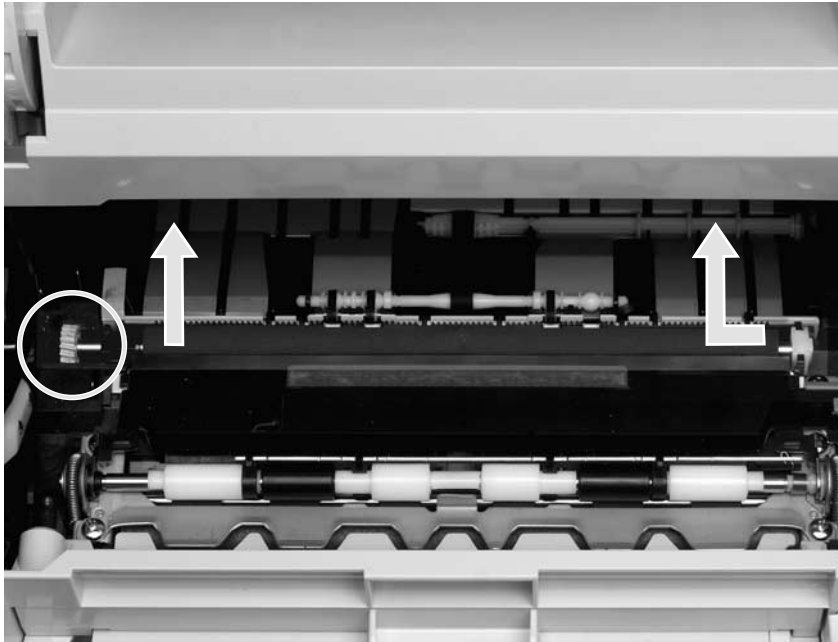
### Print cartridge (2 of 2)

## Transfer roller

1. Open the control-panel door and tray 1.

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

2. Use a flat-blade screwdriver to lift the left end of the metal shaft out of place near the blue gear. Slide the transfer roller to the left to remove it.



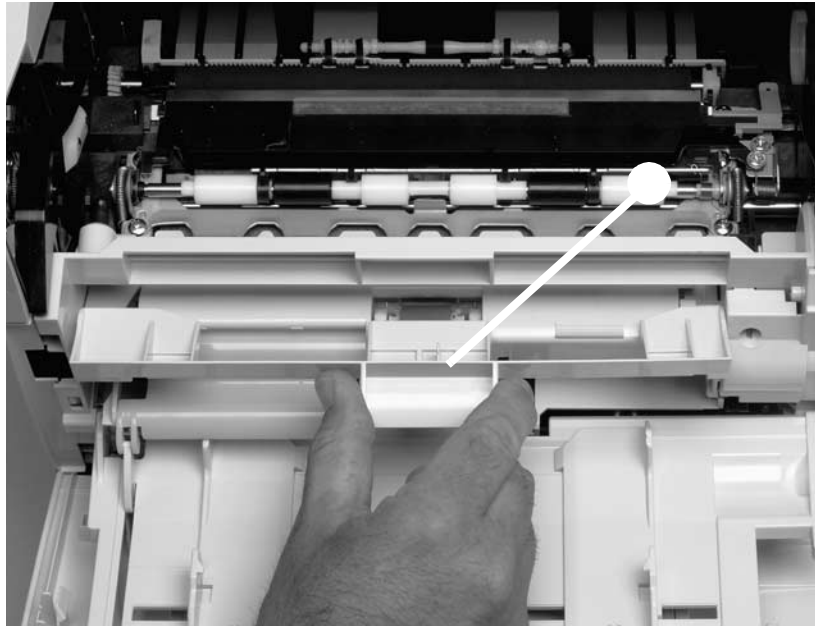
### Transfer roller

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

## Tray 1 pickup roller

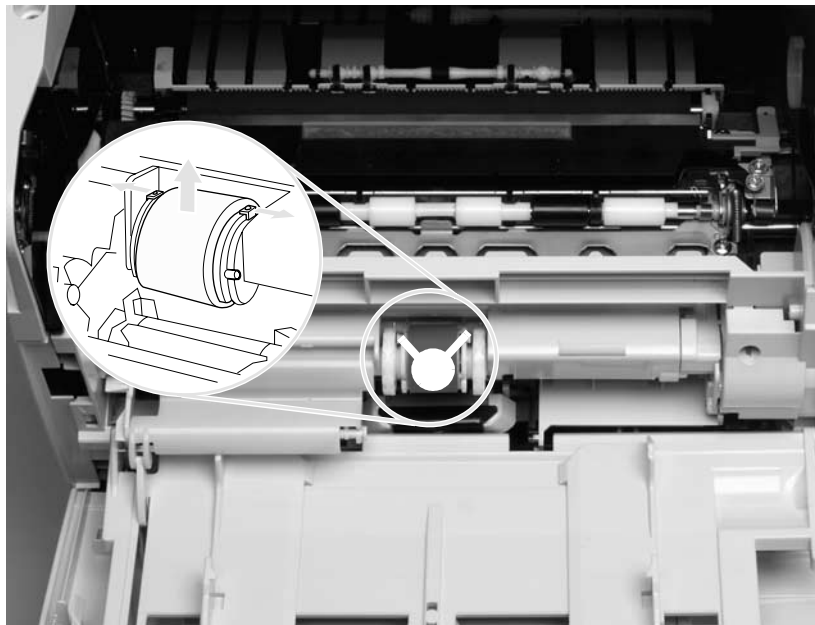
If the optional envelope feeder accessory is installed, press the release button that is on the left side and remove it. Then proceed to step 2.

1. Remove the front accessory cover (callout 1).



### Tray 1 pickup roller (1 of 2)

2. Release the pickup roller by sliding apart the latches that are located on each side at the top of the roller. Lift the roller out of the opening.



### Tray 1 pickup roller (2 of 2)

When you install the pickup roller, place the two pivot pins in the lower mounting slots (callout 2) and rotate the roller into the printer until it snaps into place.

## Tray 1 separation pad

If the optional envelope feeder accessory is installed, press the release button that is on the left side and remove it. Then proceed to step 2.

1. Remove the front accessory cover (not shown). See
2. Insert the tip of a small flat-blade screwdriver under the tray 1 separation pad.
3. Carefully twist the screwdriver to dislodge the separation pad. Remove the tray 1 separation pad.



**Tray 1 separation pad**

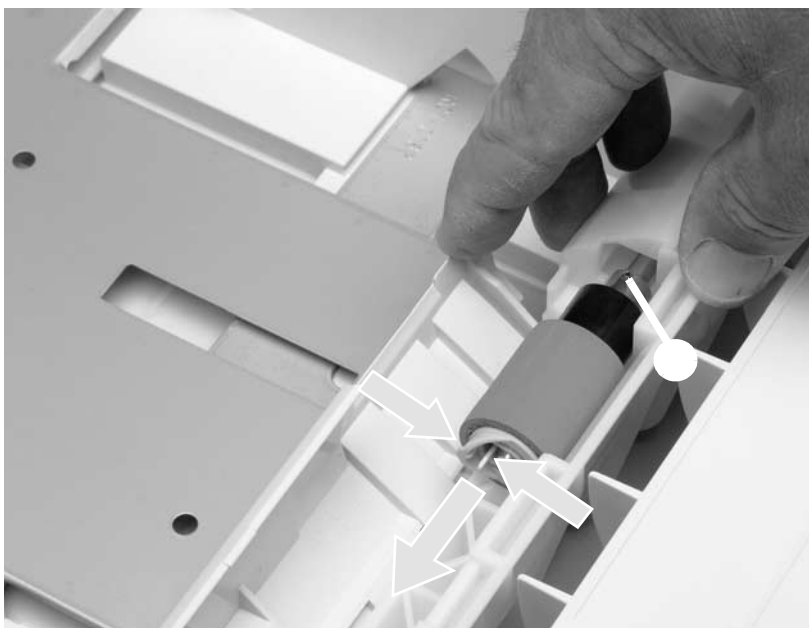
## Tray 2 feed rollers

1. Remove tray 2 and place it on a level work surface. Locate and open the cover (arrow) that is next to the roller in tray 2.



### Tray 2 feed rollers (1 of 4)

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



### Tray 2 feed rollers (2 of 4)

When you install the roller, make sure that it locks into place. Verify that the roller is correctly oriented, and that the round, black spacer next to the roller is correctly positioned against the locking pin on the shaft (callout 1).

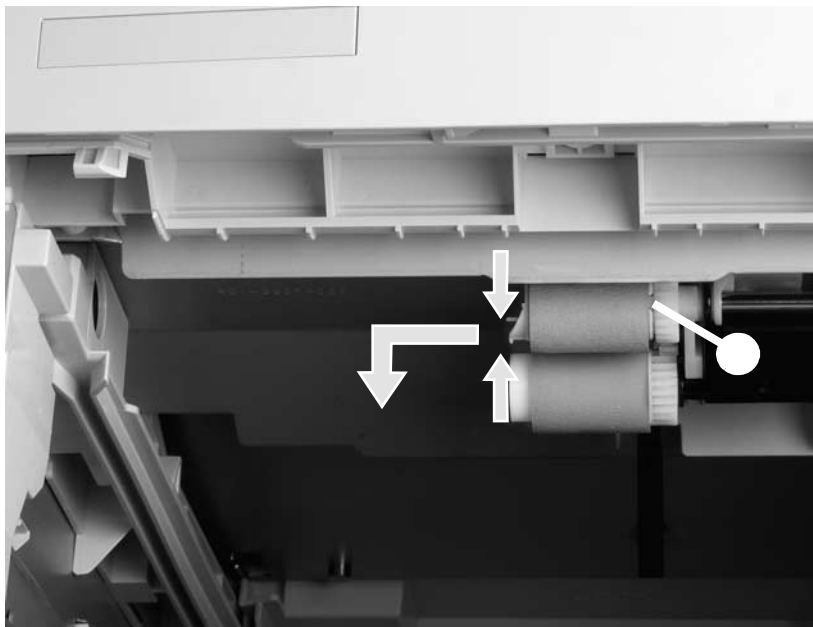
Do not allow the front of the printer to extend beyond the edge of the work surface. The printer can become unbalanced and fall, which can cause damage to the printer or personal injury to the service technician.

3. Move the front of the printer to the edge of the work surface for better access to the feed roller. To find the rollers, look up into the inside of the opening that was created when you removed tray 2.



#### Tray 2 feed rollers (3 of 4)

4. Pinch the blue latch on the left side of the feed roller. Slide the roller off of the shaft. You might need to rotate the roller in order to pinch the latch.



#### Tray 2 feed rollers (4 of 4)

5. Repeat the previous step for the remaining white pickup roller.

When you install a roller, make sure that it locks into place on the tabs that are on the drive gear (callout 2).

## Accessory covers and the tray 2 extension door

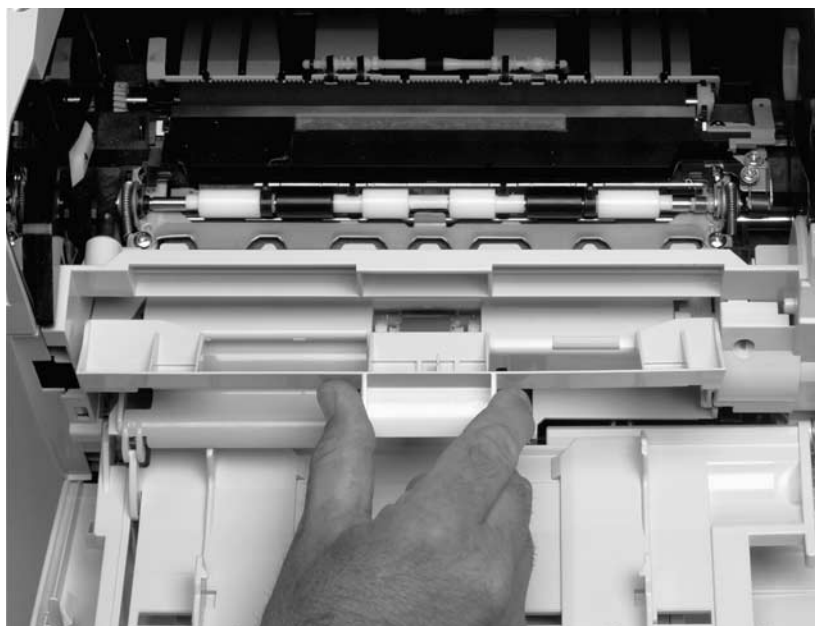
Accessory covers will not be in place if any installed accessories (for example, the optional stapler/stacker) have been removed to service the printer.

1. Grasp the top accessory cover (the mounting position for the optional stapler/stacker or stacker). Rotate the cover toward the front of the printer to release it, and then lift it up to remove it.



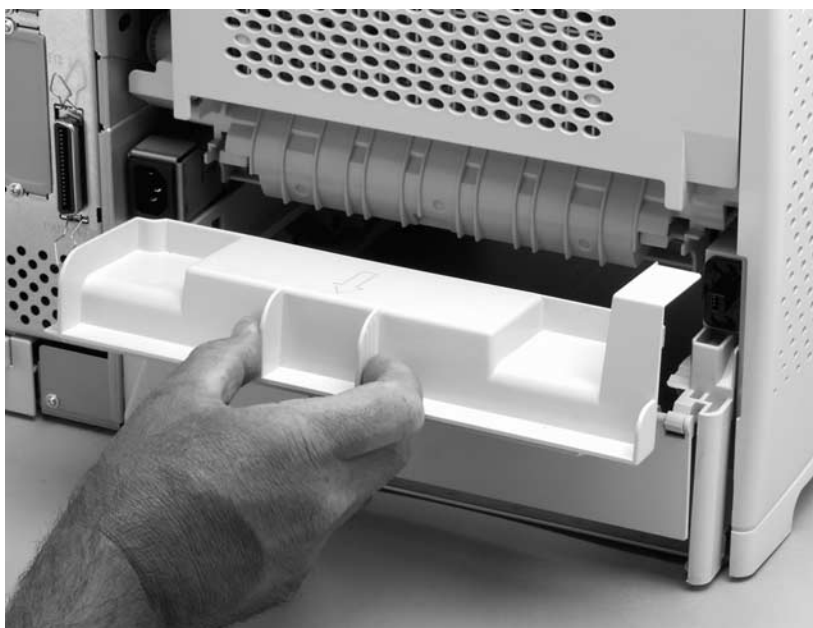
**Accessory covers (1 of 4)**

2. Open tray 1. Grasp the front accessory cover (the mounting position for the optional envelope feeder) and pull it straight out of the printer.



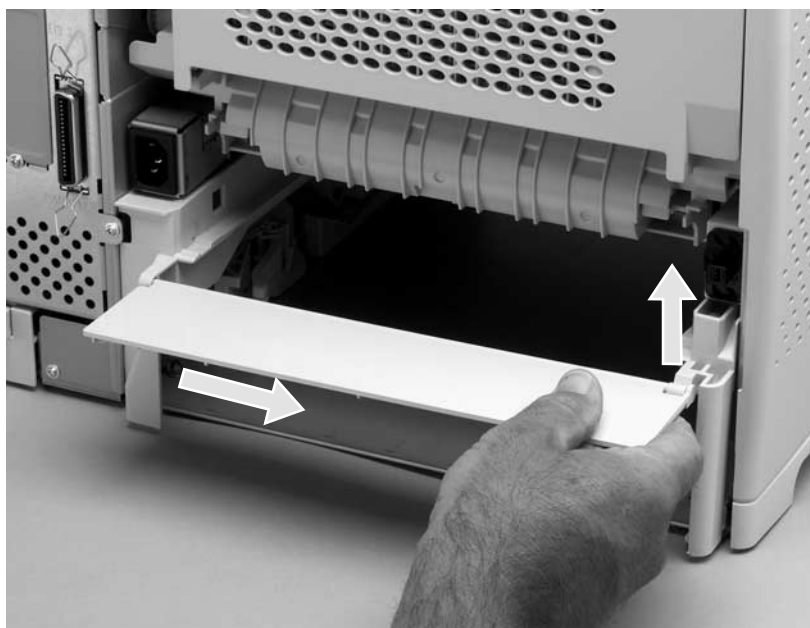
**Accessory covers (2 of 4)**

3. Grasp the rear accessory cover (the mounting position for the optional duplexer) and pull it straight out of the printer.



#### Accessory covers (3 of 4)

4. Rotate the tray 2 extension door to the horizontal position. Lift up on the right side of the door to unlock its pivot bar. Slide the left-side pivot pin out of its retainer and remove the door.



#### Accessory covers (4 of 4)



## Formatter cover

1. Grasp the formatter cover.
2. Pull the cover straight back and away from the printer.

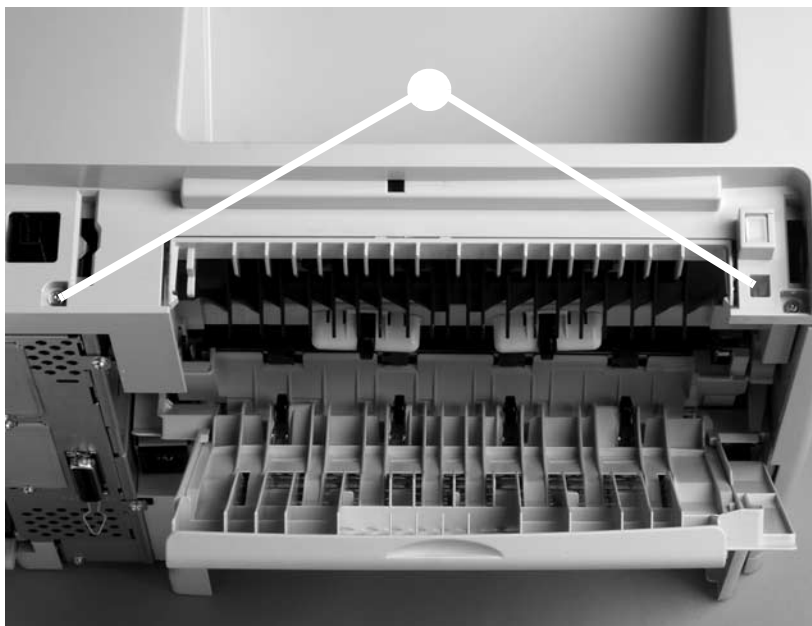


Formatter cover

## Top cover

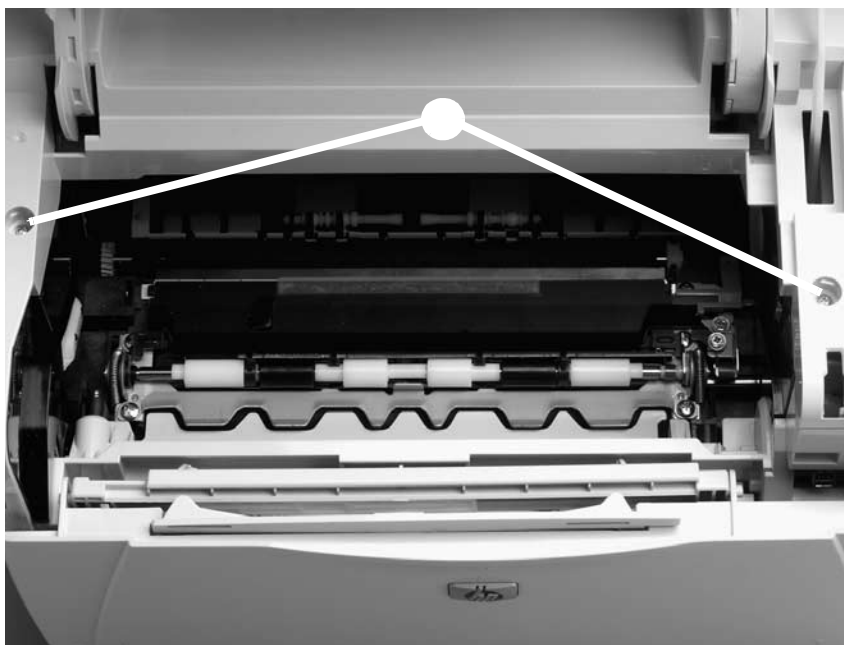
If the optional stapler/stacker or stacker accessory is installed, lift it straight up and off of the printer to remove it. Then proceed to step 2.

1. Remove the top accessory cover. See .
2. Remove the two rear mounting screws (callout 1).



**Top cover (1 of 5)**

3. Open the print-cartridge door. Remove the front two mounting screws (callout 2).



**Top cover (2 of 5)**

4. Use needle-nose pliers to release the print-cartridge drive-arm (callout 3).

Push the drive-arm back into the printer to avoid damaging it when you remove the top cover.



**Top cover (3 of 5)**

5. Open tray 1 and the rear door. Grasp the top cover and carefully rotate the left edge up and away from the printer. Do not apply stress to the control-panel wire-harness (callout 4) when rotating the top cover away from the printer.



**Top cover (4 of 5)**

6. Disconnect the control-panel wire-harness (callout 5) from the dc controller PCA. Remove the top cover.



#### **Top cover (5 of 5)**

When the top cover is reinstalled, make sure that the wire-harnesses are correctly routed through the cable guides. If the wire-harnesses are not correctly routed, they can be damaged when the top cover is installed.

The control-panel wire-harness connector can easily be disconnected when you install the top cover. If the control panel does not work after the top cover is installed, verify that the wire-harness connector is fully seated into its dc controller PCA connector.

## Right-side cover

1. Remove the following assemblies:  
Formatter cover. See  
Top cover. See
2. Release the upper right-side cover-locking tab near the formatter (callout 1).



### Right-side cover (1 of 4)

3. Locate the arrow that is embossed on the tray-number indicator. Use a small flat-blade screwdriver to push in on the lower cover-locking tab to release it.



### Right-side cover (2 of 4)

4. Locate the arrow (callout 2) that is embossed on the pickup gear cover near the optional envelope feeder power connector (not shown; open tray 1 to locate this arrow). Use a small flat-blade screwdriver to push in on the locking tab to release it



**Right-side cover (3 of 4)**

5. Open the formatter door and rotate the right-side cover away from the printer and lift it up to remove it.

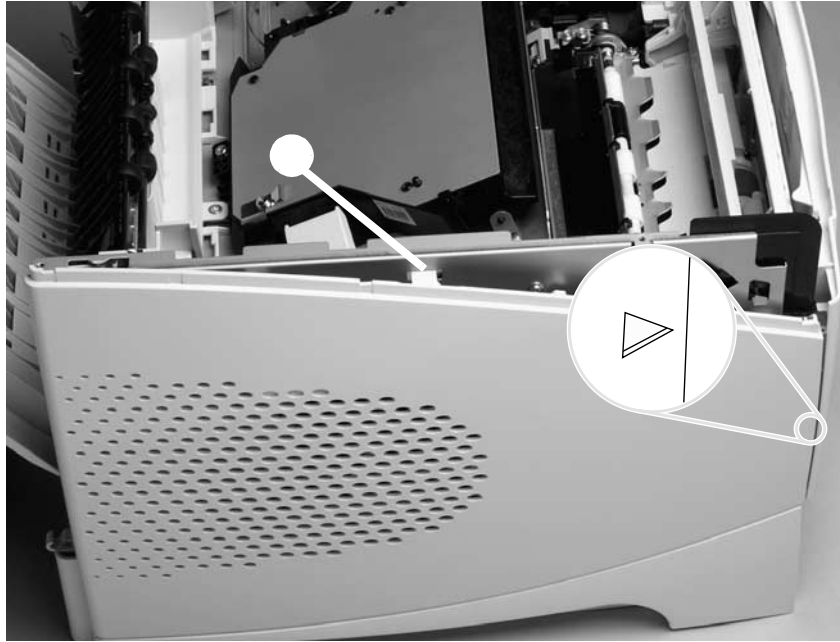


**Right-side cover (4 of 4)**

When you install the right-side cover, verify that the power-switch arm locks onto the switch connecting rod (callout 3).

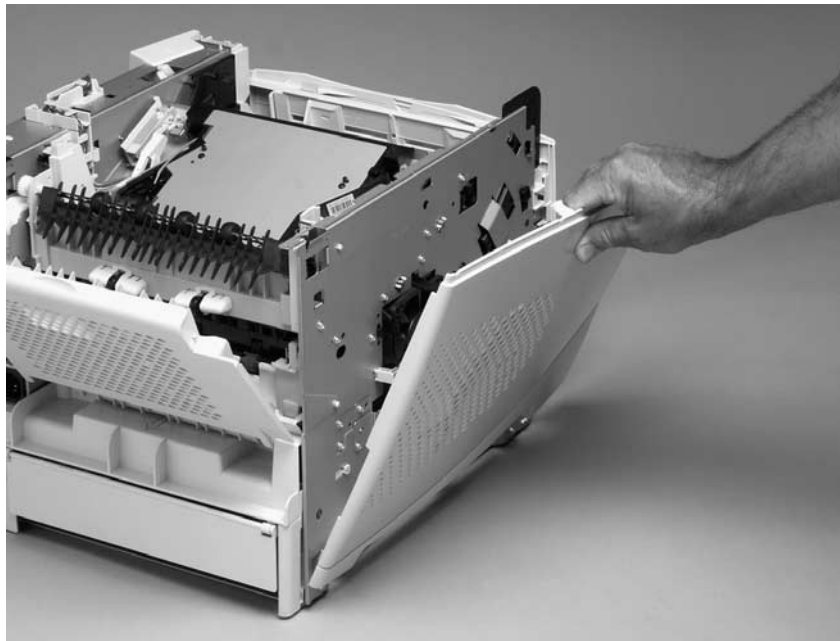
## Left-side cover

1. Remove the top cover. See .
2. Release the upper (callout 1) and front left-side cover-locking tabs.



### Left-side cover (1 of 2)

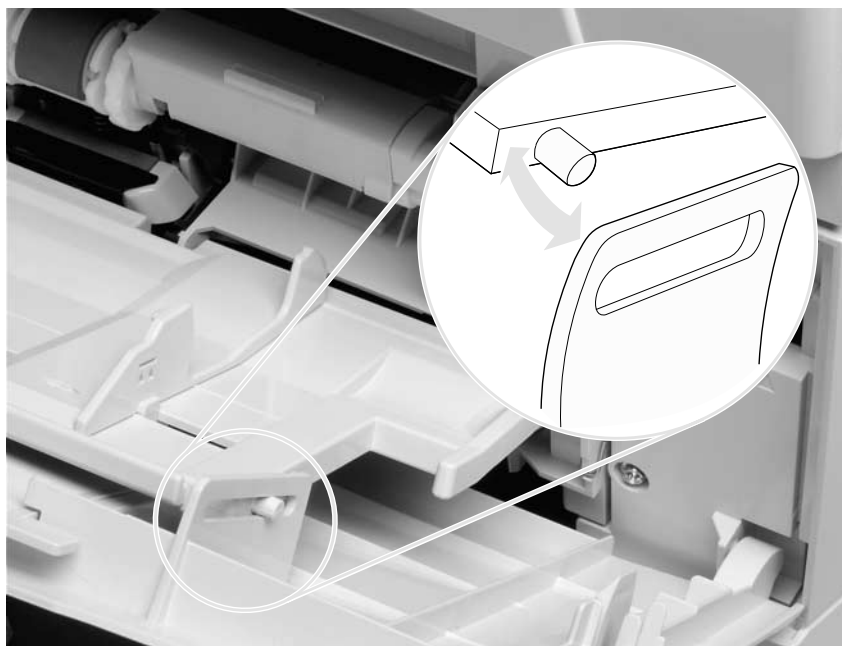
3. Rotate the top of the cover away from the printer and lift the cover up to remove it.



### Left-side cover (2 of 2)

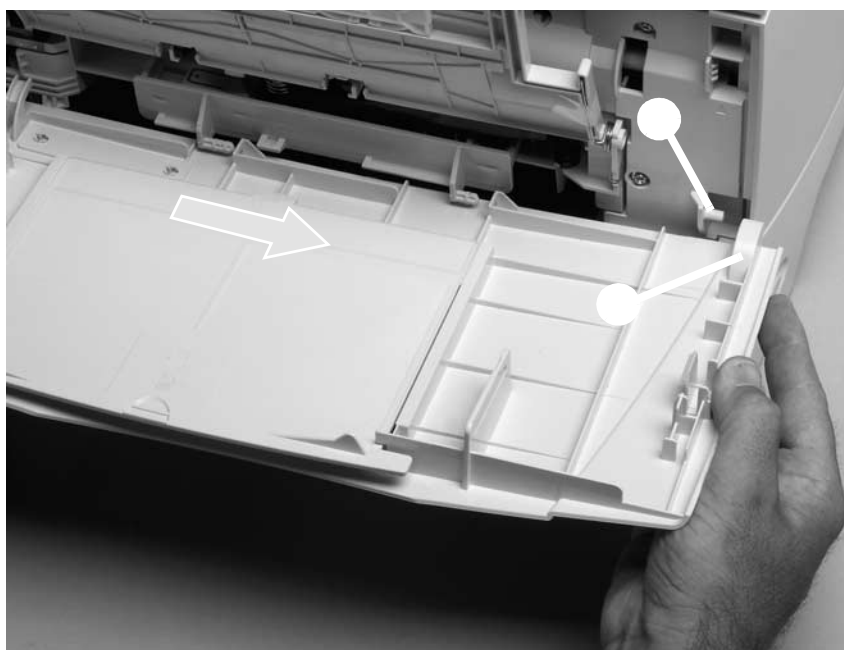
## Tray 1

1. Open tray 1. Gently pry the paper-guide slide-pin hinges out of the hinge slots on the tray 1 door to release the pins.



### Tray 1 (1 of 6)

2. Slide the tray 1 door to the right and remove it.

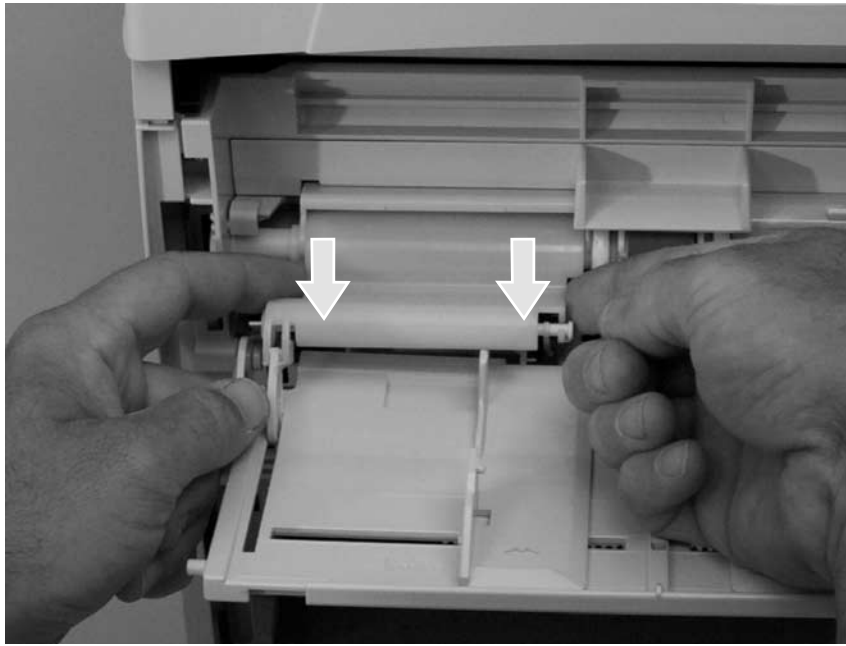


### Tray 1 (2 of 6)

When you install the tray 1 door, the door-stop pin (callout 1) must be installed in the stop receptacle on the door (callout 2) so that the door will open and close correctly.



3. Firmly pull both sides of the tray 1 sensor arm cover down to release it from the shaft.



**Tray 1 (3 of 6)**

When the tray 1 sensor cover is installed, verify that the sensor arms move freely.

Be sure to look at how the spring (callout 3) is positioned before removing it.

4. Rotate tray 1 upward and release the return spring (callout 3) from the bottom of tray 1.



**Tray 1 (4 of 6)**

5. Rotate the paper guide down and away from the printer to release the left paper-guide hinge.



**Tray 1 (5 of 6)**

6. Slide the paper guide to the left to remove it.



**Tray 1 (6 of 6)**

Tape the return spring in place on tray 1 so that you will not lose it.

When installing the tray 1 paper guide, hook the short end of the return spring in the small notch located below the right-side hinge-pin receptacle.

## Rear output bin

If the duplexer is installed, lift it up slightly and pull it away from the printer to remove it.

1. Open the rear output bin. Use your finger to squeeze the hinge pin (formatter side) out of its mounting hole.



### Rear output bin (1 of 2)

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



### Rear output bin (2 of 2)

## Control-panel overlay

1. Use a small flat-blade screwdriver to carefully pry the top of the control-panel overlay (callout 1) away from the printer.
2. Remove the overlay.

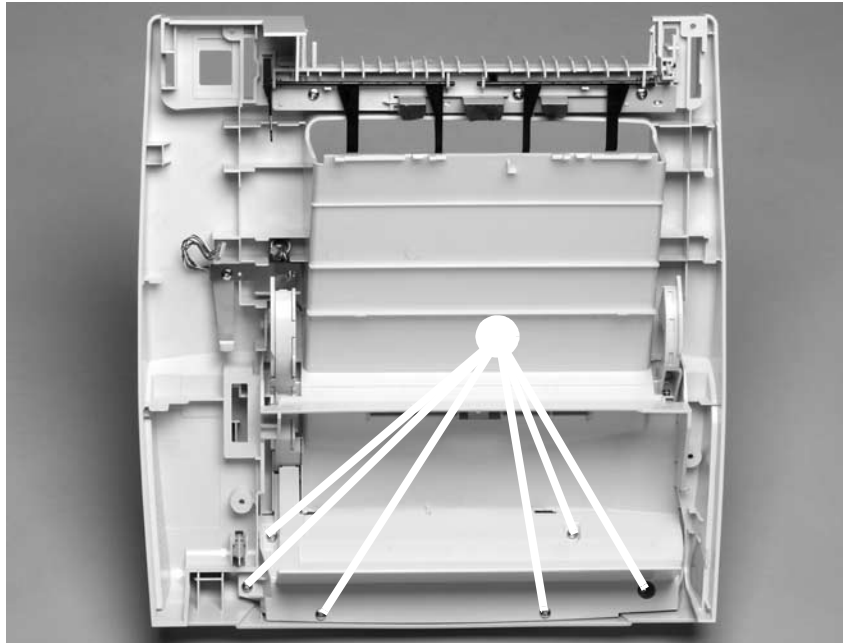


**Control-panel overlay**

## Control-panel assembly

*Always* remove the top cover *before* attempting to remove the control panel. If you drop any of the control-panel mounting screws into the printer when you remove the control panel, they might be difficult to recover. Severe damage to the printer can result if the power is turned on when loose screws are inside the unit.

1. Remove the top cover. See .
2. Place the top cover upside-down on a padded work surface.
3. Remove six screws (callout 1).



Control-panel assembly (1 of 4)

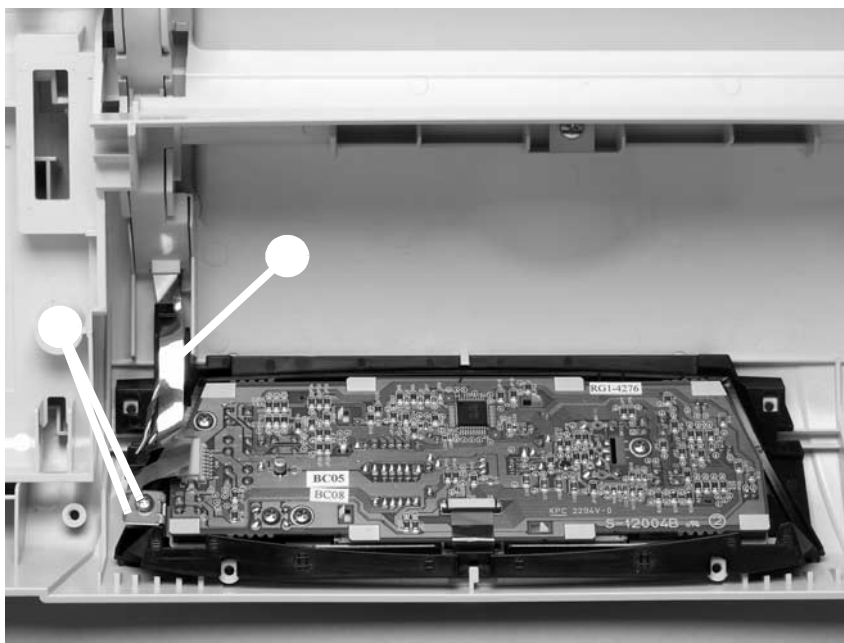
4. Raise the top cover so that the print cartridge door begins to open. This allows the door-open flag (callout 2) on the print cartridge door to clear the opening (callout 3) in the top cover. Remove the control-panel PCA cover.



#### Control-panel assembly (2 of 4)

5. Remove the grounding-strip screw and clip (callout 4).

When you install the grounding strip (callout 5), do not forget to replace the protective clip. If the grounding strip is installed without the clip, tightening the screw will damage the grounding strip.

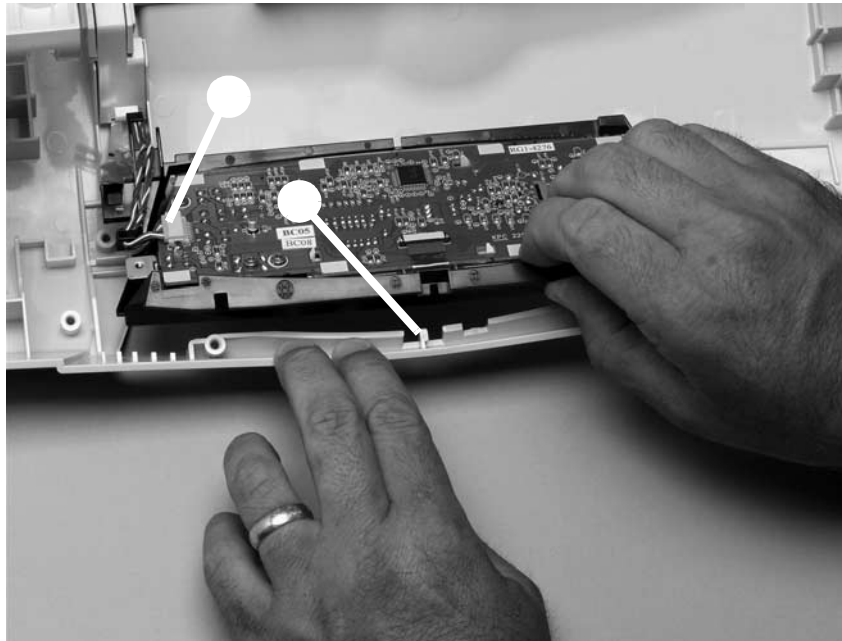


#### Control-panel assembly (3 of 4)



The product contains components that are sensitive to electrostatic discharge (ESD). Always perform service work at an ESD-protected workstation.

6. Use your fingers to gently pry the front of the print-cartridge door away from the control-panel display to release the retainer clip (callout 6). Unplug the control-panel wire-harness (callout 7). Remove the control panel.



#### **Control-panel assembly (4 of 4)**

When the control-panel display is installed, verify that the wire-harness is placed in the cable guide under the grounding strip.

## Firmware DIMM



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

1. Remove the formatter cover. See [page 160](#).

If possible, print a menu map and a configuration page. See [page 160](#) and [page 161](#). Use the information on these pages to restore any user-set printer configuration options after you install the replacement DIMMs.

2. Open the formatter door.
3. Push the DIMM locking arms away from the DIMM to release it. Remove the DIMM.



### Firmware DIMM

The firmware DIMM *must* be installed in slot 1 (formatter PCA location J1; topmost slot).

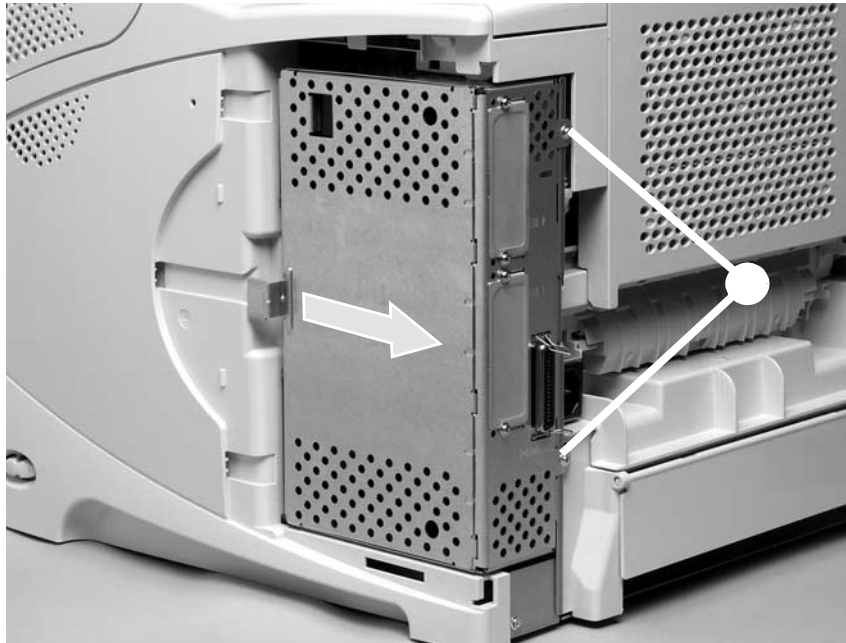
If you are installing additional DIMMs, the second DIMM must be installed in slot 2 (formatter location J2; second slot down from the top). If another DIMM is installed, the third DIMM must be installed in slot 3 (formatter location J3; third slot down from the top). If another DIMM is installed, the fourth DIMM must be installed in slot 4 (formatter location J4; bottom slot). The printer will not recognize DIMMs if they are not installed in the correct order.



## Formatter assembly

If possible, print a menu map and a configuration page. See [Figure 6-1](#) and [Figure 6-2](#). Use the information on these pages to restore any user-set product configuration options after you install a replacement formatter.

1. Remove the formatter cover. See [Figure 6-3](#).
2. Remove two screws (callout 1).
3. Slide the formatter assembly toward the rear of the printer to release it. Remove the formatter assembly.



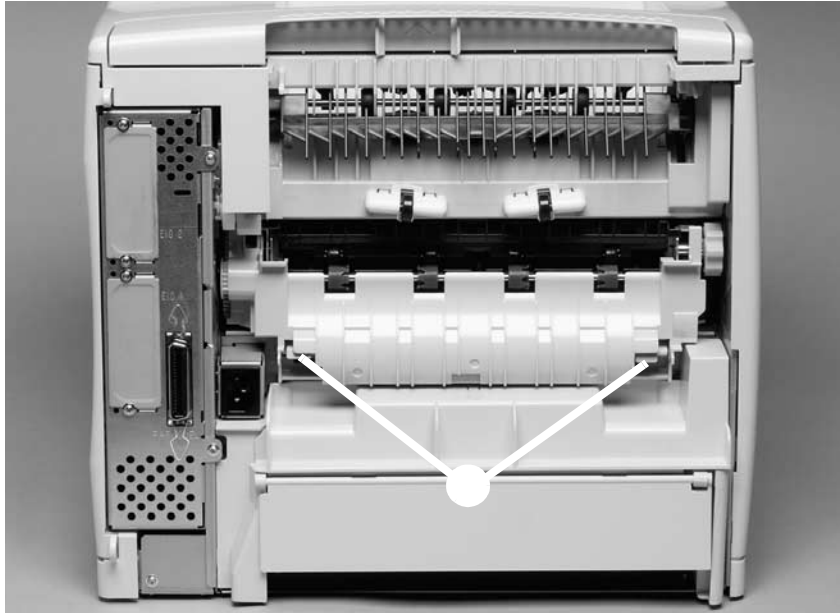
### Formatter assembly

If you install a *replacement* formatter, perform an NVRAM initialization. See [Figure 6-4](#). Then use the control-panel display to access the service menu and enter the total page count, the maintenance count, the service ID, the cold reset paper size, and the serial number. See [Figure 6-5](#). Finally, reset the printer display language to the customer's choice. See [Figure 6-6](#).

## Fuser

The fuser is very hot. After turning the printer power off, allow the fuser to cool for at least 30 minutes before removing it.

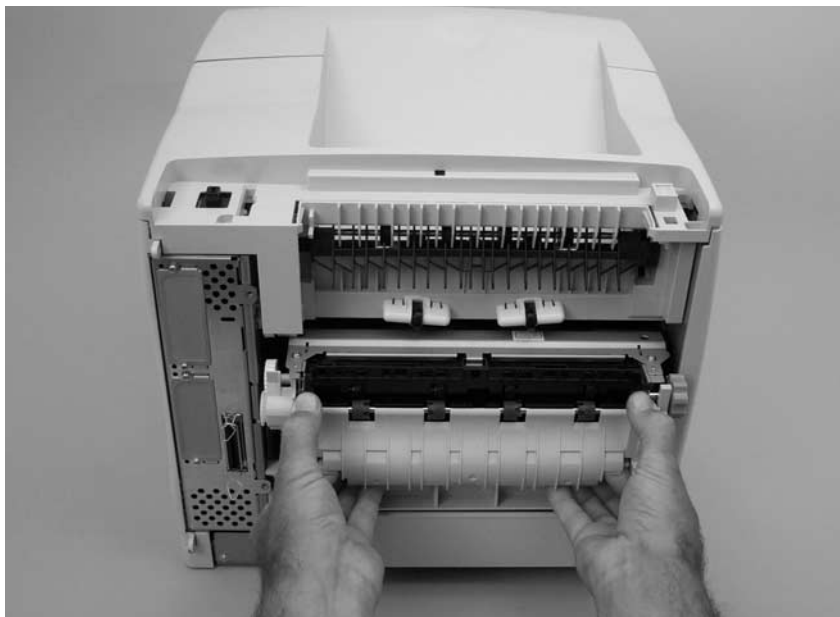
1. Remove the rear output bin. See
2. Squeeze the blue fuser release tabs (callout 1).



### Fuser (1 of 2)

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

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



### Fuser (2 of 2)

When you replace the fuser, make sure that it is fully seated into the printer. You should hear both sides snap into place.

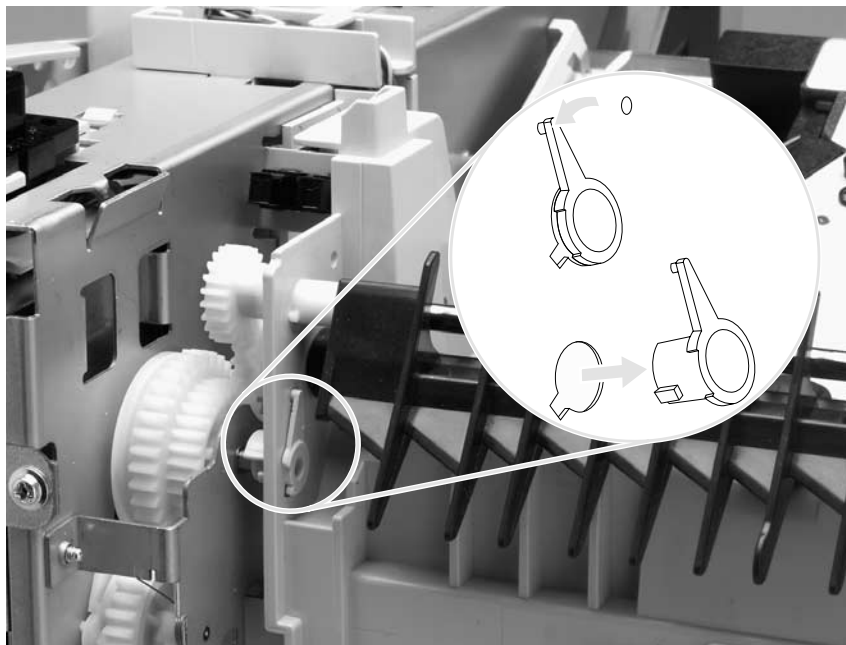
## Output delivery assembly

1. Remove the following assemblies:

Top cover. See  
Rear output bin. See

2. Release the locking pin on the shaft lock and rotate the lock toward the rear of the printer until the inner retaining tab (gear side) aligns with the hole in the output delivery assembly frame. Slide the shaft lock to the right and remove it to release the gear shaft from the output delivery assembly.

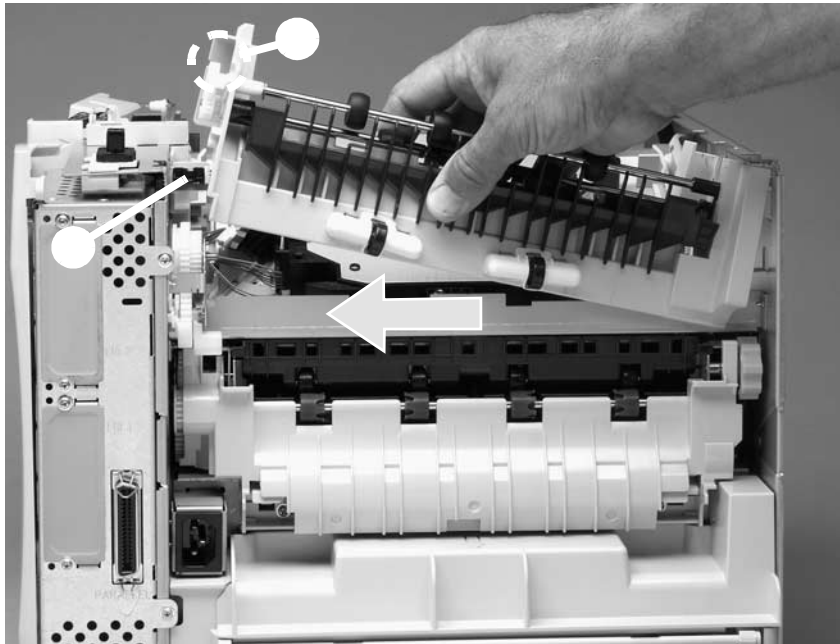
Snap the shaft lock back into place on the assembly so that you will not lose it. Remove the shaft lock when you reinstall the output delivery assembly. When the output delivery assembly is installed, verify that the locking pin on the shaft lock is fully seated in the hole on the output delivery assembly.



**Output delivery assembly (1 of 2; rear view, formatter side)**

The rear face-down output-bin-sensor (callout 1) wire is routed through a notch (callout 2) on the output delivery system at the gear end of the assembly. When you remove the assembly, make sure that this wire-harness is carefully removed from the notch and is not damaged.

3. Lift up the gear end of the assembly slightly and move the assembly toward the formatter assembly to remove it.

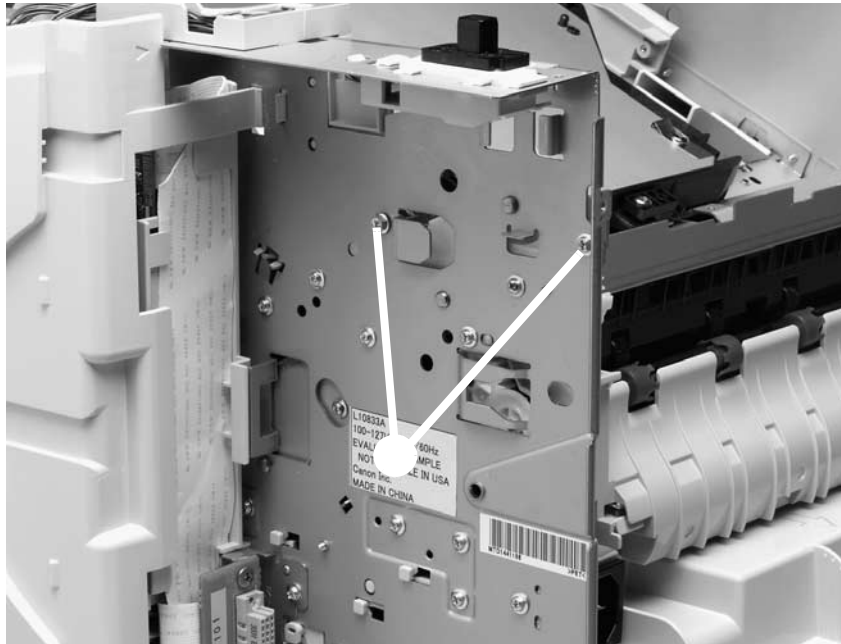


**Output delivery assembly (2 of 2)**

## Duplexing pendulum assembly

The duplexing pendulum assembly is part of the paper-path switching mechanism when the duplexer is installed. It also drives the output delivery assembly.

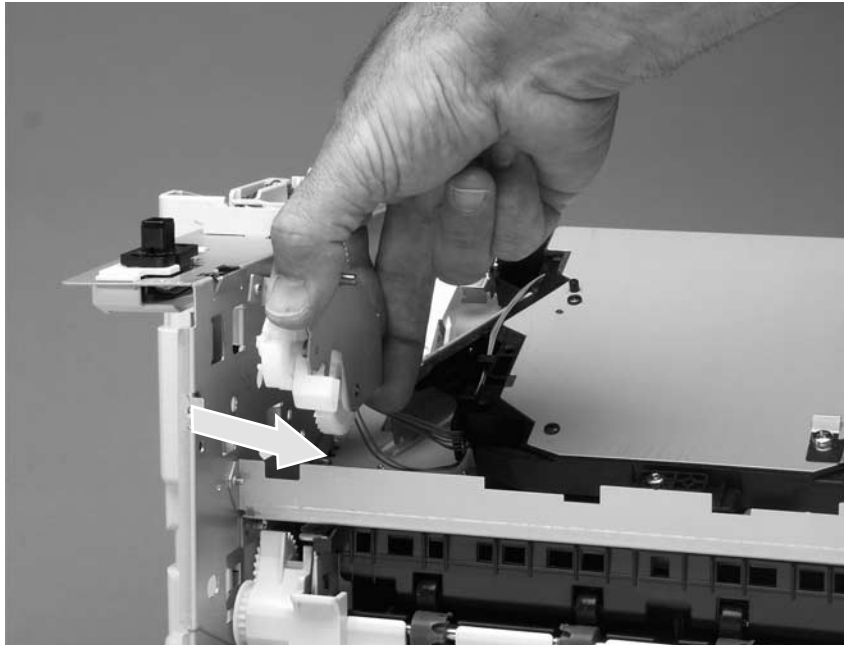
1. Remove the following assemblies:
  - Top cover. See
  - Rear output bin. See
  - Formatter assembly. See
  - Output delivery assembly. See
2. Remove two screws (callout 1).



Duplexing pendulum assembly (1 of 2)

The gears in this assembly are not captive when the assembly is removed. They can easily slide off of the shafts. Handle the assembly carefully and place it gear-side-up on your workstation to prevent the gears from coming off of the shafts.

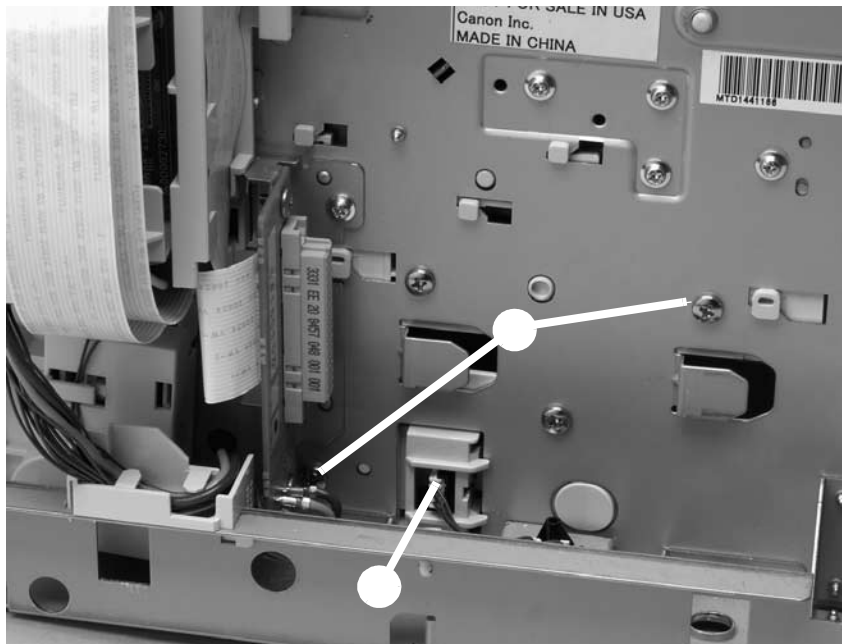
3. Pull the duplexing pendulum assembly toward the laser/scanner until the upper gear-drive shaft clears the hole in the chassis, and then remove the assembly.



**Duplexing pendulum assembly (2 of 2)**

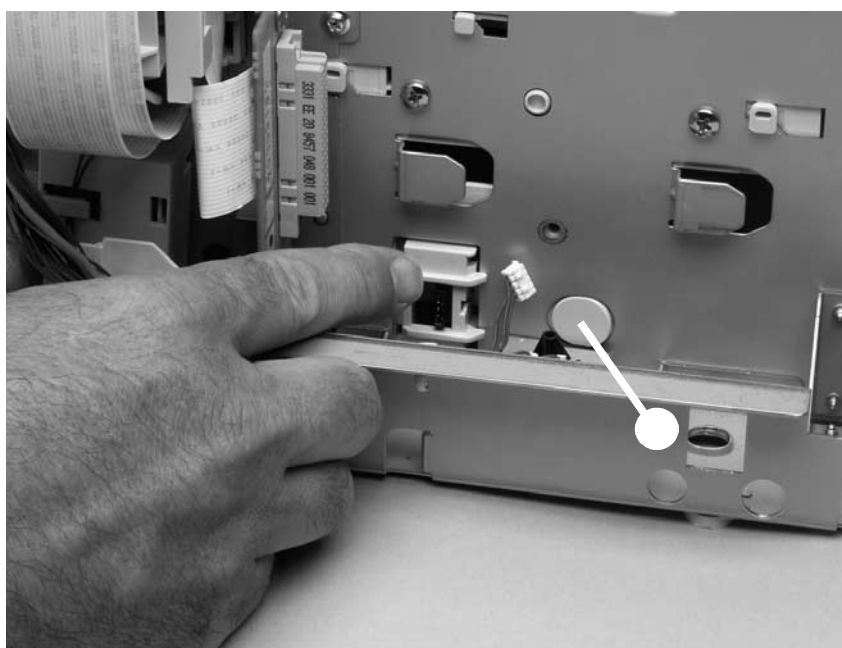
## Tray 2 media-size sensor

1. Remove the following assemblies:  
Top and right-side covers. See [Figure 6-1](#) and [Figure 6-2](#).  
Formatter assembly. See [Figure 6-3](#).
2. Unplug the sensor connector (callout 1). Remove two screws (callout 2).



### Tray 2 media-size sensor (1 of 2)

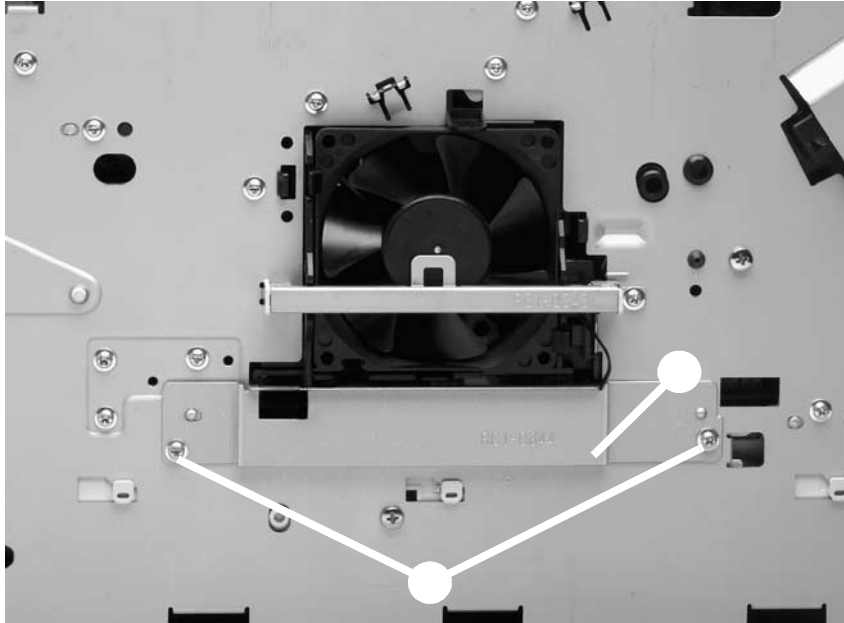
3. Depress the locking tab (callout 3), and slide the sensor toward the front of the printer to release it. Remove the sensor.



### Tray 2 media-size sensor (2 of 2)

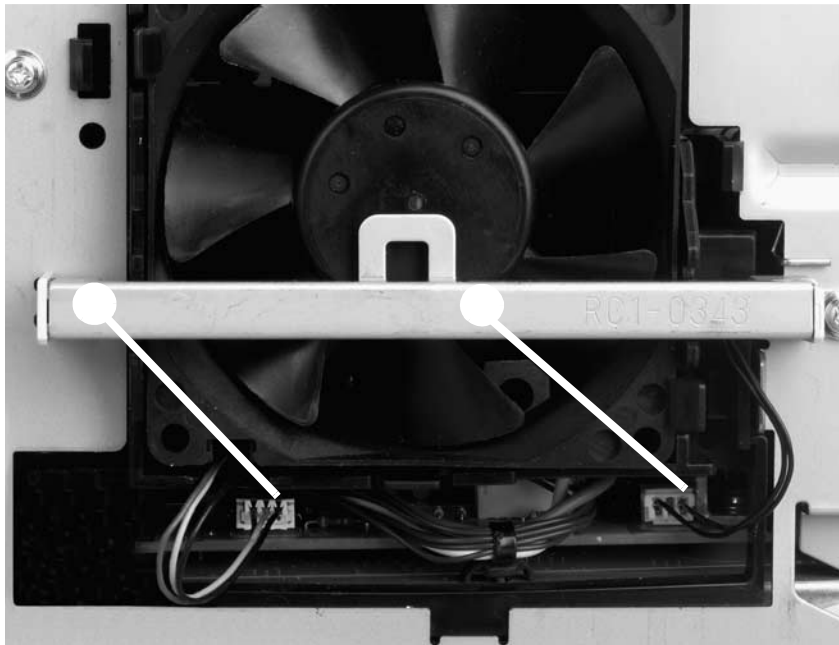
## Main cooling fan (left side)

1. Remove the following assemblies:  
Top cover. See  
Left-side cover. See
2. Remove two screws (callout 1). Remove the power-supply shield (callout 2).



### Main cooling fan (1 of 4)

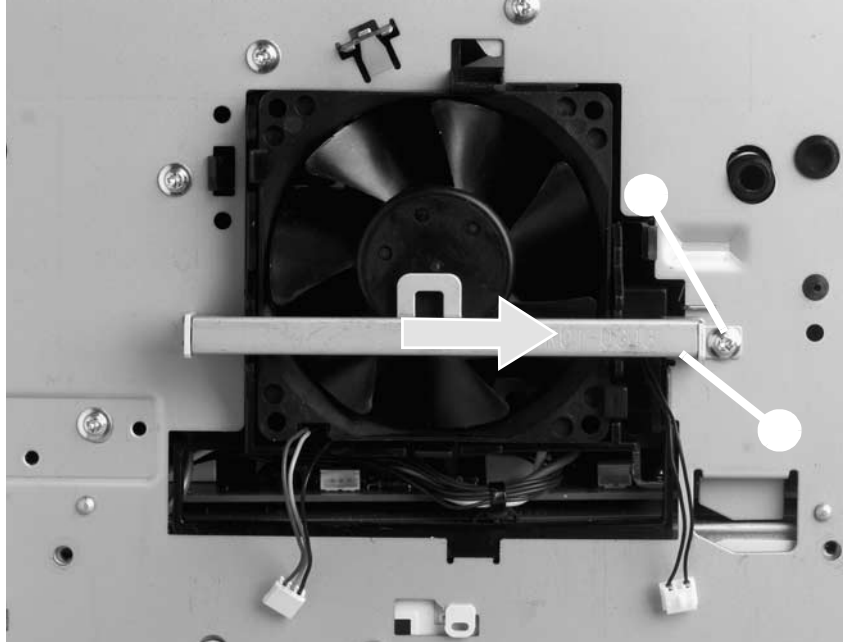
3. Unplug the fan connector (callout 3) and thermistor sensor connector (callout 4) from the power supply.



### Main cooling fan (2 of 4)

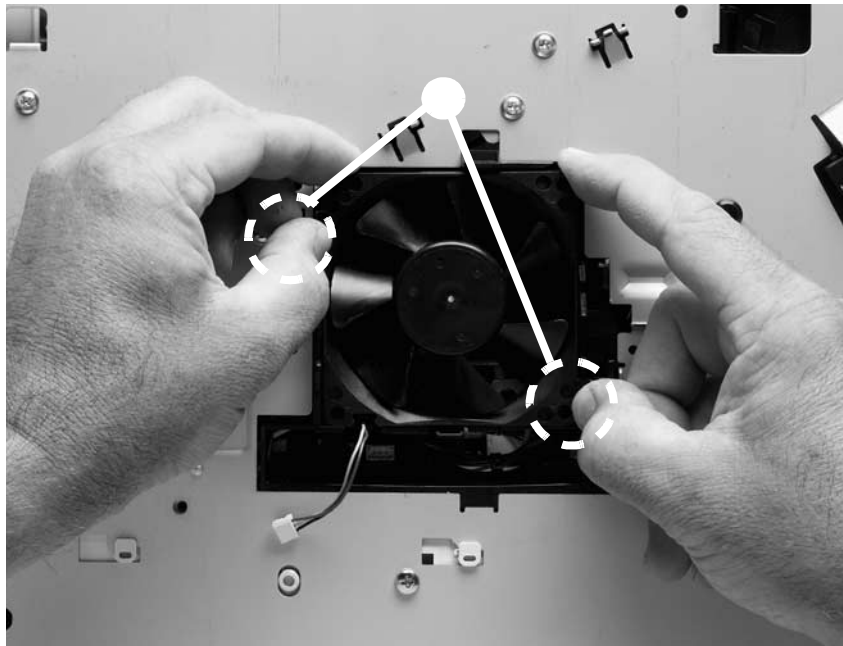


4. Remove one screw (callout 5). Slide the thermistor sensor bar (callout 6) to the right to release it. Remove the thermistor sensor bar.



#### Main cooling fan (3 of 4)

5. Release the two fan-locking tabs (callout 7). Slide the fan out of its mounting bracket.



#### Main cooling fan (4 of 4)

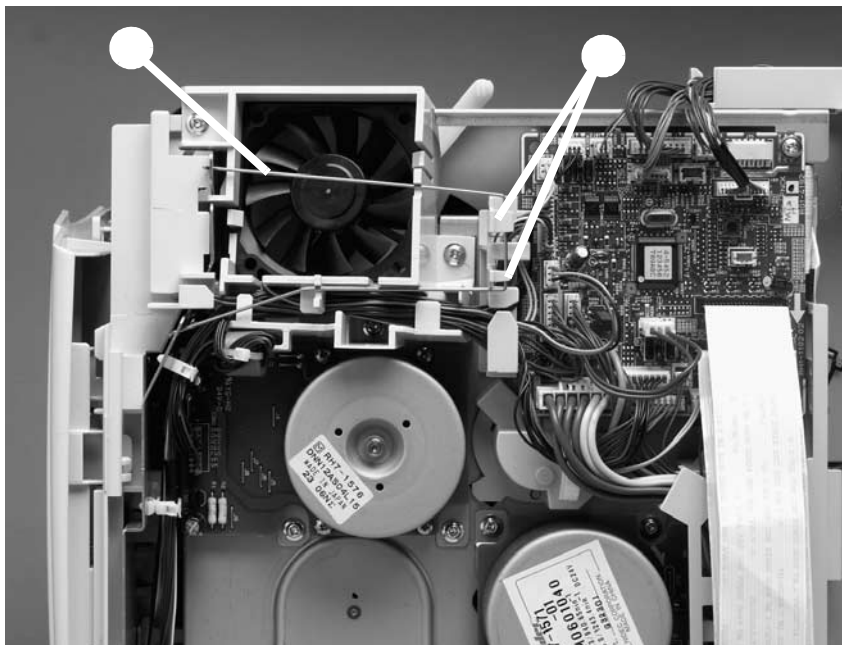
When you install the fan, the air *must* flow into the printer. Verify that the airflow arrows that are embossed on the fan body point *into* the printer.

When you install the fan, do not apply too much pressure to the wire-harness connectors when they are connected to the power supply. Too much pressure might snap off the soldered connectors on the power supply.

## Cooling fan (right side, HP LaserJet 4300 series printers only)

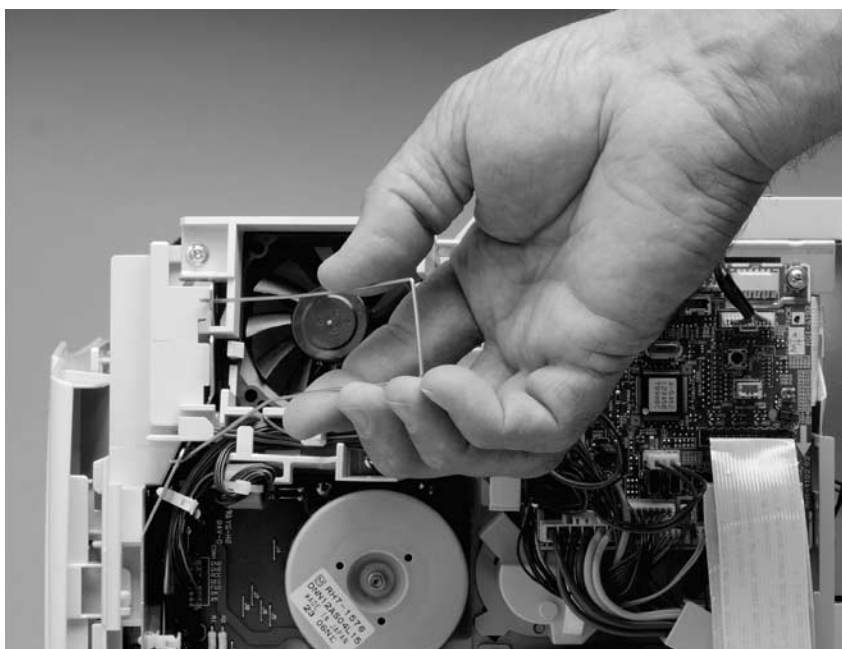
This fan is not installed in HP LaserJet 4200/4200L series printers.

1. Remove the following assemblies:  
Top cover. See  
Right-side cover. See
2. Gently pry back the two retaining tabs (callout 1) and slip the anti-static bar (callout 2) off of them.



### Cooling fan (HP LaserJet 4300 series only; 1 of 5)

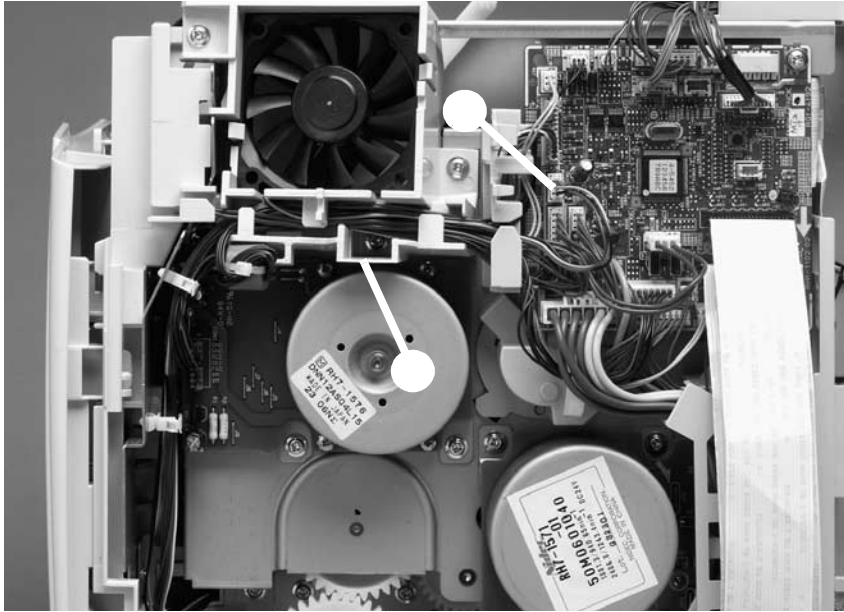
3. Rotate the anti-static bar away from the printer to release it. Remove the anti-static bar.



### Cooling fan (HP LaserJet 4300 series only; 2 of 5)

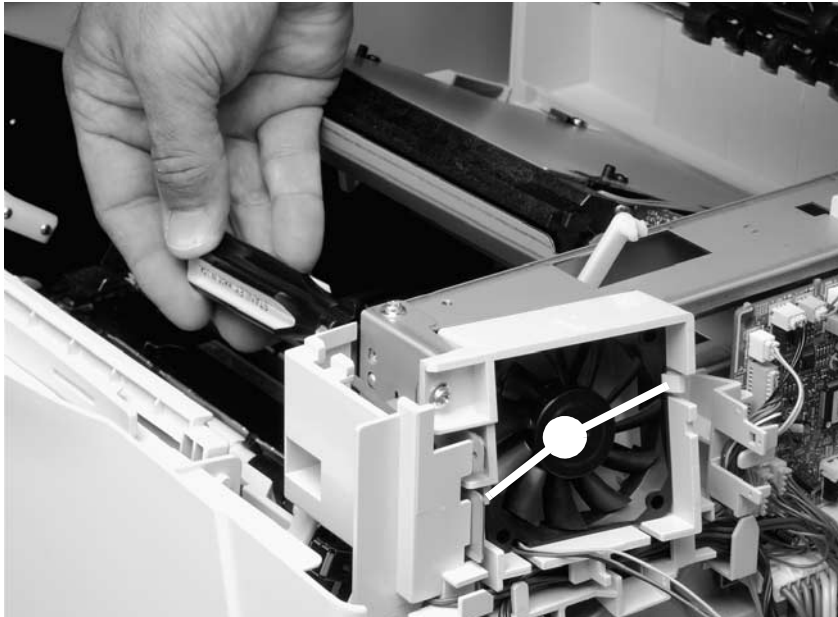
4. Unplug the fan connector from the dc controller PCA (location J78; callout 3) and unweave it from the harness guide (callout 4).

You might have to unplug connectors or release some wire-harness retainer clips to provide enough slack in the wire-harnesses to unweave them easily from the harness guide.



**Cooling fan (HP LaserJet 4300 series only; 3 of 5)**

5. Use a screwdriver to push against the fan through the fan duct, from inside the printer. Release the two retaining tabs (callout 5) and push the fan out of the duct bracket.

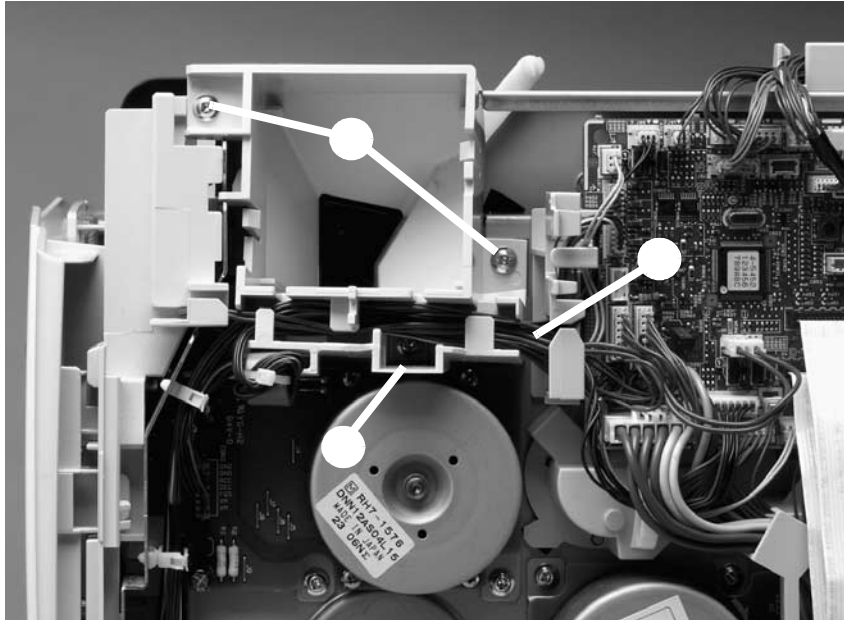


**Cooling fan (HP LaserJet 4300 series only; 4 of 5)**

When you install the fan, the air *must* flow into the printer. Verify that the airflow arrows that are embossed on the fan body point *into* the printer. Verify that each harness connector on the dc controller PCA is fully seated. These connectors can become partially unplugged when the harnesses are unwoven from the guide on the fan duct.

6. If it is necessary to remove the fan duct (for example, if the main drive assembly is going to be removed), unweave the remaining wire-harness (callout 6) from the harness guide (callout 7). Remove two screws (callout 8) and remove the fan-duct bracket.

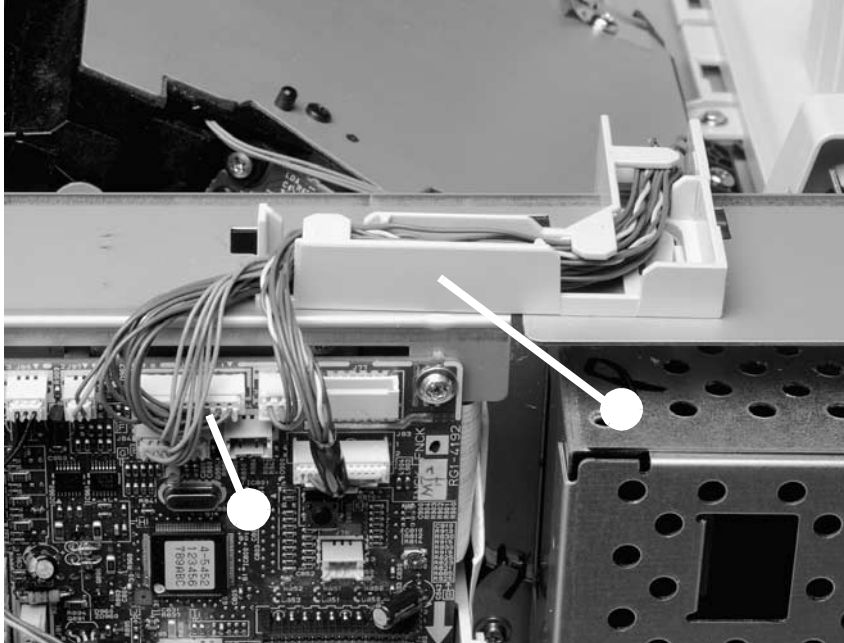
You might have to unplug connectors or release some wire-harness retainer clips to provide enough slack in the wire-harnesses to unweave them easily from the harness guide.



**Cooling fan (HP LaserJet 4300 series only; 5 of 5)**

## Laser/scanner assembly

1. Remove the following assemblies:  
Top cover. See  
Right-side cover. See
2. Unplug the laser/scanner wire-harness connector from the dc controller PCA (location J84; callout 1). Remove the laser/scanner wire-harness from the wire guide (callout 2).



### Laser/scanner (1 of 4)

3. Unplug the laser/scanner wire-harness (callout 3) from the laser/scanner PCA

### Laser/scanner (2 of 4)

4. Remove four screws (callout 4). Do *not* turn the laser/scanner adjustment screw (circled).

#### **Laser/scanner (3 of 4)**

The two front mounting screws have grounding clips that are not captive when the screws are removed. Be sure to replace these clips when the laser/scanner is installed.

5. Carefully lift the laser/scanner up and out of the printer. Make sure that the laser/scanner assembly does not catch or snag the wires along the bottom of the assembly when the assembly is removed.



#### **Laser/scanner (4 of 4)**

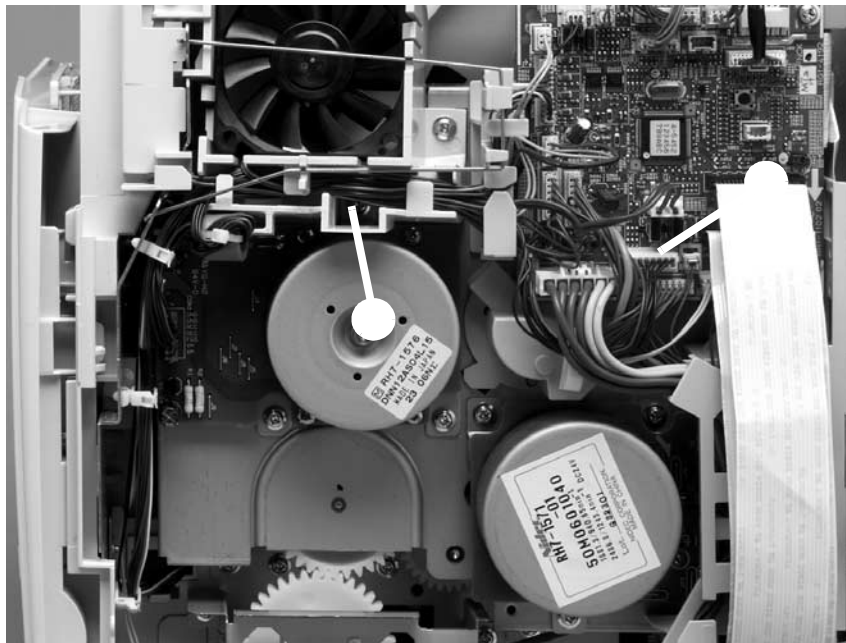
When the laser/scanner assembly is installed, make sure that the wire-harnesses are correctly routed through the cable guides. If the wire-harnesses are not correctly routed, they can be damaged when the top cover is installed.

## Print-cartridge motor (HP LaserJet 4300 series printer only)

This motor is not installed on the HP LaserJet 4200/4200L series printers.

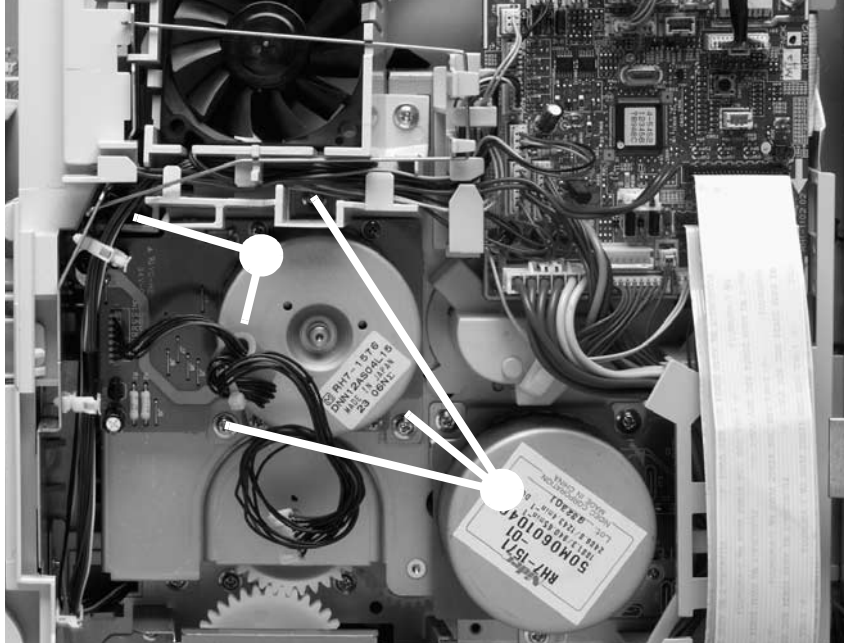
1. Remove the following assemblies:
  - Top cover. See
  - Right-side cover. See
2. Unplug the print-cartridge motor wire-harness connector from the dc controller PCA (location J86; callout 1). Unweave the harness from the wire guide (callout 2).

You might have to remove additional wire-harnesses from the wire guide to gain access to the print-cartridge motor wire-harness.



Print-cartridge motor—HP LaserJet 4300 series only (1 of 2)

3. Slip the toroid (callout 3) off of its retainer clip. Support the motor and remove three screws (callout 4). Remove the print-cartridge motor.



**Print-cartridge motor—HP LaserJet 4300 series only (2 of 2)**



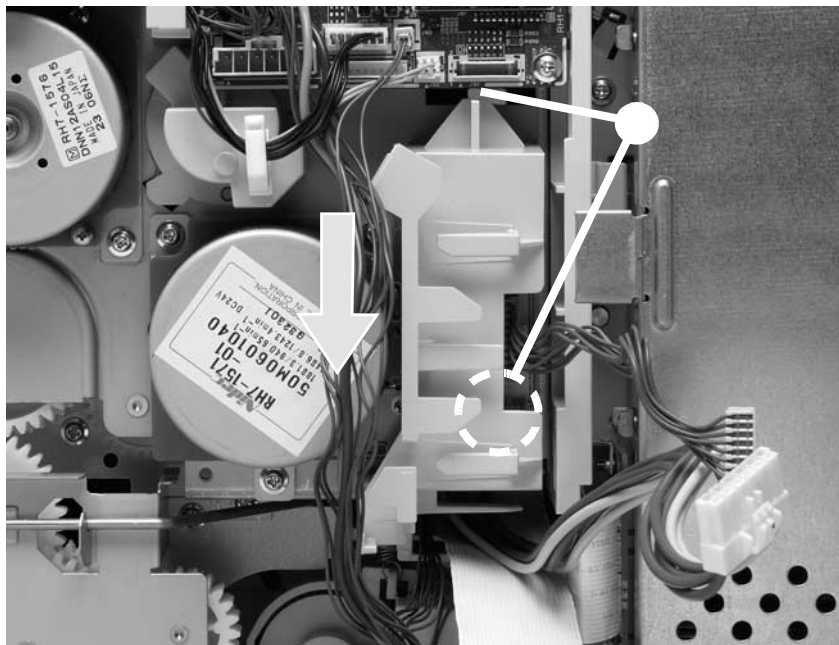
## Main motor

1. Remove the following assemblies:  
Top cover. See  
Right-side cover. See
2. Unplug the power-supply ribbon cables and the main motor harness connector from the dc controller PCA (locations J80, J81, and J98; callout 1). Unweave all of the wire-harnesses from the wire guide (callout 2).



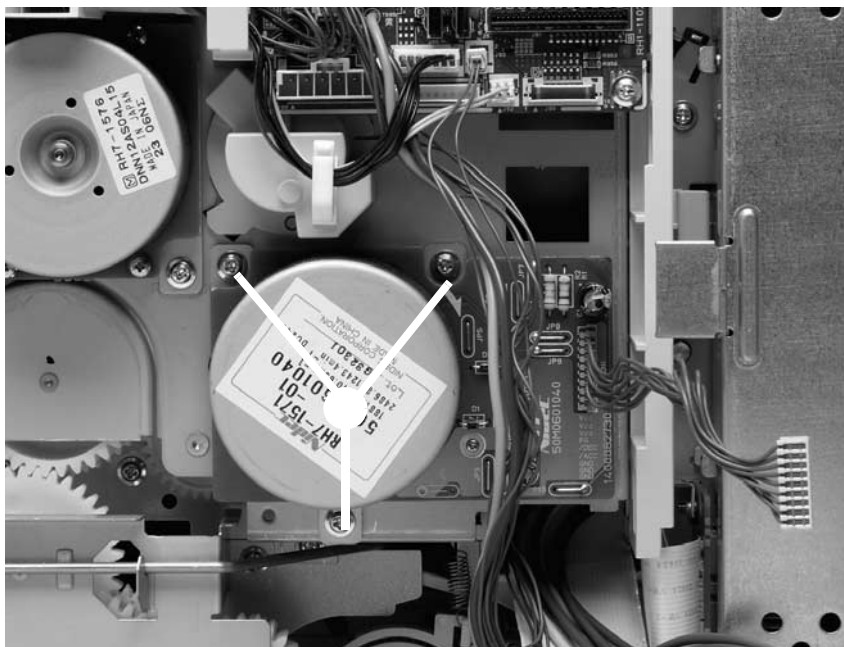
### Main motor (1 of 3)

3. Push in on the wire guide locking tabs (callout 3) to release the guide and push down to remove it.



### Main motor (2 of 3)

4. Remove three screws (callout 4). Remove the main motor.

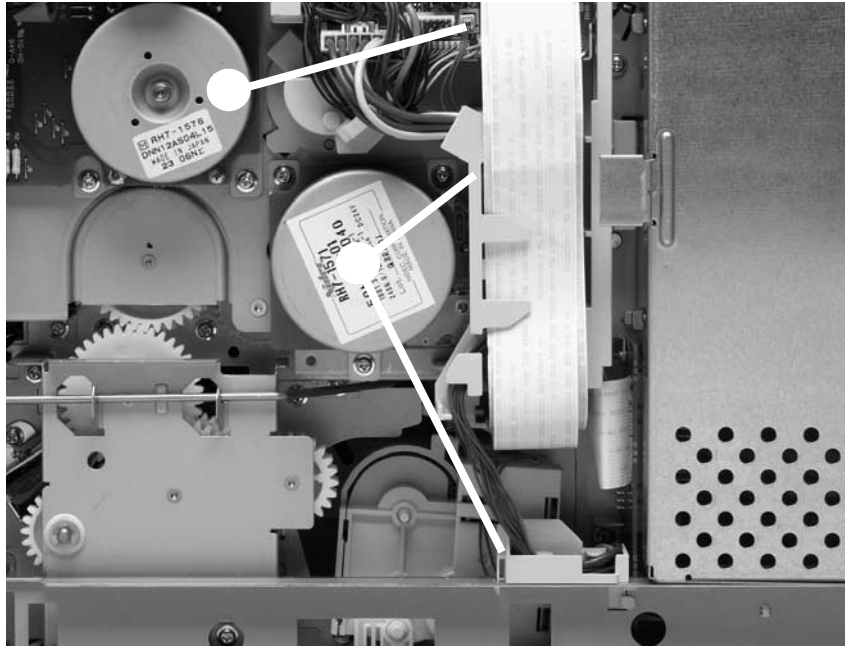


**Main motor (3 of 3)**

## Tray 2 lifter-drive assembly

1. Remove the following assemblies:  
Top cover. See  
Right-side cover. See
2. Use a small flat-blade screwdriver to pry up the lifter-drive assembly connector (callout 1) retaining tab and unplug the connector from the dc controller PCA (location J93). Unweave the harness from the wire guides (callout 2).

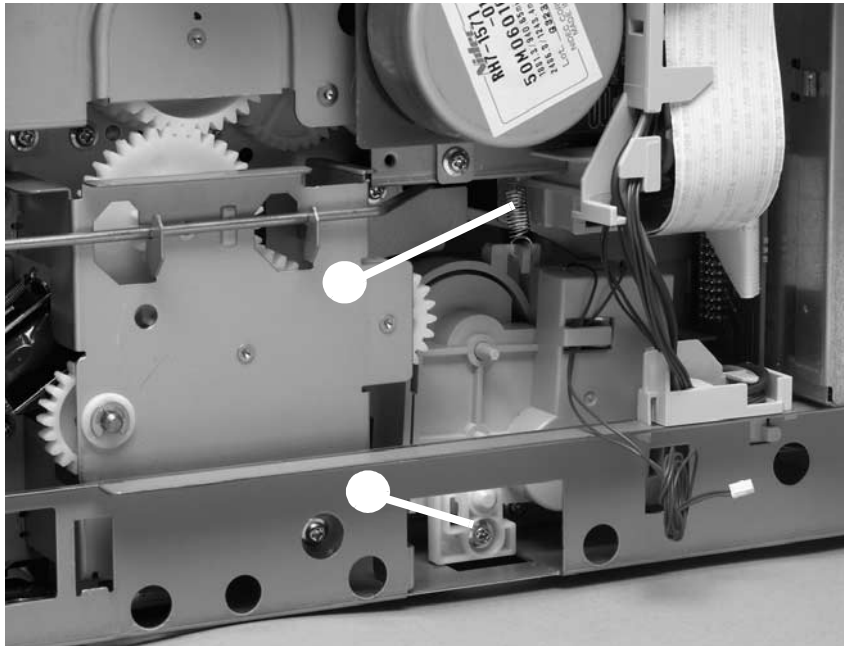
You might have to remove additional wire-harnesses from the wire guide to gain access to the lifter-drive assembly wire-harness.



Tray 2 lifter-drive assembly (1 of 2)

3. Unhook the tension spring (callout 3). Remove one screw (callout 4). Remove the lifter-drive assembly.

You might have to remove some wire guides to easily remove the lifter-driver assembly.



**Tray 2 lifter-drive assembly (2 of 2)**

## Dc controller PCA

1. Remove the following assemblies:

Top and right-side covers. See [Figure 6-1](#) and [Figure 6-2](#).

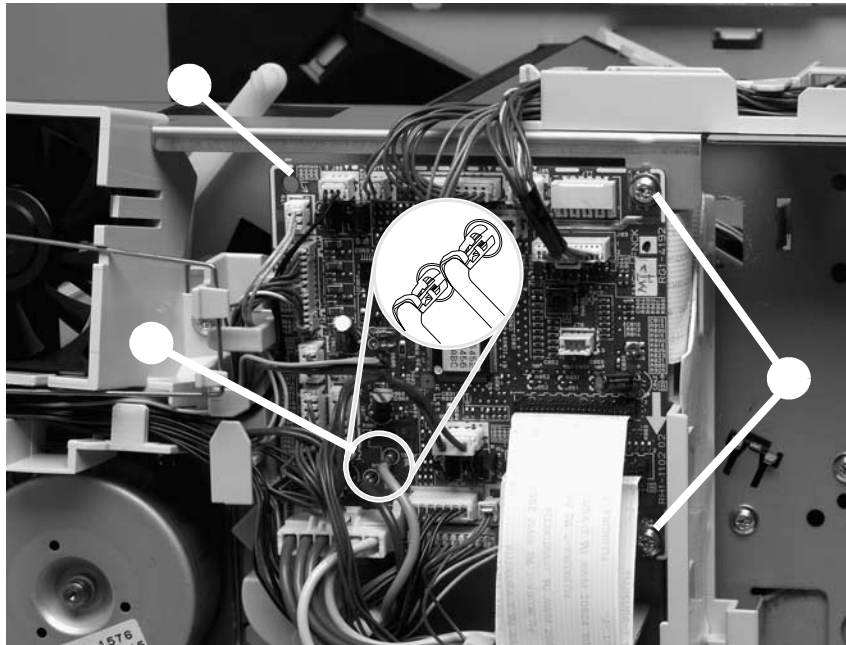
Formatter assembly. See [Figure 6-3](#).



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

The yellow and blue heavy-gauge wires connected to dc controller PCA locations TB85 and TB86 (callout 3) are *not* terminal lug connectors. These terminals are soldered to the dc controller PCA. Do *not* attempt to unplug these connectors.

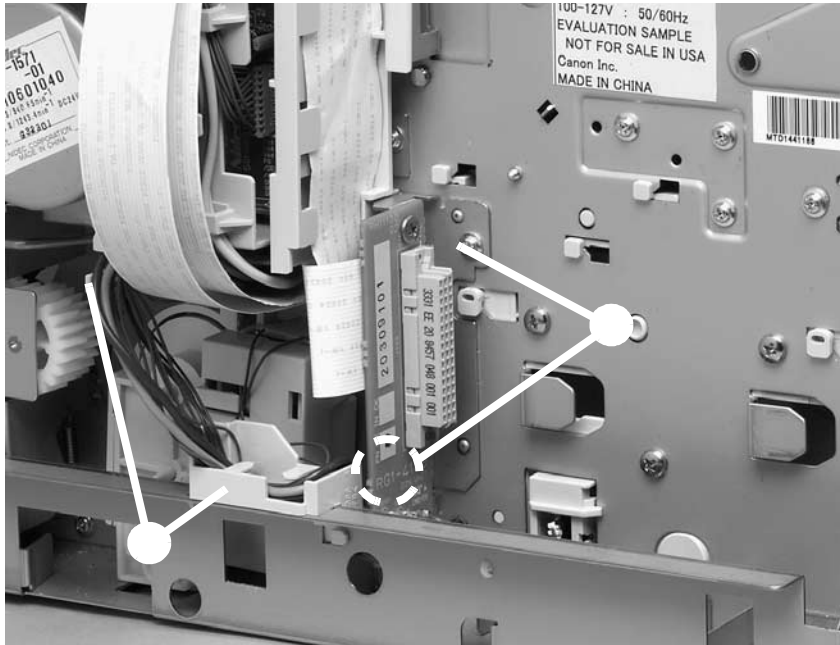
2. Unplug all of the wire/cable connectors from the dc controller PCA (callout 1). Remove two screws (callout 2).



Dc controller PCA (1 of 3)

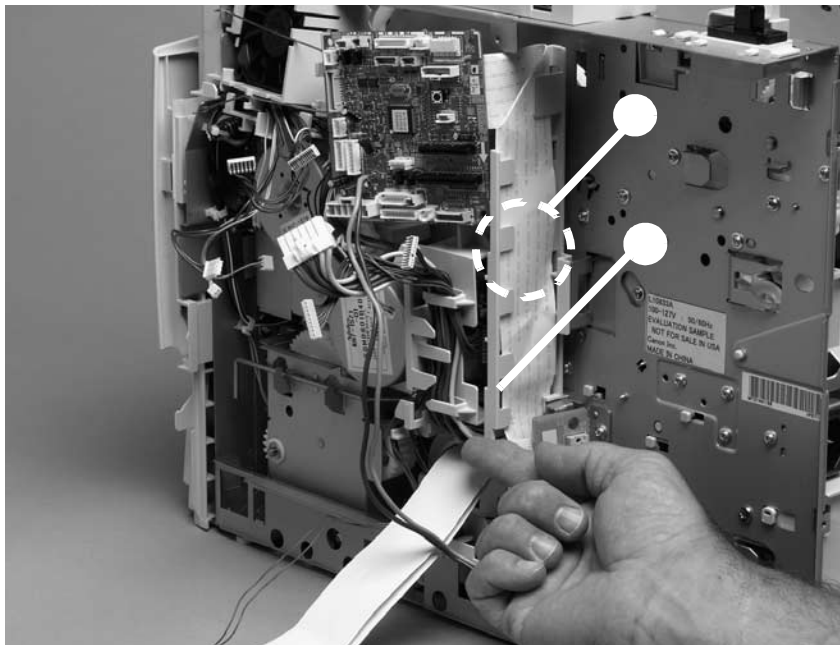
3. Remove the two screws (callout 4) that fasten the formatter connector bracket to the chassis. Unweave the formatter connector wire-harness from the wire guides (callout 5).

You might have to remove additional wire-harnesses from the wire guide to gain access to the formatter connector harness.



#### Dc controller PCA (2 of 3)

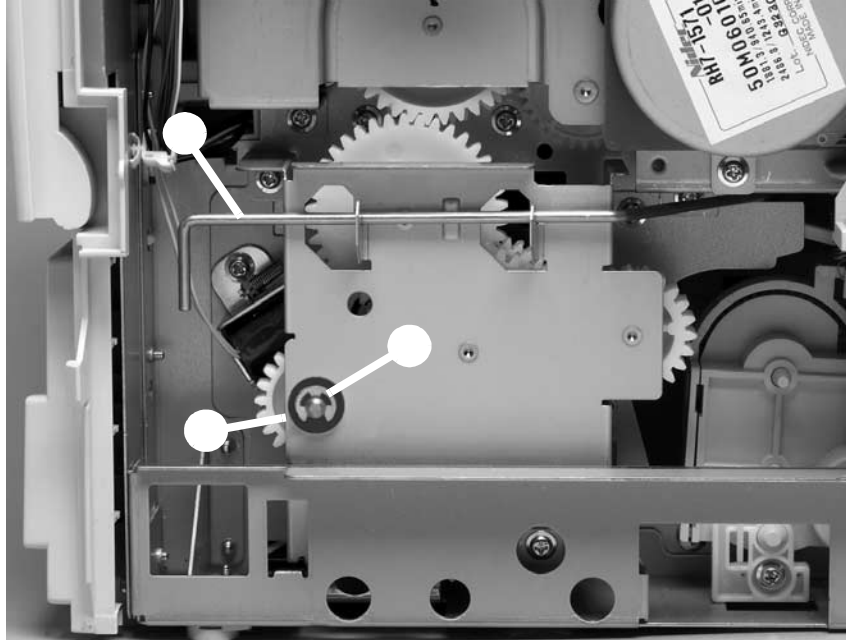
4. Push in on the locking tab (callout 6) on the rear of the dc controller PCA wire guide (callout 6), and then push up on the guide to release it. Remove the dc controller PCA and formatter connector assembly.



#### Dc controller PCA (3 of 3)

## Paper-pickup drive assembly

1. Remove the following assemblies:  
Top cover. See  
Right-side cover. See
2. Remove one e-clip (callout 1) and the shaft collar (callout 2). Lift the power-switch connector-bar (callout 3) up and swing it away from the paper-pickup gear assembly.



Paper-pickup drive assembly (1 of 5)

3. From the right side of the printer, push the tray drive-gear/shaft into the tray 2 cavity and remove it.

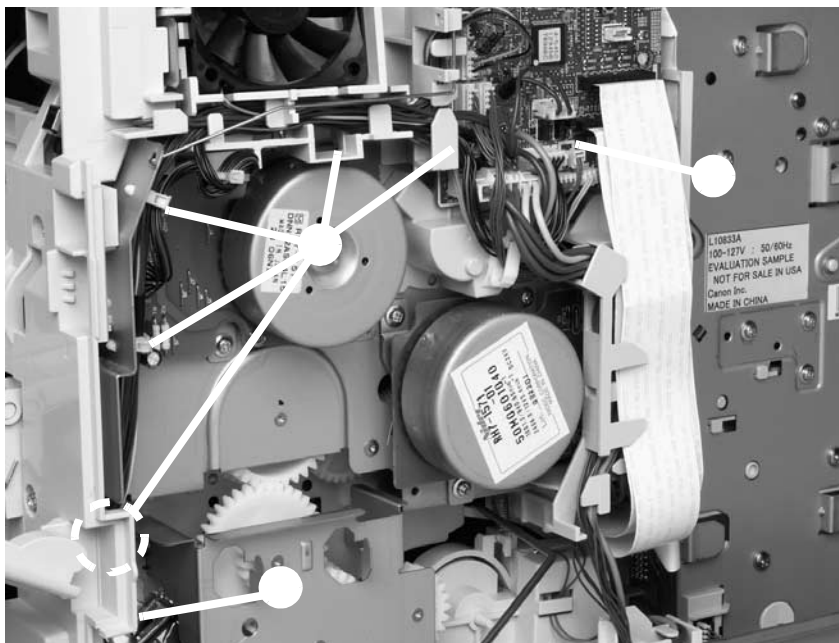
The large gear inside of the paper-pickup drive assembly is not captive and will slide off of the shaft and be loose inside the paper-pickup drive assembly (see ).



#### Paper-pickup drive assembly (2 of 5)

4. Unplug the paper-pickup gear assembly solenoid (callout 4) connector from the dc controller PCA (location J92; callout 5). Unweave the solenoid wire-harness from the wire guide and the cable clips (callout 6).

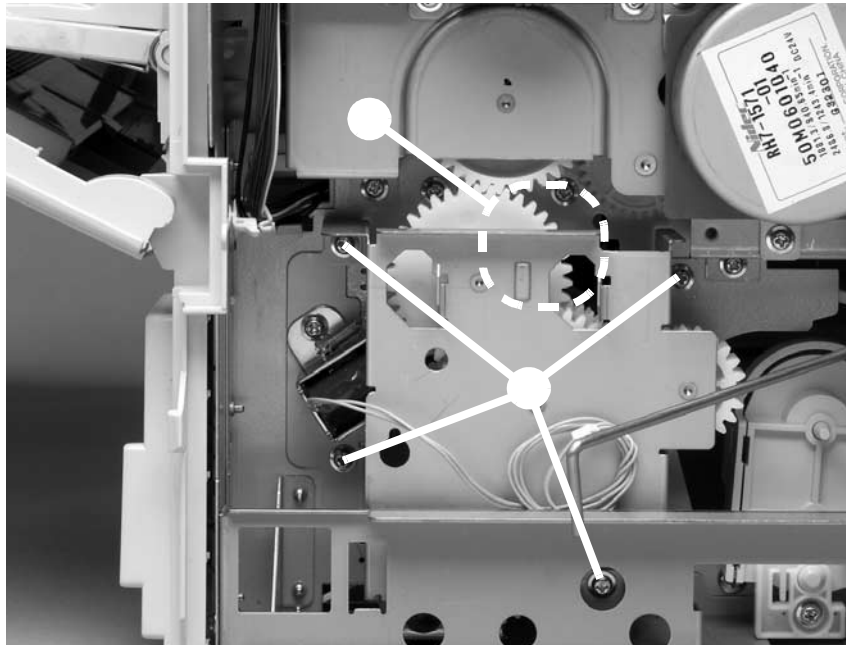
You might have to remove additional wire-harnesses from the wire guide to gain access to the solenoid wire-harness.



#### Paper-pickup drive assembly (3 of 5)

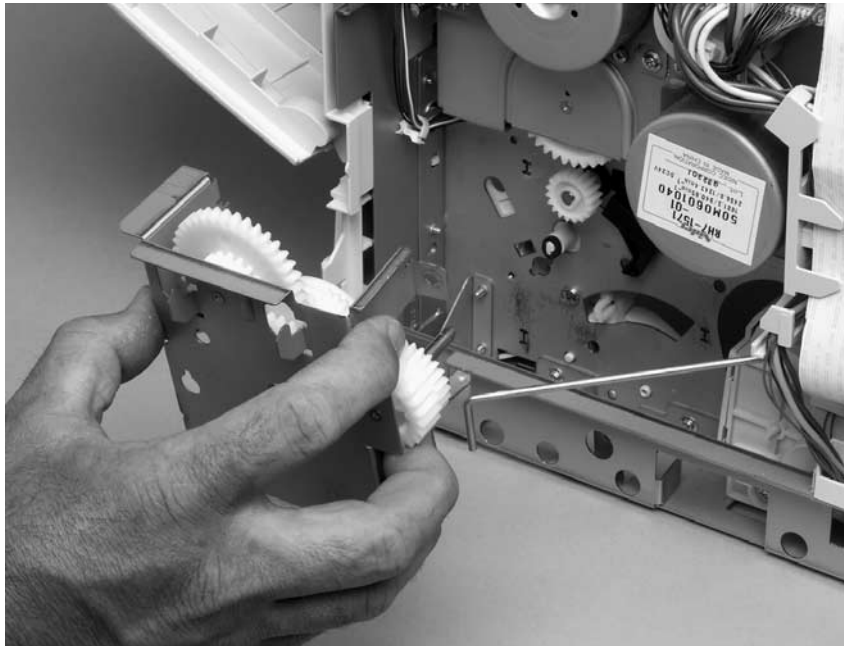


5. Remove four screws (callout 7). Reach inside the printer and push the rear tray 2 feed roller up into its raised position (see ). This disengages the roller lifting arm (callout 8) from the clutch gear.



**Paper-pickup drive assembly (4 of 5)**

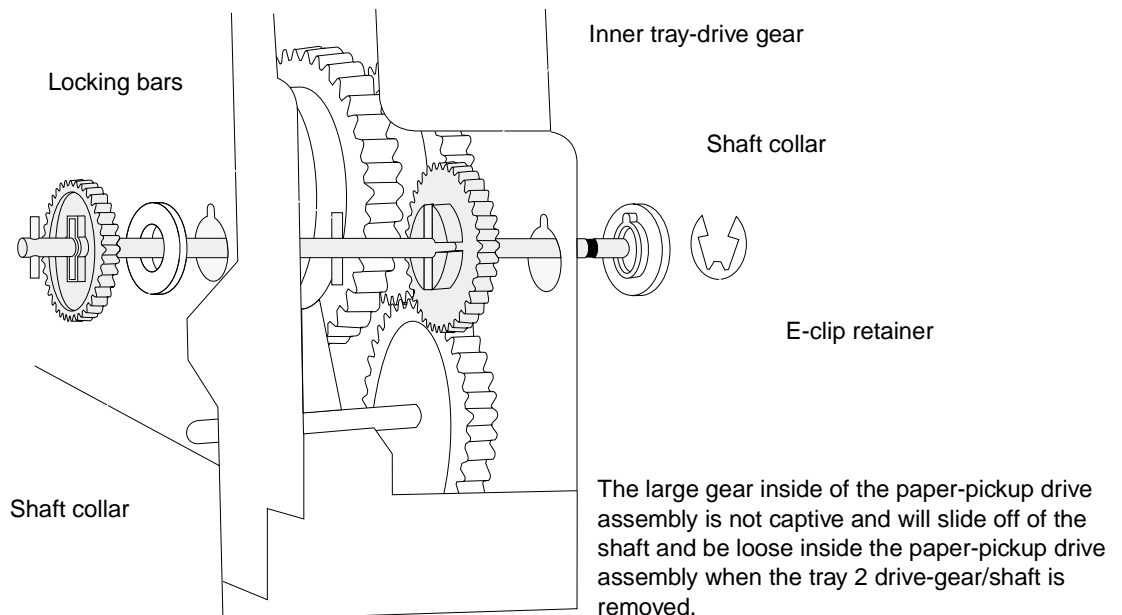
6. Remove the paper-pickup drive-gear assembly.



**Paper-pickup drive assembly (5 of 5)**

When you install the tray 2 drive gears and shaft, verify that the gears are seated on the shaft locking bars and that the shaft collars are correctly positioned in the paper-pickup drive-gear assembly mounting bracket and printer chassis.

When you install the paper-pickup drive assembly, reach up inside the printer and push the rear feeder roller (see figure 71 on page 142) up into its raised position. Position the paper-pickup drive assembly onto the chassis (it should sit flush against the chassis) and then lower the roller into its resting position. This ensures that the feeder lever rests correctly on the large gear in the paper-pickup drive assembly.



**Tray 2 drive gear and shaft**

## Main drive assembly

1. Remove the following assemblies:

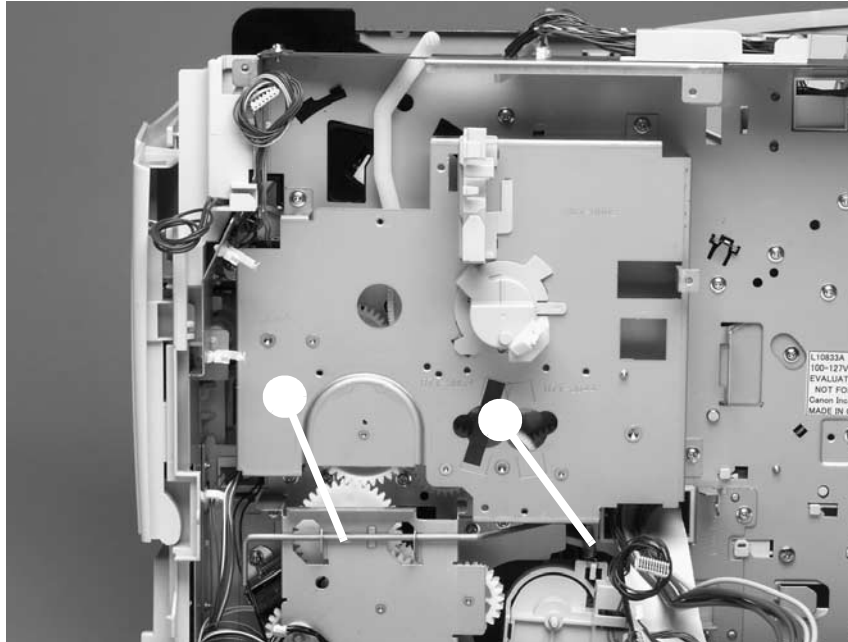
Top and right-side covers. See [Figure 6-1](#) and [Figure 6-2](#).

Right-side fan (HP LaserJet 4300 series only) and fan duct. See [Figure 6-3](#).

Print-cartridge motor (HP LaserJet 4300 series only). See [Figure 6-4](#).

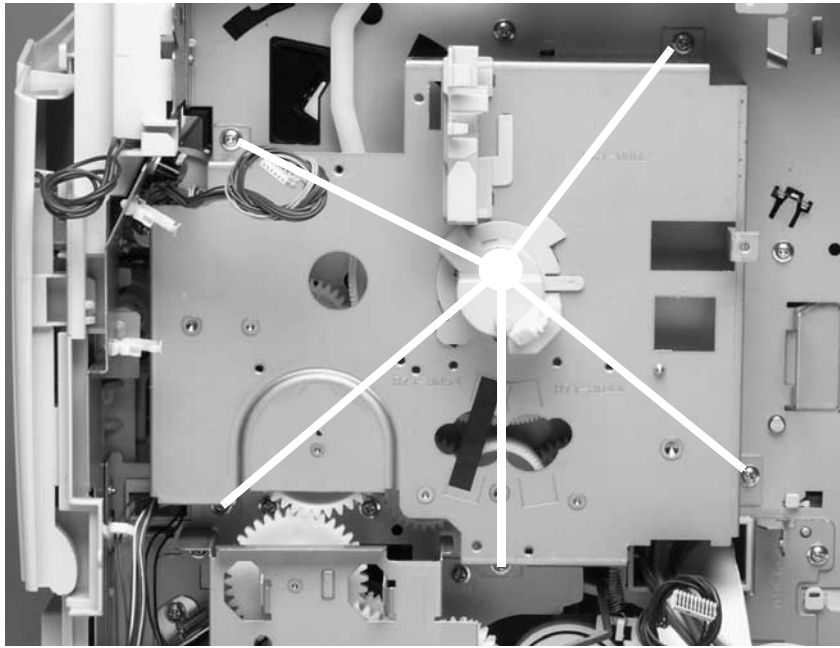
Dc controller PCA. See [Figure 6-5](#).

2. Use needle-nose pliers to release the lifting assembly spring (callout 1). Lift up the power switch arm (callout 2) and rotate it away from the chassis.



**Main drive assembly (1 of 2)**

3. Remove five screws (callout 3). Remove the main drive assembly.



**Main drive assembly (2 of 2)**

## Power supply

### 1. Remove the following assemblies:

Rear output bin. See

Rear accessory cover and tray 2 extension door. See

Top, right-side, and left-side covers. See through

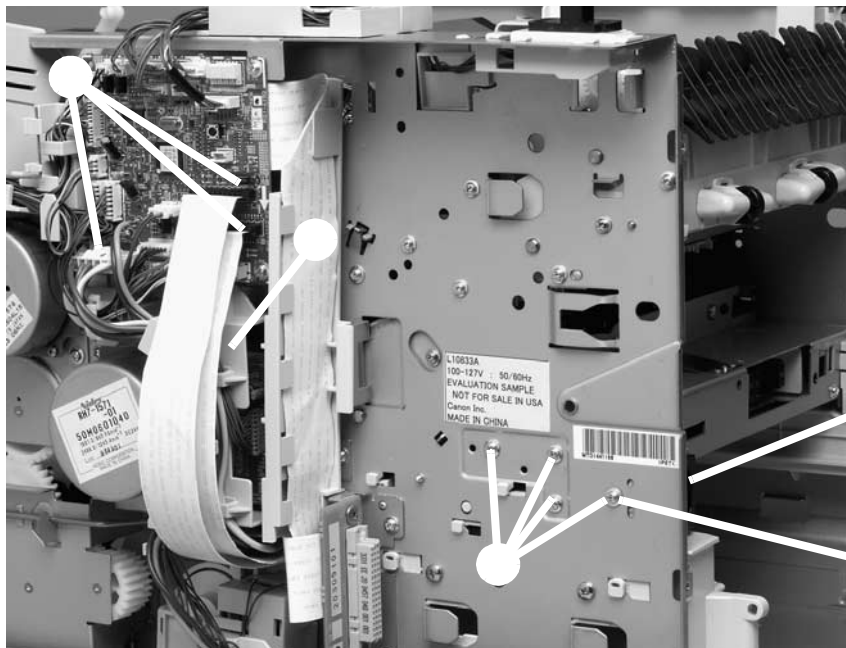
Fuser. See

Formatter assembly. See

### 2. Unplug the two power-supply ribbon cables and the dc controller power connector from the dc controller (locations J80, J81, and J99; callout 1). Unweave the wire-harness and cables from the wire guide (callout 2). Remove four screws (three machine screws and one ground screw; callout 3).

You might have to remove additional wire-harnesses from the wire guide to gain access to the power-supply harness.

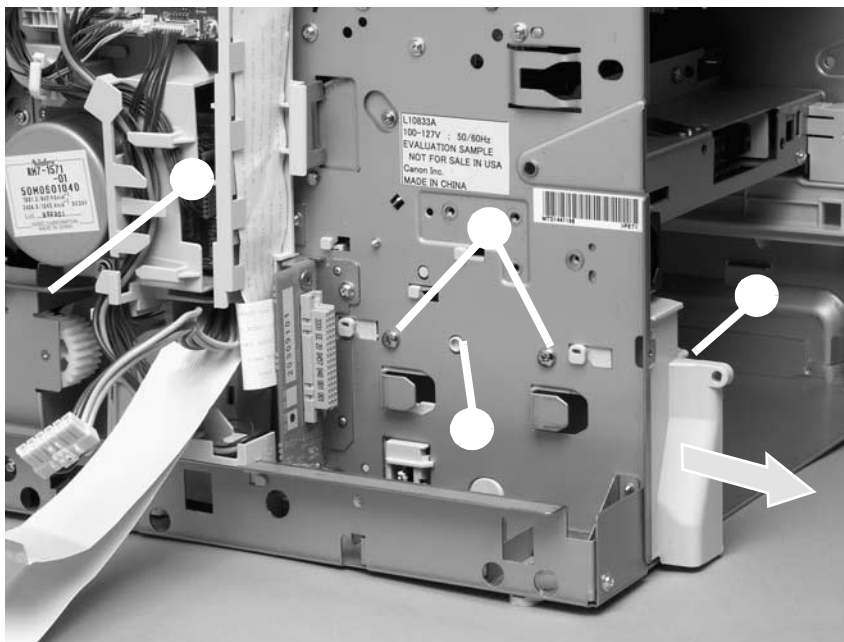
Also note the position of the ribbon cables and power cables through the bottom of the wire guide (callout 2). Failure to route these cables correctly through the bottom of the wire guide might result in interference with the tray 2 lifter-driver assembly and the cable might be damaged during printer operation.



**Power supply (1 of 5; right side)**

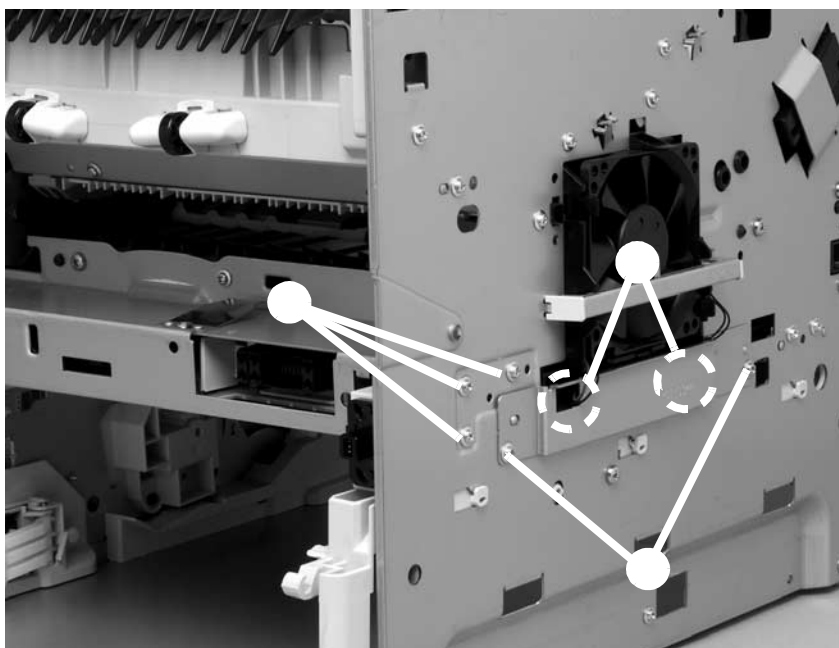
When installing the power supply, you must use a ground screw to secure the ac outlet to the printer chassis.

3. Remove two screws (callout 4). Depress the tray 2 right-side guide lock (callout 5) and slide the guide (callout 6) toward the back of the chassis to release it. Remove the guide. Rotate the power-switch connector bar (callout 7) away from the printer.



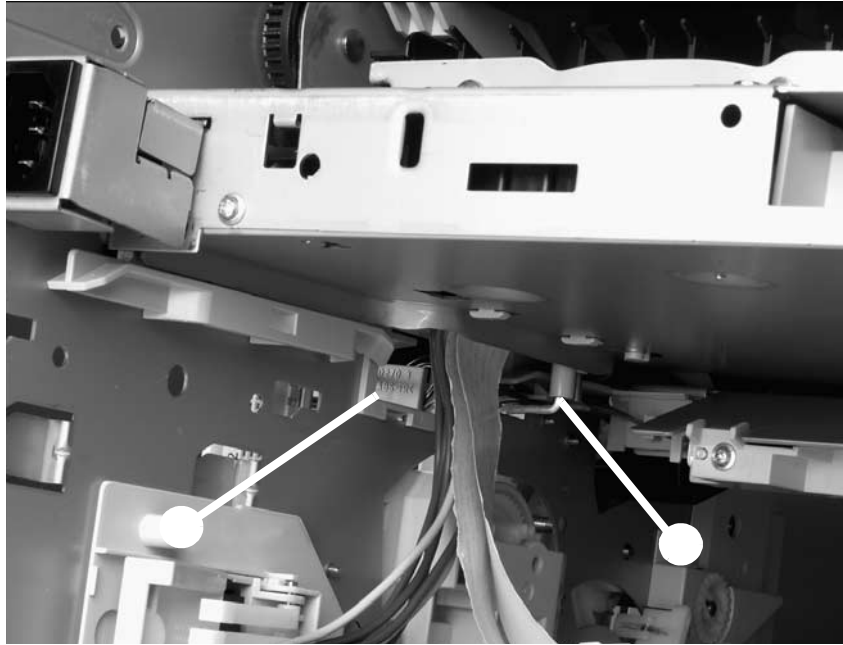
#### Power supply (2 of 5)

4. Remove five screws (callout 8). Unplug the left-side fan and thermistor sensor connectors on the power-supply PCA (callout 9; behind the cover plate).



#### Power supply (left side; 3 of 5)

5. Feed the two ribbon cables and the wire-harness through the hole in the right side of the chassis (callout 9) under the power supply. Pull down on the power-switch connector bar (callout 10) to slide it out of its mounting bracket, and remove it.



**Power supply (tray 2 cavity; 4 of 5)**

When performing step 6, verify that the four rubber belts and plastic rollers (callout 3 in figure 148 on page 192) remain in place. These belts and rollers can easily come off and you might lose them.

6. Grasp the power supply and lift it up slightly. Pull it straight out of the chassis.

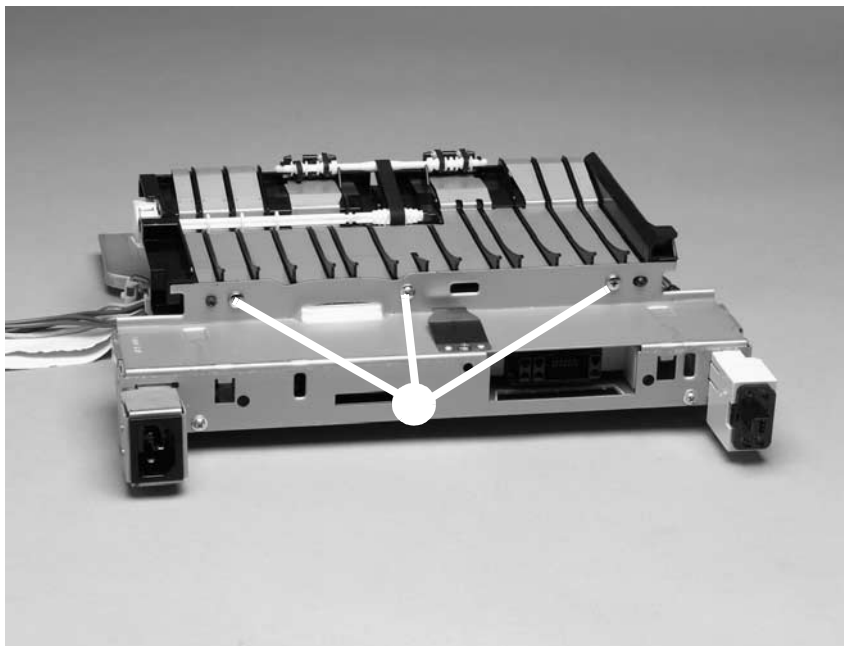


**Power supply (5 of 5)**

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

## Paper-feed belt assembly

1. Remove the power supply. See .
2. Remove three screws (callout 1).

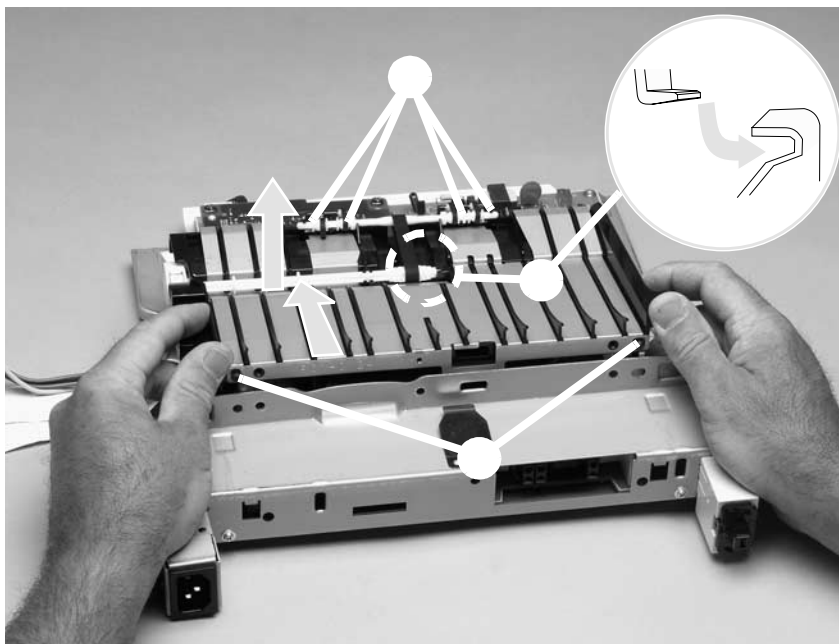


### Paper-feed belt assembly (1 of 2)

Verify that the four rubber belts and plastic rollers (callout 3) remain in place. These belts and rollers can easily come off and you might lose them.

When you install the paper-feed belt assembly, verify that the center foot (on the power-supply side; callout 4) is correctly hooked under the support leg on the power supply.

3. Release the paper-feed belt assembly alignment pins (callout 2). Rotate the assembly toward the back of the power supply and remove it.



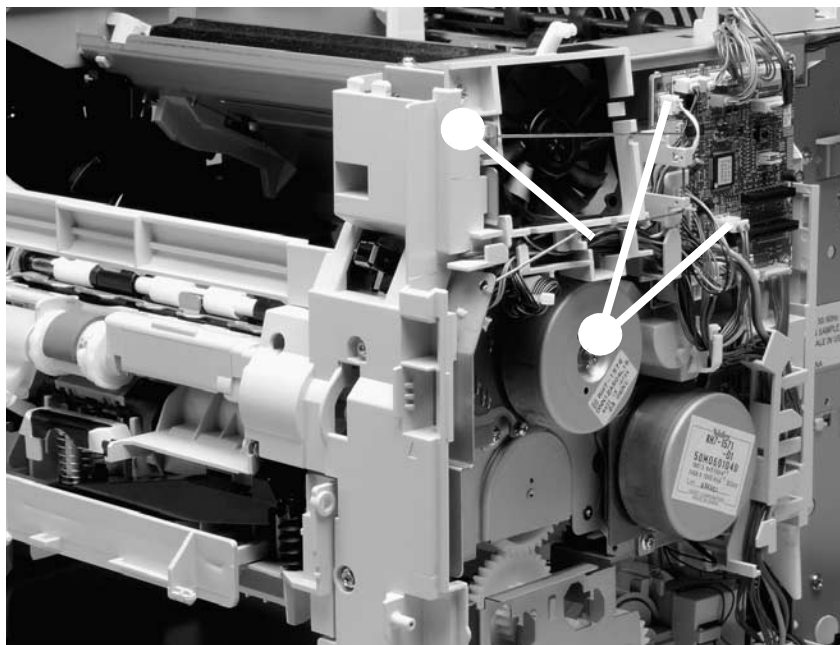
### Paper-feed belt assembly (2 of 2)



## Tray 1 paper-pickup assembly

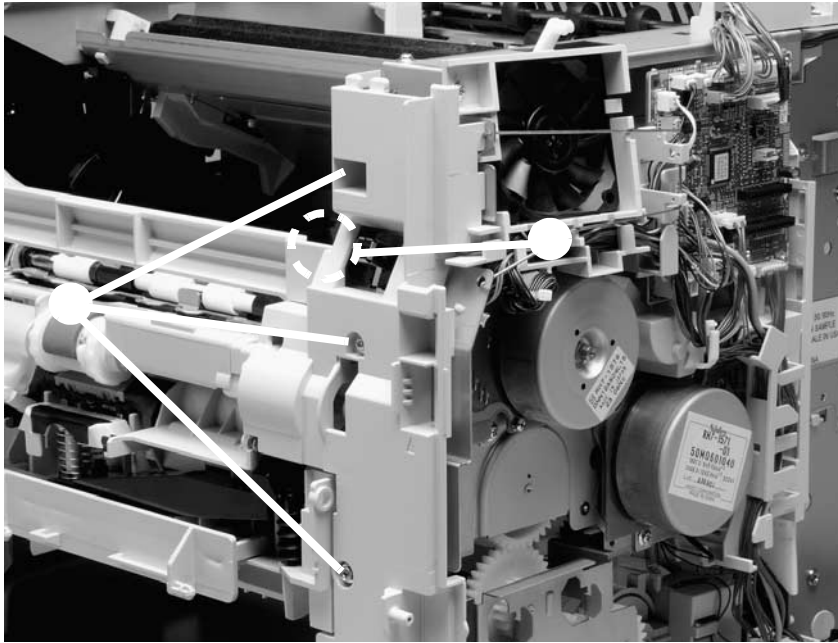
1. Remove the following assemblies:  
Top, right-side, and left-side covers. See through  
Tray 1. See  
2. Unplug the tray 1 pickup solenoid connector and the top-cover sensor from the dc controller PCA (locations J79 and J95; callout 1). Unweave the harnesses from the wire guide (callout 2).

You might have to remove additional wire-harnesses from the wire guide to gain access to the solenoid and sensor harnesses.



Tray 1 pickup assembly (1 of 4)

3. Remove three screws (callout 3). Depress the pickup-gear-cover upper retainer tab (callout 4) to release it. Lift up on the cover to release the lower retaining tab (not shown) and remove the cover.



#### **Tray 1 pickup assembly (2 of 4)**

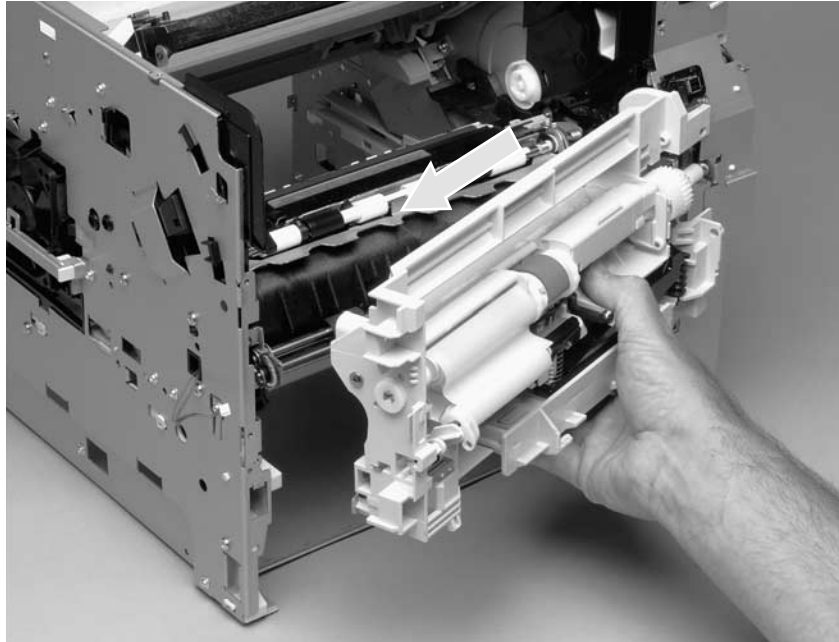
4. Unplug the pickup sensor connector (callout 5). Remove six screws (callout 6).

One of the screws (callout 7) on the left side is longer than the others. Make sure that this screw is replaced in the hole from which it was removed.

#### **Tray 1 pickup assembly (3 of 4)**

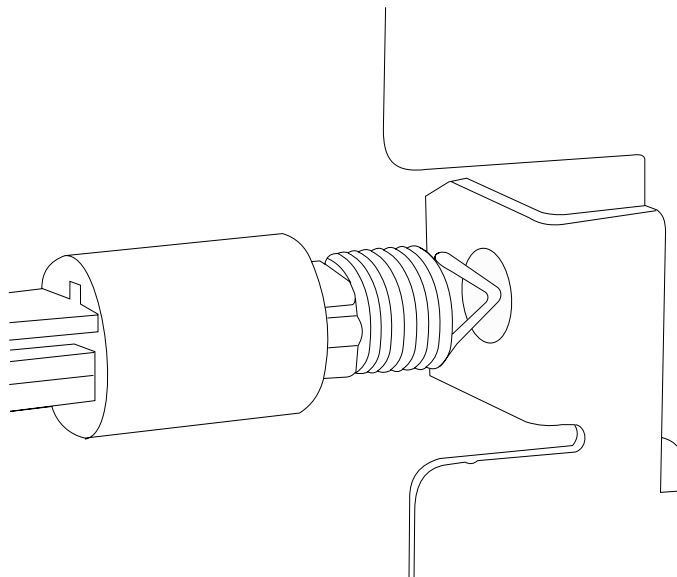
Carefully thread the solenoid wire-harness through the hole in the chassis. When you remove the pickup assembly, avoid pinching the pickup solenoid wire-harness between the assembly and the chassis.

5. Rotate the left side of the assembly away from the chassis and then slide the assembly to the left to remove it. Carefully feed the pickup assembly solenoid wire-harness through the opening in the chassis as you remove the assembly.



#### **Tray 1 pickup assembly (4 of 4)**

When you install the pickup assembly, verify that the grounding spring (located on the right-side of the assembly near the drive gear) is correctly positioned against the dimple in the chassis.



#### **Correct position of the tray 1 pickup assembly grounding spring**

## Paper-feed assembly

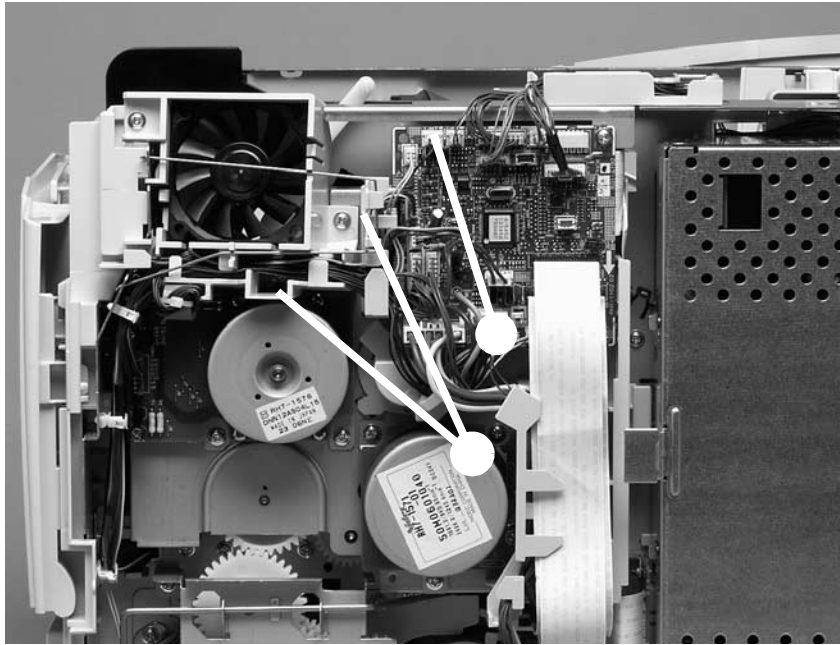
1. Remove the following assemblies:

Tray 1. See

Tray 1 pickup assembly. See

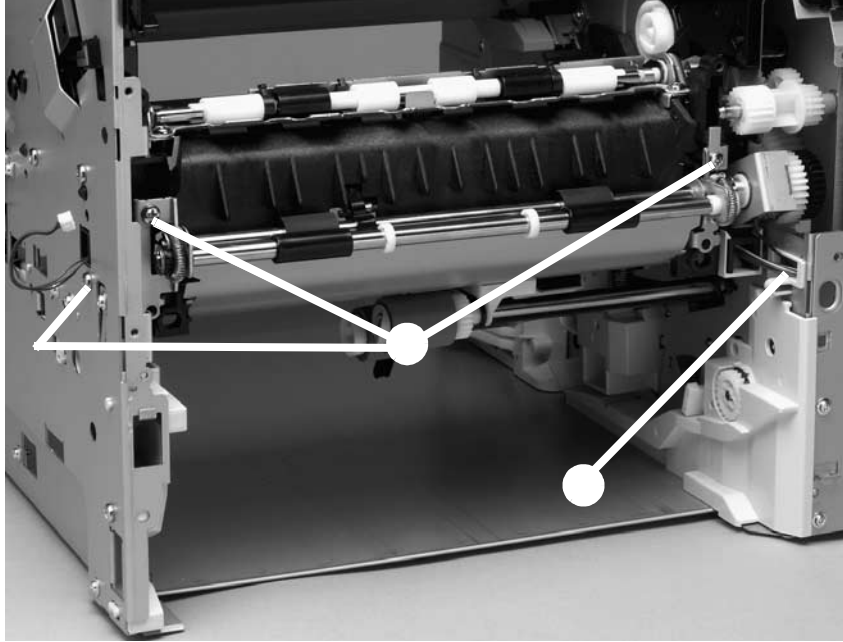
2. Unplug the paper-feed assembly wire-harness connector from the dc controller PCA (location J89; callout 1). Unweave the wire-harness from the wire guide (callout 2).

You might have to remove additional wire-harnesses from the wire guides to gain access to the paper-feed assembly wire-harness.



Paper-feed assembly (1 of 2)

3. Feed the paper-feed assembly wire-harness through the hole in the chassis (callout 3). Remove three screws (callout 4).



**Paper-feed assembly (2 of 2)**

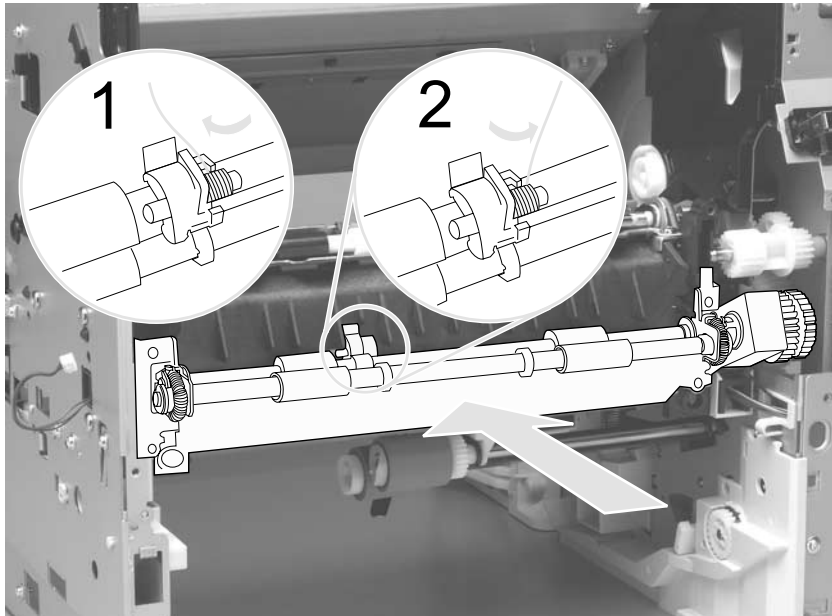
When the paper-feed assembly is installed, the sensor-flag spring must be correctly positioned for the flag to operate. If a paper-jam error message (13.20.00 JAM) appears on the control-panel display after you replace the paper-feed assembly, verify that this sensor-flag spring is installed correctly.

Hook the spring over the flag tab (see 1 in figure 156). Fasten the paper-feed assembly to the chassis with the flag spring positioned in the hole in the transfer assembly. Release the spring from the tab on the flag (see 2 in figure 156).

Verify that the flag is held in the upright position, can freely move, and always returns to the upright position. If the flag does not move freely, or does not return to the upright position, an error message (13.20.00 JAM) will appear on the control-panel display when the printer power is turned on.

Verify that the clutch tab on the right side of the paper-feed assembly is inserted into the hole in the plastic frame.

The antistatic bar (see ) can be used to release the sensor spring.



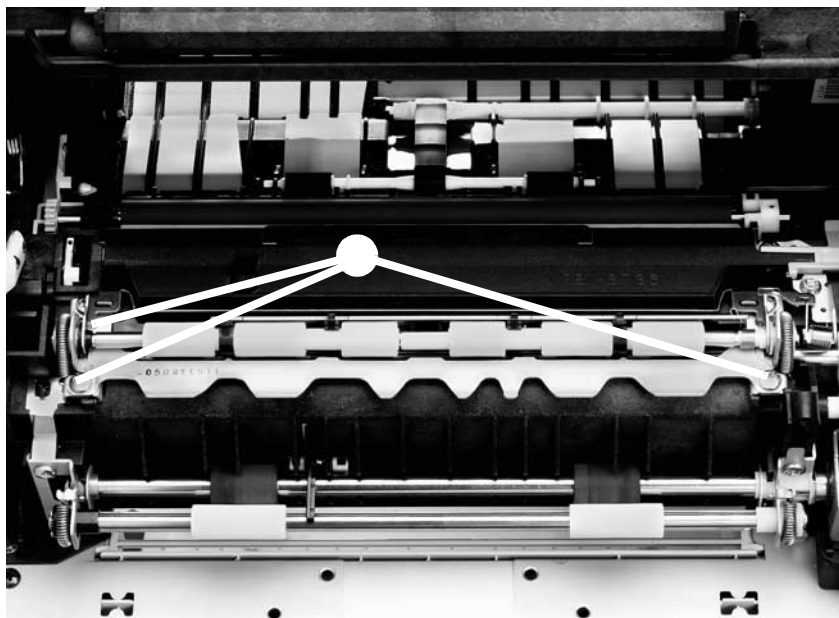
**Correctly install the paper-feed assembly sensor flag**

## Registration assembly

1. Remove the main drive assembly. See .
2. Remove one e-clip retainer (callout 1) and one screw (callout 1). Remove the registration-roller drive gear (callout 2).

### Registration assembly (1 of 3)

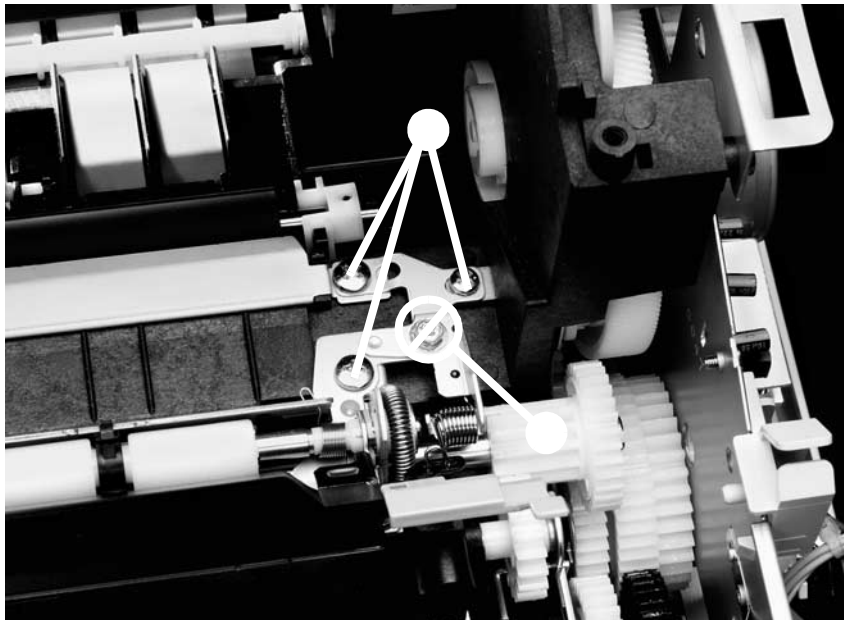
3. Remove three screws (callout 3).



### Registration assembly (2 of 3)

Do not remove the screw (callout 4) that holds the registration-roller-plate return-spring in place. It is not necessary to remove this spring.

4. Use the green handle (located at the right edge of the registration plate) to raise the registration-roller plate. Remove three screws (two large self-tapping screws on the right-hand side and one silver machine screw; callout 5). Remove the registration assembly.



**Registration assembly (3 of 3)**



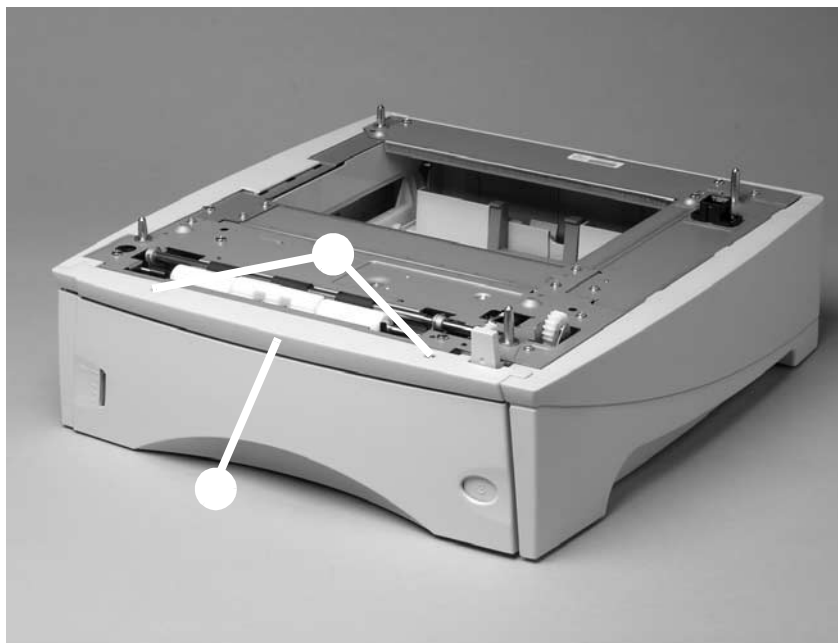
## 500-sheet feeder assembly

### 500-sheet feed rollers

The removal procedure for the two paper-feed rollers in the 500-sheet feeder is the same as the procedure for the tray 2 feed rollers. See .

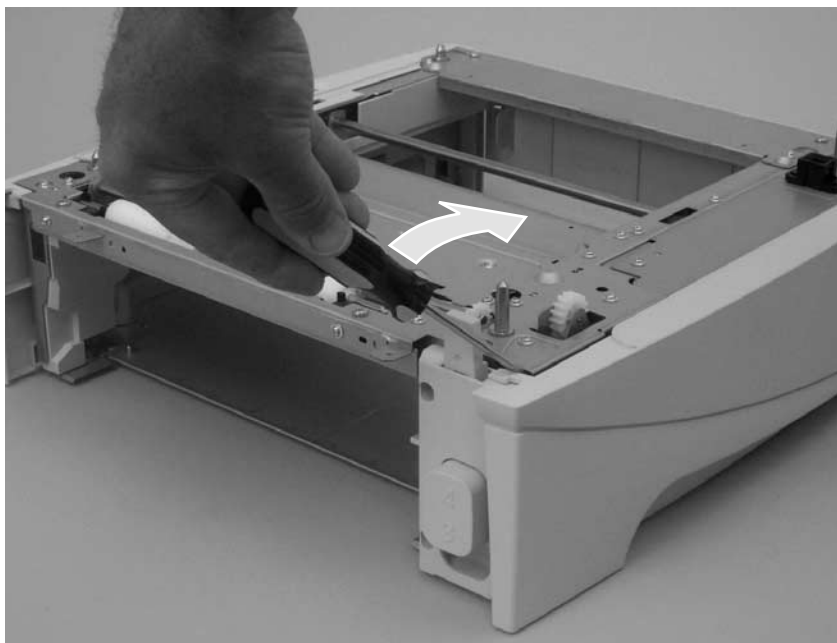
### 500-sheet feeder right-side cover

1. Remove two screws (callout 1) and the front cover (callout 2).



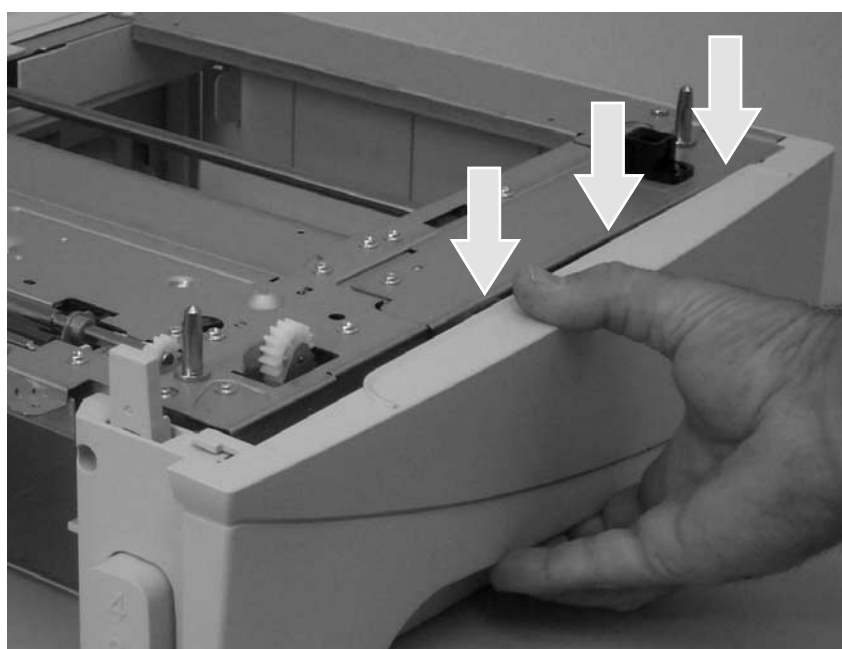
500-sheet feeder right-side cover (1 of 5)

2. Use a flat-blade screwdriver to release the right-side cover front locking tab.



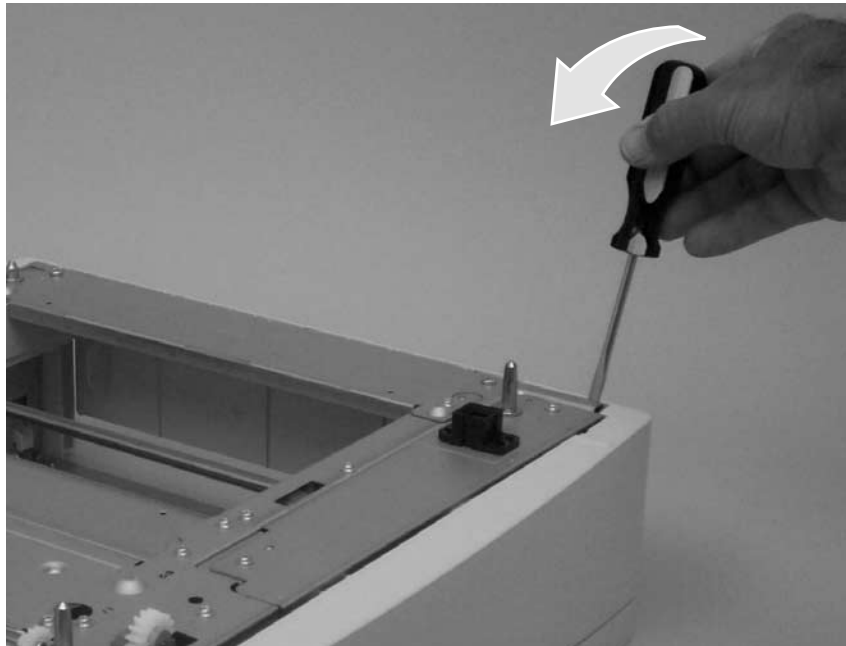
**500-sheet feeder right-side cover (2 of 5)**

3. Depress the edge of the cover and release the three center locking tabs.



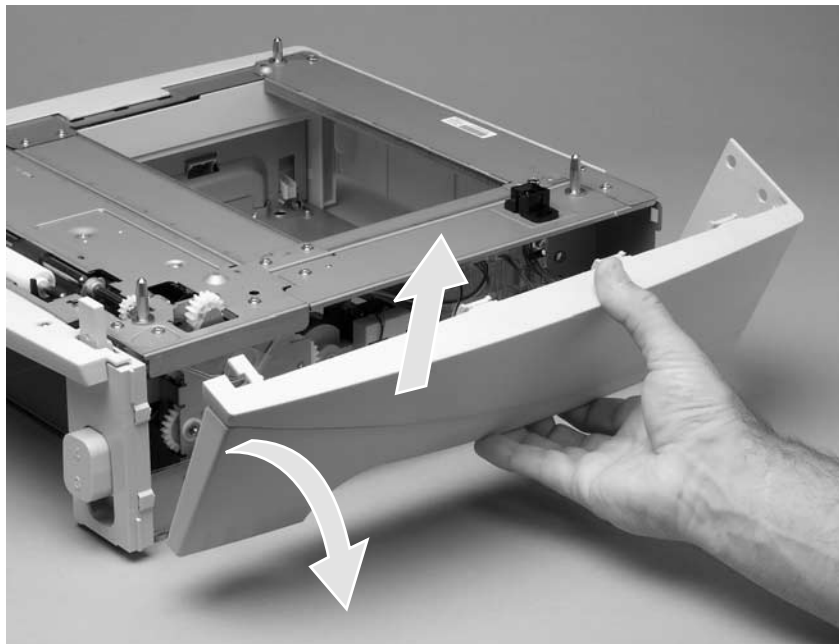
**500-sheet feeder right-side cover (3 of 5)**

4. Use flat-blade screwdriver to release the rear locking tab.



**500-sheet feeder right-side cover (4 of 5)**

5. Rotate the top of the cover away from the tray assembly and lift it up to remove it.



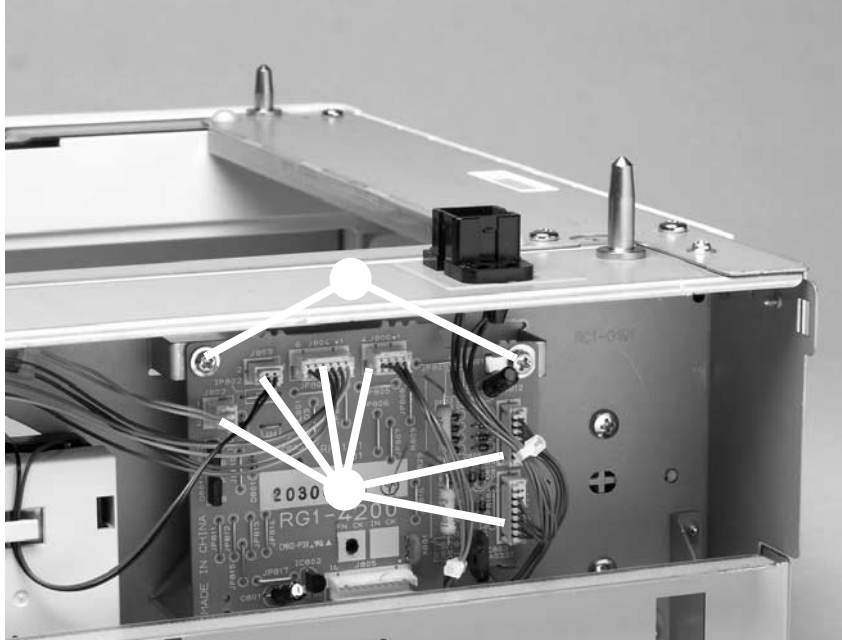
**500-sheet feeder right-side cover (5 of 5)**

## 500-sheet feeder control PCA



The product contains components that are sensitive to electrostatic discharge (ESD). Always perform service work at an ESD-protected workstation. If an ESD-protected workstation is not available, discharge body static by grasping the 500-sheet feeder chassis before touching an ESD-sensitive component. Ground the 500-sheet feeder chassis *before* servicing the product.

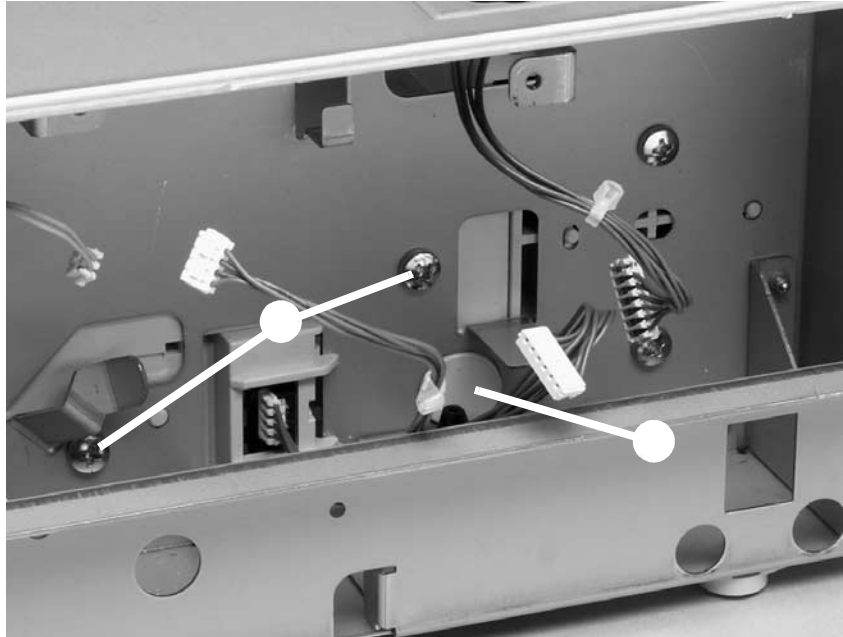
1. Remove the 500-sheet feeder right-side cover. See .
2. Unplug six wire-harness connectors (callout 1).
3. Remove two screws (callout 2).
4. Remove the PCA.



500-sheet feeder control PCA

### 500-sheet feeder media-size sensor

1. Remove the 500-sheet feeder PCA. See
2. Remove two screws (callout 1).



#### 500-sheet feeder media-size sensor (1 of 2)

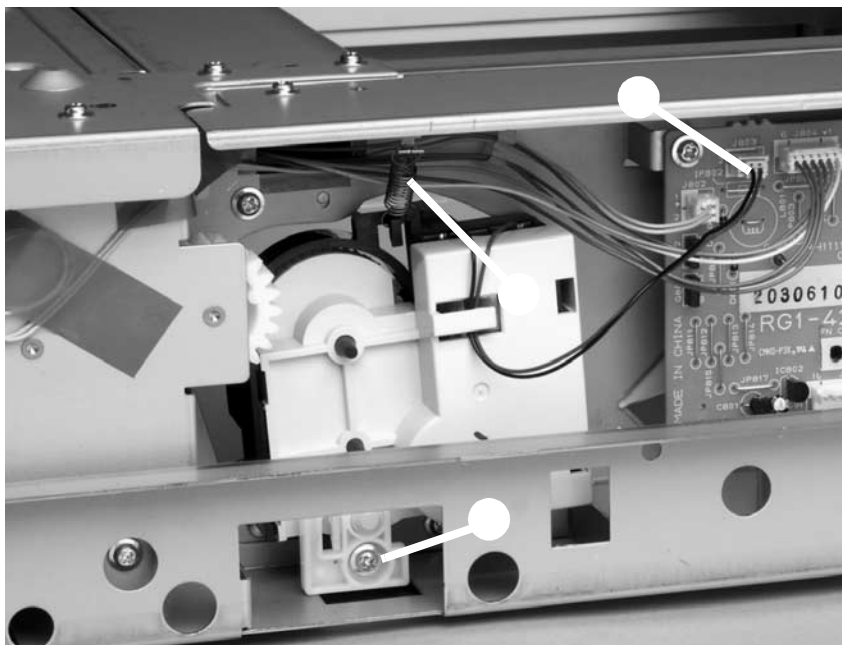
3. Push the locking tab (figure 166; callout 2) and slide the sensor toward the front of the feeder to release it. Remove the sensor.

#### 500-sheet feeder media-size sensor (2 of 2)

When you install the media sensor, verify that the locator pins are correctly positioned in the corresponding holes in the chassis.

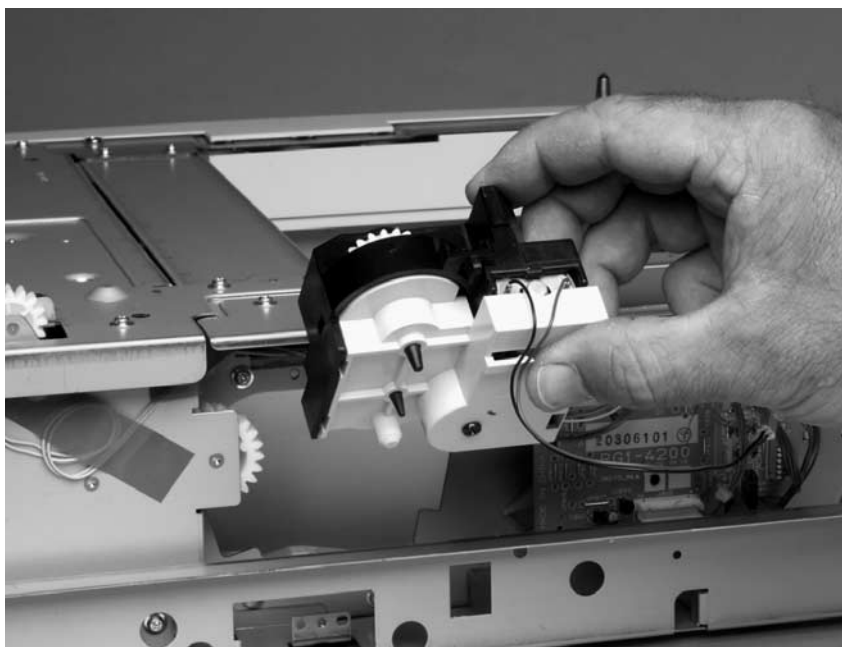
## 500-sheet feeder lifter-drive assembly

1. Remove the 500-sheet feeder right-side cover. See
2. Unplug the lifter-drive harness connector from the assembly PCA (location J803; callout 1). Disconnect the tension spring (callout 2) and remove one screw (callout 3).



### 500-sheet feeder lifter-drive assembly (1 of 2)

3. Pull the tray lifter-drive assembly out towards the right side of the chassis until its pivot shaft clears the tray guide. Rotate the lifter-drive assembly up and out of the chassis to remove it.



### 500-sheet feeder lifter-drive assembly (2 of 2)

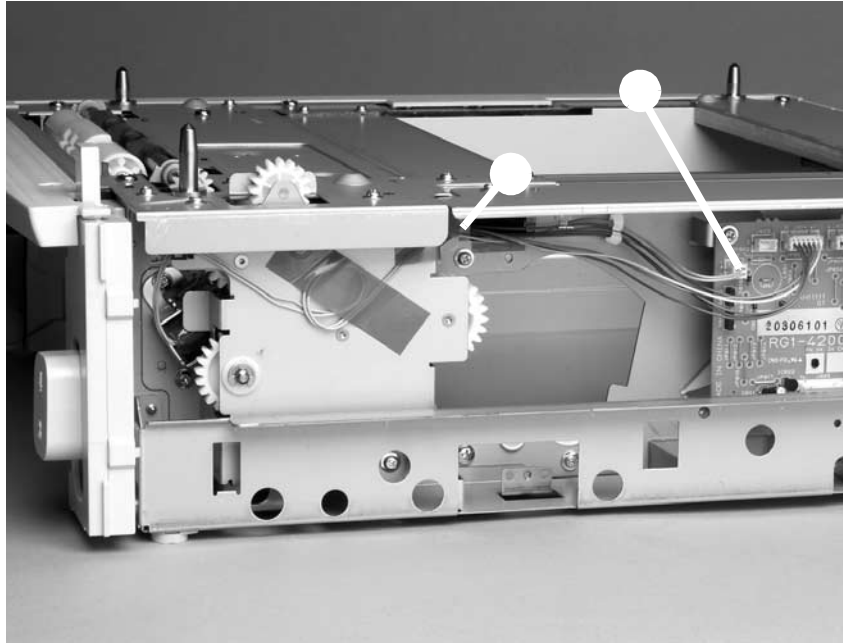
## 500-sheet feeder paper-pickup drive assembly

1. Remove the following assemblies:

500-sheet feeder right-side cover. See

500-sheet feeder tray lifter-drive assembly. See

2. Unplug the main drive solenoid harness connector (callout 1) from the PCA (location J802). Remove the harness from the harness clip (callout 2).



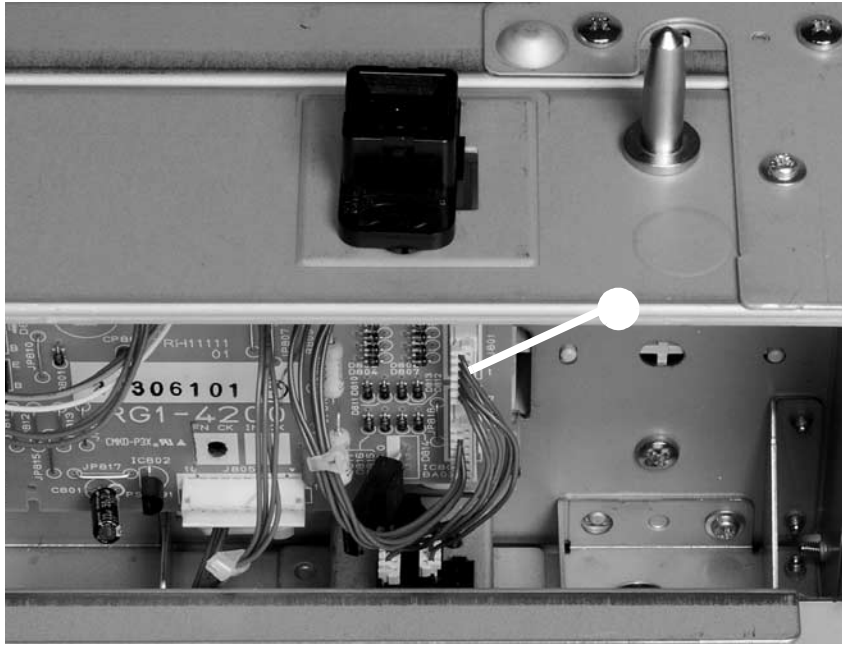
### 500-sheet feeder paper-pickup drive assembly (1 of 7)

3. Remove two screws (callout 3). Remove the tray-number indicator.



### 500-sheet feeder paper-pickup drive assembly (2 of 7)

4. Unplug the accessory-connector wire-harness from the PCA (callout 4).



#### 500-sheet feeder paper-pickup drive assembly (3 of 7)

5. Remove 8 screws (callouts 5, 6, and 7). Remove the chassis gutter (callout 8).

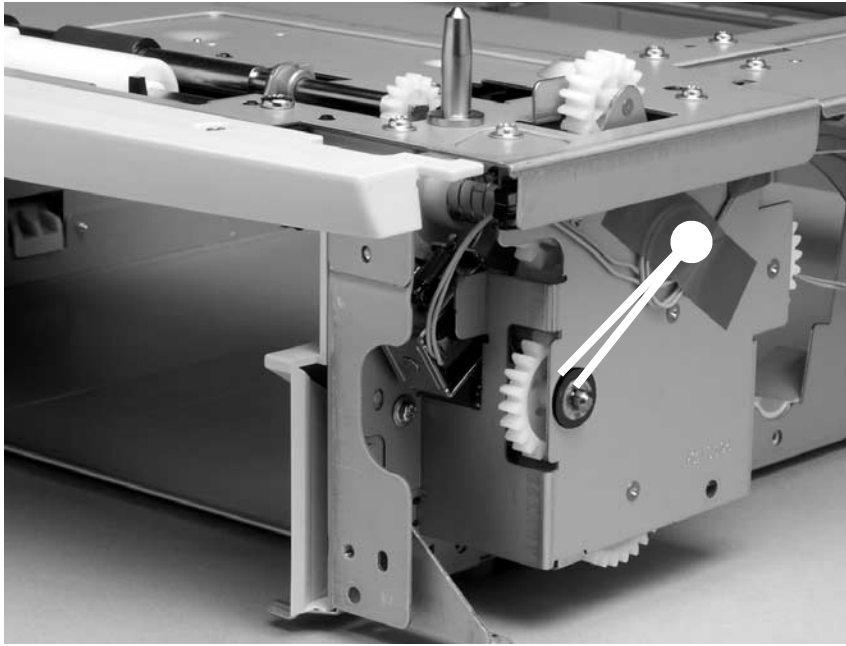
Callout 5 consists of 1 screw on the end and 1 screw at the top of the angular brace

Callout 6 consists of 1 screw on the end and 1 screw at the top of the angular brace

#### 500-sheet feeder paper-pickup drive assembly (4 of 7)



6. Remove one e-clip and the shaft collar (callout 9).



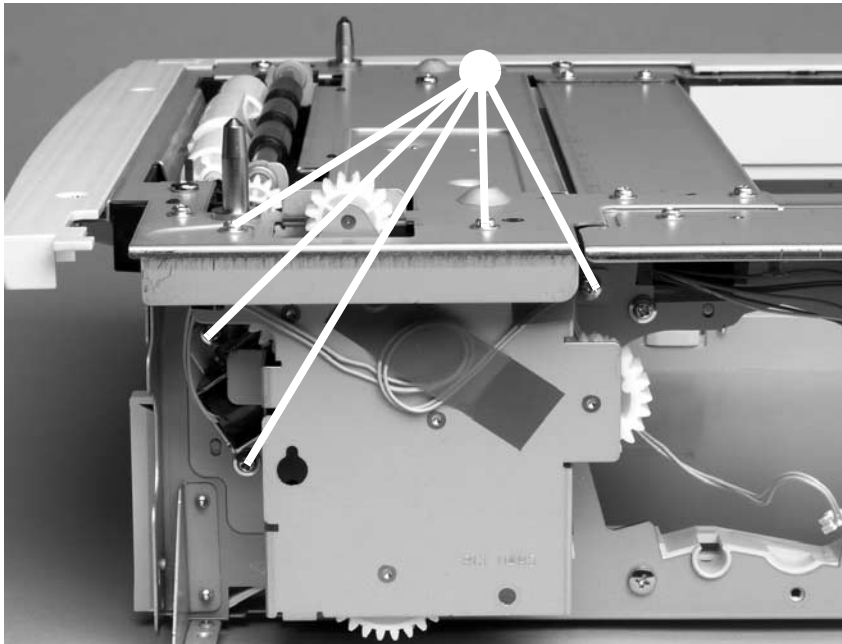
**500-sheet feeder paper-pickup drive assembly (5 of 7)**

7. Push the shaft into the paper-pickup drive assembly. Grasp the tray drive gear inside the tray cavity and pull the gear/shaft assembly out of the paper-pickup gear assembly.

**500-sheet feeder paper-pickup drive assembly (6 of 7)**

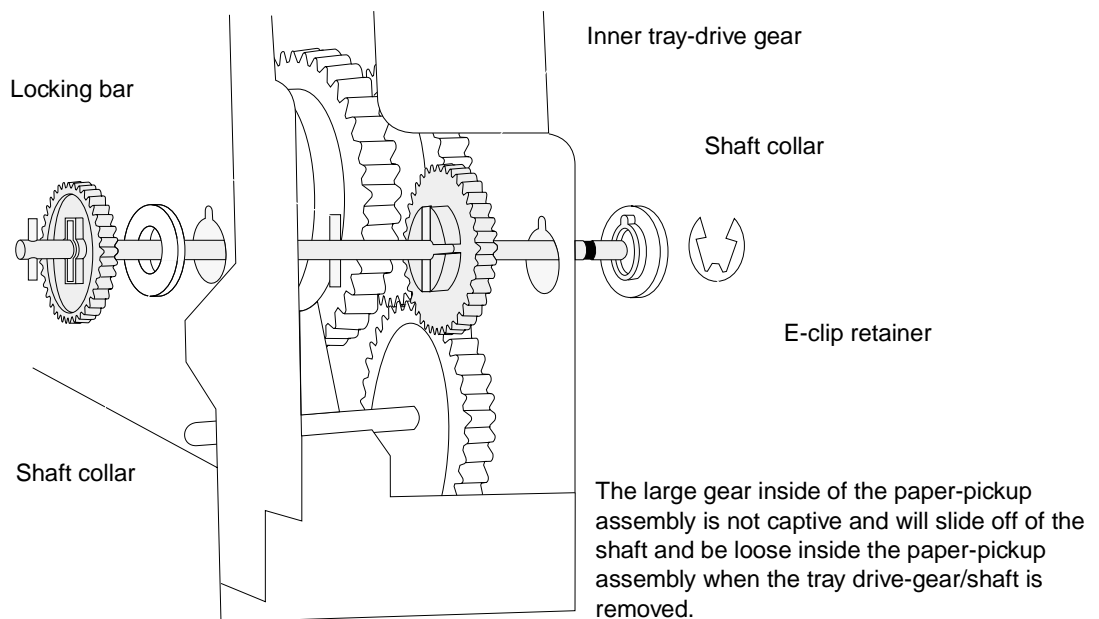
Some gears are not captive when the paper-pickup assembly is removed. They can easily slide off of the shafts and be lost. Also, the solenoid is not captive when the paper-pickup assembly is removed.

8. Remove five screws (callout 10). Pull the paper-pickup gear assembly away from the chassis and remove it.



**500-sheet feeder paper-pickup drive assembly (7 of 7)**

When you install the tray drive gears and shaft, verify that the gears are seated on the shaft locking bars and that the shaft collars are positioned correctly in the lower gear assembly mounting bracket and 500-sheet feeder chassis.



**500-sheet feeder paper-pickup drive gear**

## 1,500-sheet feeder assembly

### 1,500-sheet feeder feed rollers

The removal procedure for the two paper-feed rollers in the 1,500-sheet feeder is the same as the procedure for the tray 2 feed rollers. See .

### 1,500-sheet feeder separation roller

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



### 1,500-sheet feeder roller (1 of 2)

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



### 1,500-sheet feeder roller (2 of 2)

This roller must lock into place. Verify that the roller is seated on the locking bars that are located on the round black spacer and that the spacer is seated on the shaft-locking pin (callouts 1 and 2).

## 1,500-sheet feeder door

1. Remove one screw (callout 1) and remove the door-stop plate (callout 2).



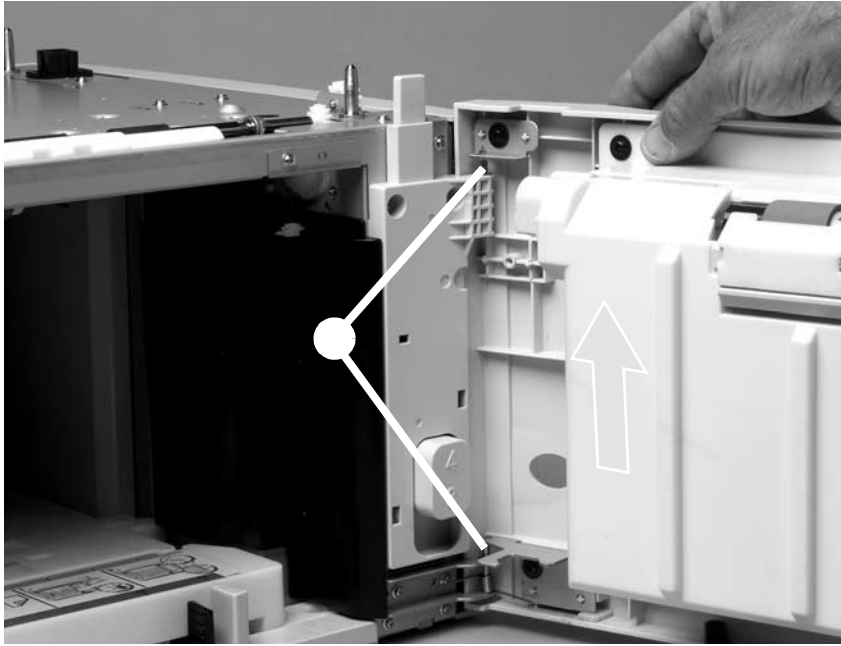
### 1,500-sheet feeder door (1 of 3)

2. Open the 1,500-sheet feeder door about halfway. Gently pry open the door slide-bar slot and disengage the door slide-bar from the feeder.



### 1,500-sheet feeder door (2 of 3)

3. Lift the door straight up and off of the door hinge pins.

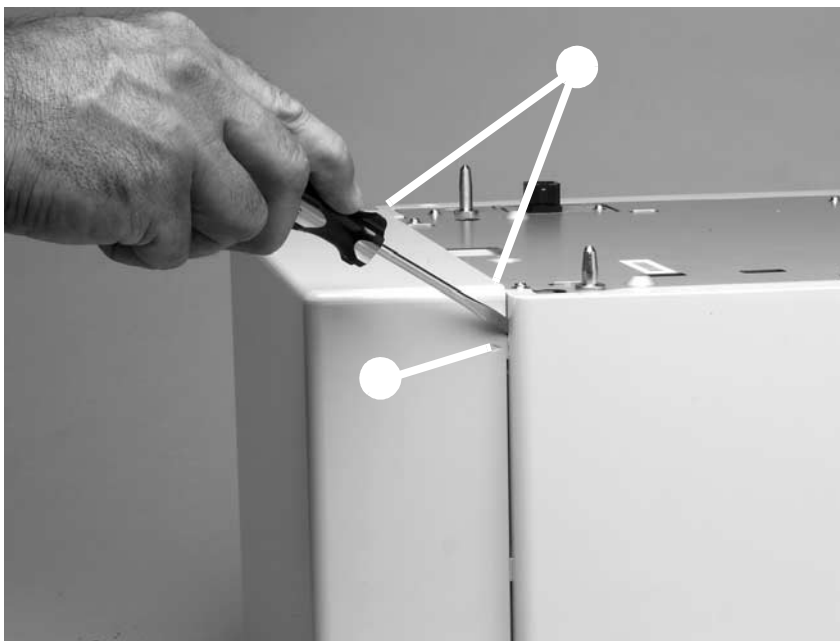


#### **1,500-sheet feeder door (3 of 3)**

The door hinge pins are not captive when the door is removed. If the feeder must be turned on its side or placed upside down, remove the hinge pins and the door spring (callout 2). Place the pins and the spring where you will not lose them.

### 1,500-sheet feeder rear cover

1. Locate the upper rear-cover locking tabs (callout 1) on each side of the rear cover (they are marked with arrows; callout 2). Use a flat-blade screwdriver to release these tabs.



### 1,500-sheet feeder rear cover (1 of 2)

2. Rotate the top of the cover away from the feeder. Lift up on the cover to release it.



### 1,500-sheet feeder rear cover (2 of 2)

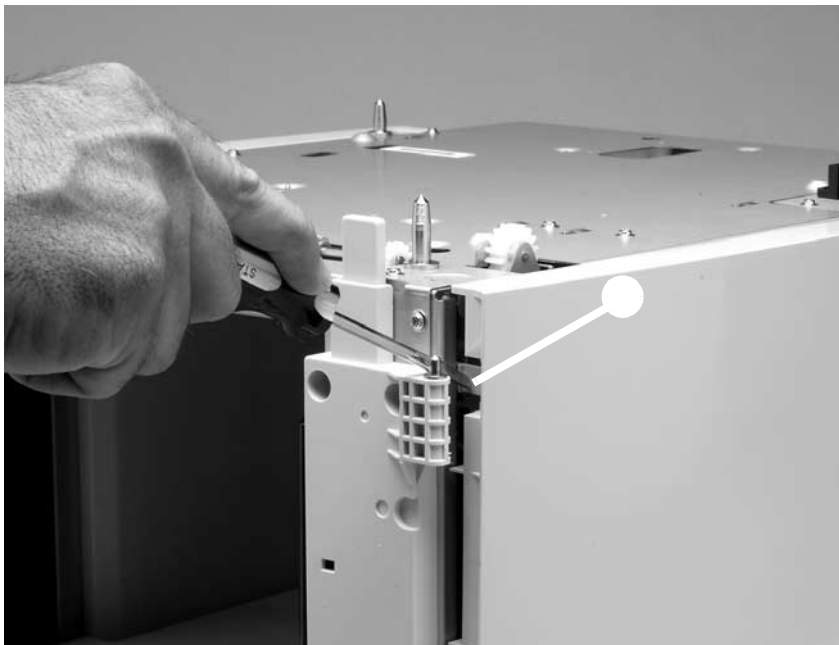
## 1,500-sheet feeder right-side cover

1. Remove the following assemblies:  
Door. See  
Rear cover. See
2. Remove one screw (callout 1).



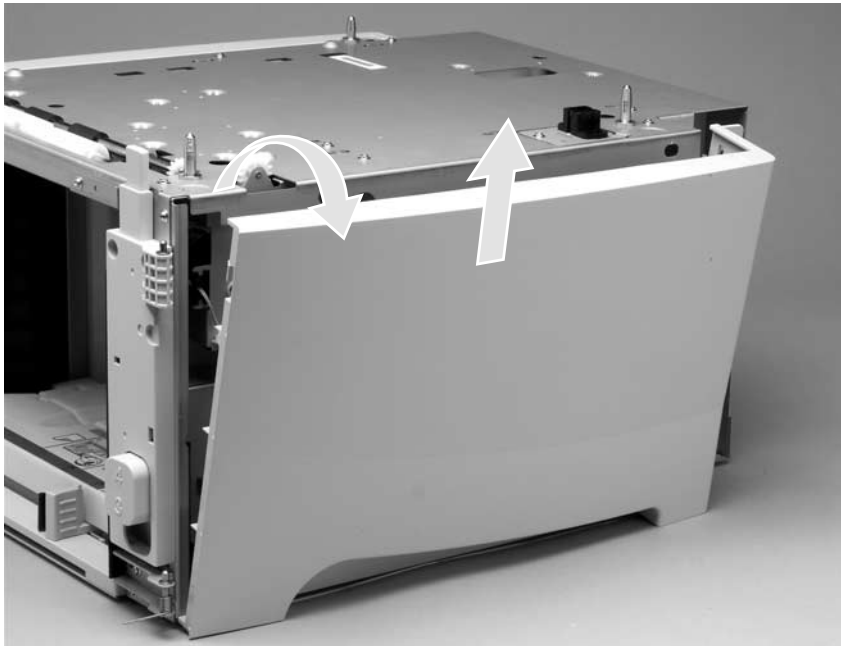
### 1,500-sheet feeder right-side cover (1 of 3)

3. Use a flat-blade screwdriver to release the cover-locking tab (door hinge side; callout 2)



### 1,500-sheet feeder right-side cover (2 of 3)

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



**1,500-sheet feeder right-side cover (3 of 3)**



## 1,500-sheet feeder control PCA

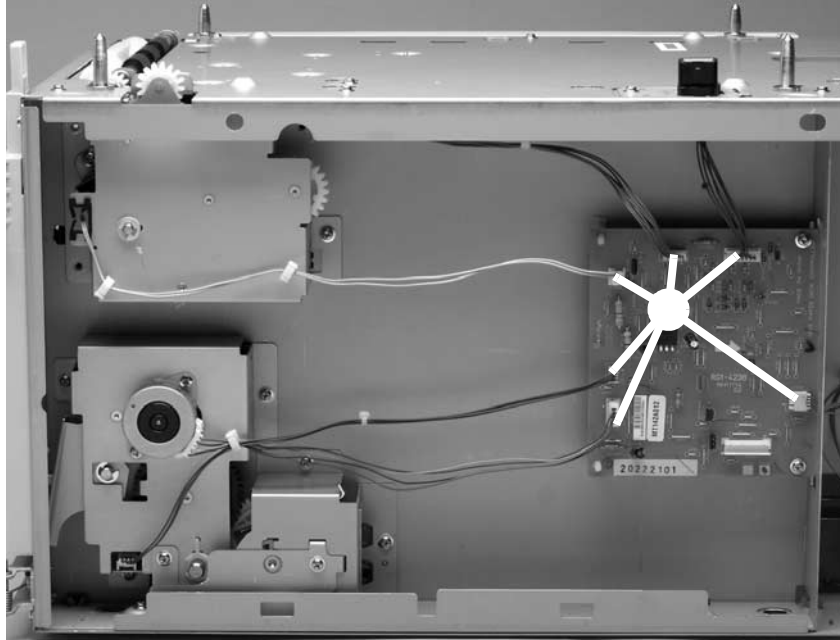
1. Remove the following assemblies:

Door. See

Rear and right-side covers. See

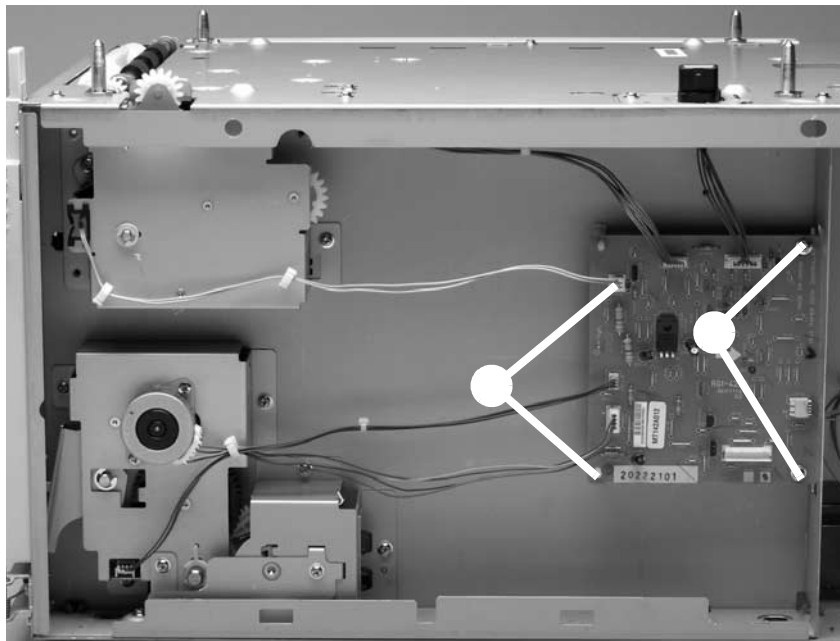
and

2. Unplug six wire-harness connectors (callout 1).



### 1,500-sheet feeder control PCA (1 of 2)

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



### 1,500-sheet feeder control PCA (2 of 2)

## 1,500-sheet feeder media-size sensor

1. Remove the following assemblies:

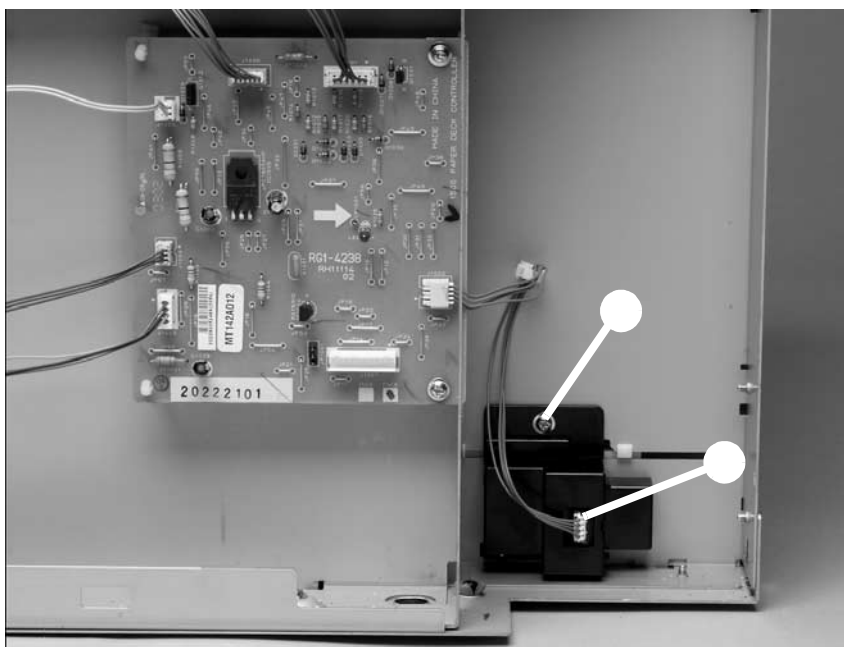
Door. See

Rear and right-side covers. See

and

2. Unplug the sensor wire-harness at the sensor (callout 1).
3. Remove one screw (callout 2).
4. Remove the sensor.

Two plastic locator pins are on the back of the sensor. Be careful not to break them when the sensor is removed.



## 1,500-sheet feeder media-size sensor

When you install the sensor, verify that the sensor body is flush with the chassis.

## 1,500-sheet feeder lifter-drive assembly

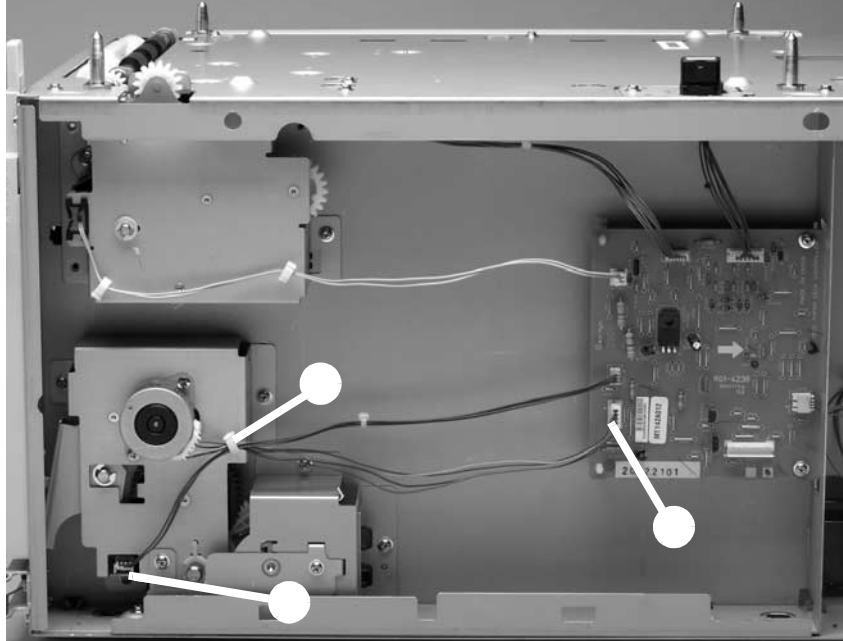
1. Remove the following assemblies:

Door. See

Rear and right-side covers. See

and

2. Unplug the lifter-drive harness connector from the PCA (location J1003; callout 1).
3. Unplug the lifter-drive sensor harness from the sensor (callout 2) and remove the sensor harness from the wire clip (callout 3).

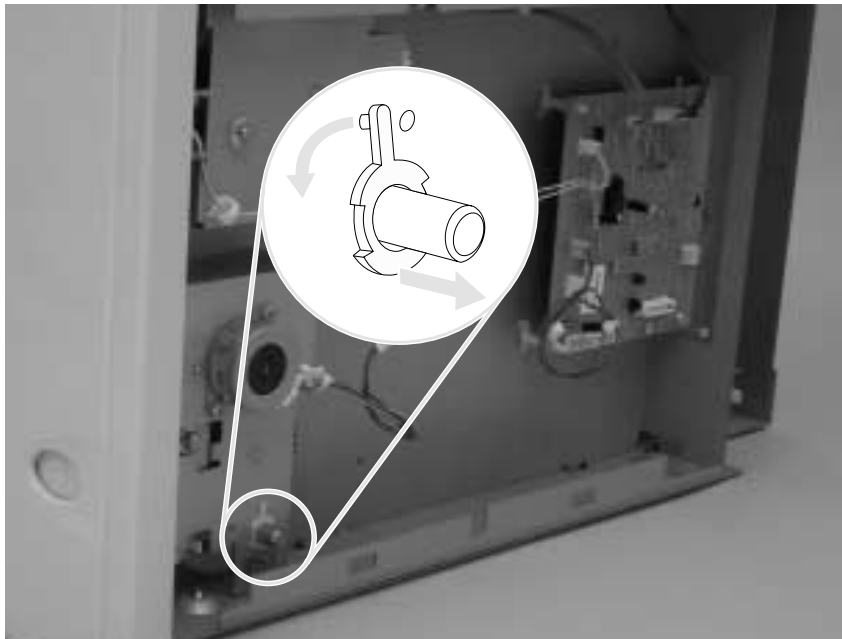


1,500-sheet feeder lifter-drive assembly (1 of 4)

4. Remove seven screws (callout 4) and then remove the bracket (callout 5).
5. Slide the spring-gear assembly (callout 6) away from the chassis until the gear shaft clears the hole in the chassis. Slide the assembly towards the rear of the feeder and then remove it.

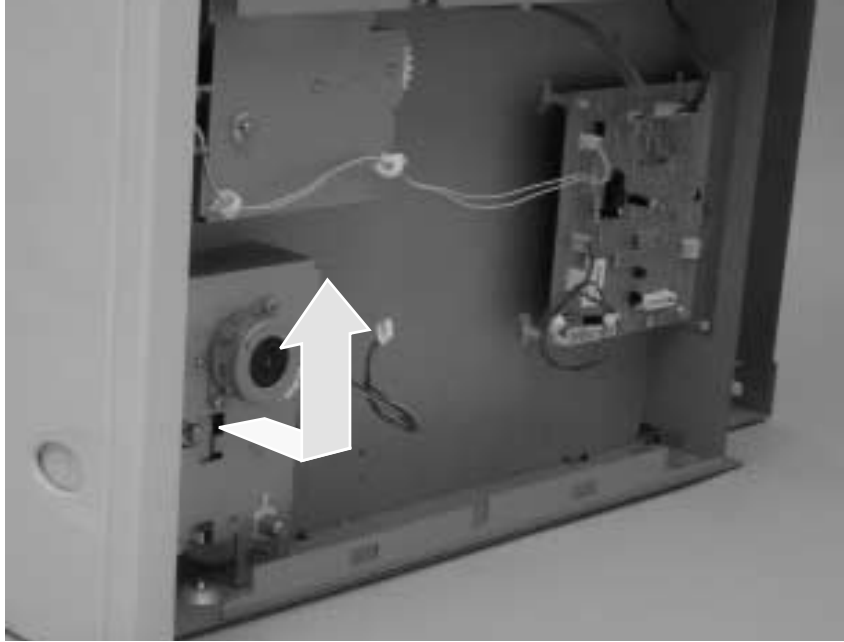
#### **1,500-sheet feeder lifter-drive assembly (2 of 4)**

6. Release the lifter-gear shaft-collar locking pin and rotate the collar until the inner locking tabs align with the corresponding holes in the bracket. Slide the collar off of the shaft.






#### **1,500-sheet feeder lifter-drive assembly (3 of 4)**

7. Slide the lifter-drive assembly away from the chassis until the lifter-drive gear-shaft clears the corresponding hole in the bracket. Remove the assembly.

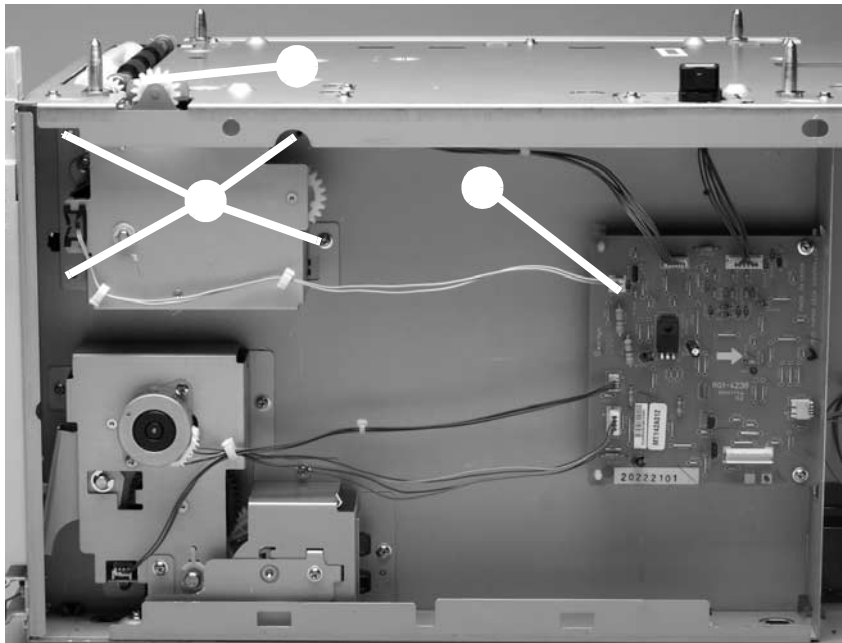


**1,500-sheet feeder lifter-drive assembly (4 of 4)**

## 1,500-sheet feeder paper-pickup drive assembly

1. Remove the following assemblies:  
Door. See .  
Rear and right-side covers. See  and .
2. Unplug the paper-pickup drive-solenoid harness connector from the assembly PCA (location J1005; callout 1). Remove four screws (callout 2).
3. Reach inside the 1,500-sheet feeder and push the rear feed roller up into its raised position (this will disengage the roller lifting arm from the clutch gear).
4. Remove the paper-pickup drive assembly.

The top gear (callout 3) is not captive when the paper-pickup gear assembly is removed. It can easily slide off of the shaft and be lost.



### 1,500-sheet feeder paper-pickup drive assembly

When you install the paper-pickup drive assembly, reach up inside the 1,500-sheet feeder and push the rear feeder roller up into its raised position. Position the paper-pickup drive assembly onto the chassis (it should sit flush against the chassis) and then lower the roller into its resting position. This ensures that the feeder lever correctly rests on the clutched gear in the paper-pickup drive assembly.

# Troubleshooting

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

This chapter contains the following sections:

**Troubleshooting process** This section includes an initial troubleshooting checklist and a troubleshooting flowchart. These contain information about common printer errors that can inhibit proper operation or create print-quality problems. They also include recommendations for resolving the cause of the problem. See

**Troubleshooting tools** This section contains information that helps to isolate the cause of printer failures. This section contains information about printing information and test pages, resetting printer options, using the diagnostics and service menus, and using the embedded Web server. See

**Interface troubleshooting** This section provides techniques for isolating the source of communication problems to the printer hardware, the printer configuration, the network configuration, or the software application. See

**Display-message troubleshooting** This section explains each control-panel-display message and suggests recommendations for resolving the cause of each message. When the printer message indicates a failure for which the root cause is not obvious, use the printer error troubleshooting section and the troubleshooting tools section found later in this chapter to solve the problem. See

**Paper-path troubleshooting** This section provides information to help solve feed problems, including print media checks, jam troubleshooting checks, and information about media-caused and printer-caused jams. See

**Image-formation troubleshooting** This section explains methods for solving print-quality problems. See

**Stacker and stapler/stacker troubleshooting** This section provides information about solving stacker and stapler/stacker problems. See

**Printer and accessory components** This section contains illustrations and tables that list the printer and accessory internal components. See  
and

**Printer and accessory wiring diagrams** This section contains wiring diagrams for the printers and accessories. See

**General timing diagrams** This section contains timing diagrams for the printer. See

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

Use the initial troubleshooting checklist to evaluate the source of the problem and to reduce the number of steps that are required to fix the problem.

Use the troubleshooting flowchart to pinpoint the cause of malfunctions. The flowchart lists the section within this chapter that provides steps for correcting the malfunction.

Before beginning any troubleshooting procedure, check the following:

Are supply items (for example, the print cartridge, fuser, and rollers) within their rated life?

Does the configuration page reveal any configuration problems? See

The customer is responsible for checking and maintaining supplies, and for using supplies that are in good condition. The customer is responsible for media and print-cartridge supplies. The customer is also responsible for replacing the fuser, transfer roller, and all paper pickup, feed, and separation rollers (tray 1 has a separation pad instead of a roller) that are at or near the end of their 200,000-page rated life.

## Initial troubleshooting checklist

The following checklist contains basic questions that you can ask the customer to help define the problem(s) quickly. For more information about printer and media specifications, see [Chapter 1](#) and [Chapter 2](#).

**Table 37. Initial troubleshooting checklist**

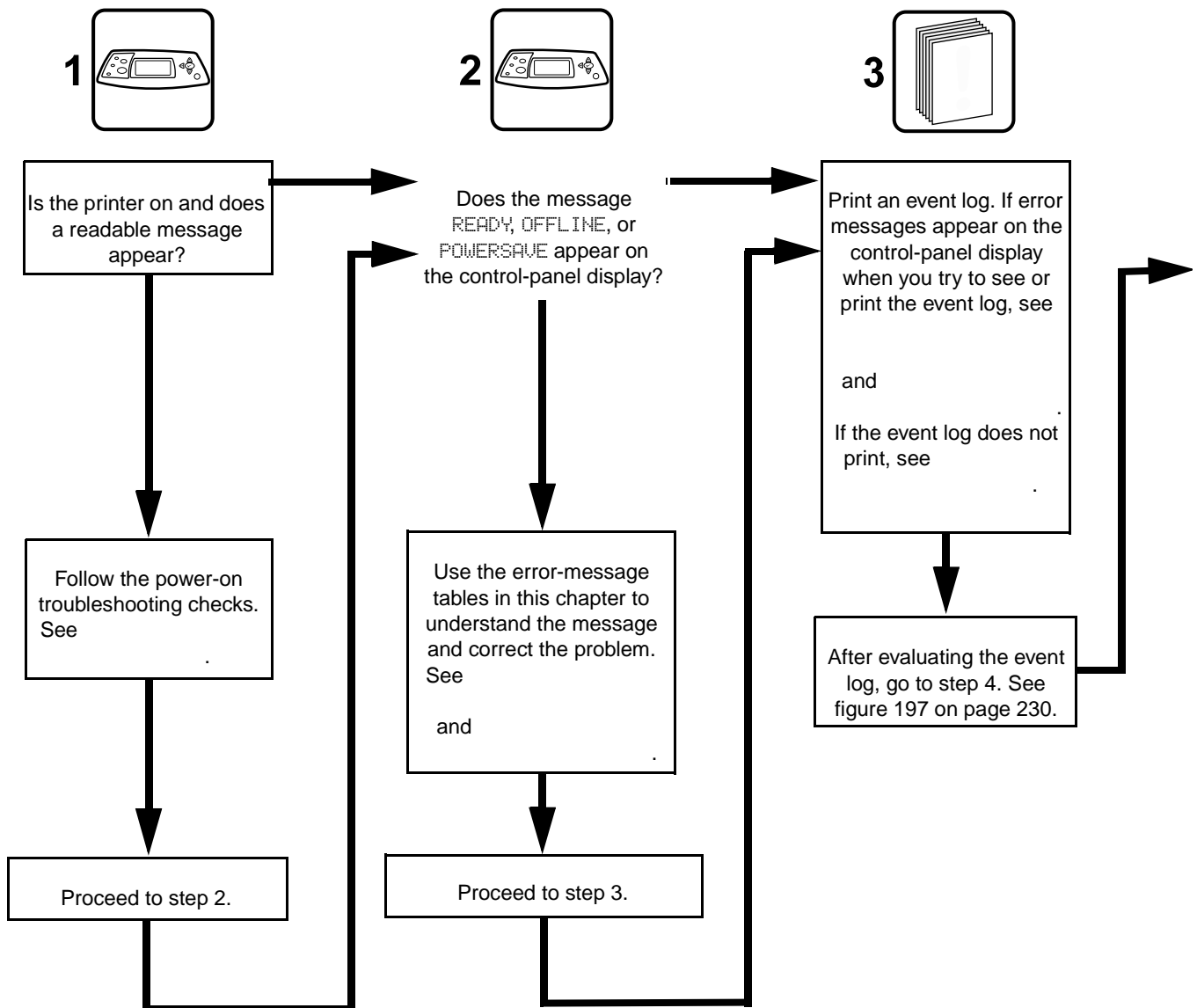
<b>Environment</b>	<p>Is the printer installed in a suitable environment? See <a href="#">Chapter 1</a>.</p> <p>Is the printer installed on a solid, level surface?</p> <p>Is the supply voltage (from the wall receptacle) within <math>\pm 10</math> percent of the printer's rated voltage (see <a href="#">Table 36</a>)?</p> <p>Is the power cord fully seated into both the printer and the wall receptacle?</p> <p>Is the operating environment (for example, the temperature and humidity levels) within the specified parameters that are listed in chapter 1 (see <a href="#">Table 36</a>)?</p> <p>Is the printer exposed to ammonia gas, such as that produced by diazo copiers or office-cleaning materials?</p> <p>Is the printer exposed to direct sunlight?</p>
<b>Media</b>	<p>Is suitable media being used in the printer? See <a href="#">Chapter 2</a> and <a href="#">Table 38</a>.</p> <p>Does the customer use only supported print media?</p> <p>Is the media in good condition (no curls, folds, or other flaws)?</p> <p>Is the media stored correctly and within environmental limits?</p> <p>Is the correct side of the page printed on first?</p> <p>Is long-grain paper being used?</p>
<b>Input trays</b>	<p>Is the correct amount of media loaded in the tray (not stacked above the arrows embossed in the tray)?</p> <p>Is the media placed in the tray correctly?</p> <p>Are the paper guides aligned with the paper?</p> <p>Is the tray cassette installed correctly in the printer?</p>
<b>Print cartridge</b>	<p>Is the print cartridge installed correctly?</p>
<b>Fuser</b>	<p>Is the fuser installed correctly? See <a href="#">Chapter 2</a>.</p>
<b>Covers</b>	<p>Is the top cover closed?</p>
<b>Condensation</b>	<p>Does condensation occur following a temperature change (particularly in winter following cold storage)? If so, wipe off the affected parts or leave the printer on for 10 to 20 minutes and then attempt to resume printing.</p> <p>Was a print cartridge opened soon after it was moved from a cold room to a warm one? If so, allow the print cartridge and the printer to acclimate to room temperature for one to two hours.</p>
<b>Miscellaneous</b>	<p>Are any non-HP components installed? Check for any non-HP components (print cartridges, memory modules, and EIO cards) installed in the printer and remove them. Hewlett-Packard recommends the use of HP components in its printers.</p> <p>Remove the printer from the network, and make sure that the failure is associated with the printer before beginning troubleshooting.</p>

## Troubleshooting flowchart

The flowchart on these two pages highlights the general processes you can use to isolate and solve printer hardware problems quickly.

Each heading depicts a major troubleshooting step. A “yes” answer to a question allows you to proceed to the next major step.

A “no” answer indicates that additional testing is needed. Proceed to the appropriate section in this chapter, and follow the instructions there. After completing the instructions, proceed to the next major step in this troubleshooting flowchart.



Troubleshooting flowchart (1 of 2)

## Troubleshooting flowchart (continued)

4



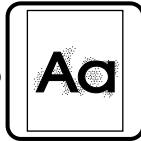
Can you print a configuration page?

Print an event log. If error messages appear on the control-panel display when you try to see or print the configuration page, see

and

After evaluating the configuration page, go to step 5.

5

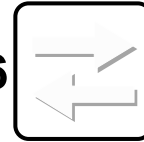


Does the print quality meet customer requirements?

Compare the images with the sample defects in the image defect tables. See

After meeting print quality requirements, go to step 6.

6



Can the customer print successfully from the host computer?

Repeat the control-panel error-message actions and image-defect corrective actions until all errors and image defects are corrected.

See

and

and

## Troubleshooting flowchart (2 of 2)

## Power-on checks

The basic printer functions should start up as soon as the printer is plugged into an electrical wall receptacle and the power switch is pushed to the *on* position.

### Overview

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

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

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

If the fan and main motor are operating correctly, the next troubleshooting step is to separate print engine, formatter, and control-panel problems. Perform an engine test (see [Chapter 7](#)). If the formatter is damaged, it might interfere with the engine test. If the engine test page does not print, try removing the formatter and then performing the engine test again. If the engine test is then successful, the problem is almost certainly with the formatter, the control panel, or the cable that connects them.

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

1. Make sure that the printer is plugged into an active electrical outlet that delivers the correct voltage.
2. Make sure that the on/off switch is in the *on* position.
3. Make sure that the fan runs briefly, which indicates that the power supply is operational.
4. Make sure that the control panel display wire-harness is connected. See the hint in the procedure for [Figure 7-1](#).
5. Make sure that the firmware DIMM and the formatter are seated and operating properly. See [Figure 7-2](#).
6. Remove any HP Jetdirect or other EIO cards, and then try to turn the printer on again.

If the printer control-panel display is blank, but the main cooling fan runs briefly after the printer power is turned on, try printing an engine test page to determine whether the problem is with the control-panel display, formatter, or other printer components. See [Figure 7-3](#).

If the main cooling fan is not operating, check the following items.

7. Check the fuse on the power supply (location FU2; near the power switch) to make sure that it is not open.
8. If necessary, replace the power supply. See [Figure 7-4](#).
9. If necessary, replace the dc controller PCA. See [Figure 7-5](#).

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




**Table 38. Power-on defect or blank display**

Problem	Action
	Make sure that the power cord is firmly plugged into the wall receptacle and connected to the printer.
	Measure the voltage at the outlet. If necessary, plug the power cord into another circuit outlet.
	<p>Set the switch to the <i>on</i> position. You should hear the switch toggle. If the front right-side cover has been removed recently, make sure that the rod connecting the power supply switch moves as you toggle the switch. See the reinstall note in .</p> <p>If the printer still does not turn on, the power switch might be defective.</p> <ol style="list-style-type: none"><li>1. Remove the power supply.</li><li>2. Measure the resistance between the two terminals of the power switch (SW1) by applying the tester probes to the terminals. The resistance must be low (under 1 K<math>\Omega</math>) when the power is turned on, and high (over 6 M<math>\Omega</math>) when the switch is turned off.</li><li>3. Replace the power supply, if necessary.</li></ol>
	Wait for more than two minutes before turning the printer back on.
	<ol style="list-style-type: none"><li>1. Check the fuses (FU1 and FU2) on the power supply.</li><li>2. Replace the power supply if necessary.</li></ol>
	<p>An operational fan indicates the following:</p> <ul style="list-style-type: none"><li>ac power is present in the printer.</li><li>dc power supply is functional (24 V, 5 V, and 3.3 V are being generated).</li><li>The dc controller's microprocessor is functional.</li></ul> <p><b>If the fan is not working:</b></p> <ol style="list-style-type: none"><li>1. Turn the printer off and remove the formatter. Disconnect the optional accessories.</li><li>2. Turn the printer on and check the fan again.</li></ol> <p><b>If the fan is still not working:</b></p> <ol style="list-style-type: none"><li>1. Verify that the fan is connected to the power supply.</li><li>2. Replace the fan. See .</li><li>3. Replace the power supply assembly. See .</li><li>4. Replace the dc controller. See .</li></ol> <p>The fan only operates during the initial startup and while printing, and when the temperature inside the printer is too high. If the temperature is too high, the fan turns on to cool the inside of the printer.</p>







**Table 38. Power-on defect or blank display (continued)**

<b>Problem</b>	<b>Action</b>
	<ol style="list-style-type: none"><li>1. Print an engine test.</li><li>2. If the engine test is successful, perform the following steps, in order.<ol style="list-style-type: none"><li>Reseat the control panel and formatter connector. See <a href="#">Figure 38-1</a> and <a href="#">Figure 38-2</a>.</li><li>Replace the control panel cable. See <a href="#">Figure 38-3</a>.</li><li>Replace the control panel assembly. See <a href="#">Figure 38-4</a>.</li><li>Replace the firmware DIMM. See <a href="#">Figure 38-5</a>.</li><li>Replace the formatter. See <a href="#">Figure 38-6</a>.</li></ol></li><li>3. If the engine test is not successful, remove the formatter and attempt to perform the engine test again. If the engine test is successful with the formatter removed, replace the formatter. See <a href="#">Figure 38-7</a>. If the test is not successful with the formatter removed, replace the dc controller PCA. See <a href="#">Figure 38-8</a>.</li></ol>


Press the  button to open the menus. Use the  button or the  button to scroll through the menus that appear. For more information about control panel menus, see [Chapter 4](#). The high-level menus appear in the following order:

RETRIEVE JOB	INFORMATION
PAPER HANDLING	CONFIGURE DEVICE
DIAGNOSTICS	SERVICE

## Information pages

1. Press the  button to open the MENUS.
2. Press the  button to scroll to INFORMATION.
3. Press the  button to select INFORMATION.
4. Press the  button to scroll to a listed information page. The following pages are available:

- Menu map
- Configuration
- Supplies status
- File directory
- Usage page
- PCL and PS font list

5. Press the  button to select and print the selected information page.

The informational pages for the printer are also available in the embedded Web server. Not all information pages are discussed in detail in this manual. For more information, see the *HP LaserJet 4200/4300 Use Guide*. The information pages include the following.

**Menu map:** A menu map shows how individual items are configured within the high-level (user-set values) menus. The last page of the menu map series describes instructions about how to use the control-panel buttons. *Print a menu map before changing printer settings or before replacing the formatter assembly.*

**Configuration page:** The configuration page lists printer configuration information. For example, the printer serial number and tray size settings appear on the configuration page. *Print a configuration page before servicing the printer to help restore values after servicing the printer.*

**Supplies status:** This page shows the levels of the printer supplies, a calculation of the number of pages that can be printed before the supplies are replaced, and cartridge-usage information.








**File directory:** This page provides information about files on the RAM disk or installed EIO disk drives and flash DIMMs if those memory accessories are installed.

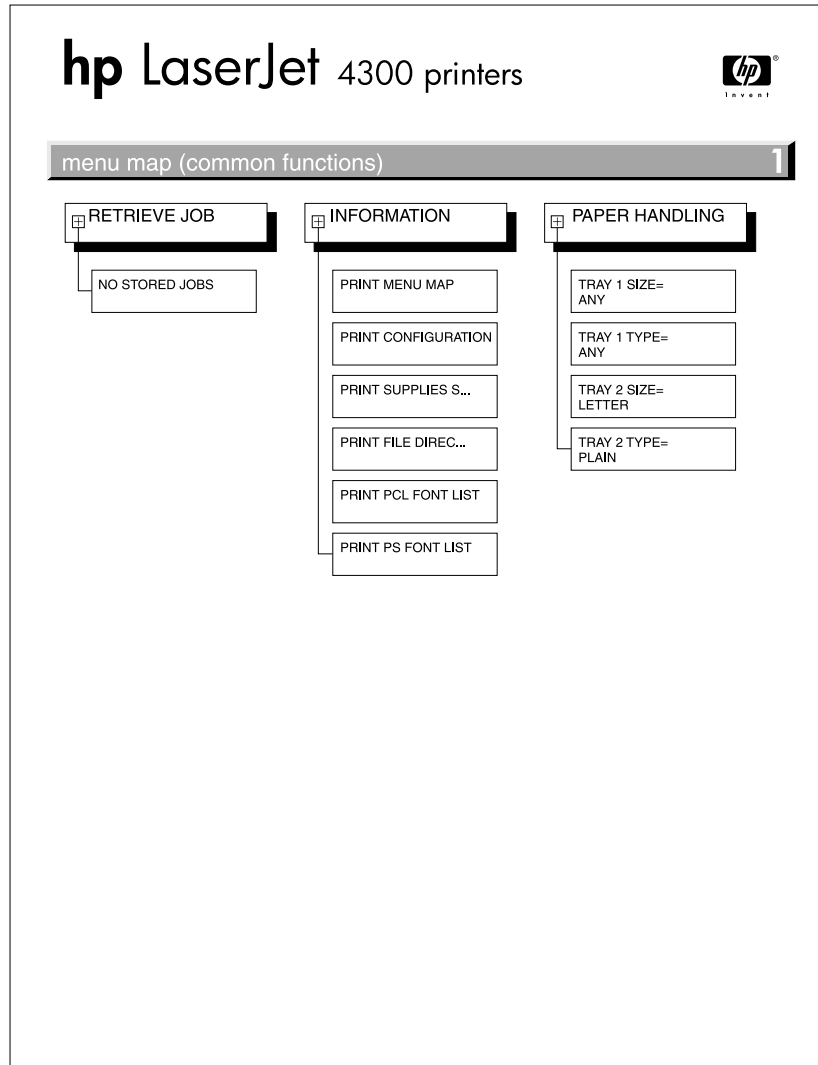
**Usage page:** The usage page is only available if an optional hard disk is installed. It provides useful accounting information (for example, the number of pages of various paper sizes that have been used and data that can be used to calculate toner usage).

**PS or PCL font list:** This page lists the fonts that are installed in the printer memory. This page also lists fonts on an optional hard-disk accessory or flash DIMM if those memory accessories are installed.

## Menu map

Use the menu map to help navigate the printer submenus and select configuration settings. Printing a menu map is very helpful when you are changing numerous printer settings.

1. Press the  button to open the menus.
2. Use the  button or the  button to scroll to **INFORMATION**, and then press the  button.
3. Use the  button or the  button to scroll to **MENU MAP**, and then press the  button.










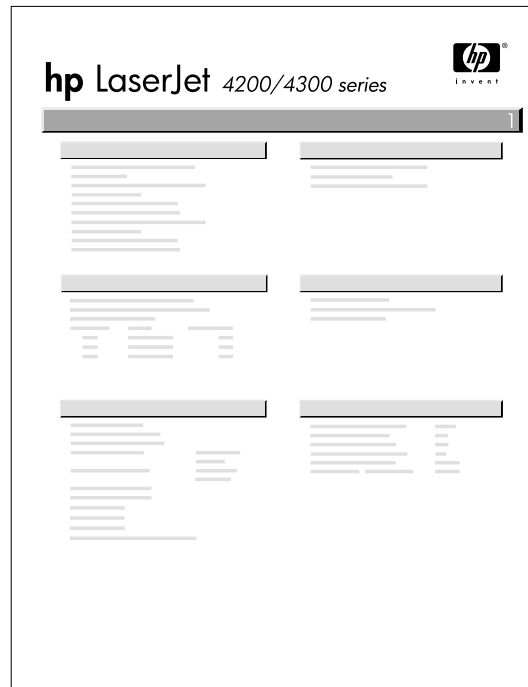
Sample menu map page

## Configuration page

Use the configuration page to view current printer settings, to help troubleshoot printer problems, or to verify installation of optional accessories, such as memory (DIMMs), trays, and printer languages. The content of the configuration page varies, depending on the options currently installed in the printer. To decode the service identification information on the configuration page, see

If an HP Jetdirect print server is installed, an HP Jetdirect configuration page prints as well. HP LaserJet 4200n/tn/dtn/dtns/dtnsL and 4300n/tn/dtn/dtns/dtnsL printers come with an HP Jetdirect printer server installed.

1. Press the  button to open the menus.
2. Use the  button or the  button to scroll to **INFORMATION**, and then press .
3. Use the  button or the  button to scroll to **PRINT CONFIGURATION**, and then press the .










### Configuration page

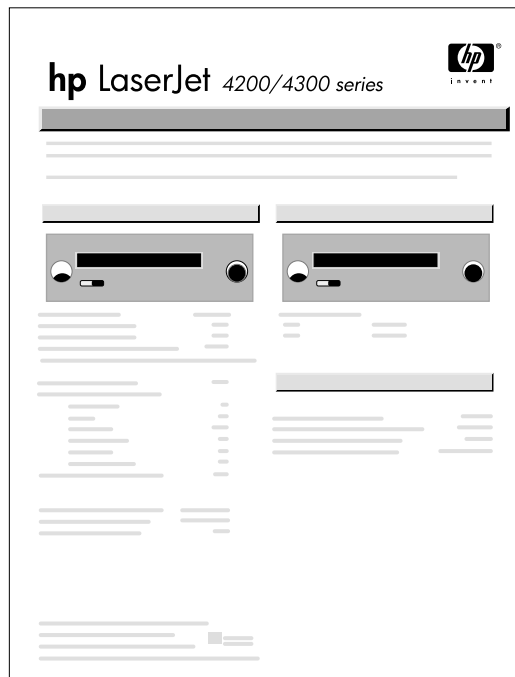
- |                                     |  |
|-------------------------------------|--|
| <b>A. Printer Information</b>       | Lists the serial number, page counts, printer number (dc controller revision), service ID (see <a href="#">Service ID</a> ), and other printer information |
| <b>B. Event log</b>                 | Lists the three most recent event log entries (numeric codes for printer events)   |
| <b>C. Personalities and options</b> | Lists installed personalities and options (such as PS and PCL languages) and installed optional DIMM(s) or EIO accessories                                 |
| <b>D. Memory</b>                    | Lists the printer memory and I/O buffering and resource saving information   |
| <b>E. Security</b>                  | Lists the status of the control-panel lock, control-panel password, and any disk drives  |

- |                            |   |
|----------------------------|---|
| F. Paper trays and options | Lists the size and type settings for all trays and lists optional paper-handling accessories that are installed |
|----------------------------|---|

## Supplies status page

Use the supplies status page to obtain information about the print cartridge installed in the printer, the amount of life left in the print cartridge, and the number of pages and jobs that have been processed. The page also lets you know when you should perform the next preventive maintenance.

1. Press the  button to open the menus.
2. Use the  button or the  button to scroll to **INFORMATION**, and then press the  button.
3. Use the  button or the  button to scroll to **PRINT SUPPLIES STATUS PAGE**, and then press the  button.



## Supplies status page

- |                          |   |
|--------------------------|---|
| A. Supplies website      | Lists the website for ordering supplies over the Internet   |
| B. Cartridge information | Provides information about the amount of toner available in the print cartridge, and shows the print-cartridge part number and estimated pages that can be printed for the amount of toner in the cartridge |
| C. Printing statistics   | Lists statistics about the total number of pages and jobs that have been processed using this print cartridge, the first and last use date for the cartridge, and the print cartridge serial number         |
| D. Recycle website       | Lists the website for information about returning used HP print cartridges  |
| E. Maintenance kit gauge | Shows a gauge to let you know the remaining life of the maintenance kit components  |

## Embedded Web server

When the printer is directly connected to a computer, the embedded Web server is supported for Windows 95 and later. In order to use the embedded Web server with a direct connection, you must choose the Custom installation option when you install the printer driver. Select the option to load Printer Status and Alerts. The proxy server is installed as part of the Printer Status and Alerts software.

When the printer is connected to the network (by using a HP Jetdirect print server EIO card), the embedded Web server is automatically available.

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

- view printer status information
- specify the type of media that is loaded in each tray
- determine the remaining life for all supplies and order new supplies
- view and change tray configurations
- view and change the printer control panel menu configurations
- view and print internal pages
- receive notification of printer and supplies events
- view and change the network configuration

To use the embedded Web server, you must have Microsoft Internet Explorer 4 and later or Netscape Navigator 4 and later. The embedded Web server works when the printer is connected to an IP-based network. The embedded Web server does not support IPX-based printer connections. You do not have to have Internet access to open and use the embedded Web server.

## Gaining access to the embedded Web server

In a supported Web browser on your computer, type the IP address for the printer. (To find the IP address, print a configuration page.)

After you navigate to the URL, you can bookmark it so that you can return to it quickly in the future.

The embedded Web server has three tabs that contain settings for and information about the printer: the **Information** tab, the **Settings** tab, and the **Network** tab. Click the tab that you want to view. See the following sections for more information about each tab.

## Information tab

The **Information** tab contains the following pages.

**Device Status.** Shows the printer status and the life that remains in HP supplies (0 percent represents that a supply is empty). This page also shows the type and size of print media set for each tray. To change the default settings, click **Change Settings**.

**Configuration page.** Shows the information that is contained on the printer Configuration page.

**Supplies Status.** Shows the life that remains in HP supplies (0 percent represents that a supply is empty). This page also provides supplies part numbers. To order new supplies, click **Order Supplies** in the **Other Links** area on the left side of the window. To visit this or any website, you must have Internet access.

**Event log.** Shows a list of all printer events and errors.

**Usage page.** Shows a summary of the number of pages the printer has printed, grouped by size and type (this page is only available if an optional hard disk is installed).

**Device Information.** Shows the printer network name, address, and model information. To change these entries, click **Device Information** on the **Settings** tab.

## Settings tab

Use the **Settings** tab to configure the printer from your computer. The **Settings** tab can be password protected. If the printer is on a network, always consult with the network administrator before changing settings on this tab.

The **Settings** tab contains the following pages.

**Configure Device.** Use this page to configure all the printer settings. This page contains the traditional printer menus: **Information**, **Paper Handling**, **Configure Device**, and **Diagnostics**.

**Alerts.** (On networks only.) Use this page to establish e-mail alerts for various printer and supplies events.

**E-mail.** (On networks only.) Use this page in conjunction with the Alerts page to set up incoming and outgoing e-mail, as well as to establish e-mail alerts.

**Security.** Use this page to set a password that must be typed to gain access to the **Settings** and **Networking** tabs. Also use it to enable and disable certain features of the embedded Web server.

**Other Links.** Use this page to add or customize a link to another website. The link you establish appears in the **Other Links** area on all embedded Web server pages. The following permanent links always appear in the **Other Links** area: HP Instant Support™, Order Supplies, and Product Support.

