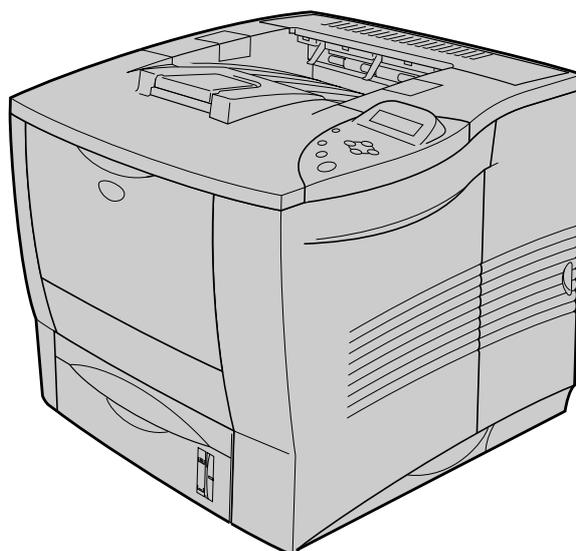




Brother Laser Printer **SERVICE MANUAL**

MODEL: HL-2460 / 2460N



Read this manual thoroughly before maintenance work.

Keep this manual in a convenient place for quick and easy reference at all times.

Sep 2001
SM-PRN010

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PREFACE

This service manual contains basic information required for after-sales service of the laser printer (hereinafter referred to as "this machine" or "the printer"). This information is vital to the service technician to maintain the high printing quality and performance of the printer.

This service manual covers the **HL-2460 / 2460N** printers.

This manual consists of the following chapters:

CHAPTER 1: GENERAL

Features, specifications, etc.

CHAPTER 2: INSTALLATION AND BASIC OPERATION

Installation conditions, Installation procedures, basic operation of the printer etc.

CHAPTER 3: THEORY OF OPERATION

Basic operation of the mechanical system, the electrical system and the electrical circuits and their timing information.

CHAPTER 4: DISASSEMBLY AND RE-ASSEMBLY

Procedures for disassembling and re-assembling the mechanical system.

CHAPTER 5: MAINTENANCE

Periodical replacements parts, consumable parts, etc.

CHAPTER 6: TROUBLESHOOTING

Reference values and adjustments, troubleshooting image defects, troubleshooting malfunctions, etc.

CHAPTER 7: HIDDEN FUNCTIONS

Professional Menu mode and Service Menu mode, etc.

APPENDICES: Serial No. descriptions, page counter, Diameter / circumference of rollers, Connection diagrams, PCB circuit diagrams, etc.

Information in this manual is subject to change due to improvement or redesign of the product. All relevant information in such cases will be supplied in service information bulletins (Technical Information).

A thorough understanding of this printer, based on information in this service manual and service information bulletins, is required for maintaining its print quality performance and for improving the practical ability to find the cause of problems.

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REGULATION

LASER SAFETY (110 - 120V MODEL ONLY)

This printer is certified as a Class I laser product under the US Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968. This means that the printer does not produce hazardous laser radiation.

Since radiation emitted inside the printer is completely confined within the protective housing and external covers, the laser beam cannot escape from the machine during any phase of user operation.

FDA REGULATIONS (110 - 120V MODEL ONLY)

The US Food and Drug Administration (FDA) has implemented regulations for laser products manufactured on and after August 2, 1976. Compliance is mandatory for products marketed in the United States. One of the following labels on the back of the printer indicates compliance with the FDA regulations and must be attached to laser products marketed in the United States.

The label for Japanese manufactured products

MANUFACTURED: BROTHER INDUSTRIES, LTD. 15-1, Naeshiro-cho, Mizuho-ku, Nagoya 467-8561, Japan. This product complies with FDA radiation performance standards, 21 CFR Subchapter J.	K
---	---

The label for Chinese manufactured products

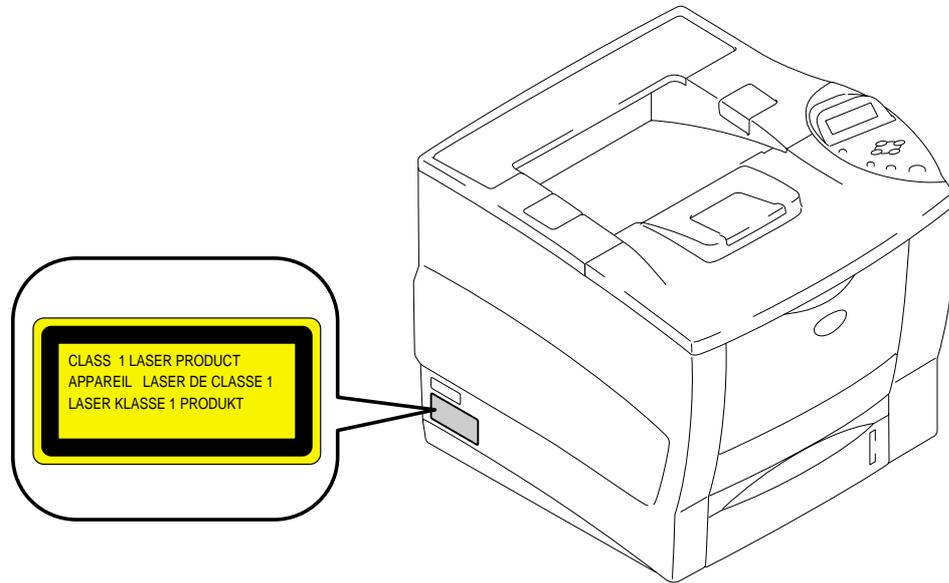
MANUFACTURED: BROTHER Corporation (Asia) Ltd. Shenzen Buji Nan Ling Factory Gold Garden Ind., Nan Ling Village, Buji, Rong Gang, Shenzen, CHINA This product complies with FDA radiation performance standards, 21 CFR Subchapter J.	C
--	---

Caution

Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

IEC 825 (220-240V MODEL ONLY)

This printer is a Class I laser product as defined in IEC 825 specifications. The label shown below is attached in countries where required.



This printer has a laser diode which emits invisible laser radiation in the Laser Unit. The Laser Unit should not be opened without disconnecting the two connectors connected with the AC power supply and laser unit. Since the variable resistor in the laser unit is adjusted in accordance with the standards, never touch it.

Caution

Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

For Finland and Sweden**LUOKAN 1 LASERLAITE****KLASS 1 LASER APPARAT**

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

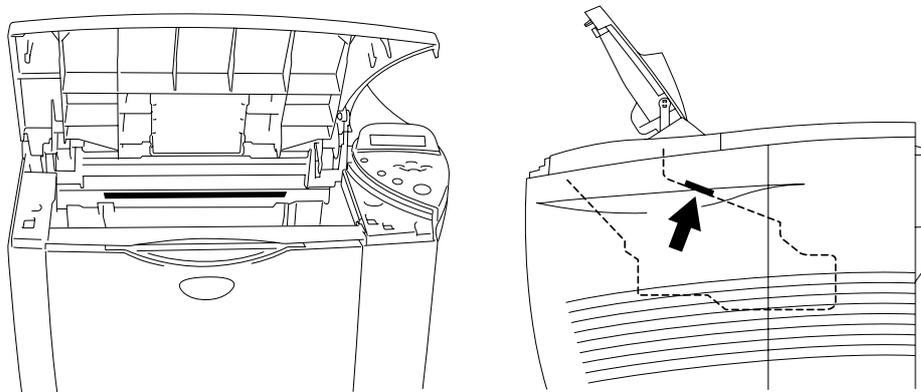
Varning – Om apparaten används på annat sätt än i denna Bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

SAFETY INFORMATION

CAUTION FOR LASER PRODUCT (WARNHINWEIS FÜR LASER DRUCKER)

- CAUTION:** When the machine during servicing is operated with the cover open, the regulations of VBG 93 and the performance instructions for VBG 93 are valid.
- CAUTION:** In case of any trouble with the laser unit, replace the laser unit itself. To prevent direct exposure to the laser beam, do not try to open the enclosure of the laser unit.
- ACHTUNG:** