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hp color LaserJet 4600
4600n, 4600dn, 4600dtn, 4600hdn



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hp color LaserJet 4600 series printer

service manual _____

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Conventions

This manual uses the following conventions:

- **COLOR** is used to emphasize items that are important to the material under discussion.
- **Bold** is used for menu items to click and for emphasis, particularly in situations where *italic* type would be confusing.
- *Italic* type is used to indicate related documents or emphasis.
- `DISPLAY` type indicates text as seen on the printer control panel display.
- Commands you use on a computer keyboard or on the printer control panel are shown in **KEYCAP**. Two examples are **PAUSE/RESUME** and **CANCEL JOB**.
- `COURIER` type indicates text that you type on a computer keyboard exactly as shown.

Note

Notes contain important information set off from the text.

CAUTION

Caution messages alert you to the possibility of damage to equipment or loss of data.

WARNING!

Warning messages alert you to the possibility of personal injury.

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Printer features

The HP Color LaserJet 4600 series printer pictured in Figure 1-1 has five models.

- The HP Color LaserJet 4600 printer is the base model; it contains 96 MB of SDRAM.
- The HP Color LaserJet 4600n printer is the base model with an HP Jetdirect 610N print server (this model is available only in Europe)
- The HP Color LaserJet 4600dn printer is the base model with an HP Jetdirect 610N print server (network card) and automatic 2-sided printing.
- The HP Color LaserJet 4600dtn printer is the base model with an HP Jetdirect 610N print server (network card), automatic 2-sided printing, additional 500-sheet paper feeder, and 160 MB of SDRAM.
- The HP Color LaserJet 4600hdn printer is the base model with an HP Jetdirect 610N print server (network card), automatic 2-sided printing, additional 500-sheet paper feeder, a hard disk, and 160 MB of SDRAM.

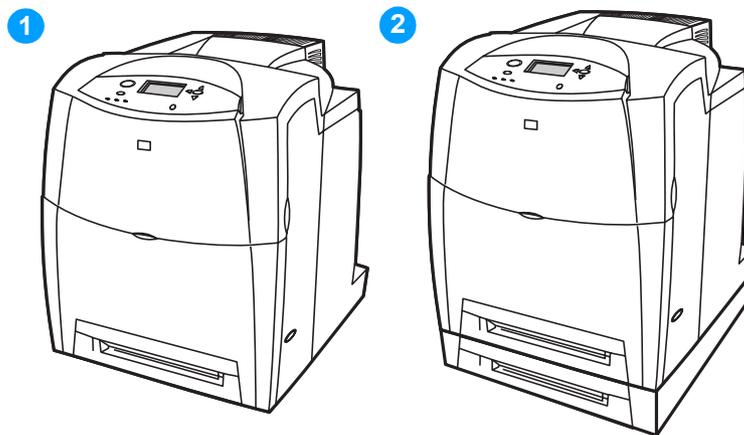


Figure 1-1 HP Color LaserJet 4600 series printers

- 1 HP Color LaserJet 4600, 4600n, and 4600dn printers
- 2 HP Color LaserJet 4600dtn and 4600hdn printers

This printer series combines the quality and reliability of Hewlett-Packard printers with the features listed in Table 1-1.

Table 1-1 Printer features

Feature	Description
Performance	<ul style="list-style-type: none">● 17 pages per minute (ppm) on letter-sized paper, 16 ppm on A4-sized paper.● Prints on transparencies and glossy paper.
Memory	<ul style="list-style-type: none">● 96 megabytes (MB) of synchronous dynamic random access memory (SDRAM) (160 MB in the HP Color LaserJet 4600dtn and 4600hdn printers).● Can be expanded to 512 MB.● Optional hard disk drive (included with the HP Color LaserJet 4600hdn printer).
User interface	<ul style="list-style-type: none">● Graphic display on control panel.● Enhanced Help with animated graphics.● Embedded Web server to access support and order supplies (network-connected printers).
Supported printer personalities	<ul style="list-style-type: none">● HP PCL 6.● HP PCL 5c.● PostScript 3 emulation.● Automatic language switching.
Storage features	<ul style="list-style-type: none">● Job retention (for printers with hard disks).● Fonts and forms.● Personal identification number (PIN) printing (for printers with hard disks).
Environmental features	<ul style="list-style-type: none">● PowerSave setting.● High content of recyclable components and materials.● Energy star compliant.● Blue Angel compliant.
Fonts	<ul style="list-style-type: none">● 80 internal fonts available for both PCL and PostScript emulation.● 80 printer-matching screen fonts in TrueType™ format available with the software solution.● Supports forms and fonts on the disk using HP Web Jetadmin.

Table 1-1 Printer features

Feature	Description
Paper handling	<ul style="list-style-type: none">● Prints on media from 77 mm by 127 mm (3 inches by 5 inches) up to legal size.● Prints on media with weights from 60 g/m² to 163 g/m² (16 lb bond to 43 lb bond).● Prints on a wide range of media types including glossy, labels, overhead transparencies, and envelopes.● Multiple gloss levels.● A 500-sheet input tray (Tray 2) that supports letter-, legal-, executive-, JIS B5-, A4-, and A5-sized and custom media.● Optional 500-sheet paper feeder (Tray 3) that supports letter-, legal-, executive-, JIS B5-, A4-, and A5-sized and custom media; standard on HP Color LaserJet 4600dtn and 4600hdn printers.● 2-sided printing on HP Color LaserJet 4600dn, 4600dtn, and 4600hdn printers.● 250-sheet face-down output bin.
Accessories	<ul style="list-style-type: none">● Printer hard disk, which provides storage for fonts and macros as well as job storage; standard on HP Color LaserJet 4600hdn.● Dual inline memory modules (DIMM).● Printer stand.● Optional 500-sheet paper feeder (Tray 3) that supports letter-, legal-, executive-, JIS B5-, A4-, and A5-sized media; standard on HP Color LaserJet 4600dtn and 4600hdn printers.● Flash DIMM.● Fast InfraRed (FIR) pod.
Connectivity	<ul style="list-style-type: none">● Optional enhanced input/output (EIO) network card; standard on HP Color LaserJet 4600n, 4600dn, 4600dtn, and 4600hdn printers.● FIR connection.● HP Web Jetadmin software.● Standard bidirectional parallel cable interface (IEEE-1284 compliant).
Supplies	<ul style="list-style-type: none">● Supplies status page contains information on toner level, page count, and estimated pages remaining.● No-shake cartridge design.● Printer checks for authentic HP print cartridges at cartridge installation.● Internet-enabled supply-ordering capabilities (using embedded Web server or printer Status and Alerts).

Identification

Model and serial numbers

The model number and serial numbers are listed on identification labels located on the rear of the printer. The model number is alphanumeric, such as C9660A for the HP Color LaserJet 4600. The serial number contains information about the country/region of origin, the printer version, production code, and the production number of the printer (see Figure 1-2).



Figure 1-2 Model and serial number information

Table 1-2 Model names and numbers

Model name	Model number
HP Color LaserJet 4600	C9660A
HP Color LaserJet 4600n	C9692A
HP Color LaserJet 4600dn	C9661A
HP Color LaserJet 4600dtn	C9662A
HP Color LaserJet 4600hdn	C9663A

Power and regulatory information

The identification labels on the rear of the printer also contain power rating and regulatory information as shown in Figure 1-3.

CAUTION

Converting the voltage on the printer can damage the printer. Do not use any voltage other than the operating voltage. Any attempt to convert operating voltages will void the product warranty (for example, attempting to change a 110V printer to a 220V printer).

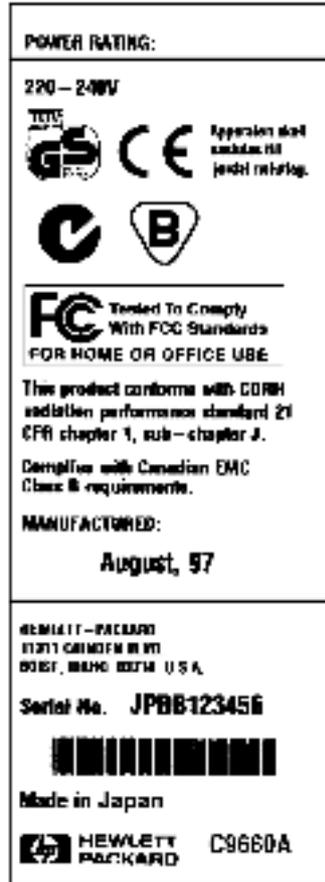


Figure 1-3 Sample label

Site requirements

The printer must be kept in a proper location to maintain the performance level that has been set at the factory. In particular, be sure that the environment adheres to the specifications listed in this chapter.

Below are recommendations for the printer location and placement.

Make sure the printer has the following:

- a well-ventilated, dust-free area
- a hard, level surface (not more than a 2° angle):
 - for the HP Color LaserJet 4600, 4600n, and 4600dn, the surface must support 37 kg (81 lb)
 - for the HP Color LaserJet 4600dtn and 4600hdn, the surface must support 44 kg (97 lb)
- a level surface that supports all four corners of the 500-sheet paper feeder
- a constant temperature and humidity. (Do not install near water sources, humidifiers, air conditioners, refrigerators, or other major appliances)

Make sure to keep the printer away from the following:

- direct sunlight, dust, open flames, or water
- the direct flow of exhaust from air ventilation systems
- magnets and devices that emit a magnetic field
- areas subject to vibration
- walls or other objects. There must be enough space around the printer for proper access and ventilation. See Figure 1-4 on page 23.

Space requirements

The printer must have the following amounts of space above and around it.

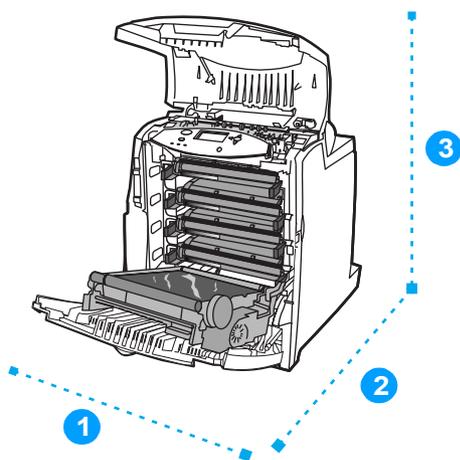


Figure 1-4

Space requirements

- 1 530 mm (20.9 inches)
- 2 1294 mm (50 inches)
- 3 804 mm (31.7 inches)

Electrical specifications

Table 1-3 lists the electrical specifications required to run the printer safely.

Table 1-3 Electrical specifications

Item	110-volt models	220-volt models
Power requirements	100-127 V (-10%, +6%) 50/60 Hz (+/- 2 Hz)	220-240 V (-10%, +6%) 50/60 Hz (+/- 2 Hz)
Power consumption (LaserJet 4600)		
During printing	426 W	430 W
During standby*	34 W	36 W
During PowerSave	30 W	32 W
Off	0 W	0 W
Minimum recommended circuit capacity for typical product	6 A	3 A

* When the printer is in standby mode, it continues to consume a minimal amount of energy.

Note

This information is preliminary and might not be current. Please see <http://www.hp.com/support/lj4600> for current information.

Environmental specifications

Keep the printer within the environmental conditions shown in Table 1-4 for optimum performance.

Table 1-4 Environmental specifications

Item	Operating
Temperature	
Recommended	17° to 25° C (63° to 77° F)
Allowed	10° to 30° C (50° to 86° F)
Humidity	
Recommended	30% to 70% RH
Allowed	10% to 80% RH
Altitude	
Allowed	0 to 2600 m (0 to 8530 ft)

Supply storage requirements

The life of supplies is greatly affected by their storage environment. Use Table 1-5 to determine the shelf life of stored supplies.

Table 1-5 Supply storage requirements

Item	Storage time	Storage condition
Temperature	Normal (maximum of 2.5 years)	0° to 35° C (32° to 95° F)
	Severe (maximum of 18 days)	High 35° to 40° C (95° to 104° F) Low 0° to -20° C (32° to -4° F)
Maximum temperature change rate	40° to 15° C (104° to 59° F) within 3 minutes -20° to 25° C (-4° to 77° F) within 3 minutes	
Humidity	Normal (maximum of 2.5 years)	35% to 85% RH
	Severe (maximum of 18 days)	High 85% to 95% RH Low 10% to 35% RH
Atmospheric pressure	460 to 760 mm Hg (18.1 to 29.9 in Hg)	
Storage time ¹	2.5 years	

¹ The average storage time includes use time. Use cartridges within 2.5 years of the date code on the cartridge.

Printer specifications

Table 1-6 describes the dimensions of the printer.

Table 1-6 Printer dimensions

	HP Color LaserJet 4600, 4600n, 4600dn	HP Color LaserJet 4600dtn, 4600hdn
Height	566 mm (22.3 inches)	654 mm (25.8 inches)
Width	456 mm (20 inches)	456 mm (20 inches)
Depth	480 mm (18.9 inches)	480 mm (18.9 inches)
Weight	37 kg (81 lb)	44 kg (97 lb)

Table 1-7 lists the acoustic emissions of the printer when it is printing and when it is in standby mode.

Table 1-7 Acoustic emissions

	HP Color LaserJet 4600
Sound power Printing PowerSave	Per ISO 9296 $L_{WA_d} = 6.5$ bels(A) [65 dB (A)] $L_{WA_d} = 5.0$ bels(A) [50dB (A)]
Bystander (1m) Printing PowerSave	Per ISO 9296 $L_{PA_m} = 51$ dB(A) $L_{PA_m} = 34$ dB(A)

Note

These values are subject to change. See <http://www.hp.com/support/lj4600> for current information.

Maximum duty cycle is 85,000 pages per month.

Printer assemblies

Figures 1-5 and 1-6 show the location of each major assembly in the printer. These assemblies are described in Chapter 3.

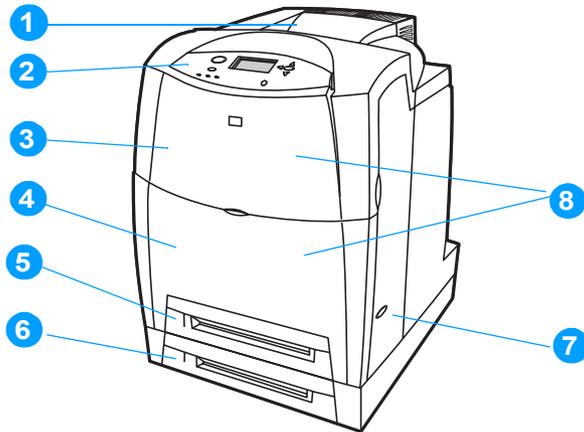


Figure 1-5 Front view, HP Color LaserJet 4600 series (shown with additional 500-sheet paper feeder)

- 1 output bin
- 2 printer control panel
- 3 top cover
- 4 front cover (contains Tray 1)
- 5 Tray 2 (500-sheet standard tray)
- 6 Tray 3 (500-sheet paper feeder; optional on 4600, 4600n, and 4600dn models)
- 7 on/off switch
- 8 access to print cartridges, transfer unit, and fuser

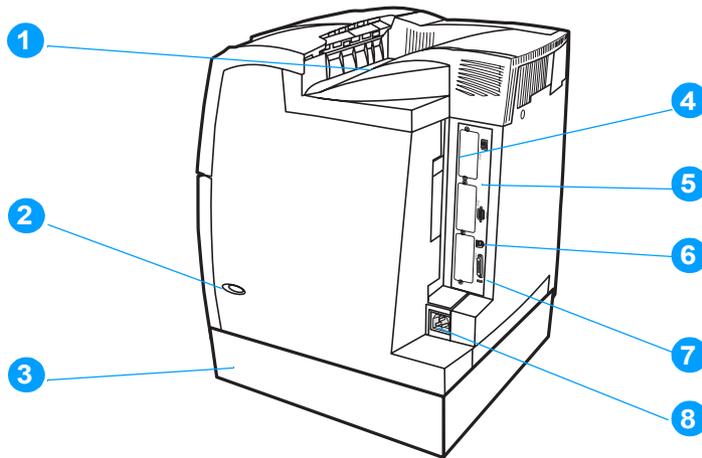


Figure 1-6 Rear view, HP Color LaserJet 4600 series (shown with additional 500-sheet paper feeder)

- 1 output bin
- 2 on/off switch
- 3 Tray 3 (500-sheet paper feeder; optional on 4600, 4600n, and 4600dn models)
- 4 EIO connection (quantity 3)
- 5 memory access
- 6 FIR (Fast InfraRed) connection
- 7 parallel connection
- 8 power connection

Selecting print media

You can use many types of paper and other print media with this printer. This section provides guidelines and specifications for selecting and using different print media.

Before purchasing any media or specialized forms in quantity, verify that your paper supplier obtains and understands the print media requirements specified in the *HP LaserJet Family Print Media Guide*. The guide is available through Hewlett-Packard Customer Support (HPCS). See page 47 for ordering information.

It is possible that media could meet all of the guidelines in this chapter and still not print satisfactorily. This may be a result of abnormal characteristics of the printing environment or of other variables over which Hewlett-Packard has no control (for example, extremes in temperature and humidity).

Hewlett-Packard recommends testing any media before buying it in large quantities.

CAUTION

Using media that does not conform to the specifications listed here and in the *HP LaserJet Family Print Media Guide* can cause problems that require service. This service is not covered by the Hewlett-Packard warranty or service agreements.

Media specifications

For optimum results, use conventional 75 g/m² (20 lb) xerographic paper. Verify that the paper is of good quality and is free of cuts, nicks, tears, spots, loose particles, dust, wrinkles, curls, or bent edges. Avoid fanning the print media before loading it into the paper trays.