**Device Information.** Use this page to name the printer and assign an asset number to it. Use the name and e-mail address for the primary contact who will receive information about the printer.

**Language.** Use this page to specify the language in which the embedded Web server information appears.

## Networking tab

The network administrator uses this tab to control network-related settings for the printer when it is connected to an IP-based network. This tab does not appear if the printer is directly connected to a computer, or if the printer is connected to a network with anything other than an HP Jetdirect print server.

## Other links

This section of the embedded Web server contains links that connect you to the Internet. You must have Internet access in order to use any of these links. If you use a dial-up connection and did not connect when you first opened the embedded Web server, you must connect before you can visit these Web sites. Connecting to the Internet might require that you close your Web browser and reopen it.

**HP Instant Support™** connects to the HP website to help you find solutions. This service analyzes your printer error log and configuration information to provide diagnostic and support information that is specific to your printer.

**Order Supplies** connects to the HP website so you can order genuine HP supplies, such as print cartridges and paper.

**Product Support** connects to the support site for the HP LaserJet 4200/4300 printer, where you can search for help regarding general topics.

## Printer Status and Alerts software

Printer Status and Alerts is supported only for Windows 95 and later versions.

The Printer Status and Alerts software is available to users of both networked and directly connected printers. To use Printer Status and Alerts software with a directly connected computer, you must select the Custom installation option when you install the printer driver, and then select the option to install Printer Status and Alerts. For network connections, Printer Status and Alerts is installed automatically with the Typical software installation option.

Use this software to view the embedded Web server information for a particular printer. Printer Status and Alerts also generates messages on the computer that explain the status of the printer and print jobs. Depending on how the printer is connected, you can receive different messages.

**Networked printers.** You can receive regular job status messages that appear every time a print job is sent to the printer or every time the print job is complete. You can also receive alert messages. These messages appear when you are printing to a particular printer if that printer experiences a problem. In some cases, the printer can continue to print (such as when a tray that is not being used is open, or a print cartridge is low). In other cases, a problem might prevent the printer from printing (such as when paper is out, or a print cartridge is empty).

**Directly connected printers.** You can receive alert messages that appear when the printer experiences a problem but can continue printing or a problem that prevents it from printing. You can also receive messages that indicate that the print cartridge is low.

You can set alert options for a single printer that supports Printer Status and Alerts, or you can set alert options for all printers that support Printer Status and Alerts. For networked printers, these alerts only appear for your jobs.

Even if you set alert options for all printers, not all of the selected options will apply to all printers. For example, when you select the option to notify you when the print cartridges are low, directly connected printers that support Printer Status and Alerts generate a message when the print cartridges are low. However, none of the networked printers generate this message unless the alert affects a user-specific job.



## To select status messages

1. Open Printer Status and Alerts in one of these ways:
  - Double-click the **Printer Status and Alerts** tray icon, which is near the clock in the Tray Manager.
  - On the Start menu, point to **Programs**, point to **Printer Status and Alerts**, and click **Printer Status and Alerts**.
2. Click the **Options** icon on the left side of the window.
3. In the **For** field, select the printer driver for this printer, or select **All Printers**.
4. Clear the options for the messages that you do not want to appear, and select the options for the messages that you do want to appear.
5. In **Status check rate**, select how frequently you want the software to update the printer-status information that the software uses to generate the messages. The status check rate might not be available if the network administrator has restricted the rights to this function.

## To view status messages and information

On the left side of the window, select the printer for which you want to see information. The information that is provided includes status messages, supplies status, and printer capabilities. You can also click the job history (clock) icon at the top of the window to view a list of previous jobs that were sent to the printer from your computer.

Use the control-panel menus to control various printer functions. For example, you can use the **Resets** submenu to quickly reset and restore most of the factory default printer settings. Not all of the available menus are described in this manual. For more information about control-panel menus, see .

### Using control-panel menus

1. Press the (OK) button to open the menus.
2. Use the (Up) button or the (Down) button to scroll to the menu that you want, and then press the (OK) button.
3. Some menus might have several submenus. Use the (Up) button or the (Down) button to scroll to the submenu item that you want, and then press the (OK) button.
4. Use the (Up) button or the (Down) button to scroll to the setting, and then press the (OK) button. An asterisk (\*) appears next to the selection on the display, indicating that it is now the default. Some settings change rapidly if the (Up) button or the (Down) button is held down.
5. Press to close the menu.

### Resets submenu

To find the **Resets** submenu, use the control panel to open the **Configure Device** menu (see . and ). Items on the Resets submenu are used to return settings to the defaults and to change settings such as PowerSave.

The following section lists the settings and their possible values in the **Resets** submenu. The default value for each setting is the one that has an asterisk (\*) next to it.

Table 39. Resets submenu





Item	Values	Explanation
RESTORE FACTORY SETTINGS	No values available.	Performs a simple reset and restores most of the factory (default) settings. This item also clears the input buffer for the active I/O. Restoring factory settings does not affect the network parameter settings on the optional HP Jetdirect print server.  Restoring memory during a print job cancels the print job.
POWERSAVE	OFF *ON	Turns the PowerSave mode on or off. The PowerSave mode affects the printer in two ways:  minimizes the amount of power that the printer consumes when it is idle  reduces wear on the electronic components in the printer (for example, it turns off the display backlight, although the display can still be read)  The printer automatically leaves the PowerSave mode when you send a print job, press a printer control panel button, open a tray, or open the top cover.  You can set the amount of time that the printer remains idle before it enters the PowerSave mode. For more information see .

## Diagnostics menu

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

The following section lists the settings and their possible values in the **Diagnostics** menu. The default value for each setting is the one that has an asterisk (\*) next to it.

**Table 40. Diagnostics menu**












Item	Values	Explanation
PRINT EVENT LOG	No values available.	Press the  button to generate a list of the 50 most recent entries in the event log. The printed event log shows the error number, page count, error code, and description or personality that was in use when the event occurred.
SHOW EVENT LOG	No values available.	Use the  button or the  button to scroll through the event log contents.
PAPER PATH TEST	No values available.	Generate a test page, which is useful for testing the paper-handling features of the printer.
PRINT TEST PAGE	PRINT TEST PAGE	Press the  button to start the paper-path test using the source (tray), destination (output bin), duplex, and number of copies settings that you set in the other items on the Paper Path Test menu. Set the other items before choosing PRINT TEST PAGE.
SOURCE	SOURCE ALL TRAYS TRAY 1 *TRAY 2 TRAY [N]	Select the tray for the paper path that you want to test. You can select any tray that is installed. Select ALL TRAYS to test the paper path for every tray. (Paper must be loaded in the selected trays.)
DESTINATION	DESTINATION ALL BINS *STANDARD OUTPUT OPTIONAL BIN 1	Select the output bin for the paper path that you want to test. You can select any output bin that is installed. Optional bins (stacker or stapler/stacker bin) must also be correctly configured. Select ALL BINS to test the paper path for every bin.
DUPLEX	DUPLEX *OFF ON	Determine whether or not the paper goes through the duplexer during the paper path test. This item is available only if the duplexer is installed.
COPIES	COPIES *1 10 50 100 500	Set how many sheets of paper are used from each tray during the paper-path test. If you are testing the stapling function of the optional stapler/stacker (DESTINATION item OPTIONAL BIN 1), you must select 10 copies.

## Service menu (service PIN codes)

Authorized HP service technicians can use this menu to gain access to printer settings that are reserved for service personnel. The service menu is protected by use of a personal identification number (PIN). When you select **SERVICE** from the list of menus, you are prompted to type an eight-digit PIN code.

The printer automatically exits the service menu after about one minute if no menu items are selected or changed.

Use the **PIN code 11420002** for the **HP LaserJet 4200 product** and the **PIN code 11430002** for the **HP LaserJet 4300 product**.

1. Press the  button to open the menus. Use the  button or the  button to scroll to **SERVICE**, and then press the  button.
2. Press the  button or the  button until the first digit of the PIN code appears. Press the  button to save that digit. Repeat this selection procedure until you have typed the entire eight-digit PIN code. You can use the  button to return to a PIN digit. When the last digit is saved, the service submenu appears on the control-panel display.
3. Use the  button or the  button to scroll to the service-menu item that you want, and then press the  button.

**Clear event log.** Select this item to clear (reset to zero) the internal event log.

**Total page count.** Select this item to set the total number of pages that have been printed to-date. Typically this is only required when a new formatter is installed.

**Maintenance count.** Select this item to set the number of pages that have been printed since the last maintenance kit was installed or the total number of pages that have been printed on this printer if a maintenance kit has not yet been installed (during the first 200,000 pages).

**Maintenance interval.** Select this item to specify the number of pages that can be printed before a maintenance-kit-required message appears on the control-panel display to indicate that a maintenance kit is required.

**Serial number.** Select this item to update the serial number if you replace the formatter.

**Service ID.** Select this item to specify the date when the printer was first used, rather than the date when a replacement formatter is installed. See

**Cold reset.** Select this item to reset the default paper size when you replace the formatter or restore factory settings (see [Cold reset](#)). When you replace a formatter or restore factory settings in a country/region that uses A4 as the standard paper size, use this item to reset the default paper size to A4 (see [Cold reset](#)). Letter and A4 are the only cold-reset values available.

## Service ID

This information appears on the configuration page (see [Figure 7-1](#)), which eliminates the need for customers to keep paper receipts for proof of the warranty. Because the printer does not have an internal clock, the availability of the service ID date depends on the printer being connected to a source that can provide the date, in this case a time server on the same network as the printer. When the printer is not connected to a date source, the service ID is not available, and 00000 appears on the configuration page.

## Restoring the Service ID

If you replace the formatter, the date is lost. Use this menu item to reset the value to the date that the printer was first used. The date format is YYDDD. Use the following procedure to calculate the date.

1. To calculate YY, subtract 1990 from the calendar year. For instance, if the printer was first used in 2002, calculate YY as follows:  $2002 - 1990 = 12$  (YY = 12).
2. To calculate DDD, use the following formula:  
 $30 (\text{calendar month} - 1) + \text{calendar day} = \text{DDD}$ . If the calendar day is 31, use 30 instead. For instance, if the printer was first used on October 17, calculate DDD as follows:
  - a. Subtract 1 from 10 (October is the tenth month of the year):  $10 - 1 = 9$ .
  - b. Multiply 9 by 30:  $9 \times 30 = 270$ .
  - c. Add 17 to 270:  $270 + 17 = 287$  (DDD = 287).

## Converting the Service ID to an actual date

You can use the printer's Service ID number to determine whether the printer is still under warranty. Use the following procedure to convert the Service ID into the installation date.

1. Add 1990 to YY to determine the actual year that the printer was installed.
2. Divide DDD by 30 and add 1 to the remainder. The total is the month.
3. The remainder from the calculation in step 2 is the day of the month.

Using the Service ID 12287 as an example, the date conversion is as follows:

$12 + 1990 = 2002$ , so the year is 2002.

$287 \text{ divided by } 30 = 9 \text{ with a remainder of } 17$ . Add 1 to 9 to get 10 so the month is October.

The remainder (from the above calculation) is 17, so that is the day of the month.

The complete date is 17-October-2002.






A 6-day grace period is built into the date system.

## Cold reset

A cold reset unlocks menus that have been previously locked and sets all control panel menu items (including EIO settings) back to the factory defaults. However, it *does not* clear the values in the service menu (such as the serial number and page counts).

Before performing a cold reset, print a menu map and a configuration page (see [Figure 1-1](#) and [Figure 1-2](#)). Use the information on the configuration page to reset any customer-set printer configuration values that the cold reset procedure changes.

### To perform a cold reset







1. Turn the printer power off.
2. Hold down the  button, and then turn the printer power on. Continue holding down the  button until all three printer control-panel lights flash once and then remain on. This might take up to 10 seconds.
3. After the message `SELECT LANGUAGE` appears on the display, press the  button or the  button until `COLD RESET` is highlighted.
4. Press the  button. The printer performs a cold reset and then continues its power-on sequence.
5. Check all I/O settings and reset any customer-set printer configuration values.

## NVRAM initialization

Initializing the NVRAM resets the serial number, the event log, the page counts, and the EIO card (Initializing the NVRAM *will* reset service menu values to factory defaults). Use the service menu to restore the serial number and page counts. Also reconfigure any computers that print to this printer so that the computers can recognize the printer. Initialize the NVRAM only when absolutely necessary. In most situations, use a cold reset rather than a NVRAM initialization to reset printer settings (this will retain the values in the service menu).

Before performing a NVRAM initialization, print a menu map and a configuration page (see [Figure 1-1](#) and [Figure 1-2](#)). Use the information on the configuration page to reset any customer-set printer configuration values that the NVRAM initialization procedure changes. Take special note of the *total page count*, *maintenance count*, and the *serial number*.

### To initialize NVRAM

1. Remove any installed accessories (for example, a stapler/stacker).
2. Turn the printer power off.
3. Hold down the  button, and then turn the printer power on. Continue holding down the  button until all three printer control panel lights flash once and then remain on. This might take up to 10 seconds.
4. Press the  button.
5. Press the  button. The display should show `SKIP DISK LOAD`.
6. Press the  button until `NVRAM INIT` is highlighted.
7. Press the  button. The printer initializes NVRAM and then continues its power-on sequence.

## Hard-disk initialization

A hard-disk initialization erases and reformats the printer hard disk. Perform a hard-disk initialization only if an error code on the control panel indicates an EIO disk error. Always try initializing the hard disk before replacing it.

Before performing a hard-disk initialization, print a menu map and a configuration page (see [Figure 7-1](#) and [Figure 7-2](#)). Use the information on the configuration page to reset any customer-set printer configuration values that the hard-disk initialization procedure changes.

### To initialize the hard disk

1. Turn the printer power off.
2. Hold down the [Power](#) button, and then turn the printer power on. Continue holding down the [Power](#) button until all three printer control panel lights flash once and then remain on. This might take up to 10 seconds.
3. Press the [Left Arrow](#) button. The display should show `INITIALIZE DISK`.
4. Press the [Right Arrow](#) button. The printer initializes the hard disk and continues its power-on sequence.

## Power-on bypass







When the power is turned on the printer begins the power-on sequence. By performing a power-on bypass, you can cause the printer to resume the power-on sequence but not to recognize any installed EIO hard disk (skip disk load procedure). This can be helpful in isolating EIO hard-disk errors.

You can also resume the power-on sequence but make the printer continuously print configuration pages until the [Stop](#) button is pressed (self test procedure). This can be helpful if you need to verify the printer components that are installed by reviewing the information on the configuration page, but you cannot open the menus to print a configuration page.

### Skip disk load

1. Turn the printer power off.
2. Hold down the [Power](#) button, and then turn the printer power on. Continue holding down the [Power](#) button until all three printer control panel lights flash once and then remain on. This might take up to 10 seconds.
3. Press the [Up Arrow](#) button followed by the [Right Arrow](#) button.
4. Press the [Up Arrow](#) button or the [Power](#) button until `SKIP DISK LOAD` is highlighted.
5. Press the [Right Arrow](#) button. The printer continues the power-on sequence but ignores an installed EIO hard disk.

## Self test

1. Turn the printer power off.
2. Hold down the  button, and then turn the printer power on. Continue holding down the  button until all three printer control panel lights flash once and then remain on. This might take up to 10 seconds.
3. Press the  button or the  button until SELF TEST is highlighted.
4. Press the  button. The printer continues the power-on sequence and begins to continuously printing configuration pages.
5. Press the  button to exit the self test.



Printing test pages helps you determine whether or not the printer engine and the formatter are functioning.

## Engine test page

To verify that the printer engine (all printer components *except* the formatter, formatter DIMMs, EIO products, and the stacker or stapler/stacker) is functioning, print an engine test page. Use a small, non-metallic, pointed object to depress the test-page switch, which is located on the right side of the printer (callout 1).

The test page should have a series of vertical lines. The test page will print from the last tray you printed from. However, if the printer has been turned off and then back on since the most recent print job, the page will print from tray 2. The printer will continuously print test pages as long as the test-page switch is depressed. The printer will not print a test page if it is in PowerSave mode.






A damaged formatter might interfere with the engine test. If the engine test page does not print, try removing the formatter and performing the engine test again. If the engine test is then successful, the problem is almost certainly with the formatter, the control panel, or the cable that connects them.



Engine test-page switch

## Formatter test page

To verify that the formatter is functioning, print a configuration.

1. Press the  button to open the `MENUS`.
2. Press the  button to scroll to `INFORMATION`.
3. Press the  button to select `INFORMATION`.
4. Press the  button to scroll to `PRINT CONFIGURATION`.
5. Press the  button to select `PRINT CONFIGURATION`.

## Communications checks

Communication problems are normally the customer's responsibility. Time spent attempting to resolve these problems might not be covered by the Hewlett-Packard product warranty.

Refer the customer to the network administrator for assistance in troubleshooting network problems.

If the printer is not connected directly to a Windows or MS-DOS-based host, see

HP LaserJet printers are not designed to work with mechanical switch-box products without proper surge protection. These devices generate high transient voltages that cause permanent damage to the formatter PCA. This circumstance is not covered by the Hewlett-Packard product warranty.

### Computer direct connect (parallel) test

After the printer is installed, verify communications by bypassing the Windows<sup>®</sup> driver between the printer and the IBM-compatible computer. Type the following information at the MS-DOS prompt:

```
C:\>DIR>LPT1 Enter (for printing to parallel port #1)
```

The printer should print a directory listing of the C: \ directory. You might need to press on the control panel to print the data that is in the buffer.

## EIO troubleshooting

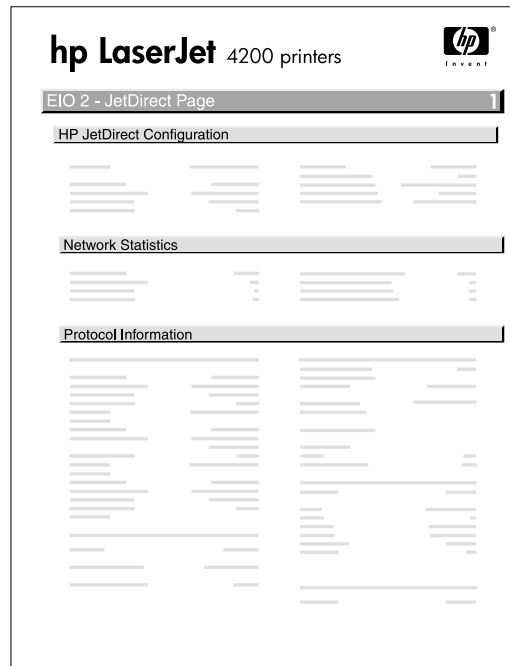
If the printer contains an optional HP Jetdirect print server, and you cannot communicate with the printer over the network, verify that the print server is operating. Print a configuration page (see ). If the Jetdirect card does not appear under "Installed personalities and options" on the configuration page, reseal or replace the Jetdirect EIO card. See the troubleshooting section of the *HP Jetdirect Print Server Software Administrators Guide*.

When the HP Jetdirect print server is installed correctly, print a Jetdirect page (this page automatically prints when a Jetdirect print server is installed and a configuration page is printed). See . The Jetdirect page contains valuable network-related information about the printer.

If the host system and printer are still not communicating, replace the formatter PCA and the EIO card and reconfigure the printer.

The following illustration shows the contents of the Jetdirect page.

## Jetdirect page



## Jetdirect page

- A. HP Jetdirect Configuration** If the EIO Jetdirect card is installed correctly and the printer completes its internal diagnostics, the `I/O CARD READY` status message prints. If communication is lost, an `I/O NOT READY` status message prints, followed by a two-digit error code. See the *HP Jetdirect Network Interface Configuration Guide* for further details and recommended action.
- B. Network Statistics** This block indicates that network activity has been occurring. Bad packets, framing errors, unsendable packets, and collisions should be minimal. If a high percentage (greater than one percent) of these occur, contact the network administrator. All of the statistics are set to zero when the printer is turned off.
- C. TCP/IP** In this block, the default IP address is "192.0.0.192." You can operate the printer by using this default address. The error message `ARP DUPLICATE ADDRESS` might appear in this block. This is an acceptable error code if the TCP/IP protocol is not being used. Check with the network administrator to determine the correct IP address for the printer. To configure the printer's IP address, go to the control panel EIO menu, select `CFG NETWORK=YES`, select `CFG TCP/IP=YES`, and then select `BOOTP=NO`.
- D. Novell/NetWare** This block should state the name of the Novell printer server to which the printer is connected. If the node name reads "NP1xxxxx" (where xxxxxx = the last six digits of the EIO LAN address), the EIO card has not been configured for a Novell server. This could indicate that the card is operating under protocol other than Novell. Check with the network administrator to determine what node name might be appropriate.


The following tables explain the messages that might appear on the control-panel display or in the event log. Alphabetical printer messages and their meanings are listed in [Table 1](#), and numerical printer messages are listed in [Table 2](#).

Not all messages are described in the tables; the messages that are not listed are self-explanatory.

## Status messages

Status messages reflect the current state of the printer. They inform you of normal printer operation and require no interaction to clear them. They change as the state of the printer changes. Whenever the printer is ready, is not busy, and has no pending warning messages, the status message `READY` appears if the printer is online.


## Warning messages

Warning messages inform you of data and print errors. These messages typically alternate with `READY` or with status messages and continue to appear until the  button is pressed. If `CLEARABLE WARNING` is set to `JOB` in the printer's configuration menu, these messages are cleared when the next print job is sent to the printer.

## Error messages

Error messages inform you that an action must be performed, such as adding paper or clearing a paper jam.

Some error messages are auto-continuable (these are not critical errors and the printer will continue to function). If the printer setting `AUTO CONTINUE=ON` is used, the error message will continue to appear for about 10 seconds and then the printer will resume printing.

Pressing any button while an auto-continuable error message appears on the control-panel display overrides the auto-continue feature, and the button's function will take precedence. For example, pressing the  button will cancel the job.





## Critical-error messages

Critical-error messages inform you of a device failure. Some of these messages can be cleared by turning the printer off and then on. These messages are not affected by the auto-continue setting. If a critical error persists, then service is required.

## Alphabetical printer messages

Not all messages are described in the tables; the messages that are not listed are self-explanatory.








**Table 41. Alphabetical printer messages**

Message	Description	Action
ACCESS DENIED MENUS LOCKED	An attempt has been made to modify a printer menu item, but the network systems administrator has enabled the control-panel security mechanism. The message will disappear shortly, and the printer will return to the ready state.	Contact the network system administrator to change settings.
BAD DUPLEXER CONNECTION	The duplexer is not functioning.	<ol style="list-style-type: none"> <li>1. Turn off the printer.</li> <li>2. Remove and then reinstall the accessory.</li> <li>3. Turn on the printer.</li> <li>4. Check the rear accessory power connector.</li> <li>5. If the error persists, replace the duplexer.</li> </ol>
BAD ENVELOPE FEEDER CONNECTION	The envelope feeder is not functioning.	<ol style="list-style-type: none"> <li>1. Turn off the printer.</li> <li>2. Remove and then reinstall the accessory.</li> <li>3. Turn on the printer.</li> <li>4. Check the front accessory power connector.</li> <li>5. If the problem persists, replace the envelope feeder.</li> </ol>
CANNOT DUPLEX Check rear bin or CANNOT DUPLEX Check Paper	The printer cannot perform the duplex function.	<ol style="list-style-type: none"> <li>1. Close the face-up bin before sending a duplex print job.</li> <li>2. Replace the duplexer.</li> <li>3. Replace the dc controller PCA. See .</li> </ol>
CARTRIDGE FAILURE For help press ? alternates with RETURN FOR REPLACEMENT For help press ?	The print cartridge contains part of the sealing tape.	<ol style="list-style-type: none"> <li>1. Try to remove the sealing tape.</li> <li>2. If the sealing tape cannot be removed, insert a new print cartridge and return the faulty print cartridge for replacement.</li> </ol>
CHOSEN PERSONALITY NOT AVAILABLE For help press ? alternates with CHOSEN PERSONALITY NOT AVAILABLE To continue press 	The printer job language (PJM) encountered a request for a personality that did not exist in the printer. The job is aborted and no pages print.	<ol style="list-style-type: none"> <li>1. Press the  button for detailed information.</li> <li>2. Press the  button and the  button to step through the instructions.</li> </ol>

**Table 41. Alphabetical printer messages (continued)**

Message	Description	Action
CLOSE TOP COVER For help press ?	The top cover is open or the top-cover switch (SW101) is defective.	<ol style="list-style-type: none"> <li>1. Press the (?) button for information.</li> <li>2. Close the top cover.</li> <li>3. Replace the top-cover switch (SW101). See figure 209 on page 320.</li> </ol>
DATA RECEIVED To print last page press (✓)	The printer received data and is waiting for a form feed. When the printer receives another file, the message should disappear.	Press the (✓) button to continue.
DETECTABLE SIZE IN TRAY XX For help press ?  alternates with  DETECTABLE SIZE IN TRAY XX Recommend move switch to STANDARD	A tray has been loaded with media that is a standard size and the switch in the tray is set to "custom."	<ol style="list-style-type: none"> <li>1. Press the (?) button for detailed information.</li> <li>2. Press the (▲) button and the (▼) button to step through the instructions.</li> </ol>
DISK DEVICE FAILURE  alternates with  READY For menu press (✓)	A device failure has occurred on the specified drive.	<ol style="list-style-type: none"> <li>1. Printing can continue for jobs that do not require access to the disk drive.</li> <li>2. Press the (✓) button to continue.</li> <li>3. If the message persists, remove and reinstall the EIO disk drive.</li> <li>4. Reinitialize the EIO disk.</li> <li>5. If the message persists, replace the EIO disk drive.</li> </ol>
DISK FILE OPERATION FAILED  alternates with  READY For menu press (✓)	The printer received a PJL file system command that attempted to perform an illogical operation (for example, a command to download a file to a nonexistent directory).	<ol style="list-style-type: none"> <li>1. Printing can continue.</li> <li>2. Press the (✓) button to continue.</li> <li>3. If the message reappears, then a problem might exist with the software application.</li> </ol>
DISK FILE SYSTEM IS FULL  alternates with  READY For menu press (✓)	The printer received a PJL file system command that attempted to store something on the file system. The attempt was unsuccessful because the file system is full.	<ol style="list-style-type: none"> <li>1. Use the device storage manager in the HP Web Jetadmin software to delete files from the EIO disk drive and then try again.</li> <li>2. Press the (✓) button to continue.</li> </ol>
DISK IS WRITE PROTECTED  alternates with  READY For menu press (✓)	The file system device is protected and no new files can be written to it.	<ol style="list-style-type: none"> <li>1. To enable writing to the disk, turn off the write protection by using the device storage manager in HP Web Jetadmin.</li> <li>2. Press the (✓) button to continue.</li> </ol>

**Table 41. Alphabetical printer messages (continued)**

Message	Description	Action
EIO DISK X NOT FUNCTIONAL For help press <b>?</b>	The EIO disk in slot X is not working correctly.	<ol style="list-style-type: none"> <li>1. Remove the EIO disk from the indicated slot and reinstall it.</li> <li>2. If the error persists, replace the EIO disk drive</li> </ol>
ENVELOPE FEEDER EMPTY	The envelope feeder is empty.	<ol style="list-style-type: none"> <li>1. Refill the envelope feeder.</li> <li>2. Turn off the printer.</li> <li>3. Remove and then reinstall the accessory. Turn the printer on.</li> <li>4. If the error persists, replace the envelope feeder.</li> </ol>
FLASH DEVICE FAILURE  alternates with  READY For menus press 	A flash DIMM is installed in one of the formatter slots.	<ol style="list-style-type: none"> <li>1. Printing can continue for jobs that do not require the flash DIMM.</li> <li>2. Press the  button to continue.</li> <li>3. If the message persists, remove and reinstall the flash DIMM. See</li> <li>4. If the message persists, replace the flash DIMM. See</li> </ol>
FLASH FILE OPERATION FAILED  alternates with  READY For menus press 	The printer received a PJL file system command that attempted to perform an illogical operation (for example, a command to download a file to a non-existent directory).	<ol style="list-style-type: none"> <li>1. Printing can continue.</li> <li>2. Turn the printer off and then on to delete the message from the display.</li> <li>3. If the message reappears, a problem might exist with the software application.</li> </ol>
FLASH FILE SYSTEM IS FULL  alternates with  READY For menus press 	The printer received a PJL file system command that attempted to store something on the file system. The attempt was unsuccessful because the file system is full.	<ol style="list-style-type: none"> <li>1. Use HP Web Jetadmin Device Storage Manager software to delete files from the flash memory and try again.</li> <li>2. Press the  button to continue.</li> </ol>
FLASH IS WRITE PROTECTED  alternates with  READY For menus press 	The file-system device is protected and no new files can be written to it.	<ol style="list-style-type: none"> <li>1. To enable writing to the flash memory, turn off the write protection by using the device storage manager in HP Web Jetadmin.</li> <li>2. Press the  button to continue.</li> </ol>
INCORRECT	The wrong personal identification number (PIN) was typed.	Type the correct PIN code. After three incorrect PIN entries, the printer returns to the Ready state.

**Table 41. Alphabetical printer messages (continued)**





Message	Description	Action
INSERT OR CLOSE TRAY XX For help press ?	Tray XX must be inserted or closed before the current job can be printed.	<ol style="list-style-type: none"> <li>1. Press the (?) button for detailed information.</li> <li>2. Press the (▲) button and the (▼) button to step through the instructions.</li> <li>3. If the error persists, verify that the indicated tray's media-size sensor (PS102, SW801, or SW1) is operating correctly. See figure 210 on page 321, figure 214 on page 325, or figure 217 on page 328. Verify that the sensor "fingers" inside the tray are engaging the tray sensor correctly.</li> <li>4. Print a configuration page. See</li> <li>5. If the tray settings on the configuration page are correct, verify that the tray's paper-out sensor is operating. See</li> </ol>
INSTALL CARTRIDGE  alternates with  For help press ?	The cartridge is either not installed or not correctly installed in the printer.	<ol style="list-style-type: none"> <li>1. Insert the cartridge, or make sure that the cartridge is fully seated.</li> <li>2. Press the (?) button for detailed information.</li> <li>3. Press the (▲) button and the (▼) button to step through the instructions.</li> <li>4. If the error persists, replace the cartridge.</li> <li>5. Verify that the connectors between the power supply and transfer assembly are not damaged.</li> <li>6. Replace the power supply. See</li> </ol>
INSTALL FUSER For help press ?	The fuser is either not installed or not correctly installed in the printer.	<ol style="list-style-type: none"> <li>1. The fuser is not fully seated or has been removed and must be reinstalled for printing to continue. See <ul style="list-style-type: none"> <li>• If the fuser is in the printer, remove and reinstall it.</li> <li>• If the fuser is not in the printer, install it.</li> </ul> </li> <li>2. Push the fuser firmly into the printer until the blue levers on both sides click into place.</li> <li>3. Press the (?) button for detailed information.</li> <li>4. Press the (▲) button and the (▼) button to step through the instructions.</li> <li>5. If the error persists, verify that the fuser connector (J128 for the HP LaserJet 4200; J228 for the HP LaserJet 4300) is good.</li> <li>6. Replace the fuser assembly. See</li> <li>7. Replace the dc controller PCA. See</li> <li>8. Replace the power supply. See</li> </ol>







**Table 41. Alphabetical printer messages (continued)**

Message	Description	Action
<p>LOAD TRAY XX: &lt;TYPE&gt; &lt;SIZE&gt; For help press ?</p> <p>alternates with</p> <p>LOAD TRAY XX: &lt;TYPE&gt; &lt;SIZE&gt; TO USE ANOTHER TRAY PRESS (✓)</p>	<p>Tray XX is either empty (based on the operation of the paper sensor) or configured for a type and size other than that specified in the job.</p>	<ol style="list-style-type: none"> <li>1. Press the (?) button for detailed information.</li> <li>2. Press the (▲) button and the (▼) button to step through the instructions.</li> <li>3. Print a configuration page and verify that the tray settings are correctly set. See</li> <li>4. If the tray settings on the configuration page do not match the actual tray setting, verify that the indicated tray's paper width switch (SW102, SW801, or SW1) is operating correctly. See figure 210 on page 321, figure 214 on page 325, or figure 217 on page 328.</li> </ol>
<p>LOAD TRAY XX: &lt;TYPE&gt; &lt;SIZE&gt; For help press ?</p>	<p>Tray XX is either empty (based on the operation of the paper sensor) or configured for a type and size other than that specified in the job. No other tray is available.</p>	<ol style="list-style-type: none"> <li>1. Press the (?) button for detailed information.</li> <li>2. Press the (▲) button and the (▼) button to step through the instructions.</li> <li>3. Print a configuration page and verify that the tray settings are correctly set. See</li> <li>4. If the tray settings on the configuration page do not match the actual tray setting, verify that the indicated tray's paper width switch (PS106, SW801, or SW1) is operating correctly. See figure 210 on page 321, figure 214 on page 325, or figure 217 on page 328.</li> </ol>
<p>LOWER THE OPTIONAL BIN</p>	<p>The stacker or stapler/stacker output bin is in the raised position.</p>	<ol style="list-style-type: none"> <li>1. Lower the output bin.</li> <li>2. If this error persists, replace the stacker or stapler/stacker.</li> </ol>
<p>MANUALLY FEED &lt;TYPE&gt; &lt;SIZE&gt; For help press ?</p> <p>alternates with</p> <p>MANUALLY FEED &lt;TYPE&gt; &lt;SIZE&gt; To continue press (✓)</p>	<p>A job was sent that requires a specific paper type and size that is not currently available.</p>	<ol style="list-style-type: none"> <li>1. Press the (?) button for detailed information.</li> <li>2. Press the (▲) button and the (▼) button to step through the instructions.</li> <li>3. If the requested paper size and type is installed in one of the trays, print a configuration page (see ) to see if the printer tray setting differ from the paper size and type in the tray.</li> <li>4. Check the tray size sensor switches if the configuration page indicates a different size than that in the tray. Verify that the sensor "fingers" inside the tray are engaging the tray sensor correctly. See</li> </ol>






**Table 41. Alphabetical printer messages (continued)**

Message	Description	Action
NON HP CARTRIDGE DETECTED	The printer has detected that a non-HP print cartridge is currently installed. (If a new HP cartridge has been installed, this message appears for about 20 seconds and then is replaced by the READY message.)	<ol style="list-style-type: none"> <li>1. If the print cartridge appears to be an authentic HP cartridge, try installing another HP print cartridge that has the same shipment lot number. If this clears the error message, return the print cartridge that you removed to the supplier as defective.</li> <li>2. If the error message persists, the print cartridge might be a fraudulent cartridge.</li> <li>3. If the error message persists, the memory chip on the print cartridge (location J600) might be defective or the connector might be defective.</li> <li>4. The dc controller PCA might be defective. Replace the dc controller PCA. See</li> </ol> <p>Printer repairs that are required as a result of using non-HP print cartridges are <i>not</i> covered under the HP warranty.</p>
NON HP CARTRIDGE DETECTED  alternates with  READY For menus press 	The printer has detected that a non-HP print cartridge is currently installed.	<ol style="list-style-type: none"> <li>1. If the print cartridge appears to be an authentic HP cartridge, try installing another HP print cartridge that has the same shipment lot number. If this clears the error message, return the print cartridge you removed to the supplier and report that it is defective.</li> <li>2. If the error message persists, the print cartridge might be a fraudulent cartridge.</li> <li>3. If the error message persists, the memory chip on the print cartridge or the connector (location J600) might be defective.</li> <li>4. The dc controller PCA might be defective. Replace the dc controller PCA. See</li> </ol> <p>Printer repairs that are required as a result of using non-HP print cartridges are <i>not</i> covered under the HP warranty.</p>
OUTPUT BIN 1 FULL REMOVE ALL PAPER FROM BIN	The stacker or stapler/stacker output bin is full and must be emptied in order to continue printing.	<ol style="list-style-type: none"> <li>1. Remove the media from the output bin.</li> <li>2. If the error persists, verify that the output bin flapper (the four plastic paddles hanging down in front of the output bin rollers) can move freely.</li> <li>3. Replace the stacker or stapler/stacker.</li> </ol>
OUTPUT PAPER PATH OPEN	The jam-access door or the staple-cartridge door is open.	<ol style="list-style-type: none"> <li>1. Press the  button for detailed information.</li> <li>2. Press the  button and the  button to step through the instructions.</li> <li>3. Close the open door.</li> <li>4. If this message persists, replace the stacker or stapler/stacker.</li> </ol>





**Table 41. Alphabetical printer messages (continued)**

Message	Description	Action
PERFORM PRINTER MAINTENANCE  alternates with  READY For menus press 	To ensure optimum print quality, the printer prompts you to perform routine maintenance every 200,000 pages (default setting).  Q2429A: 110 V printer kit for the HP LaserJet 4200 Q2436A: 110 V printer kit for the HP LaserJet 4300 Q2430A: 220 V printer kit for the HP LaserJet 4200 Q2437A: 220 V printer kit for the HP LaserJet 4300	Install an HP LaserJet 4200/4300 printer maintenance kit. See the instructions that come with this kit.  -or-  Continue printing and order a printer maintenance kit  For information about how to order a maintenance kit, see chapter 8 in this manual.
PERFORMING UPGRADE	A firmware upgrade is in progress.	Do not turn the printer off until the printer returns to the Ready state. The printer will be damaged if the power is turned off during a firmware upgrade.
PRINTING... REGISTRATION PAGE	The printer is generating the registration page. The printer will return to the Ready state when the page is completed.	Follow the instructions on the printed pages.
RAM DISK DEVICE FAILURE  alternates with  READY For menus press 	The RAM disk had a critical failure and can no longer be used.	<ol style="list-style-type: none"> <li>1. Turn the printer power off, and then on again.</li> <li>2. If this error persists, a defective DRAM DIMM might be installed in the printer (on the formatter). Replace the DRAM DIMM(s). The procedure for replacing a DRAM DIMM is the same as replacing a firmware DIMM. See .</li> </ol>
RAM DISK FILE OPERATION FAILED  alternates with  READY For menus press 	The printer received a PJL file system command that attempted to perform an illogical operation (for example, a command to download a file to a nonexistent directory).	<ol style="list-style-type: none"> <li>1. Printing can continue.</li> <li>2. Turn the printer off and then on to delete the message from the display.</li> <li>3. If this error persists, a problem might exist with the software application.</li> </ol>
RAM DISK FILE SYSTEM IS FULL  alternates with  READY For menus press 	The RAM disk is full.	<ol style="list-style-type: none"> <li>1. Delete files and then try again, or turn the printer off and then on to delete all the files on the RAM disk.</li> <li>2. If the message persists, increase the size of the RAM disk by adding additional memory DIMMs.</li> </ol>

**Table 41. Alphabetical printer messages (continued)**

Message	Description	Action
RAM DISK IS WRITE PROTECTED  alternates with  READY For menus press 	The file system device is protected and no new files can be written to it.	To enable writing to the RAM disk, turn off the write protection by using the device storage manager in the HP Web Jetadmin software.
RECEIVING UPGRADE	A firmware upgrade is in progress.	Do not turn the printer off until the printer returns to the ready state. The printer will be damaged if the power is turned off during a firmware upgrade.
REINSERT DUPLEXER	The duplexer is not functioning.	<ol style="list-style-type: none"> <li>1. Turn off the printer.</li> <li>2. Remove and then reinstall the accessory.</li> <li>3. Turn on the printer.</li> <li>4. Check the rear accessory power connector.</li> <li>5. If the error persists, replace the duplexer.</li> </ol>
REPLACE CARTRIDGE  alternates with  For help press 	The print cartridge is almost empty. Printing can continue until the toner supply is depleted.	<ol style="list-style-type: none"> <li>1. Replace the print cartridge to continue printing.</li> <li>1. Press the  button for detailed information.</li> <li>2. Press the  button and the  button to step through the instructions.</li> <li>3. Supplies-ordering information is also available from the embedded Web server.</li> <li>4. If this error persists, replace the power supply. See .</li> </ol>
RESEND UPGRADE	The firmware upgrade was not completed successfully.	Attempt the upgrade again.

**Table 41. Alphabetical printer messages (continued)**

Message	Description	Action
<p>SIZE MISMATCH TRAY XX=&lt;SIZE&gt; For help press <b>?</b></p> <p>alternates with</p> <p>READY For menus press </p>	<p>The tray is loaded with media that is longer or shorter in the feed direction than the size setting for the tray.</p>	<ol style="list-style-type: none"> <li>1. Adjust the side and rear paper guides against the paper. From the control panel, set the tray 1 paper size to the media size that is in tray 1.</li> <li>2. If the media being used is Letter, A4, Executive, B5 JIS, A5, or Legal size, the tray switch should be set to "standard." Set the tray switch to "custom" for all other media sizes. The custom size switch must be set before the size can be selected at the control panel.</li> <li>3. Print a configuration page and verify that the tray size settings match the actual tray settings. If the settings do not match, verify that the tray size sensors are correctly functioning. If they are not, replace the media-size sensors (SW102, SW801, or SW1). See figure 210 on page 321, figure 214 on page 325, or figure 217 on page 328. Verify that the sensor "fingers" inside the tray are engaging the tray sensor correctly. See</li> <li>4. Replace the indicated feeder-control PCA. For the 500-sheet feeder, see . For the 1,500-sheet feeder, see</li> <li>5. Replace the dc controller PCA. See</li> </ol>
<p>STANDARD OUTPUT BIN FULL Remove all paper from bin</p>	<p>The top (standard) output bin is full and must be emptied.</p>	<ol style="list-style-type: none"> <li>1. Empty the top output bin.</li> <li>2. If the error persists, verify that the output-bin sensor (PS104) is operating and that the sensor arm can freely move. See figure 210 on page 321.</li> </ol>
<p>STAPLER LOW ON STAPLES For help press <b>?</b></p>	<p>Fewer than 70 staples remain in the optional stapler/stacker staple cartridge. Printing will continue until the STAPLER OUT OF STAPLES message appears on the printer control-panel display.</p>	<ol style="list-style-type: none"> <li>1. Press the  button for detailed information.</li> <li>2. Press the  button and the  button to step through the instructions.</li> <li>3. If, after following these instructions, this error persists, replace the staple unit. See</li> </ol> <p>The customer is responsible for ordering replacement staple cartridges.</p>










**Table 41. Alphabetical printer messages (continued)**

Message	Description	Action
STAPLER OUT OF STAPLES For help press ?	<p>Fewer than 15 staples remain in the optional stapler/stacker. The printer behavior depends on how the STAPLES OUT setting is configured.</p> <p>If STAPLES OUT=STOP, the printer stops printing until you refill the stapler or press the (✓) button. This is the default setting.</p> <p>If STAPLES OUT=CONTINUE, printing continues but the jobs will not be stapled.</p>	<ol style="list-style-type: none"> <li>1. Press the (?) button for detailed information.</li> <li>2. Press the (▲) button and the (▼) button to step through the instructions.</li> <li>3. Replace the staple cartridge.</li> <li>4. If this error persists, Replace the stapler unit (see ) followed by the stapler/stacker if necessary.</li> </ol>
TOO MANY PAGES IN JOB TO STAPLE	<p>The maximum number of sheets the stapler can staple is 15. The print job finishes printing but is not stapled.</p>	<p>Reduce the number of pages in the print job, or print and staple in batches of 15 or fewer pages.</p>
TOO MANY TRAYS INSTALLED Turn power off and uninstall a tray.	<p>Too many optional input trays are installed. The printer accommodates a maximum of two optional trays.</p>	<p>Turn off the printer power and remove a tray.</p>
TRAY XX CONTAINS UNKNOWN MEDIA	<p>The printer cannot determine the media type or size in the specified tray.</p>	<ol style="list-style-type: none"> <li>1. To change the media type, press the (✓) button. Use the (▲) button and the (▼) button to scroll to the type, and then press the (✓) button to select it.</li> <li>2. To change the media size to Letter, A4, Executive, B5 JIS, A5, or Legal, leave the tray switch in the "standard" position.</li> <li>3. To change the media size to other sizes, move the tray switch to "custom", adjust the paper guides against the paper, and close the tray. Use the (▲) button and the (▼) button to scroll to the media size, and then press the (✓) button to select it.</li> </ol>
TRAY XX EMPTY <TYPE> <SIZE> alternates with READY For help press (✓)	<p>The specified tray is empty, but the current job does not require this tray in order to print correctly.</p>	<ol style="list-style-type: none"> <li>1. Refill the indicated tray.</li> <li>2. If the error persists, verify that the paper-out sensor (PS105, PS101, PS801, or SR3) for the indicated tray is functioning correctly. See figure 210 on page 321, figure 214 on page 325, or figure 217 on page 328.</li> </ol>

**Table 41. Alphabetical printer messages (continued)**

Message	Description	Action
<p>TRAY XX OPEN For help press ?</p> <p>alternates with</p> <p>READY For menus press (✓)</p>	<p>The specified tray is open or not closed completely.</p>	<ol style="list-style-type: none"> <li>1. Close the tray.</li> <li>2. If this error persists, verify that the media-size sensors (SW102, SW801, or SW1) for the indicated tray is functioning correctly. See figure 210 on page 321, figure 214 on page 325, or figure 217 on page 328. Verify that the sensor “fingers” inside the tray are engaging the tray sensor correctly. See</li> </ol>
<p>TRAY XX SIZE= &lt;XXXX SIZE&gt; For help press ?</p>	<p>A tray was installed with the standard/custom switch set to “custom”, or with the paper guides in a non-standard configuration. The printer is prompting you to use the control panel to specify a predefined non-standard paper size, a “custom” paper size, or an “any custom” or an “any” size setting. (The user’s software program defines the “any custom” and “any” size settings.)</p>	<ol style="list-style-type: none"> <li>1. Use the control panel to select the appropriate custom paper size. Press the (✓) button.</li> <li>2. If the media used is Letter, A4, Executive, B5 JIS, A5, or Legal sized, the tray switch should be set to “standard.” Set the tray switch to “custom” for all other media sizes. The tray switch must be set to custom before the size can be selected at the control panel.</li> <li>3. Print a configuration page and verify that the tray size settings match the actual tray settings. If the settings do not match, verify that the tray size sensors are functioning correctly. If they are not, replace the media-size sensors (SW102, SW801, or SW1). See figure 210 on page 321, figure 214 on page 325, or figure 217 on page 328. Verify that the sensor “fingers” inside the tray are engaging the tray sensor correctly. See</li> </ol>
<p>TRAY XX &lt;TYPE&gt; &lt;SIZE&gt; TO CHANGE TYPE PRESS (✓)</p> <p>alternates with</p> <p>TRAY XX &lt;TYPE&gt; &lt;SIZE&gt; SIZE DETECTED BY TRAY</p>	<p>The printer is reporting the current configuration of tray XX. The tray switch is in the “standard” position.</p>	<ol style="list-style-type: none"> <li>1. To change the media type, press the (✓) button. Use the (▲) button and the (▼) button to scroll to the type, and then press the (✓) button to select it.</li> <li>2. To change the media size to Letter, A4, Executive, B5 JIS, A5, or Legal, leave the tray switch in the “standard” position and adjust the media guides to the correct positions.</li> <li>3. To change the media size to other sizes, move the tray switch to “custom”, adjust the paper guides against the paper, and close the tray.</li> <li>4. Use the (▲) button and the (▼) button to scroll to the media size, and then press the (✓) button to select it. Repeat this procedure to select the media type.</li> <li>5. If the size that appears on the control panel display is incorrect and the tray paper guides are properly adjusted, verify that the media-size sensor (SW102, SW801, or SW1) for the indicated tray is operating. See figure 210 on page 321, figure 214 on page 325, or figure 217 on page 328. Verify that the sensor “fingers” inside the tray are engaging the tray sensor correctly. See</li> </ol>

**Table 41. Alphabetical printer messages (continued)**

Message	Description	Action
TRAY XX <TYPE> <SIZE> SIZE SPECIFIED BY USER  alternates with  TRAY XX <TYPE> <SIZE> TO CHANGE TYPE PRESS 	The printer is reporting the current configuration of tray XX. The tray switch is in the "custom" position.	<ol style="list-style-type: none"> <li>1. To change the media type, press the  button. Use the  button and the  button to scroll to the type, and then press the  button to select it.</li> <li>2. To change the media size to Letter, A4, Executive, B5 JIS, A5, or Legal, set the tray switch to the "standard" position and adjust the media guides to the correct positions.</li> <li>3. To change the media size to other sizes, leave the tray switch in the "custom" position, adjust the media guides against the media, and close the tray.</li> <li>4. Select the <b>Paper Handling</b> menu from the control panel. Configure the size and media type for the tray.</li> </ol>
UNABLE TO STORE JOB <JOBNAME>	A job cannot be stored because of a memory, disk, or configuration problem.	<ol style="list-style-type: none"> <li>1. Install additional memory in the printer, or install a disk drive in the printer. See .</li> <li>2. If a disk drive is installed, delete the previously stored print jobs to increase the disk storage space.</li> <li>3. If this error persists, check the printer driver and application program settings.</li> </ol>
USE INSTEAD? TRAY X#: <TYPE> <SIZE>	The printer is offering an alternative for the print job.	To use the alternative, press the  button. Or use the  button and the  button to scroll to any alternative selection, and then press the  button to select it.



# Numerical printer messages

**Table 42. Numerical printer messages**

Message	Description	Action
<p>10.XX.YY SUPPLIES MEMORY ERROR or 10.XX.YY SUPPLIES MEMORY ERROR For help press ?</p>	<p>The printer is unable to read the electronic information (e-label) on the print cartridge so that the printer can keep track of the page count for the print cartridge.</p> <p><b>XX Description</b> 00 memory error on the cartridge 10 memory device not found</p> <p><b>YY Description</b> 00 black print cartridge</p>	<ol style="list-style-type: none"> <li>1. Open the top cover, remove the print cartridge, and then reinstall it. See</li> <li>2. Install a new HP print cartridge.</li> <li>3. Check the connection between the dc controller PCA (location J97) and the memory chip on the print cartridge (location J600).</li> <li>4. Replace the memory chip cable and contact assembly.</li> <li>5. Replace the dc controller PCA. See</li> </ol>
<p>13.XX.YY DUPLEX JOB INTERRUPTED For help press ? alternates with</p>	<p>A duplex job was physically interrupted as the paper was momentarily routed to the output bin during duplexing.</p>	<ol style="list-style-type: none"> <li>1. Press the (?) button for more information.</li> <li>2. Remove the specified number of pages from the output bin.</li> <li>3. Press the (✓) button to continue printing.</li> <li>4. Replace the duplexer.</li> <li>5. Replace the dc controller PCA. See</li> </ol>
<p>13.XX.YY DUPLEX JOB INTERRUPTED DISCARD TOP SHEET AND PRESS (✓) or 13.XX.YY DUPLEX JOB INTERRUPTED DISCARD TOP TWO SHEETS AND PRESS (✓)</p>	<p>This error is usually caused by a user who is attempting to grasp the edge of the page as it exits the top output bin during the duplexing process.</p>	<p>: IF JAM RECOVERY = OFF some pages will not be reprinted. Resend the missing pages.</p>
<p>13.XX.YY JAM For help press ?</p>	<p>A jam exists in the media path.</p>	<ol style="list-style-type: none"> <li>1. Press the (?) button for detailed information about clearing the jam.</li> <li>2. Press the (▲) button and the (▼) button to step through the instructions.</li> <li>3. If the media is folding into an accordion shape, make sure the shutter on the print cartridge opens as you insert the cartridge. Replace any defective print cartridge.</li> <li>4. For information about how to resolve a jam, see the specific numerical error codes in this table (the following 13.XX.YY error codes are not in numerical sequence).</li> <li>5. See in this chapter.</li> </ol>

**Table 42. Numerical printer messages (continued)**

Message	Description	Action
13.01.00. or 13.03.00 JAM IN TRAY X For help press ? or 13.03.00 PAPER JAM OPEN INPUT TRAYS THEN OPEN AND CLOSE TOP COVER	<p>A page is jammed in tray X.</p> <p>A 13.01.00 error message indicates that the media did not arrive at the pre-feed sensor (PS102) within the specified time.</p> <p>A 13.03.00 error message indicates that the media did not arrive at the top-of-page sensor (PS103) within the specified time.</p> <p>The 13.01.00 error can also be caused by the failure of the paper-level sensor (PS107). If this sensor fails, the lifter motor does not rotate to lift the paper tray plate. This error can also be caused when the printer attempts to pick up media from a tray that is empty, but the paper-out sensing mechanism for that tray has failed and the printer senses that the tray appears to be loaded.</p>	<ol style="list-style-type: none"> <li>1. Press the (?) button for detailed information about clearing the jam.</li> <li>2. Press the (▲) button and the (▼) button to step through the instructions.</li> <li>3. Check that the paper-out sensor in the specified tray is functioning correctly.</li> <li>4. Clean the pickup roller. If it is worn or damaged, replace it.</li> <li>5. Clean the feed and separation rollers. If any of the rollers are worn or damaged, replace them (always replace both rollers at the same time).</li> <li>6. Verify that the pre-feed sensor (PS102) is installed correctly. See</li> <li>7. Open and close the specified tray while watching the control-panel display. A short delay should occur between when the tray closes and the tray-size message appears on the control-panel display. If there is no delay and you do not hear the tray-lift motor lift the tray plate into place, replace the tray's stack position sensor (PS107, PS802, or SR2). See , or</li> <li>8. Replace the tray X pickup solenoid.</li> <li>9. Replace the tray 1 paper-pickup assembly. See</li> <li>10. Replace the paper-feed assembly. See</li> <li>11. Verify that the top-of-page sensor (PS103) is operating correctly and that the sensor flag can freely move. Replace the sensor if it is not operating correctly. See</li> <li>12. Replace the dc controller PCA. See</li> </ol>

**Table 42. Numerical printer messages (continued)**

Message	Description	Action
13.02.00 or 13.05.00 or 13.20.00 or 13.21.00 JAM IN TOP COVER AREA For help press ?	<p>A jam exists in the top-cover area.</p> <p>A 13.02.00 error message indicates that the media did not pass the top-of-page sensor (PS103) within the specified time.</p> <p>A 13.05.00 error message indicates that the media did not arrive at the fuser delivery sensor (PS108) within the specified time.</p> <p>A 13.20.00 error message indicates that the printer power was turned on or that the printer attempted to initialize while the pre-feed sensor (PS102), the top-of-page sensor (PS103) or the fuser delivery sensor (PS108) was detecting media.</p> <p>A 13.21.00 error message indicates that the top-cover-open switch (SW101) was activated while a print job was printing (the top cover was opened or the switch is defective).</p>	<ol style="list-style-type: none"> <li>1. Press the (?) button for detailed information about clearing the jam.</li> <li>2. Press the (▲) button and the (▼) button to step through the instructions.</li> <li>3. Check the pre-feed, top-of-page, and fuser assembly sensors (PS102, PS103, and PS 108) and verify that the sensor arms move freely. (sSe .)</li> <li>4. If the paper-feed assembly has been replaced, verify that the pre-feed sensor (PS102) is installed correctly. See</li> <li>5. Replace the top-of-page sensor (PS103). See</li> <li>6. Replace the top-cover-open switch (SW101). See</li> <li>7. Replace the fuser. See</li> <li>8. Replace the dc controller PCA. See</li> <li>9. If this error message appears frequently, see</li> </ol>

**Table 42. Numerical printer messages (continued)**

Message	Description	Action
13.06.00 and 13.12.00 JAM INSIDE REAR DOOR For help press ?	A page is jammed near the rear output door.	<ol style="list-style-type: none"> <li>1. Press the (?) button for detailed information about clearing the jam.</li> <li>2. Press the (▲) button and the (▼) button to step through the instructions.</li> <li>3. Check the paper-width and fuser delivery sensors (PS106, PS108) and verify that the sensor arms move freely. (See .)</li> <li>4. Check the inside of the duplexer for scraps of media that might have torn off when a jam was cleared.</li> <li>5. Replace the media-size sensor (PS106) and fuser. See and .</li> <li>6. Turn the power off. Remove the duplexer and turn the power on. If the error message persists, replace the dc controller PCA. See .</li> <li>7. If the error message appears frequently, see .</li> </ol>
13.12.07 JAM IN STAPLER	A jam exists in the staple cartridge (the stapler did not finish stapling but was able to return to its home position).	<ol style="list-style-type: none"> <li>1. Press the (?) button for detailed information.</li> <li>2. Press the (▲) button and the (▼) button to step through the instructions.</li> <li>3. Remove any jammed paper from the stapler/stacker.</li> <li>4. Remove the staple cartridge from the stapler unit.</li> <li>5. Push the green door on the end of the staple cartridge up (in the direction of the arrows).</li> <li>6. Remove the jammed staple.</li> <li>7. Close the staple cartridge door. Replace the cartridge in the stapler unit.</li> <li>8. Close the stapler unit.</li> <li>9. If the error persists, replace the staple cartridge.</li> <li>10. If the error persists, replace the stapler unit. See .</li> </ol>
13.12.08 JAM IN OUTPUT DEVICE	The output bin page-detection sensor has been active for longer than the specified time.	<ol style="list-style-type: none"> <li>1. Press the (?) button for detailed information.</li> <li>2. Press the (▲) button and the (▼) button to step through the instructions.</li> <li>3. Remove all of the pages from the output bin.</li> <li>4. Open the jam-access door and remove all of the pages. Close the access door.</li> <li>5. If this error message persists, replace the stapler/stacker.</li> </ol>
13.12.09 JAM IN OUTPUT DEVICE For help press ?	The stacker or staple/stacker paper-inlet sensor has been active for longer than a specified time.	<ol style="list-style-type: none"> <li>1. Press the (?) button for detailed information.</li> <li>2. Press the (▲) button and the (▼) button to step through the instructions.</li> <li>3. Open the jam-access door and remove all of the pages. Close the access door.</li> <li>4. If this error message persists, replace the stacker or stapler/stacker.</li> </ol>












**Table 42. Numerical printer messages (continued)**

Message	Description	Action
13.12.10 JAM IN OUTPUT DEVICE For help press ?	A page did not arrive at the stacker or staple/stacker paper-inlet sensor in the specified time.	<ol style="list-style-type: none"> <li>1. Press the (?) button for detailed information.</li> <li>2. Press the (▲) button and the (▼) button to step through the instructions</li> <li>3. Open the jam-access door and remove all of the pages. Close the access door.</li> <li>4. Verify that the output bin deflector (in the printer) is operating correctly.</li> <li>5. If this error message persists, replace the stacker or stapler/stacker.</li> </ol>
13.12.11 JAM IN OUTPUT DEVICE For help press ?	A jam was detected when the stacker or stapler/stacker power was turned on.	<ol style="list-style-type: none"> <li>1. Press the (?) button for detailed information.</li> <li>2. Press the (▲) button and the (▼) button to step through the instructions.</li> <li>3. Remove all of the pages from the output bin.</li> <li>4. Open the jam-access door and remove all of the pages. Close the access door.</li> <li>5. If this error persists, replace the stacker or the stapler/stacker.</li> </ol>
13.13.00 JAM INSIDE DUPLEXER For help press ?	A page is jammed inside of the duplexer.	<ol style="list-style-type: none"> <li>1. Press the (?) button for detailed information about clearing the jam.</li> <li>2. Press the (▲) button and the (▼) button to step through the instructions.</li> <li>3. Check the inside of the duplexer for scraps of media that might have been torn off when a jam was cleared.</li> <li>4. Turn the power off. Remove the duplexer and turn the power on. If this error persists, replace the dc controller PCA. See</li> <li>5. Replace the duplexer.</li> </ol>
13.1C.00 FUSER JAM For help press ?	A jam exists in the fuser area. The media is probably wrapped around the fuser roller.	<ol style="list-style-type: none"> <li>1. Remove the fuser.</li> <li>2. Turn the blue knob to remove the jammed media.</li> <li>3. If necessary, replace the fuser. See</li> </ol>

**Table 42. Numerical printer messages (continued)**

Message	Description	Action
13.98.00 OPEN INPUT TRAYS THEN OPEN AND CLOSE TOP COVER	The face-up tray was opened when the printer was attempting to send a page to the duplexer.  A page shorter than 200 mm (7.87 inches) was sent to the duplexer.  A page less than 120 mm (4.72 inches) in width was sent to the duplexer.  A multi-feed paper jam has occurred.	<ol style="list-style-type: none"> <li>1. Remove any jammed media from the paper path.</li> <li>2. Open and close the top cover.</li> <li>3. Disconnect all optional paper-handling accessories.</li> <li>4. Replace the feed and separation rollers. See (this procedure includes the separation roller).</li> <li>5. Replace the dc controller PCA. See</li> </ol>
20 INSUFFICIENT MEMORY For help press ?  alternates with  20 INSUFFICIENT MEMORY To continue press	The printer has received more data from the computer than fits in the available memory.	<ol style="list-style-type: none"> <li>1. Press the ( ) button to resume printing. : A loss of data will occur.</li> <li>2. Reduce the complexity of the print job to avoid this error.</li> <li>3. You might be able to print pages that are more complex if you add memory to the printer.</li> </ol>
21 PAGE TOO COMPLEX For help press ?  alternates with  21 PAGE TOO COMPLEX To continue press	The printer cannot process the page quickly enough.	<ol style="list-style-type: none"> <li>1. Press the ( ) button to process the page. : A loss of data will occur.</li> <li>2. Make the page contents less complex and re-send the print job.</li> </ol>
22 EIO X BUFFER OVERFLOW To continue press	The printer's EIO card in slot X has overflowed its I/O buffer during a busy state.	<ol style="list-style-type: none"> <li>1. Press the ( ) button to resume printing. : A loss of data will occur.</li> <li>2. Check the configuration of the EIO card and the host computer.</li> <li>3. If this error message persists, replace the EIO card.</li> </ol>
22 PARALLEL I/O BUFFER OVERFLOW For help press ?  alternates with  22 PARALLEL I/O BUFFER OVERFLOW To continue press	The printer's parallel buffer has overflowed during a busy state.	<ol style="list-style-type: none"> <li>1. Press the ( ) button to resume printing. : A loss of data will occur.</li> <li>2. Check the parallel I/O configuration. Set HIGH SPEED to NO and ADVANCED FUNCTIONS to OFF.</li> <li>3. Replace the formatter PCA. See</li> </ol>

**Table 42. Numerical printer messages (continued)**

Message	Description	Action
40 EIO X BAD TRANSMISSION To continue press 	A connection with the card in EIO slot X has been broken abnormally.	<ol style="list-style-type: none"> <li>1. Press the  button to resume printing. : A loss of data will occur.</li> <li>2. Check that all of the cables are connected to the EIO ports and that the EIO board is seated properly.</li> <li>3. If possible, print to another network printer to verify that the network is working properly.</li> <li>4. Check the configuration of the EIO card.</li> <li>5. If this error message persists, replace the EIO card.</li> </ol>
41.3 UNEXPECTED SIZE IN TRAY XX For help press   alternates with  41.3 LOAD TRAY XX: [TYPE] [SIZE] For help press 	The media that is loaded is longer or shorter in the feed direction than the size that is configured for the tray.	<ol style="list-style-type: none"> <li>1. If the incorrect size was selected, cancel the job or press the  button to gain access to help.</li> <li>2. Press the  button and the  button to step through the instructions.</li> <li>3. Print a configuration page and verify that the tray settings match the media in the tray. See</li> <li>4. Verify that the pre-feed, top-of-page, and fuser delivery sensors (PS102, PS103, PS108) are operating and the sensor flags can move freely. See</li> <li>5. Replace the dc controller PCA. See</li> </ol>
41.X PRINTER ERROR For help press   alternates with  41.X PRINTER ERROR To continue press 	<p>A printer error has occurred.</p> <p><b>X Description</b></p> <p>1 unknown misprint error 2 beam-detect misprint error 4 no VSYNC error 7 feed-delay error 9 signal-noise error</p>	<ol style="list-style-type: none"> <li>1. Press the  button to continue or press the  button for more information.</li> <li>2. If the message persists, turn the printer power off and then on again.</li> <li>3. If these errors becomes a frequent problem, replace the dc controller PCA. See</li> </ol>

**Table 42. Numerical printer messages (continued)**

Message	Description	Action
49.XXXX PRINTER ERROR To continue turn off then on	<p>A critical firmware error has occurred that caused the processor on the formatter to abort the operation.</p> <p>This type of error can be caused by invalid print commands, corrupt data, or invalid operations.</p> <p>In some instances, electrical noise in the cable can corrupt data during transmission to the printer. Other causes include poor-quality parallel cables, poor connections, or specific software programs.</p> <p>Sometimes, the formatter itself is at fault, which is usually indicated by a 79 SERVICE ERROR.</p>	<ol style="list-style-type: none"> <li>1. Press <span style="float: right;">to clear the print job from the printer memory.</span></li> <li>2. Turn the printer off and then on.</li> <li>3. Go to <a href="http://www.hp.com/support/LJ4200">http://www.hp.com/support/LJ4200</a> or <a href="http://www.hp.com/support/LJ4300">http://www.hp.com/support/LJ4300</a>. Select <i>Download Drivers and Software</i>. Check for the latest firmware image version at the bottom of the page. If this firmware image is newer than the one installed on the printer and the printer can receive a firmware update, download the newer firmware upgrade. Not all HP LaserJet 4200/4300 printers can receive firmware upgrades.</li> <li>4. Try printing a job from a different software program. If the job prints, go back to the first program and try printing a different file. If the message appears only with a certain software program or print job, contact the software vendor for assistance.</li> <li>5. If the message persists when using different software programs and attempting specific print jobs, disconnect all cables that connect the printer to the network or a computer.</li> <li>6. Turn the printer off.</li> <li>7. Remove all memory DIMMs or third-party DIMMs from the printer. (Do not remove the firmware DIMM in slot J1.) See</li> <li>8. Remove all of the EIO devices from the printer.</li> <li>9. Turn the printer on.</li> <li>10. If the error message disappears, reinstall each DIMM and EIO device individually, making sure to turn the printer power off and then on again as you install each device. To replace a DIMM, see figure 101 on page 160.</li> <li>11. Replace the DIMM or EIO device that caused the error message.</li> <li>12. Remember to reconnect all of the cables that connect the printer to the network or computer.</li> <li>13. If this error message persists, replace the firmware DIMM. See</li> <li>14. Replace the formatter assembly. See</li> </ol>
49.24.02 PRINTER ERROR	The printer has experienced a critical error.	<ol style="list-style-type: none"> <li>1. Verify that the ribbon cables are fully seated in the connectors on the dc controller PCA.</li> <li>2. Replace the power supply. See</li> <li>3. Replace the dc controller PCA. See</li> <li>4. Replace the formatter assembly. See</li> </ol>



**Table 42. Numerical printer messages (continued)**

Message	Description	Action
50.X FUSER ERROR For help press ?	A fuser error has occurred.  <b>X Description</b> 1 low fuser temperature 2 fuser warmup service 3 fuser over temperature 4 faulty fuser 5 incorrect fuser is installed 6 open fuser circuit	<ol style="list-style-type: none"> <li>1. Turn the printer off and allow it to cool down.</li> <li>2. Verify that the correct model of fuser is installed.</li> <li>3. Verify that the correct voltage fuser is installed.</li> <li>4. Reinstall the fuser, and check the connection between the fuser and the printer. Replace the connector if it is damaged.</li> <li>5. Replace the fuser.</li> <li>6. Replace the dc controller PCA. See</li> <li>7. Replace the power supply. See</li> </ol>
51.XY PRINTER ERROR For help press ?  alternates with  51.XY PRINTER ERROR To continue turn off then on	A printer error has occurred.  <b>X Description</b> 1 beam-detect error 2 laser error	<ol style="list-style-type: none"> <li>1. Press the (✓) button to continue.</li> <li>2. Turn the printer off and then on.</li> <li>3. Reseat the connectors between the laser/scanner and dc controller PCA (J83 and J84).</li> <li>4. Replace the laser/scanner assembly. See</li> <li>5. Replace the dc controller PCA. See</li> </ol>
52.XY PRINTER ERROR For help press ?  alternates with  52.XY PRINTER ERROR To continue turn off then on	A printer error has occurred.  <b>X Description</b> 0 scanner error 1 scanner startup error 2 scanner rotation error	<ol style="list-style-type: none"> <li>1. Press the (✓) button to continue.</li> <li>2. Turn the printer off and then on.</li> <li>3. Reseat the connectors between the laser/scanner and dc controller PCA (J83 and J84).</li> <li>4. Replace the laser/scanner assembly. See</li> <li>5. Replace the dc controller PCA. See</li> </ol>

**Table 42. Numerical printer messages (continued)**

Message	Description	Action
53.XY.ZZ PRINTER ERROR To continue press cancel job	An error occurred in the printer memory.  <b>X DIMM Type</b> 0 ROM (firmware DIMM) 1 RAM <b>Y Device Location</b> 1 DIMM Slot 1 2 DIMM Slot 2 3 DIMM Slot 3 4 DIMM Slot 4 <b>ZZ Error Number</b> 0 unsupported memory 1 unrecognized memory 2 unsupported memory size 3 failed RAM test 4 exceeded maximum RAM size 6 invalid DIMM speed	Press . If the problem persists, replace the DIMM card in the specific slot. See figure 101 on page 160.
54.1 REMOVE THE SEALING TAPE FROM TONER CARTRIDGE	The print cartridge was installed with the sealing tape in place.	1. Remove the sealing tape from the print cartridge. 2. Replace the print cartridge.
55.X PRINTER ERROR For help press ?  alternates with  55.X PRINTER ERROR To continue press ⓧ	The dc controller is not communicating with the formatter. The problem could be caused by a timing error or an intermittent connection.	1. Press the ⓧ button to continue. 2. Turn the printer off and then on. 3. Reseat the connectors between the dc controller PCA and the formatter. 4. If the problem persists, replace the dc controller PCA. See 5. Replace the formatter. See
56.1 PRINTER ERROR To continue turn off then on	Unknown input device installed.	1. Turn the power off and then on. 2. Reinstall all input trays. 3. Remove all non-HP paper-handling devices.
56.2 PRINTER ERROR To continue turn off then on	Unknown output device installed.	1. Turn the power off and then on. 2. Reinstall the stacker or stapler/stacker. 3. Remove all non-HP paper-handling devices.

**Table 42. Numerical printer messages (continued)**

Message	Description	Action
57.X PRINTER ERROR To continue turn off then on  or  57.3 EP FAN FAILURE  or  57.4 MAIN FAN FAILURE	A printer fan is not functioning.  <b>X Description</b> 3 EP cartridge fan, right side (LJ 4300 only) 4 Main cooling fan, left side	Turn the printer off and then on. <b>57.3 Cartridge fan error (F2)</b> 1. Reconnect the connector between the fan and the dc controller PCA (location J78). 2. Replace the fan. See  3. Replace the dc controller PCA. See  <b>57.4 Main fan error (F1)</b> 1. Reconnect the connector between the fan and the power supply. 2. Verify that the ribbon cables are fully seated in the connectors on the dc controller PCA. 3. Replace the fan. See  4. Replace the power supply. See  5. Replace the dc controller PCA. See
57.7 DUPLEX FAN FAILURE	The cooling fan in the optional duplexer is not functioning.	1. Turn the printer off and then on. 2. Replace the duplexer.
58.X PRINTER ERROR For help press ?  alternates with  58.X PRINTER ERROR To continue turn off then on	A memory error has been detected.  <b>X Description</b> 2 air-temperature sensor 3 Dc controller 4 power supply	1. Turn the printer off and then on. <b>58.2 Air-temperature sensor</b> 1. Turn the printer off and then on. 2. Reconnect the connector between the air-temperature sensor (the bar mounted across the main cooling fan on the left side of the printer) and the power supply (location J63). 3. Replace the air-temperature sensor. See  4. Replace the power supply. See  <b>58.3 Dc controller</b> 1. Replace the dc controller PCA. See  <b>58.4 Power supply</b> 1. Replace the power supply. See

**Table 42. Numerical printer messages (continued)**

Message	Description	Action
59.XY PRINTER ERROR For help press ?  alternates with  59.XY PRINTER ERROR To continue turn off then on	A printer-motor error has occurred.  <b>X Description</b> 0 main-motor error 1 motor startup error 2 motor rotation error 4 EP-motor error (LJ 4300 only) A EP-motor error (LJ 4300 only)  <b>Y Description</b> Y = 0	<b>59.00, 59.10, 59.20 Motor failure</b> <b>1.</b> Turn the printer off and then on. <b>2.</b> Reconnect the main-motor wire-harness on the dc controller PCA (location J98) <b>3.</b> Replace the main motor. See  <b>4.</b> Replace the dc controller PCA. See  <b>59.A or 59.4 EP Motor failure (LJ 4300 only)</b> <b>1.</b> Turn the printer off and then on. <b>2.</b> Reconnect the EP-motor wire-harness on the dc controller PCA (location J86). <b>3.</b> Replace the print-cartridge motor. See  <b>4.</b> Replace the dc controller PCA. See
59.2 MAIN MOTOR ROTATION ERROR	The main motor is not functioning correctly.	<b>1.</b> Turn the printer off and then on. <b>2.</b> Reconnect the main-motor wire-harness on the dc controller PCA (location J98) <b>3.</b> Replace the main motor. See  <b>4.</b> Replace the dc controller PCA. See
59.4 EP MOTOR ROTATION ERROR (LJ 4300 only)	The print-cartridge drive motor (LJ 4300 only) is not functioning properly.	<b>1.</b> Turn the printer off and then on. <b>2.</b> Replace the print cartridge. <b>3.</b> Reconnect the EP-motor wire-harness on the dc controller PCA (location J86). <b>4.</b> Replace the EP motor. See  <b>5.</b> Replace the dc controller PCA. See
60.2 PRINTER ERROR	The tray 2 lifter-motor is not functioning.	<b>1.</b> Turn the printer off and then on. <b>2.</b> If the error persists, turn the printer off. <b>3.</b> Verify that the tray 2 lifter wire-harness is full seated in its connector on the dc controller PCA (location J93). <b>4.</b> Replace the tray 2 lifter-driver assembly. See  <b>5.</b> Replace the dc controller PCA. See
60.3 TRAY 3 LIFTER MOTOR FAILURE	The tray 3 lifter-motor is not functioning.  Tray 3 can be a 500-sheet feeder or 1,500-sheet feeder accessory.	<b>1.</b> Turn the printer off and then on. <b>2.</b> If the error persists., turn the printer off. <b>3.</b> Verify that the tray 3 lifter wire-harness is fully seated in its connector on the sheet feeder PCA. <b>4.</b> Replace the tray 3 lifter-driver assembly. See  or  <b>5.</b> Replace the tray 3 feeder controller PCA. See or

**Table 42. Numerical printer messages (continued)**

Message	Description	Action
60.4 TRAY 4 LIFTER MOTOR FAILURE	The tray 4 lifter-motor is not functioning.  Tray 4 can be a 500-sheet feeder or 1,500-sheet feeder accessory.	<ol style="list-style-type: none"> <li>1. Turn the printer off and then on.</li> <li>2. If the error persists, turn the printer off.</li> <li>3. Verify that the tray 4 lifter wire-harness is fully seated in its connector on the sheet feeder PCA.</li> <li>4. Replace the tray 4 lifter assembly. See <a href="#">or</a></li> <li>5. Replace the tray 4 feeder controller PCA. See <a href="#">or</a></li> </ol>
62 NO SYSTEM To continue turn off then on	No system (firmware image) was found.	<ol style="list-style-type: none"> <li>1. Turn the printer off and then on.</li> <li>2. Reseat the firmware DIMM, in slot J1. See <a href="#">or</a></li> <li>3. Replace the firmware DIMM. See <a href="#">or</a></li> <li>4. Replace the formatter assembly. See <a href="#">or</a></li> </ol>
64 PRINTER ERROR For help press <b>?</b>	A scan-buffer error has occurred.	<ol style="list-style-type: none"> <li>1. Turn the printer off and then on.</li> <li>2. If the message persists, replace the formatter assembly. See <a href="#">or</a></li> </ol>
alternates with		
64 PRINTER ERROR To continue turn off then on		
66.00.15 EXTERNAL DEVICE FAILURE	The stacker or stapler/stacker was removed and then replaced while the printer power was on.	<ol style="list-style-type: none"> <li>1. Turn the printer power off.</li> <li>2. Verify that the stacker or stapler/stacker is installed correctly.</li> <li>3. Turn the printer power on.</li> </ol>
66.12.XX OUTPUT DEVICE FAILURE For help press <b>?</b>	<p>A stacker or stapler/stacker error has occurred.</p> <p><b>XX Description</b></p> <p>01 output-lift roller or paddle motor error</p> <p>02 jogger-motor error</p> <p>03 stapler-motor error</p>	<ol style="list-style-type: none"> <li>1. Press the <b>(?)</b> button for detailed information.</li> <li>2. Press the <b>(A)</b> button and the <b>(V)</b> button to step through the instructions.</li> <li>3. Turn the power off.</li> <li>4. Verify that the stapler/stacker is installed correctly and that its electrical connector is seated in the connector on the printer.</li> <li>5. Turn the power on.</li> <li>6. If the error 66.12.03 persists, replace the stapler unit. See <a href="#">or</a></li> <li>7. If other errors messages persist, replace the stacker or stapler/stacker.</li> </ol>

**Table 42. Numerical printer messages (continued)**

Message	Description	Action
68.X PERMANENT STORAGE ERROR For help press ?  alternates with  68.X PERMANENT STORAGE ERROR To continue press (✓)	One or more printer settings that were saved in the nonvolatile storage device are invalid and have been reset to the factory default. Pressing the (✓) button should clear the message. Printing can continue, but the printer might behave unexpectedly in response to the changed settings.	<ol style="list-style-type: none"> <li>1. Press the (✓) button to continue.</li> <li>2. Turn the printer off and then on.</li> <li>3. Check the printer settings to determine which settings have been changed. See and</li> <li>4. Perform a NVRAM initialization. See</li> <li>5. Replace the formatter assembly. See</li> </ol>
<b>X Description</b> 0 onboard NVRAM 1 flash DIMM or hard drive		
68.X PERMANENT STORAGE FULL For help press ?  alternates with  68.X PERMANENT STORAGE FULL To continue press (✓)	A nonvolatile storage device is full. Pressing the (✓) button should clear the message. Printing can continue, but the printer might behave unexpectedly in response to the changed settings.	<ol style="list-style-type: none"> <li>1. Press the (✓) button to continue.</li> <li>2. For <b>68.0</b> errors, turn the printer off and then on.</li> <li>3. If a <b>68.0</b> error persists, Initialize NVRAM. See the caution and note in</li> <li>4. For <b>68.1</b> errors, use the HP Web Jetadmin software to delete files from the disk drive.</li> <li>5. If this error message persists, replace the formatter assembly. See</li> <li>6. If the <b>68.1</b> error persists, reinitialize the hard disk. See the caution and note in</li> <li>7. If the <b>68.1</b> error persists, replace the disk.</li> </ol>
<b>X Description</b> 0 onboard NVRAM 1 flash DIMM or hard drive		
68.X PERMANENT STORAGE WRITE FAIL To continue press (✓)	A nonvolatile storage device is failing to write. Pressing the (✓) button should clear the message. Printing can continue, but the printer might behave unexpectedly in response to the changed settings.	<ol style="list-style-type: none"> <li>1. Press the (✓) button to continue.</li> <li>2. Turn the printer off and then on.</li> <li>3. If the <b>68.0</b> error persists, initialize the NVRAM. See the caution and note in</li> <li>4. If this error message persists, replace the formatter assembly. See</li> <li>5. For a <b>68.1</b> error message, reinitialize the hard disk. See the caution and note in</li> <li>6. If the <b>68.1</b> error persists, replace the disk.</li> </ol>
<b>X Description</b> 0 onboard NVRAM 1 removable disk (flash or hard)		
69.X PRINTER ERROR To continue turn off then on	The optional duplexer is not functioning.	<ol style="list-style-type: none"> <li>1. Remove the duplexer.</li> <li>2. Turn the printer off and then on.</li> <li>3. Replace the duplexer.</li> <li>4. If the message persists, replace the duplexer.</li> </ol>

**Table 42. Numerical printer messages (continued)**

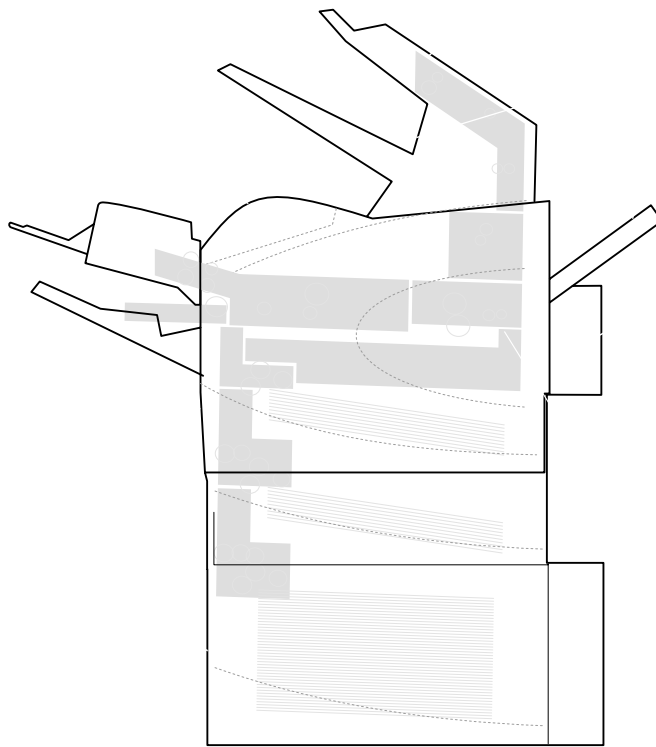
Message	Description	Action
79.XXXX PRINTER ERROR To continue turn off then on	A critical hardware error has occurred.	<ol style="list-style-type: none"><li>1. Turn the printer off and then on.</li><li>2. If the problem persists, reseal the firmware DIMM.</li><li>3. Reseat the formatter.</li><li>4. Go to <a href="http://www.hp.com/support/LJ4200">http://www.hp.com/support/LJ4200</a> or <a href="http://www.hp.com/support/LJ4300">http://www.hp.com/support/LJ4300</a>. Select <i>Download Drivers and Software</i>. Check for the latest firmware image version at the bottom of the page. If this firmware image is newer than the one installed on the printer and the printer can receive a firmware update, download the newer firmware upgrade. Not all HP LaserJet 4200/4300 printers can receive firmware upgrades.</li><li>5. Replace the formatter. See</li><li>6. Replace the firmware DIMM. See</li></ol>
8X.YYYY EIO ERROR	The EIO accessory card in slot X has encountered a critical error.	<ol style="list-style-type: none"><li>1. Turn the printer off and then on.</li><li>2. If the problem persists, reseal the EIO card.</li><li>3. Replace the EIO card.</li><li>4. Replace the formatter assembly. See</li></ol>

## Overview

If a jam message appears on the printer control-panel display, look for jammed paper or other print media in the locations that are indicated in the following figure. Then see the tables in this section for information about clearing the jam. You might need to look for media in locations other than those specified in the jam message. If the location of the jam is not obvious, look first in the top-cover area underneath the print cartridge.

When clearing jams, be very careful not to tear the jammed media. If a small piece of media is left in the printer, it could cause additional jams. If jams are a recurring problem, see

After you have cleared the jammed media, you must open and then close the top cover to clear a jam message.



### Jam locations

1. Top-cover and print-cartridge areas
2. Optional envelope feeder
3. Tray areas (tray 1, tray 2, and optional trays)
4. Optional duplexer
5. Fuser area
6. Output areas (top, rear, and optional stacker or stapler/stacker)
7. Optional stacker or stapler/stacker

Loose toner might remain in the printer after a jam and cause poor print quality. Print quality will improve after a few pages are printed.



## Jam recovery

This printer can automatically provide jam recovery. You can use the jam-recovery to automatically reprint jammed pages.











Select whether or not you want the printer to attempt to reprint jammed pages.

- AUTO    Printer will attempt to reprint jammed pages.
- OFF     Printer will not attempt to reprint jammed pages.

To improve print speed and increase memory resources, you might want to disable the jam recovery. If jam recovery is disabled, the printer will not attempt to reprint the jammed pages.

During the recovery process, the printer might reprint several pages that were printed correctly before the jam occurred. Be sure to remove any duplicated pages.

### To disable the jam recovery

1. Press the  button to open the **MENUS**.
2. Press  button to scroll to **CONFIGURE DEVICE**.
3. Press the  button to select **CONFIGURE DEVICE**.
4. Press  button to scroll to **SYSTEM SETUP**.
5. Press the  button to select **SYSTEM SETUP**.
6. Press  button to scroll to **JAM RECOVERY**.
7. Press the  button to select **JAM RECOVERY**.
8. Press  button to scroll to **OFF**.
9. Press the  button to select **OFF**.
10. Press the  button to return to the **READY** state.

## Avoiding jams

Use this table to help avoid specific types of jams.

**Table 43. Common causes of paper jams**

Cause	Solution
The print media does not meet HP recommended media storage and use specifications.	Use only media that meets HP specifications. See chapter 1 in this manual or the <i>HP print media guide</i> (available at <a href="http://www.hp.com/support/ljpaperguide">http://www.hp.com/support/ljpaperguide</a> ) for media recommendations.
A supply item is installed incorrectly, which causes repeated jams.	Verify that the print cartridge and the fuser are correctly installed.
You are reloading paper that has already passed through a printer or copier.	Do not use media that has been used previously in a printer or copier.
An input tray is loaded incorrectly.	Remove any excess media from the input tray. Make sure that the stack of media fits below the indicators inside of the tray.
The print media is skewed.	The tray guides are not adjusted correctly. Adjust the guides to hold the media firmly in place without bending it. If media heavier than 120 g/m <sup>2</sup> (32 lb) is loaded into tray 2, tray 3, or tray 4, the media might skew.
The print media is binding or sticking together.	Remove the media and flex it, rotate it 180 degrees, or flip it over. Reload the media into the tray. Do not fan media.
The print media is removed before it settles into the output bin.	Wait until the page completely exits the output delivery assembly before you attempt to remove the it.
When you are using the duplex print feature, the print media is removed before the second side of the document is printed.	Print the document again. During the duplex operation, the page will partially protrude from the output delivery assembly (when the page is being reversed). Do not attempt to grab or remove the page. Wait until the page completely exits the output delivery assembly before you attempt to remove the it.
The print media is in poor condition.	Replace the print media.
The print media is not picked up by the internal rollers from Trays 2, 3 or 4.	Remove the top sheet of media. If the media is heavier than 120 g/m <sup>2</sup> (32 lb), it might not be picked up properly from the tray.
The print media has rough or jagged edges.	Replace the media.
The print media is perforated or embossed.	If the media does not separate easily, you might need to feed single sheets from tray 1.
The printer supply items have reached the end of their useful life.	Check the printer control panel for messages that prompt you to replace supplies, or print a supplies status page to verify the remaining life of the supplies.
The print media was not stored correctly.	Replace the print media. The media should be stored in its original packaging and in a controlled environment.

## Persistent jams

If jams occur repeatedly, use the information in this section to diagnose the root cause of the problem. The tables in this section list possible causes and recommended solutions for jams in each area of the paper path. The information is listed in the order in which you conduct the investigation. In general, items at the beginning of the list are relatively minor repairs. Items at the end of the list are more significant repairs.

### Basic troubleshooting for persistent jams

The basic troubleshooting process for jams consists of the following:

1. Gather data.
2. Identify the cause of the problem.
3. Fix the problem.

### Data collection

To troubleshoot jams, gather the following information:

- the exact error code that appears on the control panel
- the location of the leading edge of all of the media that is in the paper path
- the location of the media when the jam occurs: in the paper path or if paper is stuck in the input tray
- the timing of the jam: at power-up or while paper is moving
- the location of any damage that occurs on the media and the location in the paper path where the damaged media stops
- the relationship to a particular tray
- the relationship to duplex printing
- the relationship to the type of paper
- the use of any non-HP supplies (non-HP supplies are known to cause jams)
- paper-handling conditions, including correct storage, overloading trays, damaging media during loading, fanning of the paper ream, or use of paper that has already been fed through this printer, another printer, or a copier

## General paper-path troubleshooting

Use the following information to isolate the cause of the problem. When you have identified the cause, use the tables that follow to find a recommended solution.

View or print the event log to determine if a particular jam error occurs more often than others. Try to identify a pattern.

View or print the event log, to determine the frequency of a particular jam. If a jam occurs repeatedly at a particular page count, consider this event to be a single jam that the customer tried to clear.

Try printing from all of the available input trays and to all of the available output bins to identify whether the problem is isolated to one tray.

Print the job in both simplex and duplex modes to identify whether the problem occurs only in one mode or the other.

Try printing on paper from an unopened ream that has been stored correctly. If the jam does not occur with this media, then the customer's media might be causing the problem.

If the jam occurs when the printer is first turned on, check the paper path for small, torn pieces of paper. Also check for broken sensors or flags, and check for loose or defective connections.

If the paper is torn, folded, or wrinkled (typically along the leading edge), inspect the paper path for items that might be causing the damage.

If the customer is using non-HP supplies, try replacing those supplies with genuine HP supplies to see if the problem is resolved.

If necessary, explain the correct methods of media storage, media loading, and printer operation to the customer. Make sure the customer knows not to remove media from the output bin (during duplex printing) until it completely exits the output delivery assembly.

## Paper-path checklist

- ☐ Verify that the media is correctly loaded in the input trays and that all length and width guides are set correctly.
- ☐ Clean the printer. Toner and paper dust in the paper path can inhibit free movement of the media through the printer and can block the sensors.
- ☐ Use the paper path-test on the **Diagnostic** menu to select various printer input and output options to determine if the problem is associated with a particular area of the printer.
- ☐ Worn rollers or separation pads can cause multifeeds. Check the condition of the rollers and separation pads.
- ☐ Defective paper-tray switches can cause jams by communicating the wrong paper size to the formatter.
- ☐ Defective paper sensors along the paper path might signal a false jam.
- ☐ Scraps of media that remain in the paper path can cause intermittent jams. Always check that the paper path is clear after cleaning the printer or clearing jams. Also, remove the fuser and carefully check it for debris.

## Paper-path test

This test generates one or more test pages that can be used to isolate the cause of jams.

To isolate a jam, you can specify which input tray to use, which output bin to use, whether to use the duplex path, and the number of pages to print. Printing multiple pages helps to isolate intermittent jam problems. The following options are available for this test.

**Print test page.** This option uses factory default settings to run the paper path test. The page starts from tray 2, does not use the duplex path, and prints a single page. The user can specify the number of pages to be printed.














**Source.** Use this option to select tray 1, tray 2, or tray X (if optional tray feeders are installed) as the page source.

**Destination.** Use this option to send the test page to the optional stacker or stapler/stacker if this accessory is installed.

**Duplex.** Use this option to send the test page through the duplex path.

**Page count.** Use this option to sets the number of test page copies to be printed. The choices are 1, 10, 50, 100, or 500.

### To perform a paper- test

1. Press the  button to open the menus.
2. Use the  button or the  button to scroll to **DIAGNOSTICS**, and then press the  button.
3. Use the  button or the  button to scroll to **PAPER PATH TEST**, and then press the  button.
4. Use the  button or the  button to scroll through the available test options, and then press the  button.
5. After the test options are selected, use the  button or the  button to scroll to **PRINT TEST PAGE**, and then press the  button to start the test.

To test the stacker and stacker/stapler paper path, see [Figure 44-1](#) and [Figure 44-2](#).

## Jams in tray 1

**Table 44. Causes of tray 1 jams**

Cause	Solution
The pickup roller is dirty, worn, or damaged.	Clean the pickup roller. If it is dirty after cleaning, or if it is worn or damaged, replace the pickup roller.
The separation pad is dirty, worn, or damaged.	Clean the separation pad. If it is dirty after cleaning, or if it is worn or damaged, replace the separation pad.
The drive gears are damaged.	Check the drive gears in the tray 1 pickup assembly. Replace the pickup assembly if the gears are damaged.
The tray 1 pickup solenoid (SL102) is defective.	<ol style="list-style-type: none"><li>1. Disconnect the connector for the tray 1 pickup solenoid from the dc controller PCA (location J79).</li><li>2. Measure the resistance between the cable connectors.</li><li>3. If the measured resistance is <i>not</i> approximately 160 ohms, replace the tray 1 pickup solenoid.</li></ol>
The tray 1 pickup assembly is defective.	Replace the tray 1 paper-pickup assembly. See <a href="#">Figure 44-1</a> .
The dc controller PCA is defective.	Replace the dc controller PCA. See <a href="#">Figure 44-2</a> .

## Jams in tray 2

**Table 45. Causes of tray 2 jams**

<b>Cause</b>	<b>Solution</b>
The feed or separation rollers are dirty, worn, or damaged.	Clean the rollers. If they are dirty after cleaning, or if they are worn or damaged, replace the rollers.
The pickup roller is worn or damaged.	Replace the pickup roller.
The tray 2 paper pickup assembly drive gears are damaged or the assembly is defective.	Check the drive gears in the paper pickup drive assembly. Replace the pickup drive assembly if the gears are damaged. See .
The tray 2 pickup solenoid (SL101) is damaged.	<ol style="list-style-type: none"> <li>1. Disconnect the connector for the tray pickup solenoid from the dc controller PCA (location J92).</li> <li>2. Measure the resistance between the cable connectors.</li> <li>3. If the measured resistance is <i>not</i> approximately 160 ohms, replace the tray 2 pickup solenoid.</li> </ol>
The tray 2 lifter-drive assembly or the stack position sensor (PS107) is defective.	Replace the lifter-drive assembly. See and/or
The dc controller PCA is defective.	Replace the dc controller PCA. See .

## Jams in tray 3 and/or tray 4

**Table 46. Causes of tray 3 and or tray 4 jams**

<b>Cause</b>	<b>Solution</b>
The feed or separation rollers are dirty, worn, or damaged.	Clean the rollers. If they are dirty after cleaning, or if they are worn or damaged, replace the rollers. See and/or
The pickup roller is worn or damaged.	Replace the pickup roller.
The tray 3 or tray 4 paper pickup drive gears are damaged, or the assembly is defective.	Check the drive gears in the paper-pickup unit. Replace the pickup drive assembly if the gears are damaged. See and/or
The connector to the printer has poor contact.	Inspect the connector to the printer. Replace any damaged connectors.
The paper-feeder pickup solenoid is damaged.	<ol style="list-style-type: none"> <li>1. Disconnect the connector for the paper-feeder solenoid from the feeder control PCA.</li> <li>2. Measure the resistance between the cable connectors.</li> <li>3. If the measured resistance is <i>not</i> approximately 160 ohms, replace the paper-feeder pickup solenoid. See and/or</li> </ol>
The tray 3 or tray 4 lifter assembly or stack position sensor (PS802 or SR2) is defective.	Replace the lifter-drive assembly (500-sheet feeder) or the lifter-drive assembly (1,500-sheet feeder). See and/or . Replace the surface stack sensor (PS802 for the 500-sheet feeder, or SR2 for the 1,500-sheet feeder. See and/or
The paper feeder control PCA is defective.	Replace the paper-feeder control PCA. See and
The dc controller PCA is defective.	Replace the dc controller PCA. See

## Jams in the paper path

**Table 47. Causes of paper-path jams**

Cause	Solution
The cartridge shutter open/close mechanism is damaged.	The shutter in the print cartridge should open as you insert the print cartridge. If the shutter does not open, replace the print cartridge.
The registration roller is dirty, worn, or damaged. (This applies to jams that occur before media reaches the registration rollers.)	Clean the registration roller assembly if it is dirty. If it is dirty after cleaning, or if it is worn or damaged, replace the registration assembly. See .
The paper-feed assembly (including clutch CL101) might be damaged. (This applies to jams that occur before the registration rollers.)	Replace the paper-feed assembly. See .
The drive gears are damaged. (This can cause jams that occur before media reaches the registration rollers.)	Check the drive gears in the paper pickup and main drive assemblies. Replace the pickup or main drive assemblies if the gears are damaged. See and/or .
The pre-feed (PS102), top-of-page (PS103), or fuser assembly (PS108) sensor is defective.	Replace any defective sensors. See .
The dc controller PCA is defective.	Replace the dc controller PCA. See .

Avoid using odd-sized media. Odd-sized media might not travel properly between the transfer roller and the fuser without getting jammed.

Avoid using short-grained paper. Short-grain paper might curl excessively and become jammed. This type of jam is often found between the fuser and the output destination or in the duplexer.

## Jams in the duplex path

**Table 48. Causes of duplex path jams**

Cause	Solution
The oblique rollers are worn or damaged.	Replace the duplexer.
The oblique roller drive gears are worn or damaged.	Replace the duplexer.
The duplex feed guide is damaged.	Replace the duplexer.
The duplex sensors are defective.	Replace the duplexer.



If media is feeding incorrectly, use the information in this section to identify and resolve the problem.

## Multiple pages feed

**Table 49. Causes for multiple pages feeding**

Cause	Solution
The tray 1 separation pad is worn.	Replace the separation-pad assembly.
Too much media (particularly envelopes) is loaded in tray 1.	Remove some of the media and resend the print job.
The separation rollers in the tray are worn or damaged	Replace the rollers. See <a href="#">Figure 49-1</a> for tray 2, <a href="#">Figure 49-2</a> for a 500-sheet feeder, or <a href="#">Figure 49-3</a> for a 1,500-sheet feeder.
The media edges are locked together.	Flex the media stack before loading it into the printer. <i>Do not</i> fan the media.

## Paper is wrinkled or folded

**Table 50. Causes for wrinkled or folded paper at the paper-path entrance**

Cause	Solution
The feed rollers or registration rollers are dirty or defective.	Replace the affected rollers.
The paper path contains foreign substances or dirt.	Remove any foreign substances or dirt from the paper path.
The cartridge shutter open/close mechanism is damaged. (This can cause jams in which the media is crumpled into an accordion fold under the print cartridge.)	The shutter in the print cartridge should open as you insert the cartridge. If a shutter does not open, replace the print cartridge.

**Table 51. Causes for wrinkled or folded paper at the paper-path exit**

Cause	Solution
The fuser inlet guide is dirty.	Replace the fuser. See <a href="#">Figure 51-1</a> .
The fuser pressure roller is dirty or damaged.	Run several cleaning pages through the printer. See <a href="#">Figure 51-2</a> . If the problem persists, replace the fuser. See <a href="#">Figure 51-3</a> .

## Paper is skewed

**Table 52. Causes for skewed paper**

Cause	Solution
Paper dust or dirt has accumulated on the tray feed roller or separation roller.	Clean or replace the rollers.
The tray feed roller and separation roller are worn irregularly.	Replace the affected roller.
The registration assembly is defective.	Replace the registration assembly. See

The image-formation system is the central hub of the printer. During image formation, an image is formed with toner and then fused onto the paper. The image-formation system consists of the following physical components:

- laser/scanner
- print cartridge
- fuser
- transfer roller
- supporting circuitry (power supply and dc controller PCA)

Before beginning the image-formation troubleshooting, check that the media meets the specifications listed in chapter 1 and the *HP LaserJet Printer Family Print Media Guide*. See and

## Media-related print-quality problems

Some print-quality problems occur when inappropriate media is used.

Use paper that meets HP paper specifications. See the specifications listed in the *HP LaserJet Printer Family Print Media Guide*.

The surface of the media is too smooth. Use media that meets HP paper specifications. See the specifications listed in the *HP LaserJet Printer Family Print Media Guide*.

The printer driver is set incorrectly. Change the paper-type setting.

The media is too heavy for the printer, and the toner is not fusing to the media.

The transparencies are not designed for proper toner adhesion or high fusing temperatures. Use only transparencies that are designed for monochrome HP LaserJet printers.

The moisture content of the paper is uneven, too high, or too low. Use paper from a different source or from an unopened ream of paper.

Some areas of the paper reject toner. Use paper from a different source or from an unopened ream of paper. Make sure that the paper has not been previously used.

The letterhead is printed on rough paper. Use a smoother, photocopy-grade paper. If this solves the problem, consult with the letterhead supplier to verify that the paper used meets the specifications for this printer.

The paper is excessively rough. Use a smoother, photocopy-grade paper.

The paper has a coating that is not compatible with the electrophotographic process.

The letterhead or other preprinted media was printed with inks or other materials that can contaminate the fuser, which causes offset or repeated images.

The use of some carbonless papers contaminates the printer and can cause printer damage if used repeatedly.

## Overhead transparency defects

Overhead transparencies can contain any of the image-quality problems that appear in other types of media in addition to defects that are specific to transparencies. In addition, because transparencies are pliable, they can be affected by the media-handling components in the paper path.

Allow transparencies to cool at least 30 seconds before handling them.

On the printer driver **Paper** tab, select **Transparency** as the media type. Also, make sure that the tray is correctly configured for transparencies.

Make sure that the transparencies meet the specifications for this monochrome LaserJet printer. For more information, consult the *HP LaserJet Printer Family Print Media Guide*.

Handle transparencies by the edges. Skin oil on the surface of transparencies can cause spots and smudges.

Small, random dark areas on the trailing edge of solid fill pages might be caused by transparencies sticking together in the output bin. Try printing the job in smaller batches.

To show the printed transparency, use a standard overhead projector instead of a reflective overhead projector

## Print quality problems that are related to the environment

The printer is operating in excessively humid or dry conditions. Verify that the printing environment is within specifications. See table 6 in

## Print quality problems that are related to jams

Make sure that all media is cleared from the paper path.

If the printer recently jammed, print two or three pages to clean the printer.

Repeated jams might require that use of your printer cleaning procedures in chapter 4. It might be necessary to process several cleaning pages through the printer. See

## Image defects

This section helps you define print-quality problems and solutions. Often, print-quality problems can be resolved by making sure that the printer is properly maintained, using print media that meets HP specifications, or running a cleaning page.

Do not use letterhead paper that is printed with low-temperature inks, such as those that are used in some types of thermography.

Do not use raised letterhead.

The printer uses heat and pressure to fuse toner to the media. Make sure that any colored paper or preprinted forms use inks that are compatible with the printer's temperature of 230° C (446° F) for 0.05 second.

Avoid using paper that has already been used in a printer or copier. (Do not print on both sides of envelopes, transparencies, or labels.)

## Image quality

When you are working with customers, obtain a print sample before you begin troubleshooting their printer. Ask the customer to explain the quality that is expected from the printer. The print sample will also help clarify the image-quality issue.

**Table 53. Image-quality checks**

Image-quality check	Action
	Use the repetitive defect table to determine the cause of the repeating defect. See
	Check the print cartridge as described in this chapter and verify that you are not using the EconoMode setting when sending the print job. See and
	For more information about HP's media specification standards, see chapter 1 or the <i>HP LaserJet Printer Family Print Media Guide</i> . See and
	Compare the sample to the print quality tables in this chapter and perform the corresponding procedures that are recommended. See table 54 on page 296.
	Perform the half self-test functional check and the drum rotation functional check to determine the location of the defect. See and
	If the toner image is present on the drum's surface, assume that the first four functions of the electrophotographic process are functioning, and troubleshoot the failure as a transfer or fusing problem. If the image on the paper is correct before it enters the fuser, then the problem exists in the fuser.

## Check the print cartridge

Image-formation defects are often the result of problems with the print cartridge. If you suspect that the print cartridge is the source of the problem, replace the print cartridge before troubleshooting image defects.

Use the following list to make sure that the print cartridge is still operable.

- Check the print cartridge to see if it has been disassembled or refilled.

- Inspect the cartridge for toner leaking through worn seals. (If the drum has been manually rotated, it might have caused internal damage and toner spills can result.)

Print cartridges are rated for 12,000 (LaserJet 4200) and 18,000 (LaserJet 4300) images at five percent coverage. It is possible to wear out the gears and the cartridge seals before **TONER LOW** appears on the control panel if average toner coverage is less than five percent. See

- 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 defects during printing.

- Dark areas on the page might indicate that the drum has been exposed to light for too long. If dark areas appear, stop the printer and wait a few minutes. This should eliminate most defective images. If not, placing the print cartridge in a dark environment for several days can restore some life to the drum.

## EconoMode

EconoMode creates draft-quality printing by reducing the amount of toner on the printed page by up to 50%. Advise the customer to turn EconoMode on or off from the printer driver or software application, because those settings override the control panel settings. EconoMode settings can also be changed from the print-quality menu on the control panel.

Hewlett-Packard does not recommend full-time use of EconoMode. If EconoMode is always used, it is likely that the toner supply will outlast the mechanical parts in the print cartridge.

## Half self-test functional check

The electrophotographic process can be subdivided into the following stages:

- Cleaning (removes excess toner from the drum surface)
- Conditioning (places a uniform electrical charge on the drum)
- Writing (the laser strikes the surface of the drum to create an electrostatic image)
- Developing (forms the toner image on the drum)
- Transferring (charges transfer the image to the print media)
- Fusing (heat and pressure produces a permanent image)

The purpose of the half self-test check is to determine which process is malfunctioning. Use this procedure to perform the test:

1. Print a configuration page from the control panel **INFORMATION** menu.
2. Open the top cover after the paper advances half-way through the printer (about 3 to 5 seconds after the main motor begins rotation). The leading edge of the paper should have advanced past the print cartridge.
3. Remove the print cartridge.
4. Open the print cartridge drum shield to view the drum surface.

If a dark and distinct toner image is present on the drum surface, assume that the first four functions of the electrophotographic process are functioning (cleaning, conditioning, writing, and developing), and troubleshoot the failure as a transfer or fusing problem.

If no image is present on the photosensitive drum, perform the following check.

## Drum rotation functional check

The photosensitive drum, located in the print cartridge, must rotate in order for the print process to work. The photosensitive drum receives its drive from the main gear assembly. Use this procedure to determine whether the drum is rotating:

1. Open the top cover.
2. Remove the print cartridge.
3. Mark the cartridge drive gear with a felt-tipped marker. Note the position of the mark.
4. Install the print cartridge and close the top cover. The start-up sequence should rotate the drum enough to move the mark on the gear.
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 gear assembly to make sure that it meshes with the print-cartridge gears. If the drive gears function but the drum does not move, replace the print cartridge.

This test is especially important if refilled print cartridges are in use.

## Image defect tables

Compare a printed sample of the image quality to these defect tables in order to determine a remedy.

**Table 54. Print-quality image defects**

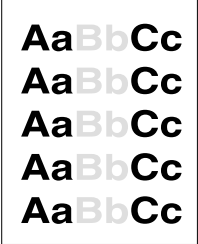

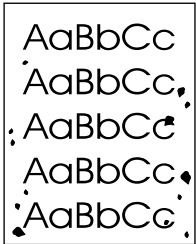
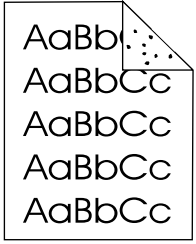
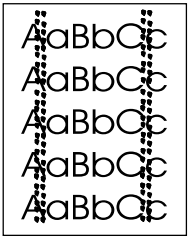
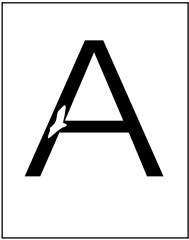
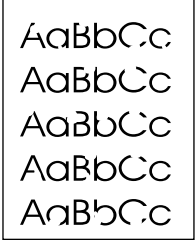
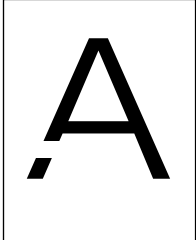
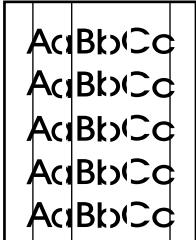
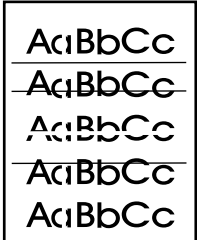

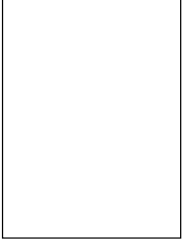
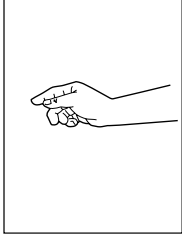
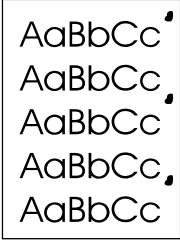

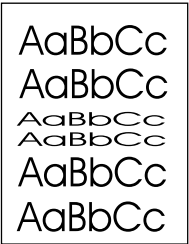
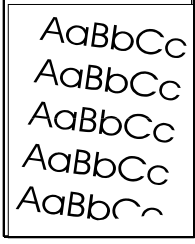
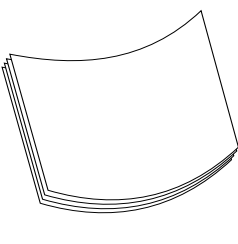
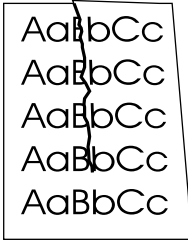
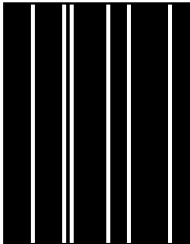
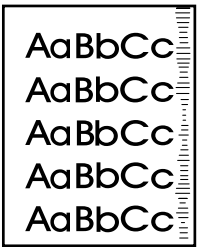
				
See	See	See	See	See
				
See	See	See	See	See
				
See	See	See	See	See
				
See	See	See	See	See



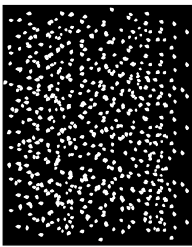
Table 54. Print-quality image defects (continued)



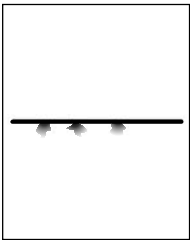
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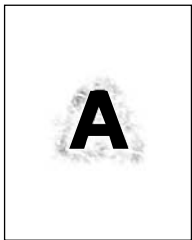
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See



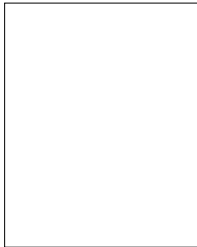
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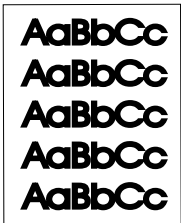
See



See



See



See

Table 55. Light print (partial page)

AaBbCc  
AaBbCc  
AaBbCc  
AaBbCc  
AaBbCc

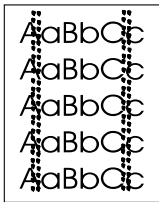
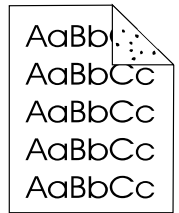
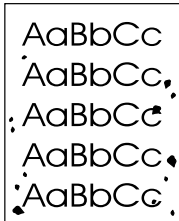
Possible cause	Recommended action(s)
	Remove the print cartridge and then reinstall it. The top cover should close completely when the cartridge is fully seated.
	<ol style="list-style-type: none"> <li>1. Shake the print cartridge gently to redistribute the toner.</li> <li>2. Replace the cartridge.</li> </ol>
	Print a supplies status page (see ) and look at the maintenance-kit gauge. If maintenance is due, install a maintenance kit. For information about ordering a maintenance kit, see chapter 8.

Table 56. Light print (entire page)

AaBbCc  
AaBbCc  
AaBbCc  
AaBbCc  
AaBbCc

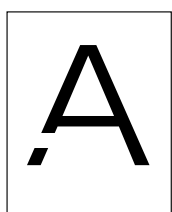
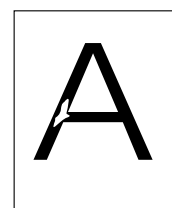
Possible cause	Recommended action
Begin by performing the half self-test functional check (see ). If the image on the print drum is light, proceed with actions 1, 2, 3, 6, and 7. If the drum image is normal, proceed with actions 5, 6, and 8.	
	Shake the print cartridge gently to redistribute the toner, or replace the cartridge.
	Turn EconoMode off.
	Change the toner density (see ) to a darker setting and try to print the job again.
	Try a different media type.
	Verify that the transfer roller is installed correctly. If the transfer roller is damaged, replace it. See .
	The high-voltage connector springs protrude into the print cartridge cavity. Clean the springs if they are dirty. Replace the springs if they are damaged or missing.
	<ol style="list-style-type: none"> <li>1. Remove and reseal the print cartridge.</li> <li>2. Verify that the laser/scanner shutter door can open correctly. If necessary, replace the laser/scanner assembly. See .</li> </ol>
	Replace the power supply. See

**Table 57. Specks or dots**



Possible cause	Recommended action
<b>Specks</b>	
Specks might appear on a page after a jam has been cleared. Print two or three more pages and see if the specks disappear.	
	<ol style="list-style-type: none"> <li>1. Print a few more pages and see if the problem corrects itself.</li> <li>2. Clean the inside of the printer (see chapter 4)</li> <li>3. Process a printer cleaning page. See</li> </ol>
	Replace the print cartridge.
	<ol style="list-style-type: none"> <li>1. Turn over the stack of media in the tray. Also try rotating the media 180 degrees.</li> <li>2. Check the media type and quality. Replace the media if it does not meet specifications, and advise the customer to use the HP-recommended media and to store it correctly. See</li> </ol>
	Replace the fuser. See
<b>Dots (in the paper-path direction)</b>	
	Clean the static eliminator teeth by using a small brush or compressed air.
	Clean the contacts, if they are dirty. If the problem persists after cleaning, or the contacts are damaged or deformed, replace them.
	Replace the transfer roller. See
	Replace the power supply. See

**Table 58. Drop outs and character voids**



Possible cause	Recommended action(s)
	<ol style="list-style-type: none"> <li>1. Check the arrow on the paper wrapper. From tray 1, the printer prints on the side of the paper that faces <i>up</i>. From the other trays, the printer prints on the side of the paper that faces <i>down</i>.</li> <li>2. Turn over the stack of paper in the tray. Also try rotating the stack 180 degrees. <i>Do not</i> fan the stack.</li> <li>3. Check the media type and quality. Replace the media if it does not meet specifications, and advise the customer to use the HP-recommended media and to store it correctly. See</li> </ol>
	Use media that meets HP specifications (see the <i>HP LaserJet Printer Family Paper Specification Guide</i> ).
	Use HP-approved transparencies for monochrome LaserJet printers (see the <i>HP LaserJet Printer Family Paper Specification Guide</i> ).
	Make sure that the printer is installed in an area that meets the environmental specifications. See
	Process a cleaning page (see chapter 4). Several pages might be required if the fuser is very dirty.
	Replace the print cartridge.
	Open the print-quality menu at the control panel and adjust the toner density setting. See Make sure that EconoMode is off.
	Open the configure-device menu at the control panel and change the fuser mode setting or select another media type. See
	Clean the transfer roller by using a dry, lint-free cloth. Do not touch the transfer roller with your fingers. If the problem persists, replace the transfer roller. See
	Inspect the contacts and clean them if they are dirty. Replace them if they are damaged.
	Replace the power supply. See

Table 59. Lines

A	c	B	b	C	c
A	c	B	b	C	c
A	c	B	b	C	c
A	c	B	b	C	c
A	c	B	b	C	c

A	c	B	b	C	c
A	c	B	b	C	c
A	c	B	b	C	c
A	c	B	b	C	c
A	c	B	b	C	c

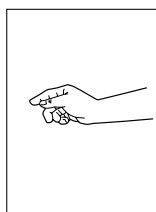
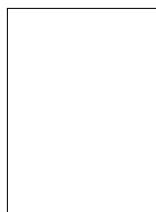
Possible cause	Recommended action(s)
<b>Vertical lines (in the paper-path direction)</b>	
	Remove the print cartridge and then reinstall it. The top cover should close completely when the print cartridge is fully seated.
	Replace the print cartridge.
	Process a printer cleaning page. See <a href="#">Figure 1-10</a> . Several pages might be required if the fuser is very dirty. If the problem persists, replace the fuser. See <a href="#">Table 59</a> .
	Clean the static-eliminator teeth by using a small brush or compressed air. Replace the assembly if it is damaged.
	Make sure that all of the covers are in place. Move the printer away from windows that face the outdoors.
<b>Horizontal lines (parallel to the paper-path direction)</b>	
	Use the repetitive defect ruler to determine the cause of this defect. See <a href="#">Figure 1-11</a> .
	<ol style="list-style-type: none"> <li>1. Check the cables between the dc controller and the laser/scanner assembly.</li> <li>2. If the cables are not connected, connect the cables.</li> <li>3. If, after checking the cables between the DC controller and the laser/scanner, the problem persists, replace the laser/scanner assembly. See <a href="#">Table 59</a>.</li> <li>4. If, after replacing the laser/scanner, the problem persists, replace the dc controller PCA. See <a href="#">Table 59</a>.</li> <li>5. If, after replacing the dc controller PCA, the problem persists, replace the Formatter assembly. See <a href="#">Table 59</a>.</li> </ol>

**Table 60. Grey background**



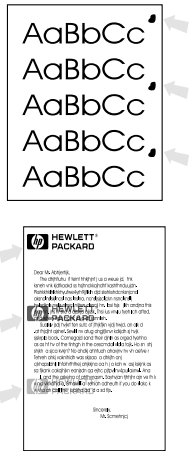
Possible cause	Recommended action(s)
	<ol style="list-style-type: none"> <li>1. Turn over the stack of media in the tray. Also try rotating the media 180 degrees.</li> <li>2. Check the media type and quality. Replace the media if it does not meet specifications, and advise the customer to use the HP-recommended media and to store it correctly. See</li> </ol>
	Clean the inside of the printer (see chapter 4). Install a new print cartridge.
	Make sure that the printer is installed in an area that meets the environmental specifications. See
	Move the text to an area that has no seams.
	Open the print-quality menu at the control panel and adjust the toner density setting. See Make sure that EconoMode is off.
	Open the print-quality menu at the control panel (see ). Select OPTIMIZE and set HIGH TRANSFER=ON.
	Replace the print cartridge.
	The high-voltage connector springs protrude into the print cartridge cavity. Clean the springs if they are dirty. Replace the springs if they are damaged or missing.
	Replace the power supply. See

**Table 61. Loose toner or toner smear**



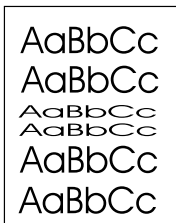
Possible cause	Recommended action(s)
	<ol style="list-style-type: none"> <li>1. Print a few more pages and see if the problem corrects itself.</li> <li>2. Clean the inside of the printer (see chapter 4)</li> <li>3. Process a printer cleaning page. See</li> </ol>
	Process a cleaning page (see ). Several pages might be required if the fuser is very dirty.
	Use media that meets HP specifications (see the <i>HP LaserJet Printer Family Paper Specification Guide</i> ).
	Clean the static-eliminator teeth with a small brush or compressed air. Replace the assembly if it is damaged.
	Replace the fuser. See
	Replace the dc controller PCA. See

**Table 62. Repeating defects and repeating images**



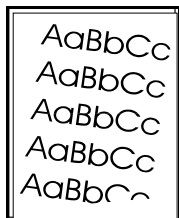
Possible cause	Recommended action(s)
	<ol style="list-style-type: none"> <li>1. Inspect the drum for scratches or other damage. Replace the print cartridge for defects that repeat at 37.7 mm (1.5 inches), 62.8 mm (2.5 inches), 54.0 mm (2.1 inches), and/or 94.2 mm (3.7 inches).</li> <li>2. Process a printer cleaning page. See</li> <li>3. If the problem persists, and the defect repeats at the 75.0 mm (2.95 inches) or 94.0 mm (about 3.7 inches) replace the fuser (see ). For more information about repetitive defects, see</li> </ol> <p>For more information about troubleshooting repeating defects, see</p>
	Examine and clean (or replace) the rollers in the paper path.
	Try a different media type or quality.
	Some preprinted forms (for example, letterheads) use an ink that cannot stand up to the high temperatures in the fuser. Check the media for type and quality. Replace the media, and advise the customer to use the HP-recommended media and to store it correctly. See

**Table 63. Distorted images**



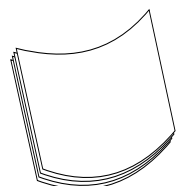
Possible cause	Recommended action(s)
	<ol style="list-style-type: none"> <li>1. Turn over the stack of media in the tray. Also try rotating the media 180 degrees.</li> <li>2. Check the media type and quality. Replace the media if it does not meet specifications, and advise the customer to use the HP-recommended media and to store it correctly. See</li> </ol>
	Make sure that the printer is installed in an area that meets the environmental specifications. See
	Reseat the cables that are connected to the laser/scanner assembly.
	Reseat the cables that are connected to the dc controller PCA.
	Replace the laser/scanner. See
	Inspect the gears that drive the print cartridge and fuser. Replace the main drive assembly. See
	Replace the print-cartridge motor (HP LaserJet 4300 only). See
	Replace the dc controller PCA. See

**Table 64. Skew**



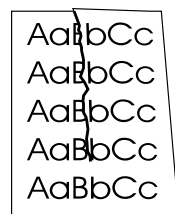
Possible cause	Recommended action(s)
	<ol style="list-style-type: none"> <li>1. Turn over the stack of media in the tray. Also try rotating the media 180 degrees.</li> <li>2. Check the media for type and quality. Replace the media if it does not meet specifications, and advise the customer to use the HP-recommended media and to store it correctly. See</li> </ol>
	Make sure that the media is loaded correctly and that the guides fit snugly against the stack.
	Make sure that the registration assembly is installed correctly. If necessary, replace the registration assembly. See

**Table 65. Curl or wave**



Possible cause	Recommended action(s)
	<ol style="list-style-type: none"> <li>1. Turn over the stack of media in the tray. Also try rotating the media 180 degrees.</li> <li>2. Check the media for type and quality. Replace the media if it does not meet specifications, and advise the customer to use the HP-recommended media and to store it correctly. See</li> </ol>
	Make sure that the printer is installed in an area that meets the environmental specifications. See
	Print to a different output bin (top or rear output bin).
	Open the configure-device menu at the control panel, and change the fuser-mode setting or select another media type. See

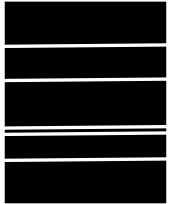
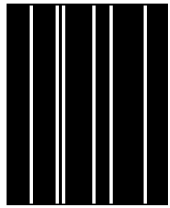
**Table 66. Creases**



Possible cause	Recommended action(s)
	<ol style="list-style-type: none"> <li>1. Turn over the stack of media in the tray. Also try rotating the media 180 degrees.</li> <li>2. Check the media for type and quality. Replace the media if it does not meet specifications, and advise the customer to use the HP-recommended media and to store it correctly. See</li> </ol>
	Make sure that the printer is installed in an area that meets the environmental specifications. See
	Make sure that the media is loaded correctly and that the guides fit snugly against the stack.
	Print from tray 1 when you use a difficult media.
	Print to a different output bin (top or rear output bin).
	<ol style="list-style-type: none"> <li>1. Check the paper path for debris.</li> <li>2. Check for damaged components that might be creasing the paper.</li> </ol>

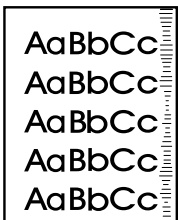


Table 67. White lines



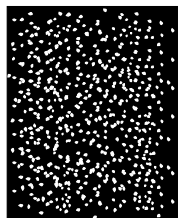
Possible cause	Recommended action(s)
<b>White lines in the paper path</b>	
	<ol style="list-style-type: none"> <li>1. Shake the print cartridge gently to redistribute the toner.</li> <li>2. Replace the cartridge.</li> </ol>
	Clean the laser path. Remove the laser/scanner assembly (see ) and check for dirt or other obstructions in the beam path.
	Replace the fuser. See .
	Replace the laser/scanner assembly. See
<b>White lines opposite the paper path</b>	
	Replace the print cartridge.
	Process a printer cleaning page. See
	If the problem persists, replace the fuser. See
	<ol style="list-style-type: none"> <li>1. Check the cables between the dc controller and the laser/scanner assembly.</li> <li>2. If the cables are not connected, connect the cables.</li> <li>3. If, after checking the cables between the DC controller and the laser/scanner, the problem persists, replace the laser/scanner assembly. See</li> <li>4. If, after replacing the laser/scanner, the problem persists, replace the dc controller PCA. See</li> <li>5. If, after replacing the dc controller PCA, the problem persists, replace the Formatter assembly. See</li> </ol>

Table 68. Smudged lines (either direction)



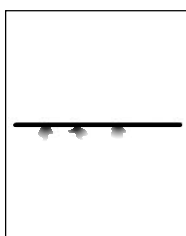
Possible cause	Recommended action(s)
	<ol style="list-style-type: none"> <li>1. Perform the half self-test functional check. See . If the drum is damaged, replace the print cartridge.</li> <li>2. Process a printer cleaning page. See . If the problem persists, replace the fuser. See .</li> <li>3. Check the tray 1 feed roller and the rollers in the other trays. Clean or replace the rollers as necessary.</li> <li>4. Check for other sources of contamination or damage in the paper path and clean or replace parts as necessary.</li> </ol> <p>This type of defect might also be a repetitive defect, See .</p>
	The print cartridge has an expected life of 12,000 pages for the HP LaserJet 4200 printer and 18,000 pages for the HP LaserJet 4300 printer. Replace the print cartridge.

**Table 69. White spots on black**



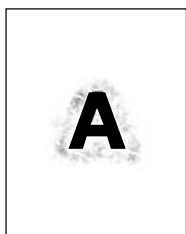
Possible cause	Recommended action(s)
	<ol style="list-style-type: none"> <li>1. Turn over the stack of media in the tray. Also try rotating the media 180 degrees.</li> <li>2. Check the media for type and quality. Replace the media if it does not meet specifications, and advise the customer to use the HP-recommended media and to store it correctly. See</li> </ol>
	Make sure that the printer is installed in an area that meets the environmental specifications. See
	Replace the print cartridge.

**Table 70. Scattered lines**



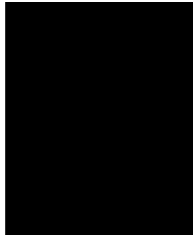
Possible cause	Recommended action(s)
	<ol style="list-style-type: none"> <li>1. Turn over the stack of media in the tray. Also try rotating the media 180 degrees.</li> <li>2. Check the media for type and quality. Replace the media if it does not meet specifications, and advise the customer to use the HP-recommended media and to store it correctly. See</li> </ol>
	Make sure that the printer is installed in an area that meets the environmental specifications. See
	Open the print-quality menu at the control panel and adjust the toner density setting. See
	Open the print-quality menu at the control panel (see ). Select OPTIMIZE and set HIGH TRANSFER=ON.
	Open the print-quality menu at the control panel (see ). Select OPTIMIZE and set LINE DETAIL=ON.

**Table 71. Blurred print**



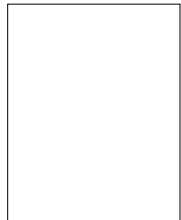
Possible cause	Recommended action(s)
	<ol style="list-style-type: none"> <li>1. Turn over the stack of media in the tray. Also try rotating the media 180 degrees.</li> <li>2. Check the media for type and quality. Replace the media if it does not meet specifications, and advise the customer to use the HP-recommended media and to store it correctly. See</li> </ol>
	Make sure that the printer is installed in an area that meets the environmental specifications. See
	Open the print-quality menu at the control panel and adjust the toner density setting. See
	Open the print-quality menu at the control panel (see ). Select OPTIMIZE and set HIGH TRANSFER=ON.
	Open the print-quality menu at the control panel (see ). Select OPTIMIZE and set LINE DETAIL=ON.

**Table 72. Black page**



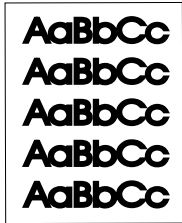
Possible cause	Recommended action(s)
	Replace the print cartridge.
	The high-voltage connector springs protrude into the print cartridge cavity. Clean the springs if they are dirty. Replace the springs if they are damaged or missing.
	<ol style="list-style-type: none"> <li>1. Check the cables between the dc controller PCA and the high-voltage circuitry (part of the power supply).</li> <li>2. If the cables are not connected, connect the cables.</li> <li>3. If the cables are connected, but the problem persists, replace the power supply. See</li> <li>4. If, after replacing the power supply, the problem persists, replace the dc controller PCA. See</li> </ol>
	Replace the laser/scanner assembly. See
	Inspect and reseal the connectors. If necessary, replace the cables.

**Table 73. Blank page**



Possible cause	Recommended action(s)
	Make sure that the application is not sending incorrect page-length requests or extra page-eject commands.
	Check with the network administrator.
	Remove the media from the tray and flex the stack in one direction and then the other to separate the pages. <i>Do not</i> fan the stack. Replace the stack in the tray.
	Remove the sealing tape.
	Replace the print cartridge.
	<ol style="list-style-type: none"> <li>1. Remove and reseal the print cartridge.</li> <li>2. Verify that the laser/scanner shutter door can open correctly. If necessary, replace the laser/scanner assembly. See</li> </ol>
	Without transfer-roller voltage, toner does not transfer correctly from the surface of the drum to the paper. Perform the half self-test functional check (see ) to check the electrophotographic process. If necessary, replace the transfer roller. See
	The high-voltage connector springs protrude into the print cartridge cavity. Clean the springs if they are dirty. Replace the springs if they are damaged or missing.
	When no drum ground path exists, the drum cannot discharge. The negative charge on the drum repels toner, and leaves a nearly-white page (possibly with bubbled print). Check the drum ground that runs from the contact point in the center of the print drum.
	Replace the power supply. See
	Low-level signals that are exchanged between the laser/scanner assembly and the dc controller PCA might be affecting the laser output. Replace the laser/scanner cables.

Table 74. Dark print



Possible cause	Recommended action(s)
	Open the print-quality menu at the control panel and adjust the toner density setting. See .
	Replace the print cartridge.
	<ol style="list-style-type: none"> <li>1. Turn over the stack of media in the tray. Also try rotating the media 180 degrees.</li> <li>2. Check the media for type and quality. Replace the media, and advise the customer to use the HP recommended media and to store it correctly. See</li> </ol>
	Clean the contacts if they are dirty. If the problem persists after cleaning, or if the contacts are damaged or deformed, replace the contacts.
	Replace the laser/scanner assembly. See .
	Replace the power supply. See

## Repetitive defects troubleshooting

Defects on printer rollers can cause image defects to appear at regular intervals on the page, corresponding to the circumference of the roller that is causing the defect. Measure the distance between defects that recur on a page. Use table 75 or the repetitive defect ruler (figure 204) to determine which roller is causing the defect. To resolve the problem, try cleaning the roller first. If the roller remains dirty after cleaning or if it is damaged, replace the part indicated in table 75.

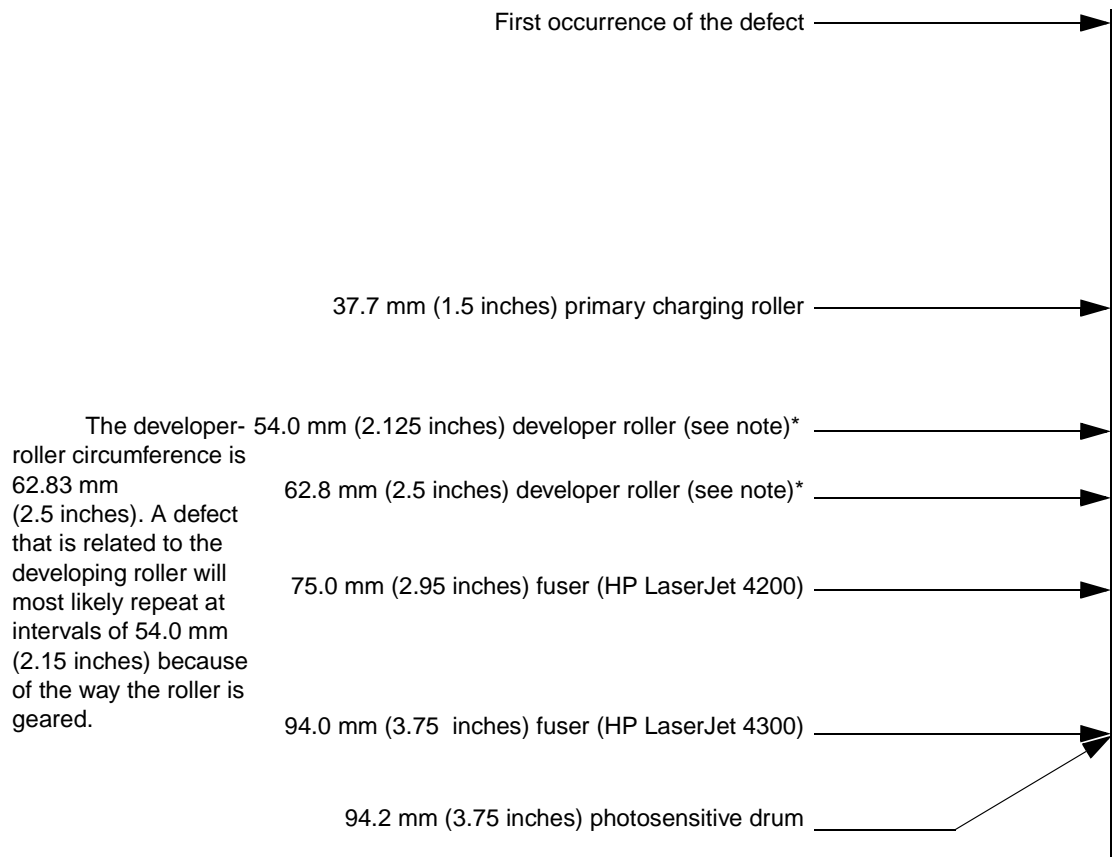
Do not use solvents or oils to clean rollers. Instead, rub the roller with lint-free paper. If dirt is difficult to remove, rub the roller with lint-free paper that has been dampened with water.

**Table 75. Repetitive defects**

Roller	Distance between defects	Replacement part
Primary charging roller	37.7 mm (1.5 inches)	print cartridge
Developer roller*	62.8 mm (2.5 inches)	print cartridge
Fuser	75.0 mm (2.95 inches; HP LaserJet 4200) 94.0 mm (3.75 inches; HP LaserJet 4300)	fuser
Photosensitive drum	94.2 mm (3.75 inches)	print cartridge

\*The developer-roller circumference is 62.8 mm (2.5 inches). A defect that is related to the developing roller will most likely repeat at intervals of 54.0 mm (2.125 inches) because of the way the roller is geared.

Defects on the tray pickup rollers or the tray 1 pickup roller do not cause a repetitive defect. Defects on these rollers cause a defect to appear only on the leading edge of the image.



**Repetitive defect ruler**

When troubleshooting problems that are related to the stacker or stapler/stacker, you might find that it is difficult to distinguish whether the malfunction relates to the stacker, the stapler/stacker, or the printer. The troubleshooting procedures in this section assume that the stacker or stapler/stacker is installed on a printer that is working normally. Always correct any printer errors *before* attempting to troubleshoot the stacker or stapler/stacker. Stacker and stapler/stacker errors fall into four groups:

- jam errors
- paper-transport errors
- malfunction errors
- component errors

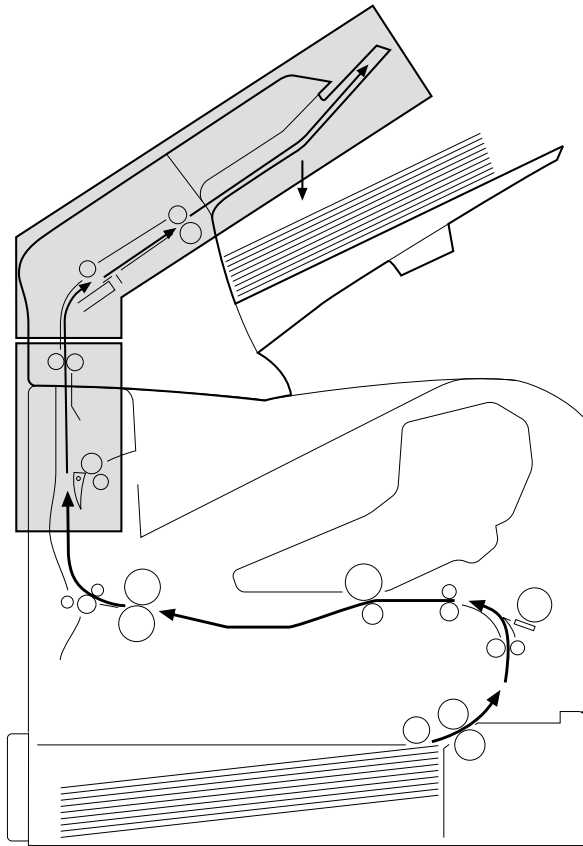
Jam and transport errors result when media does not move successfully from the printer through to the stacker or stapler/stacker. Malfunction errors cause the stacker or stapler/stacker to stop or to operate incorrectly. Component errors that are the result of an internal component failure and generate errors messages that appear on the control-panel display. For more information about control-panel messages, see [and](#)

## Initial checks

- ☐ Inspect the stacker or stapler/stacker connectors on the unit and on the printer. Verify that the connectors are not damaged, and that the stacker or stapler/stacker is installed correctly. If the stacker or stapler/stacker was installed while the printer power was on, turn the power off and then back on.
- ☐ Verify that the environmental specifications are met. The specifications for the stacker and stapler/stacker are the same as for the printer. See [and](#)
- ☐ Verify that the media being used meets HP specifications. See [and](#)
- ☐ Before troubleshooting the stacker or stapler/stacker, verify that any printer errors have been corrected. The printer must be operating normally before you can troubleshoot the stacker or stapler/stacker. See [and](#)
- ☐ If the stacker or stapler/stacker was recently moved from a cold environment (for example, a warehouse) into a warm room, condensation within the device might be causing the problem. If condensation occurs, either wipe the parts with a dry, lint-free cloth, or leave the stacker or stapler/stacker turned on for 10 to 20 minutes.

## Jam errors

### Stacker and stapler/stacker paper path



### Stacker and stapler/stacker paper path

#### Stacker paper-path test































Use the following procedure to perform a stacker paper-path test.

1. Press the (⏏) button to open the menus
2. Use the (⬆) button or the (⬇) button to scroll to **DIAGNOSTICS**, and then press the (⏏) button.
3. Use the (⬆) button or the (⬇) button to scroll to **PAPER PATH TEST**, and then press the (⏏) button.
4. Use the (⬆) button or the (⬇) button to scroll to **DESTINATION**, and then press the (⏏) button. Scroll to **OPTIONAL BIN 1** then press the (⏏) button.
5. Use the (⬆) button or the (⬇) button to scroll to **COPIES** then press the (⏏) button. Scroll to the desired number of test pages, then press the (⏏) button.
6. Use the (⬆) button or the (⬇) button to scroll to **PRINT TEST PAGE**, and then press the (⏏) button. The printer will print the selected number of pages and send them to the stacker.



## Stapler/stacker paper-path test

Use the following procedure to perform a stapler/stacker paper-path test.

1. Press the  button to open the menus.
2. Use the  button or the  button to scroll to **CONFIGURE DEVICE**, and then press the  button.
3. Use the  button or the  button to scroll to **STAPLER STACKER**, and then press the  button.
4. Use the  button or the  button to scroll to **STAPLES**, and then press the  button. Scroll to **ONE**, and then press the  button.
5. Press the  button to exit the submenus.
6. Press the  button to open the menus.
7. Use the  button or the  button to scroll to **DIAGNOSTICS**, and then press the  button.
8. Use the  button or the  button to scroll to **PAPER PATH TEST** and then press the  button.
9. Use the  button or the  button to scroll to **DESTINATION**, and then press the  button. Scroll to **OPTIONAL BIN 1**, and then press the  button.
10. Use the  button or the  button to scroll to **COPIES**, and then press the  button. Scroll to **10**, and then press the  button.
11. Use the  button or the  button to scroll to **PRINT TEST PAGE**, and then press the  button. The printer will print 10 test pages and send them to the stapler/stacker where they are stapled.

**Table 76. Printer-connection-area jam troubleshooting**

Possible cause	Recommended action(s)
	Turn the printer off and then on. Verify that the feed rollers rotate correctly. If the rollers do not rotate, replace the stacker or stapler/stacker.
	Clean the rollers if they are dirty. If necessary, replace the stacker or stapler/stacker.
	Inspect the inlet sensor (PS1101). See <a href="#">Figure 7-10</a> . Verify that the sensor arm can move freely. If necessary, replace the stacker or stapler/stacker.
	Reseat the inlet-sensor (PS1101) spring. See <a href="#">Figure 7-10</a> . If necessary, replace the stacker or stapler/stacker.
	Replace the stacker or stapler/stacker.
	Inspect the deflector. Verify that it can move freely and is not damaged. If necessary, replace the stacker or stapler/stacker.
	If necessary, replace the deflector mechanism in the printer.
	Replace the stacker or stapler/stacker.

**Table 77. Delivery area jam troubleshooting**

Possible cause	Recommended action(s)
	Replace the stapler unit. See .
	Inspect the paper-delivery sensor (PS1102). See . Verify that the sensor arm can move freely. If necessary, replace the stacker or stapler/stacker.
	Reseat the paper-delivery sensor (PS1102) spring. See . If necessary, replace the stacker or stapler/stacker.
	Replace the stacker or stapler/stacker.

## Paper-transport errors

**Table 78. Paper-transport-error troubleshooting**

Possible cause	Recommended action(s)
	Inspect all of the stacker or stapler/stacker rollers. Clean any dirty rollers. If necessary, replace the stacker or stapler/stacker.
	Inspect the feed guide. If, necessary, replace the stacker or stapler/stacker.
	The paper path is contaminated. Clean the paper path. See
	The rollers are worn, dirty or defective. Inspect all of the stacker or stapler/stacker rollers. Clean any dirty rollers. If necessary, replace the stacker or stapler/stacker.

## Malfunction errors

**Table 79. Malfunction-error troubleshooting**

Possible cause	Recommended action(s)
	Inspect the stacker or stapler/stacker connectors on the unit and on the printer. Verify that these connectors are not damaged, and that the stacker or stapler/stacker is installed correctly and fully seated.
	If the stacker or stapler/stacker is installed when the printer power was on, turn the power off and then back on.
	Turn the printer power off. Remove and reinstall the stacker or stapler/stacker. Turn the printer power on again.
	Replace the stacker or stapler/stacker.
	Replace the stapler-unit staple cartridge. See
	Replace the stapler unit. See
	When using the stapler/stacker, limit the print job to a single page size.
	Replace the stapler/stacker.

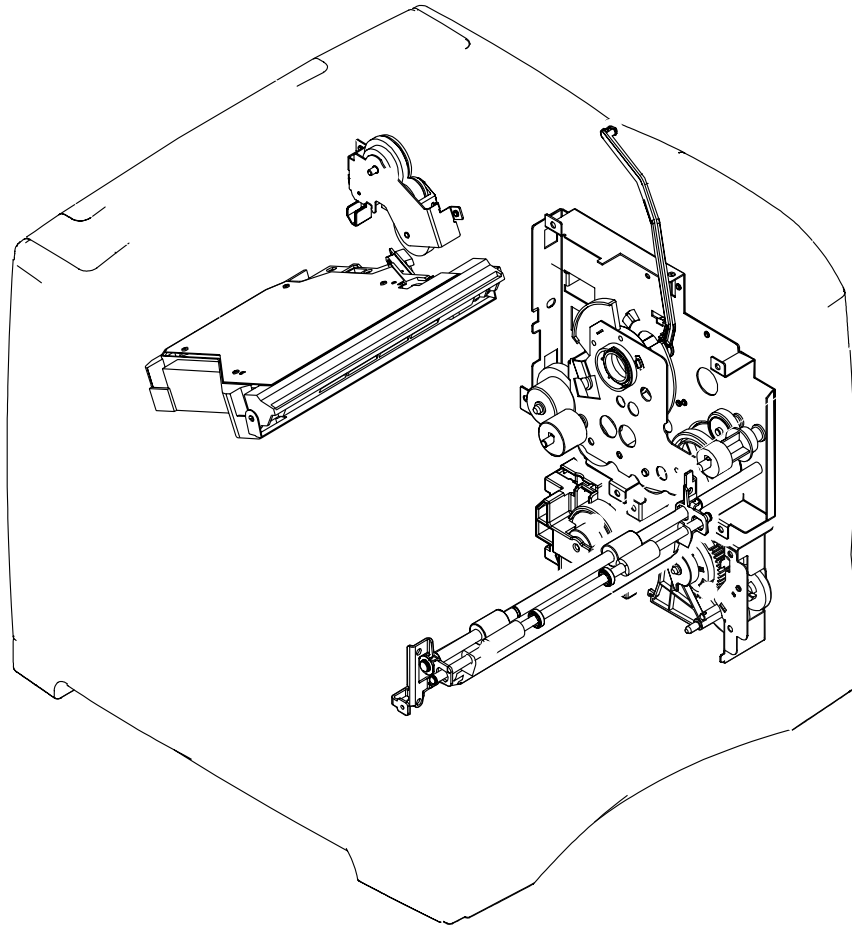
## Component errors

When component errors occur, a control-panel message appears on the control-panel display. For more information about these messages, see and .

**Table 80. Component-error troubleshooting**

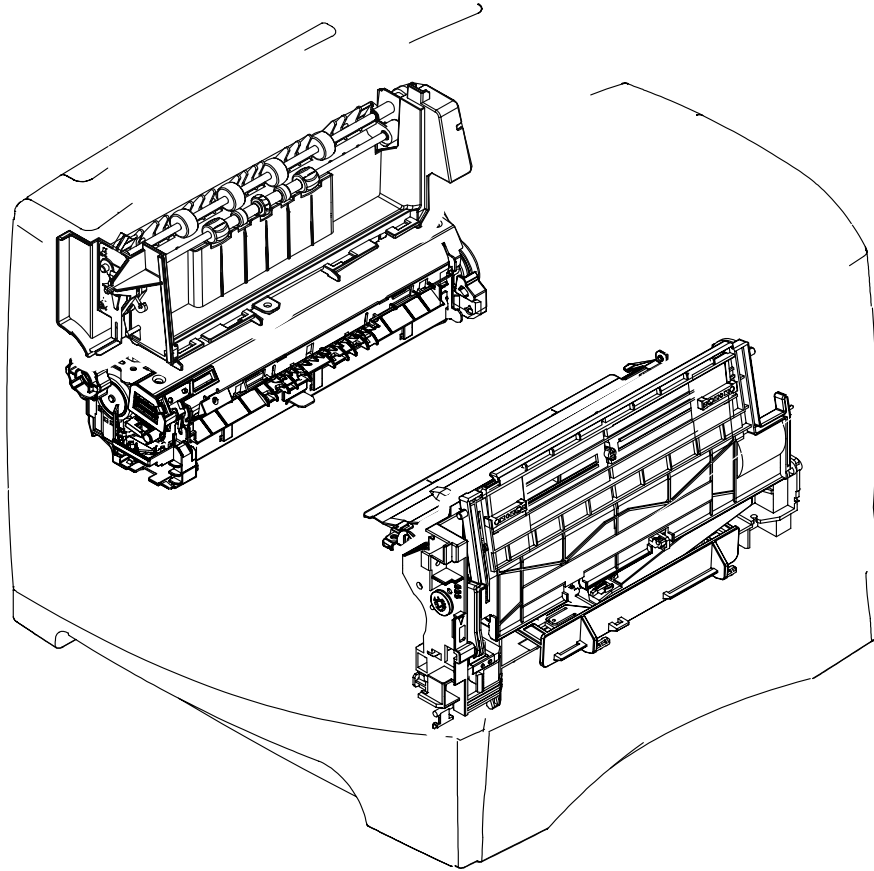
Possible cause	Recommended action(s)
	Inspect the jogger mechanism. See . If necessary, replace the stapler/stacker.
	Inspect the paddle mechanism. See . If necessary, replace the stapler/stacker. The stapler/stacker PCA is defective. Replace the stapler/stacker.
	The stapler unit has failed. Replace the stapler unit. See . The stapler/stacker PCA is defective. Replace the stapler/stacker.
13.12.07 JAM IN THE STAPLER	The staples are defective. Replace the staple cartridge. The stapler unit is defective. Replace the stapler unit. See . The stapler/stacker PCA is defective. Replace the stapler/stacker.
STAPLER LOW ON STAPLES STAPLER OUT OF STAPLES	The staple cartridge contains no staples. Replace the staple cartridge. See . Replace the stapler unit. See . The stapler/stacker PCA is defective. Replace the stapler/stacker.
13.XX.YY JAM	The inlet-sensor (PS1101) lever does not move smoothly or is damaged. See . Inspect the inlet sensor. Verify that the sensor lever can move freely. The delivery sensor (PS1102) lever does not move smoothly or is damaged. See . Inspect the delivery sensor. Verify that the sensor lever can move freely. If necessary, replace the stacker or stapler/stacker.
OUTPUT PAPER PATH OPEN	The door-open switch (SW1101) is damaged or defective. See . Replace the stacker or stapler/stacker. The stapler/stacker PCA is defective. Replace the stacker or stapler/stacker.
OPTIONAL BIN 1 FULL	The paper-full sensor (PS1106) is damaged or defective. See . Replace the stacker or stapler/stacker. The stapler/stacker PCA is defective. Replace the stacker or stapler/stacker.

