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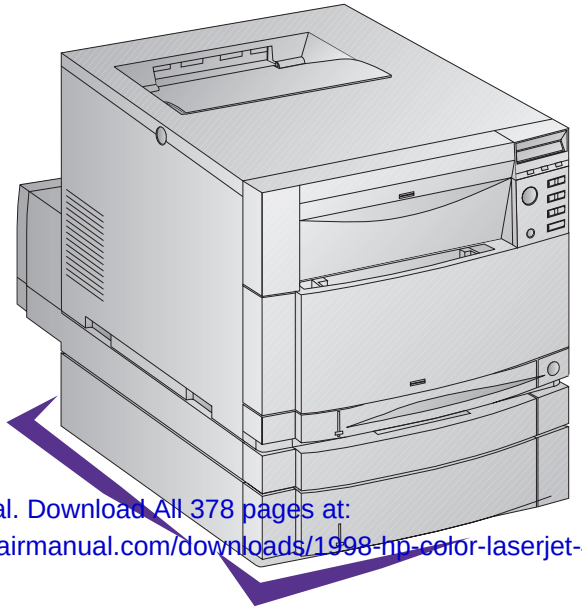
HEWLETT® PACKARD

Color LaserJet™

4500, 4500 N, 4500 DN Printer

Service Manual



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HP Color LaserJet 4500, 4500 N, 4500 DN 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 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 [Select], and [Value +].

COURIER type indicates text that you type on a computer keyboard exactly as shown.

Hint Hints are used to suggest an action that may simplify the process.

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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1 Printer description

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Overview

This chapter discusses the following topics:

- Printer features
- Identification
- Site requirements
- Printer specifications
- Printer assemblies
- Media requirements
- Environmental Product Stewardship Program
- Regulatory statements
- Safety information

Printer features

The HP LaserJet 4500 printer family pictured in Figure 1-1 has three models.

- The HP LaserJet 4500 printer is the base model.
- The HP LaserJet 4500 N printer includes the base model with an HP JetDirect 600N Print Server (network card).
- The HP LaserJet 4500 DN printer includes the base model with an HP JetDirect 600N Print Server (network card), a 500-sheet paper feeder, and a duplex printing accessory.

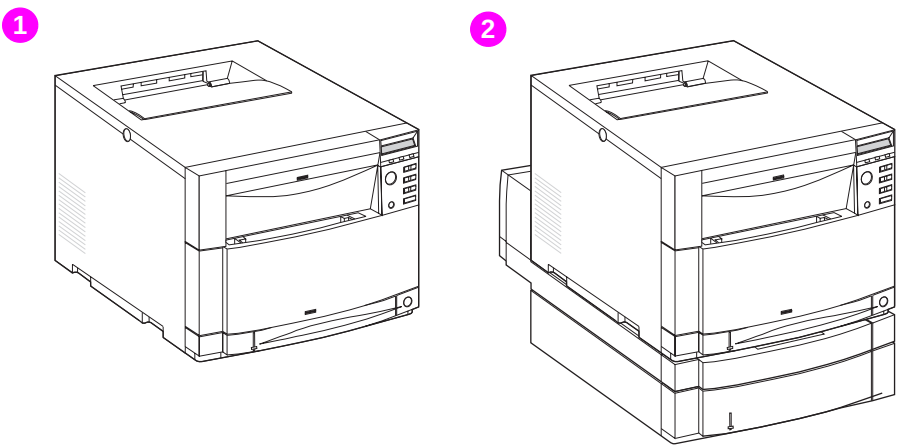

Figure 1-1 **HP Color LaserJet 4500 family printers**

1 HP Color LaserJet 4500 and 4500 N printers

2 HP Color LaserJet 4500 DN printer

This printer combines the quality and reliability of Hewlett-Packard printers with the features listed in Table 1-1 below. For more information on printer features, refer to the Hewlett-Packard website at http://www.hp.com.

Table 1-1 Printer features

Feature	Description
Connectivity	● Bidirectional parallel port (requires a “C” connector) ● Two enhanced input/output (EIO) slots ● Optional HP JetDirect 600N Print Server (network card) (included with the HP Color LaserJet 4500 N and 4500 DN printers)
Duplex	● Optional duplex printing accessory; mounts directly beneath the printer for two-sided printing ● Requires 64 MB of memory **Note:** If the 500-sheet paper feeder (Tray 3) is installed, the duplex printing accessory must be positioned between the printer and Tray 3.
Environmental	● PowerSave setting (meets ENERGY STAR guidelines) ● High content of recyclable components and materials
Fonts	● 80 internal fonts ● HP FontSmart software
Memory—standard	● 32 MB RAM (Base) ● Memory Enhancement Technology (MEt), which automatically compresses data to use RAM more efficiently
Memory—optional	● Install 4, 8, 16, 32 or 64 MB DIMMs into the printer’s three DIMM slots. Synchronous DRAM modules do not need to be configured in pairs (in corresponding left and right slots). Do not exceed 208 MB of total printer memory.

Table 1-1 Printer features (continued)

Feature	Description
Paper handling—input (tray capacity)	The capacities will vary depending on the media being used (for example, transparencies, labels, heavier media, and envelopes): ● **Tray 1:** 150-sheet multipurpose tray. Use for 75 g/m^2 (20 lb) paper stock. ● **Tray 2:** 250-sheet standard cassette ● **Tray 3:** Optional 500-sheet paper feeder
Paper handling—output (face-down, correct order output)	● Top output bin holds up to 250 sheets of standard paper ● Rear output bin holds up to 100 sheets of standard paper. (The output is in reverse order, facing up.)
Printer language support	● HP PCL5c ● PostScript(TM) Emulation ● Auto language switching
Paper sizes supported	● A4/Letter ● Legal ● Executive ● JIS B5 ● A5 ● Custom (B5 ISO)
Print speed—monochrome printing	● 16 pages per minute (ppm) ● 8 ppm for transparencies, heavy paper, and glossy paper
Print speed—color printing	● 4 ppm ● 2 ppm for transparencies, heavy paper, and glossy paper
Standard interfaces	The printer comes equipped with two enhanced input/output (EIO) slots **Note:** If the printer is not configured with a network interface card, connect the printer using a bidirectional parallel cable (IEEE-1284 compliant) with a “C” connector.

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 C4084A, C4089A, and C4094A for the HP Color LaserJet 4500, 4500 N, and 4500 DN printers.

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

The rear labels also contain power rating and regulatory information. 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, changing a 110V printer to a 220V printer).

Site requirements

Locating and placing the printer correctly are important in maintaining the performance level that has been set at the factory. In particular, be sure to adhere to the environmental specifications listed in this chapter. The following are recommendations for locating and placing the printer:

- Install in a well-ventilated, dust-free area.
- Install on a hard, level surface (at an angle not more than 2°)
  - For the HP Color LaserJet 4500 and 4500 N, the surface must support 51 kg (112 lb)
  - For the HP Color LaserJet 4500 DN, the surface must support 77 kg (169 lb)
  - The surface must support all four corners of the 500-sheet paper feeder.
- Install where the temperature and humidity do not change abruptly. Do not install near water sources, humidifiers, air conditioners, refrigerators, or other major appliances.
- Do not expose the printer to direct sunlight, dust, open flames, or ammonia fumes.
- Install the printer away from walls or other objects. There must be enough space around the printer for proper access and ventilation. See Figure 1-2 on page 8.
- Install the printer away from the direct flow of exhaust from air ventilation systems.

Space requirements

The printer requires the top and side clearances shown below.

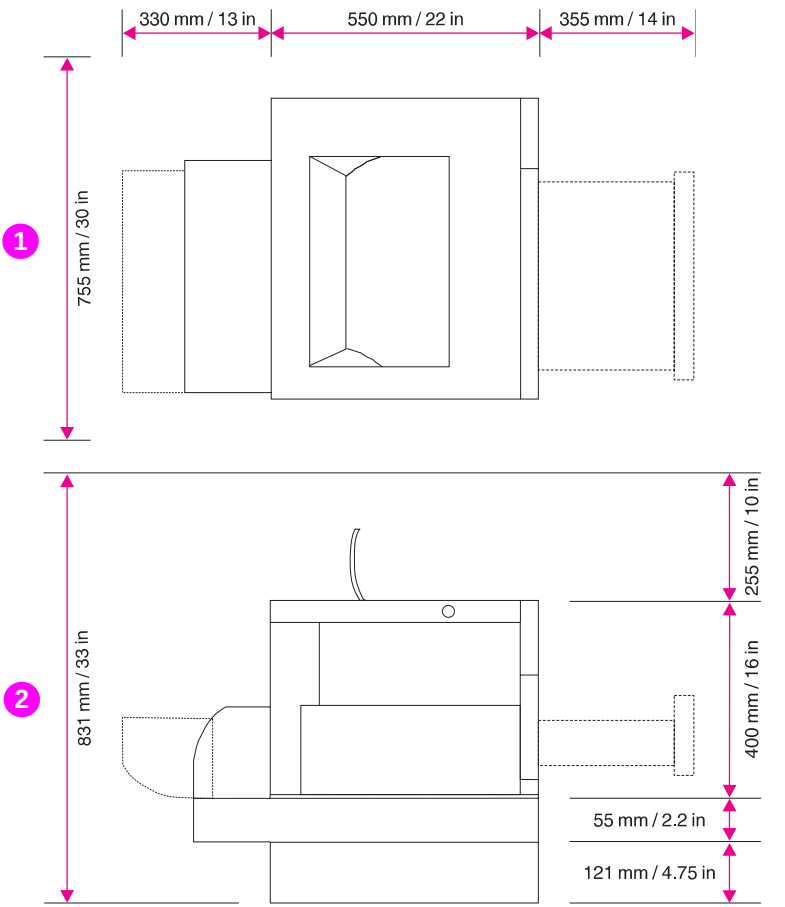

Figure 1-2 **Space requirements**

1 Top view

2 Side view

Electrical specifications

Table 1-2 lists the electrical specifications required to run the printer safely.

Table 1-2 Electrical specifications

Item	110-volt models	220-volt models
Power requirements	100-127 V (+/- 10%) 50/60 Hz (+/- 2 Hz)	220-240 V (+/- 10%) 50/60 Hz (+/- 2 Hz)
Power consumption (typical) During printing During standby[1] During PowerSave	 470 W (average) 80 W (average) < 45 W	 480 W (average) 90 W (average) < 45 W
Minimum recommended circuit capacity for typical product	16.0 A at 120 V	7.1 A at 220 V

[1]When the printer is in standby (off) mode, a minimal amount of energy is still consumed.

Environmental specifications

Keep the printer within the environmental conditions shown in Table 1-3 for optimum performance.

Table 1-3 Environmental specifications

Item	Operating
Temperature Recommended Allowed	 20 to 26° C (68 to 79° F) 15 to 30° C (59 to 86° F)
Humidity Recommended Allowed	 20 to 50% RH 10 to 80% RH
Altitude Allowed	 0 to 3100 m (0 to 10,000 ft)

Consumable storage requirements

The life of consumables is greatly affected by their storage environment. Use Table 1-4 to determine the shelf life of stored consumables.

Table 1-4 Consumable 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	
Total storage time	1 year	

Printer specifications

Table 1-5 describes the dimensions of the printer.

Table 1-5 Printer dimensions

	HP Color LaserJet 4500, 4500 N	HP Color LaserJet 4500 DN
Height	394 mm	394 mm
Width	495 mm	495 mm
Depth	546 mm	545 mm
Weight	57 kg (125 lb)	75 kg (165 lb)

Table 1-6 lists the acoustic emissions of the printer when it is printing and when it is in standby mode.

Table 1-6 Acoustic emissions

Operating position Printing Standby	Per ISO 9296, DIN 45635, T.19 L_{PA} 58 dB(A) L_{PA} 49 dB(A)
Bystander 1m Printing Standby	Per ISO 7779, DIN 45635, T.19 L_{PA} 52 dB(A) L_{PA} 45 dB(A)
Sound power Printing Standby	Per ISO 9296 L_{WAd} = 6.6 bels(A) L_{WAd} = 5.8 bels(A)

Note This product emits a sound intensity level, L_{WAd}, at 6.4 bel during printing. Do not place the printer in close proximity to users.

Duty Engine maximum is 35,000 ppm.

Printer assemblies

Figures 1-3 and 1-4 show the location of each major assembly in the printer. These assemblies are described in Chapter 3.

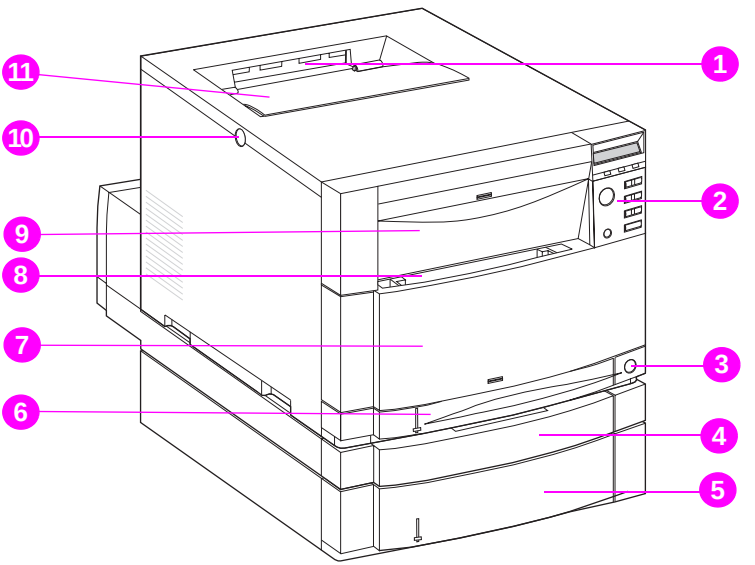

Figure 1-3 **Front view (shown with 500-sheet paper feeder and duplex printing accessory)**

1 Top output bin

2 Printer control panel

3 Power switch (standby button)

4 Duplex printing accessory drawer (optional on 4500 and 4500 N models)

5 Tray 3 (500-sheet paper feeder, optional on 4500 and 4500 N models)

6 Tray 2 (250 sheets of standard paper)

7 Middle front drawer (transfer belt access)

8 Tray 1 (150-sheet multipurpose tray)

9 Upper front drawer (imaging drum access)

10 Top cover door release button

11 Top cover door (toner cartridge access)

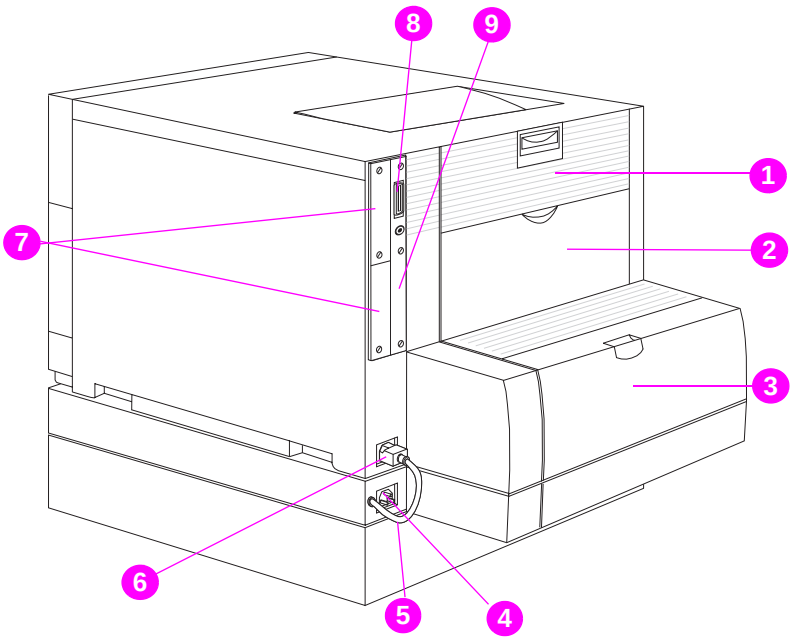

Figure 1-4 **Rear view (shown with 500-sheet paper feeder and duplex printing accessory)**

1 Rear door (fuser access)

2 Rear output bin door

3 Cover for duplex printing accessory

4 Power receptacle for duplex printing accessory

5 Power cord

6 Printer power receptacle

7 EIO slots

8 Parallel connector (“C” connector)

9 Memory access

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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 Paper Specification Guide*. The guide is available through HP Direct. See Appendix D in the online user guide 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 due to abnormal characteristics of the printing environment or to 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 or in the *HP LaserJet Family Paper Specification 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/m^2 (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.

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