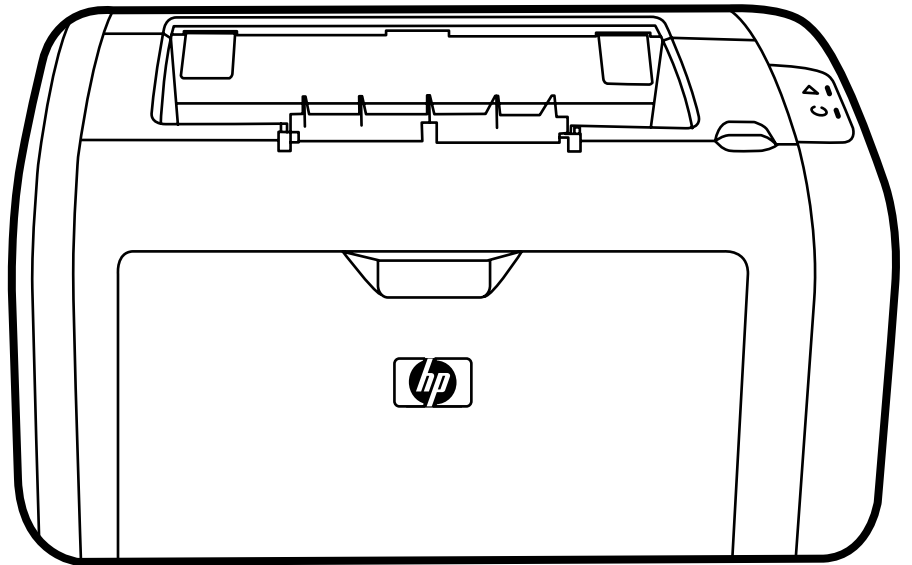


HP LaserJet 1018

Service Manual



HP LaserJet 1018 printer

Service Manual



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Part number CB419-90938

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Information regarding FCC Class B, Parts 15 and 68 requirements can be found in the user guide.

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Safety Information

WARNING!

Potential Shock Hazard

Always follow basic safety precautions when using this product to reduce risk of injury from fire or electric shock.

Read and understand all instructions in the user guide.

Observe all warnings and instructions marked on the product.

Use only a grounded electrical outlet when connecting the HP LaserJet 1018 printer to a power source. If you don't know whether the outlet is grounded, check with a qualified electrician.

Do not touch the contacts on the end of any of the sockets on the HP LaserJet 1018 printer. Replace damaged cords immediately.

Unplug this product from wall outlets before cleaning or servicing.

Do not install or use this product near water or when you are wet.

Install the product securely on a stable surface.

Install the product in a protected location where no one can step on or trip over the power cord and the power cord will not be damaged.

If the product does not operate normally, see the online user guide (CB419-90901).

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1 Product Information

This chapter provides general product information for the HP LaserJet 1018 printer.

- [Product configuration](#)
- [Overview of product](#)
- [Product specifications](#)
- [Extended service plan](#)
- [Print-cartridge information](#)
- [Regulatory information](#)

Product configuration

The HP LaserJet 1018 printer (HP LJ 1018) offers the following features:

- Prints up to 12 ppm
- 10 seconds or less to first page out
- FastRes 1200: 1200 dpi effective output quality (600 x 600 x 2 dpi with HP Resolution Enhancement technology [REt])
- 150-sheet input capacity (75-g/m² [20-lb] media)
- 125-sheet output bin capacity
- A priority feed slot
- EconoMode (saves toner)
- Prints watermarks, booklets, and multiple pages per sheet (N-up), and can print the first page on different media from the remainder of the document
- 2 MB of RAM
- 2,000-page print cartridge
- A USB 2.0 Hi-Speed port

Overview of product

HP LaserJet 1018 printer

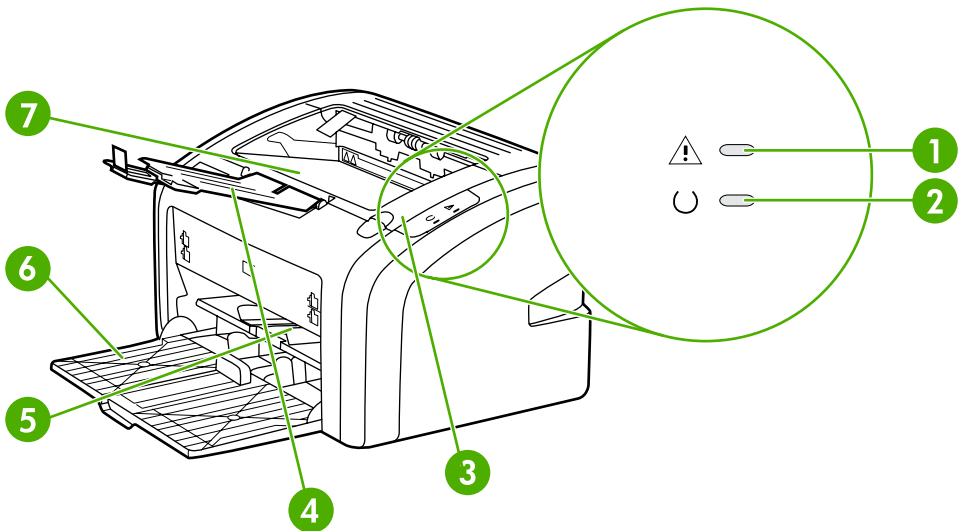


Figure 1-1 Front and right-side view

1	Attention light
2	Ready light
3	Print-cartridge door
4	Output-media support
5	Priority feed slot
6	150-sheet main input tray
7	Output bin

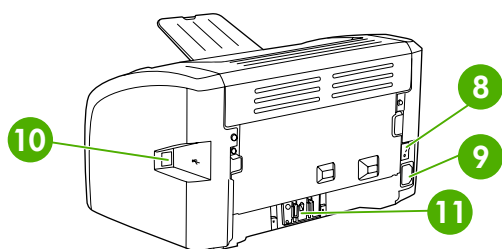


Figure 1-2 Back and left-side view

8	On/off switch
9	Power receptacle
10	USB port
11	Separation pad

Model and serial numbers

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

The serial number contains information about the country/region of origin, and the revision level, production code, and production number of the product.

The label also contains power-rating and regulatory information.

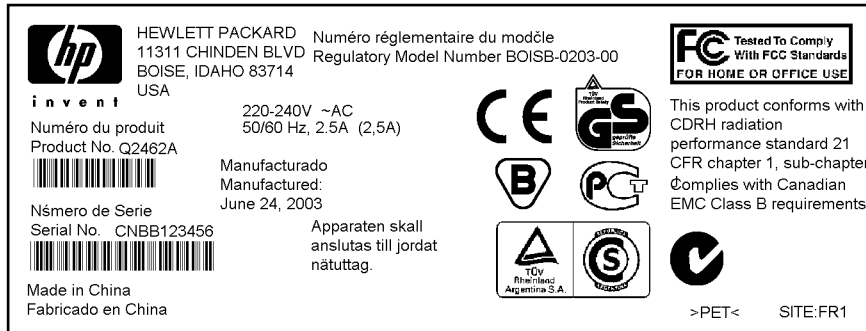


Figure 1-3 Model- and serial-number label (HP LJ 1010 printer is shown)

Hardware description

The HP LaserJet 1018 printer offers HP REt technology for 600 x 600 x 2 dpi printing (effectively 1200 dpi).

The printer prints up to 12 ppm. With an effective 1200 dpi printing resolution, the printer has exceptional text and graphics print quality. The simple control panel and improved paper-handling make this printer easy to use.

The main input tray has a 150-sheet (75-g/m² [20-lb] media) capacity for continuous, multiple-page printing. The priority feed slot is used to manually feed single sheets of most recommended media and holds up to ten sheets of 75-g/m² (20-lb) media. Both the main input tray and the priority feed slot are center-justified for all supported media sizes. The output bin holds up to 125 sheets of 75-g/m² (20-lb) media.

This printer has a very fast first-page-out, at less than 10 seconds to first page out. The base memory is 2 MB, and the printer uses an embedded 133 MHz processor.

The print engine has an average duty cycle of 1,000 pages per month (7,000 peak) or 50,000 total pages printed. The standard replacement print-cartridge life is 2,000 pages, in accordance with ISO/IEC 19752.



NOTE Actual print cartridge life depends on specific usage.

Firmware description

The firmware in the printer includes these features:

- Host-based printing
- EconoMode functionality

Product specifications

This section lists the specifications for the HP LaserJet 1018 printer.

Physical specifications

Table 1-1 Physical specifications

Model	Height	Depth	Width	Weight
HP LaserJet 1018 printer	209 mm (8.3 inches)	242 mm (9.5 inches)	370 mm (14.6 inches)	5.9 kg (13.0 lb)

Printer performance

Table 1-2 Performance

Model	Print resolution (normal)	Print speed (A4-size media)
HP LaserJet 1018 printer	600 x 600 dpi ¹	12 ppm

¹ 1200 dpi effective output quality, 600 x 600 x 2 dpi with HP Resolution Enhancement technology (REt)

Environmental specifications

Table 1-3 Environmental specifications (HP LJ 1018 printer)

Category	Specification
Operating environment (unit plugged into an alternating-current [ac] outlet)	<ul style="list-style-type: none">• Temperature: 10° to 32.5°C (50° to 90.5°F)• Humidity: 20 to 80% relative humidity (no condensation)
Storage environment (unit not plugged into an ac outlet)	<ul style="list-style-type: none">• Temperature: 0° to 40°C (32° to 104°F)• Humidity: 10 to 80% relative humidity (no condensation)

Electrical specifications



WARNING! Power requirements are based on the country/region where the printer is sold. Do not convert operating voltages. This might damage the printer and void the product warranty.

Table 1-4 Power requirements

Specification	110-volt models	220-volt models
Power requirements	110–127 V (±10%)	220–240 V (±10%)
	50/60 Hz (±2 Hz)	50/60 Hz (±2 Hz)
Rated current	4.0 amps	2.3 amps



WARNING! Power sources are not interchangeable.

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

Product model	Printing ²	Ready ²	PowerSave	Off
HP LaserJet 1018 printer	250 W	4 W	4 W	0 W

¹ Values are subject to change. See <http://www.hp.com/support/lj1018> for current information.

² Power reported is highest value measured for printing using all standard voltages. HP LaserJet 1018 printer print speed is 12 ppm.

Acoustic emissions

Table 1-6 Acoustic emissions¹

Sound power level	Declared per ISO 9296
Printing	$L_{WA} = 6.2$ Bels (A) [62 dB (A)]
Ready	Inaudible
Sound pressure level—Bystander position	Declared per ISO 9296
Printing	$L_{pA} = 49$ dB (A)
Ready	Inaudible

¹ Values are subject to change. See <http://www.hp.com/support/lj1018> for current information. Configuration tested: HP LaserJet 1018 printer using the standard tray, A4 paper, and simplex, continuous printing. During other operations, acoustic emissions might vary.

Extended service plan

In most countries/regions, extended service plans are available for hardware and technical support coverage for terms of up to three years. The service plan must be purchased during the hardware product's period of original warranty validity (typically one year).

Print-cartridge information

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

The HP LaserJet 1018 ships with a 1000-page introductory print cartridge. The standard replacement print-cartridge life is 2,000 pages, in accordance with ISO/IEC 19752.



NOTE Actual print cartridge life depends on specific usage.

Refilled print cartridges

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

- Repairs resulting from the use of refilled cartridges are not covered under Hewlett-Packard warranty or maintenance contracts.
- Hewlett-Packard has no control or process to ensure that a refilled cartridge functions at the high level of reliability of a new HP LaserJet print cartridge. Hewlett-Packard also cannot predict the long-term reliability effect on the product from using the different toner formulations that are found in refilled cartridges.
- The print quality of HP LaserJet print cartridges influences the customer's perception of the product. Hewlett-Packard has no control over the actual print quality of a refilled cartridge.
- Parts that are critical to print quality might not be replaced when the cartridge is refilled with toner.

Recycling print cartridges

In order to reduce waste, Hewlett-Packard offers a recycling program. Cartridge components that do not wear out are recycled. Plastics and other materials are recycled. Hewlett-Packard pays the shipping costs from the user to the recycling plant (within the United States). To join this recycling effort, follow the instructions inside the print cartridge box. See <http://www.hp.com/recycle> for more information.

Regulatory information

FCC compliance

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 it is not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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



NOTE Any changes or modifications to the printer that are not expressly approved by Hewlett-Packard 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.

Canadian DOC regulations

Complies with Canadian EMC Class B requirements.

«Conforme à la classe B des normes canadiennes de compatibilité électromagnétiques. «CEM».»

Korean EMI statement

사용자 안내문 (B급 기기)

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Laser statement for Finland

LASERTURVALLISUUS

LUOKAN 1 LASERLAITE

KLASS 1 LASER APPARAT

HP LaserJet 1018 -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 1018 -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 785-800 nm

Teho 5 mW

Luokan 3B laser

2 Installation and operation

This chapter provides an overview of the appropriate operating environment, describes the control panel, describes media requirements, and describes how to load print media.

- [Operating environment](#)
- [Identifying the control-panel components](#)
- [Media specifications](#)
- [Guidelines for using media](#)
- [Loading media](#)
- [Setting media types](#)

Operating environment

Place the product on a sturdy, level surface in a well-ventilated area that meets the following environmental requirements:

- Temperature: 10° to 32.5°C (50° to 90.5°F)
- Humidity: 20 to 80% relative humidity (no condensation)
- Away from direct sunlight, open flames, and ammonia fumes
- With sufficient space around the product to accommodate access and ventilation requirements

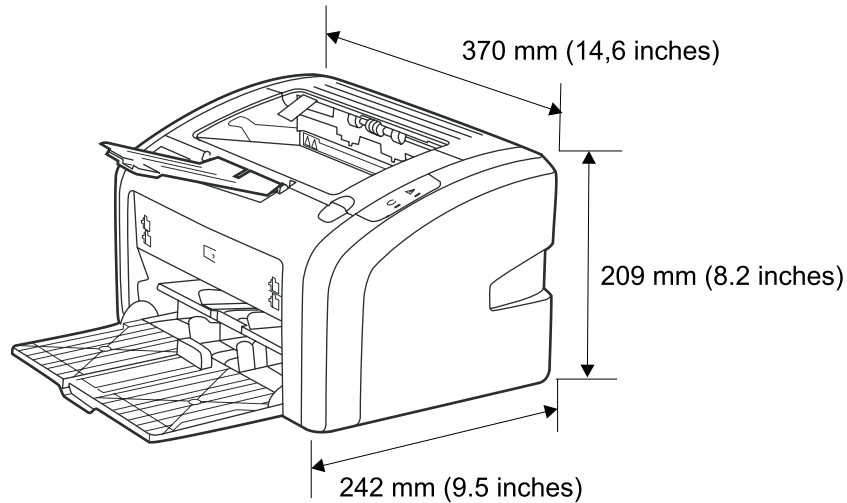


Figure 2-1 HP LaserJet 1018 printer dimensions

Identifying the control-panel components

The printer control panel has two lights. These lights produce patterns that identify printer status.

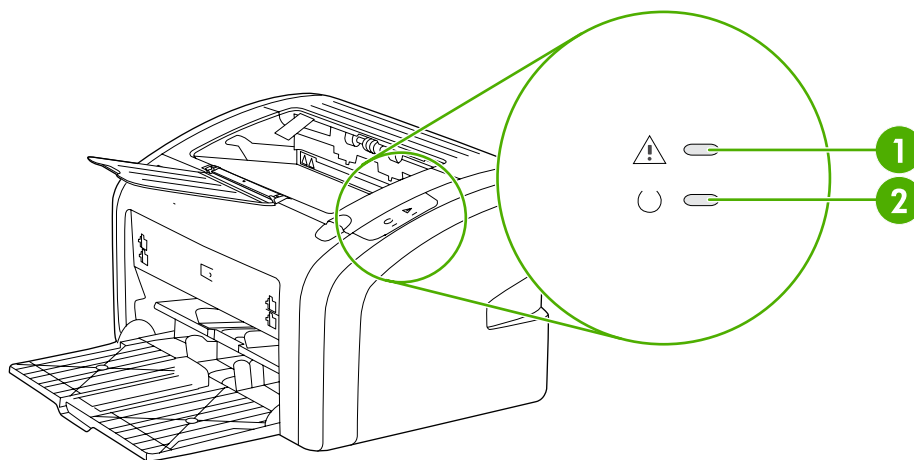


Figure 2-2 Control-panel lights

1	Attention light: Indicates that the print-cartridge door is open, print cartridge is missing, and other errors.
2	Ready light: Indicates that the printer is ready to print.

Media specifications

The printer accepts a variety of media. Properties such as weight, grain, and moisture content are important factors that affect printer performance and output quality. Media should conform to the guidelines in the User Guide. Media that does not meet HP guidelines might cause poor print quality, increased media jams, or premature wear on the printer, which might require printer repair.



CAUTION Damage that is caused by using media that does not meet HP specifications is not covered by the HP warranty or service agreements.

Supported media sizes

The printer supports media within this size range:

- **Minimum:** 76 x 127 mm (3 x 5 inches)
- **Maximum:** 216 x 356 mm (8.5 x 14 inches)

Table 2-1 Media sizes

Paper type	Metric	English
Letter	216 x 279 mm	8.5 x 11 inches
Legal	216 x 356 mm	8.5 x 14 inches
Executive	184 x 267 mm	7.25 x 10.5 inches
A4	210 x 297 mm	8.25 x 11.75 inches
COM10 envelopes	105 x 241 mm	4.13 x 9.5 inches
DL envelopes	110 x 220 mm	4.33 x 8.67 inches
C5 envelopes	162 x 229 mm	6.4 x 9 inches
B5 envelopes	176 x 250 mm	6.9 x 9.85 inches
Monarch envelopes	98.5 x 191 mm	3.88 x 7.5 inches
Labels	216 x 279 mm	(8.5 x 11 inches)
Custom-size media	custom (within acceptable range)	custom (within acceptable range)



NOTE Narrow and heavy media can cause the printer to print more slowly.

Guidelines for using media

HP LaserJet printers produce documents that have excellent print quality. They can print on a variety of media types, such as paper (including up to 100% recycled fiber content paper), envelopes, labels, transparencies, and custom-sized media.

Paper and transparencies

Paper must be of good quality and free of cuts, nicks, tears, spots, loose particles, dust, wrinkles, holes, and curled or bent edges. Check the label on the paper package for details about the type of paper (such as bond or recycled).

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



NOTE Do not use letterhead that is printed with low-temperature inks, such as those used in some types of thermography, raised letterhead, or colored paper or preprinted forms that use inks incompatible with the printer temperature, which is 200°C (392°F) for 0.1 second.

Transparencies must be able to withstand 200°C (392°F), the maximum print temperature.

Common media problems table

Symptom	Problem with paper	Solution
Poor print quality or toner adhesion, or problems with feeding	Too moist, too rough, too smooth, embossed, or from a faulty paper lot The correct media type is not selected in the Printer Properties dialog box.	Try another kind of paper that is between 100 and 250 Sheffield and has 4% to 6% moisture content. Select the correct media type. See Setting media types on page 22 .
Dropouts, jamming, or curl	Stored improperly	Store paper flat in its moisture-proof wrapping.
Increased gray background shading	Might be too heavy	Use lighter paper.
Excessive curl, or problems with feeding	Too moist, wrong grain direction, or short-grain construction	Use long-grain paper or change the media type to light.
Jamming, or damage to printer	Cutouts or perforations Damaged media	Do not use paper that has cutouts or perforations. Do not use media that has been previously run through a printer or copier.
Problems with feeding	Ragged edges	Use good-quality paper.
Moisture on the trailing edge of the paper	Too moist (media is steaming when it exits the printer)	Store paper in a low humidity area or air tight container or change the media type to light.

Labels

When selecting labels, consider the following factors:

- **Adhesives:** The adhesive material should be stable at 200°C (392°F), the printer's maximum temperature.
- **Arrangement:** Only use 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 with wrinkles, bubbles, or other indications of separation. Never use a sheet of labels that has already been sent through the printer.

Envelopes

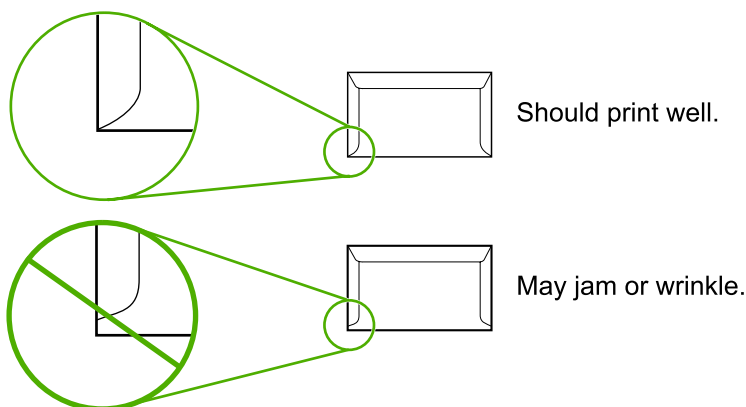
Envelope construction is critical. Envelope fold lines can vary considerably, not only between manufacturers but also within a box from the same manufacturer. Successful printing on envelopes depends on the quality of the envelopes. When selecting envelopes, consider the following factors:

- **Weight:** The weight of the envelope paper should not exceed 105 g/m² (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 may cause problems.
- **Condition:** Make sure that the envelopes are not wrinkled, nicked, or otherwise damaged.
- **Sizes:** From 90 x 160 mm (3.5 x 6.3 inches) to 178 x 254 mm (7 x 10 inches).

Store envelopes flat. If air is trapped in an envelope, creating an air bubble, the envelope might wrinkle during printing.

Envelopes with double-side seams

An envelope with double-side-seam construction (vertical seams at both ends of the envelope rather than diagonal seams) is more likely to wrinkle. Make sure the seam extends all the way to the corner of the envelope as shown in top figure of the following illustration:



Envelopes with adhesive strips or flaps

Envelopes with a peel-off adhesive strip or with more than one flap that folds over to seal must use adhesives compatible with the heat and pressure in the printer: 200°C (392°F). The extra flaps and strips might cause wrinkling, creasing, or jams.

Card stock and heavy media

For optimum performance, do not use paper heavier than 157-g/m² (42-lb). Paper that is too heavy might cause misfeeds, stacking problems, jams, poor toner fusing, poor print quality, or excessive mechanical wear.

Card-stock construction

- **Smoothness:** 135- to 157-g/m² (36- to 42-lb) card stock should have a smoothness rating of 100 to 180 Sheffield. 60- to 135-g/m² (16- to 36-lb) card stock should have a smoothness rating of 100 to 250 Sheffield.
- **Construction:** Card stock should lie flat with less than 5 mm (0.2 inch) of curl.
- **Condition:** Make sure that the card stock is not wrinkled, nicked, or otherwise damaged.
- **Sizes:** Only use card stock within the following size ranges:
 - **Minimum:** 76 x 127 mm (3 x 5 inches)
 - **Maximum:** 216 x 356 mm (8.5 x 14 inches)

Card-stock guidelines

- Set margins at least 2 mm (0.08 inch) away from the edges.

Loading media

Loading media in the HP LaserJet 1018 printer is simple and straightforward.

This section describes loading bulk media.

Main input tray

The main input tray holds up to 150 sheets of 75-g/m² (20-lb) paper or a 25 mm (0.98 inch) stack of heavier media. Load media with the top forward and the side to be printed on facing up. To prevent jams and skew, always adjust the side and rear media guides.

Priority feed slot

Use the priority feed slot to feed a single sheet of a recommended media for manual feeding and special operations. It can hold up to ten pages of 75-g/m² (20-lb) paper, but is best used for feeding one sheet at a time of paper, heavier paper (163-g/m² [42-lb]), or card stock, or a single envelope or transparency. Load media with the top forward and the side to be printed facing up. To prevent jams and skew, always adjust the side media guides.

If you try to print on media that is wrinkled, folded, or damaged in any way, a jam might occur. See [Jams on page 90](#).



NOTE When you add new media, make sure that you remove all of the media from the input tray and straighten the stack of new media. This helps prevent multiple sheets of media from feeding through the printer at one time, and therefore reduces jams.

Specific types of media

- **Transparencies and labels:** Load transparencies and labels with the top forward and the side to be printed facing up. See the user guide for more information.
- **Envelopes:** Load envelopes with the narrow, stamp side forward and the side to be printed facing up. See the user guide for more information.
- **Letterhead or preprinted forms:** Load with the top forward and the side to be printed facing up. See the user guide for more information.
- **Cards and custom-sized media:** Load with the narrow side forward and the side to be printed facing up. See the user guide for more information.

Setting media types

Use the procedure in this section to select the correct type of media for the print job. An incorrect media type setting might cause image-quality problems.

Set the media type

1. Open the **Printer Properties** dialog box.
2. Click **Printer Preferences**.
3. Select the correct media type from the **Type Is** drop down menu.
4. Click **OK** to close the **Printer Preferences** dialog box.
5. Click **OK** to close the **Printer Properties** dialog box.

3 Maintenance

This chapter describes the life expectancy of parts that wear, printer cleaning, printer maintenance, and the replacement of user-replaceable parts.


- [Life expectancies of parts that wear](#)
- [Cleaning the product](#)
- [User-replaceable parts](#)

Life expectancies of parts that wear

Inspect any parts that wear when servicing the product. Replace them as needed, based on failure or wear rather than on usage.

The following table lists approximate schedules for replacing consumables.

Table 3-1 Life expectancies of parts that wear

Description	Part number	Life (estimated)	Remarks
Replacement print cartridge (user-replaceable)	Q2612A	2,000 pages  NOTE The declared cartridge yield value is stated in accordance with ISO/IEC 19752. For more information, see http://www.hp.com/go/pageyield .	When print becomes faint, redistribute the toner in the cartridge by gently rotating the cartridge, or replace the cartridge.
Pickup roller	RL1-0266-000CN	50,000 pages	Affects paper pickup
Printer separation pad	RM1-0648-000CN	50,000 pages	Affects paper separation (feeding one page at a time)
Fuser assembly (110–127 V)	RM1-2086-000CN	50,000 pages	Can affect print quality and paper movement
Fuser assembly (220–240 V)	RM1-2087-000CN	50,000 pages	Can affect print quality and paper movement
HP LJ 1018 printer 110 V	CB419-60056 (replacement) CB419-69056 (exchange engine with formatter) CB419-67001 (exchange engine without formatter)	50,000 pages	Maximum life
HP LJ 1018 printer 220 V	CB419-60055 (replacement) CB419-69055 (exchange engine with formatter) CB419-67002 (exchange engine without formatter)	50,000 pages	Maximum life

Cleaning the product



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

To maintain quality, thoroughly clean the printer at the following times:

- Any time a new print cartridge is installed
- After printing approximately 2,000 pages
- Whenever print-quality problems appear

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



WARNING! Avoid touching the heating element in the fuser. It might be very hot and can cause burns.



CAUTION To avoid permanent damage to the printer, do not use ammonia-based or ethyl alcohol-based cleaners on or around the printer.

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

Cleaning the print path

The HP LaserJet 1018 printer features a special cleaning mode to clean the paper path.



NOTE This process requires using a transparency to remove dust and toner from the print paper path. Do not use bond or rough paper.

Make sure that the transparency that is used in this cleaning process meets the media requirements for the printer.

If transparency film is unavailable, use copier-grade paper (70 to 90 g/m², or 18 to 24 lb) that has a smooth surface. If you must use paper, perform the procedure two or three times to ensure thorough cleaning.

1. Make sure that the printer is idle and the **Ready** light is on.
2. Load the media in the input tray.
3. Open the **Printer Properties** dialog box.
4. Click the **Configure** tab, and then select **Start** in the **Cleaning Page** box.
5. Follow the instructions in the **Cleaning Utility** dialog box.

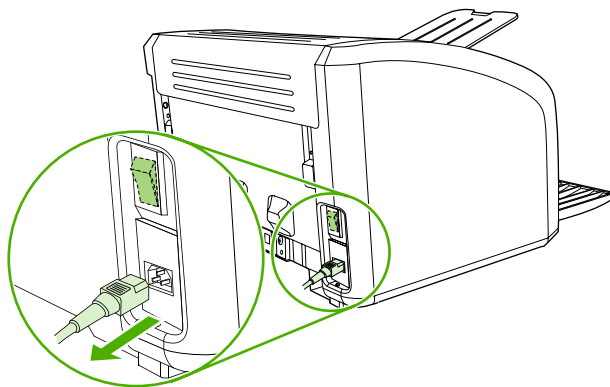


NOTE The cleaning process takes approximately 3 minutes. The cleaning page stops periodically during the cleaning process. Do not turn the printer off until the cleaning process has been completed. You might need to repeat the cleaning process several times to thoroughly clean the printer.

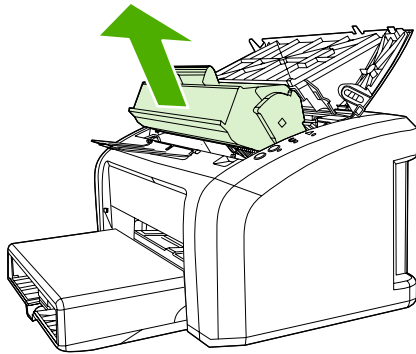
Cleaning the print-cartridge area

You do not need to clean the print-cartridge area often. However, cleaning this area can improve the quality of printed sheets.

1. Turn off the printer, unplug and remove the power cord. Wait for the printer to cool.

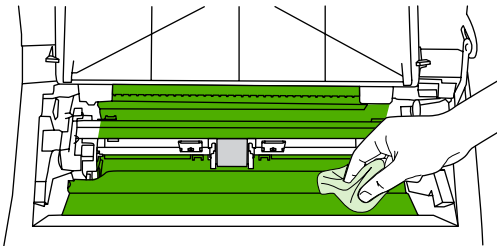


2. Open the print-cartridge door, and remove the print cartridge (HP LJ 1010 series printer shown).

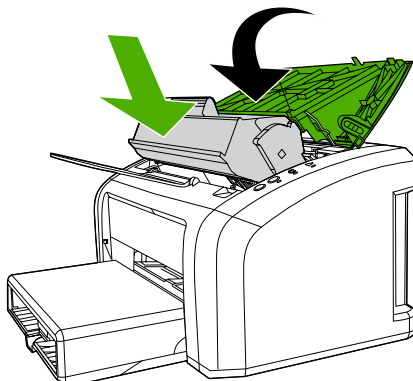


CAUTION To prevent damage, do not expose the print cartridge to light. Cover the print cartridge, if necessary. Also, do not touch the black-sponge transfer roller inside the printer. By doing so, you can damage the printer.

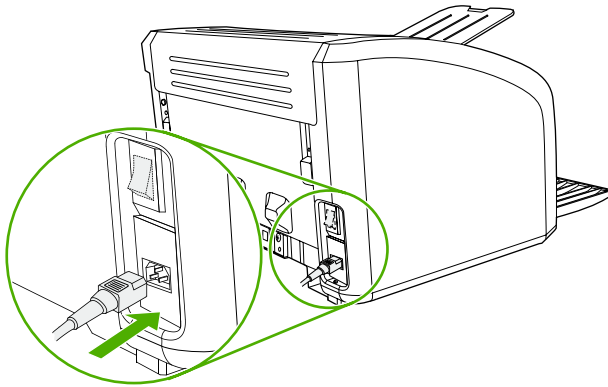
3. With a dry, lint-free cloth, wipe any residue from the media-path area and the print-cartridge cavity.



4. Replace the print cartridge, and close the print-cartridge door (HP LJ 1010 series printer shown).



5. Plug in the printer, and then turn it on.

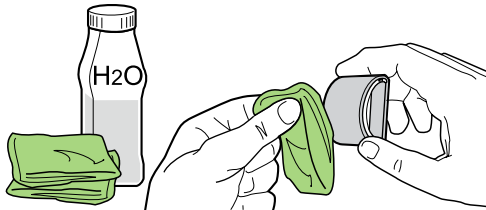


Cleaning the pickup roller

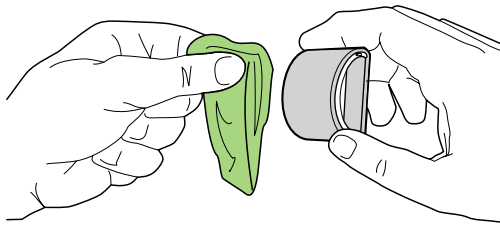
If you want to clean the pickup roller rather than replace it, use the following instructions.

Remove the pickup roller as described in steps 1 through 5 of [Replacing the pickup roller on page 30](#). With the roller outside the printer, use the following steps to complete the cleaning.

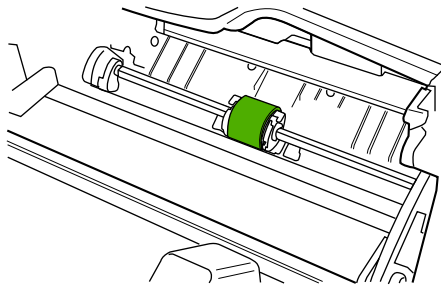
1. Dampen a lint-free cloth with water and scrub the roller.



2. Using a dry, lint-free cloth, wipe the pickup roller to remove loosened dirt.



3. Allow the pickup roller to dry completely before you reinstall it in the printer. To reinstall the pickup roller, see steps 6 through 9 of [Replacing the pickup roller on page 30](#).



User-replaceable parts

To order a new pickup roller or separation pad, go to <http://www.hp.com/go/hpparts>.

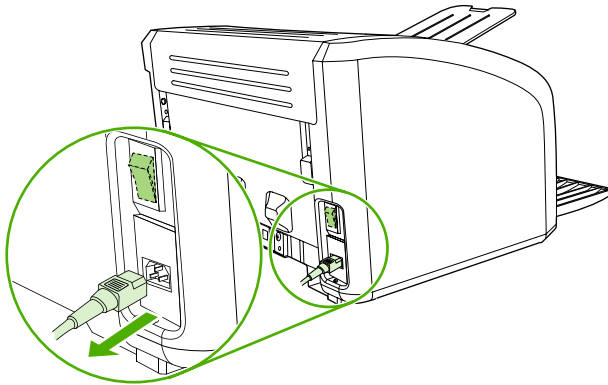
Replacing the pickup roller

If the printer regularly misfeeds (no media feeds through) and cleaning the pickup roller does not fix the problem, replace the pickup roller.

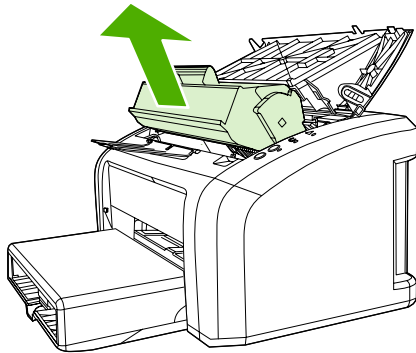


CAUTION Failure to complete all of the steps in this procedure might damage the product.

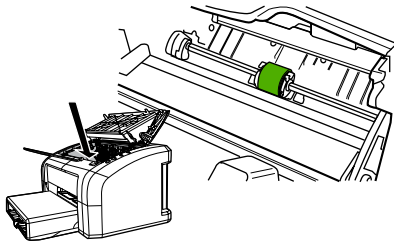
1. Turn off the printer, unplug and remove the power cord. Wait for the printer to cool.



2. Open the print-cartridge door, and remove the print cartridge (HP LJ 1010 series printer shown).



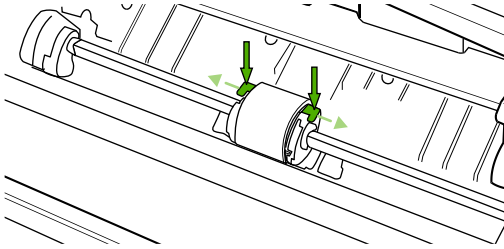
3. Locate the pickup roller (HP LJ 1010 series printer shown).



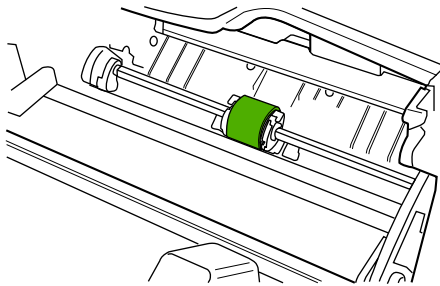
4. Gently release the small, white tabs on each side of the pickup roller by pushing them away from the roller, and then rotate the pickup roller toward the front.



CAUTION Use gentle pressure to release the small, white tabs to avoid breaking them.



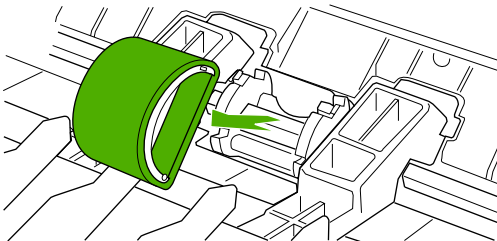
5. Gently pull the pickup roller up and out.



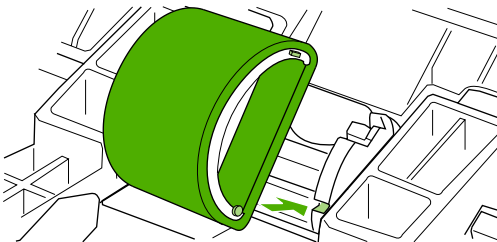
6. Position the new pickup roller in the slot of the previous pickup roller.



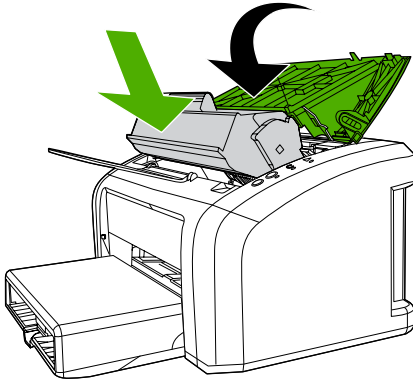
NOTE Circular and rectangular pegs on each side prevent you from incorrectly positioning the pickup roller.



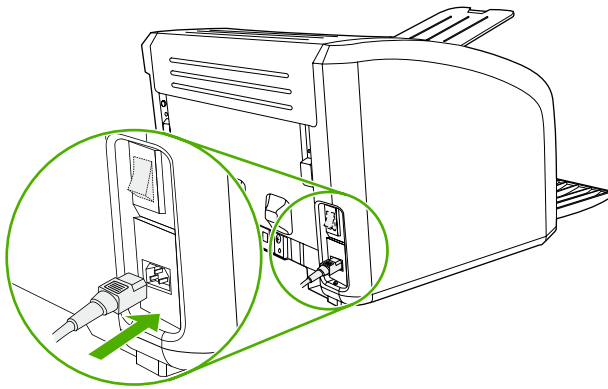
7. Rotate the top of the new pickup roller into position until the white tabs on each side of the roller snap the roller into place.



8. Reinstall the print cartridge, and close the print-cartridge door.



9. Plug in the printer, and then turn it on.



Replacing the separation pad

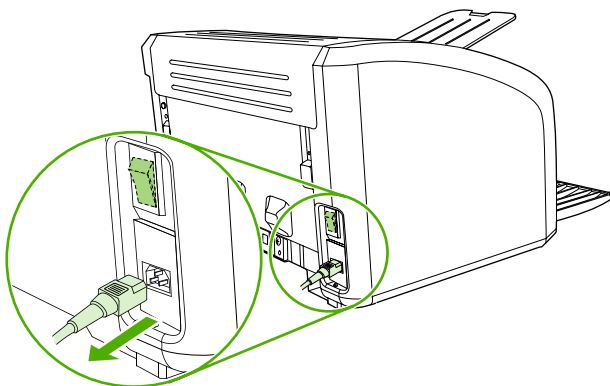
If the printer regularly pulls multiple sheets of media at a time, you might need to change the separation pad. Recurring feed problems might indicate that the separation pad is worn.

Normal use with good-quality media causes wear. The use of poor-quality media might require more frequent replacement of the separation pad.

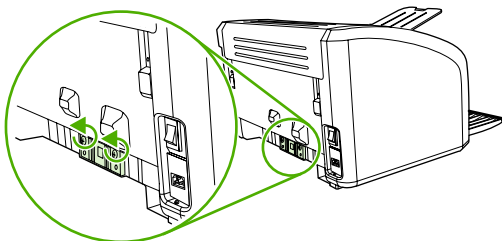


NOTE Before you change the separation pad, clean the pickup roller. See [Cleaning the pickup roller on page 29](#). To order parts, go to <http://www.hp.com/go/hpparts>.

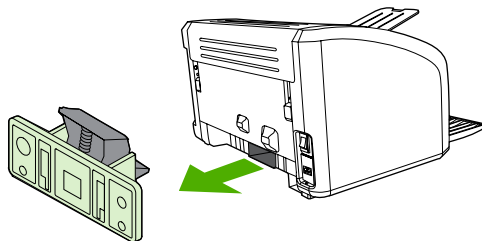
1. Turn off the printer, unplug and remove the power cord. Wait for the printer to cool.



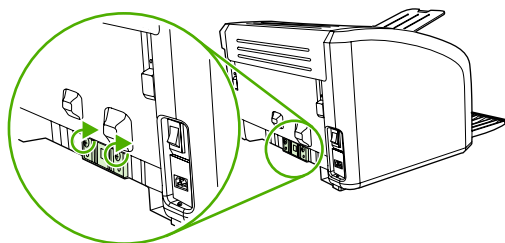
2. At the back of the printer, use a #2 Phillips screwdriver to unscrew the two screws that hold the separation pad in place.



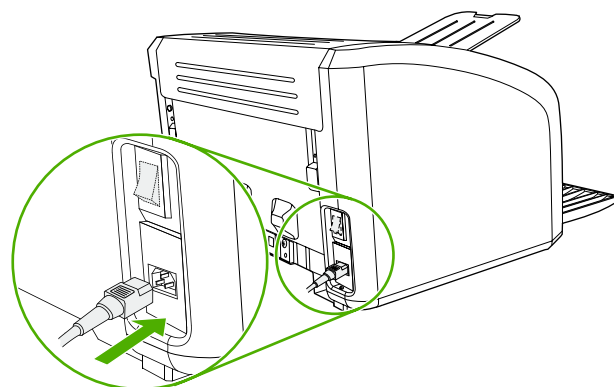
3. Remove the separation pad.



4. Insert the new separation pad, and screw it in place.



5. Plug the printer in, and then turn it on.



Replacing the main input tray (paper-pickup tray assembly)

If you break or damage the main input tray (also called the paper-pickup tray assembly), you can replace it. To order parts, go to <http://www.hp.com/go/hpparts>.

1. Carefully flex the main input tray just enough to release one side.



NOTE Be careful not to break the hinge points.



Figure 3-1 Main input tray (HP LaserJet 1020 printer shown)

2. Remove the main input tray.

Replacing the output-bin extension (delivery-tray assembly)

If you break or damage the output-bin extension (also called the delivery-tray assembly), you can replace it. To order parts, go to <http://www.hp.com/go/hpparts>.

1. Carefully flex the sides of output-bin extension just enough to release the hinge pins.



NOTE Be careful not to break the hinge pins (callout 1).



Figure 3-2 Output-bin extension

2. Remove the output-bin extension.

4 Operational overview

This chapter describes the general components and theory of operation of the HP LaserJet 1018 printer.

- [Basic functions](#)
- [Formatter system](#)
- [Printer functions](#)

Basic functions

The following are the major systems of the printer:

- Formatter and I/O functions
 - Formatter system
- Printer functions and operation
 - Engine-control system (engine control unit [ECU] and engine power assembly)
 - Image-formation system
 - Paper-feed system

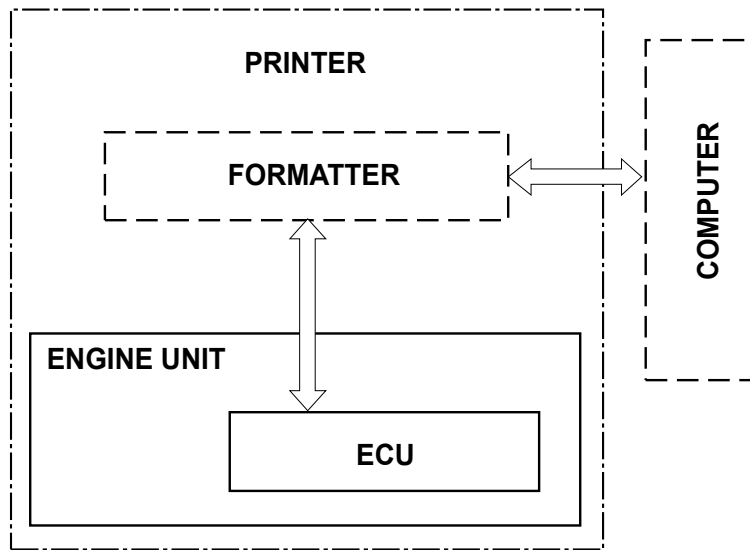


Figure 4-1 Basic configuration

Formatter system

The formatter coordinates the major systems. It is responsible for the following tasks:

- Receiving and processing print data from the printer interface (the computer)
- Monitoring the control panel and relaying printer-status information
- Coordinating image formation and timing with the print engine
- Communicating with the host computer through the bidirectional interface

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

Central processing unit

The formatter uses an embedded Coldfire V4 microprocessor operating at 133 MHz.

RAM

- One bank of nonvolatile RAM (NVRAM) stores parameters.
- Dynamic random access memory (DRAM) provides temporary storage of the product program code and print data.
- The HP LaserJet 1018 printer has 2 MB of RAM.

USB interface

The formatter receives incoming data through the USB interface. This interface provides high-speed, two-way communication between the printer and the host, allowing applications on the host computer to change printer settings and monitor printer status. The USB interface is compatible with the USB 2.0 specification.

Control panel

The control panel consists of two status lights.

Draft mode (EconoMode)

Depending on which driver is used, selecting draft or EconoMode from the driver allows the product to use less toner, extending the life of the print cartridge. There is a change in print quality when this setting is used.



NOTE HP does not recommend the full-time use of EconoMode. If EconoMode is used full-time when the average toner coverage is very low, it is possible that the toner supply will outlast the mechanical parts of the print cartridge.

HP Memory Enhancement technology (MEt)

HP MEt effectively doubles the standard memory through a variety of font- and data-compression methods.

Enhanced I/O

The Enhanced I/O feature uses printer memory to store data that the printer receives from the host computer. When Enhanced I/O is enabled, you can send more data to the printer in less time, so that you can return to your software program sooner. Enhanced I/O has the following options:

- **Auto:** The product uses Enhanced I/O memory allocation to increase the speed of data transfer from the host computer to the printer, if necessary. The default setting is Auto.
- **Off:** The printer uses the minimum amount of product memory for storing data that the host computer sends.
- **Page protect:** The formatter creates the entire page image in page-buffer memory before physically moving the media through the printer. This process ensures that the entire page is printed.

Page complexity (ruling lines, complex graphics, or dense text) can exceed the printer's ability to create the page image quickly enough to keep pace with the image-formation process. If the page-protect feature is disabled and a page is too complex, the page might print in parts (for example, the top half on one page and the bottom half on the next page). Some print-data loss is likely in these instances, and the **Attention** light on the control panel will illuminate.

Printer functions

Printer functions are divided into five groups:

- Engine control
- Formatter
- Image formation
- Laser/scanner
- Pickup and feed

The following figure is a block diagram of the printer:

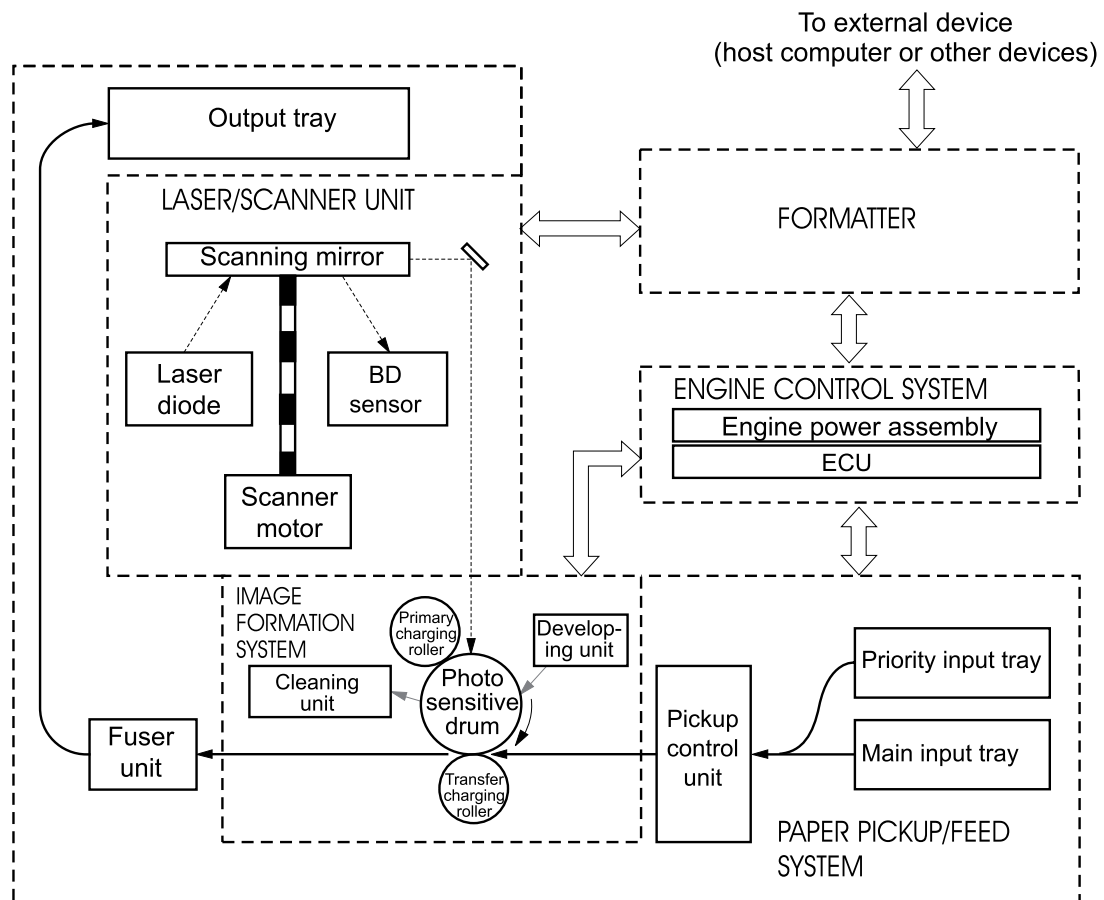


Figure 4-2 Printer functional-block diagram

Engine control system (engine control unit and power assembly)

The engine control system coordinates all print engine activities. The engine control system includes both the engine control unit (ECU) PCA and the engine-power-assembly PCA.



NOTE In other HP LaserJet products, the ECU and power functions are combined onto one PCA known as the controller PCA or the DC controller PCA. In the HP LaserJet 1018 printer, the control functions are primarily relegated to the ECU PCA, and the power functions are relegated to the engine-power-assembly PCA.

The ECU controls the following systems and functions:

- **Printer-engine control**
 - Paper-motion monitoring and control (printing)
 - Motor
- **Printer laser/scanner unit**

The engine-power assembly provides the following features in the power system:

- AC power distribution
- DC power distribution
- Overcurrent/overvoltage protection
- High-voltage power distribution

Printer-engine-control system

Paper motion monitoring and control

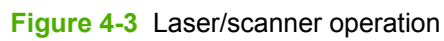
The ECU controls paper motion in the printer by continuously monitoring the two paper sensors and coordinating the timing with the other print processes.

For a detailed explanation of paper movement and the interaction of the sensors and pickup solenoid with the paper-movement process, see [Printer paper-feed system on page 47](#).

Motor

The ECU controls the motor. The motor drives all of the paper movement in the printer.

The ECU sends signals to the laser/scanner assembly to modulate the laser diode on and off modes and to drive the laser/scanner motor.



Power system on the engine power assembly

The engine-power assembly provides the ac, dc, and high-voltage power supply circuits.

AC power distribution

The ac power circuitry supplies ac voltage whenever the power cord is connected to the ac power source and the power switch is on. AC voltage is distributed to the dc power supply circuitry and to the ac driver circuitry, which controls ac voltage to the fuser-assembly heating element.

DC power distribution

The dc power distribution circuitry, located on the engine-power assembly, distributes +3.3 Vdc, +5 Vdc, and +24 Vdc as follows:

• +3.3 Vdc	ECU, sensors, formatter
• +5 Vdc	Parallel interface on the HP LJ 1015 printer formatter
• +24 Vdc	Main motor, laser/scanner motor, solenoid, high-voltage power supply, fuser, safety circuit, door switch



CAUTION

Overcurrent/overvoltage

Two overvoltage devices are in this printer:

- Fuse F101 provides overcurrent protection for the fusing-system circuitry.
- Fuse F102 (110 V printers only) provides overcurrent protection to the printer dc power-supply circuitry.

You can check or replace the fuses by removing the left cover. If either of these fuses fails, replace the engine-power assembly.

High-voltage power distribution

The high-voltage power supply applies an overlap of dc and ac voltage to the primary-charging roller and to the developing roller. This circuit also applies a positive or negative dc voltage to the transfer roller according to the instructions from the engine-control unit.

This circuit also controls the image density by changing the primary ac voltage and the developing ac bias according to the print-density setting. See [Setting media types on page 22](#).

The high-voltage power supply is disabled when the print-cartridge door is open.

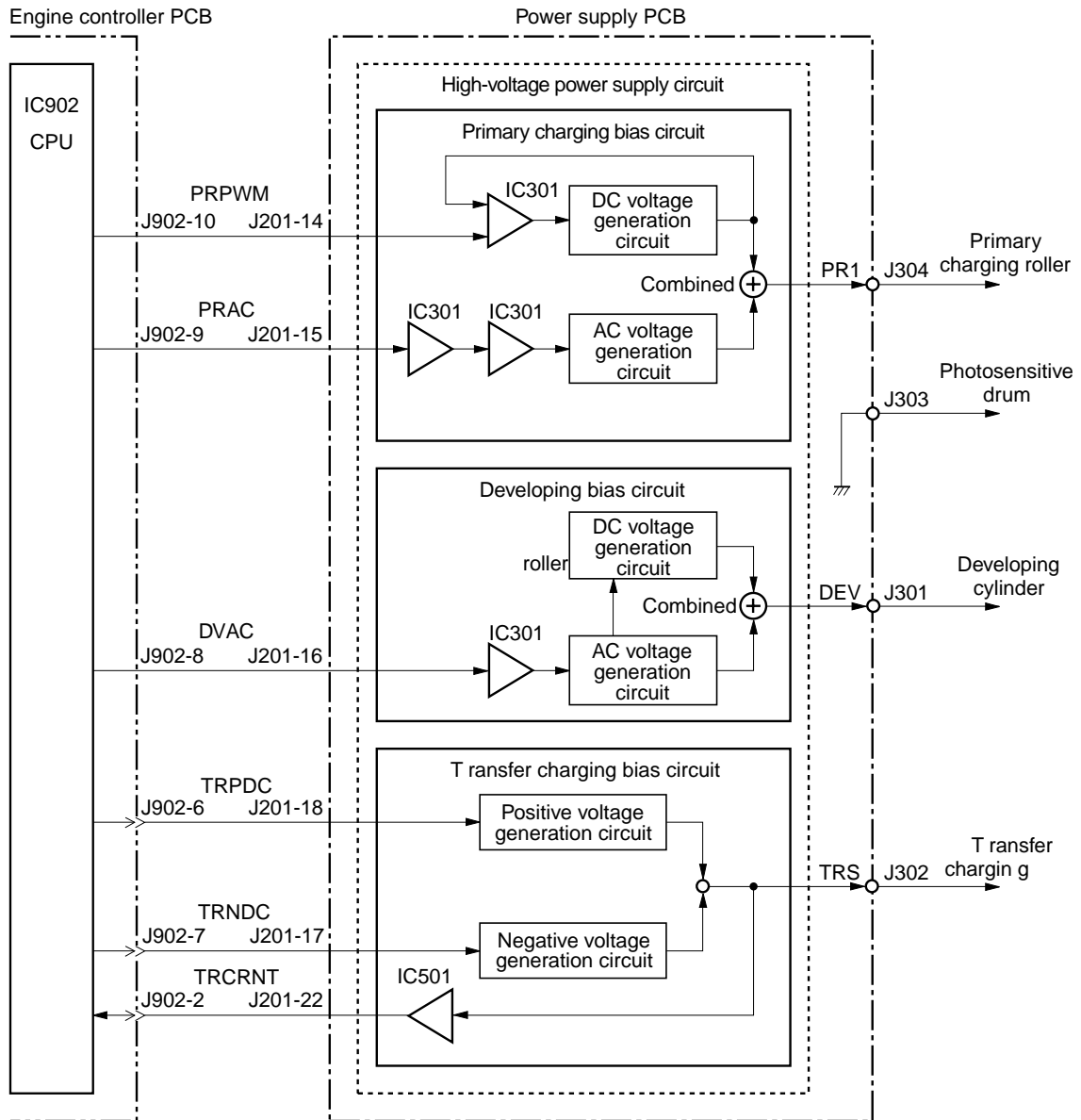


Figure 4-4 High-voltage power supply circuit

Image-formation system

Laser printing requires the interaction of several different technologies, including electronics, optics, and electrophotographic, to provide a printed page. Each process functions independently and must be coordinated with the other printer processes. Image formation consists of seven processes, which are described in the following section.

The seven image-formation processes

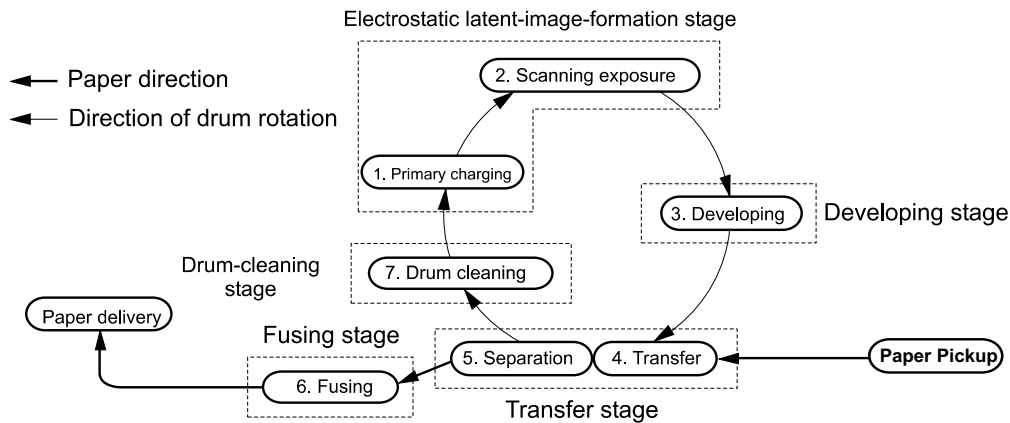


Figure 4-5 Image formation-block diagram

1. **Conditioning stage (primary charging)**—This process applies a uniform negative charge to the surface of the drum with the primary charging roller, which is located in the print cartridge. The primary charging roller is coated with conductive rubber. An ac bias is applied to the roller to erase any residual charges from any previous image. In addition, the primary charging roller applies a negative dc bias to create a uniform negative potential on the drum surface. The print density setting modifies the dc voltage.
2. **Writing stage (scanning exposure)**—During this process, a modulated laser diode projects the beam onto a rotating scanning mirror. As the mirror rotates, the beam reflects off the mirror, first through a set of focusing lenses, then off a mirror, and finally through a slot in the top of the print cartridge, and onto the photosensitive drum. The beam sweeps the drum from left to right, discharging the negative potential wherever the beam strikes the surface. This creates a latent electrostatic image, which later is developed into a visible image. Because the beam sweeps the entire length of the drum while the drum rotates, the entire surface area of the drum can be covered. At the end of each sweep, the beam strikes the beam-detect lens, generating the beam-detect signal (BD signal). The BD signal is sent to the ECU where it is converted to an electrical signal used to synchronize the output of the next scan line of data.
3. **Developing stage**—During this process, the latent electrostatic image is present on the drum. The toner particles obtain a negative surface charge by rubbing against the developing cylinder, which is connected to a negative dc supply. The negatively charged toner is attracted to the discharged (exposed, grounded) areas of the drum, and it is repelled from the negatively charged (unexposed) areas.
4. **Transfer stage**—During this process, the toner image on the drum surface is transferred to the media. The transfer roller applies a positive charge to the back of the media, which attracts the negatively charged toner on the drum surface to the media. After separation, the drum is cleaned and conditioned for the next image.
5. **Separation stage**—During this process, the media separates from the drum. To stabilize the feed system and prevent toner dropouts on the printed image at low temperature and humidity, the static eliminator reduces the charge on the back of the media.

6. **Fusing stage**—During this process, the heat and pressure fuse the toner into the media to produce a permanent image. The media passes between a heated fusing element and a soft pressure roller, which melt the toner and press it into the media.
7. **Drum-cleaning stage**—During this process, the cleaning blade is in contact with the surface of the drum at all times. As the drum rotates during printing, the cleaning blade wipes excess toner off the drum and stores it in the waste toner receptacle.

Print cartridge

As the focal point of the image-formation system, the print cartridge contains toner and houses the cleaning, conditioning, and developing stages of the process. The print cartridge contains the photosensitive drum, primary-charging roller, developing station, toner cavity, and cleaning station. By including these components (which wear, degrade, or are consumed) in the replaceable print cartridge, the need for many service calls is eliminated. The special photosensitive properties of the drum form an image on the drum surface and then transfer the image to media.

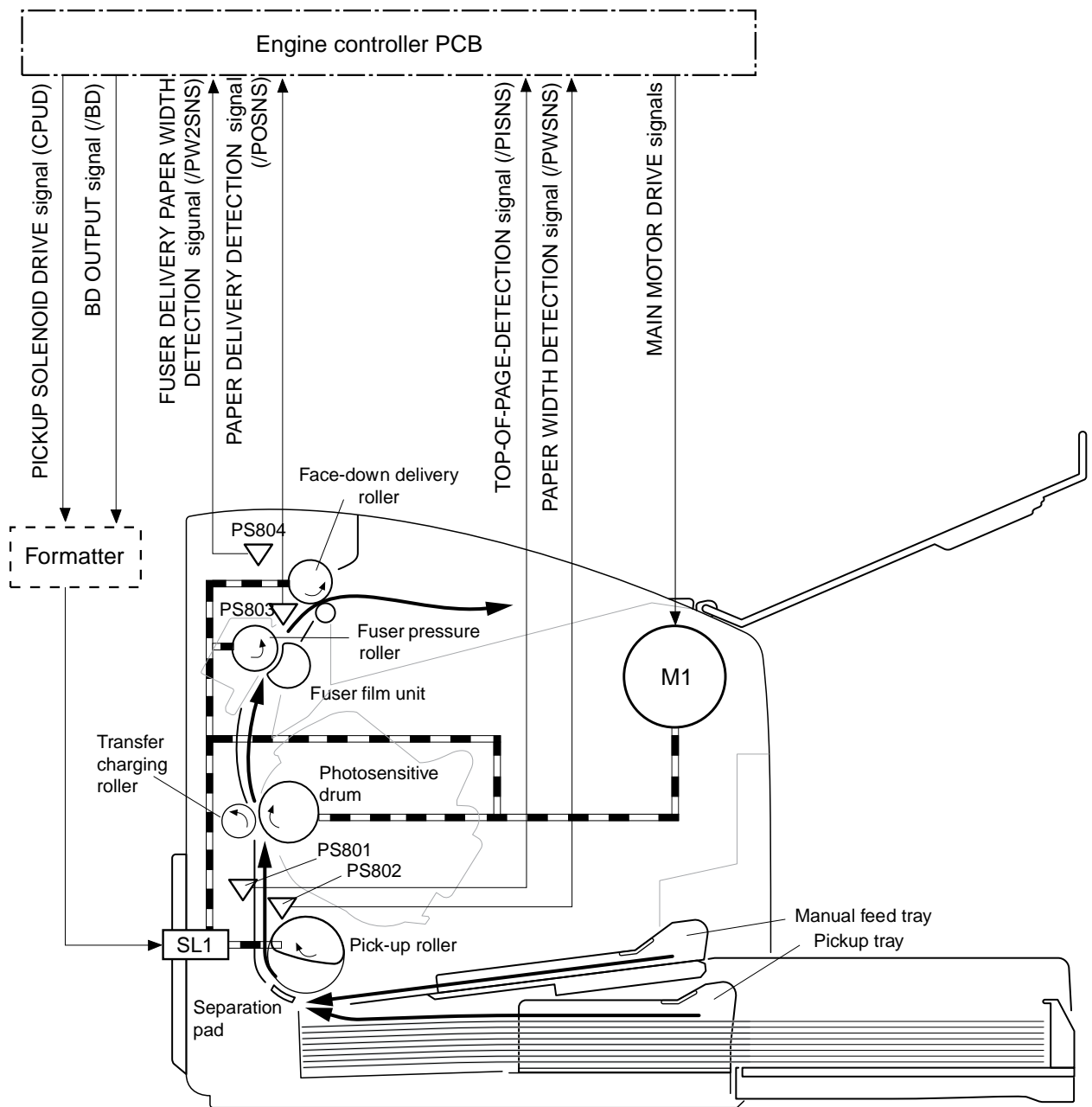


CAUTION The print cartridge does not include a light-blocking shutter. Do not expose the drum to light, which can permanently damage the drum. Protect the print cartridge whenever you remove it by covering it with paper.

Printer paper-feed system

The main input tray and the priority feed slot merge into one main input area. The printer senses the media as it enters the paper-feed path and passes the top-of-page sensor (PS801). It does not sense the presence of media before the beginning of the print cycle. The following steps occur when the printer receives a print job.

Step 1	The ECU activates the motor (M1). Paper motion begins when the ECU energizes the pickup solenoid (SL1).
Step 2	The paper pickup roller rotates once. The paper-lift plate pushes the media against the pickup roller.
Step 3	Using friction, the pickup roller grabs the top sheet and advances it to the feed-assembly drive-rollers. To ensure that only one sheet is fed, a main separation pad holds the remainder of the stack in place.
Step 4	The feed-assembly drive-rollers advance the media to the top-of-page sensor (PS801). This sensor informs the ECU of the exact location of the leading edge of media, so that the image being written on the photosensitive drum can be precisely positioned on the page.
Step 5	The feed-assembly drive-rollers then advance the media to the transfer area where the toner image on the photosensitive drum is transferred to the media.
Step 6	After the image is transferred, the media enters the fuser assembly where heat from the fuser and pressure from the pressure roller permanently bond the toner image to media. The paper-delivery sensor (PS803) determines that the media has successfully moved out of the fusing area.
Step 7	The fuser-assembly exit-rollers deliver media to the output bin face-down.



- PS801: Top-of-page sensor
- PS802: Paper-width sensor
- PS803: Paper-delivery sensor
- PS804: Fuser delivery paper width sensor
- M1: Main motor
- SL1: Pickup solenoid

Figure 4-6 Printer paper path

Jam detection

The top-of-page sensor (PS801) and the paper-delivery sensor (PS803) detect media moving through the printer. If a jam is detected, the ECU immediately stops the printing process and the jam light on the control panel illuminates.

Conditions of jam detection

- **Pickup-delay jam**—Paper does not reach the top-of-page sensor (PS801) within 1.4 seconds after the pickup solenoid (SL1) has been turned on, a second pickup operation is attempted, and paper again does not reach the top-of-page sensor within 1.4 seconds.
- **Pickup stationary jam**—The top-of-page sensor (PS801) does not detect the trailing edge of media within 4.6 seconds of detecting the leading edge.
- **Delivery-delay jam**—The paper-delivery sensor (PS803) does not detect the leading edge of media within 2.1 seconds after the top-of-page sensor (PS801) detects the leading edge.
- **Wrapping jam**—The paper-delivery sensor (PS803) does not detect the trailing edge of the media within 1.5 seconds after the top-of-page sensor (PS801) detects the leading edge and within ten seconds after the paper-delivery sensor (PS803) detects the leading edge.
- **Delivery-stationary jam**—The paper delivery sensor (PS803) does not detect the leading edge of media within 2.2 seconds after the top-of-page sensor (PS801) detects the trailing edge.
- **Residual media jam**—The top-of-page sensor (PS801) or the paper-delivery sensor (PS803) detects media during the initial rotation period.
- **Door-open jam**—The top-of-page sensor (PS801) or the paper-delivery sensor (PS803) detects media while the print cartridge door is open.

Solenoid, sensors, switches, and motor

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

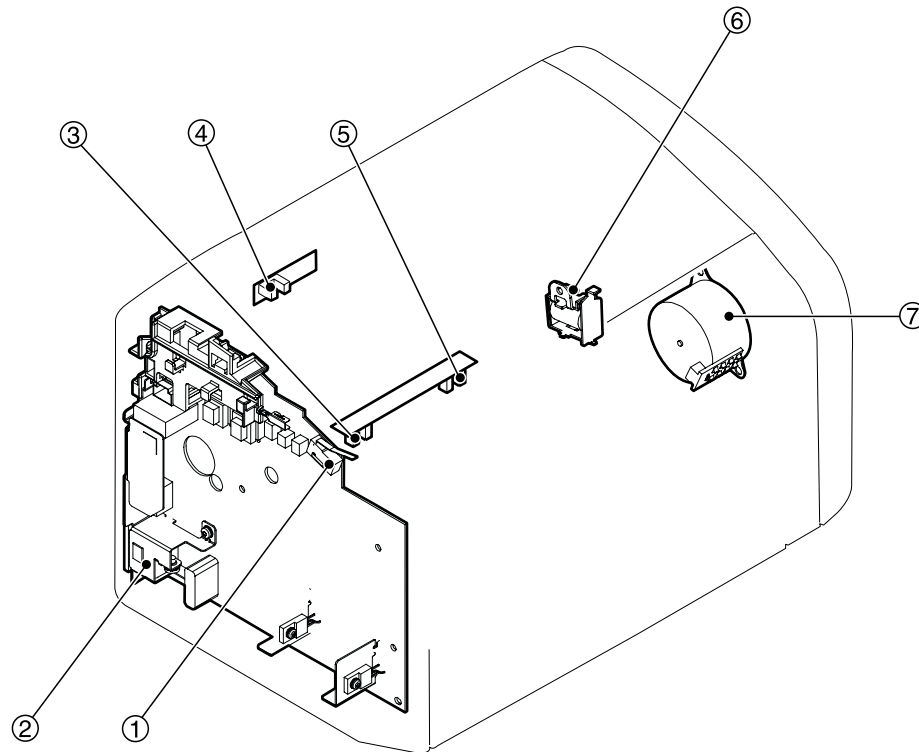


Figure 4-7 Solenoid, sensors, switches, and motor

1	The door switch detects whether the print-cartridge door is closed. Printing cannot continue until the print-cartridge door is closed.
2	Power switch
3	The paper-width sensor senses the width of the paper.
4	The paper-delivery sensor senses when paper has successfully moved out of the fusing area.
5	The top-of-page sensor detects the leading and trailing edges of the paper. It synchronizes the photosensitive drum and the top of the paper.
6	Solenoid
7	Motor

Basic sequence of operation (formatter-to-printer)

The microprocessor (CPU) on the ECU controls the printer operation sequence. The following events take place during normal printer operation.

Table 4-1 Basic sequence of operation

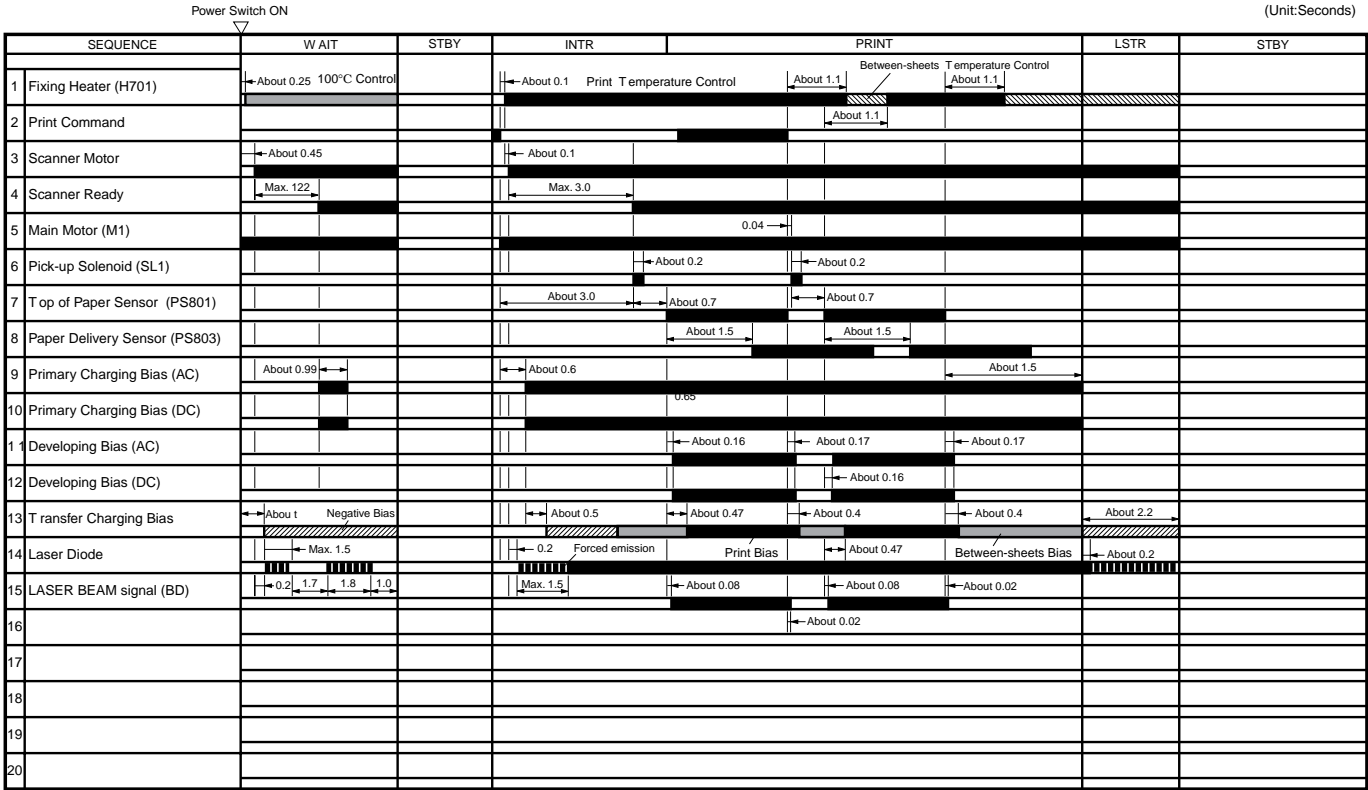
Period	Purpose	Remarks
WAIT : After the product is turned on until the end of the initial rotation of the main motor.	To clear the drum surface of potential and to clean the primary charging roller.	Detects whether or not the cartridge is installed.
STBY (Standby): From the end of the WAIT period or the LSTR period until the pickup command is sent from the formatter. Or, from the end of the LSTR period until the product is turned off.	To pause until the product is ready to print.	
INTR (Initial Rotation): After the pickup command has been sent from the formatter until the media reaches the top-of-page sensor (PS801).	To stabilize the photosensitive drum sensitivity in preparation for printing, and to clean the primary charging roller.	
PRINT (Print): From the end of the initial rotation until the primary voltage goes OFF.	To form images on the photosensitive drum based on the VIDEO signals (/ VDO, VDO) sent from the formatter and to transfer the toner image onto the media.	
LSTR (Last Rotation Period): After the primary voltage goes OFF until the main motor stops rotating.	To deliver the last page, and to clean the primary charging roller.	When the pickup command is sent from the video controller, the printer enters the INTR period immediately after the end of the LSTR period.



NOTE

The timing chart is for one sheet of A4-size media.

Figure 4-8 Printer timing diagram



5 Removal and replacement

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

- [Removal and replacement strategy](#)
- [User-replaceable parts](#)
- [Covers](#)
- [Internal assemblies](#)

Removal and replacement strategy

This chapter contains detailed steps and images that show parts removal. Replacement is generally the reverse of removal. Occasionally, notes are included to provide directions for difficult or critical replacement procedures.



WARNING! Remove the power cord before attempting to service the product. If this warning is not followed, severe injury can result, as well as damage to the device. Certain functional checks during troubleshooting must be performed with power supplied to the product. However, the power supply should be disconnected during removal of any parts.

Sheet metal and plastic edges in the product can be sharp. Use caution when working on the product.

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



CAUTION Some parts are sensitive to electrostatic discharge (ESD). Always perform service work at an ESD-protected workstation. If an ESD-protected workstation is not available, ground yourself by touching the sheet-metal chassis *before* touching an ESD-sensitive part.



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

Required tools

- #2 Phillips screwdriver with magnetic tip
- Small flat-blade screwdriver
- Needle-nose pliers
- ESD mat



CAUTION Do not use a pozidrive screwdriver or any motorized screwdriver. These can damage screws or screw threads on the product.

CAUTION Do *not* pull directly on the wires when a connector is disconnected. *Always* pull on the plastic body of a connector to avoid damaging the connector wires.

Before performing service

- Remove all media.
- Unplug the power cable.
- Place the product on an ESD mat (if one is available).
- Remove the input-tray cover.
- Remove the print cartridge.

Print cartridge

1. Open the print-cartridge door on the top of the printer.
2. Remove the print cartridge.



CAUTION To prevent damage, do not expose the print cartridge to light. Cover it with a piece of paper.

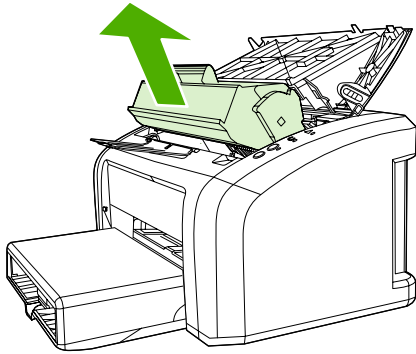


Figure 5-1 Removing the print cartridge

Parts removal order

Use the following illustration to determine which parts must be removed before removing other parts.

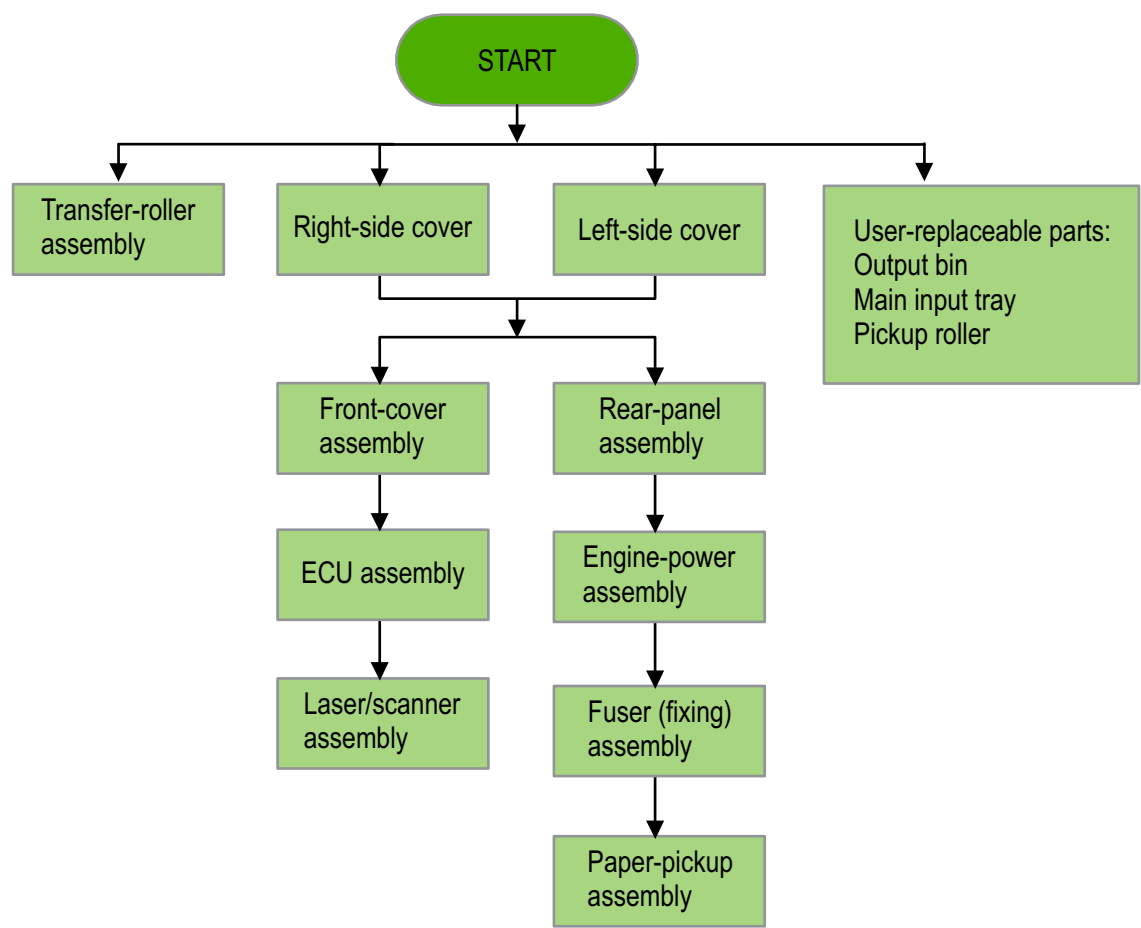


Figure 5-2 Parts-removal block diagram

User-replaceable parts

To order a new pickup roller or separation pad, go to <http://www.hp.com/go/hpparts>.

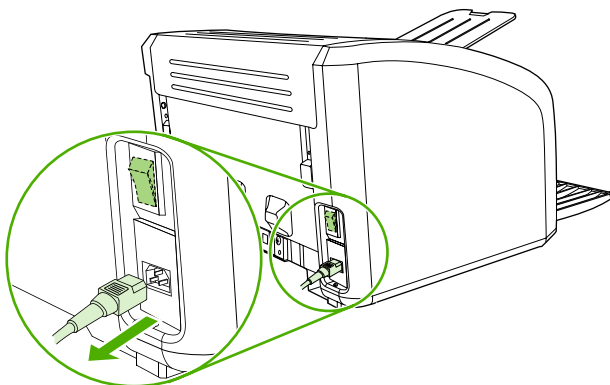
Replacing the pickup roller

If the printer regularly misfeeds (no media feeds through) and cleaning the pickup roller does not fix the problem, replace the pickup roller.

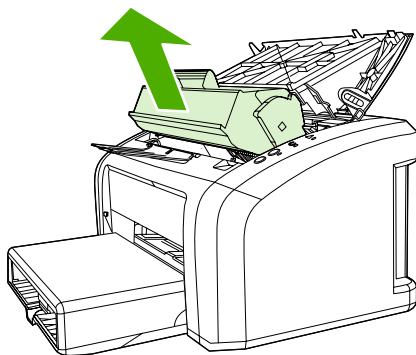


CAUTION Failure to complete all of the steps in this procedure might damage the product.

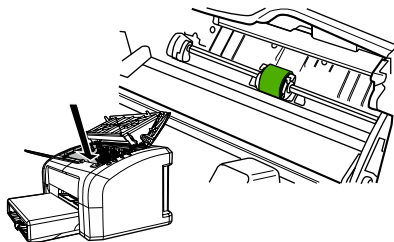
1. Turn off the printer, unplug and remove the power cord. Wait for the printer to cool.



2. Open the print-cartridge door, and remove the print cartridge (HP LJ 1010 series printer shown).



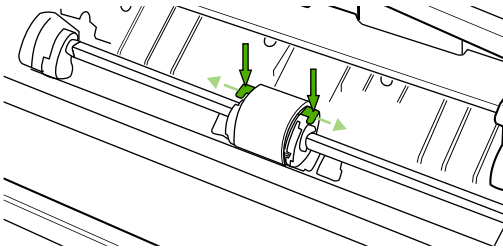
3. Locate the pickup roller (HP LJ 1010 series printer shown).



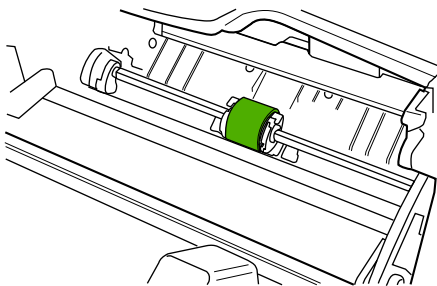
4. Gently release the small, white tabs on each side of the pickup roller by pushing them away from the roller, and then rotate the pickup roller toward the front.



CAUTION Use gentle pressure to release the small, white tabs to avoid breaking them.



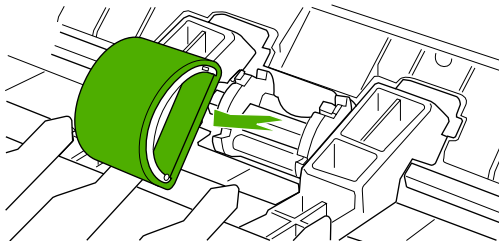
5. Gently pull the pickup roller up and out.



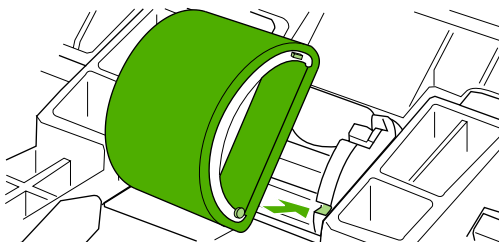
6. Position the new pickup roller in the slot of the previous pickup roller.



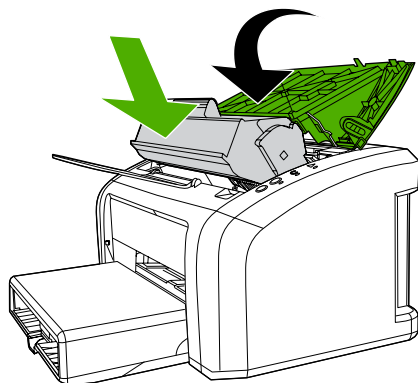
NOTE Circular and rectangular pegs on each side prevent you from incorrectly positioning the pickup roller.



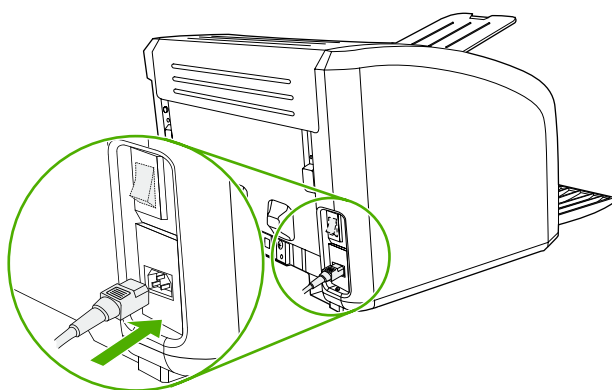
7. Rotate the top of the new pickup roller into position until the white tabs on each side of the roller snap the roller into place.



8. Reinstall the print cartridge, and close the print-cartridge door.



9. Plug in the printer, and then turn it on.



Replacing the separation pad

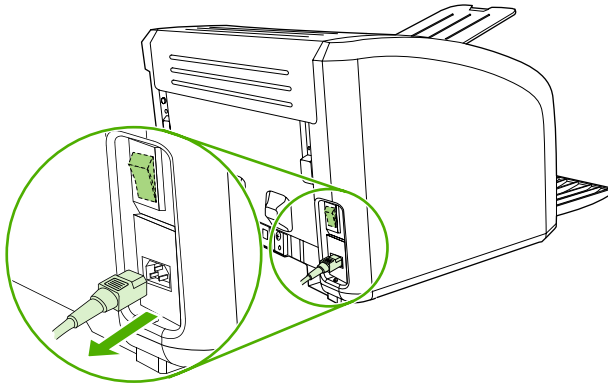
If the printer regularly pulls multiple sheets of media at a time, you might need to change the separation pad. Recurring feed problems might indicate that the separation pad is worn.

Normal use with good-quality media causes wear. The use of poor media might require more frequent replacement of the separation pad.

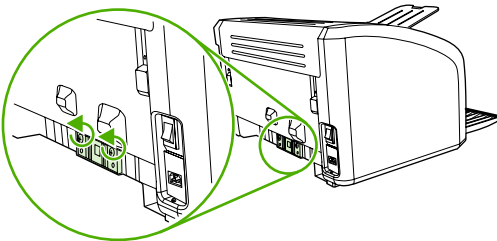


NOTE Before you change the separation pad, clean the pickup roller. See [Cleaning the pickup roller on page 29](#). To order parts, go to <http://www.hp.com/go/hpparts>.

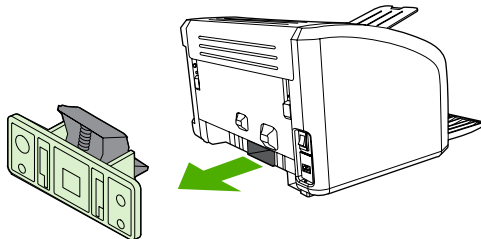
1. Turn off the printer, unplug and remove the power cord. Wait for the printer to cool.



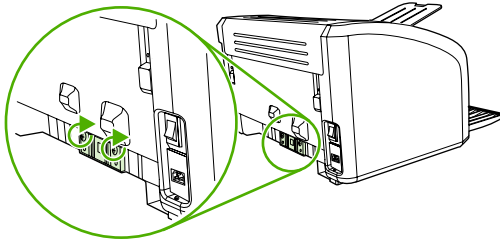
2. At the back of the printer, use a #2 Phillips screwdriver to unscrew the two screws that hold the separation pad in place.



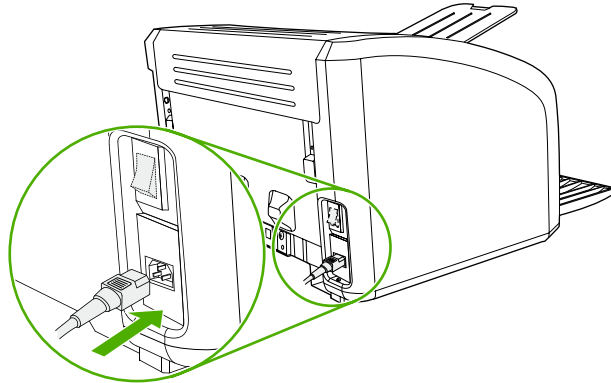
3. Remove the separation pad.



4. Insert the new separation pad, and screw it in place.



5. Plug the printer in, and then turn it on.



Replacing the main input tray (paper-pickup tray assembly)

If you break or damage the main input tray (also called the paper-pickup tray assembly), you can replace it. To order parts, go to <http://www.hp.com/go/hpparts>.

1. Carefully flex the main input tray just enough to release one side.



NOTE Be careful not to break the hinge points.



Figure 5-3 Main input tray (HP LaserJet 1020 printer shown)

2. Remove the main input tray.

Replacing the output-bin extension (delivery-tray assembly)

If you break or damage the output-bin extension (also called the delivery-tray assembly), you can replace it. To order parts, go to <http://www.hp.com/go/hpparts>.

1. Carefully flex the output-bin extension just enough to release the hinge pins.



NOTE Be careful not to break the hinge pins (callout 1).



Figure 5-4 Output-bin extension

2. Remove the output-bin extension.

Covers

Remove the covers to gain access to the internal replaceable parts.

Right-side cover

1. Before removing the cover, examine [Figure 5-5 Remove the right-side cover \(1 of 4; HP LJ 1020 printer shown\)](#) on page 64 and note the location of tabs on the cover.

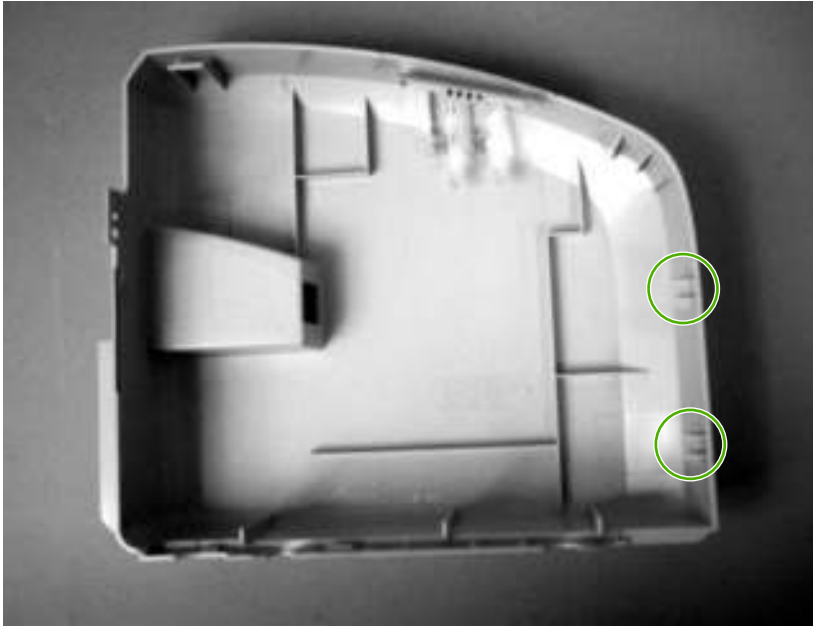


Figure 5-5 Remove the right-side cover (1 of 4; HP LJ 1020 printer shown)

2. Remove one screw (callout 1) and then release one tab (callout 2).

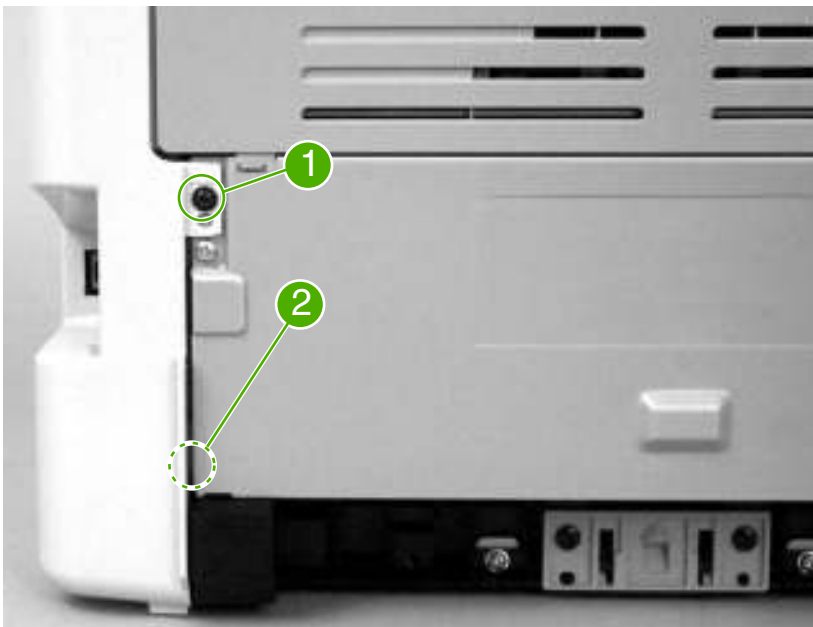


Figure 5-6 Remove the right-side cover (2 of 4; HP LJ 1020 printer shown)

3. Open the print-cartridge door. Grasp the cover, and carefully pry up on the cover to release one tab.



Figure 5-7 Remove the right-side cover (3 of 4; HP LJ 1020 printer shown)

4. Slightly rotate the back of the cover away from the product, and then slide the cover forward to remove it.



NOTE If the cover cannot be removed easily, release one additional tab that is located on the bottom of the printer near the center of the cover.



Figure 5-8 Remove the right-side cover (4 of 4; HP LJ 1020 printer shown)

Left-side cover

- Removing the left-side cover is similar to removing the right-side cover. Use the steps and figures for removing the right-side cover, except start the procedure by examining the tabs on the *left side* and removing the screw on the *left side*.



NOTE If the cover cannot be removed easily, release one additional tab that is located on the bottom of the printer near the center of the cover.

Rear panel and top-cover assembly



NOTE This procedure removes the rear panel and the top-cover assembly (the assembly consists of the print-cartridge door and the fuser cover).

1. Remove the following assemblies.
 - Right-side cover. See [Right-side cover on page 64](#).
 - Left-side cover. See [Left-side cover on page 66](#).
2. Open the print-cartridge door.
3. Remove two screws from the top of the printer (callout 1).

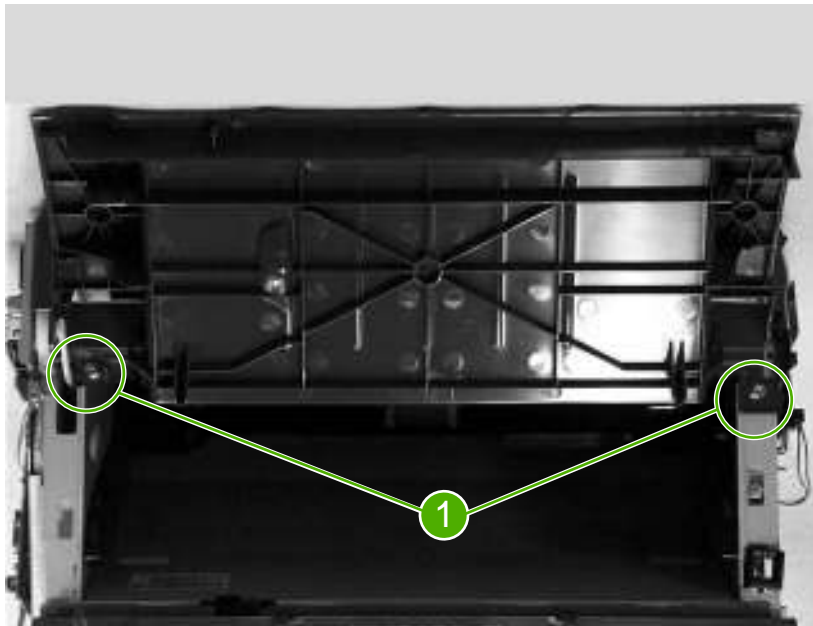


Figure 5-9 Remove the rear panel and top-cover assembly (1 of 6)

4. Squeeze the two retaining tabs on the plastic door-link clip to release it from the hinge arm on the print-cartridge door.



CAUTION Do not drop the clip into the gear assembly that is on the side of the printer.

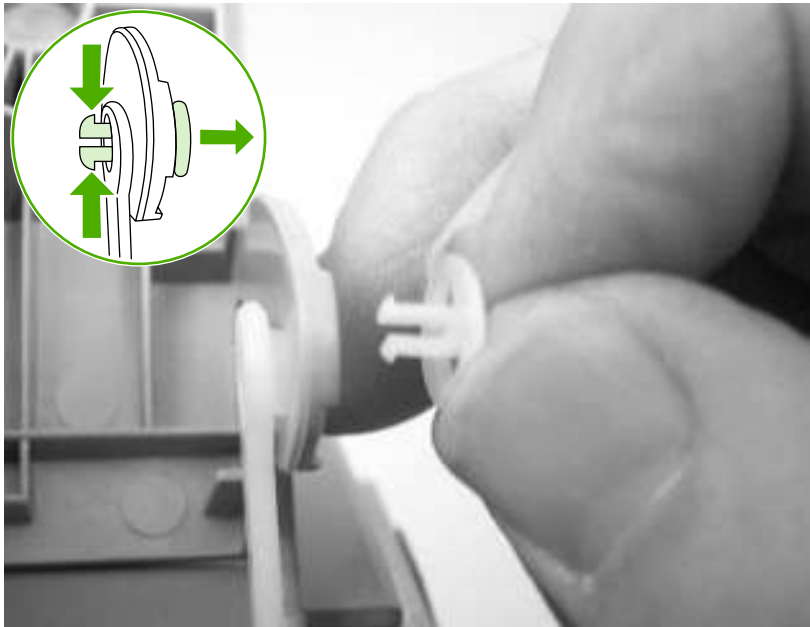


Figure 5-10 Remove the rear panel and top-cover assembly (2 of 6)



Hint Reinsert the plastic door-link clip in the hinge arm or store it with the screws to prevent losing it.



Figure 5-11 Remove the rear panel and top-cover assembly (3 of 6)

5. Remove one screw (callout 2) from the back of the product.



Figure 5-12 Remove the rear panel and top-cover assembly (4 of 6; HP LJ 1020 printer shown)

6. The top-cover assembly and metal rear-panel are interlocked with plastic tabs. Plastic tabs also secure the metal rear-panel at the bottom. Lift up the fuser cover at the top and pull it back slightly. Lift the rear panel up and off the tabs on the bottom.

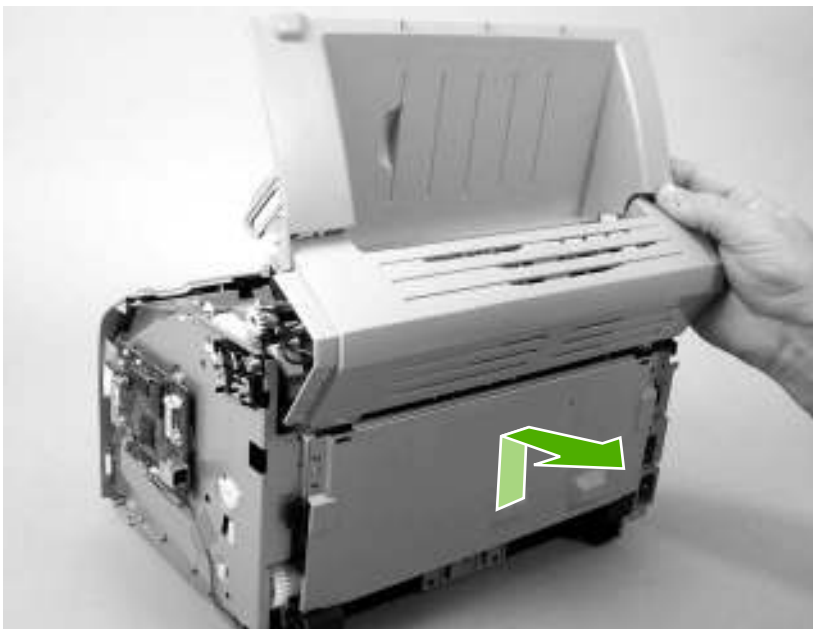


Figure 5-13 Remove the rear panel and top-cover assembly (5 of 6)

7. Lift up on the top-cover assembly to remove it.



Figure 5-14 Remove the rear panel and top-cover assembly (6 of 6)

Reinstalling the top-cover assembly

1. To reinstall the top-cover assembly, raise the two pressure-release levers.



Figure 5-15 Reinstall the top-cover assembly (1 of 2)

2. Position the top-cover assembly over the pressure-release levers (callout 1), and lower it onto the chassis. Make sure that the pressure-release levers are inserted through the slots (callout 2) on the top-cover assembly.

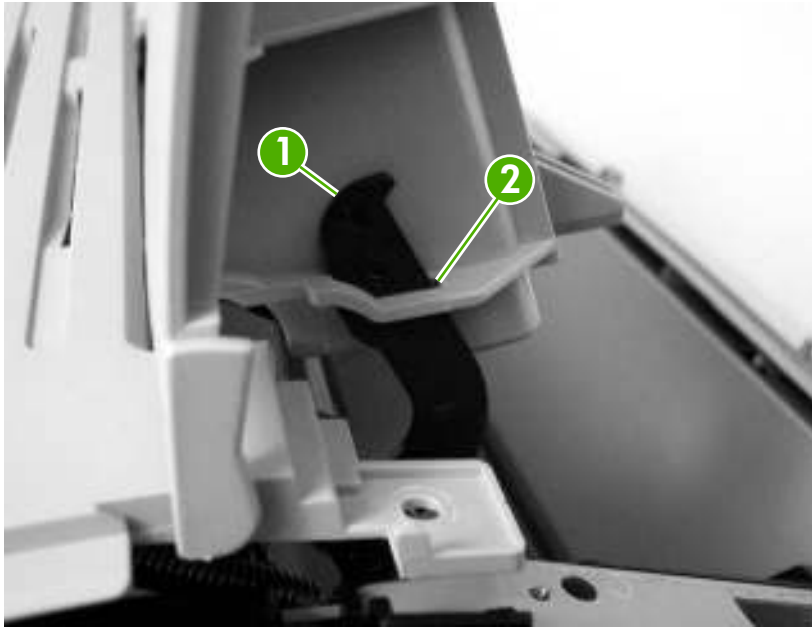
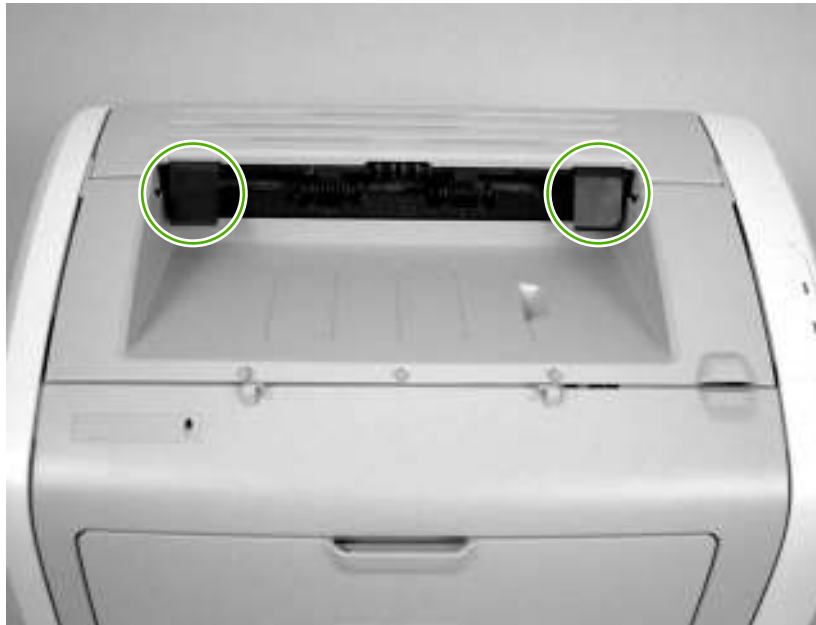


Figure 5-16 Reinstall the top-cover assembly (2 of 2)



CAUTION Make sure that the two plastic antistatic tabs are correctly positioned. The tabs must protrude into the output bin area.



Front cover

1. Remove the following assemblies.
 - Right-side cover. See [Right-side cover on page 64](#).
 - Left-side cover. See [Left-side cover on page 66](#).
2. Before removing the cover, examine [Figure 5-17 Remove the front cover \(1 of 3\) on page 71](#) and note the locations of the plastic tabs at the top of the front cover. Open the print-cartridge door.



Figure 5-17 Remove the front cover (1 of 3)

3. Release the tab on the bottom right side of the front cover, and then pull the bottom of cover away from the chassis. Repeat this step for the left side of the front cover.

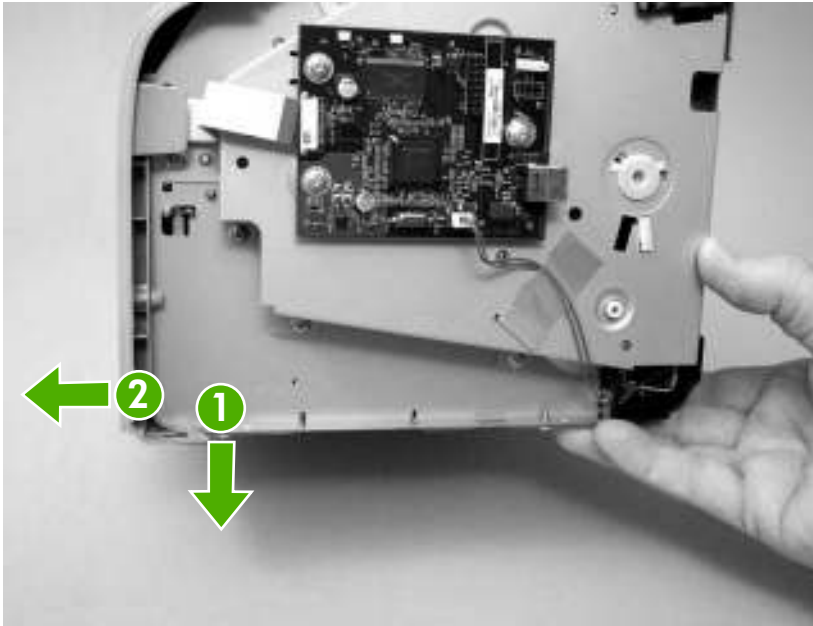


Figure 5-18 Remove the front cover (2 of 3)

4. With the bottom of the front cover released, pull up and back at the top of the cover while gently rocking it to release all of the tabs at the top, and remove the front cover.

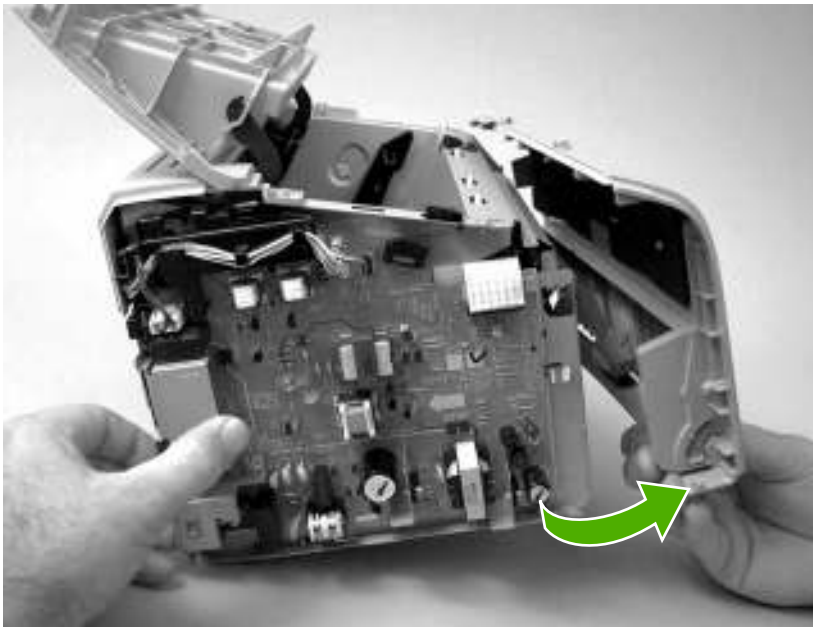


Figure 5-19 Remove the front cover (3 of 3)



Reinstallation tip When reinstalling the front cover, make sure that the tabs on the top of the cover are securely in place, and then press the bottom of the front cover into place.

Internal assemblies

When replacing internal assemblies, make sure to transfer any component parts that are not provided with the new assembly from the failed assembly to the new assembly. For example, sensor PCBs are not included with the fuser assembly or the paper-pickup assembly. The sensor PCB from the failed assembly must be transferred to the new assembly.

Transfer-roller assembly

Before proceeding, make sure it is absolutely necessary to remove the transfer roller.

CAUTION Be very careful not to break the paper guide that is removed during replacement of the transfer roller. This is not a service part. If the paper guide is broken, the entire printer must be replaced.

CAUTION Do not touch the black-sponge portion of the transfer roller. Skin oils and finger prints can cause print-quality problems.

1. Open the print-cartridge door, and then release the two tabs on the paper guide and rotate it up.

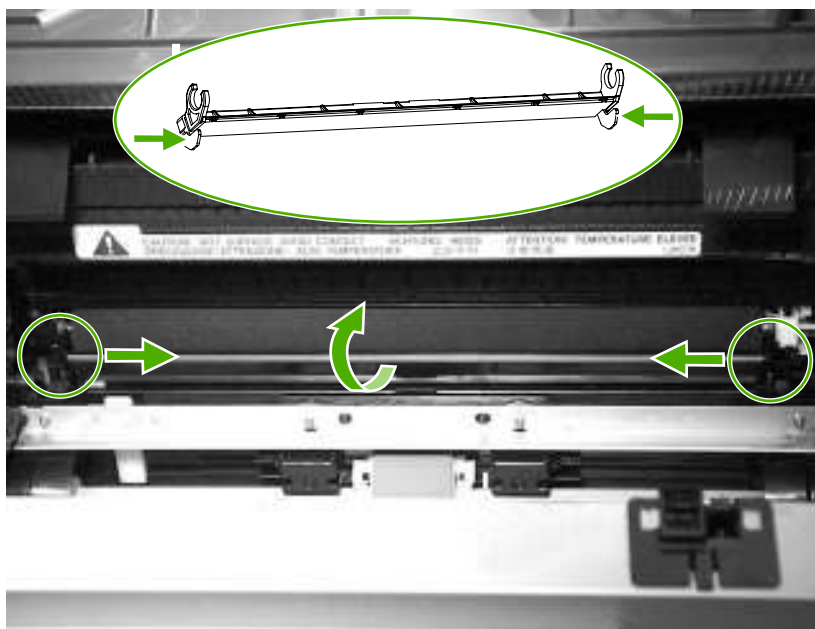


Figure 5-20 Remove the transfer roller (1 of 3)

2. The clamps on the paper guide fit over the bearings on the right and left ends of the transfer roller. *Do not touch the black-sponge portion of the transfer roller.* Grasp the right end of the paper guide and pull the clamp off the right bearing. Slide the paper guide slightly to the right, and the left clamp will slide off the left bearing.

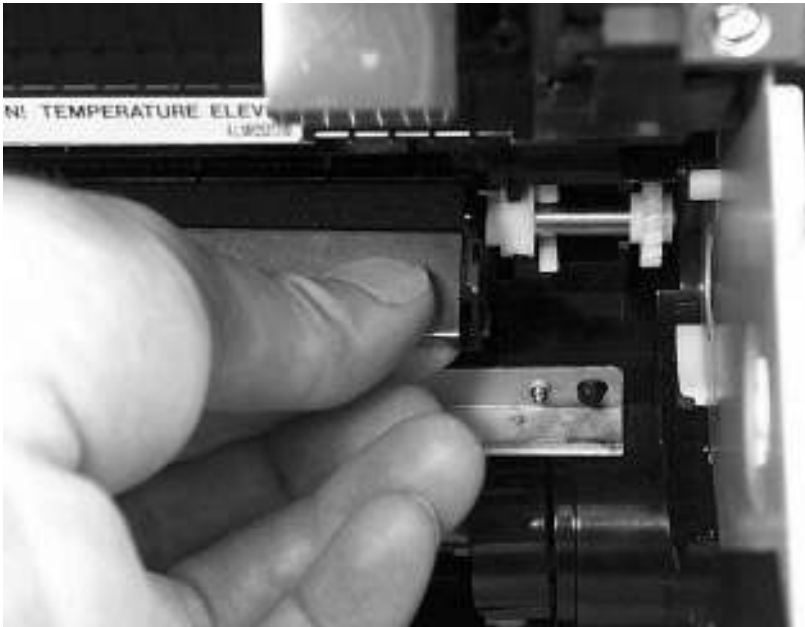


Figure 5-21 Remove the transfer roller (2 of 3)

3. Use needle-nose pliers or your fingers to squeeze the two small tabs on the transfer roller.



Figure 5-22 Remove the transfer roller (3 of 3)

4. Angle the transfer roller up while holding on to the gear on the right side. Slide the roller toward right side of the printer, and lift both the transfer roller and the transfer-roller guide out of the printer.



Reinstallation tip A small grounding spring is under the right transfer-roller bearing. When reinstalling the transfer roller, position this spring correctly under the right bearing. Reverse the removal process to install the new transfer roller. Then reinstall the paper guide by gently pressing the two ends of the guide onto the transfer-roller bearings until the clamps snap into place. Rotate the paper guide down until the tabs on both ends engage.

Engine-power assembly

1. Remove the following assemblies

- Right-side cover. See [Right-side cover on page 64](#).
- Left-side cover. See [Left-side cover on page 66](#).
- Top-cover assembly. See [Rear panel and top-cover assembly on page 66](#).
- Front cover. See [Front cover on page 71](#).

2. Disconnect six cables (callout 1) near the top of the power assembly.



CAUTION Do *not* pull directly on the wires when a connector is disconnected. *Always* pull on the plastic body of a connector to avoid damaging the connector wires.

3. Remove four screws (callout 2).

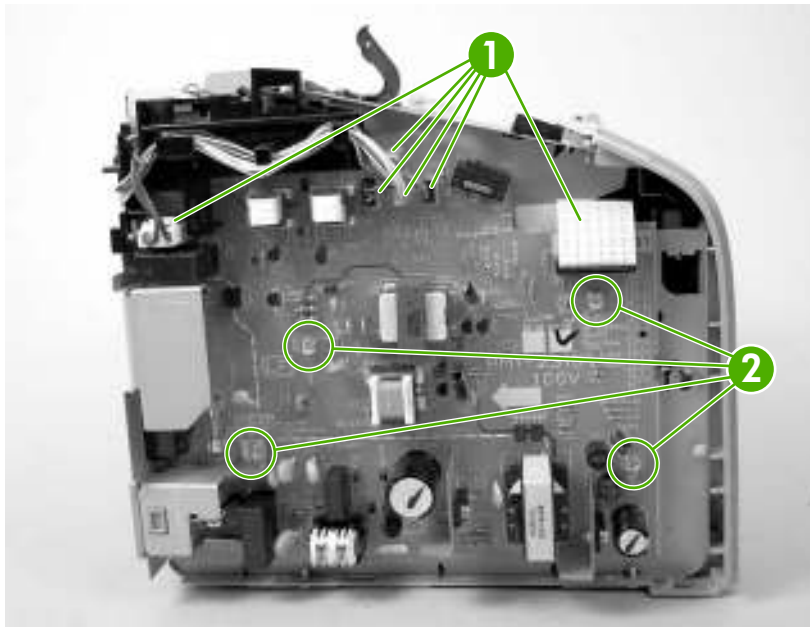


Figure 5-23 Remove the engine-power assembly (1 of 2; HP LJ 1020 printer shown)

4. Remove two screws from the back of the printer (callout 3), disconnect the high-voltage wire (callout 4) and then remove the engine-power assembly.



NOTE Be careful not to lose the two springs that are behind the engine-power assembly.

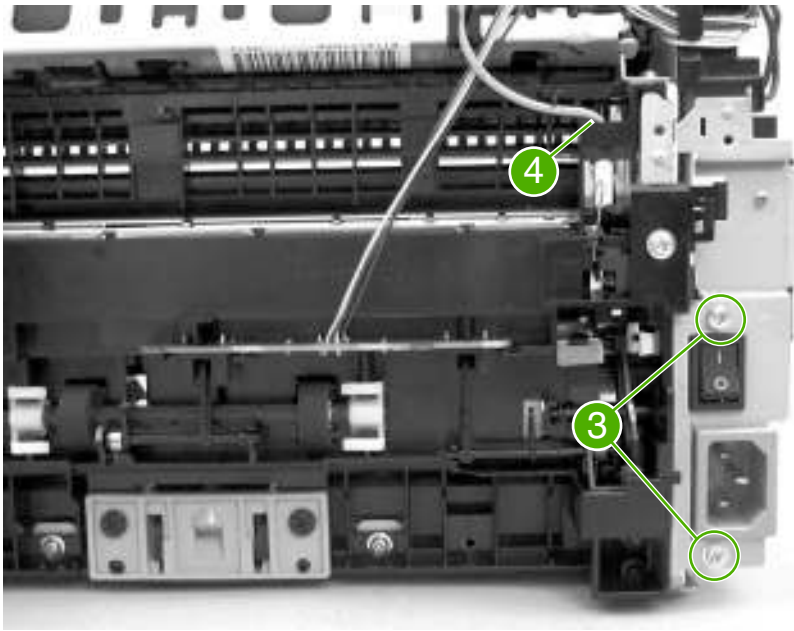


Figure 5-24 Remove the engine power assembly (2 of 2)



Reinstallation tip When reinstalling the engine-power assembly, make sure that the cable guide is correctly installed by clipping it onto the PCB at the top, back corner and onto the metal casing.

Fuser (fixing) assembly

1. Remove the following assemblies.
 - Right-side cover. See [Right-side cover on page 64](#).
 - Left-side cover. See [Left-side cover on page 66](#).
 - Top-cover assembly. See [Rear panel and top-cover assembly on page 66](#).
2. Disconnect cables, as necessary, from near the top of the engine-power assembly, and disconnect the high-voltage wire (callout 1) from the back of the printer.



CAUTION Do *not* pull directly on the wires when a connector is disconnected. *Always* pull on the plastic body of a connector to avoid damaging the connector wires.

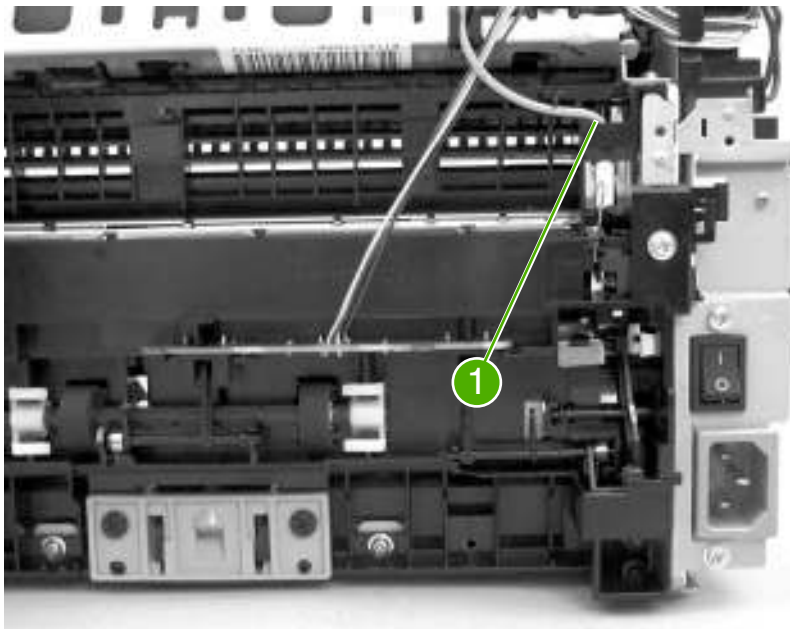


Figure 5-25 Remove the fuser (fixing) assembly (1 of 2)

3. Remove the wire harnesses from the plastic harness retainers.

4. Remove three screws (callout 2). (This figure shows the delivery-sensor PCB removed, but it is not necessary to remove this PCB in order to remove the fuser).

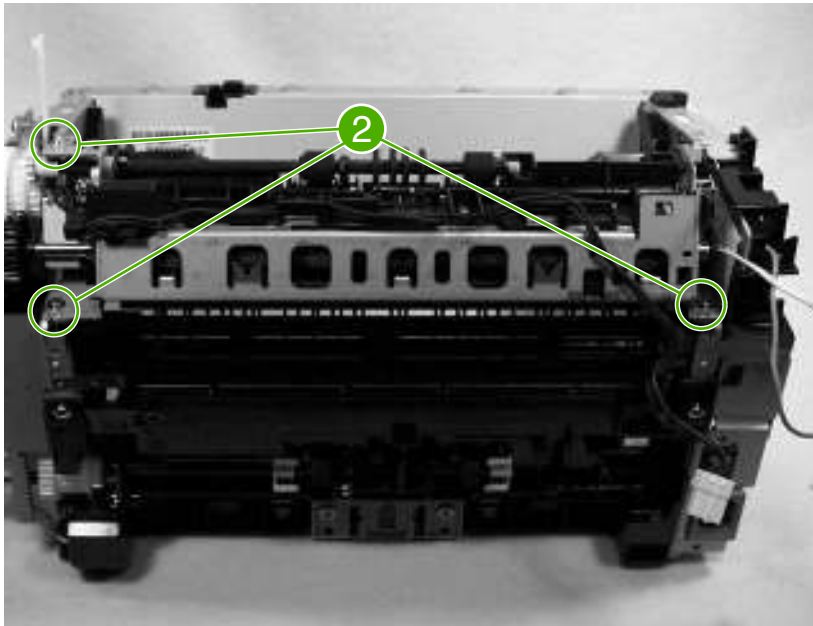


Figure 5-26 Remove the fuser (fixing) assembly (2 of 2)

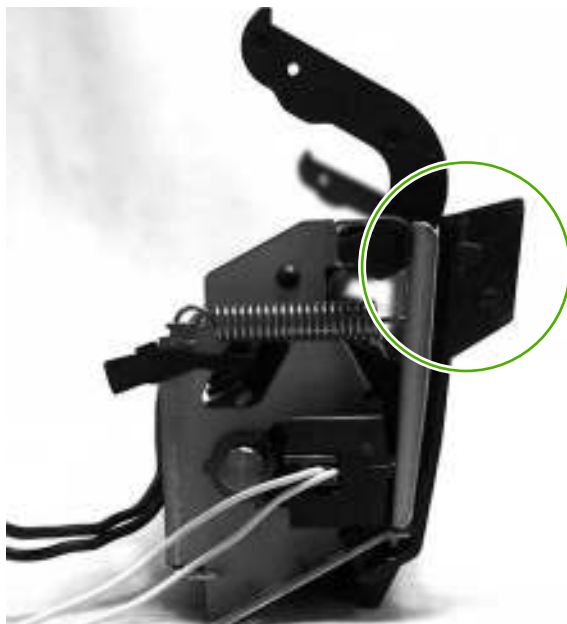
5. Lift the end of the fuser assembly from the right side of the printer, and remove it.



Reinstallation tip When replacing the fuser assembly, be sure to transfer the delivery sensor PCB from the old fuser to the new one.



NOTE When reinstalling the fuser assembly, be careful not to break the plastic tab on the assembly.



Paper-pickup assembly

1. Remove the following assemblies.
 - Right-side cover. See [Right-side cover on page 64](#).
 - Left-side cover. See [Left-side cover on page 66](#).
 - Top-cover assembly. See [Rear panel and top-cover assembly on page 66](#).
 - Transfer roller. See [Transfer-roller assembly on page 73](#).
 - Fuser (fixing) assembly. See [Fuser \(fixing\) assembly on page 77](#).
2. Disconnect and unwind any additional wires as necessary to release the paper-pickup assembly. Unplug and unwind the wire from the solenoid to the formatter.

Disconnect and unwind any additional wires as necessary to release the paper-pickup assembly. Unplug and unwind the wire from the solenoid to the formatter.



CAUTION Do *not* pull directly on the wires when a connector is disconnected. *Always* pull on the plastic body of a connector to avoid damaging the connector wires.

3. Remove six screws (callout 1), and then remove the paper-pickup assembly.

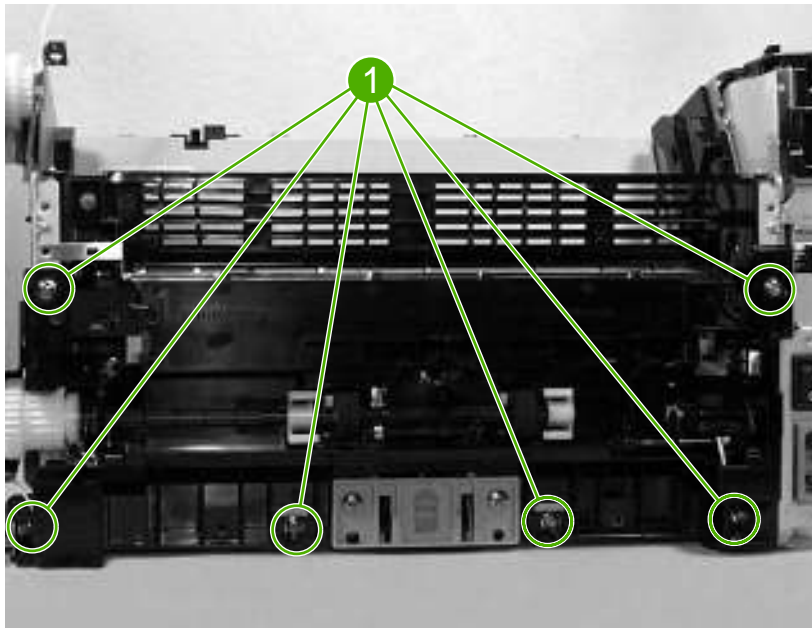


Figure 5-27 Remove the paper-pickup assembly



Reinstallation tip When replacing the paper-pickup assembly, be sure to transfer the sensor PCB and, if necessary, the separation-pad assembly to the new paper-pickup assembly.

Engine control unit (ECU) assembly

1. Remove the following assemblies.
 - Right-side cover. See [Right-side cover on page 64](#).
 - Left-side cover. See [Left-side cover on page 66](#).
 - Top-cover assembly. See [Rear panel and top-cover assembly on page 66](#).
 - Front cover. See [Front cover on page 71](#).
2. Disconnect the flat flexible (ribbon) cable (callout 1) from the formatter, which is on the right side of the product.

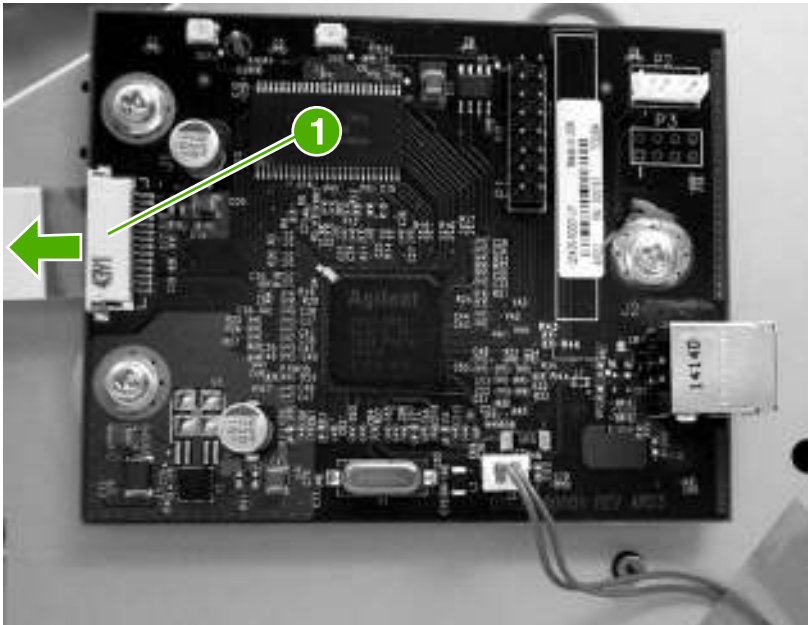


Figure 5-28 Remove the ECU assembly (1 of 6)

3. Disconnect the flat flexible (ribbon) cable (callout 2) from the engine-power assembly.

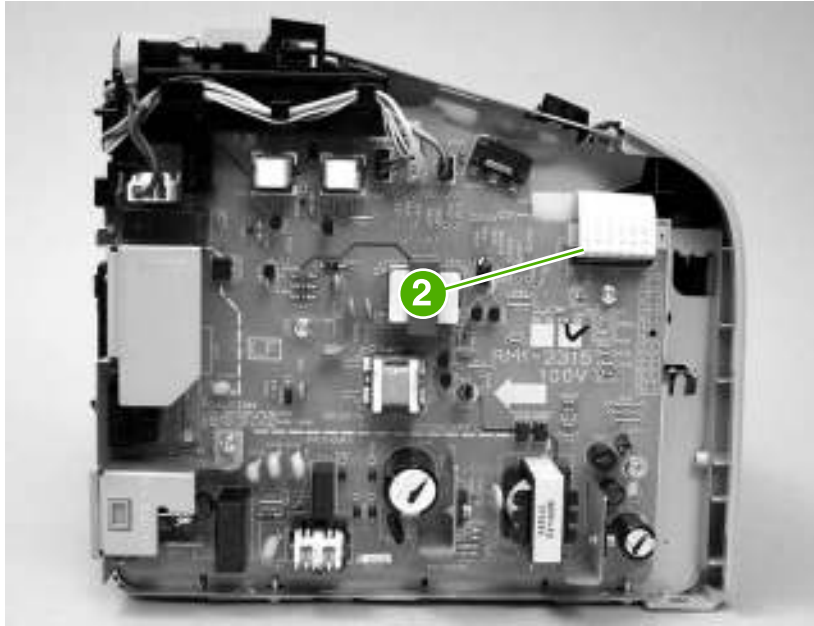


Figure 5-29 Remove the ECU assembly (2 of 6)

4. Remove four screws (callout 3).

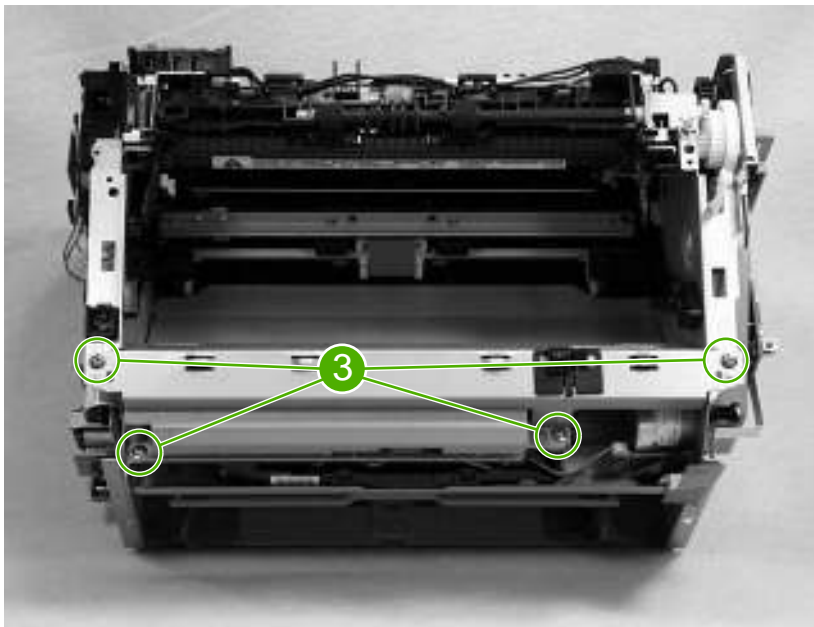


Figure 5-30 Remove the ECU assembly (3 of 6)

5. Lift the ECU cover up just enough to free it, and then tilt it back as far as it will go without forcing it.

6. Two sheet-metal hook hinges (one on each side) secure the cover. Use a screwdriver to push both hooks free, and then remove the ECU cover.

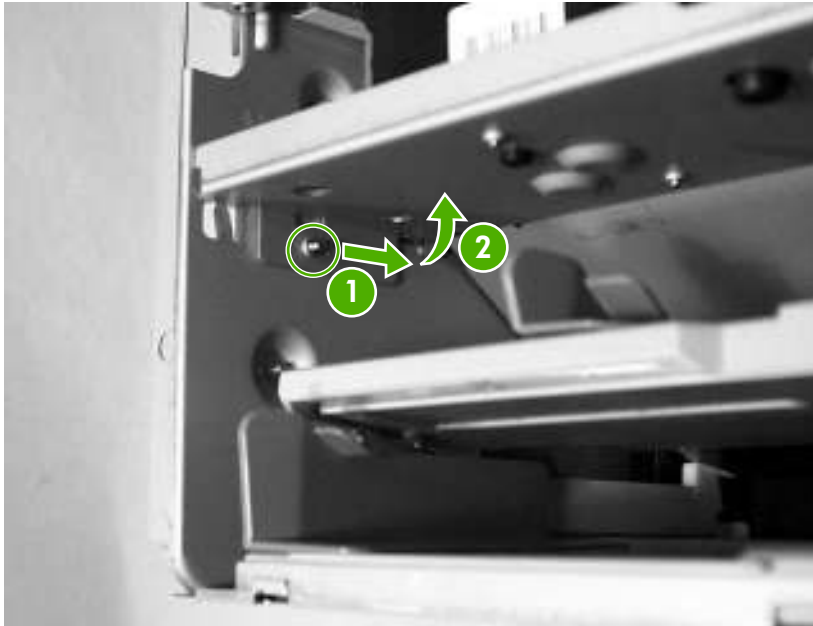


Figure 5-31 Remove the ECU assembly (4 of 6)

7. Release the plastic wire-retainer tab (arrow 1), and rotate the retainer up and away from the chassis (arrow 2).

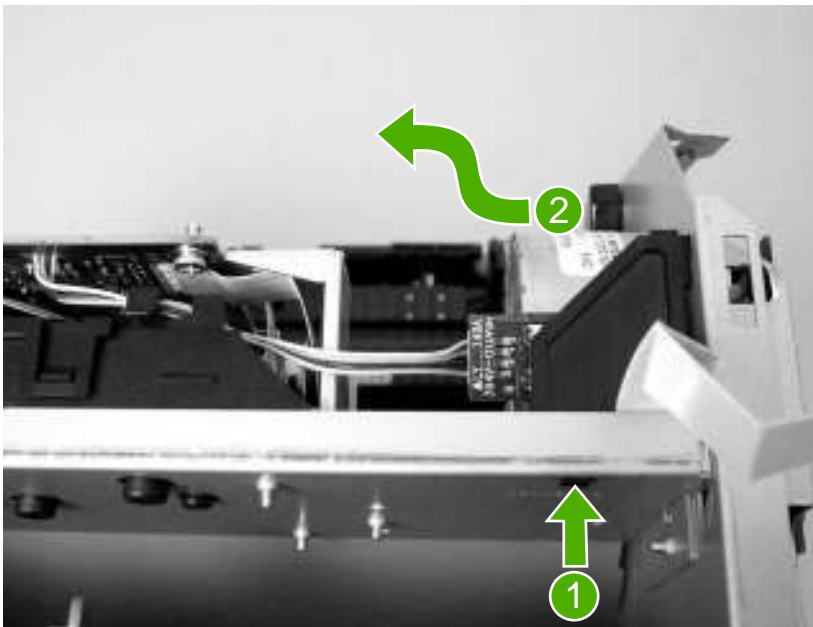


Figure 5-32 Remove the ECU assembly (5 of 6)

8. Disconnect one flat flexible (ribbon) cable and the connector to the step motor (callout 4). Remove two screws (callout 5). Loosen the tape (callout 6) that secures the cable to the chassis. As you remove the ECU, unplug the additional connector to the laser/scanner assembly.



CAUTION Do *not* pull directly on the wires when a connector is disconnected. *Always* pull on the plastic body of a connector to avoid damaging the connector wires.

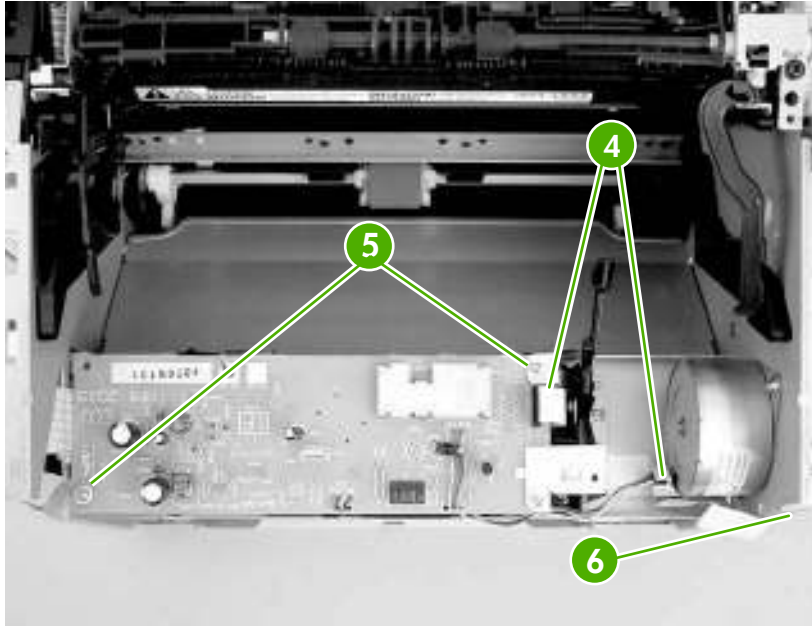


Figure 5-33 Remove the ECU assembly (6 of 6)



Reinstallation tip When reinstalling the ECU metal casing, make sure that the laser/scanner shutter lever is inserted correctly through the plastic guide.

Laser/scanner assembly

1. Remove the following assemblies.
 - Right-side cover. See [Right-side cover on page 64](#).
 - Left-side cover. See [Left-side cover on page 66](#).
 - Top-cover assembly. See [Rear panel and top-cover assembly on page 66](#).
 - Front-cover. See [Front cover on page 71](#).
 - Engine-control unit assembly. See [Engine control unit \(ECU\) assembly on page 80](#).
2. Remove four screws (callout 1) and then remove the laser/scanner assembly.

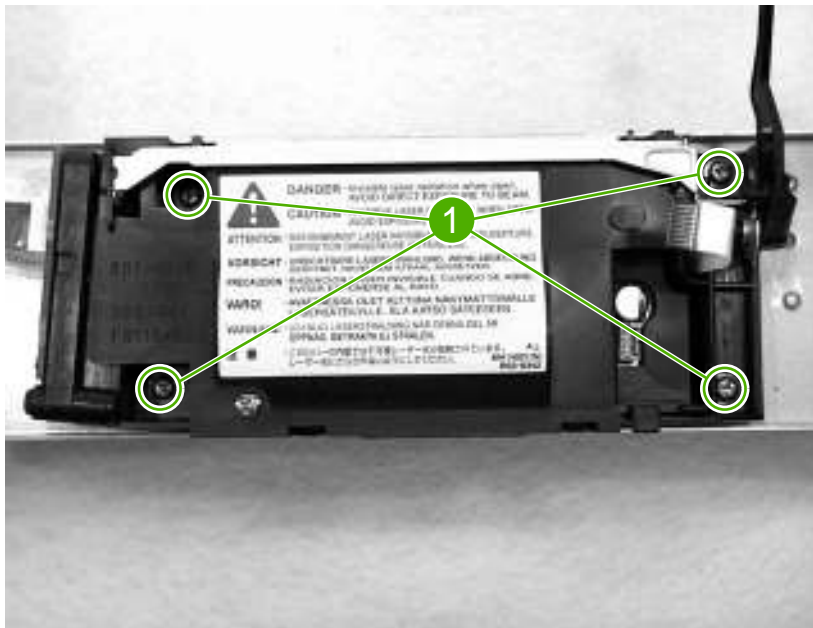


Figure 5-34 Remove the laser/scanner assembly



Reinstallation tip When replacing the laser/scanner assembly, be sure to transfer the laser shutter arm from the old assembly to the new one.

6 Troubleshooting

This chapter describes how to isolate and resolve printer problems, print-quality problems, and media problems. Troubleshooting details are provided to resolve problems or to isolate replaceable parts.

- [Basic troubleshooting](#)
- [Control-panel lights](#)
- [Jams](#)
- [Print-quality troubleshooting](#)
- [Solving paper-feed problems](#)
- [Functional checks](#)
- [Troubleshooting tools](#)
- [Solenoid, sensors, switches, and motor](#)

Basic troubleshooting

Troubleshooting checklist

Table 6-1 Basic troubleshooting

Did the printer turn on?

Cause	Solution
No power is available because the power source, cable, or switch failed.	<ol style="list-style-type: none">1. Verify that the product is plugged in. Make sure that the printer is plugged directly into a working wall receptacle.2. Verify that the power cable is functional and that the power switch is on.3. If these conditions are correct, replace the engine power assembly.
The printer motor does not rotate.	<ol style="list-style-type: none">1. Make sure that the printer is plugged directly into a working wall receptacle.2. Verify that the print-cartridge door is closed.3. Verify that the print path is clear. If it is, verify that the print-path paper-sensor arms are clean and functional.4. Verify that the cable from the ECU to the motor is connected.5. If these conditions are correct, replace the ECU. See Engine control unit (ECU) assembly on page 80.6. If, after replacing the ECU, the printer motor still does not rotate, replace the engine-power assembly. See Engine-power assembly on page 75.7. If, after replacing the ECU and engine-power assembly, the printer motor still does not rotate, replace the printer.

The motor rotates, but the lights are not on.

Is the product ready?

Cause	Solution
The formatter is damaged or has a loose connection.	Verify that the formatter cables are connected correctly. If all cables are undamaged and seated correctly but the problem persists, replace the printer.

Table 6-1 Basic troubleshooting (continued)

Is the software installed correctly?

Cause	Solution
The software is not installed correctly, or an error occurred during software installation.	Uninstall and then reinstall the product software. Make sure that you use the correct installation procedure and the correct port setting.

Connect the USB cable to the printer and the computer. Print a test page from the Printer Properties dialog box.

Does the product print from the computer?

Cause	Solution
The cable is not connected correctly.	Reconnect the cable.
An incorrect driver is selected.	Select the correct driver.

Control-panel lights

The **Attention** and **Ready** lights indicate printer status and errors.

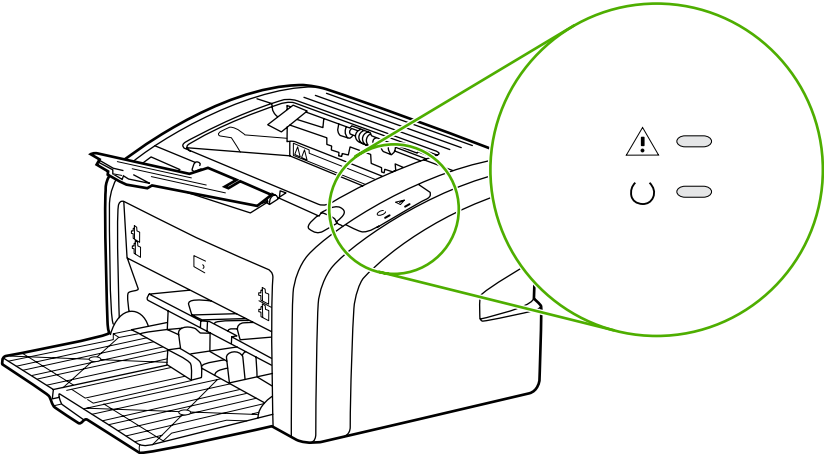


Figure 6-1 Control-panel lights

Status-light patterns




-  Off
-  On
-  Blinking

Figure 6-2 Control-panel-light legend

Table 6-2 Control-panel light patterns







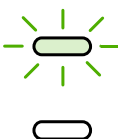
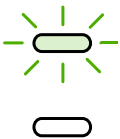
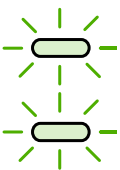


Light status	State of the printer	Action
	Ready The product is ready to print.	No action is necessary.
		
	Processing data The product is receiving of processing data.	Wait for the job to print.
		
	Cleaning mode A cleaning page is printing.	Wait until the cleaning page has finished and the printer is in the Ready state. This could take up to two minutes.
		

Table 6-2 Control-panel light patterns (continued)

Light status	State of the printer	Action
	Out of memory The printer is out of memory.	The page you are printing might be too complex for the printer's memory capacity. Try lowering the resolution.
	Attention: door open, no print cartridge, or media jam The printer is in an error state that requires operator intervention.	Check the following: <ul style="list-style-type: none"> • The print cartridge door must be completely closed. • The print cartridge is correctly installed. • There is no media jam.
	Printer initialization The printer is initializing.	No action is necessary.
	Fatal error	Turn off the printer, and then unplug the printer power cord for 30 minutes. Plug the printer power cord into the power outlet, and then turn the printer on. If the error persists, replace the printer. See Printer exchange/parts on page 120 .
	Both lights are off.	Make sure that the power switch is in the on position. Make sure that the printer power cord is plugged into a active power outlet. Unplug both ends of the printer power cord, and then plug the power cord back into the printer and the power outlet.

Jams

Clearing jams



CAUTION Do not use sharp objects, such as tweezers or needle nose pliers, to remove jams. Damage caused by sharp objects will not be covered by the warranty.

CAUTION Always pull jammed media in the direction it would travel through the paper path. *Do not* pull jammed media against the direction of travel through the paper path to avoid damage to the printer.

To prevent damage to the printer when clearing jams, including jams in the output bin, always open the print-cartridge door and remove the print cartridge. Keep the door open and the cartridge out until the jam has been cleared. Opening the print-cartridge door and removing the print cartridge relieves tension on the printer rollers, which prevents damage to the printer and makes the removal of jammed pages easier.

Occasionally, media becomes jammed during a print job. You are notified of a media jam by an error from the software and the printer control panel lights. See [Control-panel lights on page 88](#).

The following are some of the causes of media jams:

- The input trays are loaded improperly or are too full. See [Loading media on page 21](#).



NOTE When you add new media, always remove all of the media from the input tray and straighten the stack of new media. This helps prevent multiple sheets of media from feeding through the printer at one time, reducing media jams.

- The media does not meet HP specifications. See [Media specifications on page 16](#).

Typical media jam locations

- **Print cartridge area:** See [HP LaserJet 1018 printer on page 3](#).
- **Input tray area:** If the page is still sticking out of the input tray, gently try to remove it from the input tray without tearing the page. If you feel resistance, see [HP LaserJet 1018 printer on page 3](#).
- **Output path:** If the page is sticking out of the output bin, see [HP LaserJet 1018 printer on page 3](#).



NOTE There might be loose toner in the printer after a media jam. This toner clears up after a few sheets are printed.

Removing a jammed page

Use the procedures in this section to remove a jam.

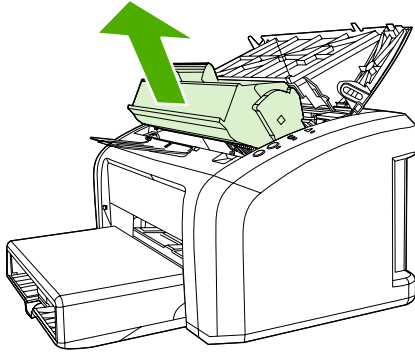


CAUTION Media jams might result in loose toner on the page. If you get any toner on your clothes, wash them in cold water. *Hot water will permanently set the toner into the fabric.*

CAUTION To prevent damage to the printer when clearing jams, including jams in the output bin, always open the print cartridge door and remove the print cartridge.

To prevent damage to the print cartridge, minimize its exposure to direct light. Cover the print cartridge with a sheet of paper.

1. Open the print cartridge door, and remove the print cartridge.

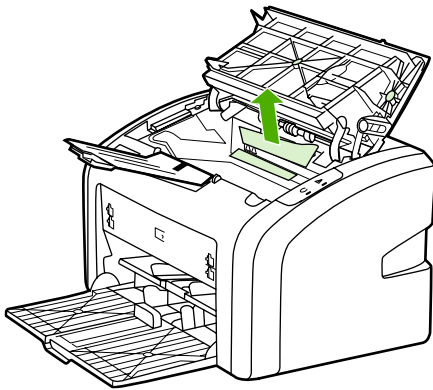


2. Grasp the middle edge of the side of the media that is most visible, and carefully pull it free from the printer.

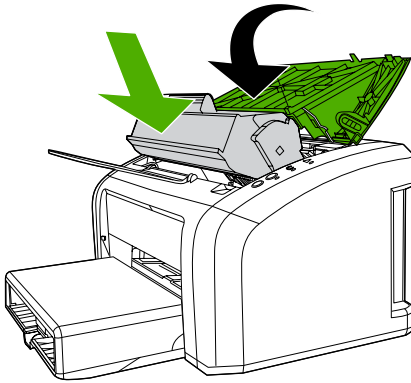


CAUTION Do not use sharp objects, such as tweezers or needle nose pliers, to remove jams. Damage caused by sharp objects will not be covered by the warranty.

CAUTION Always pull jammed media in the direction it would travel through the paper path. *Do not* forcefully pull jammed media against the direction of travel through the paper path to avoid damage to the printer.



3. When you have removed the jammed media, replace the print cartridge, and close the print cartridge door.



After clearing a media jam, you might need to turn the printer off then on again.



NOTE When you add new media, remove all of the media from the input tray and straighten the stack of new media.

Print-quality troubleshooting

Print-cartridge problems

Checking the print cartridge

Image-formation defects are frequently the result of problems in the print cartridge. If there is any doubt, always replace the print cartridge before troubleshooting image defects.



Hint If the transfer roller was recently replaced, print-quality problems might be the result of skin oils on the black-sponge portion of the transfer roller. *Do not* touch the black-sponge portion of the transfer roller when replacing it.

Use the following checklist to make sure that the print cartridge is still operable.

- Make sure that the print cartridge is installed properly and the shipping tape is removed.
- Check the print cartridge to see if it has been disassembled or refilled.
- Inspect the print cartridge to see if toner is leaking through worn seals.
- Check the surface of the photosensitive drum in the cartridge to see if it has been damaged or scratched. Touching the drum contaminates the photosensitive surface and can cause spotting and image defects.
- Blurred areas on printed pages indicate that the photosensitive drum in the cartridge has been overexposed to light. Because overexposure to light causes permanent damage to the photosensitive drum, the cartridge should be replaced.

To redistribute toner in the print cartridge

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

Solving print-quality problems

Use the following tables to help solve problems with printed pages.

If the problem occurs when printing, see [Solving paper-feed problems on page 105](#).

Table 6-3 Solving print-quality problems

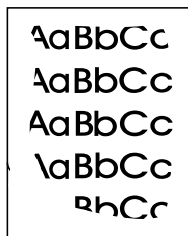
No page is produced.	
Cause	Solution
The product is not plugged in or power switch is off.	Make sure that the product is plugged into a live wall outlet or power strip and that the on/off switch is in the on position.
The printer is registering a jam.	Check the lights. If the Attention light is flashing, the printer might be jammed. Clear the jam.
The computer cable is loose.	Make sure that the cable between the product and the computer is securely connected.

Table 6-3 Solving print-quality problems (continued)

Output pages are blank.

Cause	Solution
The tape was not removed from the print cartridge.	Remove the print cartridge, remove the tape, and reinstall the print cartridge.
The print cartridge is out of toner.	Replace the print cartridge
The high-voltage connection between the printer and the print cartridge has been interrupted.	Perform a High-voltage-contacts check on page 110 .
The laser/scanner shutter lever is not installed correctly or is broken.	<p>If the ECU was recently replaced, make sure that the laser/scanner shutter lever was inserted correctly through the plastic guide in the sheet-metal ECU cover when the cover was reinstalled. See Engine control unit (ECU) assembly on page 80.</p> <p>If the laser/scanner shutter is broken, replace the printer. See Printer exchange/parts on page 120.</p>

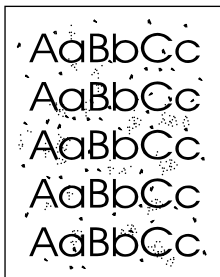
Parts of the page around the edges are not printing.



Cause	Solution
The printer cannot print all the way to the edge of the paper. The printer has minimum margins on each edge of approximately 6 mm (0.25 inch).	To make the image fit into this printable area, slightly reduce the size of the image. Open the Printer Properties dialog box, and then select Printing Preferences . Select the Effects tab and then click on the Print Document On check box in the Fit to Page area of the dialog box. If the a page size other than Letter is used, select the appropriate page size from the drop down menu. Click OK to close the Printing Preferences dialog box, and then click OK again to close the Printer properties dialog box.
The reduction setting is incorrect.	To make changes to the reduction settings, open the Printer Properties dialog box, and then select Printing Preferences . Select the Effects tab and then change the reduction settings in the Fit to Page area of the dialog box. Click OK to close the Printing Preferences dialog box, and then click OK again to close the Printer properties dialog box.
The paper-size setting is incorrect.	To make a change to the paper-size settings, open the Printer Properties dialog box, and then select Printing Preferences . Select the correct paper-size setting from the Size is drop down menu. Click OK to close the Printing Preferences dialog box, and then click OK again to close the Printer properties dialog box.

Table 6-3 Solving print-quality problems (continued)

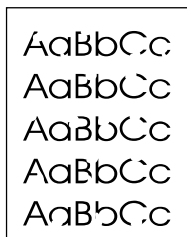
Random toner specks appear on the printed page.



Cause	Solution
The media in use does not meet HP specifications (for example, it is too moist or too rough).	Make sure that the media meets specifications detailed in the <i>HP LaserJet Printer Family Print Media Guide</i> .
The print path is dirty.	Clean the print path (see Cleaning the print path on page 26).

Table 6-3 Solving print-quality problems (continued)

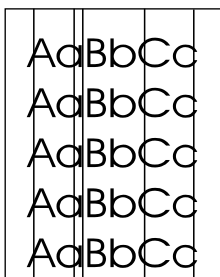
Characters are only partially printed (also referred to as dropouts).



Cause	Solution
A single sheet of paper is defective.	Try reprinting the job.
The print density needs to be adjusted.	Open the Printer Properties dialog box, and then select the Configure tab. Use the slide bar in the Print Density area of the dialog box to change the print density setting. Click OK to close the Printer Properties dialog box.
The moisture content of the paper is inconsistent, or the paper has moist or wet spots on the surface.	Make sure that the media meets the specifications detailed in the <i>HP LaserJet Printer Family Print Media Guide</i> .
The paper was damaged by inconsistent manufacturing processes.	Make sure that the media meets the specifications detailed in the <i>HP LaserJet Printer Family Print Media Guide</i> .
Economode is enabled.	Open the Printer Properties dialog box, and then select Printing Preferences . Select the Finishing tab, and then clear the EconoMode (Save Toner) check box. Click OK to close the Printing Preferences dialog box, and then click OK again to close the Printer properties dialog box.
The wrong type of media is selected in the Printer Preferences dialog box.	Open the Printer Properties dialog box, and then click Printing Preferences . Select the correct media type from the Type Is drop down menu. Click OK to close the Printing Preferences dialog box, and then click OK again to close the Printer properties dialog box.
The print cartridge is depleted or damaged.	Replace the print cartridge.
Rarely, the fuser might be damaged.	Replace the fuser.

Table 6-3 Solving print-quality problems (continued)

Vertical black lines appear on the printed page.



Cause	Solution
The print cartridge is depleted or damaged.	Replace the print cartridge.
Rarely, the fuser is defective.	Replace the fuser.

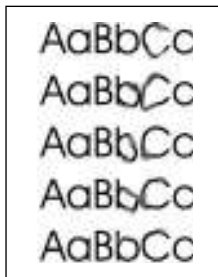
The printed page has a gray background.



Cause	Solution
The wrong type of media is selected in the Printer Preferences dialog box.	Open the Printer Properties dialog box, and then click Printing Preferences . Select the correct media type from the Type Is drop down menu. Click OK to close the Printing Preferences dialog box, and then click OK again to close the Printer properties dialog box.
The print density is too high.	Open the Printer Properties dialog box, and then select the Configure tab. Use the slide bar in the Print Density area of the dialog box to change the print density setting. Click OK to close the Printer Properties dialog box.
The media basis weight is too high.	Change the media to a lower basis weight.
The print path needs to be cleaned.	Clean the print path (see Cleaning the print path on page 26).
The printer is operating in humidity or temperature conditions that are not within the recommended ranges.	Move the product to a different location.
The print cartridge is worn, damaged, or has been refilled.	Replace the print cartridge.

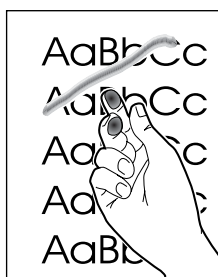
Table 6-3 Solving print-quality problems (continued)

Toner smears appear on the printed page.



Cause	Solution
If toner smears appear on the leading edge of the media, the media guides might be dirty.	Wipe the media guides with a dry, lint free cloth.
The print path needs to be cleaned.	Clean the print path (see Cleaning the print path on page 26).
The media in use does not meet HP specifications (for example, it is too moist or too rough).	Make sure that the media meets the specifications detailed in the <i>HP LaserJet Printer Family Print Media Guide</i> .
The print cartridge is worn or damaged.	Replace the print cartridge.
The wrong type of media is selected in the Printer Preferences dialog box.	Open the Printer Properties dialog box, and then click Printing Preferences . Select the correct media type from the Type Is drop down menu. Click OK to close the Printing Preferences dialog box, and then click OK again to close the Printer properties dialog box.
The fuser is damaged.	Perform the Half self-test functional check on page 107 . If the error persists, replace the fuser. If, after replacing the fuser, the error persists, replace the ECU.

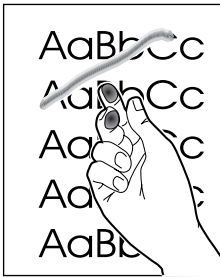
The toner is loose, and it does not stay attached to the printed page.



Cause	Solution
The media in use does not meet HP specifications (for example, it is too moist or too rough).	Make sure that the media meets the specifications detailed in the <i>HP LaserJet Printer Family Print Media Guide</i> .
The print path needs to be cleaned.	Clean the print path. See Cleaning the print path on page 26 .
The wrong type of media is selected in the Printer Preferences dialog box.	Open the Printer Properties dialog box, and then click Printing Preferences . Select the correct media type from the Type Is drop down menu. Click OK to close the Printing Preferences dialog box, and then click OK again to close the Printer properties dialog box.

Table 6-3 Solving print-quality problems (continued)

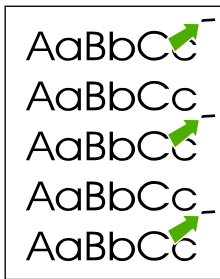
The toner is loose, and it does not stay attached to the printed page.



Cause	Solution
	the Type Is drop down menu. Click OK to close the Printing Preferences dialog box, and then click OK again to close the Printer properties dialog box.
The power strip is not working correctly or the ac power does not meet the specified requirements.	Plug the product directly into an ac outlet. Ensure that the power source is clean.
The printer is operating in humidity or temperature conditions that are not within the recommended ranges.	Move the product to a different location.
The fuser is damaged.	Perform a Half self-test functional check on page 107 . If the error persists, replace the fuser. If, after replacing the fuser, the error persists, replace the engine power assembly.

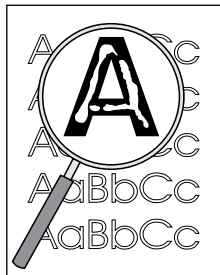
Table 6-3 Solving print-quality problems (continued)

Repetitive vertical defects appear on the printed page.



Cause	Solution
The internal parts have toner on them.	If the defects occur on the back of the page, the problem will probably correct itself after a few more printed pages. Otherwise, clean the printer (see Cleaning the print path on page 26).
The wrong type of media is selected in the Printer Preferences dialog box.	Open the Printer Properties dialog box, and then click Printing Preferences . Select the correct media type from the Type Is drop down menu. Click OK to close the Printing Preferences dialog box, and then click OK again to close the Printer properties dialog box.
If the repetitive mark occurs at equal distance on the page, then the print cartridge, transfer roller, paper-pickup assembly, or fuser is damaged.	Use the repetitive-image-defect ruler to identify the spacing. Check the appropriate assembly and replace it if necessary. (Repetitive-image-defect ruler on page 112)

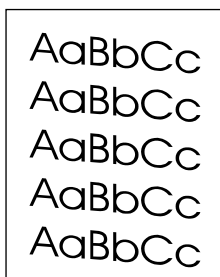
Characters are poorly formed and are producing hollow images.



Cause	Solution
The wrong type of media is selected in the Printer Preferences dialog box.	Open the Printer Properties dialog box, and then click Printing Preferences . Select the correct media type from the Type Is drop down menu. Click OK to close the Printing Preferences dialog box, and then click OK again to close the Printer properties dialog box.
The media is too slick or too thick.	Try a different media. Make sure that the media meets specifications detailed in the <i>HP LaserJet Printer Family Print Media Guide</i> .

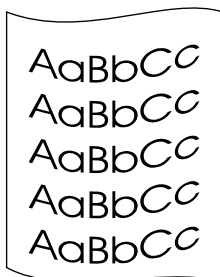
Table 6-3 Solving print-quality problems (continued)

Pages are skewed.



Cause	Solution
The media is loaded incorrectly.	Reload the media, and make sure that the side and rear media guides are not too tight against the media stack or too loose.
The input tray is too full.	Remove some of the sheets. The main input tray can hold up to 150-sheets of 75-g/m ² (20-lb) bond-weight paper (or fewer pages of heavier media), or a stack no higher than 25 mm (0.98 inch). The priority input tray can hold up to ten sheets of 75-g/m ² (20-lb) bond-weight paper, one sheet of heavier media, or one envelope or card.
The media in use does not meet HP specifications (for example, it is too moist or too rough).	Make sure that the media meets the specifications detailed in the <i>HP LaserJet Printer Family Print Media Guide</i> .

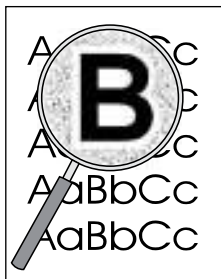
The printed page has curls or waves.



Cause	Solution
The printer is operating in humidity or temperature conditions that are not within the recommended ranges.	Move the product to a different location.
The wrong type of media is selected in the Printer Preferences dialog box.	Open the Printer Properties dialog box, and then click Printing Preferences . Select the correct media type from the Type Is drop down menu. Click OK to close the Printing Preferences dialog box, and then click OK again to close the Printer properties dialog box.
The media in use does not meet HP specifications (for example, it is too moist or too rough).	Make sure that the media meets the specifications detailed in the <i>HP LaserJet Printer Family Print Media Guide</i> .
The media was in the input tray for too long.	<ol style="list-style-type: none"> 1. Turn the stack of media over and put it back in the tray. 2. Rotate the media 180° and put it back in the tray.

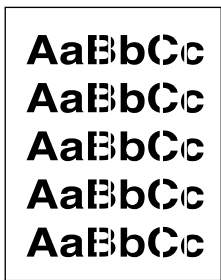
Table 6-3 Solving print-quality problems (continued)

Large amounts of toner are scattered around the characters.



Cause	Solution
The media resistivity is too high. (This most often happens when transparencies acquire a static charge.)	<ol style="list-style-type: none">1. Use a different media. Make sure that the media meets the specifications detailed in the <i>HP LaserJet Printer Family Print Media Guide</i>.2. Turn the stack of media over and put it back in the tray.3. Use media (particularly transparencies) that is designed for laser printers.
The printer is operating in humidity or temperature conditions that are not within the recommended ranges (often, the humidity is too low).	Move the product to a different location.

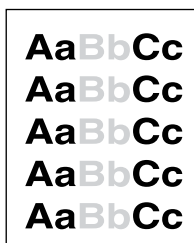
Vertical white stripes appear.



Cause	Solution
The toner is low or poorly distributed in the print cartridge.	Gently rock the print cartridge back and forth to redistribute the toner (see the illustration on the print cartridge). Replace the print cartridge.
The media you are using does not meet HP specifications (for example, it is too moist or too rough).	Make sure that the media meets the specifications detailed in the <i>HP LaserJet Printer Family Print Media Guide</i> .

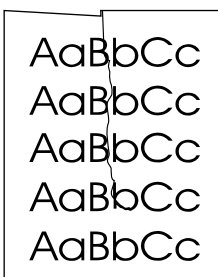
Table 6-3 Solving print-quality problems (continued)

Printout is faded in areas.



Cause	Solution
If the entire page is light, the print density is too light or Econmode might be turned on.	Open the Printer Properties dialog box, and then click Printer preferences . Select the Finishing tab and make sure that the EconoMode (Save Toner) check box is not selected. Select OK to close the Printer Preferences dialog box. Select the Configure tab in the Printer Properties dialog box. Use the slide bar in the Print Density area of the dialog box to change the print density setting. Click OK to close the Printer Properties dialog box.
The printer is operating in humidity or temperature conditions that are not within the recommended ranges.	Move the product to a different location. Increase airflow around the printer to prevent condensation on the laser/scanner lens.
The toner is low or poorly distributed in the print cartridge.	Gently rock the print cartridge back and forth to redistribute the toner (see the illustration on the print cartridge). Replace the print cartridge.

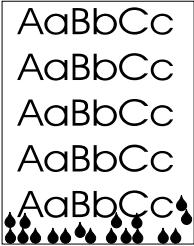

Wrinkles or creases appear in the printout



Cause	Solution
The media is not properly loaded.	Make sure the media is correctly loaded.
Damage or reused media is being used.	Do not use media that is damaged or has already been put through a copier or printer.
The media you are using does not meet HP specifications (for example, it is too moist or too rough).	Make sure that the media meets the specifications detailed in the <i>HP LaserJet Printer Family Print Media Guide</i> .

Table 6-3 Solving print-quality problems (continued)

Droplets of water are deposited on the trailing edge

	
Cause	Solution
Moisture in the printer is condensing on the fuser assembly. In excessively hot and humid areas, media retains moisture.	Try moving the printer to a less humid area. Try a different media.
<div> NOTE Water droplets do not damage the printer.</div>	

Solving paper-feed problems

Use the following table to solve problems related to moving paper or documents through the product.

Table 6-4 Solving paper-feed problems

Pages are coming out curled or wrinkled.

Cause	Solution
Paper curl is inherent to the laser printing processes, and occurs when paper is subjected to heat. Paper curl tends to relax as the paper cools while resting on a flat surface.	Make sure that the media meets the specifications detailed in the <i>HP LaserJet family Print Media Guide</i> .
Paper is not stored properly.	Whenever possible, store paper in its sealed ream at room temperature.
The media is too long for the printer output bin.	Use the output-bin extension.
The printer is operating in humidity or temperature conditions that are not within the recommended ranges.	Move the product to a different location.
The wrong type of media is selected in the Printer Preferences dialog box.	Open the Printer Properties dialog box, and then click Printing Preferences . Select the correct media type from the Type Is drop down menu. Click OK to close the Printing Preferences dialog box, and then click OK again to close the Printer properties dialog box.
The media you are using does not meet HP specifications (for example, it is too moist or too rough).	Make sure that the media meets the specifications detailed in the <i>HP LaserJet Printer Family Print Media Guide</i> .
The media was in the input tray for too long.	<ol style="list-style-type: none">1. Turn the stack of media over and put it back in the tray.2. Rotate the media 180° and put it back in the tray.

Print is misaligned on the page (skewed pages).

Cause	Solution
The media is loaded incorrectly.	Reload the media, and make sure that the side and rear media guides are not too tight against the media stack or too loose.
The input tray is too full.	Remove some of the sheets. The main input tray can hold up to 150 sheets of 75 g/m ² (20-lb) bond-weight paper (or fewer pages of heavier media), a stack no higher than 25 mm (.98 inch). The priority input tray can hold up to ten sheets of 75 g/m ² (20-lb) bond-weight paper, one sheet of heavier media, or one envelope or card.
The media you are using does not meet HP's specifications (for example, it is too moist or too rough).	Make sure that the media meets the specifications detailed in the <i>HP LaserJet Printer Family Print Media Guide</i> .

Table 6-4 Solving paper-feed problems (continued)**The printer feeds multiple sheets or jams frequently from the main input tray or priority input slot.**

Cause	Solution
The paper guides are not adjusted correctly or the paper is not far enough forward.	Slide the guides against the sides of the stack in the main input tray or the priority input slot to center the paper. Make sure that the guides are not adjusted too tightly.
The stack is not neat or not aligned well on all sides.	Remove the media, and then align stack and replace it.
The main input tray is overfilled.	Remove some of the sheets. The main input tray can hold up to 250 sheets of 75 g/m ² (20-lb) bond-weight paper (less for heavier paper) or from 20 to 30 envelopes.
The priority input slot is overfilled.	Remove media or feed single sheets. The priority input slot is designed for optimal feeding of single sheets, especially when heavier media is used. It can hold up to ten sheets of 75 g/m ² (20-lb) bond-weight paper (one sheet of heavier paper) or one envelope.
The paper was poorly cut by the manufacturer and is sticking together.	“Break” the ream of paper by curving it into an upside-down u-shape; this can effectively decrease multifeeds. Also try turning the paper around to feed the opposite end first, or use a different type of paper.
The paper does not meet HP specifications for print media.	Make sure that the media meets the specifications detailed in the <i>HP LaserJet Printer Family Print Media Guide</i> .
The output capacity was exceeded in the output bin.	Do not allow more than 125 sheets of 75 g/m ² (20-lb) bond-weight paper (less for heavier paper) to fill the paper output bin.
The pickup roller is dirty.	Clean the pickup roller.
The pickup roller is damaged.	Replace the pickup roller.
The separation pad is damaged.	Replace the separation pad.
A sensor is not operating correctly.	The chances of a sensor failing are very small. However, debris around the sensor arms can cause them to register a jam. Three sensors are in the printer: top-of-page sensor, paper-width sensor, and delivery sensor. Check them to ensure that the sensor arms can move freely. On the rare occasion of a failed sensor, replace the printer.

Functional checks

This section includes five functional checks for troubleshooting.

Half self-test functional check

The print process can be subdivided into the following stages:

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

To perform a half self-test check

The purpose of the half self-test check is to begin the printing process and then interrupt it in the middle. Examining the printer components at that point allows you to determine which stage in the print process is malfunctioning.

1. Open the **Printer Properties** dialog box. Select **Print Test Page** to print a test page. Click **OK** to close the **HP LaserJet 1018** test page troubleshooting dialog box. Click **OK** again to close the **Printer Properties** dialog box.
2. Open the print-cartridge door the instant the leading edge of the paper exits the printer.
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, then the first two functions of the electrophotographic process are functioning (image-formation and development). Any failure is occurring in the transfer or fusing stage.

To perform other checks

If no image appears on the photosensitive drum, perform these checks:

1. Make sure that you remove the entire length of the sealing tape from the print cartridge before you install the cartridge. If the tape is not removed, then toner cannot reach the drum.
2. Perform a drum-rotation functional check to ensure that the drum is rotating (see [Drum-rotation functional check on page 109](#)).
3. Perform a high-voltage contact check (see [High-voltage-contacts check on page 110](#)).

4. Check the fuser connections (callout 1) on the engine-power assembly. Also check the high voltage connection at the back side of the printer.



NOTE The following figure shows the HP LaserJet 1010 series products. The connections are located at the same place on the HP LaserJet 1018 printer.

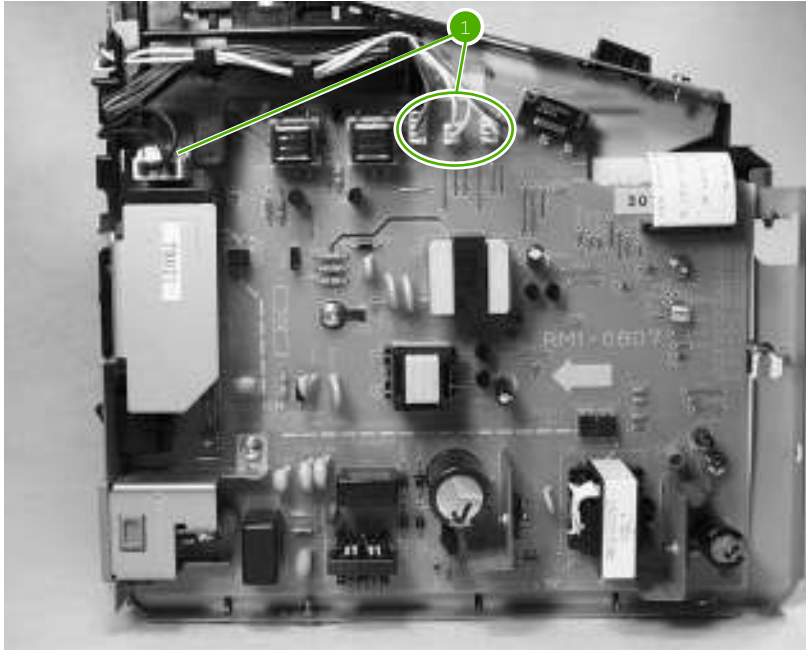


Figure 6-3 Check the fuser connections (HP LaserJet 1010 series shown)

If a transfer problem exists, replace the transfer roller (*do not* touch the black-sponge portion of the transfer roller). If a fuser problem exists, first check to make sure that the four cables to the fuser are correctly seated in the engine-power assembly.

Drum-rotation functional check

The photosensitive drum, which is located in the print cartridge, must rotate in order for the print process to work. The photosensitive drum receives its drive from the main motor through a system of gears on the right side of the printer.



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

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

If the mark did not move, inspect the drive shaft that moves into the print-cartridge area when the print-cartridge door is closed to make sure that it is meshing with the print cartridge. If the drive shaft looks functional and the drum does not move, replace the print cartridge. If the drive shaft is damaged, replace the printer.

High-voltage-contacts check

The high-voltage contacts in the printer must have a good connection with the contacts on the print cartridge to provide the necessary voltages for the electrophotographic processes.

To check the print-cartridge contacts

Remove the print cartridge and visually inspect the three connection points (callout 1) on the end of the print cartridge. If they are dirty or corroded, clean the connection. If they are damaged, replace the print cartridge.



NOTE Use a dry cloth to clean the connections.



Figure 6-4 Print-cartridge high-voltage contacts

To check the printer high-voltage contacts

The printer has three spring-loaded pins (callout 1) that make contact with the high-voltage points on the print cartridge. Verify that the pins are not dirty or corroded and that the spring-loading action is functional. If the pins are dirty or obstructed, clean them. If they are damaged, replace the printer.

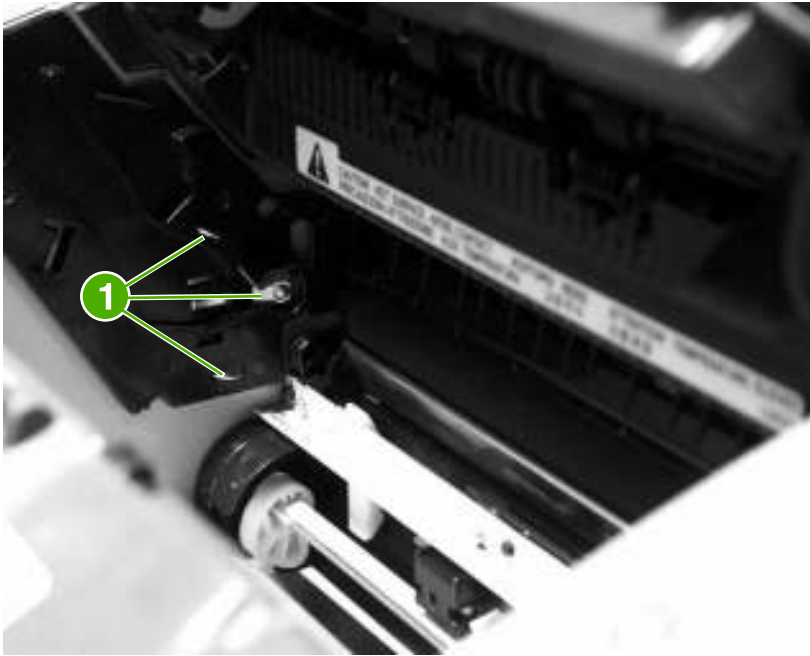


Figure 6-5 Printer high-voltage contacts

Troubleshooting tools

If the printer output has a consistent, repetitive defect, then use the following ruler to predict which part needs to be replaced based on the measured distance between the repetitions of the defect.

Repetitive-image-defect ruler

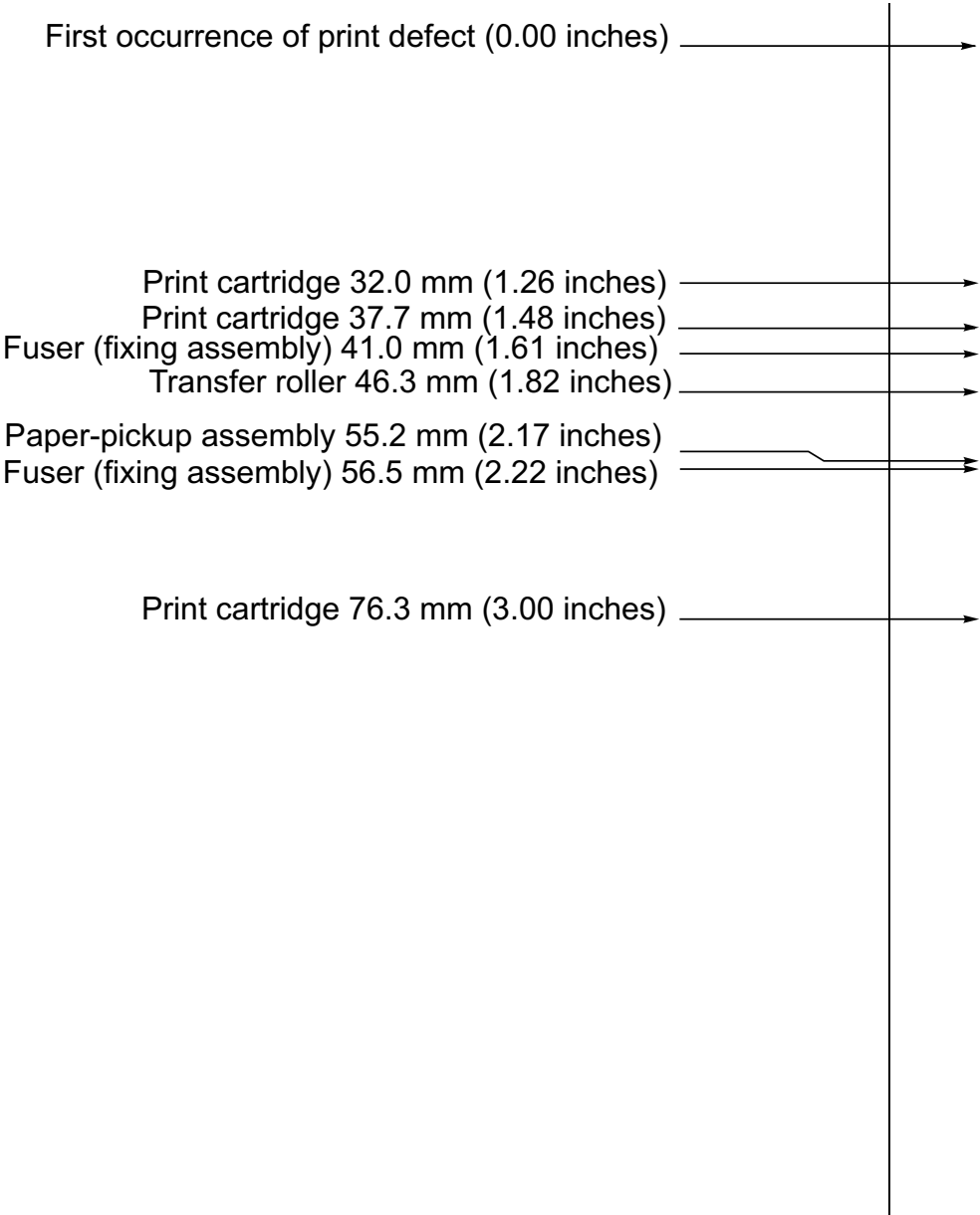
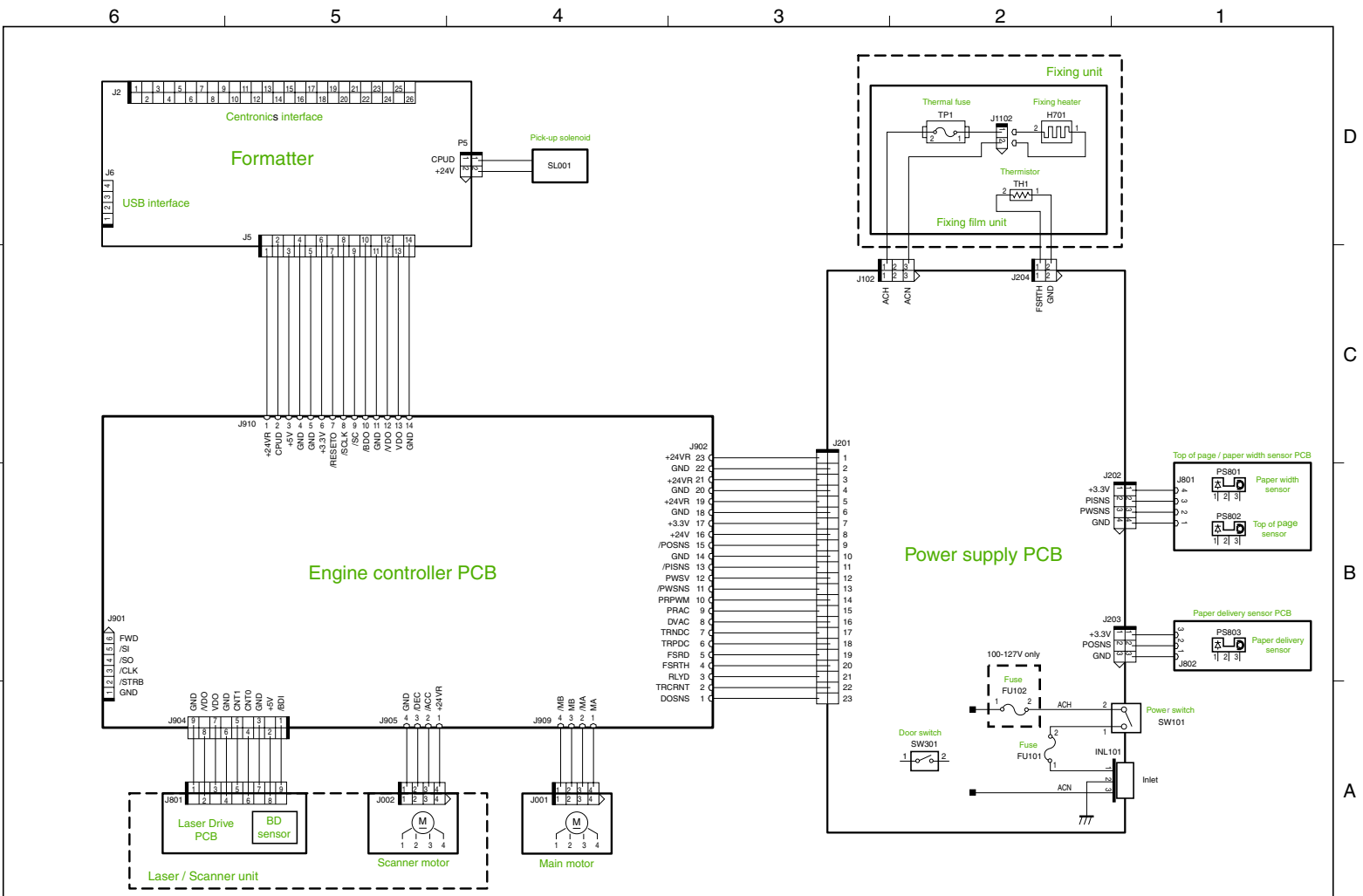


Figure 6-6 Repetitive-image-defect ruler

Circuit diagram



Solenoid, sensors, switches, and motor

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

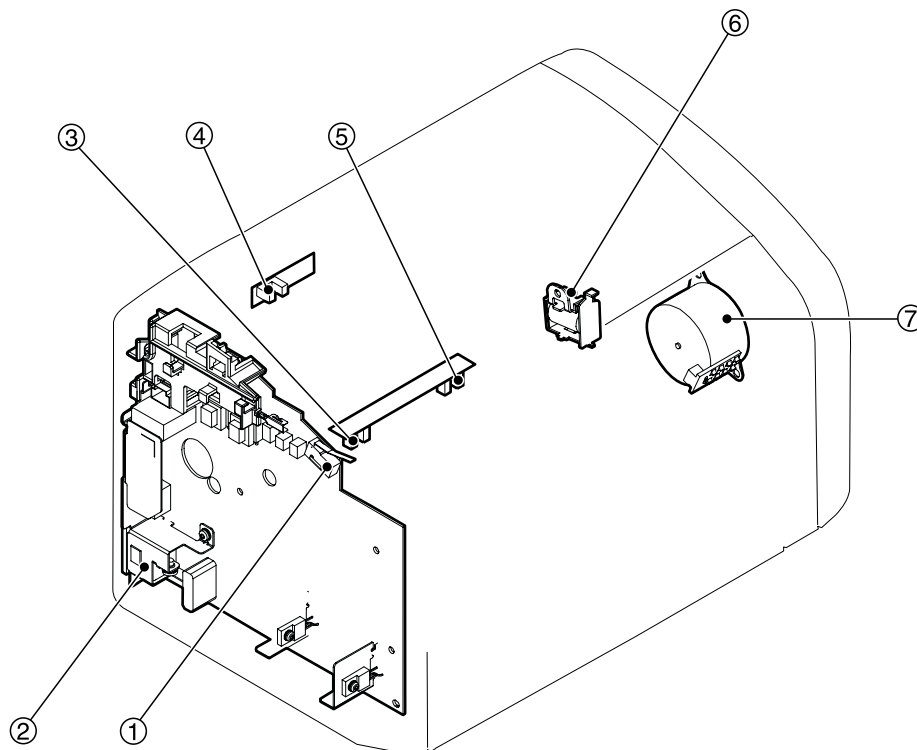


Figure 6-8 Solenoid, sensors, switches, and motor

1	The door switch detects whether or not the print-cartridge door is closed. Printing cannot continue until the print-cartridge door is closed.
2	Power switch
3	The paper-width sensor senses the width of the media.
4	The paper-delivery sensor senses when media has successfully moved out of the fusing area.
5	The top-of-page sensor detects the leading and trailing edges of the media. It synchronizes the photosensitive drum and the top of the media.
6	Solenoid
7	Motor

7 Parts and diagrams

This chapter provides an exploded view that shows the replaceable parts of the printer, tables of replaceable parts, and links to other resources.

- [Ordering parts and supplies](#)
- [Accessories and consumables](#)
- [Printer exchange/parts](#)
- [Major components](#)
- [Alphabetical parts list](#)
- [Numerical parts list](#)

Ordering parts and supplies

This section describes Web resources for ordering parts and for technical support, as well as resources for ordering related documentation and software.

Parts

Order replacement parts from the following Web site: <http://www.hp.com/go/hpparts>

Related documentation and software

Order documentation and software from the Web sites listed in [Table 7-1 Technical support websites on page 116](#).

Table 7-1 Technical support websites

HP Customer Care Online	http://www.hp.com/go/support
Software drivers, support documentation, and answers to frequently asked questions	
HP Technical Training (North America)	http://hp.com/go/onlinelearning
Classes and schedules	
Parts	http://www.hp.com/go/hpparts
Parts information	

Parts that wear

The parts that wear on the product are listed in chapter 3 of this manual. Parts are available directly from Hewlett-Packard at the following websites:

- HP Parts Store: <http://www.hp.com/buy/parts>
- Partsurfer: <http://partsurfer.hp.com>
- HP Parts Portal: <http://www.hp.com/go/hpparts>

Accessories and consumables

Accessories

Table 7-2 Accessories

Product name	Description	Product number	Part number	Exchange number
Replacement print cartridge	2,000–page cartridge	N/A	Q2612A	
Cables and interface accessories	3-meter IEEE-1284 parallel cable	N/A	C2951A	
Cables and interface accessories	1.8-meter (6-feet) USB cable	NA	8120-8485	
Cables and interface accessories	.6-meter (2-feet) USB cable	Q2460A	8121-0712	
Cables and interface accessories	Power cord, US/ Canada	NA	8120-6812	
Cables and interface accessories	Power cord, Europe	N/A	8120-6811	
Cables and interface accessories	Power cord, Switzerland	N/A	8120-6815	
Cables and interface accessories	Power cord, UK	N/A	8120-6809	
Cables and interface accessories	Power cord, Danish	N/A	8120-6814	
Cables and interface accessories	Power cord, SA	N/A	8120-6813	
Cables and interface accessories	Power cord, Israel	N/A	8120-6800	
Toner cloth	Ideal for wiping up toner spills and cleaning the printer	N/A	5090-3379	
CD ROM		N/A	CB419–60101	
CD-Service and Support Training		N/A	Q2460-60106	
Service Manual, HP LJ 1018 printer		N/A	CB419-90938	

¹ (NOTE: If two parts are listed for one country/region, you can use either part regardless of the output rating.)

Common hardware

The product uses common Phillips-head screws as fasteners.

How to use the parts lists and diagrams

The figures in this chapter illustrate the major subassemblies in the product. A table follows the exploded assembly diagram. Each table lists the reference designator, the associated part number for the item, and a description of the part.

Parts that have no reference designator or part number are not field replaceable units (FRUs) and cannot be ordered. Failure of a part that is not listed as replaceable and is not included with a listed FRU requires replacement of the entire printer.

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

Printer exchange/parts

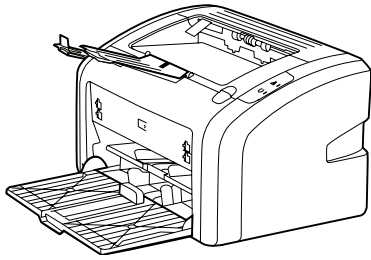


Figure 7-1 HP LJ 1018 product

Table 7-3 Printer exchange/parts

Ref	Description	Part number	Qty
	HP LJ 1018-110V printer (replacement)	CB419-60056	1
	HP LJ 1018-110V printer (exchange engine with formatter)	CB419-69056	1
	HP LJ 1018-110V printer (exchange engine without formatter)	CB419-67001	1
	HP LJ 1018-220V printer (replacement)	CB419-60055	1
	HP LJ 1018-220V printer (exchange engine with formatter)	CB419-69055	1
	HP LJ 1018-220V printer (exchange engine without formatter)	CB419-67002	1
not shown	HP LJ 1018 formatter	CB440-60001	1
not shown	Nameplate HP LJ	CB419-00002	1

Major components

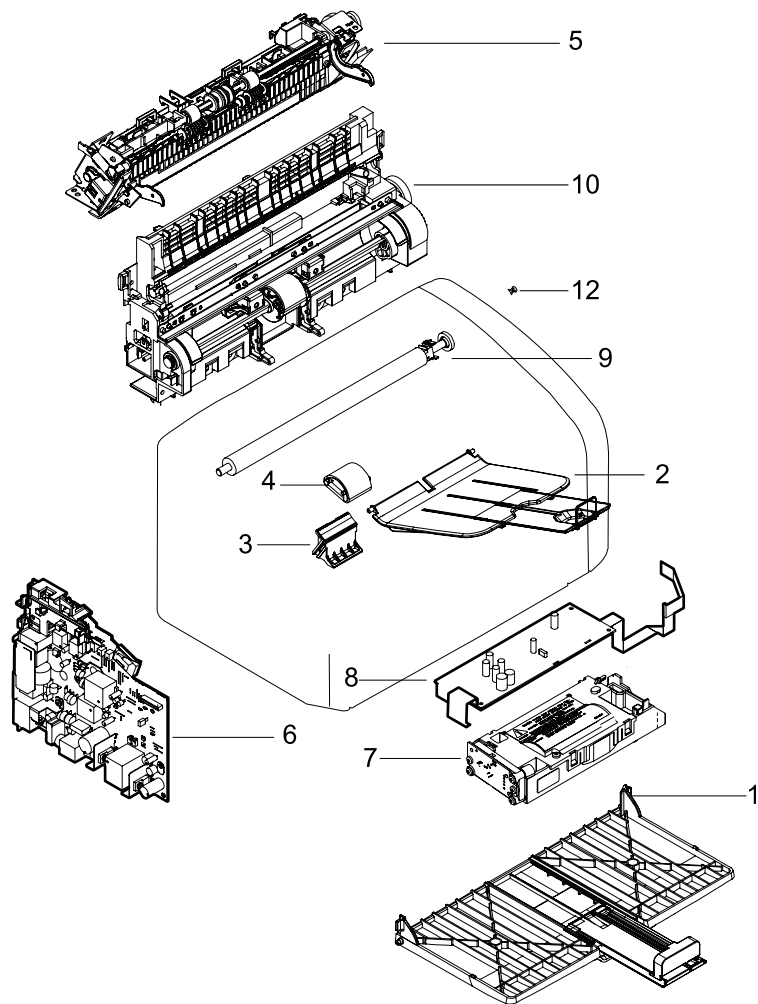


Figure 7-2 Major components (HP LJ 1010 series shown)

Table 7-4 Major components

Ref	Description	Part number	Qty
1	Paper pickup tray assembly	RM1-2079-000CN	1
2	Delivery tray assembly	RM1-0659-000CN	1
3	Separation pad assembly	RM1-0648-000CN	1
4	Roller, pickup	RL1-0266-000CN	1
5	Fuser (fixing assembly) 110V to 127V	RM1-2086-000CN	1
5	Fuser (fixing assembly) 220V to 240V	RM1-2087-000CN	1
6	Engine power supply 110V to 127V	RM1-2315-000CN	1
6	Engine power supply 220V to 240V	RM1-2316-000CN	1
7	Laser/scanner assembly	RM1-2084-000CN	1
8	Engine control assembly	RM1-2314-000CN	1
9	Transfer roller assembly	RM1-2093-000CN	1
10	Paper pickup assembly	RM1-2091-000CN	1
12	Door Link Clip (Stopper)	RM1-1957-000CN	1

Alphabetical parts list

Table 7-5 Alphabetical parts list

Description	Part number	Table and page
Delivery tray assembly	RM1-0659-000CN	Major components on page 123
Door Link Clip (Stopper)	RM1-1957-000CN	Major components on page 123
Engine control assembly	RM1-2314-000CN	Major components on page 123
Engine power supply 110V to 127V	RM1-2315-000CN	Major components on page 123
Engine power supply 220V to 240V	RM1-2316-000CN	Major components on page 123
Fuser (fixing assembly) 110V to 127V	RM1-2086-000CN	Major components on page 123
Fuser (fixing assembly) 220V to 240V	RM1-2087-000CN	Major components on page 123
HP LJ 1018-110V printer (exchange engine with formatter)	CB419-69056	Printer exchange/parts on page 120
HP LJ 1018-110V printer (replacement)	CB419-60056	Printer exchange/parts on page 120
HP LJ 1018-220V printer (exchange engine with formatter)	CB419-69055	Printer exchange/parts on page 120
HP LJ 1018-220V printer (replacement)	CB419-60055	Printer exchange/parts on page 120
HP LJ 1018-110V printer (exchange engine without formatter)	CB419-67001	Printer exchange/parts on page 120
HP LJ 1018-220V printer (exchange engine without formatter)	CB419-67002	Printer exchange/parts on page 120
HP LJ 1018 formatter	CB440-60001	Printer exchange/parts on page 120
Laser/scanner assembly	RM1-2084-000CN	Major components on page 123
Nameplate HP LJ	CB419-00002	Printer exchange/parts on page 120
Paper pickup assembly	RM1-2091-000CN	Major components on page 123
Paper pickup tray assembly	RM1-2079-000CN	Major components on page 123
Roller, pickup	RL1-0266-000CN	Major components on page 123

Table 7-5 Alphabetical parts list (continued)

Description	Part number	Table and page
Separation pad assembly	RM1-0648-000CN	Major components on page 123
Transfer roller assembly	RM1-2093-000CN	Major components on page 123

Numerical parts list

Table 7-6 Numerical parts list

Part number	Description	Table and page
CB419-60055	HP LJ 1018-220V printer (replacement)	Printer exchange/parts on page 120
CB419-60056	HP LJ 1018-110V printer (replacement)	Printer exchange/parts on page 120
CB419-69055	HP LJ 1018-220V printer (exchange engine with formatter)	Printer exchange/parts on page 120
CB419-69056	HP LJ 1018-110V printer (exchange engine with formatter)	Printer exchange/parts on page 120
CB419-00002	Nameplate HP LJ	Printer exchange/parts on page 120
CB419-67001	HP LJ 1018-110V printer (exchange engine without formatter)	Printer exchange/parts on page 120
CB419-67002	HP LJ 1018-220V printer (exchange engine without formatter)	Printer exchange/parts on page 120
CB440-60001	HP LJ 1018 formatter	Printer exchange/parts on page 120
RL1-0266-000CN	Roller, pickup	Major components on page 123
RM1-0648-000CN	Separation pad assembly	Major components on page 123
RM1-0659-000CN	Delivery tray assembly	Major components on page 123
RM1-2079-000CN	Paper pickup tray assembly	Major components on page 123
RM1-2084-000CN	Laser/scanner assembly	Major components on page 123
RM1-2086-000CN	Fuser (fixing assembly) 110V to 127V	Major components on page 123
RM1-2087-000CN	Fuser (fixing assembly) 220V to 240V	Major components on page 123
RM1-2091-000CN	Paper pickup assembly	Major components on page 123
RM1-2093-000CN	Transfer roller assembly	Major components on page 123
RM1-2314-000CN	Engine control assembly	Major components on page 123
RM1-2315-000CN	Engine power supply 110V to 127V	Major components on page 123

Table 7-6 Numerical parts list (continued)

Part number	Description	Table and page
RM1-2316-000CN	Engine power supply 220V to 240V	Major components on page 123
RM1-1957-000CN	Door Link Clip (Stopper)	Major components on page 123

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