## Main printer parts



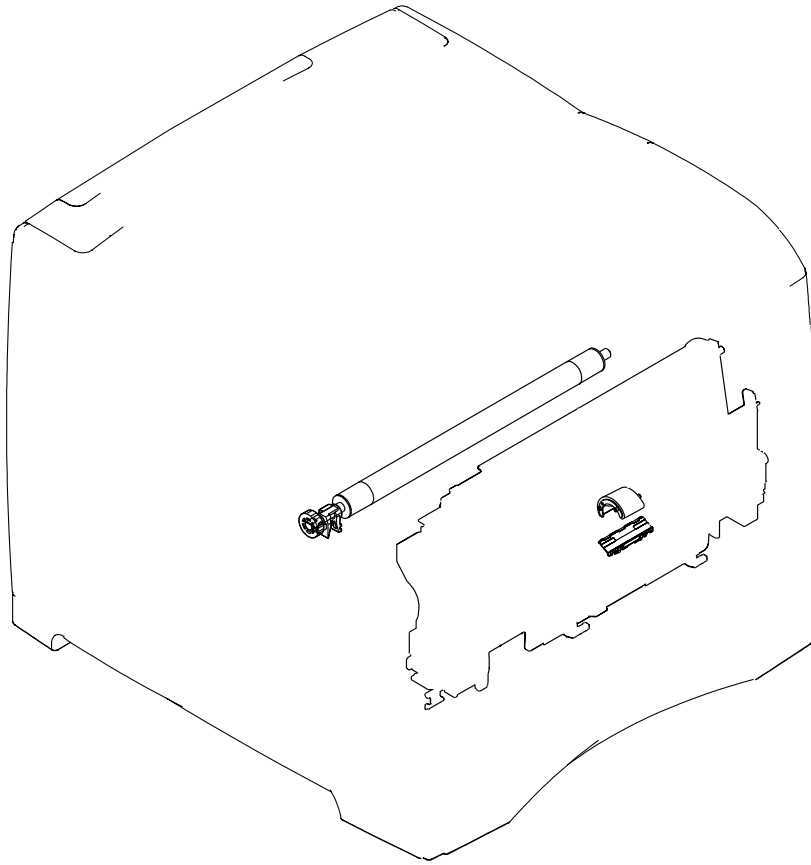
### Location of the main printer parts (1 of 4)

1. Laser/scanner assembly
2. Duplex-pendulum assembly
3. Main-drive assembly
4. Lifter-drive assembly
5. Paper-pickup-drive assembly
6. Paper-feed assembly



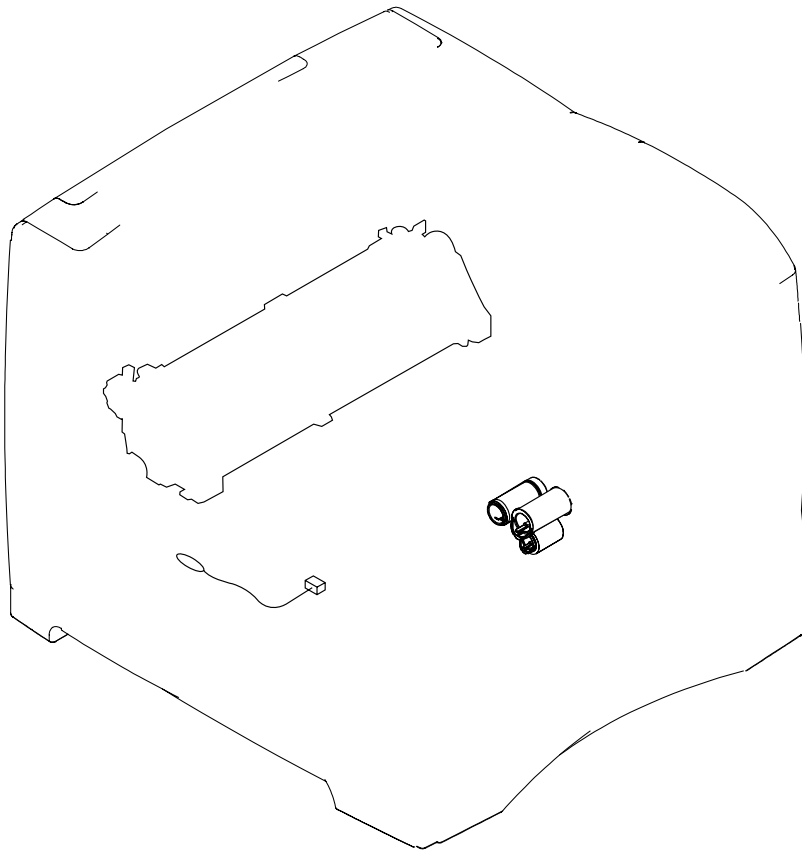
**Location of the main printer parts (2 of 4)**

1. Output-delivery assembly
2. Registration-roller assembly
3. Tray 1 pickup assembly
4. Fuser assembly



**Location of the main printer parts (3 of 4)**

1. Transfer roller
2. Tray 1 pickup roller
3. Separation pad

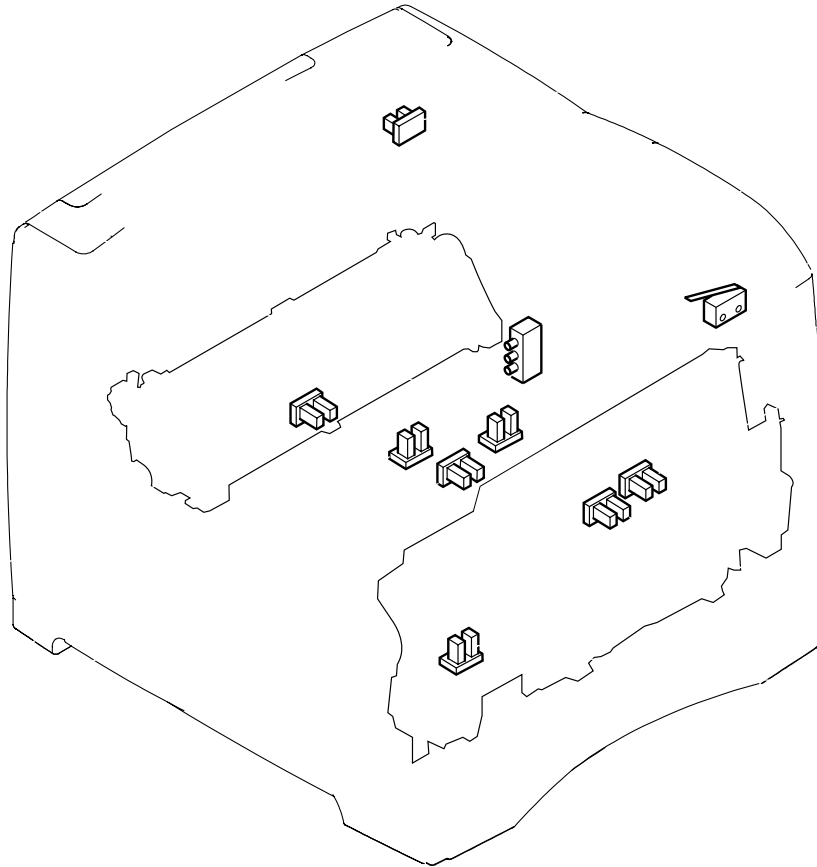


**Location of the main printer parts (4 of 4)**

1. Pickup roller
2. Feed roller
3. Separation roller (in the tray)



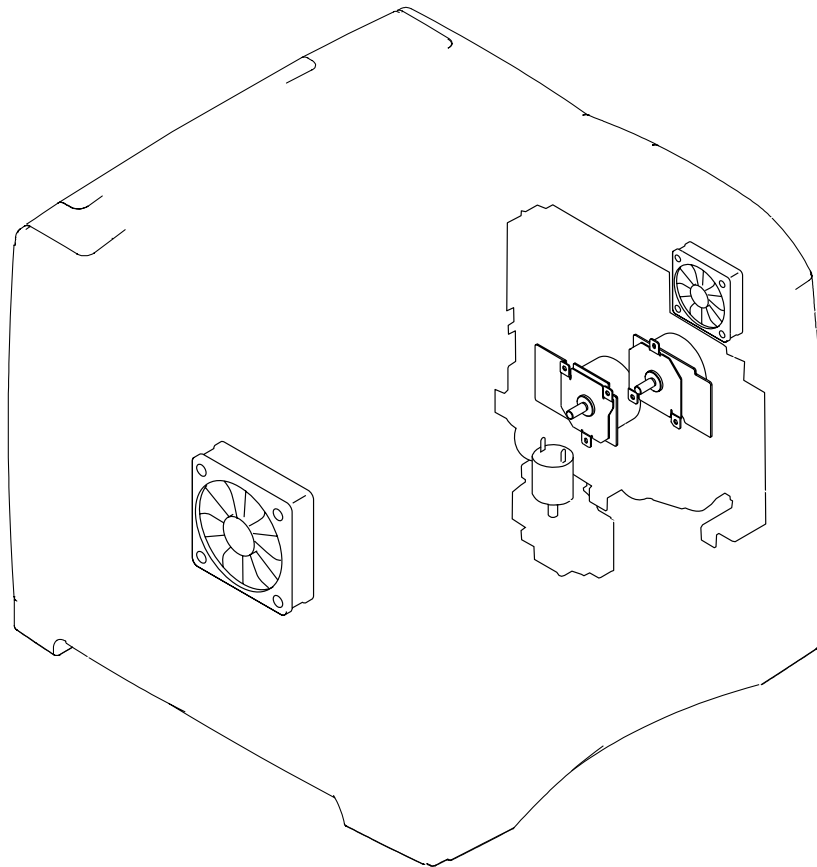
## Printer switches and sensors



### Location of the printer switches and sensors

1. Output-bin-full sensor (PS104)
2. Paper-size switch (SW102)
3. Top-cover-open switch (SW101)
4. Paper-stack-position sensor (PS107)
5. Tray 2 paper sensor (PS101)
6. Tray 1 paper sensor (on the tray 1 pickup assembly; PS105)
7. Pre-feed sensor (PS102)
8. Paper-width sensor (PS106)
9. Fuser-assembly-delivery sensor (PS108)
10. Top-of-page sensor (PS103)

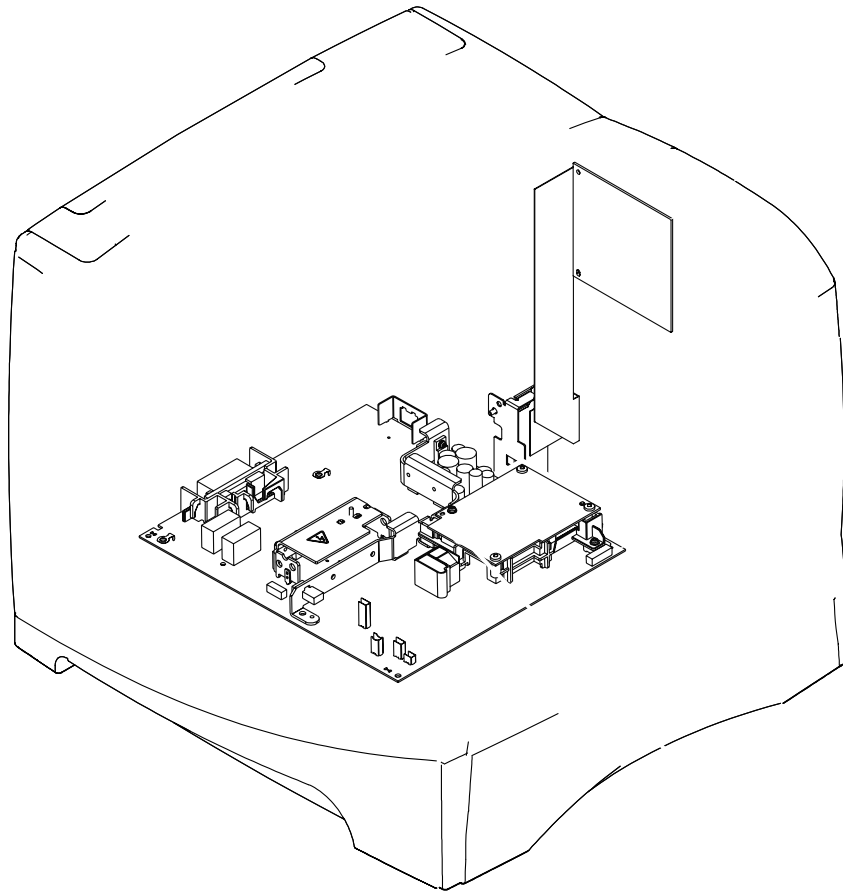
## Printer motors and fans



### Location of the printer motors and fans

1. Right-side cooling fan (HP LaserJet 4300 only)
2. Print-cartridge motor (HP LaserJet 4300 only)
3. Main drive motor
4. Lifter-drive motor
5. Main cooling fan

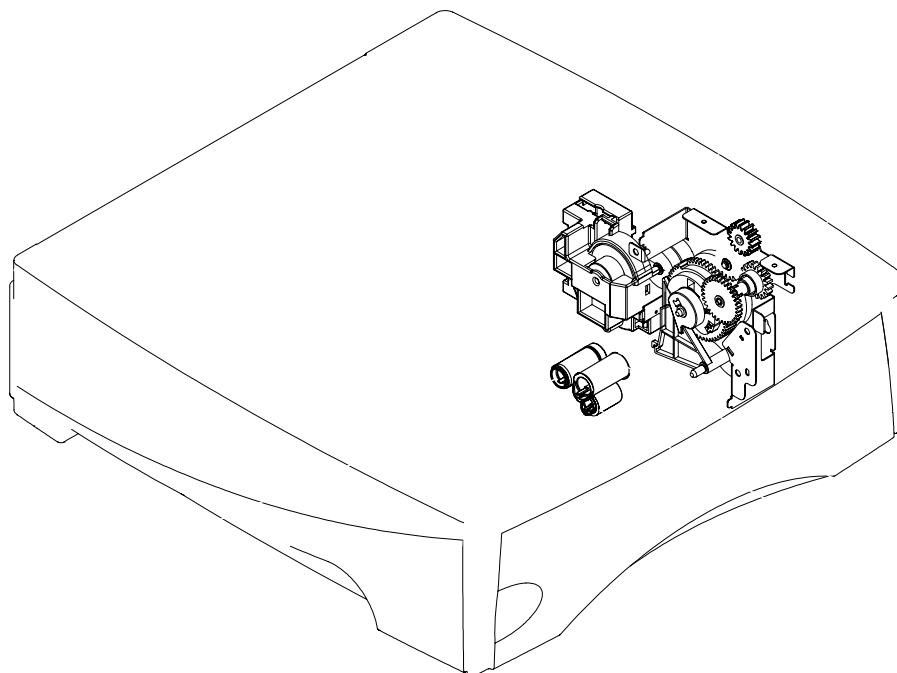
## Printer PCAs



### Location of the printer PCAs

1. Dc controller PCA
2. Power supply (high-voltage and low-voltage circuits)

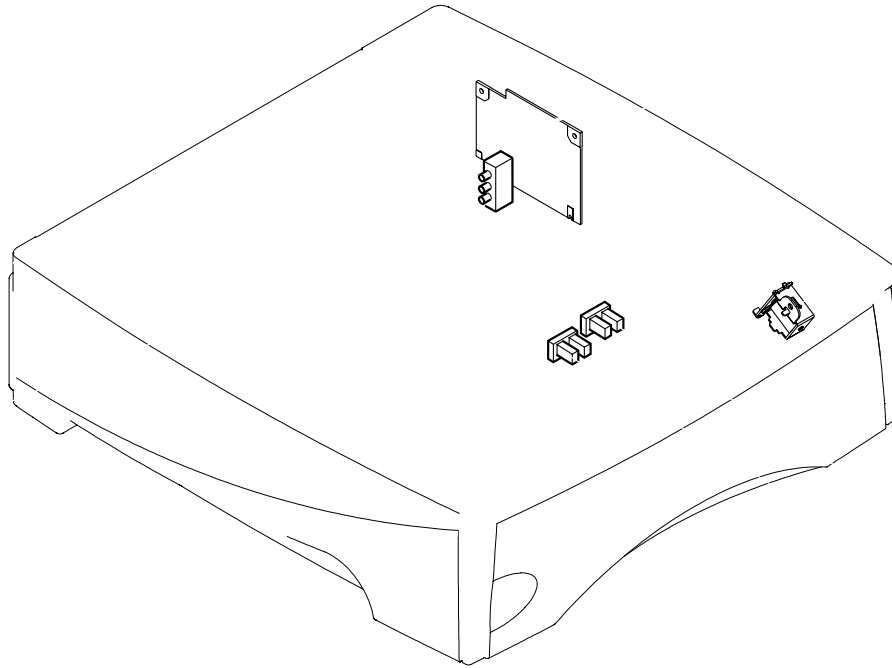
## 500-sheet feeder main parts



### Location of the 500-sheet paper-feeder main parts

1. 500-sheet feeder lifter-drive assembly
2. 500-sheet feeder pickup-gear assembly
3. 500-sheet feeder feed roller
4. 500-sheet feeder separation roller (in the tray)
5. 500-sheet feeder pickup roller

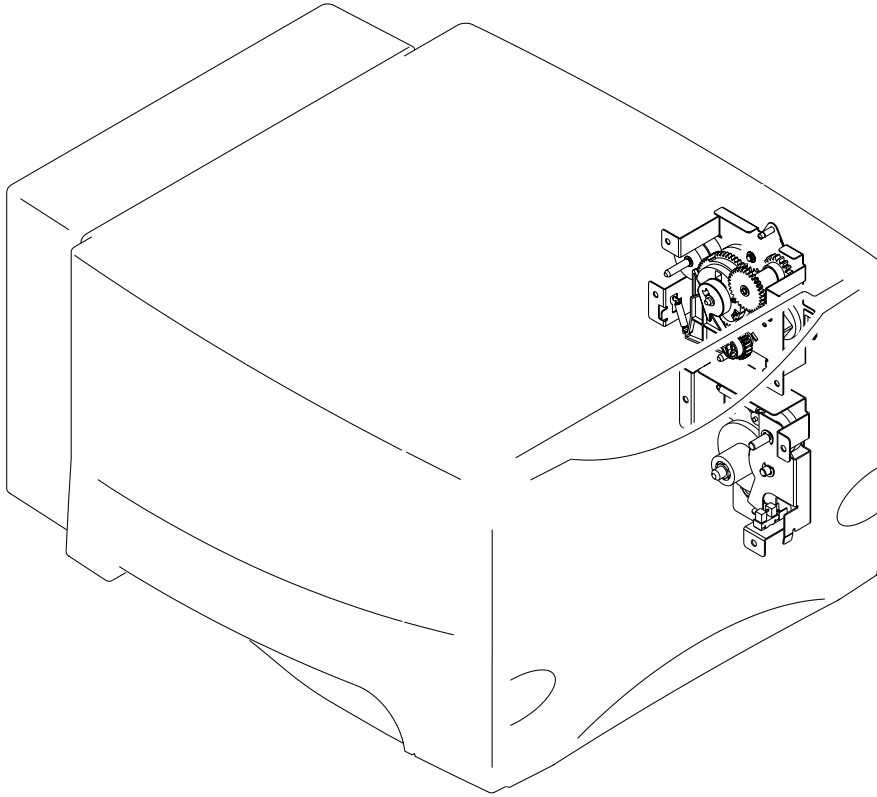
## 500-sheet feeder switches, sensors, solenoids, and PCAs



### Location of the 500-sheet paper feeder switches, sensors, solenoids, and PCAs

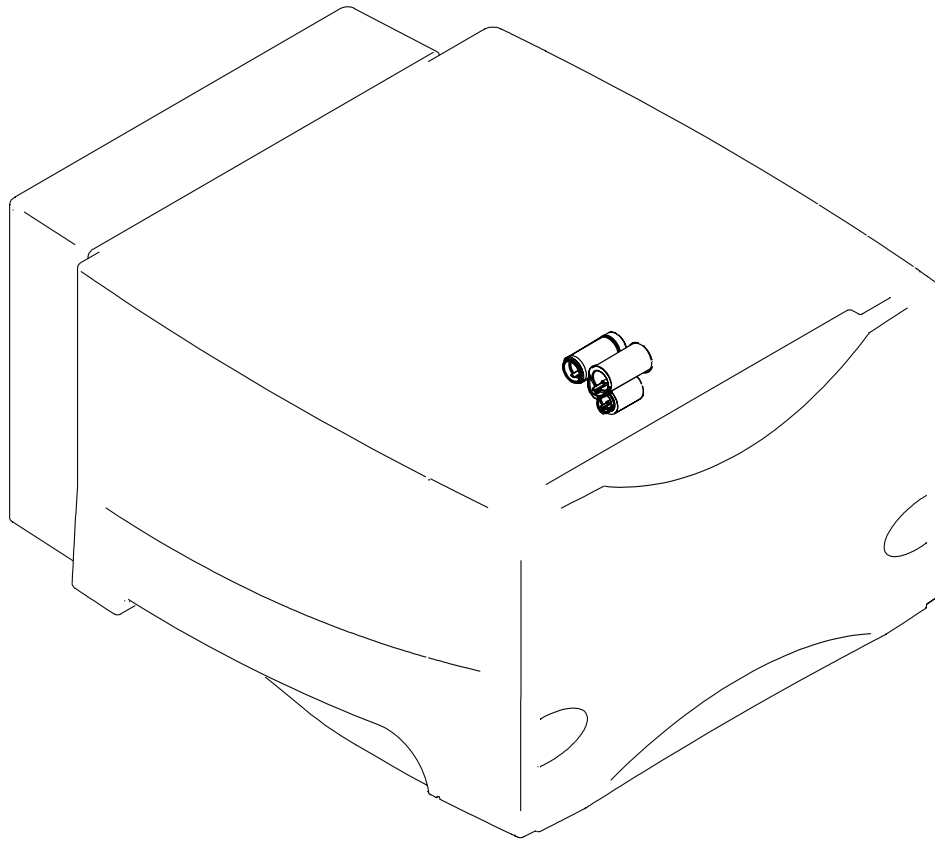
1. 500-sheet feeder control PCA
2. 500-sheet feeder paper-pickup solenoid (SL801)
3. 500-sheet feeder paper-stack-position sensor (PS802)
4. 500-sheet feeder paper sensor (PS801)
5. 500-sheet feeder paper-size switch (SW801)

## 1,500-sheet feeder main parts



### Location of the 1,500-sheet paper feeder main parts (1 of 2)

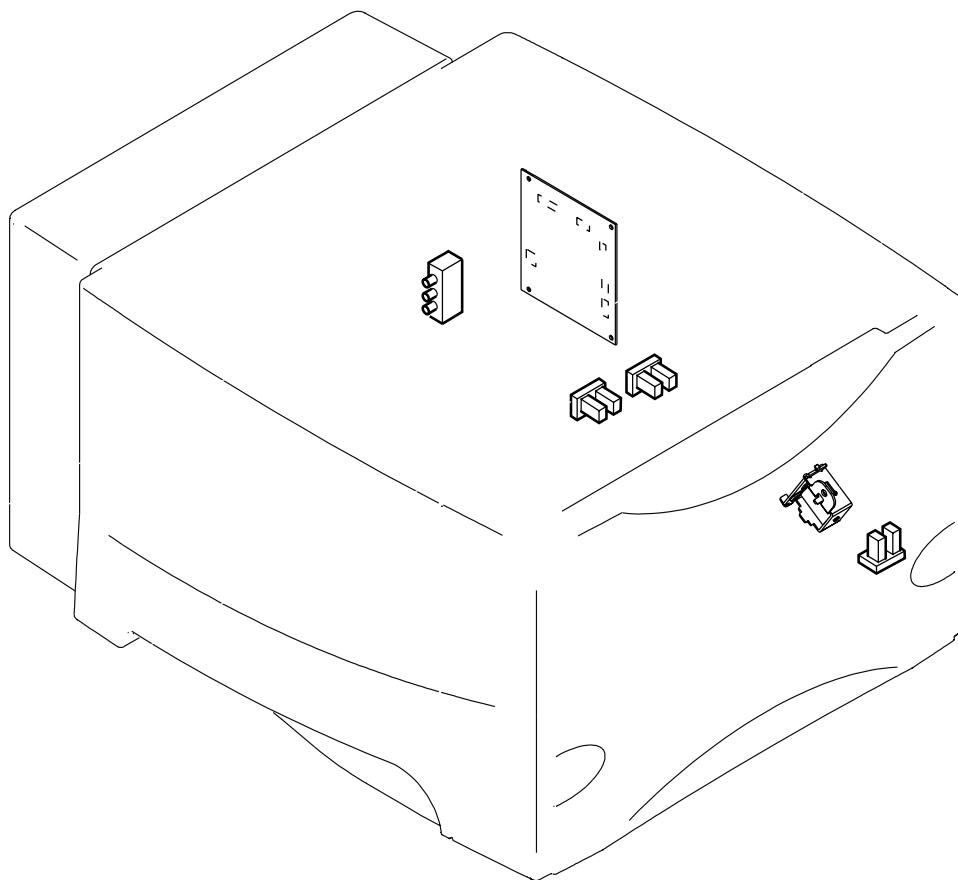
1. 1,500-sheet feeder lifter-drive assembly
2. 1,500-sheet feeder pickup-gear assembly



**Location of the 1,500-sheet paper feeder main parts (2 of 2)**

1. 1,500-sheet feeder feed roller
2. 1,500-sheet feeder pickup roller
3. 1,500-sheet feeder separation roller (in the door)

## 1,500-sheet feeder switches, sensors, solenoids, and PCAs

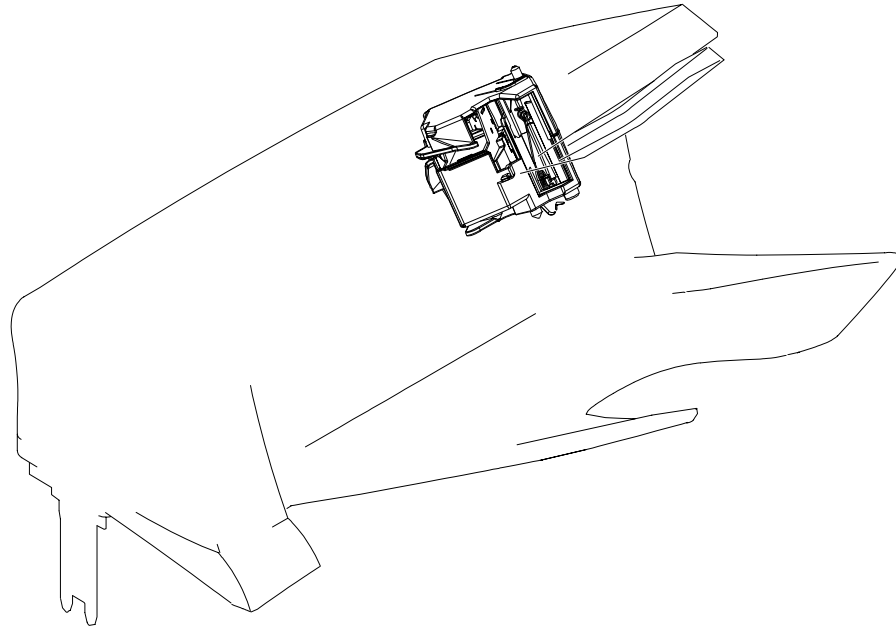


### Location of the 1,500-sheet switches, sensors, solenoids, and PCAs

1. 1,500-sheet feeder control PCA
2. 1,500-sheet feeder paper sensor (SR3)
3. 1,500-sheet feeder paper-pickup solenoid (SL1)
4. 1,500-sheet feeder door sensor (SR1)
5. 1,500-sheet feeder paper-stack-position sensor (SR2)
6. 1,500-sheet feeder paper-size sensor (SW1)



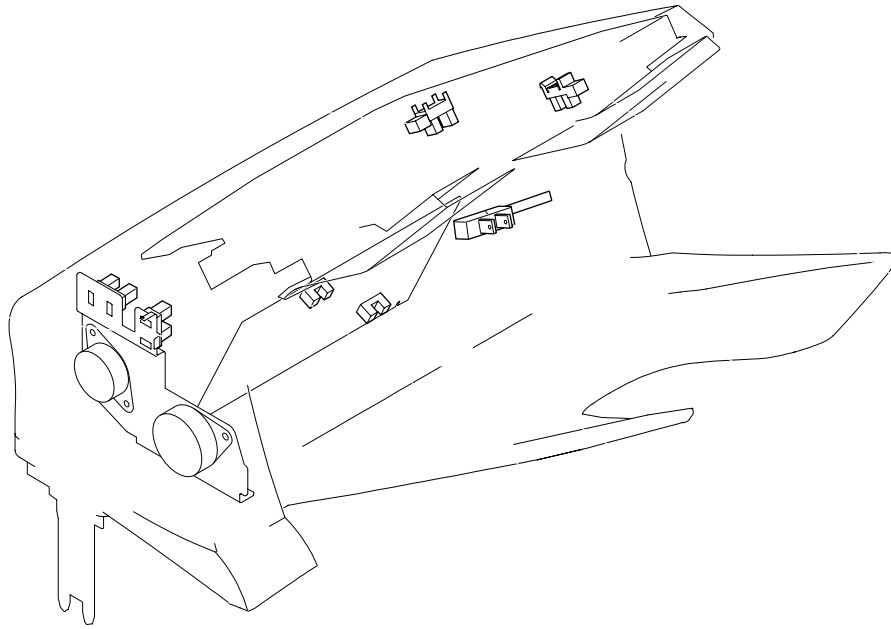
## Stapler/stacker stapler assembly



### Location of the stapler/stacker stapler unit

1. Stapler unit (stapler/stacker accessory only)

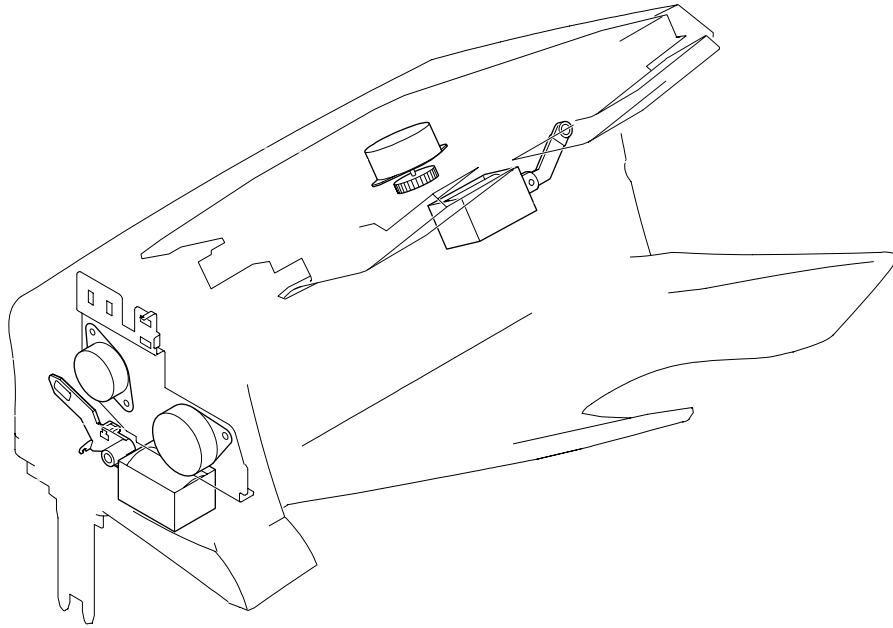
## Stacker and stapler/stacker switches and sensors



### Location of the stacker and stapler/stacker switches and sensors

1. Jogger home-position sensor (stapler/stacker only; PS1105)
2. Door-open switch (SW1101)
3. Paper-inlet sensor (PS1101)
4. Paper-delivery sensor (PS1102)
5. Delivery-roller disengaging sensor (stapler/stacker only; PS1104))
6. Paddle home-position sensor (stapler/stacker only; PS1103)
7. Paper-full sensor (PS1106)

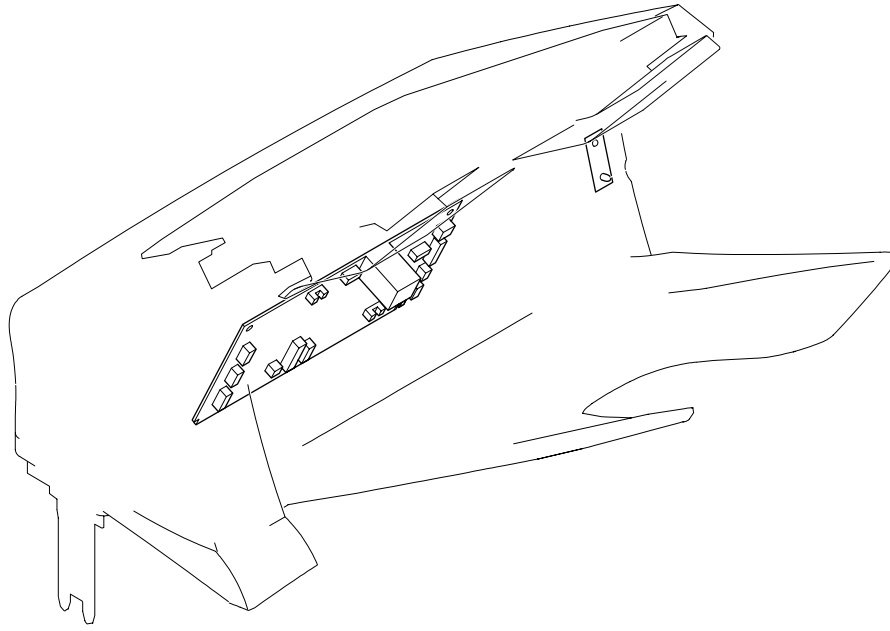
## Stacker and stapler/stacker motors and solenoids



### Location of the stacker and stapler/stacker motors and solenoids

1. Clamp solenoid (stapler/stacker only; SL1102)
2. Deflector solenoid (SL1101)
3. Feed mechanism and motor (M1103)
4. Paddle mechanism and motor (stapler/stacker only; M1101)
5. Jogger mechanism and motor (stapler/stacker only; M1102)

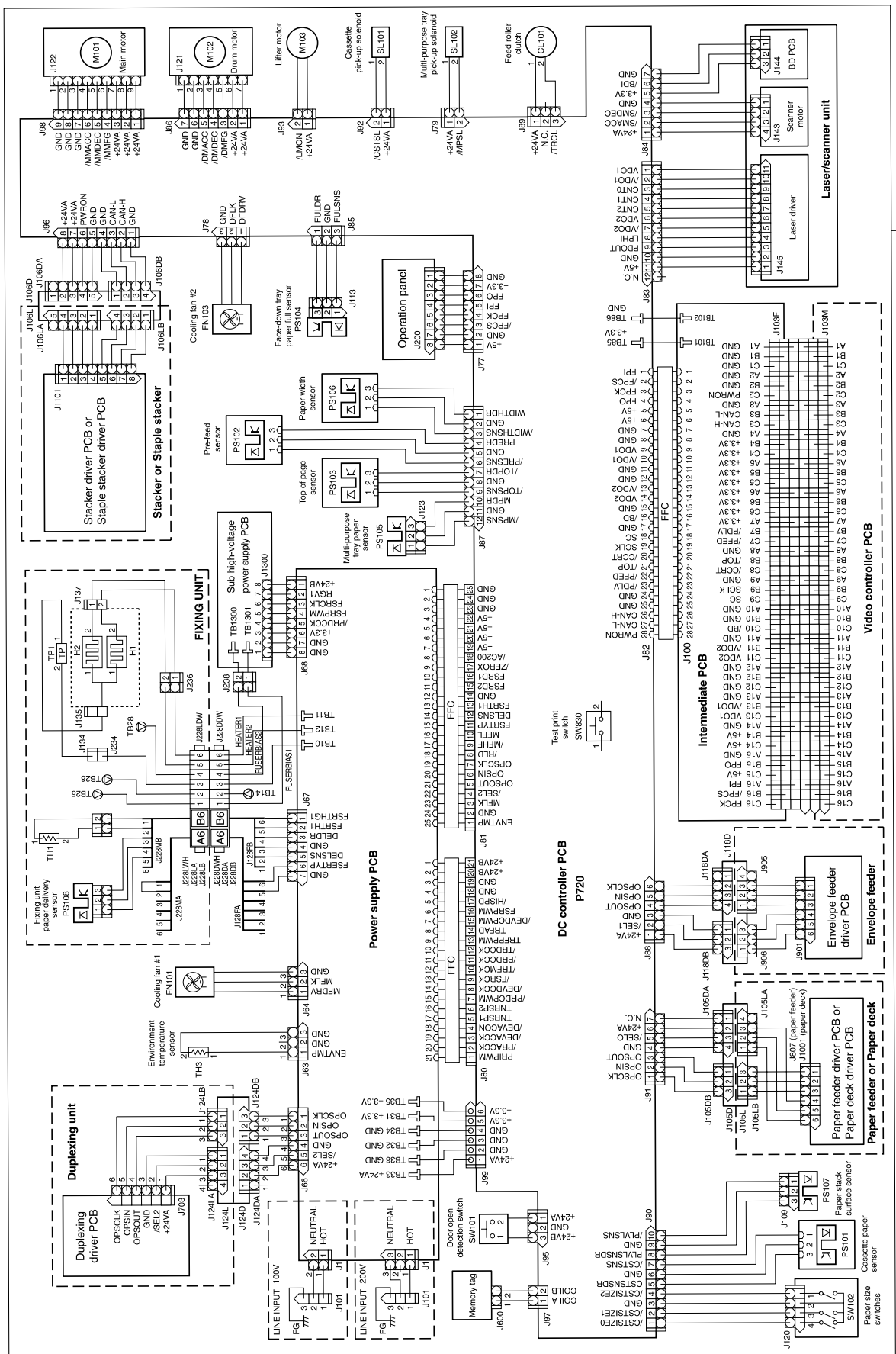
## Stacker and stapler/stacker PCAs



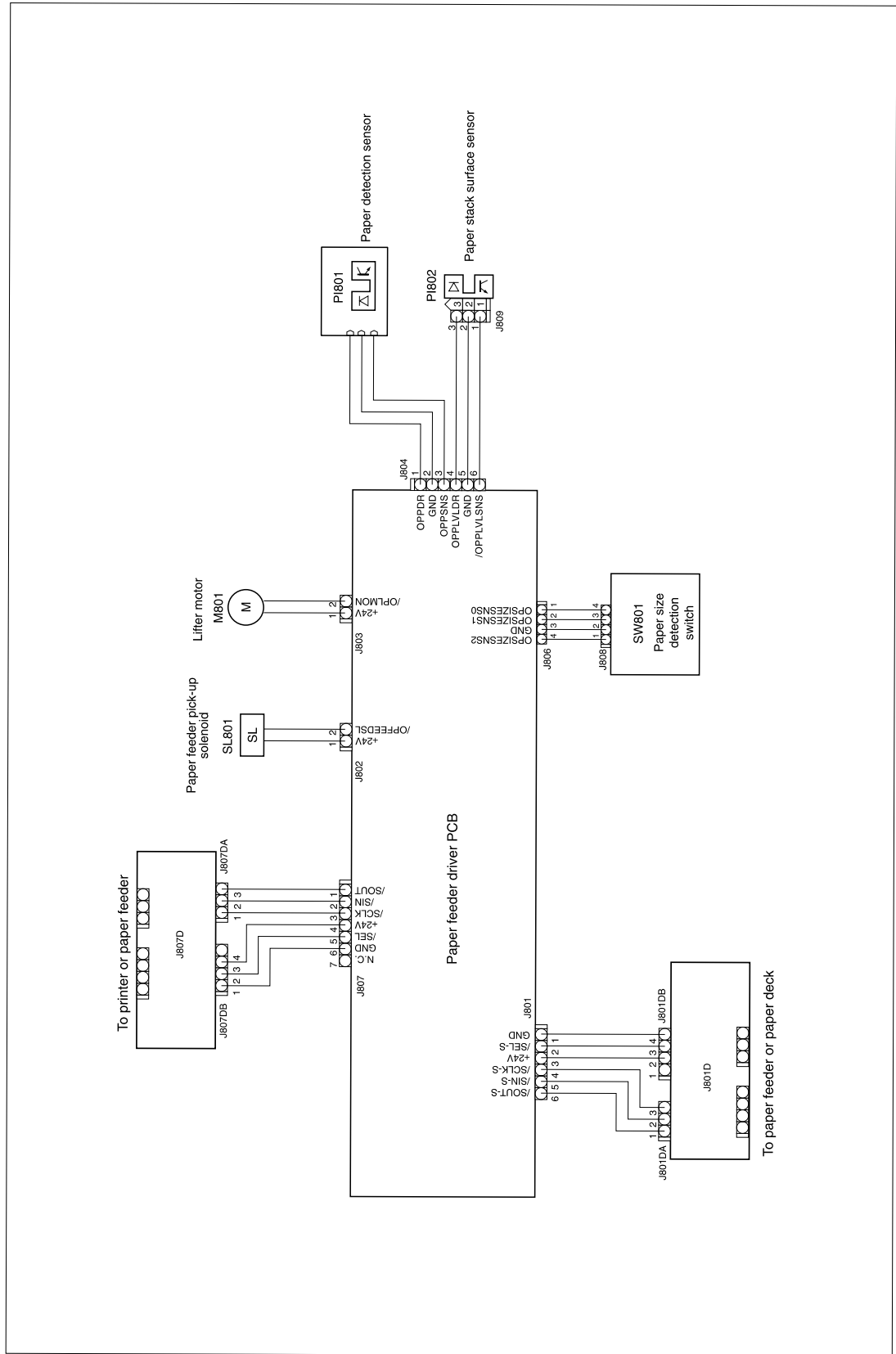
### Location of the stacker and stapler/stacker PCAs

1. Stacker or staple/stacker LED PCA
2. Stacker or staple/stacker driver PCA

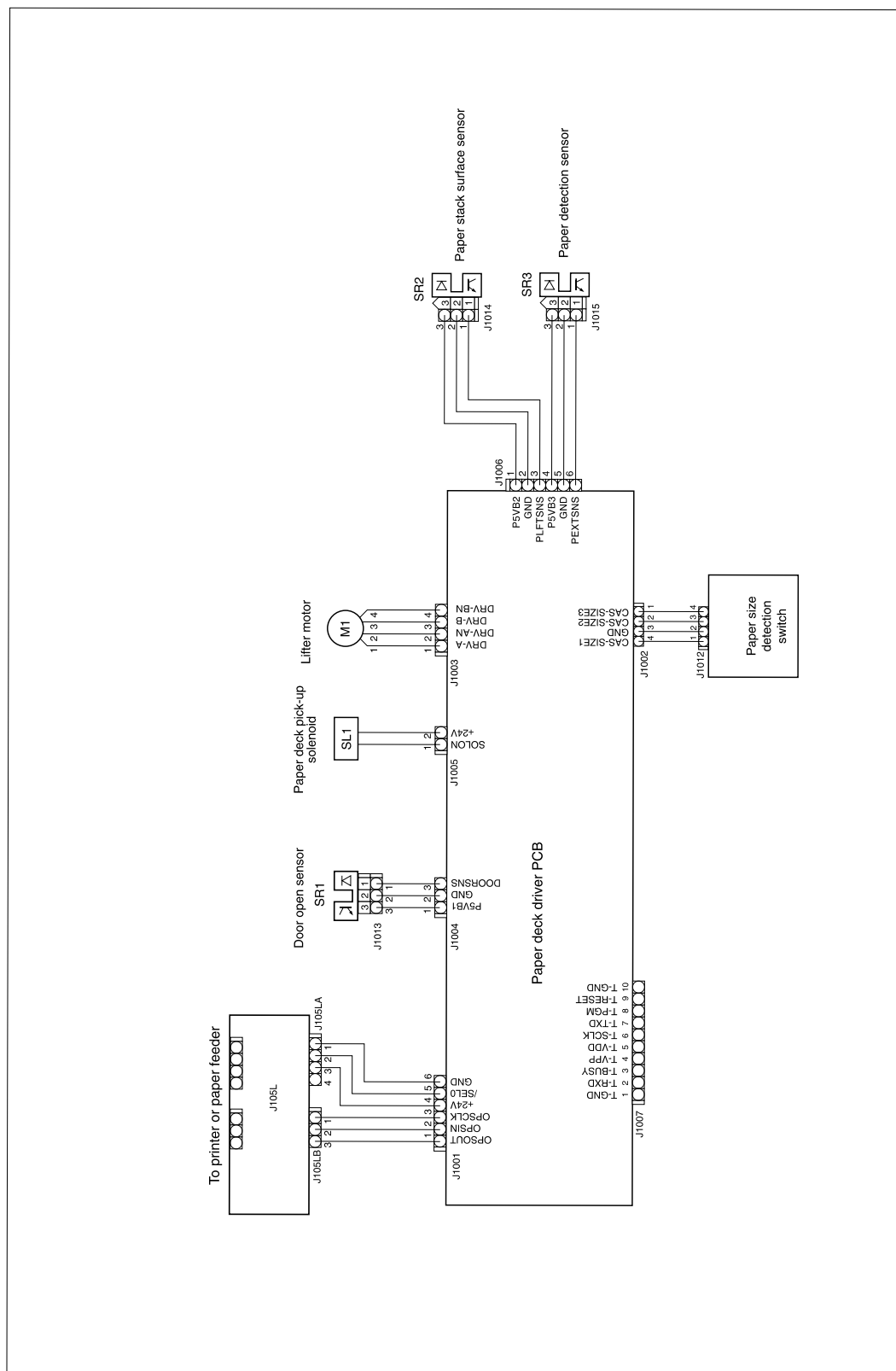
## HP LaserJet 4200 wiring diagram



HP LaserJet 4300 wiring diagram

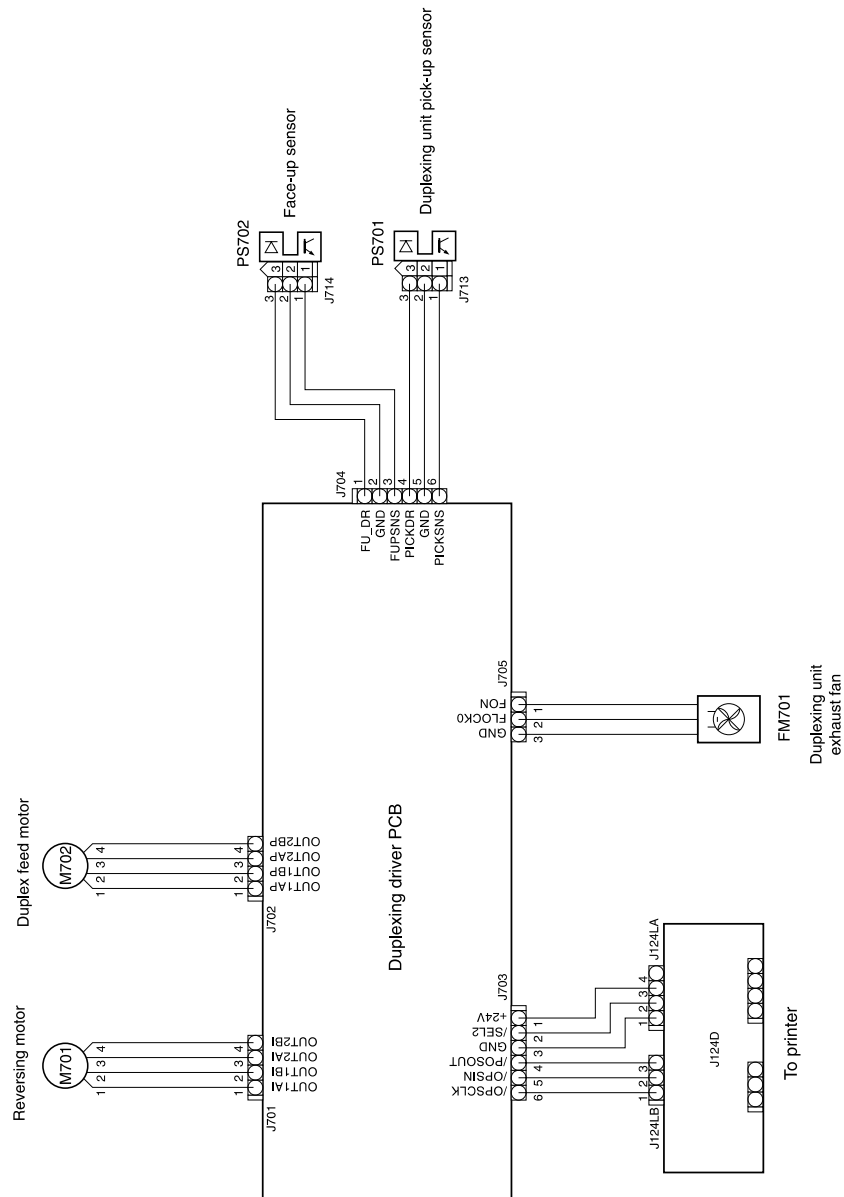


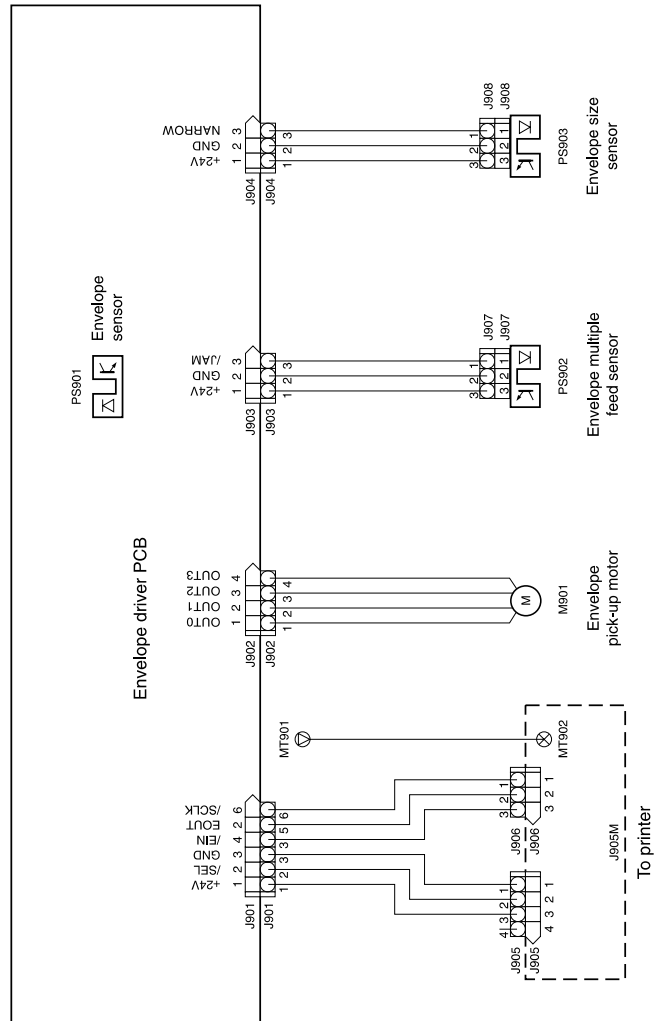
500-sheet feeder wiring diagram



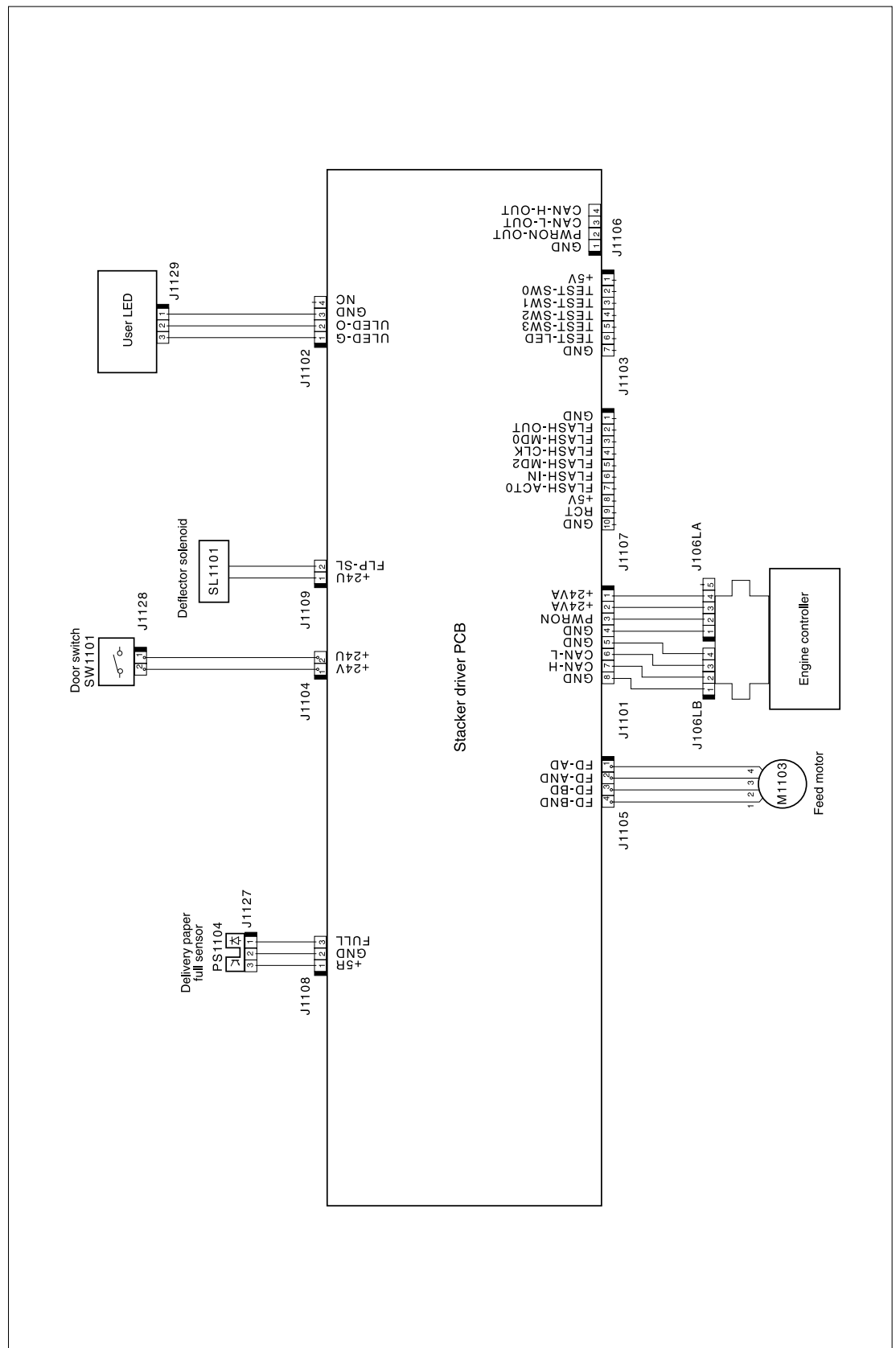


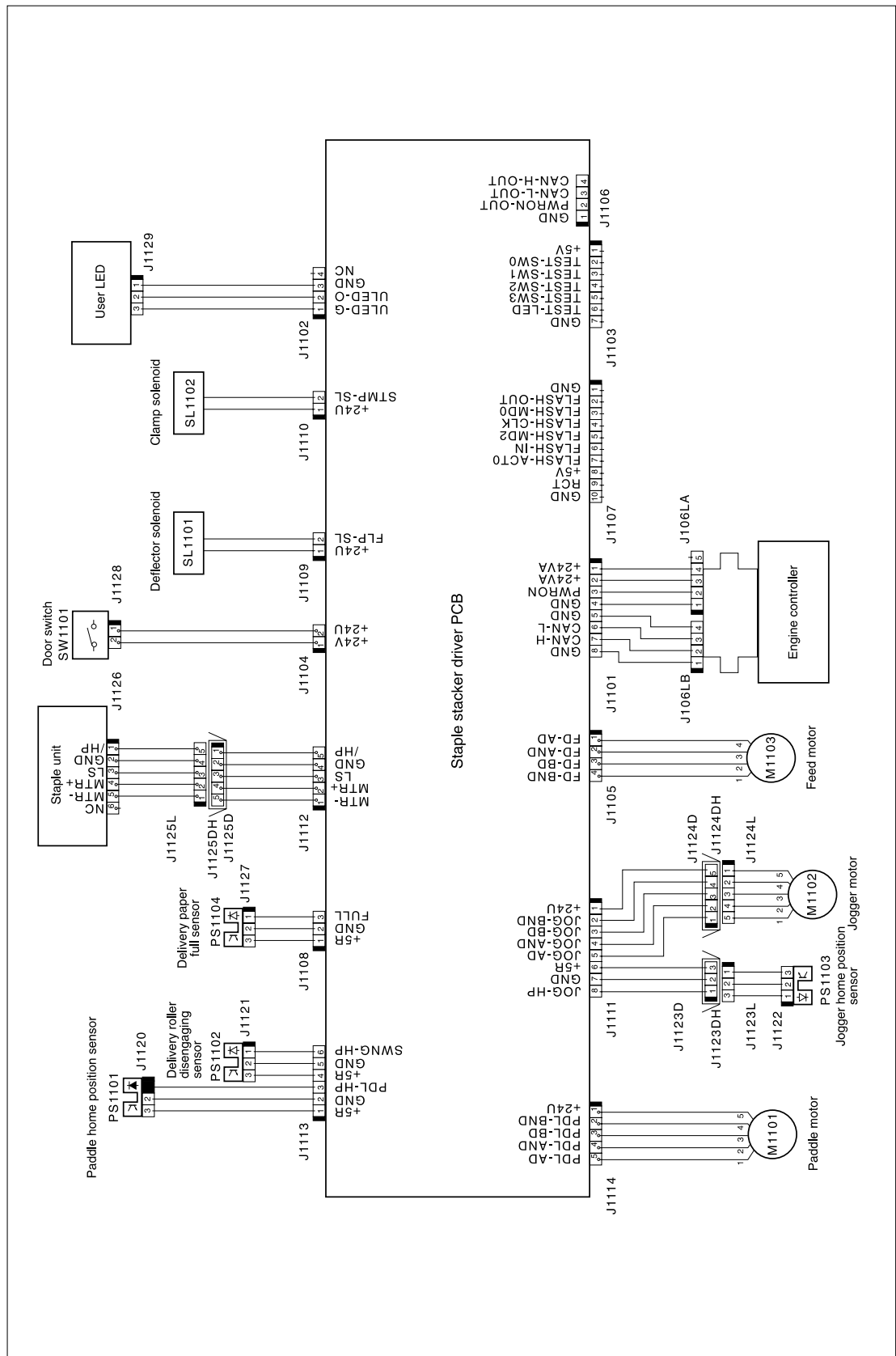
Duplex-accessory wiring diagram



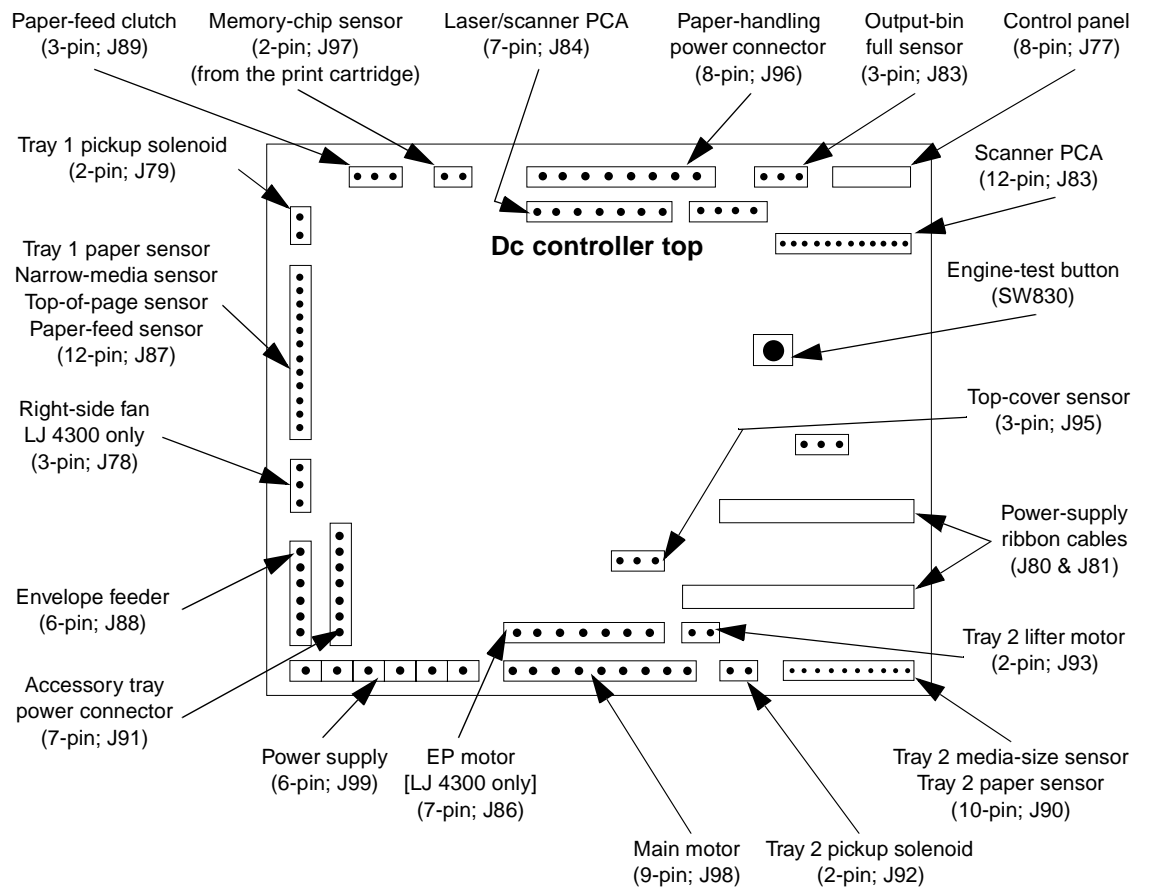


Envelope-feeder-accessory wiring diagram



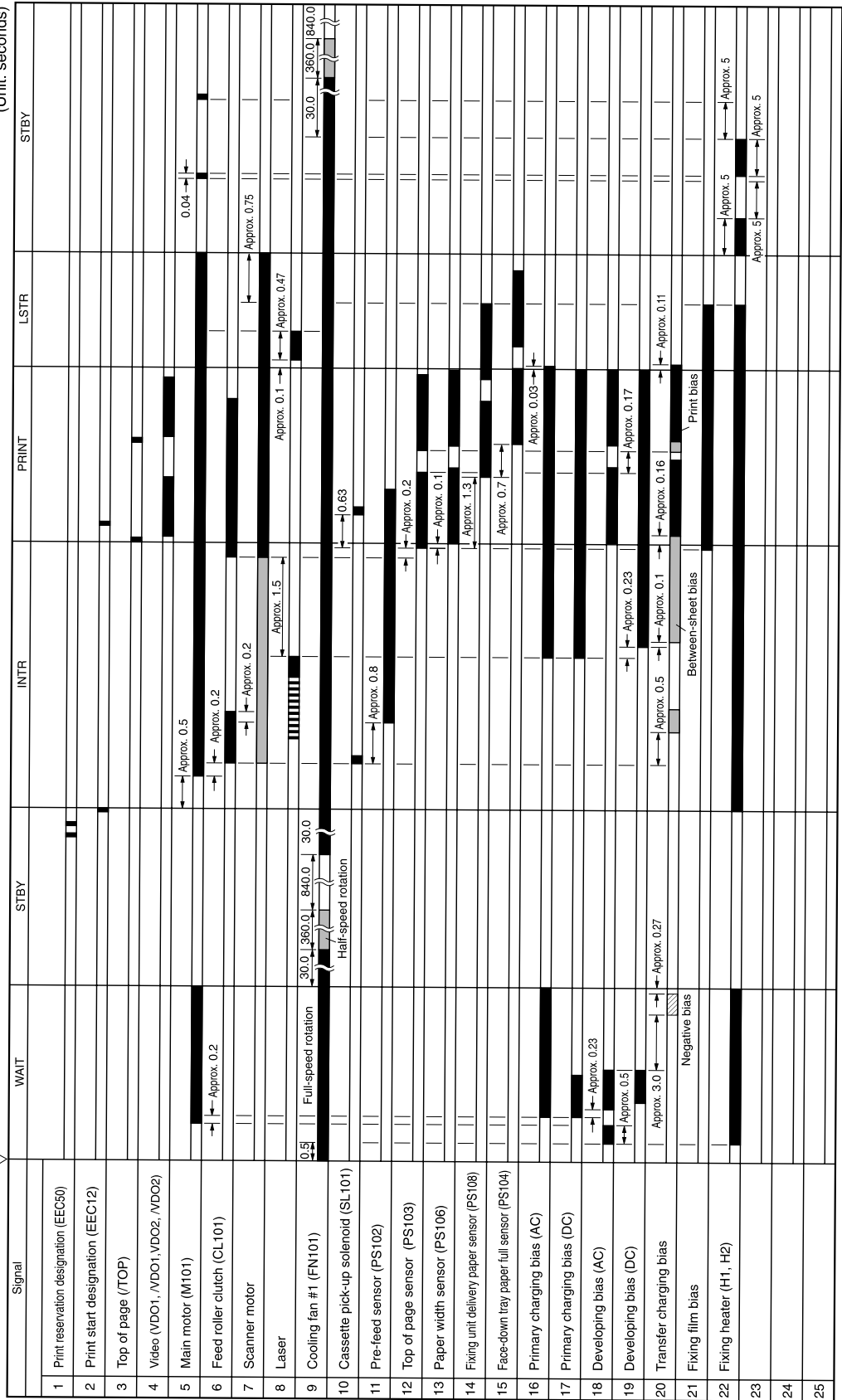


## Dc controller block diagram



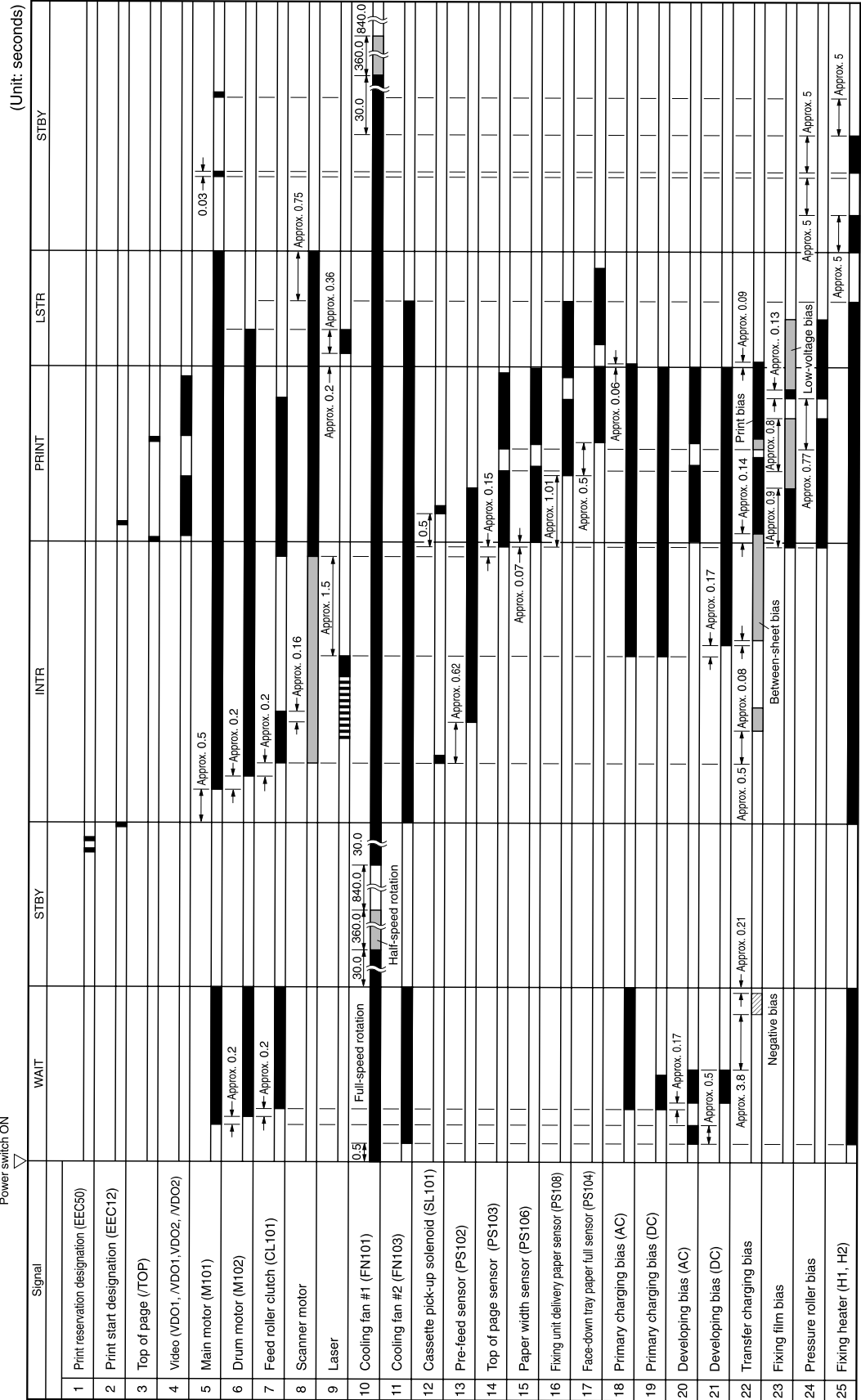
## Dc controller connectors diagram

Power switch ON (Unit: seconds)



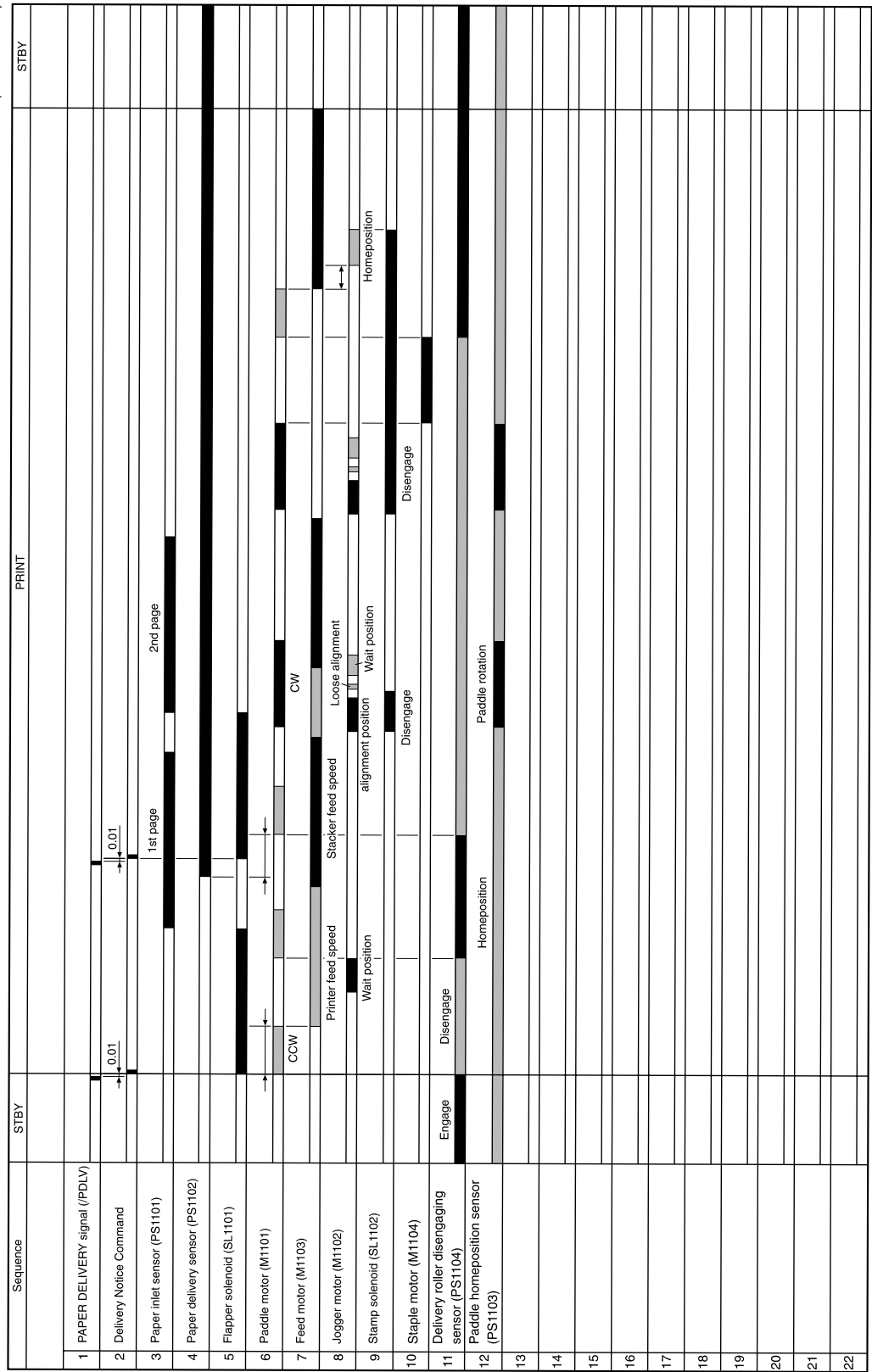
HP LaserJet 4200 general timing diagram

Power switch ON ▽



HP LaserJet 4300 general timing diagram

• Timing chart for stapling two papers. (Unit: second)



Stapler/stacker timing diagram



# Parts and diagrams

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Parts diagrams and lists . . . . .	354

## Ordering information

This chapter contains field replaceable unit (FRU) and accessory part numbers. Replacement parts can be ordered from the HP Services. Go to [HP Services](#) for information about ordering service parts in your area. Go to [HP PartSurfer](#) for the online HP service parts identification tool (HP PartSurfer).

Use only the parts and accessories that have been specifically designed for this printer. Order accessories from an authorized HP service or support provider, or online at [HP](#).

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

## Related documentation and software

Order documentation and software from the sites listed in table 81.

## Support

**Table 81. Technical support websites**

<b>HP Connect Online.</b> (for HP partners).	HP Connect Online is an Internet site that is created exclusively for our partners. You can easily find all the HP information that you need for your daily business. And you can get it earlier than from any other site.
<b>HP Customer Care Online.</b> Software drivers, support documentation, and answers to frequently asked questions.	Select your country/ region in the “select a country or region” field located on the web page. Select the support block.
<b>HP Technical Training.</b> Classes and schedules.	USA: Canada: Asia: Latin America:
<b>Parts.</b> Parts information.	
<b>Supplies/paper.</b> Ordering information.	USA: Canada: Europe: Asia Pacific:

HP provides free telephone support during the product warranty period. When you call, you will be connected to a responsive team waiting to help you. For the number you should call in your country/region, see the support sheet that came in the box with your printer. Before calling have the following information available:

- product name (for example, HP LaserJet 4300 dtns)
- product serial number (found on the underside of the control-panel door.
- the date of purchase of your printer and a description of the problem you are experiencing

Test the software installation. Attempt to print a test page from the software program. Try reinstalling the software. If reinstalling the software does not correct the problem, see the Readme file on the CD-ROM that came with the printer, or call the phone number for your country/region (phone numbers are listed on the support sheet that came in the box with the printer). You can also find answers to frequently asked questions at the following websites:

## **HP-authorized resellers and support**

To locate HP-authorized resellers and support, call (1) (800) 243-9816 in the U.S. or (1) (800) 387-3867 in Canada. See [HP.com](#) for areas outside of North America.

## **HP service agreements**

For information about HP service agreements, call (1) (800) 743-8305 in the U.S. or (1) (800) 268-1221 in Canada.

## **HP PartnerCare**

You can use the following information to contact HP PartnerCare:

- for PartnerShip Web,
- for Connect Online,
- for Asia Pacific countries/regions,
- for Canada Partner,
- for Latin America,

The following items are available through your local authorized HP Services provider. To find a dealer near you, see [www.hp.com/go/dealers](#) or [1-800-4-A-HP](#).

**Table 82. Paper-handling accessories**

Item	Part number
500-sheet tray and feeder unit	Q2240-69001
500-sheet tray	Q2441-69001
1,500-sheet tray and feeder unit	Q2444-67901
Envelope feeder	Q2438-67901
Duplexer (duplex printing accessory)	Q2439-67901
500-sheet stacker	Q2442-67901
500-sheet stapler/stacker	Q2443-69001
1,000-staple cartridge	Q3216-60500
Stapler unit	RM1-0235-000CN
Separation pad	RL1-0007-000CN
Tray 1 pickup roller	RL1-0019-000CN
Paper-feed/separation roller (500-sheet tray and 1,500-sheet tray)	RM1-0037-000CN
Paper-pickup roller (500-sheet tray and 1,500-sheet tray)	RM1-0036-000CN

**Table 83. Cables and interfaces**

Item	Part number
<b>Parallel cables</b>	
2-meter IEEE-1284 cable	5063-1256
3-meter IEEE-1284 cable	5063-1257
<b>EIO cards</b>	
Token Ring networks	J4167-69001
Fast Ethernet 615n Jetdirect print server card (10/100Base-TX single RJ-45 port)	J6057-69001
Connectivity card for USB, serial, and LocalTalk	J4135-61001
Fast Ethernet 605n Jetdirect print server card (for HP LaserJet 4200Lvn printers only)	J7955-69001

**Table 84. Memory, fonts, and mass storage**

<b>Item</b>	<b>Part number</b>
<b>Firmware DIMM (dual inline memory module)</b>	
HP LaserJet 4200, base model	Q2453-67923
HP LaserJet 4200, all models except base model	Q2453-67904
HP LaserJet 4200L, all models	Q2453-67930
HP LaserJet 4300, all models	Q2453-67913
<b>SDRAM DIMM (dual inline memory module)</b>	
8 MB	C7842-67901
16 MB	C7843-67901
32 MB	C7845-67901
64 MB	Q1887-67901
128 MB	C9121-67901
<b>Flash DIMM</b>	
2 MB	C4286A
4 MB	C4287A
8 MB	C8530A
12 MB	C7867A
<b>Font DIMM</b>	
Korean language	D4838A
Simplified Chinese language	C4293A
Traditional Chinese language	C4292A
<b>EIO hard disk</b>	J6054-61011

**Table 85. Printer maintenance kit and exchange parts**

<b>Item</b>	<b>Part number</b>
<b>Printer maintenance kits</b>	
HP LaserJet 4200/4200L, 110 V	Q2429-69003
HP LaserJet 4300, 110 V	Q2436-69004
HP LaserJet 4200/4200L, 220 V	Q2430-69003
HP LaserJet 4300, 220 V	Q2437-69004
<b>Formatters</b>	
HP LaserJet 4200	C9652-69001
HP LaserJet 4200L	C9652-69003
HP LaserJet 4300	C9651-69001
<b>Print cartridges</b>	
HP LaserJet 4200/4200L (12,000 pages)	Q1338-67901
HP LaserJet 4300 (18,000 pages)	Q1339-67901
<b>Laser/scanner assemblies</b>	
HP LaserJet 4200/4200L	Q2425-69001
HP LaserJet 4300	Q2431-69001
<b>Power supplies</b>	
HP LaserJet 4200/4200L, 110 V	Q2425-69002
HP LaserJet 4300, 110 V	Q2431-69002
HP LaserJet 4200/4200L, 220 V	Q2425-69003
HP LaserJet 4300, 220 V	Q2431-69003
<b>Fusers</b>	
HP LaserJet 4200/4200L, 110 V	Q2425-69009
HP LaserJet 4300, 110 V	Q2431-69011
HP LaserJet 4200/4200L, 220 V	Q2425-69010
HP LaserJet 4300, 220 V	Q2431-69012

**Table 86. Documentation**

Item	Part number	Description or use
<i>hp LaserJet 4200</i> <i>hp LaserJet 4300</i> <i>install</i> (installation guide)	Q2443-90902	A guide to installing the HP LaserJet 4200/4200L/4300 series printers.
Training, service kit	Q2431-67907	A guide to HP LaserJet 4200/4200L/4300 service training.
Training, service and support manual on CD-ROM	Q2431-60114	
<i>Print Media Guide For The Hp LaserJet Family Of Printers</i>	5980-8424 ENUS	A guide to using paper and other print media with HP LaserJet printers (available only in English). To obtain an updated version of the media guide, go to .
HP LaserJet 4200/4200L/4300 series printer CD-ROM (EN/FR/IT/SP/DE/NL/PT/HE/EL)	Q2431-60104	An additional copy of the CD-ROM containing software, the <i>use</i> guide, and Readmes (in English, French, Italian, Spanish, German, Dutch, Portuguese, Hebrew, and Greek).
HP LaserJet 4200/4200L/4300 series printer CD-ROM (EN/DA/FI/NO/SV/CS/HU/PL/RU/TR/AR/FR)	Q2431-60105	An additional copy of the CD-ROM containing software, the <i>use</i> guide, and Readmes (in English, Danish, Finnish, Norwegian, Swedish, Czech, Hungarian, Polish, Russian, Turkish, Arabic, and French).
HP LaserJet 4200/4200L/4300 series printer CD-ROM (EN/JA/KO/ZHCN/ZHTW/TH)	Q2431-60106	An additional copy of the CD-ROM containing software, the <i>use</i> guide, and Readmes (in English, Japanese, Korean, Simplified Chinese, Traditional Chinese, and Thai).  The PCL 5e printer driver is not available on the Asian-language CD-ROM. You can download the PCL 5e driver from the Internet at or at .
<i>hp LaserJet 4200/4300 start</i> (EN/FR/ES/PT/IT)	Q2431-90901	The getting started guide (in English, French, Spanish, Portuguese, and Italian).
<i>hp LaserJet 4200/4300 start</i> (EN/FR/DE/IT/NL)	Q2431-90902	The getting started guide (in English, French, German, Italian, and Dutch).
<i>hp LaserJet 4200/4300 start</i> (EN/DA/FI/NO/SV)	Q2431-90903	The getting started guide (in English, Danish, Finnish, Norwegian, and Swedish).
<i>hp LaserJet 4200/4300 start</i> (EN/CS/HU/PO)	Q2431-90904	The getting started guide (in English, Czech, Hungarian, and Polish).
<i>hp LaserJet 4200/4300 start</i> (EN/HR/RU/SK/SL)	Q2431-90905	The getting started guide (in English, Croatian, Russian, Slovak, and Slovenian).
<i>hp LaserJet 4200/4300 start</i> (EN/KK/RU/UK/EL)	Q2431-90906	The getting started guide (in English, Kazakh, Russian, Ukrainian, and Greek).
<i>hp LaserJet 4200/4300 start</i> (EN/BG/ET/LT/LV)	Q2431-90907	The getting started guide (in English, Bulgarian, Estonian, Lithuanian, and Latvian).
<i>hp LaserJet 4200/4300 start</i> (EN/JA/ZHTW/TH)	Q2431-90908	The getting started guide (in English, Japanese, Traditional Chinese, and Thai).

**Table 86. Documentation**

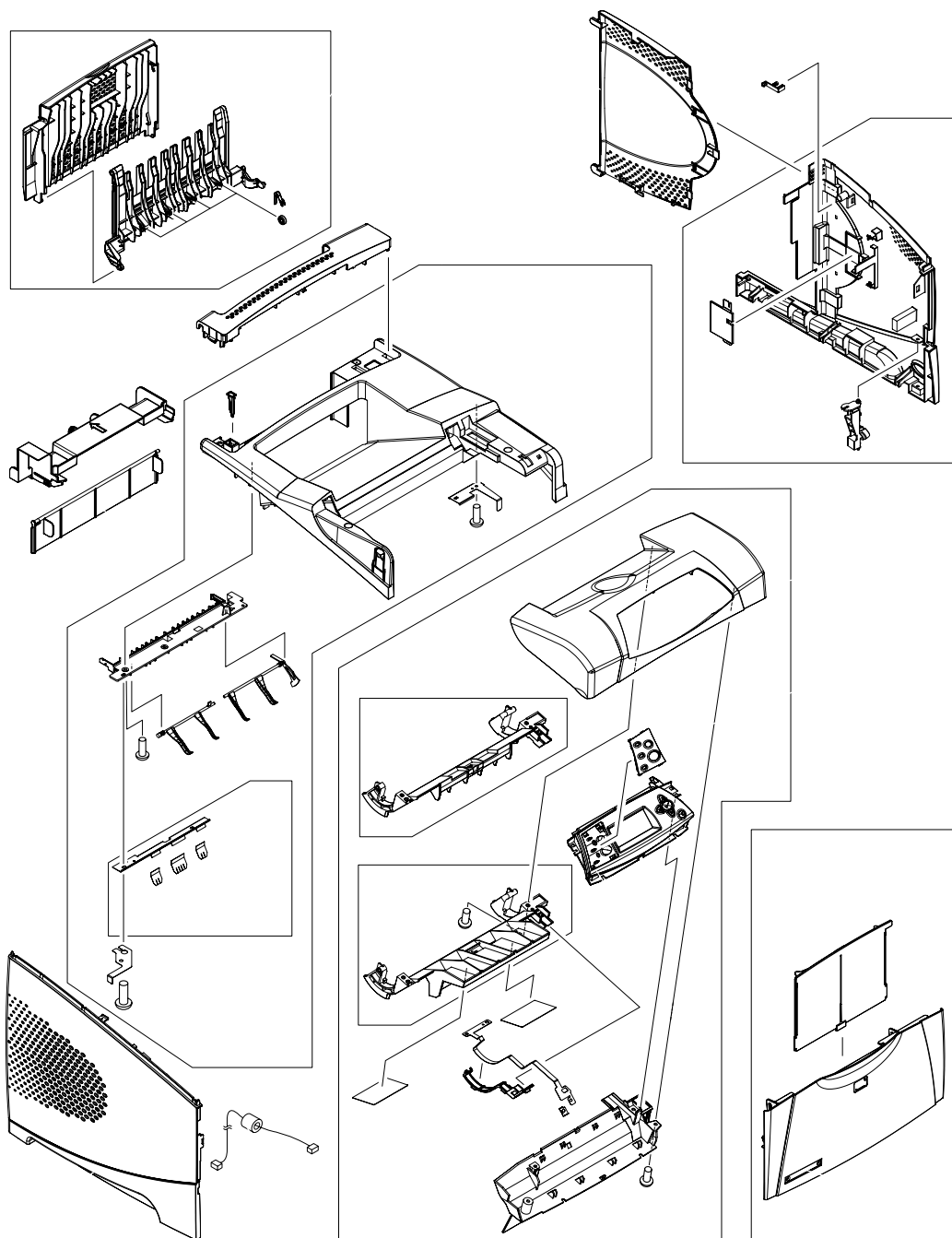
<i>hp LaserJet 4200/4300 start</i> (EN/KO/ZHCN/ID)	Q2431-90909	The getting started guide (in English, Korean, Simplified Chinese, and Bahasa/Indonesian)
<i>hp LaserJet 4200/4300 start</i> (EN/FR/TR/AR)	Q2431-90910	The getting started guide (in English, French, Turkish, and Arabic).
<i>hp LaserJet 4200/4300 start</i> (EN/HE)	Q2431-90911	The getting started guide (in English and Hebrew).
<i>hp LaserJet 4200L start</i> (EN/FR/SP/PT/IT)	Q3993-90901	The getting started guide (in English, French, Spanish, Portuguese, and Italian).
<i>hp LaserJet 4200L start</i> (EN/FR/DE/IT/NL)	Q3993-90902	The getting started guide (in English, French, German, Italian, and Dutch).
<i>hp LaserJet 4200L start</i> (EN/DA/FI/NO/SV)	Q3993-90903	The getting started guide (in English, Danish, Finnish, Norwegian, and Swedish).
<i>hp LaserJet 4200L start</i> (EN/CS/HU/PL)	Q3993-90904	The getting started guide (in English, Czech, Hungarian, and Polish).
<i>hp LaserJet 4200L start</i> (EN/HR/RU/SK/SL)	Q3993-90905	The getting started guide (in English, Croatian, Russian, Slovak, and Slovenian).
<i>hp LaserJet 4200L start</i> (EN/KK/RU/UK/EL)	Q3993-90906	The getting started guide (in English, Kazakh, Russian, Ukrainian, and Greek).
<i>hp LaserJet 4200L start</i> (EN/BG/ET/LT/LV)	Q3993-90907	The getting started guide (in English, Bulgarian, Estonian, Lithuanian, and Latvian).
<i>hp LaserJet 4200L start</i> (EN/JA/ZHTW/TH)	Q3993-90908	The getting started guide (in English, Japanese, Traditional Chinese, and Thai).
<i>hp LaserJet 4200L start</i> (EN/KO/ZHCN/ID)	Q3993-90909	The getting started guide (in English, Korean, Simplified Chinese, and Bahasa/Indonesian)
<i>hp LaserJet 4200L start</i> (EN/FR/TR/AR)	Q3993-90910	The getting started guide (in English, French, Turkish, and Arabic).
<i>hp LaserJet 4200L start</i> (EN/HE)	Q3993-90911	The getting started guide (in English and Hebrew).
Note: <i>start</i> guides are available for downloading at		or at



The figures in this chapter illustrate the major field replaceable unit (FRU) assemblies and subassemblies in the HP LaserJet 4200/4200L/4300 series printers. A table (parts number list) follows each exploded assembly diagram. The tables list a reference number for each specific part, the part number, and a brief description of the part.

When looking for a HP LaserJet 4200/4200L/4300 printer electrical part, pay careful attention to the voltage listed in the part description column to ensure that the component part number that you select is for the correct printer model.

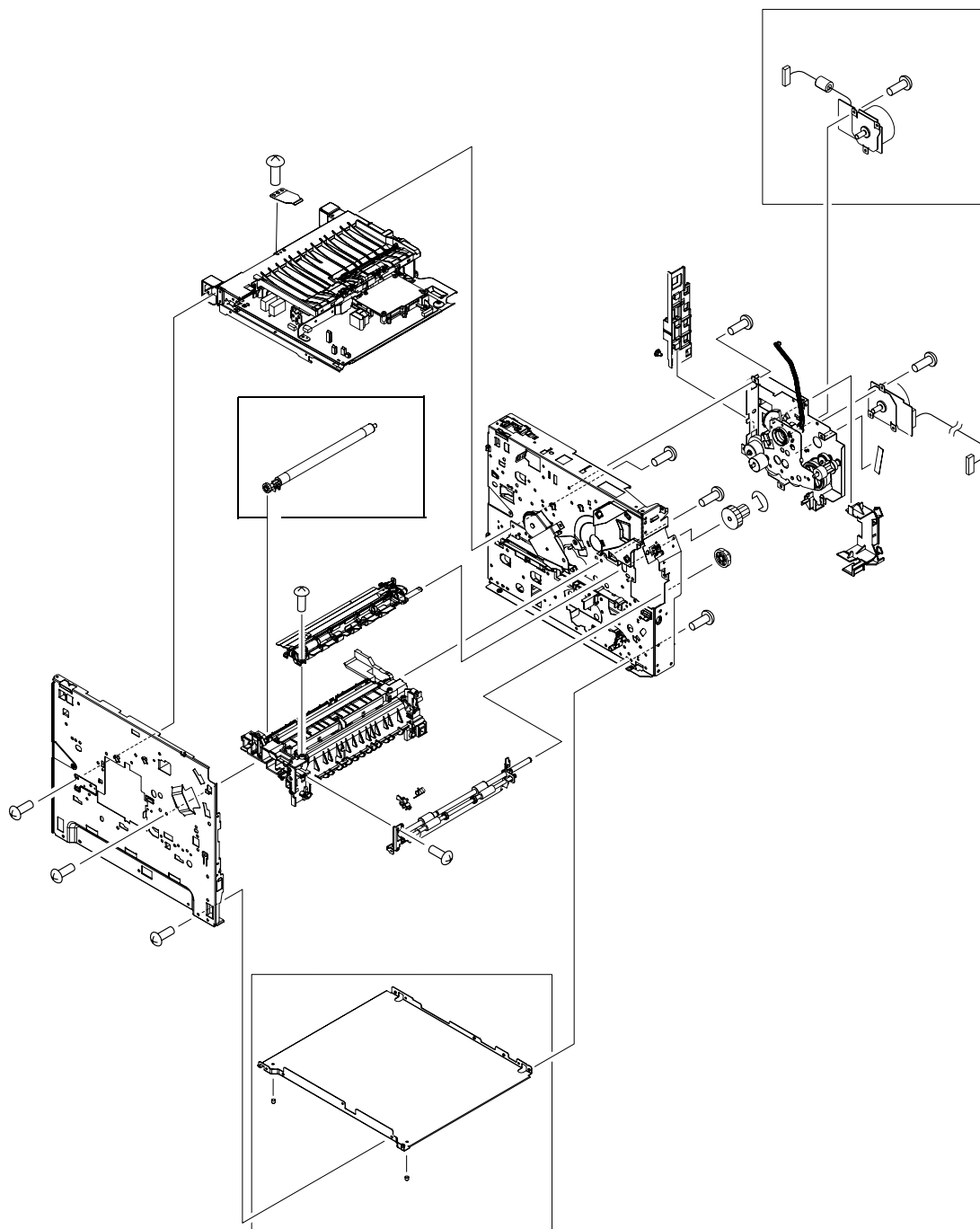
Parts that do not have a reference number or part number are not FRUs, and cannot be ordered as individual replacement parts. However, all serviceable parts should be available as part of a larger operable subassembly.



**External covers and panels**

**Table 87. External covers and panels**

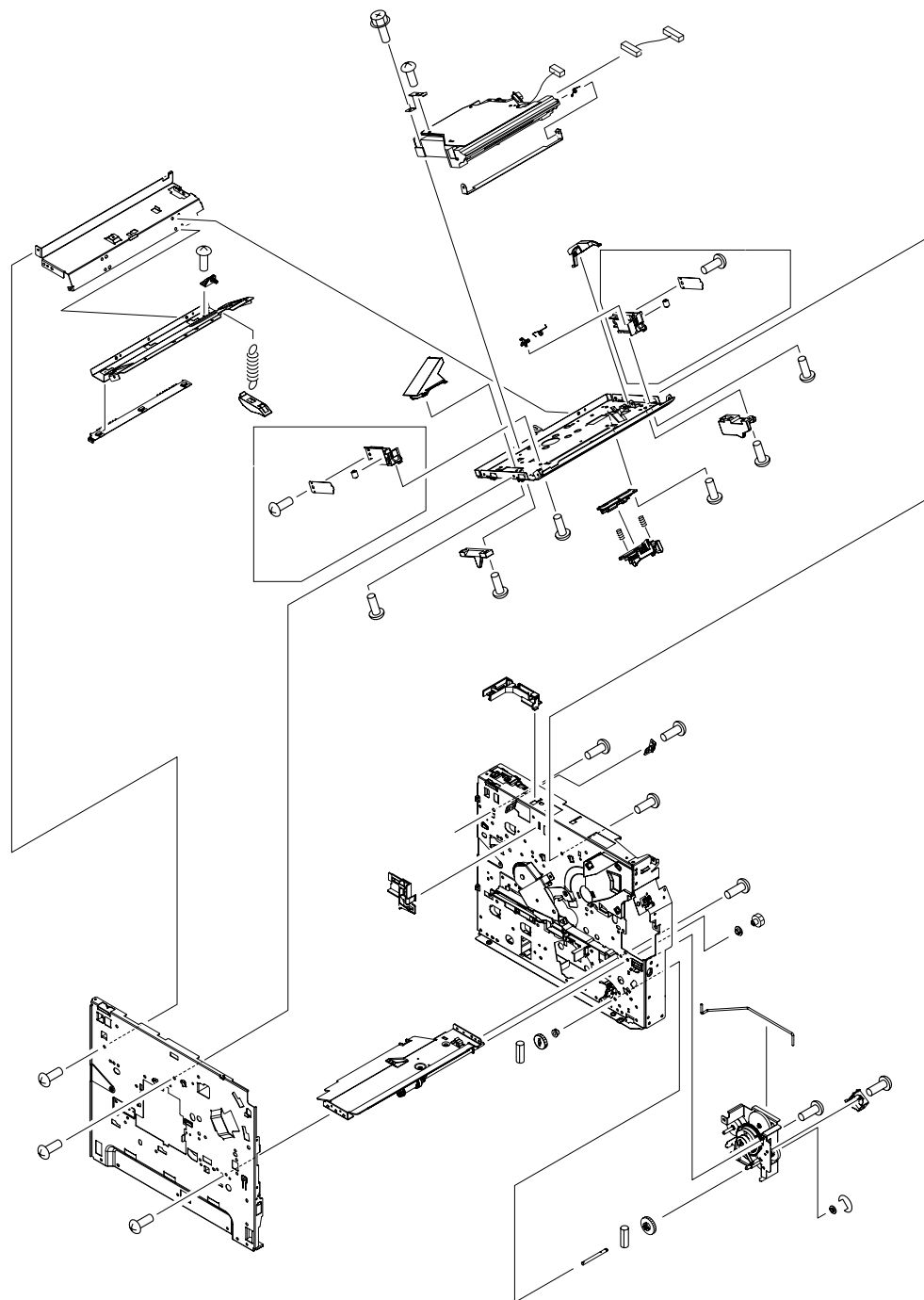
Reference	Part number	Description
1	RC1-0288-000CN	Cover, formatter
2	RM1-0046-000CN	Cover, right
3	RM1-0047-020CN	Cover, cartridge door, HP LaserJet 4200
3	RM1-0114-020CN	Cover, cartridge door, HP LaserJet 4300
4	Q2431-40021	Control panel overlay—Turkish
4	Q2431-40022	Control panel overlay—Hebrew
4	Q2431-40023	Control panel overlay—Greek
4	Q2431-60107	Control panel overlay—EN/FR/DE/IT
4	Q2431-60108	Control panel overlay—EN/CS/HU/PL
4	Q2431-60109	Control panel overlay—NO/SW/FI
4	Q2431-60110	Control panel overlay—IT/ES/PT/SP
4	Q2431-60111	Control panel overlay—EN/RU
4	Q2431-60112	Control panel overlay—EN/AR
4	Q2431-60113	Control panel overlay—EN/FR/DE/NL
5	RM1-0050-000CN	Cover, front
6	Q2425-67901	Name plate kit, HP LaserJet 4200
6	Q2431-67908	Name plate kit, HP LaserJet 4300
6	Q3993-40001	Name plate, HP LaserJet 4200L
6	Q3994-40004	Name plate, HP LaserJet 4200Ln
6	Q3995-40001	Name plate, HP LaserJet 4200Lvn
7	RG1-4276-020CN	Control panel assembly
8	RG1-4215-000CN	Cable, control panel
9	RC1-0287-000CN	Cover, left
10	RC1-0290-000CN	Cover, 500-sheet tray, rear
11	RC1-0291-000CN	Cover, duplexer
12	RM1-0027-000CN	Cover, rear output bin
13	RC1-0289-000CN	Cover, paper-handling
14	RM1-0049-000CN	Cover, top assembly



**Main assemblies (1 of 3)**

**Table 88. Main assemblies (1 of 3)**

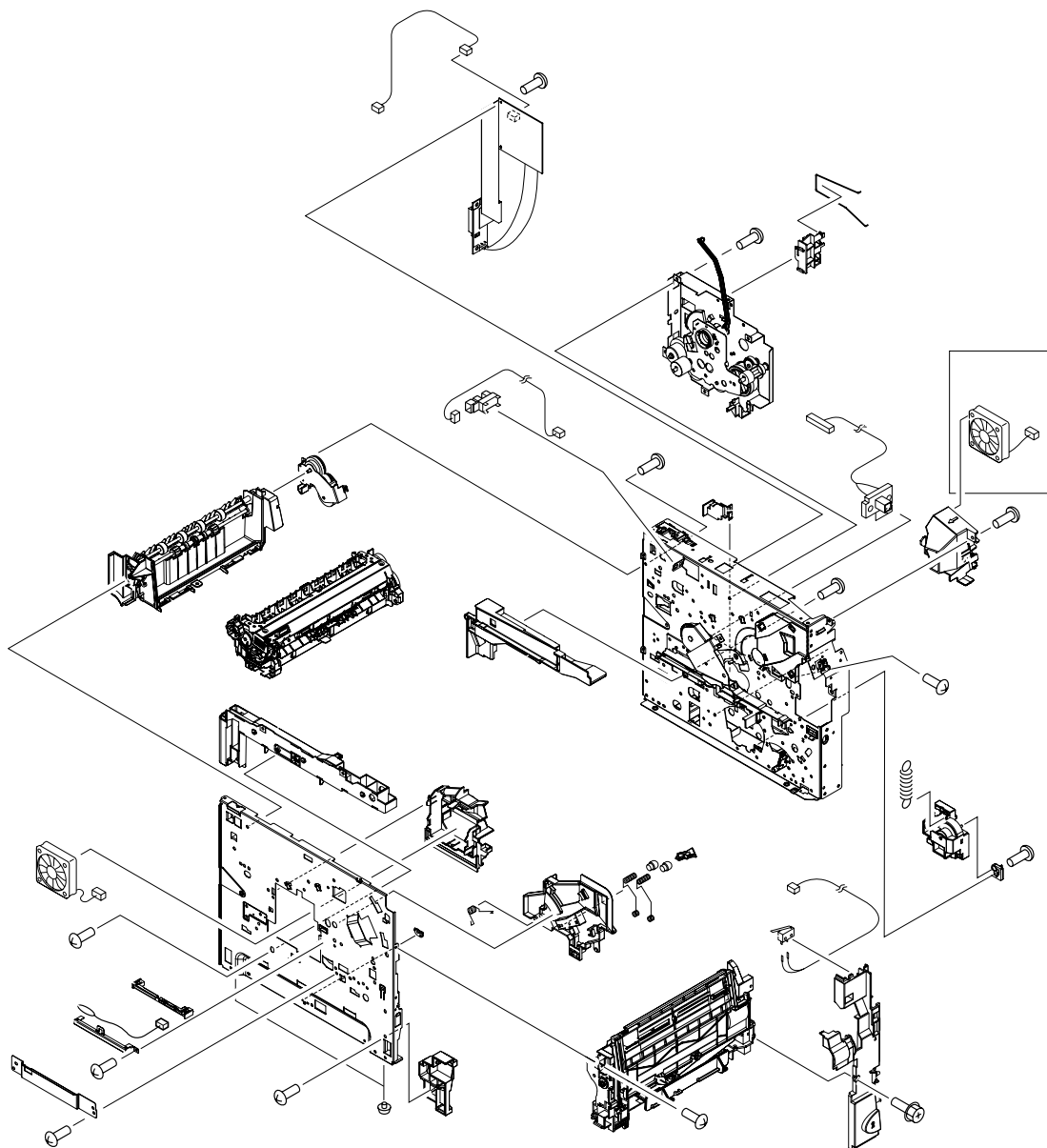
Reference	Part number	Description
1	Q2425-69011	Motor, print cartridge—HP LaserJet 4300 only
2	RH7-1570-000CN	Motor, main (M1)—HP LaserJet 4200, 4200L, 4300
3	RC1-0270-000CN	Cable guide, dc controller
4	RC1-0061-000CN	Spring, torsion
5	RC1-0060-000CN	Flag, paper-feed sensor
6	RM1-0699-000CN	Roller, transfer
7	RC1-0269-000CN	Cable guide, dc controller



**Main assemblies (2 of 3)**

**Table 89. Main assemblies (2 of 3)**

Reference	Part number	Description
1	Q2425-69001	Laser/scanner assembly, HP LaserJet 4200/4200L
1	Q2431-69001	Laser/scanner assembly, HP LaserJet 4300
2	RG1-4212-000CN	Cable, laser
3	RM1-0054-000CN	Brake assembly, right
4	RM1-0115-000CN	Mount assembly, laser/scanner
5	RU5-0045-000CN	Gear, 18T, tray 2
6	RC1-0264-000CN	Bushing, feed shaft
7	RC1-0268-000CN	Switch rod
8	RH7-5355-000CN	Solenoid, paper-pickup assembly
9	RC1-0340-000CN	Cable guide, scanner (1)
10	RC1-0385-000CN	Cable guide, scanner (2)
11	RM1-0053-000CN	Brake assembly, left

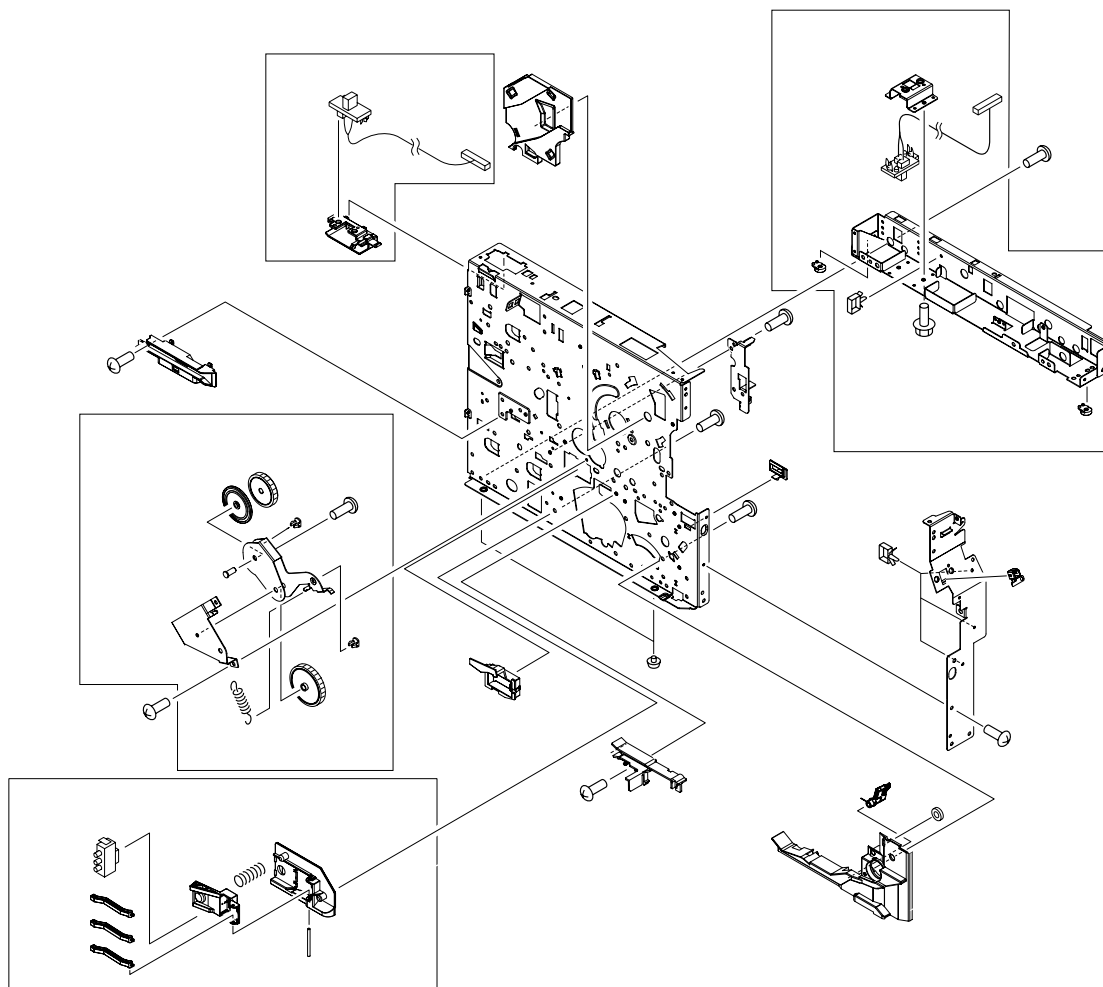


**Main assemblies (3 of 3)**



**Table 90. Main assemblies (3 of 3)**

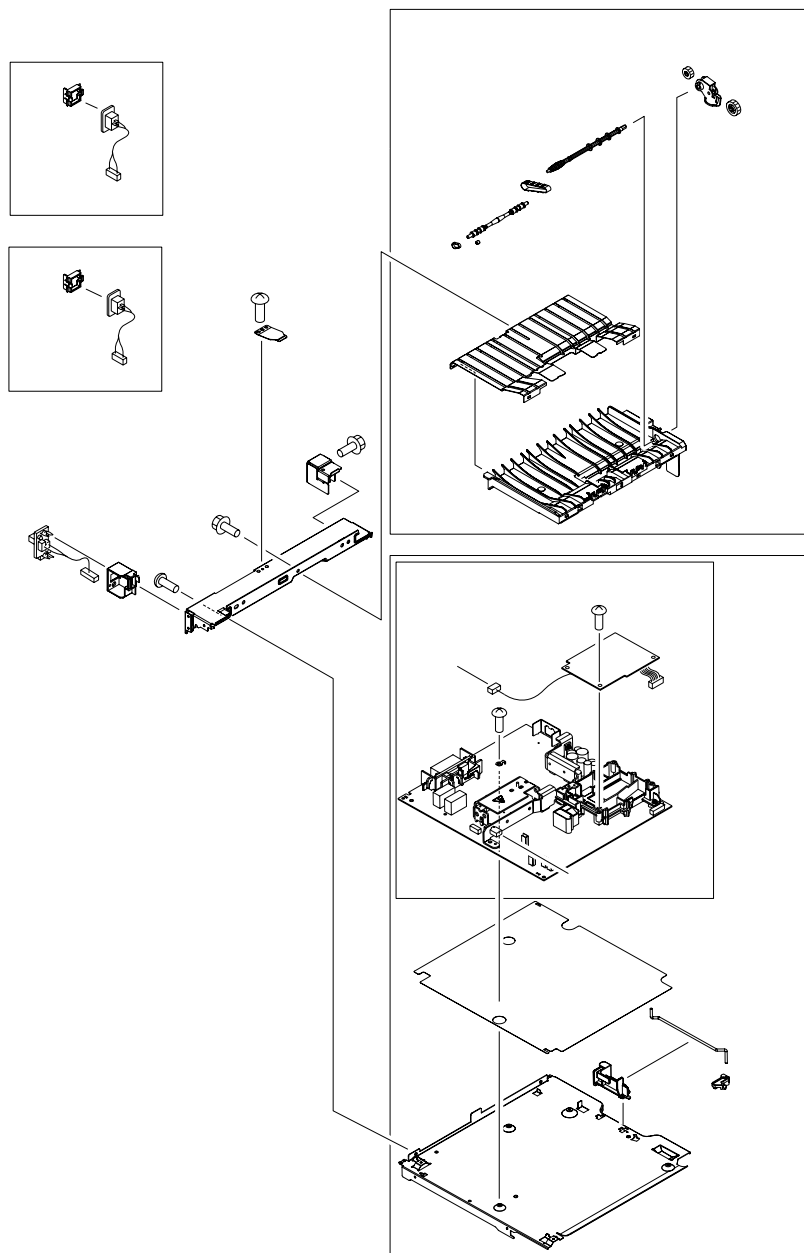
Reference	Part number	Description
1	RG1-4219-000CN	Cable, memory
2	RG1-4236-040CN	PCA, dc controller (HP LaserJet 4200)
2	RG1-4237-030CN	PCA, dc controller (HP LaserJet 4300)
3	RH7-1577-000CN	Fan, cooling right side (HP LaserJet 4300 only)
4	RG1-4224-000CN	Cable, envelope feeder
5	RC1-0386-000CN	Guide, connector cable
6	RC1-0198-000CN	Spring, tension (lifter driver assembly)
7	RC1-0200-000CN	Support lifter drive assembly
8	RG1-4213-000CN	Cable, top cover
9	WC4-5139-000CN	Switch, top cover
10	RC1-0019-000CN	Cover, inner front right side
11	RC1-0344-000CN	Cover, fan (power supply shield)
12	RC1-0343-000CN	Holder, metal thermistor
13	RH7-7116-000CN	Thermistor
14	RC1-0342-000CN	Holder, plastic thermistor
15	RH7-1573-000CN	Fan, cooling, left
16	RC1-0273-000CN	Guide, tray 2 left
17	RC1-0274-000CN	Guide, tray 2 right
18	WG8-5362-000CN	Sensor, top-bin-full
19	RG1-4214-000CN	Cable, top-bin-full



## Right-side assemblies

**Table 91. Right-side assemblies**

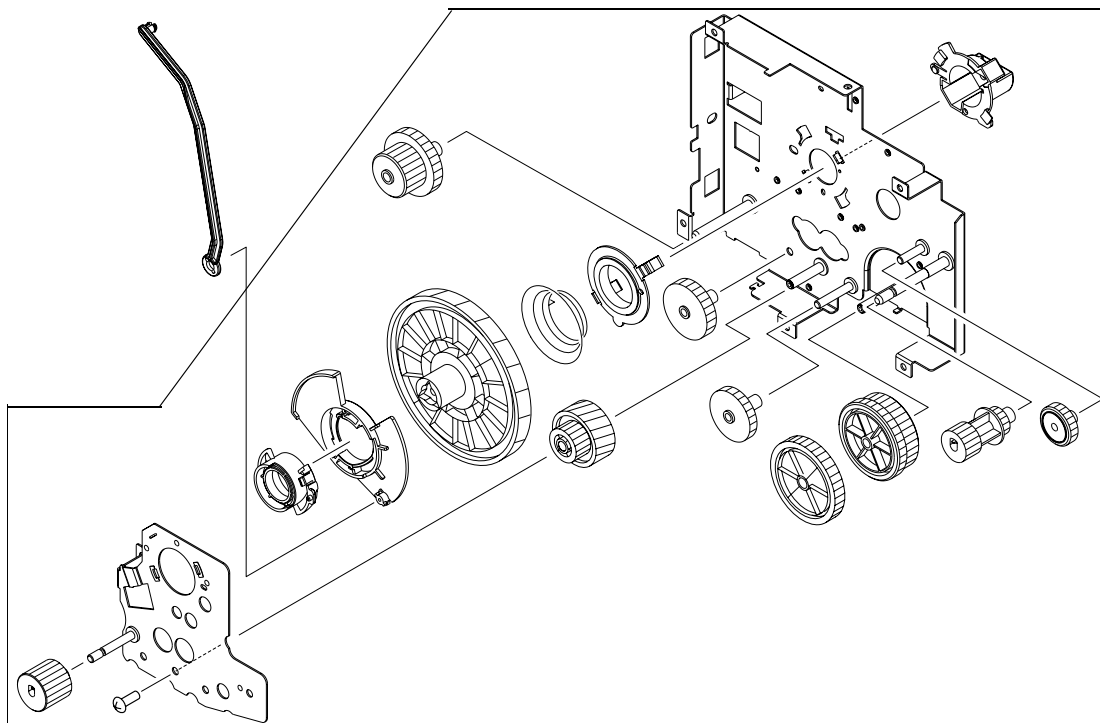
Reference	Part number	Description
1	RG1-4223-000CN	Cable, feeder accessory
2	RC1-0153-010CN	Guide, cassette
3	RM1-0041-000CN	Sensor assembly, tray 2 media-size
4	RM1-0043-010CN	Swing plate assembly, right side
5	RC1-0244-000CN	Guide, power supply, right
6	RM1-0042-000CN	Cable, JetLink accessory



## Power supply and paper-feed belt assembly

**Table 92. Power supply and paper-feed belt assembly**

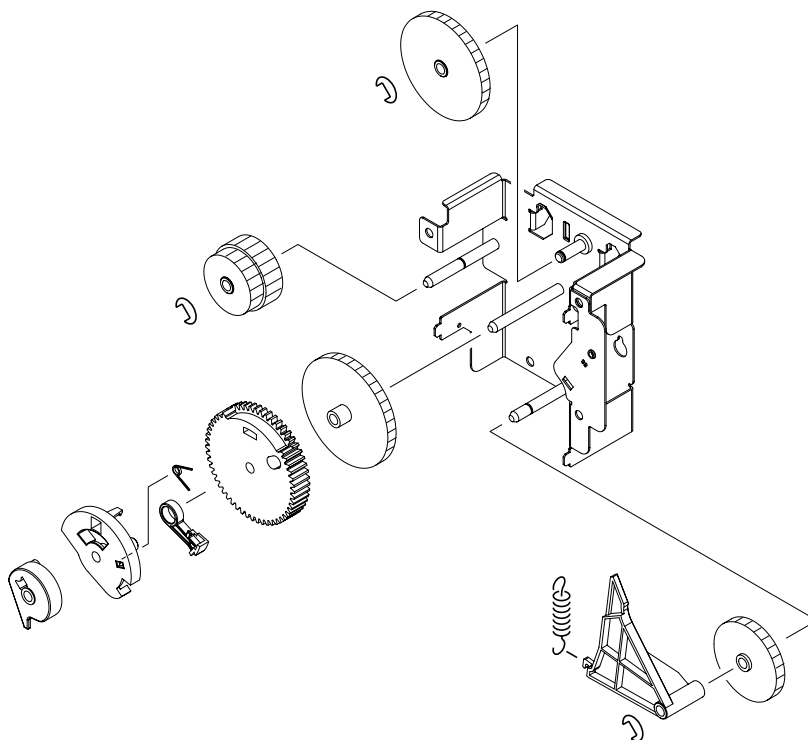
Reference	Part number	Description
1	RM1-0025-000CN	Paper-feed belt assembly
2	Q2425-69002	Power supply, 110 V, HP LaserJet 4200/4200L
2	Q2425-69003	Power supply, 220 V, HP LaserJet 4200/4200L
2	Q2431-69002	Power supply, 110 V, HP LaserJet 4300
2	Q2431-69003	Power supply, 220 V, HP LaserJet 4300



## Main drive assembly

**Table 93. Main drive assembly**

Reference	Part number	Description
1	RM1-0001-000CN	Main drive assembly
2	RC1-0003-000CN	Arm, print cartridge release



#### Paper-pickup drive assembly

**Table 94. Paper-pickup drive assembly**

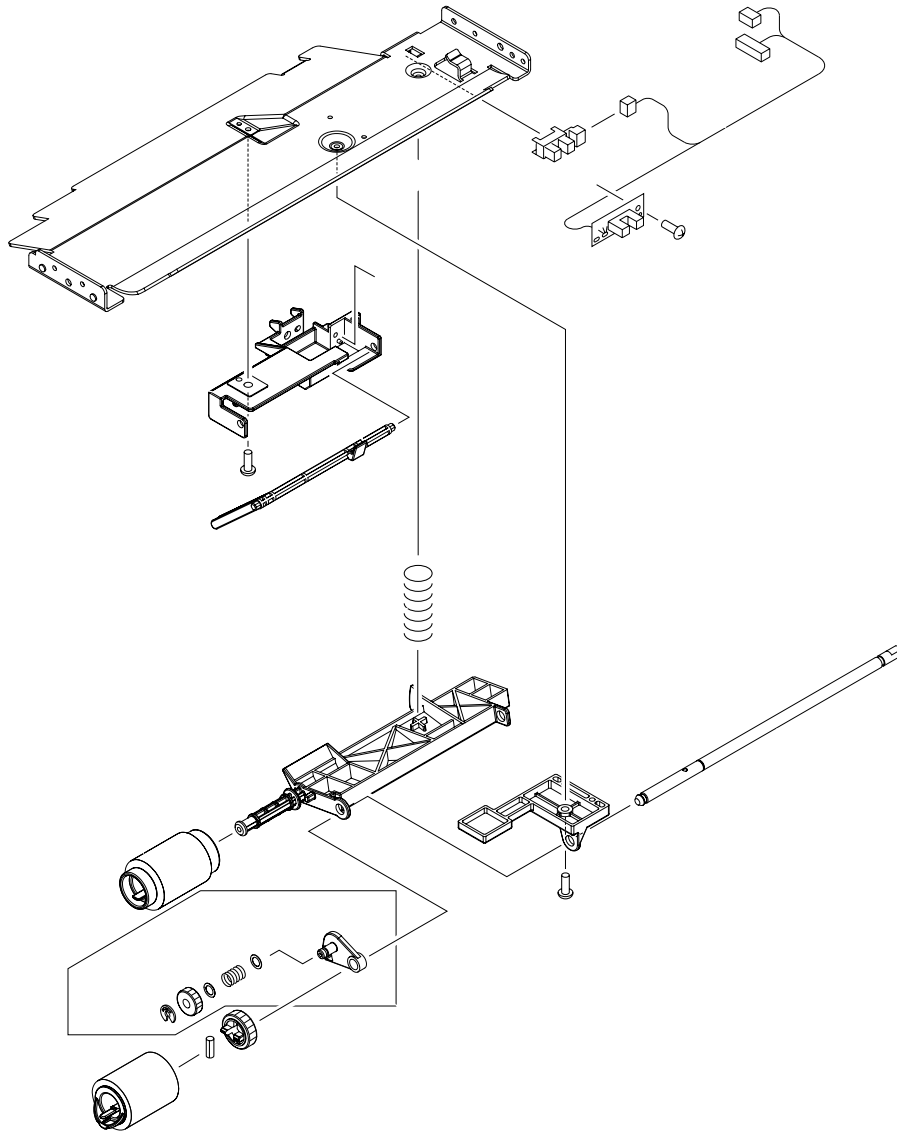
Reference	Part number	Description
	RM1-0034-000CN	Paper-pickup drive assembly



**Table 95. Duplexing pendulum assembly**

## 366 Parts and diagrams



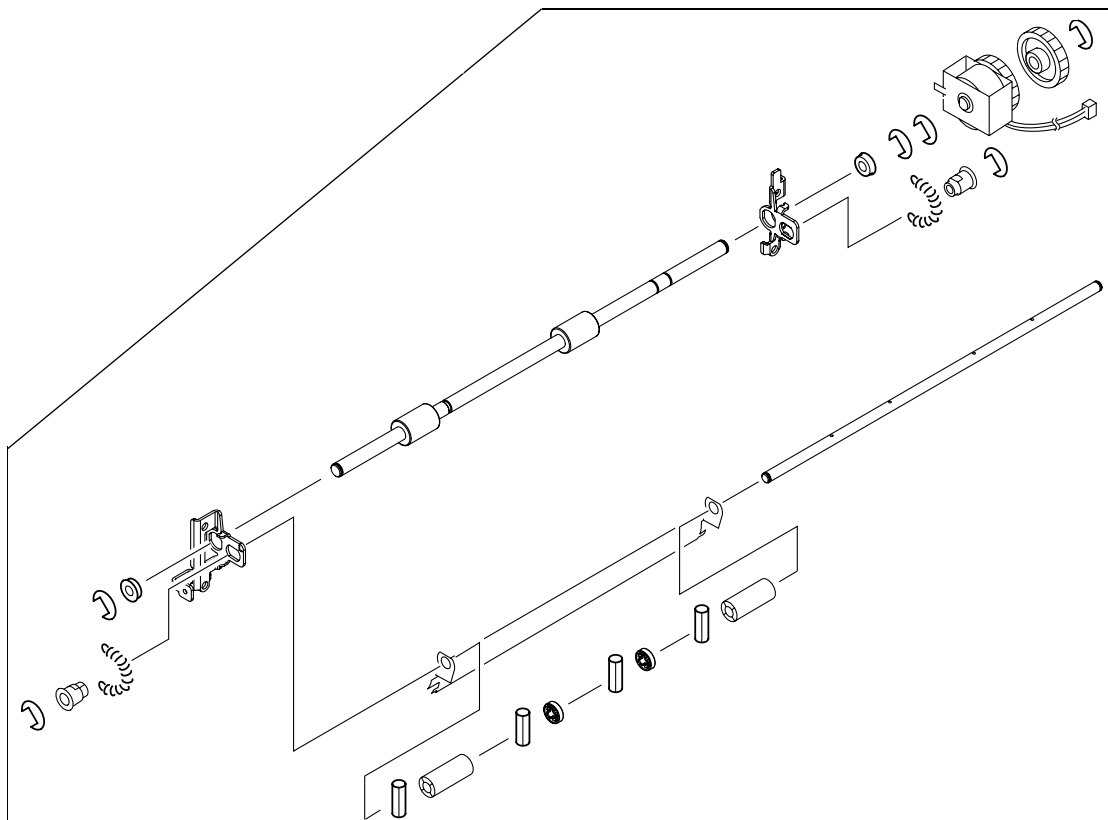


**Paper-pickup assembly**



**Table 97. Paper-pickup assembly**

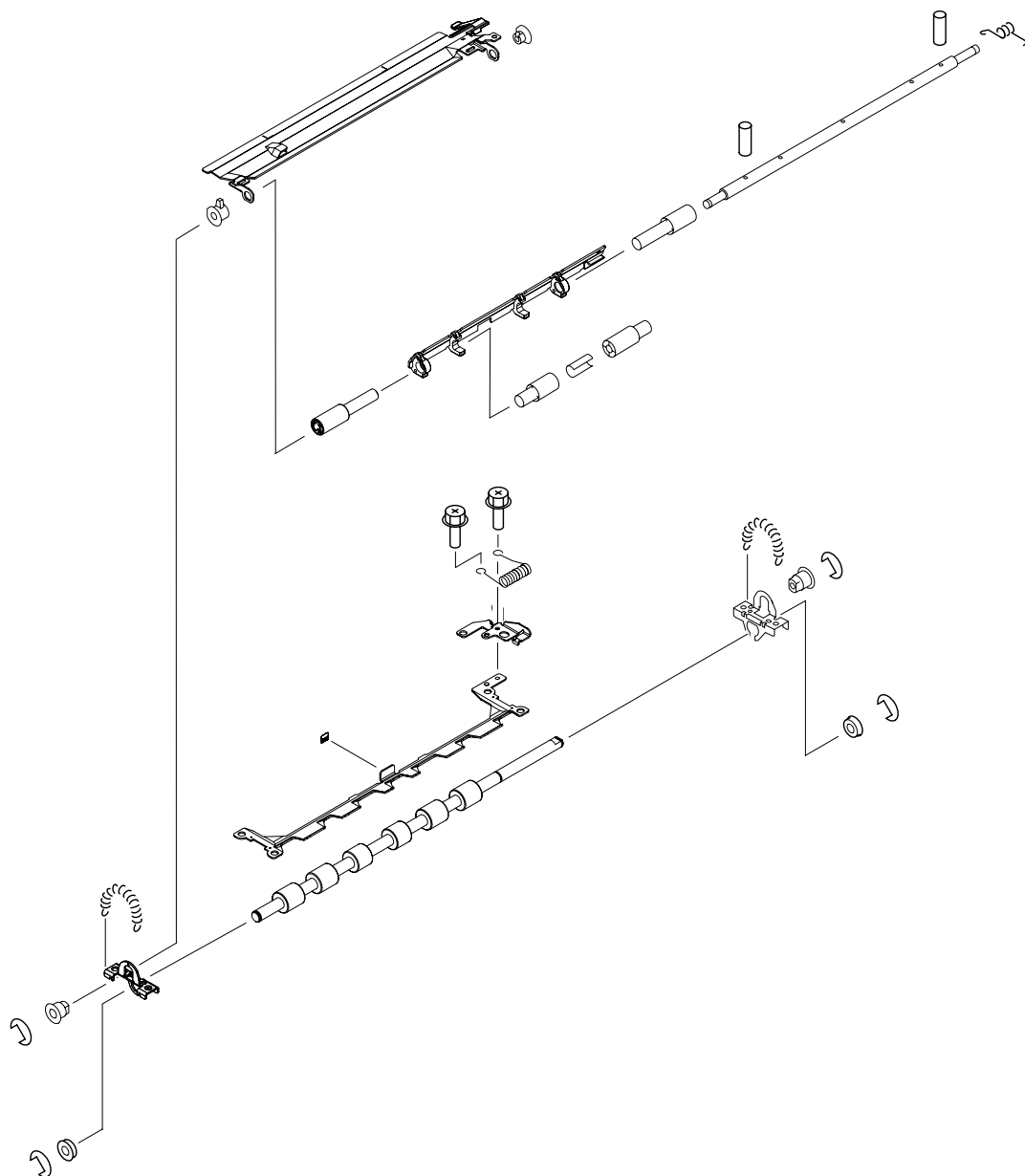
Reference	Part number	Description
1	RG1-4221-000CN	Cable assembly, paper-pickup sensor (PS101 & PS107)
2	RC1-0210-000CN	Shaft, feeder roller
3	RC1-0212-000CN	Holder, paper-pickup arm
4	RL1-0013-000CN	Swing plate, paper-pickup
5	RC1-0371-000CN	Gear, 23T
6	RM1-0037-000CN	Roller, paper-feed
7	RM1-0036-000CN	Roller, paper-pickup
8	RC1-0211-000CN	Arm, paper-pickup
9	RC1-0213-000CN	Spring, compression
10	RC1-0209-000CN	Flag, paper sensor
11	RC1-0208-000CN	Holder, paper sensor
12	WG8-5362-000CN	Sensor, tray 2 paper (PS101); paper stack (PS107)



**Paper-feed assembly**

**Table 98. Paper-feed assembly**

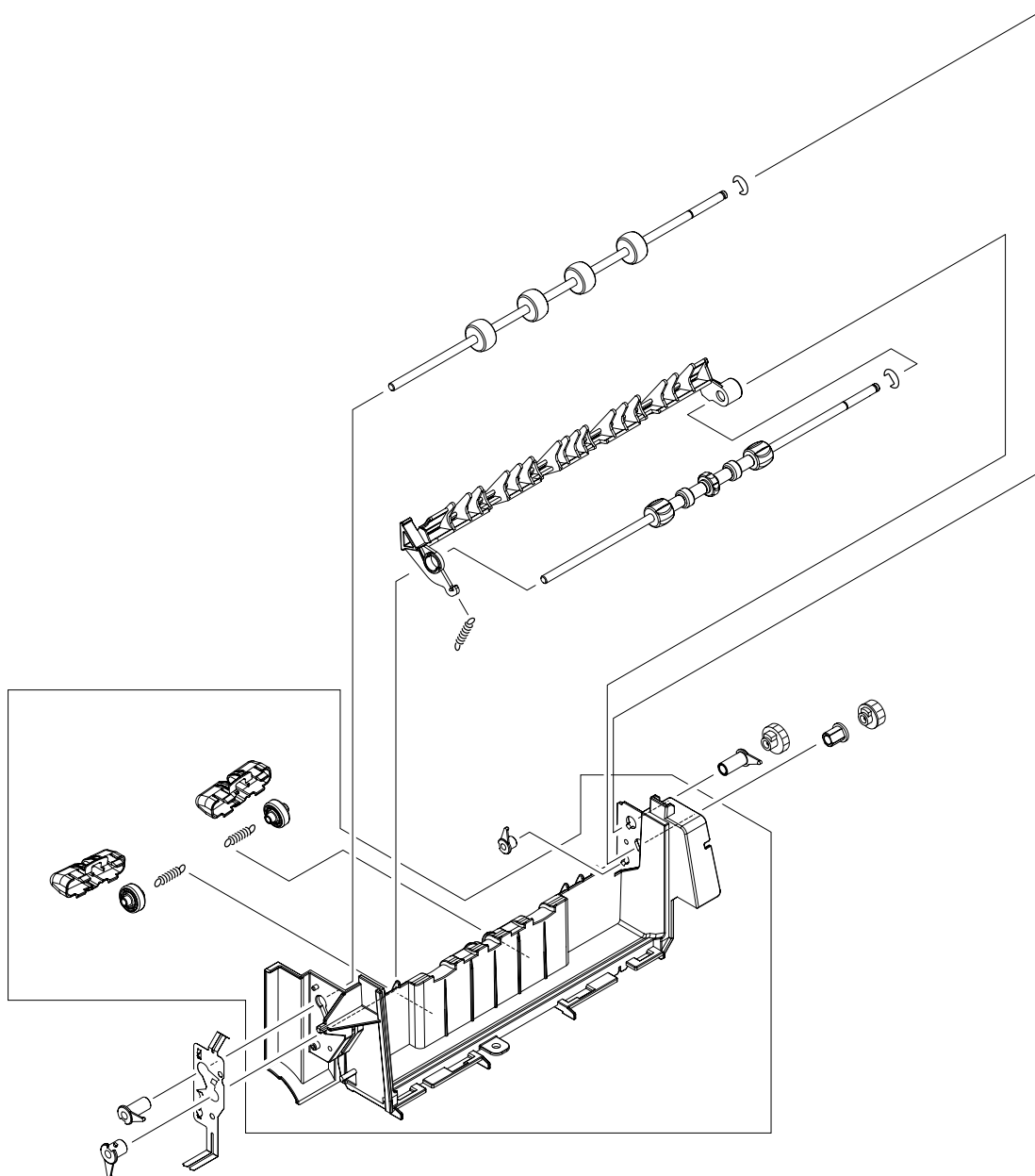
Reference	Part number	Description
1	RM1-0012-000CN	Paper-feed assembly
2	XD9-0137-000CN	E-ring
3	RU5-0050-000CN	Gear, 30T
4	RH7-5358-000CN	Clutch, paper-feed assembly



## Registration assembly

**Table 99. Registration assembly**

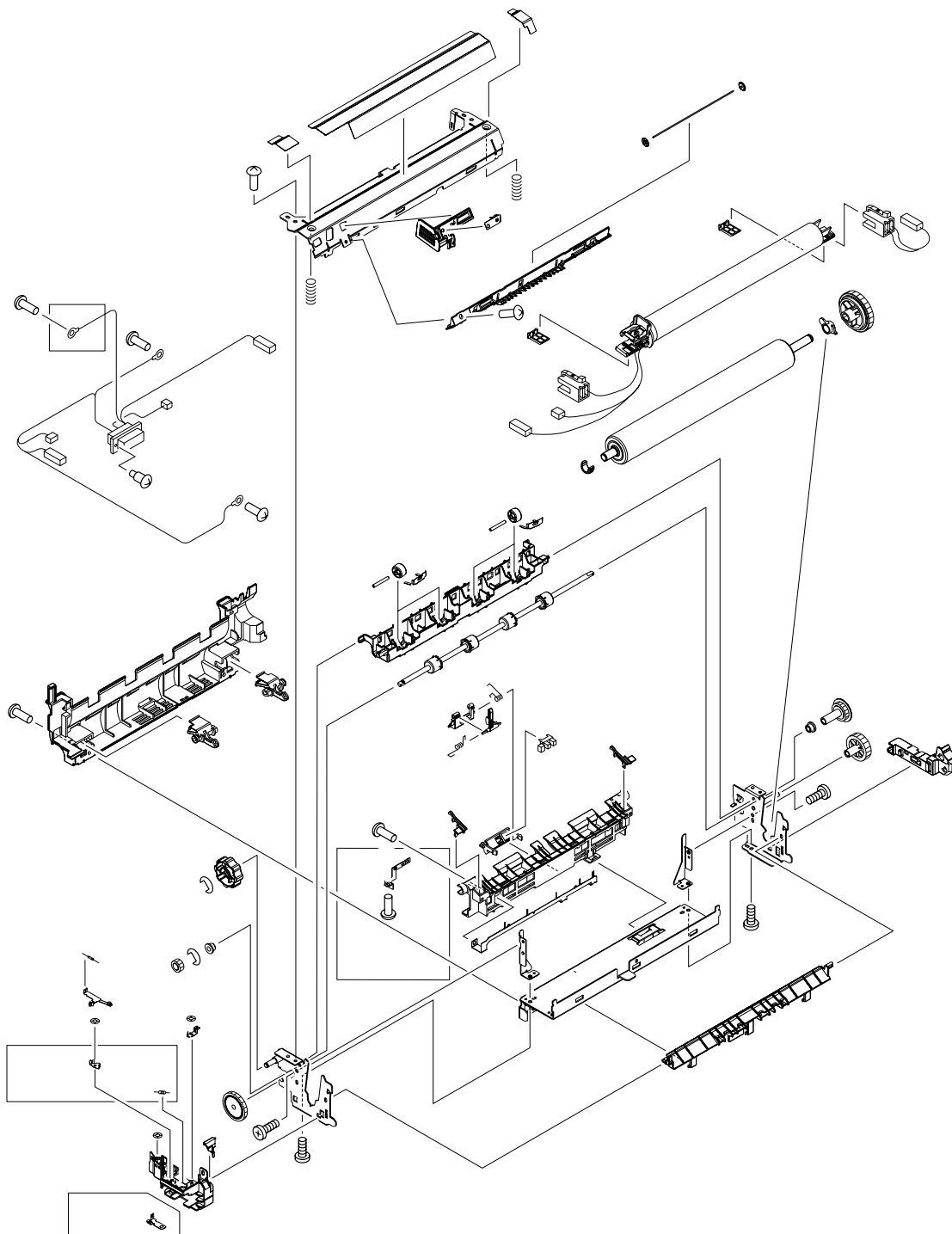
Reference	Part number	Description
	RM1-0011-000CN	Registration assembly



## Output delivery assembly

**Table 100. Output delivery assembly**

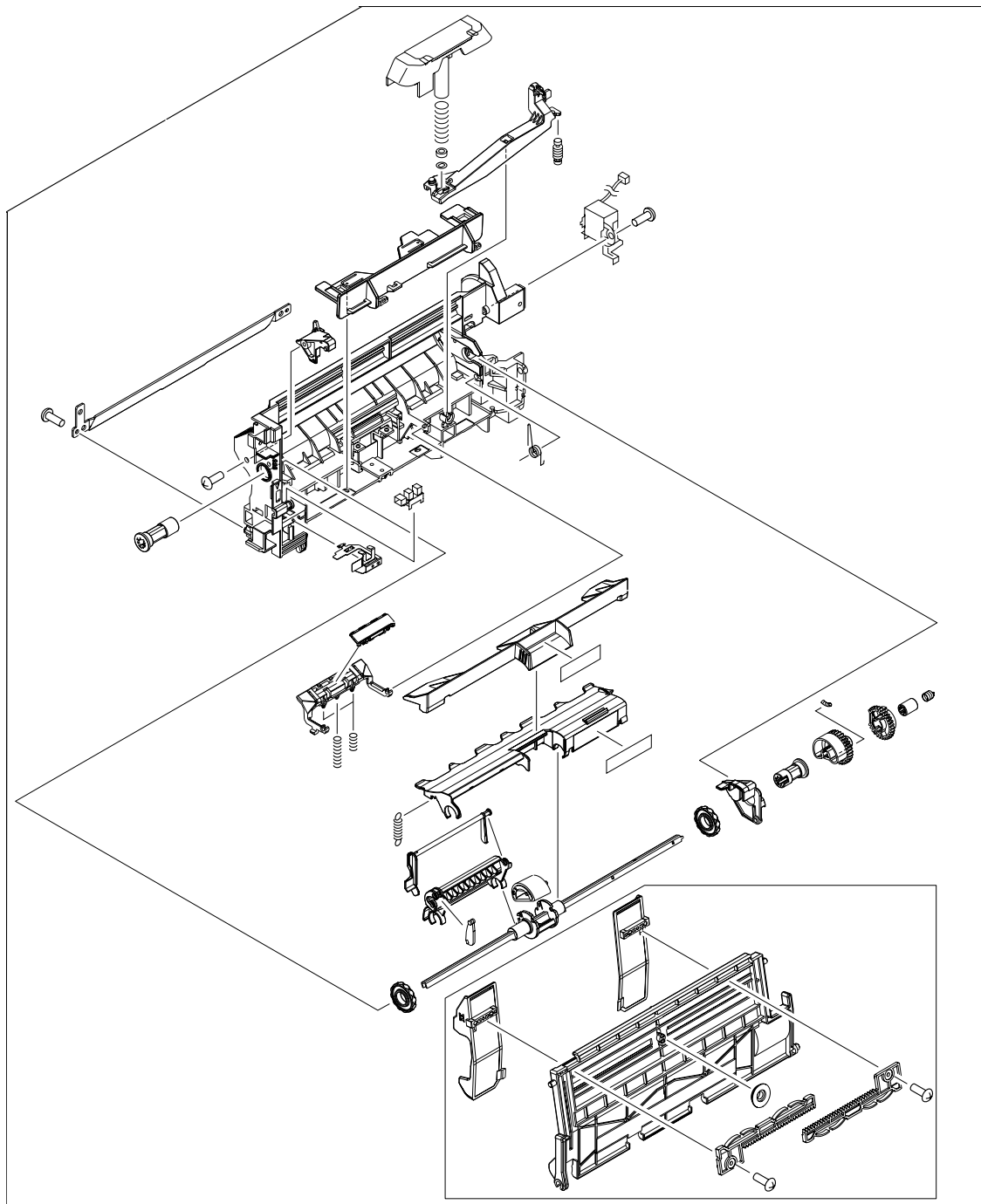
Reference	Part number	Description
	RM1-0026-020CN	Output delivery assembly



## Fuser

**Table 101. Fuser**

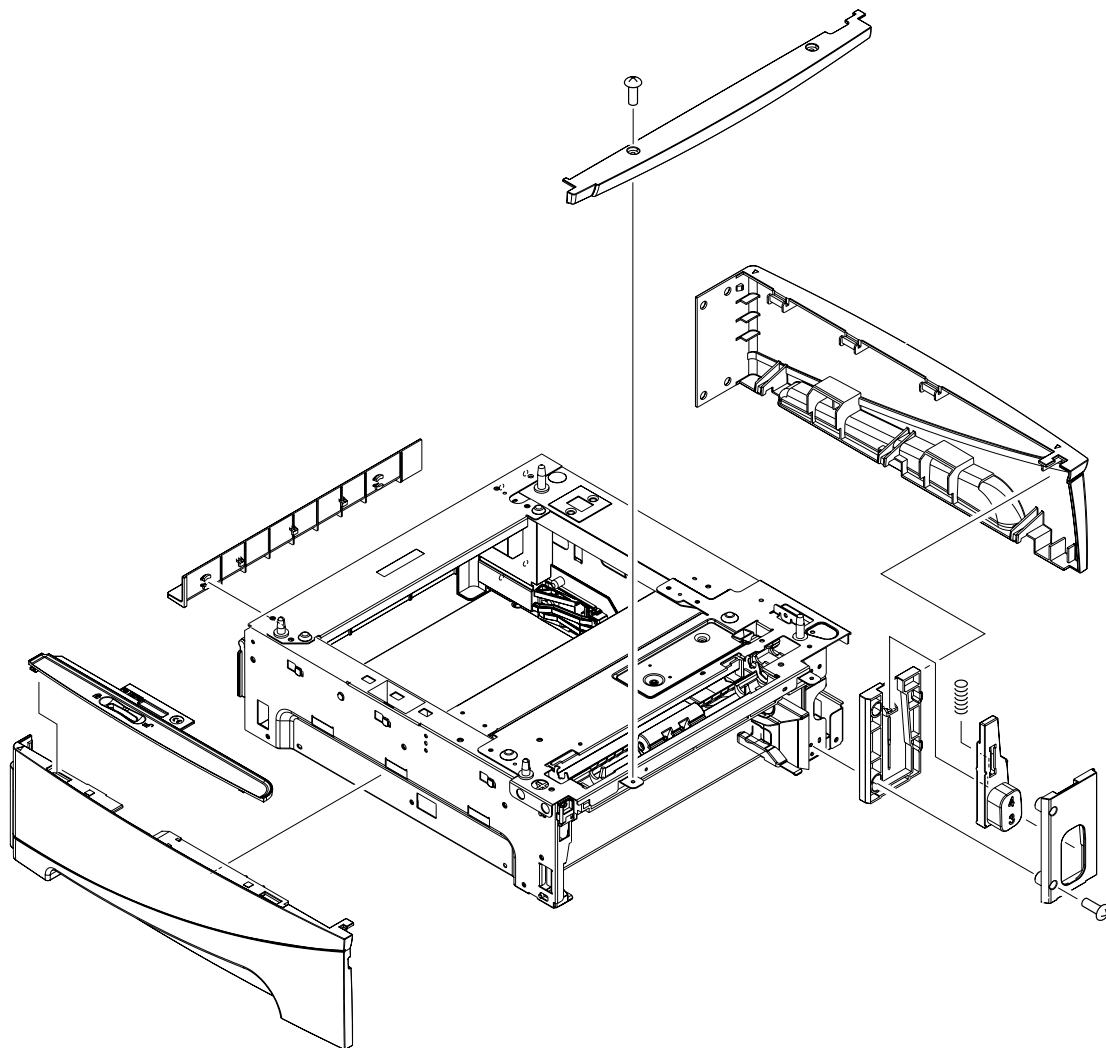
Reference	Part number	Description
	Q2425-69009	Fuser, HP LaserJet 4200/4200L, 110 V
	Q2425-69010	Fuser, HP LaserJet 4200/4200L, 220 V
	Q2431-69011	Fuser, HP LaserJet 4300, 110 V
	Q2431-69012	Fuser, HP LaserJet 4300, 220 V



**Tray 1 assembly**

**Table 102. Tray 1 assembly**

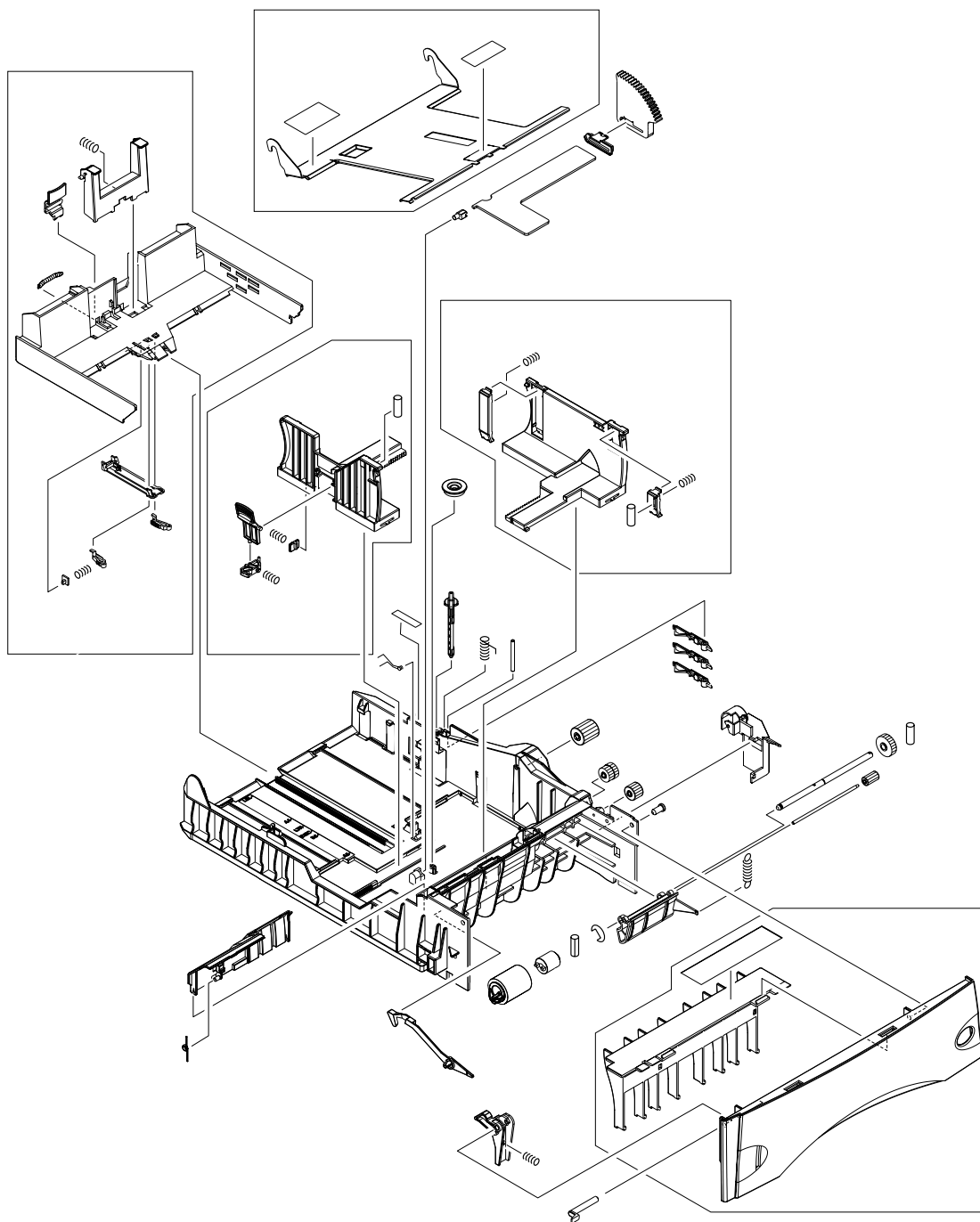
Reference	Part number	Description
1	RM1-0004-020CN	Pickup assembly, tray 1
2	RH7-5357-000CN	Solenoid, tray 1 pickup
3	RC1-0320-000CN	Cover, envelope feeder
4	RM1-0005-000CN	Tray 1
5	RL1-0019-000CN	Roller, tray 1 pickup
6	RL1-0007-000CN	Separation pad, tray 1



### 500-sheet feeder external covers and panels

**Table 103. 500-sheet feeder external covers and panels**

Reference	Part number	Description
1	RC1-0488-000CN	Cover, right, 500-sheet feeder
2	RC1-0500-000CN	Cover, number display panel, 500-sheet feeder
3	RC1-0487-000CN	Cover, left, 500-sheet feeder

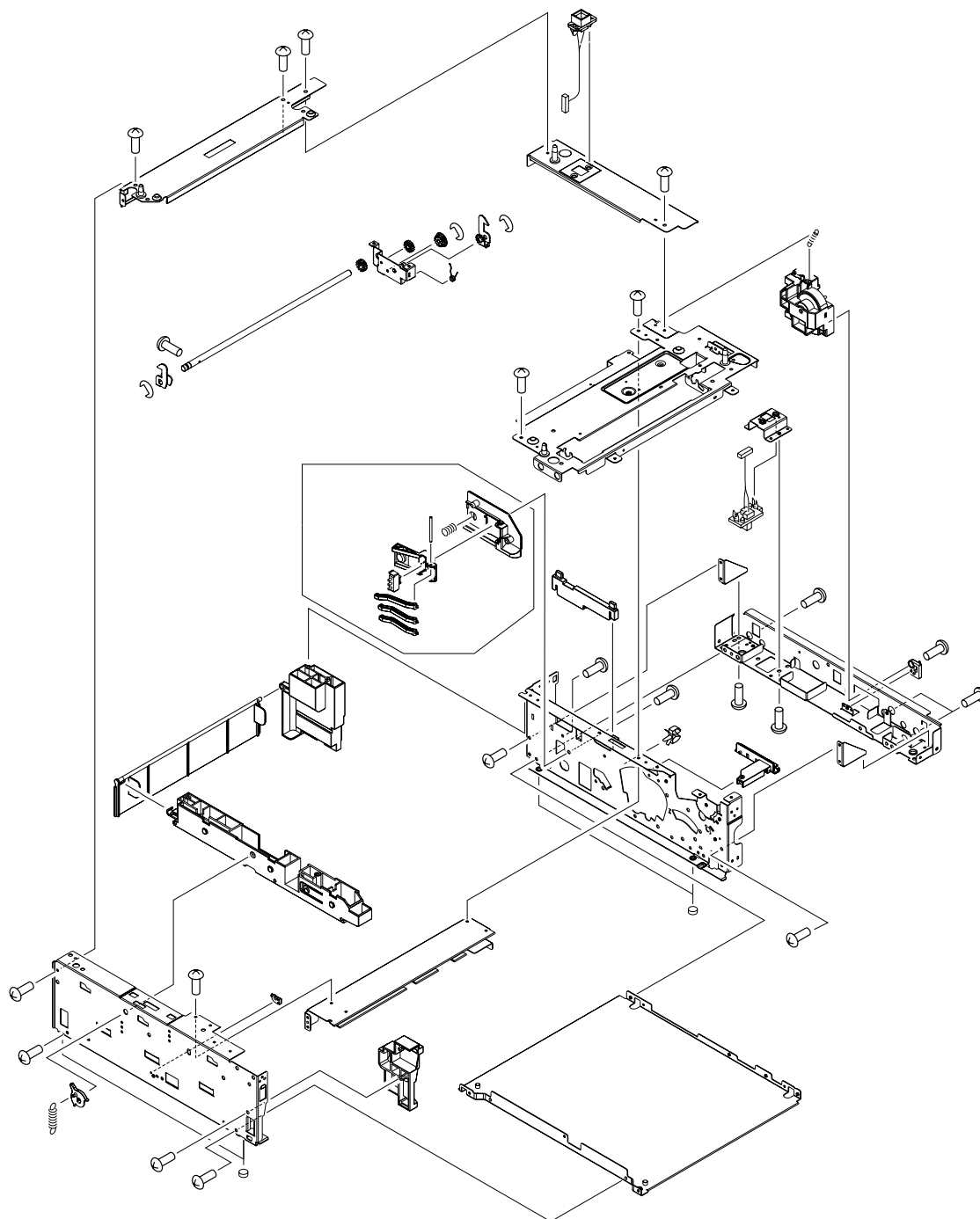


## 500-sheet tray

**Table 104. 500-sheet tray**

Reference	Part number	Description
	RM1-0028-060CN	500-sheet tray
1	RC1-0161-000CN	Flag, paper-size sensor; 500-sheet feeder
2	RC1-0335-000CN	Torque limiter, 500-sheet feeder
3	RM1-0037-000CN	Roller, separation, 500-sheet tray
4	RM1-0030-000CN	Tray assembly, rear, 500-sheet tray

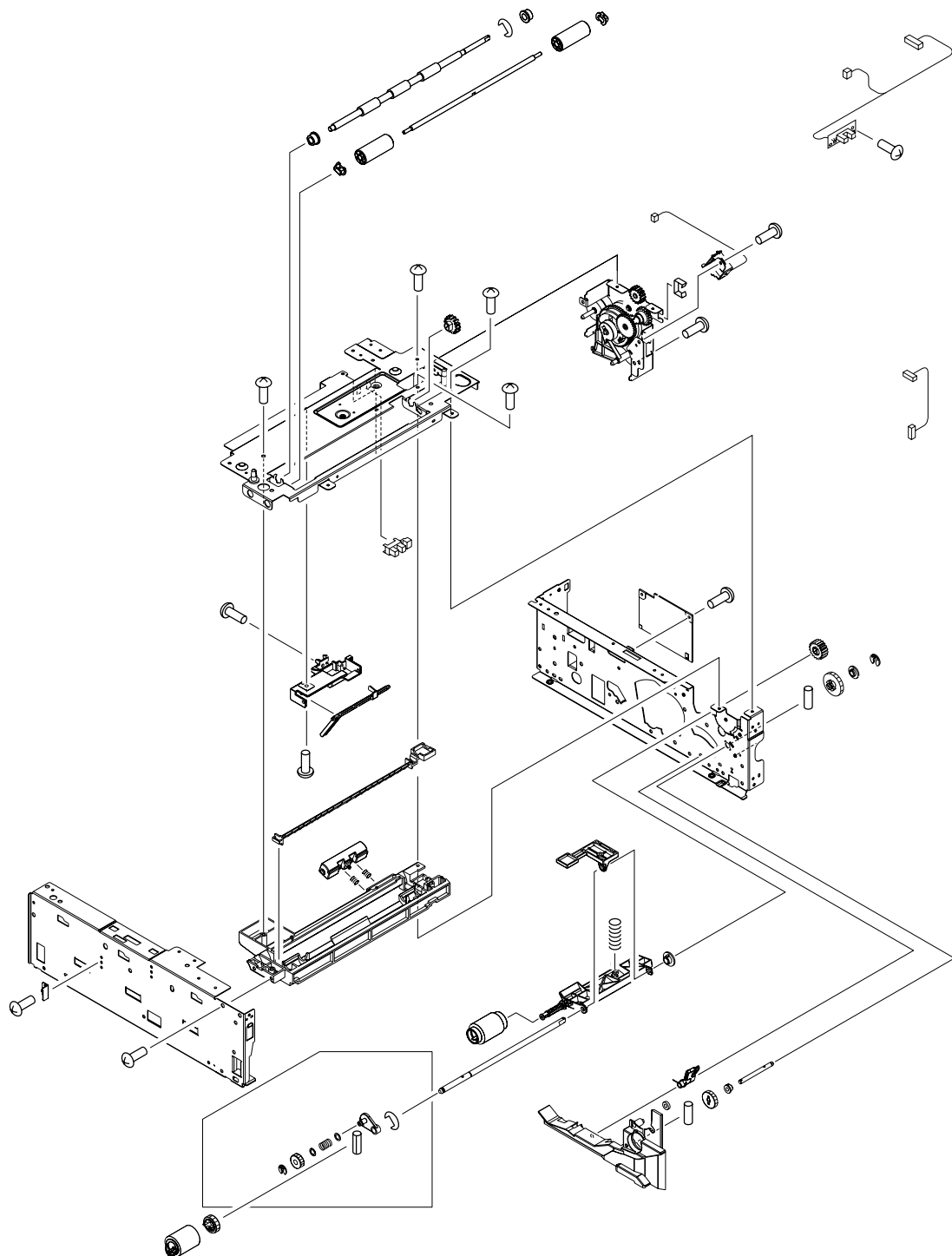




## 500-sheet feeder main assemblies (1 of 2)

**Table 105. 500-sheet feeder main assemblies (1 of 2)**

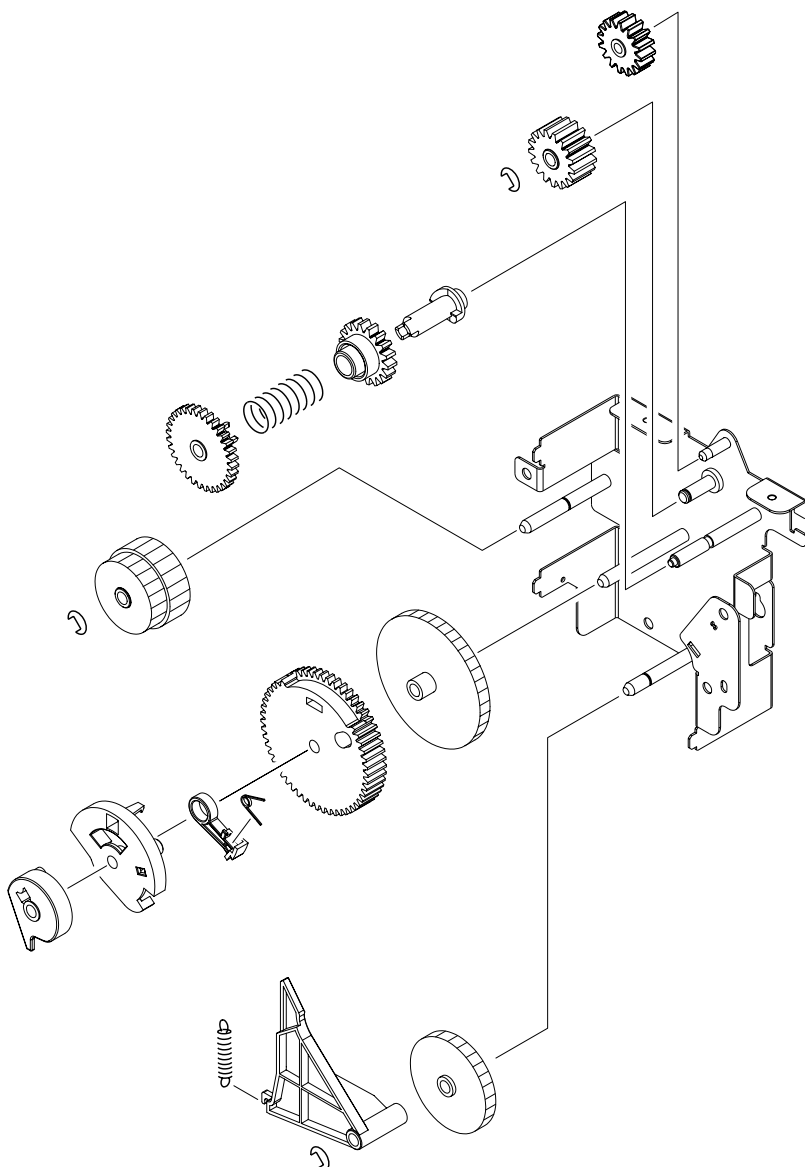
Reference	Part number	Description
1	RG1-4201-000CN	Cable, interface, upper
2	RG1-4202-000CN	Cable, interface, lower
3	RM1-0041-000CN	Sensor assembly, media-size, 500-sheet feeder



**500-sheet feeder main assemblies (2 of 2)**

**Table 106. 500-sheet feeder main assemblies (2 of 2)**

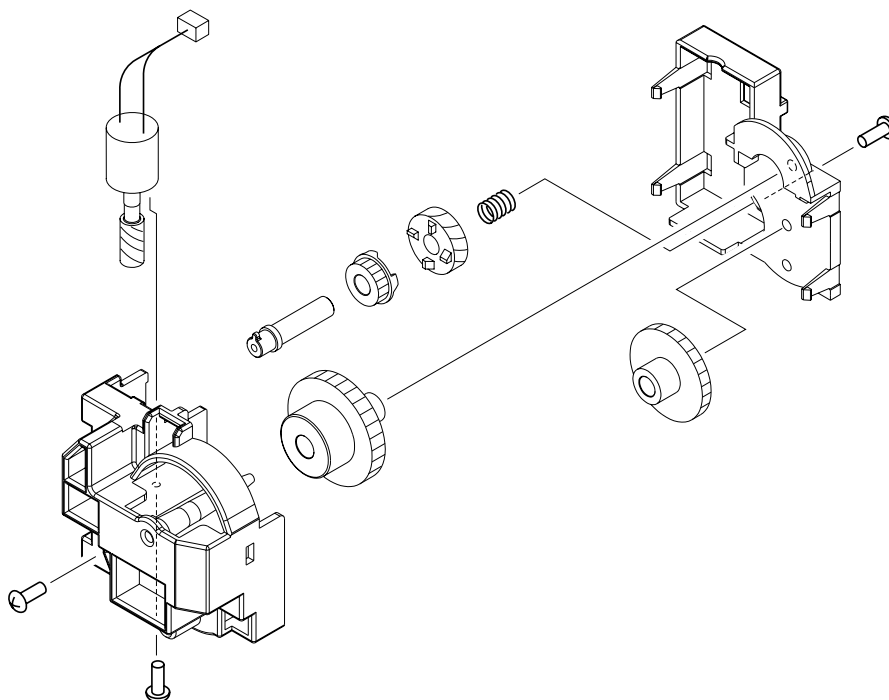
Reference	Part number	Description
1	RG1-4250-000CN	Cable, sensor assembly
2	RH7-5355-000CN	Solenoid, 500-sheet feeder
3	RG1-4200-000CN	PCA, 500-sheet feeder control
4	RU5-0088-000CN	Gear, 18T, 500-sheet tray
5	RC1-0206-000CN	Bushing, 500-sheet feeder
6	RC1-0264-000CN	Bushing, feed shaft
7	RM1-0036-000CN	Roller, paper-pickup, 500-sheet feeder
8	RM1-0037-000CN	Roller, paper-feed, 500-sheet feeder
9	RC1-0209-000CN	Flag, paper sensor



**500-sheet feeder paper-pickup drive assembly**

**Table 107. 500-sheet feeder paper-pickup drive assembly**

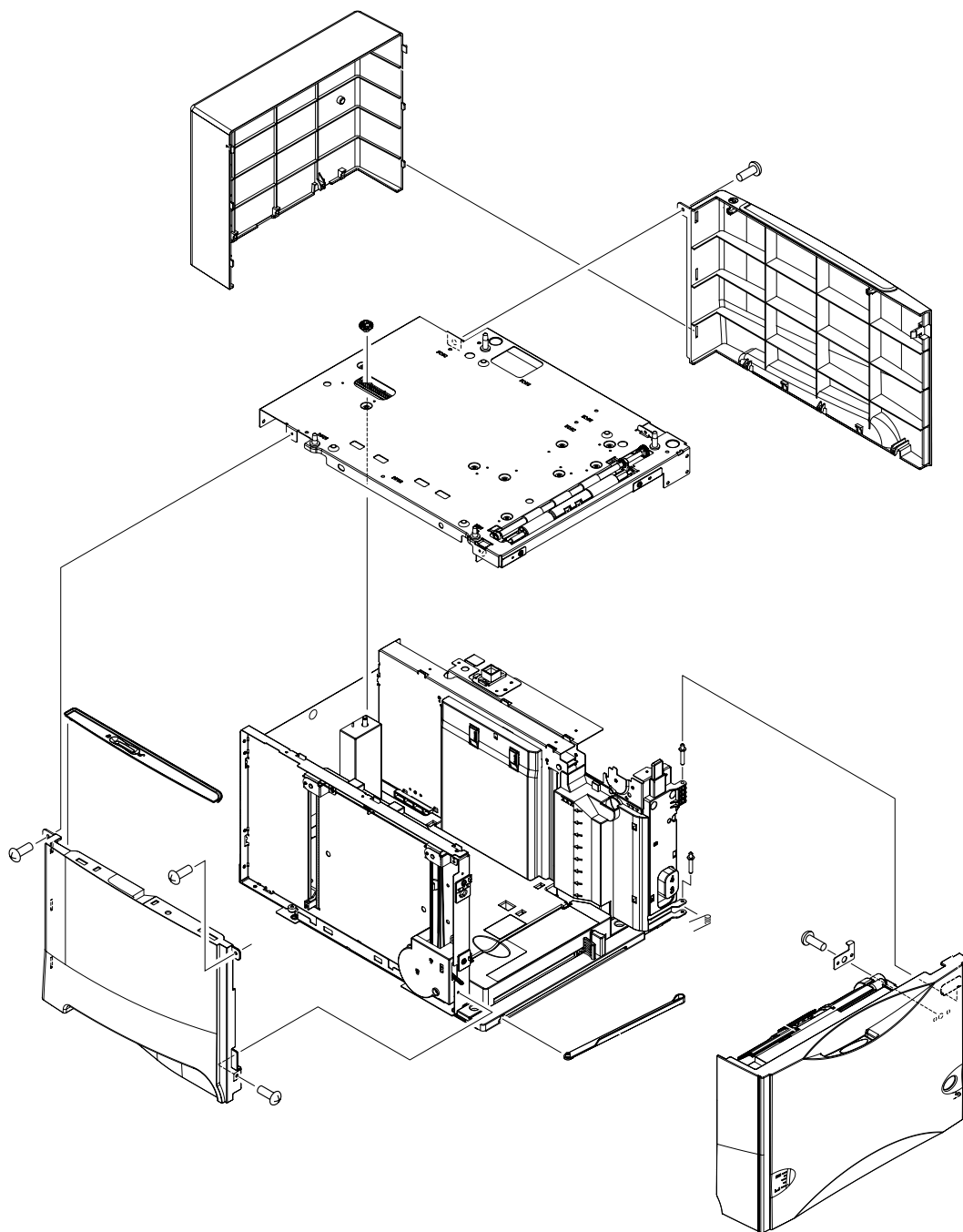
Reference	Part number	Description
	RM1-0056-000CN	Paper-pickup assembly, 500-sheet feeder



### 500-sheet feeder lifter driver assembly

**Table 108. 500-sheet feeder lifter driver assembly**

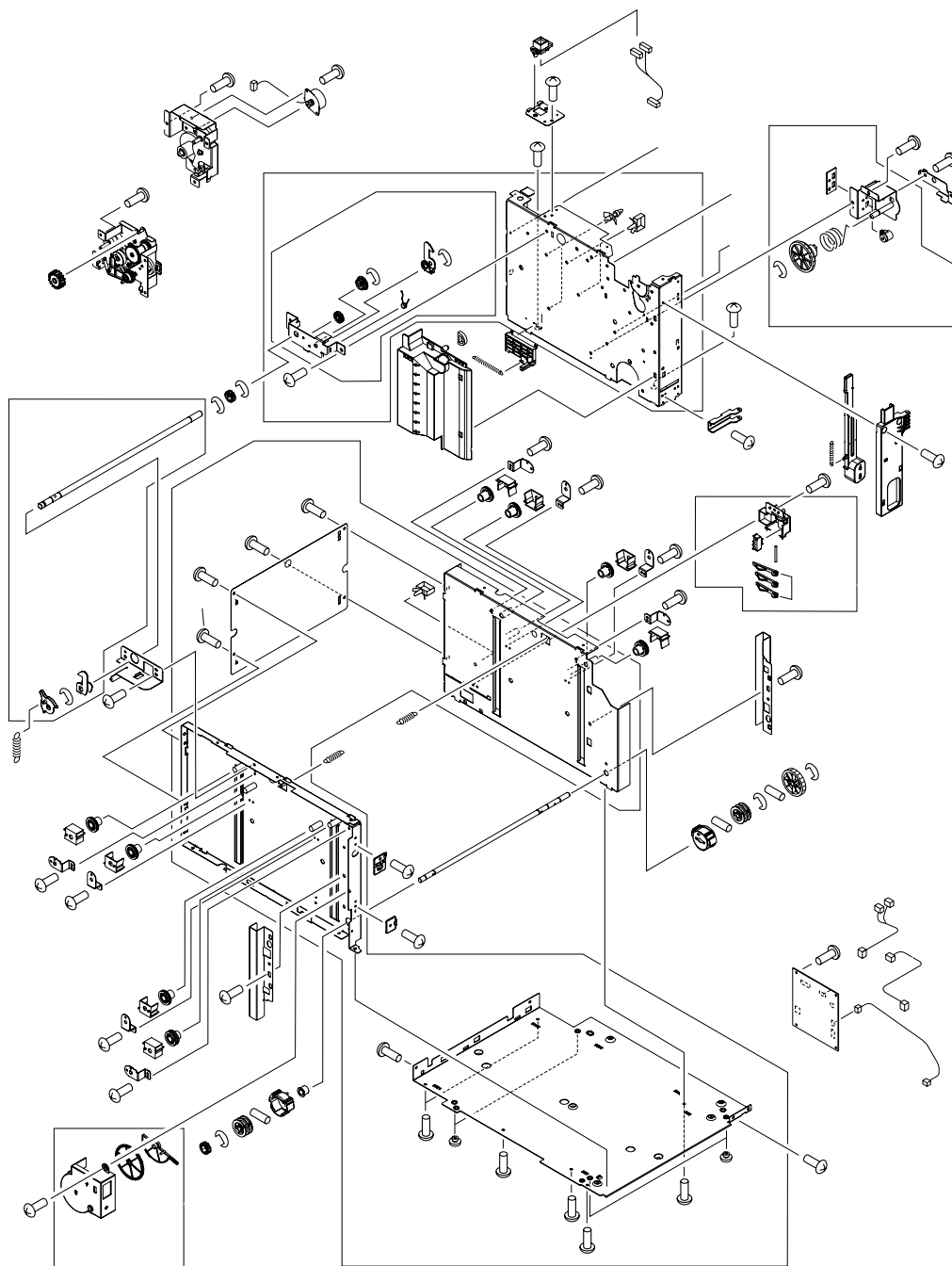
Reference	Part number	Description
	RM1-0208-000CN	Lifter-driver assembly, 500-sheet feeder



### 1,500-sheet feeder external covers and panels

**Table 109. 1500-sheet feeder external covers and panels**

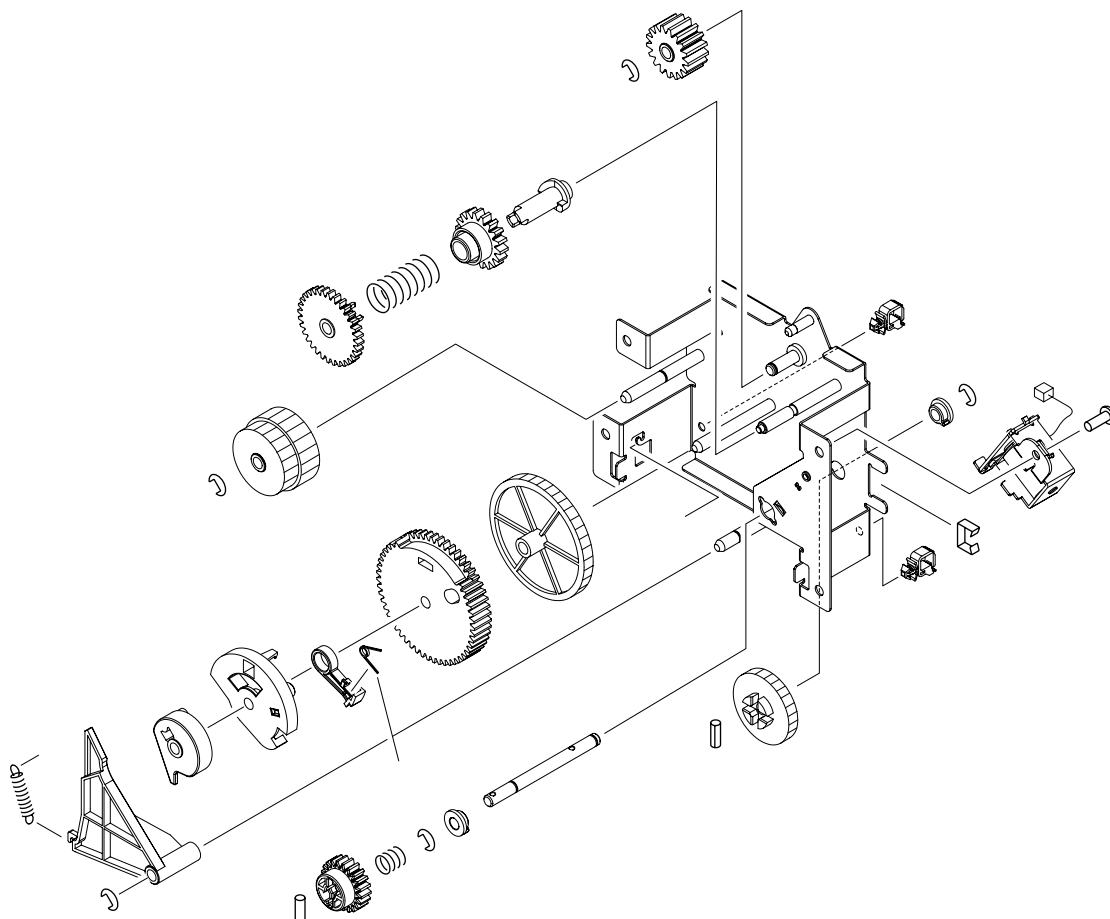
Reference	Part number	Description
	Q2444-69001	1,500-sheet tray and feeder unit
1	RC1-0663-000CN	Cover, rear, 1,500-sheet feeder
2	RC1-0661-000CN	Cover, right, 1,500-sheet feeder
3	RM1-0273-000CN	Cover, front, 1,500-sheet feeder (door assembly)
4	RM1-0037-000CN	Roller, paper-feed, 1,500-sheet feeder
5	RC1-0714-000CN	Arm, front cover stop, 1,500-sheet feeder
6	RC1-0662-000CN	Cover, left, 1,500-sheet feeder



**1,500-sheet feeder main assemblies**

**Table 110. 1,500-sheet feeder main assemblies**

Reference	Part number	Description
1	VS1-6175-006CN	Connector, interface, 1,500-sheet feeder
2	RG1-4239-000CN	Cable, interface, 1,500-sheet feeder
3	RC1-0748-000CN	Sensor, media-size (inside), 1,500-sheet feeder
4	RM1-0294-000CN	Sensor assembly, paper-size (outside), 1,500-sheet feeder
5	RG1-4240-000CN	Cable, media-size sensor, 1,500-sheet feeder
6	RG1-4241-000CN	Cable, door sensor, 1,500-sheet feeder
7	RG1-4238-000CN	PCA, 1,500-sheet feeder control
8	RM1-0286-000CN	Sensor gear assembly, 1,500-sheet feeder

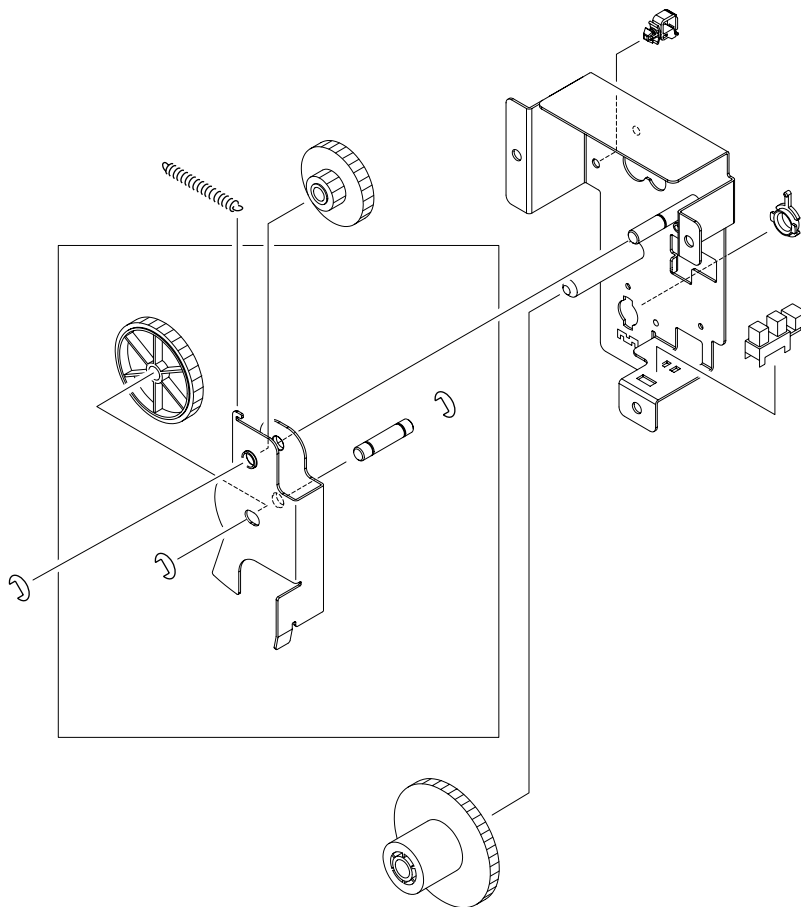


**1,500-sheet feeder paper-pickup drive assembly**

**Table 111. 1,500-sheet feeder paper-pickup drive assembly**

Reference	Part number	Description
	RM1-0283-000CN	Paper-pickup drive assembly, 1,500-sheet feeder

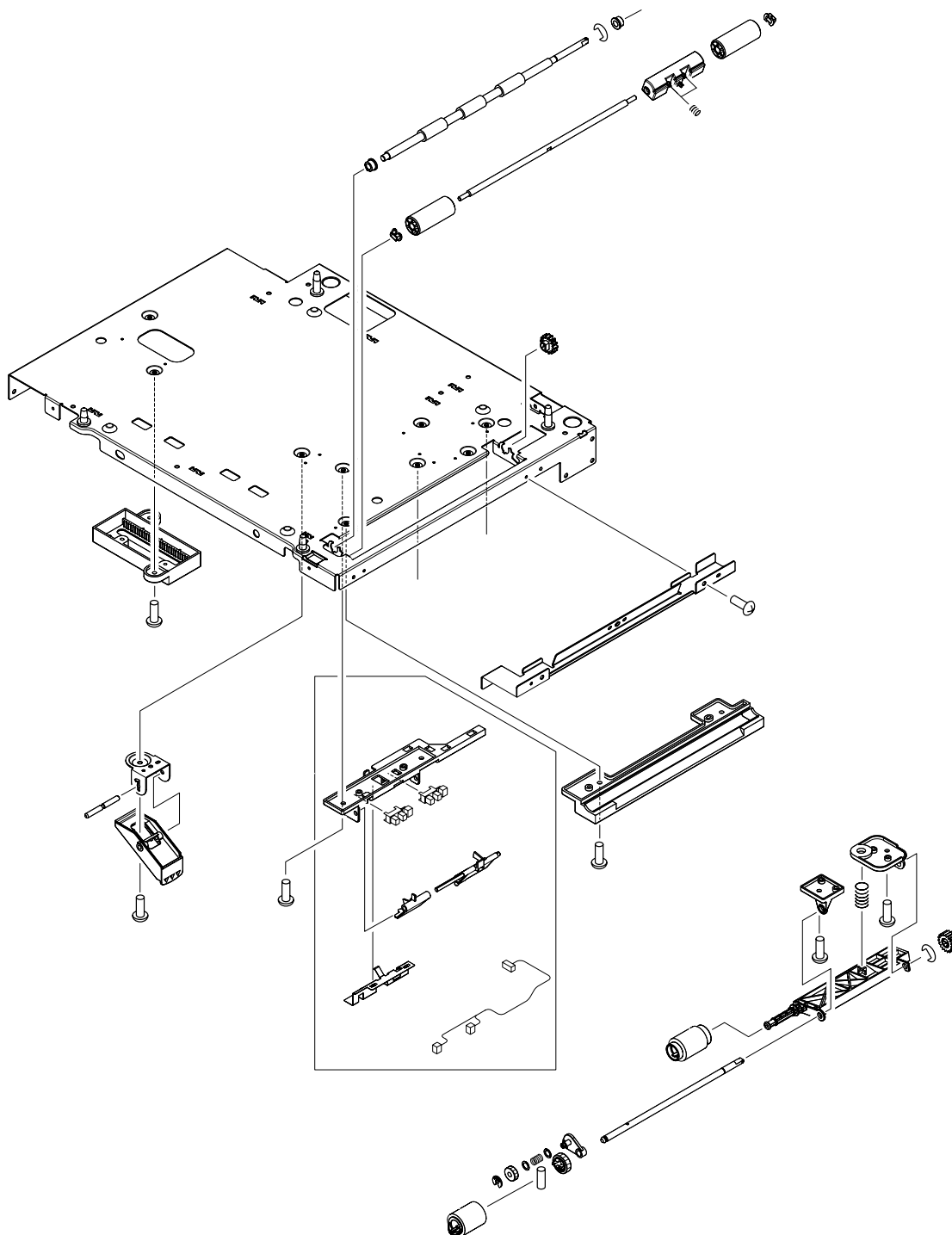




**1,500-sheet feeder lifter-drive assembly**

**Table 112. 1,500-sheet feeder lifter-drive assembly**

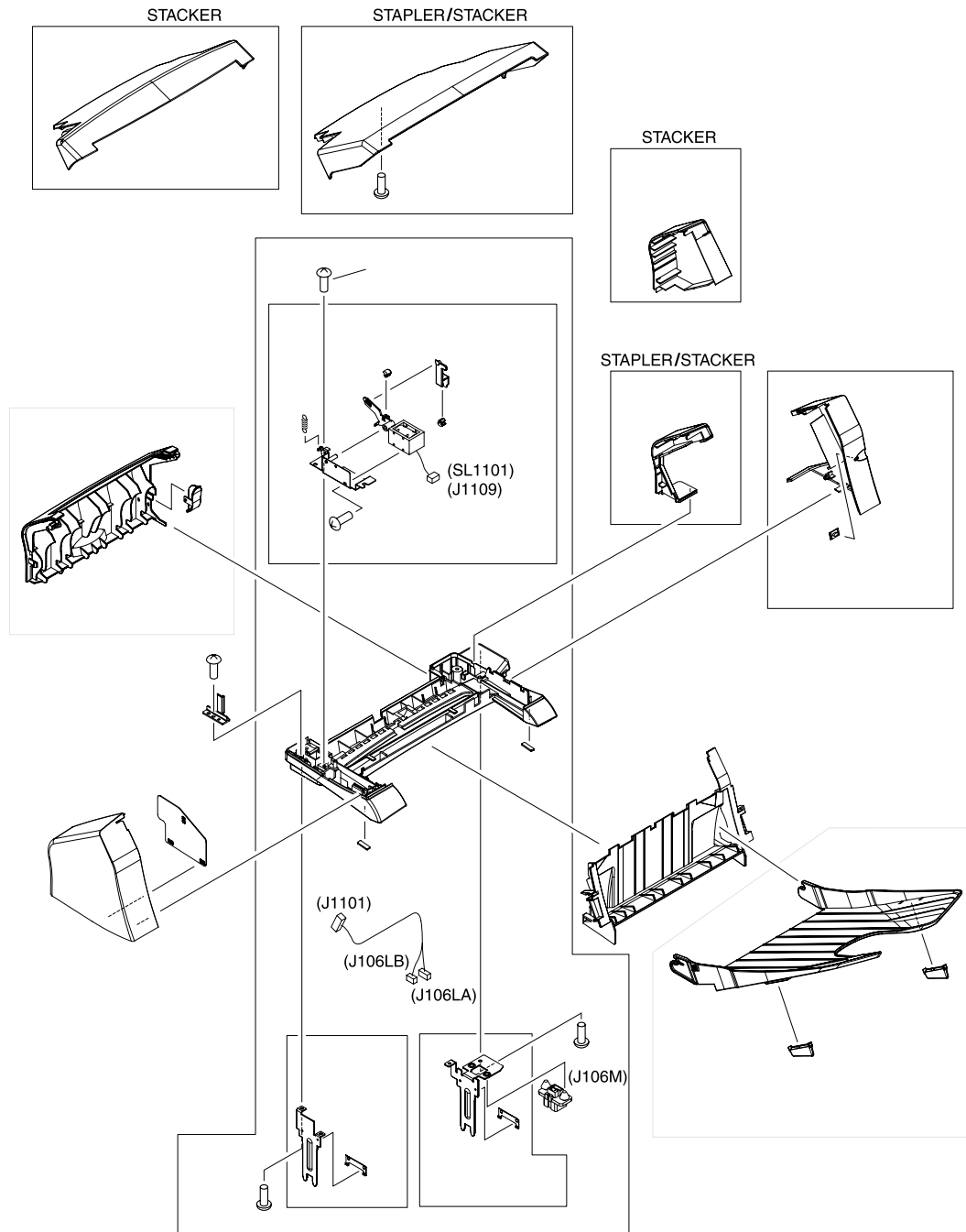
Reference	Part number	Description
	RM1-0287-020CN	Lifter-drive assembly, 1,500-sheet feeder



### 1,500-sheet feeder paper-pickup assembly

**Table 113. 1,500-sheet feeder paper-pickup assembly**

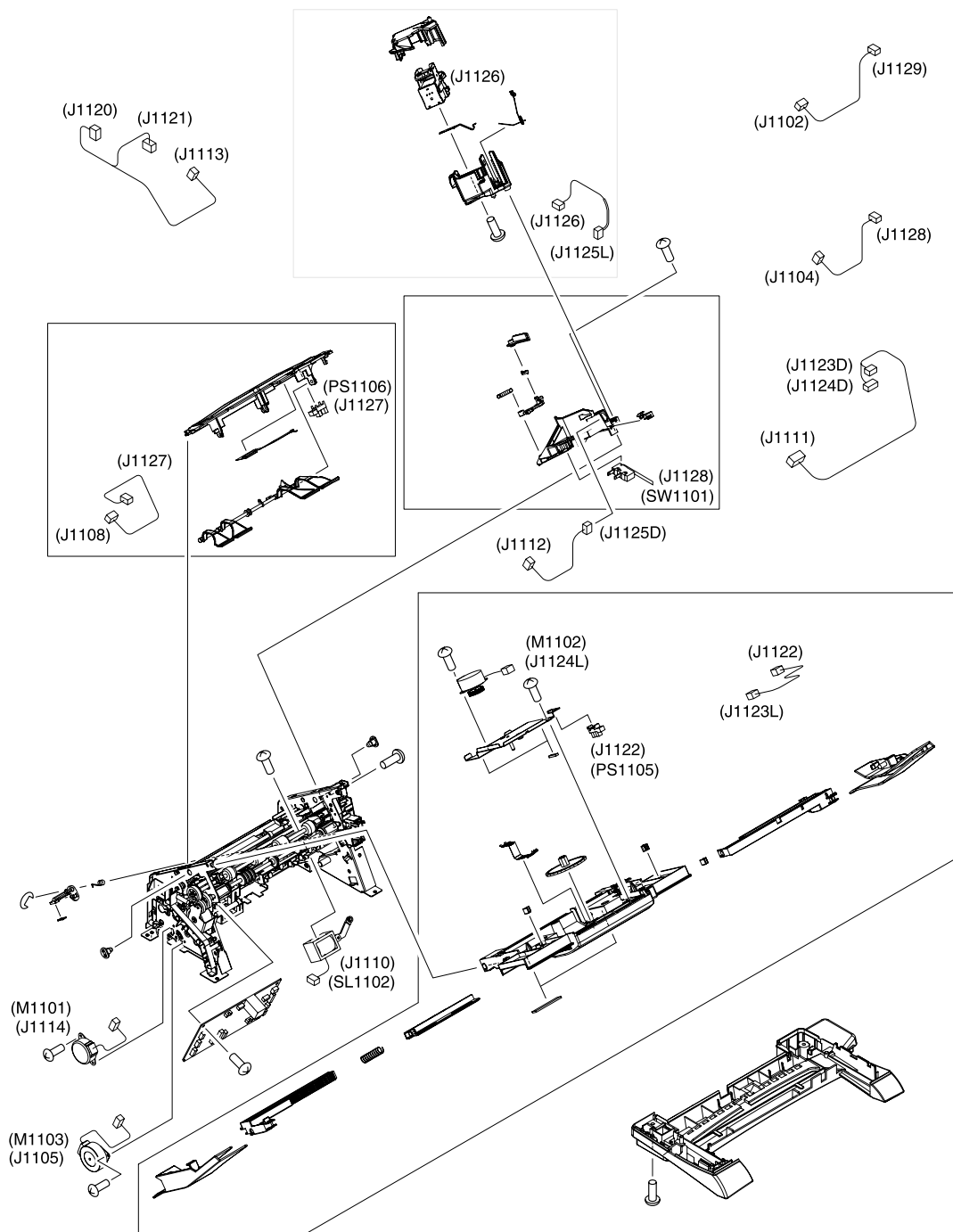
Reference	Part number	Description
1	RM1-0285-000CN	Paper sensor assembly, 1,500-sheet feeder
2	RM1-0036-000CN	Roller, pickup, 1,500-sheet feeder
3	RM1-0037-000CN	Roller, feed, 1,500-sheet feeder



### Stacker and stapler/stacker

**Table 114. Stacker and stapler/stacker**

Reference	Part number	Description
	Q2443-67901	Cover, rear, stacker and stapler/stacker
	Q2443-67902	Paper delivery tray assembly, stacker and stapler/stacker



## Stapler/stacker

**Table 115. Stapler/stacker**

Reference	Part number	Description
1	RM1-0235-000CN	Staple module (stapler/stacker only)
(not shown)	Q3216-60500	Staple cartridge (stapler/stacker only)

## Alphabetical parts list

**Table 116. Alphabetical parts list**

Description	Part number	Figure	Reference
1,000-staple cartridge	Q3216-60500	(not shown)	
1,500-sheet tray and feeder unit	Q2444-69001	256	
2-meter IEEE-1284 cable	5063-1256	(not shown)	
3-meter IEEE-1284 cable	5063-1257	(not shown)	
500-sheet stacker	Q2442-67901	(not shown)	
500-sheet stapler/stacker	Q2443-69001	(not shown)	
500-sheet tray	RM1-0028-060CN	251	
500-sheet tray	Q2441-69001	(not shown)	
500-sheet tray and feeder unit	Q2240-69001	(not shown)	
Arm, front cover stop, 1,500-sheet feeder	RC1-0714-000CN	256	5
Arm, paper-pickup	RC1-0211-000CN	244	8
Arm, print cartridge release	RC1-0003-000CN	240	2
Brake assembly, left	RM1-0053-000CN	236	11
Brake assembly, right	RM1-0054-000CN	236	3
Bushing, 500-sheet feeder	RC1-0206-000CN	253	5
Bushing, feed shaft	RC1-0264-000CN	236	6
Bushing, feed shaft	RC1-0264-000CN	253	6
Cable assembly, paper-pickup sensor (PS101 & PS107)	RG1-4221-000CN	244	1
Cable guide, dc controller	RC1-0270-000CN	235	3
Cable guide, dc controller	RC1-0269-000CN	235	7
Cable guide, scanner (1)	RC1-0340-000CN	236	9
Cable guide, scanner (2)	RC1-0385-000CN	236	10
Cable, control panel	RG1-4215-000CN	234	8
Cable, door sensor, 1,500-sheet feeder	RG1-4241-000CN	257	6
Cable, envelope feeder	RG1-4224-000CN	237	4
Cable, feeder accessory	RG1-4223-000CN	238	1
Cable, interface, 1,500-sheet feeder	RG1-4239-000CN	257	2
Cable, interface, lower	RG1-4202-000CN	252	2
Cable, interface, upper	RG1-4201-000CN	252	1
Cable, JetLink accessory	RM1-0042-000CN	238	6
Cable, laser	RG1-4212-000CN	236	2
Cable, media-size sensor, 1,500-sheet feeder	RG1-4240-000CN	257	5
Cable, memory	RG1-4219-000CN	237	1
Cable, sensor assembly	RG1-4250-000CN	253	1
Cable, top cover	RG1-4213-000CN	237	8
Cable, top-bin-full	RG1-4214-000CN	237	19
Clutch, paper-feed assembly	RH7-5358-000CN	245	4

**Table 116. Alphabetical parts list (continued)**

<b>Description</b>	<b>Part number</b>	<b>Figure</b>	<b>Reference</b>
Connector, interface, 1,500-sheet feeder	VS1-6175-006CN	257	1
Control panel assembly	RG1-4276-020CN	234	7
Control panel overlay—EN/AR	Q2431-60112	234	4
Control panel overlay—EN/CS/HU/PL	Q2431-60108	234	4
Control panel overlay—EN/FR/DE/IT	Q2431-60107	234	4
Control panel overlay—EN/FR/DE/NL	Q2431-60113	234	4
Control panel overlay—EN/RU	Q2431-60111	234	4
Control panel overlay—Greek	Q2431-40023	234	4
Control panel overlay—Hebrew	Q2431-40022	234	4
Control panel overlay—IT/ES/PT/SP	Q2431-60110	234	4
Control panel overlay—NO/SW/FI	Q2431-60109	234	4
Control panel overlay—Turkish	Q2431-40021	234	4
Cover, 500-sheet tray, rear	RC1-0290-000CN	234	10
Cover, cartridge door, HP LaserJet 4200	RM1-0047-020CN	234	3
Cover, cartridge door, HP LaserJet 4300	RM1-0114-020CN	234	3
Cover, duplexer	RC1-0291-000CN	234	11
Cover, envelope feeder	RC1-0320-000CN	249	3
Cover, fan (power supply shield)	RC1-0344-000CN	237	11
Cover, formatter	RC1-0288-000CN	234	1
Cover, front	RM1-0050-000CN	234	5
Cover, front, 1,500-sheet feeder (door assembly)	RM1-0273-000CN	256	3
Cover, inner front right side	RC1-0019-000CN	237	10
Cover, left	RC1-0287-000CN	234	9
Cover, left, 1,500-sheet feeder	RC1-0662-000CN	256	6
Cover, left, 500-sheet feeder	RC1-0487-000CN	250	3
Cover, number display panel, 500-sheet feeder	RC1-0500-000CN	250	2
Cover, paper-handling	RC1-0289-000CN	234	13
Cover, rear output bin	RM1-0027-000CN	234	12
Cover, rear, 1,500-sheet feeder	RC1-0663-000CN	256	1
Cover, rear, stacker and stapler/stacker	Q2443-67901	261	
Cover, right	RM1-0046-000CN	234	2
Cover, right, 1,500-sheet feeder	RC1-0661-000CN	256	2
Cover, right, 500-sheet feeder	RC1-0488-000CN	250	1
Cover, top assembly	RM1-0049-000CN	234	14
Duplexer (duplex printing accessory)	Q2439-67901	(not shown)	
Duplexing pendulum assembly	RM1-0002-000CN	242	
EIO card—Connectivity card for USB, serial, and LocalTalk	J4135-61001	(not shown)	
EIO card—Fast Ethernet 605n Jetdirect print server card (for HP LaserJet 4200Lvn printers only)	J7955-69001	(not shown)	

**Table 116. Alphabetical parts list (continued)**

<b>Description</b>	<b>Part number</b>	<b>Figure</b>	<b>Reference</b>
EIO card—Fast Ethernet 615n Jetdirect print server card (10/100Base-TX single RJ-45 port)	J6057-69001	(not shown)	
EIO card—Token Ring networks	J4167-69001	(not shown)	
EIO hard disk	J6054-61011	(not shown)	
Envelope feeder	Q2438-67901	(not shown)	
E-ring	XD9-0137-000CN	245	2
Fan, cooling right side (HP LaserJet 4300 only)	RH7-1577-000CN	237	3
Fan, cooling, left	RH7-1573-000CN	237	15
Firmware DIMM—HP LaserJet 4200, all models except base model	Q2453-67904	(not shown)	
Firmware DIMM—HP LaserJet 4200, base model	Q2453-67923	(not shown)	
Firmware DIMM—HP LaserJet 4200L, all models	Q2453-67930	(not shown)	
Firmware DIMM—HP LaserJet 4300, all models	Q2453-67913	(not shown)	
Flag, paper sensor	RC1-0209-000CN	244	10
Flag, paper sensor	RC1-0209-000CN	253	9
Flag, paper-feed sensor	RC1-0060-000CN	235	5
Flag, paper-size sensor; 500-sheet feeder	RC1-0161-000CN	251	1
Flash DIMM—12 MB	C7867A	(not shown)	
Flash DIMM—2 MB	C4286A	(not shown)	
Flash DIMM—4 MB	C4287A	(not shown)	
Flash DIMM—8 MB	C8530A	(not shown)	
Font DIMM—Korean language	D4838A	(not shown)	
Font DIMM—Simplified Chinese language	C4293A	(not shown)	
Font DIMM—Traditional Chinese language	C4292A	(not shown)	
Formatter, HP LaserJet 4200	C9652-69001	(not shown)	
Formatter, HP LaserJet 4200L	C9652-69003	(not shown)	
Formatter, HP LaserJet 4300	C9651-69001	(not shown)	
Fuser, HP LaserJet 4200/4200L, 110 V	Q2425-69009	248	
Fuser, HP LaserJet 4200/4200L, 220 V	Q2425-69010	248	
Fuser, HP LaserJet 4300, 110 V	Q2431-69011	248	
Fuser, HP LaserJet 4300, 220 V	Q2431-69012	248	
Gear, 18T, 500-sheet tray	RU5-0088-000CN	253	4
Gear, 18T, tray 2	RU5-0045-000CN	236	5
Gear, 23T	RC1-0371-000CN	244	5
Gear, 30T	RU5-0050-000CN	245	3
Guide, cassette	RC1-0153-010CN	238	2
Guide, connector cable	RC1-0386-000CN	237	5
Guide, power supply, right	RC1-0244-000CN	238	5
Guide, tray 2 left	RC1-0273-000CN	237	16
Guide, tray 2 right	RC1-0274-000CN	237	17

**Table 116. Alphabetical parts list (continued)**

<b>Description</b>	<b>Part number</b>	<b>Figure</b>	<b>Reference</b>
Holder, metal thermistor	RC1-0343-000CN	237	12
Holder, paper-pickup arm	RC1-0212-000CN	244	3
Holder, paper sensor	RC1-0208-000CN	244	11
Holder, plastic thermistor	RC1-0342-000CN	237	14
HP LaserJet 4200/4200L/4300 series printer CD-ROM (EN/DA/FI/NO/SV/CS/HU/PL/RU/TR/AR/FR)	Q2431-60105	(not shown)	
HP LaserJet 4200/4200L/4300 series printer CD-ROM (EN/FR/IT/SP/DE/NL/PT/HE/EL)	Q2431-60104	(not shown)	
HP LaserJet 4200/4200L/4300 series printer CD-ROM (EN/JA/KO/ZHCN/ZHTW/TH)	Q2431-60106	(not shown)	
<i>hp LaserJet 4200/4300 start</i> (EN/BG/ET/LT/LV)	Q2431-90907	(not shown)	
<i>hp LaserJet 4200/4300 start</i> (EN/CS/HU/PO)	Q2431-90904	(not shown)	
<i>hp LaserJet 4200/4300 start</i> (EN/DA/FI/NO/SV)	Q2431-90903	(not shown)	
<i>hp LaserJet 4200/4300 start</i> (EN/FR/DE/IT/NL)	Q2431-90902	(not shown)	
<i>hp LaserJet 4200/4300 start</i> (EN/FR/ES/PT/IT)	Q2431-90901	(not shown)	
<i>hp LaserJet 4200/4300 start</i> (EN/FR/TR/AR)	Q2431-90910	(not shown)	
<i>hp LaserJet 4200/4300 start</i> (EN/HE)	Q2431-90911	(not shown)	
<i>hp LaserJet 4200/4300 start</i> (EN/HR/RU/SK/SL)	Q2431-90905	(not shown)	
<i>hp LaserJet 4200/4300 start</i> (EN/JA/ZHTW/TH)	Q2431-90908	(not shown)	
<i>hp LaserJet 4200/4300 start</i> (EN/KK/RU/UK/EL)	Q2431-90906	(not shown)	
<i>hp LaserJet 4200/4300 start</i> (EN/KO/ZHCN/ID)	Q2431-90909	(not shown)	
<i>hp LaserJet 4200</i> <i>hp LaserJet 4300</i> <i>install</i> (installation guide)	Q2443-90902	(not shown)	
<i>hp LaserJet 4200L start</i> (EN/BG/ET/LT/LV)	Q3993-90907	(not shown)	
<i>hp LaserJet 4200L start</i> (EN/CS/HU/PL)	Q3993-90904	(not shown)	
<i>hp LaserJet 4200L start</i> (EN/DA/FI/NO/SV)	Q3993-90903	(not shown)	
<i>hp LaserJet 4200L start</i> (EN/FR/DE/IT/NL)	Q3993-90902	(not shown)	
<i>hp LaserJet 4200L start</i> (EN/FR/SP/PT/IT)	Q3993-90901	(not shown)	
<i>hp LaserJet 4200L start</i> (EN/FR/TR/AR)	Q3993-90910	(not shown)	
<i>hp LaserJet 4200L start</i> (EN/HE)	Q3993-90911	(not shown)	
<i>hp LaserJet 4200L start</i> (EN/HR/RU/SK/SL)	Q3993-90905	(not shown)	
<i>hp LaserJet 4200L start</i> (EN/JA/ZHTW/TH)	Q3993-90908	(not shown)	
<i>hp LaserJet 4200L start</i> (EN/KK/RU/UK/EL)	Q3993-90906	(not shown)	
<i>hp LaserJet 4200L start</i> (EN/KO/ZHCN/ID)	Q3993-90909	(not shown)	
Laser/scanner assembly, HP LaserJet 4200/4200L	Q2425-69001	236	1
Laser/scanner assembly, HP LaserJet 4300	Q2431-69001	236	1
Lifter-drive assembly, 1,500-sheet feeder	RM1-0287-020CN	259	
Lifter-drive assembly, tray 2	RM1-0033-020CN	243	
Lifter-driver assembly, 500-sheet feeder	RM1-0208-000CN	255	
Main drive assembly	RM1-0001-000CN	240	1



**Table 116. Alphabetical parts list (continued)**

<b>Description</b>	<b>Part number</b>	<b>Figure</b>	<b>Reference</b>
Maintenance kit, HP LaserJet 4200/4200L, 110 V	Q2429-69003	(not shown)	
Maintenance kit, HP LaserJet 4200/4200L, 220 V	Q2430-69003	(not shown)	
Maintenance kit, HP LaserJet 4300, 110 V	Q2436-69004	(not shown)	
Maintenance kit, HP LaserJet 4300, 220 V	Q2437-69004	(not shown)	
Motor, main (M1)—HP LaserJet 4200, 4200L, 4300	RH7-1570-000CN	235	2
Motor, print cartridge—HP LaserJet 4300 only	Q2425-69011	235	1
Mount assembly, laser/scanner	RM1-0115-000CN	236	4
Name plate kit, HP LaserJet 4200	Q2425-67901	234	6
Name plate kit, HP LaserJet 4300	Q2431-67908	234	6
Name plate, HP LaserJet 4200L	Q3993-40001	234	6
Name plate, HP LaserJet 4200Ln	Q3994-40004	234	6
Name plate, HP LaserJet 4200Lvn	Q3995-40001	234	6
Output delivery assembly	RM1-0026-020CN	247	
Paper delivery tray assembly, stacker and stapler/ stacker	Q2443-67902	261	
Paper-feed belt assembly	RM1-0025-000CN	239	1
Paper sensor assembly, 1,500-sheet feeder	RM1-0285-000CN	260	1
Paper-feed assembly	RM1-0012-000CN	245	1
Paper-pickup assembly, 500-sheet feeder	RM1-0056-000CN	254	
Paper-pickup drive assembly	RM1-0034-000CN	241	
Paper-pickup drive assembly, 1,500-sheet feeder	RM1-0283-000CN	258	
PCA, 1,500-sheet feeder control	RG1-4238-000CN	257	7
PCA, 500-sheet feeder control	RG1-4200-000CN	253	3
PCA, dc controller (HP LaserJet 4200)	RG1-4236-040CN	237	2
PCA, dc controller (HP LaserJet 4300)	RG1-4237-030CN	237	2
Pickup assembly, tray 1	RM1-0004-020CN	249	1
Power supply, 110 V, HP LaserJet 4200/4200L	Q2425-69002	239	2
Power supply, 110 V, HP LaserJet 4300	Q2431-69002	239	2
Power supply, 220 V, HP LaserJet 4200/4200L	Q2425-69003	239	2
Power supply, 220 V, HP LaserJet 4300	Q2431-69003	239	2
Print cartridge, HP LaserJet 4200/4200L (12,000 pages)	Q1338-67901	(not shown)	
Print cartridge, HP LaserJet 4300 (18,000 pages)	Q1339-67901	(not shown)	
<i>Print Media Guide For The Hp LaserJet Family Of Printers</i>	5980-8424 ENUS	(not shown)	
Registration assembly	RM1-0011-000CN	246	
Roller, feed, 1,500-sheet feeder	RM1-0037-000CN	260	3
Roller, paper-feed, 500-sheet feeder	RM1-0037-000CN	253	8
Roller, paper-pickup, 500-sheet feeder	RM1-0036-000CN	253	7
Roller, paper-feed	RM1-0037-000CN	244	6
Roller, paper-feed, 1,500-sheet feeder	RM1-0037-000CN	256	4

**Table 116. Alphabetical parts list (continued)**

<b>Description</b>	<b>Part number</b>	<b>Figure</b>	<b>Reference</b>
Roller, paper-pickup	RM1-0036-000CN	244	7
Roller, pickup, 1,500-sheet feeder	RM1-0036-000CN	260	2
Roller, separation, 500-sheet tray	RM1-0037-000CN	251	3
Roller, transfer	RM1-0699-000CN	235	6
Roller, tray 1 pickup	RL1-0019-000CN	249	5
SDRAM DIMM—128 MB	C9121-67901	(not shown)	
SDRAM DIMM—16 MB	C7843-67901	(not shown)	
SDRAM DIMM—32 MB	C7845-67901	(not shown)	
SDRAM DIMM—64 MB	Q1887-67901	(not shown)	
SDRAM DIMM—8 MB	C7842-67901	(not shown)	
Sensor assembly, media-size, 500-sheet feeder	RM1-0041-000CN	252	3
Sensor assembly, paper-size (outside), 1,500-sheet feeder	RM1-0294-000CN	257	4
Sensor assembly, tray 2 media-size	RM1-0041-000CN	238	3
Sensor gear assembly, 1,500-sheet feeder	RM1-0286-000CN	257	8
Sensor, media-size (inside), 1,500-sheet feeder	RC1-0748-000CN	257	3
Sensor, top-bin-full	WG8-5362-000CN	237	18
Sensor, tray 2 paper (PS101); paper stack (PS107)	WG8-5362-000CN	244	12
Separation pad, tray 1	RL1-0007-000CN	249	6
Shaft, feeder roller	RC1-0210-000CN	244	2
Solenoid, 500-sheet feeder	RH7-5355-000CN	253	2
Solenoid, paper-pickup assembly	RH7-5355-000CN	236	8
Solenoid, tray 1 pickup	RH7-5357-000CN	249	2
Spring, compression	RC1-0213-000CN	244	9
Spring, tension (lifter driver assembly)	RC1-0198-000CN	237	6
Spring, torsion	RC1-0061-000CN	235	4
Staple module (stapler/stacker only)	RM1-0235-000CN	262	1
Support lifter drive assembly	RC1-0200-000CN	237	7
Swing plate assembly, right side	RM1-0043-010CN	238	4
Swing plate, paper-pickup	RL1-0013-000CN	244	4
Switch rod	RC1-0268-000CN	236	7
Switch, top cover	WC4-5139-000CN	237	9
Thermistor	RH7-7116-000CN	237	13
Torque limiter, 500-sheet feeder	RC1-0335-000CN	251	2
Training, service and support manual on CD-ROM	Q2431-60114	(not shown)	
Training, service kit	Q2431-67907	(not shown)	
Tray 1	RM1-0005-000CN	249	4
Tray assembly, rear, 500-sheet tray	RM1-0030-000CN	251	4

## Numerical parts list

**Table 117. Numerical parts list**

Part number	Description	Figure	Reference
5063-1256	2-meter IEEE-1284 cable	(not shown)	
5063-1257	3-meter IEEE-1284 cable	(not shown)	
5980-8424 ENUS	<i>Print Media Guide For The Hp LaserJet Family Of Printers</i>	(not shown)	
C4286A	Flash DIMM—2 MB	(not shown)	
C4287A	Flash DIMM—4 MB	(not shown)	
C4292A	Font DIMM—Traditional Chinese language	(not shown)	
C4293A	Font DIMM—Simplified Chinese language	(not shown)	
C7842-67901	SDRAM DIMM—8 MB	(not shown)	
C7843-67901	SDRAM DIMM—16 MB	(not shown)	
C7845-67901	SDRAM DIMM—32 MB	(not shown)	
C7867A	Flash DIMM—12 MB	(not shown)	
C8530A	Flash DIMM—8 MB	(not shown)	
C9121-67901	SDRAM DIMM—128 MB	(not shown)	
C9651-69001	Formatter, HP LaserJet 4300	(not shown)	
C9652-69001	Formatter, HP LaserJet 4200	(not shown)	
C9652-69003	Formatter, HP LaserJet 4200L	(not shown)	
D4838A	Font DIMM—Korean language	(not shown)	
J4135-61001	EIO card—Connectivity card for USB, serial, and LocalTalk	(not shown)	
J4167-69001	EIO card—Token Ring networks	(not shown)	
J6054-61011	EIO hard disk	(not shown)	
J6057-69001	EIO card—Fast Ethernet 615n Jetdirect print server card (10/100Base-TX single RJ-45 port)	(not shown)	
J7955-69001	EIO card—Fast Ethernet 605n Jetdirect print server card (for HP LaserJet 4200Lvn printers only)	(not shown)	
Q1338-67901	Print cartridge, HP LaserJet 4200/4200L (12,000 pages)	(not shown)	
Q1339-67901	Print cartridge, HP LaserJet 4300 (18,000 pages)	(not shown)	
Q1887-67901	SDRAM DIMM—64 MB	(not shown)	
Q2240-69001	500-sheet tray and feeder unit	(not shown)	
Q2425-67901	Name plate kit, HP LaserJet 4200	234	6
Q2425-69001	Laser/scanner assembly, HP LaserJet 4200/4200L	236	1
Q2425-69002	Power supply, 110 V, HP LaserJet 4200/4200L	239	2
Q2425-69003	Power supply, 220 V, HP LaserJet 4200/4200L	239	2
Q2425-69009	Fuser, HP LaserJet 4200/4200L, 110 V	248	
Q2425-69010	Fuser, HP LaserJet 4200/4200L, 220 V	248	
Q2425-69011	Motor, print cartridge—HP LaserJet 4300 only	235	1
Q2429-69003	Maintenance kit, HP LaserJet 4200/4200L, 110 V	(not shown)	

**Table 117. Numerical parts list (continued)**

<b>Part number</b>	<b>Description</b>	<b>Figure</b>	<b>Reference</b>
Q2430-69003	Maintenance kit, HP LaserJet 4200/4200L, 220 V	(not shown)	
Q2431-40021	Control panel overlay—Turkish	234	4
Q2431-40022	Control panel overlay—Hebrew	234	4
Q2431-40023	Control panel overlay—Greek	234	4
Q2431-60104	HP LaserJet 4200/4200L/4300 series printer CD-ROM (EN/FR/IT/SP/DE/NL/PT/HE/EL)	(not shown)	
Q2431-60105	HP LaserJet 4200/4200L/4300 series printer CD-ROM (EN/DA/FI/NO/SV/CS/HU/PL/RU/TR/AR/FR)	(not shown)	
Q2431-60106	HP LaserJet 4200/4200L/4300 series printer CD-ROM (EN/JA/KO/ZHCN/ZHTW/TH)	(not shown)	
Q2431-60107	Control panel overlay—EN/FR/DE/IT	234	4
Q2431-60108	Control panel overlay—EN/CS/HU/PL	234	4
Q2431-60109	Control panel overlay—NO/SW/FI	234	4
Q2431-60110	Control panel overlay—IT/ES/PT/SP	234	4
Q2431-60111	Control panel overlay—EN/RU	234	4
Q2431-60112	Control panel overlay—EN/AR	234	4
Q2431-60113	Control panel overlay—EN/FR/DE/NL	234	4
Q2431-60114	Training, service and support manual on CD-ROM	(not shown)	
Q2431-67907	Training, service kit	(not shown)	
Q2431-67908	Name plate kit, HP LaserJet 4300	234	6
Q2431-69001	Laser/scanner assembly, HP LaserJet 4300	236	1
Q2431-69002	Power supply, 110 V, HP LaserJet 4300	239	2
Q2431-69003	Power supply, 220 V, HP LaserJet 4300	239	2
Q2431-69011	Fuser, HP LaserJet 4300, 110 V	248	
Q2431-69012	Fuser, HP LaserJet 4300, 220 V	248	
Q2431-90901	<i>hp LaserJet 4200/4300 start</i> (EN/FR/ES/PT/IT)	(not shown)	
Q2431-90902	<i>hp LaserJet 4200/4300 start</i> (EN/FR/DE/IT/NL)	(not shown)	
Q2431-90903	<i>hp LaserJet 4200/4300 start</i> (EN/DA/FI/NO/SV)	(not shown)	
Q2431-90904	<i>hp LaserJet 4200/4300 start</i> (EN/CS/HU/PO)	(not shown)	
Q2431-90905	<i>hp LaserJet 4200/4300 start</i> (EN/HR/RU/SK/SL)	(not shown)	
Q2431-90906	<i>hp LaserJet 4200/4300 start</i> (EN/KK/RU/UK/EL)	(not shown)	
Q2431-90907	<i>hp LaserJet 4200/4300 start</i> (EN/BG/ET/LT/LV)	(not shown)	
Q2431-90908	<i>hp LaserJet 4200/4300 start</i> (EN/JA/ZHTW/TH)	(not shown)	
Q2431-90909	<i>hp LaserJet 4200/4300 start</i> (EN/KO/ZHCN/ID)	(not shown)	
Q2431-90910	<i>hp LaserJet 4200/4300 start</i> (EN/FR/TR/AR)	(not shown)	
Q2431-90911	<i>hp LaserJet 4200/4300 start</i> (EN/HE)	(not shown)	
Q2436-69004	Maintenance kit, HP LaserJet 4300, 110 V	(not shown)	
Q2437-69004	Maintenance kit, HP LaserJet 4300, 220 V	(not shown)	
Q2438-67901	Envelope feeder	(not shown)	
Q2439-67901	Duplexer (duplex printing accessory)	(not shown)	
Q2441-69001	500-sheet tray	(not shown)	

**Table 117. Numerical parts list (continued)**

Part number	Description	Figure	Reference
Q2442-67901	500-sheet stacker	(not shown)	
Q2443-67901	Cover, rear, stacker and stapler/stacker	261	
Q2443-67902	Paper delivery tray assembly, stacker and stapler/stacker	261	
Q2443-69001	500-sheet stapler/stacker	(not shown)	
Q2443-90902	<i>hp LaserJet 4200</i> <i>hp LaserJet 4300</i> <i>install</i> (installation guide)	(not shown)	
Q2444-69001	1,500-sheet tray and feeder unit	256	
Q2453-67904	Firmware DIMM—HP LaserJet 4200, all models except base model	(not shown)	
Q2453-67913	Firmware DIMM—HP LaserJet 4300, all models	(not shown)	
Q2453-67923	Firmware DIMM—HP LaserJet 4200, base model	(not shown)	
Q2453-67930	Firmware DIMM—HP LaserJet 4200L, all models	(not shown)	
Q3216-60500	1,000-staple cartridge	(not shown)	
Q3993-40001	Name plate, HP LaserJet 4200L	234	6
Q3993-90901	<i>hp LaserJet 4200L start</i> (EN/FR/SP/PT/IT)	(not shown)	
Q3993-90902	<i>hp LaserJet 4200L start</i> (EN/FR/DE/IT/NL)	(not shown)	
Q3993-90903	<i>hp LaserJet 4200L start</i> (EN/DA/FI/NO/SV)	(not shown)	
Q3993-90904	<i>hp LaserJet 4200L start</i> (EN/CS/HU/PL)	(not shown)	
Q3993-90905	<i>hp LaserJet 4200L start</i> (EN/HR/RU/SK/SL)	(not shown)	
Q3993-90906	<i>hp LaserJet 4200L start</i> (EN/KK/RU/UK/EL)	(not shown)	
Q3993-90907	<i>hp LaserJet 4200L start</i> (EN/BG/ET/LT/LV)	(not shown)	
Q3993-90908	<i>hp LaserJet 4200L start</i> (EN/JA/ZHTW/TH)	(not shown)	
Q3993-90909	<i>hp LaserJet 4200L start</i> (EN/KO/ZHCN/ID)	(not shown)	
Q3993-90910	<i>hp LaserJet 4200L start</i> (EN/FR/TR/AR)	(not shown)	
Q3993-90911	<i>hp LaserJet 4200L start</i> (EN/HE)	(not shown)	
Q3994-40004	Name plate, HP LaserJet 4200Ln	234	6
Q3995-40001	Name plate, HP LaserJet 4200Lvn	234	6
RC1-0003-000CN	Arm, print cartridge release	240	2
RC1-0019-000CN	Cover, inner front right side	237	10
RC1-0060-000CN	Flag, paper-feed sensor	235	5
RC1-0061-000CN	Spring, torsion	235	4
RC1-0153-010CN	Guide, cassette	238	2
RC1-0161-000CN	Flag, paper-size sensor; 500-sheet feeder	251	1
RC1-0198-000CN	Spring, tension (lifter driver assembly)	237	6
RC1-0200-000CN	Support lifter drive assembly	237	7
RC1-0206-000CN	Bushing, 500-sheet feeder	253	5
RC1-0208-000CN	Holder, paper sensor	244	11
RC1-0209-000CN	Flag, paper sensor	244	10
RC1-0209-000CN	Flag, paper sensor	253	9

**Table 117. Numerical parts list (continued)**

<b>Part number</b>	<b>Description</b>	<b>Figure</b>	<b>Reference</b>
RC1-0210-000CN	Shaft, feeder roller	244	2
RC1-0211-000CN	Arm, paper-pickup	244	8
RC1-0212-000CN	Holder, paper-pickup arm	244	3
RC1-0213-000CN	Spring, compression	244	9
RC1-0244-000CN	Guide, power supply, right	238	5
RC1-0264-000CN	Bushing, feed shaft	236	6
RC1-0264-000CN	Bushing, feed shaft	253	6
RC1-0268-000CN	Switch rod	236	7
RC1-0269-000CN	Cable guide, dc controller	235	7
RC1-0270-000CN	Cable guide, dc controller	235	3
RC1-0273-000CN	Guide, tray 2 left	237	16
RC1-0274-000CN	Guide, tray 2 right	237	17
RC1-0287-000CN	Cover, left	234	9
RC1-0288-000CN	Cover, formatter	234	1
RC1-0289-000CN	Cover, paper-handling	234	13
RC1-0290-000CN	Cover, 500-sheet tray, rear	234	10
RC1-0291-000CN	Cover, duplexer	234	11
RC1-0320-000CN	Cover, envelope feeder	249	3
RC1-0335-000CN	Torque limiter, 500-sheet feeder	251	2
RC1-0340-000CN	Cable guide, scanner (1)	236	9
RC1-0342-000CN	Holder, plastic thermistor	237	14
RC1-0343-000CN	Holder, metal thermistor	237	12
RC1-0344-000CN	Cover, fan (power supply shield)	237	11
RC1-0371-000CN	Gear, 23T	244	5
RC1-0385-000CN	Cable guide, scanner (2)	236	10
RC1-0386-000CN	Guide, connector cable	237	5
RC1-0487-000CN	Cover, left, 500-sheet feeder	250	3
RC1-0488-000CN	Cover, right, 500-sheet feeder	250	1
RC1-0500-000CN	Cover, number display panel, 500-sheet feeder	250	2
RC1-0661-000CN	Cover, right, 1,500-sheet feeder	256	2
RC1-0662-000CN	Cover, left, 1,500-sheet feeder	256	6
RC1-0663-000CN	Cover, rear, 1,500-sheet feeder	256	1
RC1-0714-000CN	Arm, front cover stop, 1,500-sheet feeder	256	5
RC1-0748-000CN	Sensor, media-size (inside), 1,500-sheet feeder	257	3
RG1-4200-000CN	PCA, 500-sheet feeder control	253	3
RG1-4201-000CN	Cable, interface, upper	252	1
RG1-4202-000CN	Cable, interface, lower	252	2
RG1-4212-000CN	Cable, laser	236	2
RG1-4213-000CN	Cable, top cover	237	8
RG1-4214-000CN	Cable, top-bin-full	237	19

**Table 117. Numerical parts list (continued)**

<b>Part number</b>	<b>Description</b>	<b>Figure</b>	<b>Reference</b>
RG1-4215-000CN	Cable, control panel	234	8
RG1-4219-000CN	Cable, memory	237	1
RG1-4221-000CN	Cable assembly, paper-pickup sensor (PS101 & PS107)	244	1
RG1-4223-000CN	Cable, feeder accessory	238	1
RG1-4224-000CN	Cable, envelope feeder	237	4
RG1-4236-040CN	PCA, dc controller (HP LaserJet 4200)	237	2
RG1-4237-030CN	PCA, dc controller (HP LaserJet 4300)	237	2
RG1-4238-000CN	PCA, 1,500-sheet feeder control	257	7
RG1-4239-000CN	Cable, interface, 1,500-sheet feeder	257	2
RG1-4240-000CN	Cable, media-size sensor, 1,500-sheet feeder	257	5
RG1-4241-000CN	Cable, door sensor, 1,500-sheet feeder	257	6
RG1-4250-000CN	Cable, sensor assembly	253	1
RG1-4276-020CN	Control panel assembly	234	7
RH7-1570-000CN	Motor, main (M1)—HP LaserJet 4200, 4200L, 4300	235	2
RH7-1573-000CN	Fan, cooling, left	237	15
RH7-1577-000CN	Fan, cooling right side (HP LaserJet 4300 only)	237	3
RH7-5355-000CN	Solenoid, paper-pickup assembly	236	8
RH7-5355-000CN	Solenoid, 500-sheet feeder	253	2
RH7-5357-000CN	Solenoid, tray 1 pickup	249	2
RH7-5358-000CN	Clutch, paper-feed assembly	245	4
RH7-7116-000CN	Thermistor	237	13
RL1-0007-000CN	Separation pad, tray 1	249	6
RL1-0013-000CN	Swing plate, paper-pickup	244	4
RL1-0019-000CN	Roller, tray 1 pickup	249	5
RM1-0001-000CN	Main drive assembly	240	1
RM1-0002-000CN	Duplexing pendulum assembly	242	
RM1-0004-020CN	Pickup assembly, tray 1	249	1
RM1-0005-000CN	Tray 1	249	4
RM1-0011-000CN	Registration assembly	246	
RM1-0012-000CN	Paper-feed assembly	245	1
RM1-0025-000CN	Paper-feed belt assembly	239	1
RM1-0026-020CN	Output delivery assembly	247	
RM1-0027-000CN	Cover, rear output bin	234	12
RM1-0028-060CN	500-sheet tray	251	
RM1-0030-000CN	Tray assembly, rear, 500-sheet tray	251	4
RM1-0033-020CN	Lifter-drive assembly, tray 2	243	
RM1-0034-000CN	Paper-pickup drive assembly	241	
RM1-0036-000CN	Roller, paper-pickup	244	7
RM1-0036-000CN	Roller, paper-pickup, 500-sheet feeder	253	7

**Table 117. Numerical parts list (continued)**

<b>Part number</b>	<b>Description</b>	<b>Figure</b>	<b>Reference</b>
RM1-0036-000CN	Roller, pickup, 1,500-sheet feeder	260	2
RM1-0037-000CN	Roller, paper-feed	244	6
RM1-0037-000CN	Roller, separation, 500-sheet tray	251	3
RM1-0037-000CN	Roller, paper-feed, 500-sheet feeder	253	8
RM1-0037-000CN	Roller, paper-feed, 1,500-sheet feeder	256	4
RM1-0037-000CN	Roller, feed, 1,500-sheet feeder	260	3
RM1-0041-000CN	Sensor assembly, tray 2 media-size	238	3
RM1-0041-000CN	Sensor assembly, media-size, 500-sheet feeder	252	3
RM1-0042-000CN	Cable, JetLink accessory	238	6
RM1-0043-010CN	Swing plate assembly, right side	238	4
RM1-0046-000CN	Cover, right	234	2
RM1-0047-020CN	Cover, cartridge door, HP LaserJet 4200	234	3
RM1-0049-000CN	Cover, top assembly	234	14
RM1-0050-000CN	Cover, front	234	5
RM1-0053-000CN	Brake assembly, left	236	11
RM1-0054-000CN	Brake assembly, right	236	3
RM1-0056-000CN	Paper-pickup assembly, 500-sheet feeder	254	
RM1-0114-020CN	Cover, cartridge door, HP LaserJet 4300	234	3
RM1-0115-000CN	Mount assembly, laser/scanner	236	4
RM1-0208-000CN	Lifter-driver assembly, 500-sheet feeder	255	
RM1-0235-000CN	Staple module (stapler/stacker only)	262	1
RM1-0273-000CN	Cover, front, 1,500-sheet feeder (door assembly)	256	3
RM1-0283-000CN	Paper-pickup drive assembly, 1,500-sheet feeder	258	
RM1-0285-000CN	Paper sensor assembly, 1,500-sheet feeder	260	1
RM1-0286-000CN	Sensor gear assembly, 1,500-sheet feeder	257	8
RM1-0287-020CN	Lifter-drive assembly, 1,500-sheet feeder	259	
RM1-0294-000CN	Sensor assembly, paper-size (outside), 1,500-sheet feeder	257	4
RM1-0699-000CN	Roller, transfer	235	6
RU5-0045-000CN	Gear, 18T, tray 2	236	5
RU5-0050-000CN	Gear, 30T	245	3
RU5-0088-000CN	Gear, 18T, 500-sheet tray	253	4
VS1-6175-006CN	Connector, interface, 1,500-sheet feeder	257	1
WC4-5139-000CN	Switch, top cover	237	9
WG8-5362-000CN	Sensor, top-bin-full	237	18
WG8-5362-000CN	Sensor, tray 2 paper (PS101); paper stack (PS107)	244	12
XD9-0137-000CN	E-ring	245	2



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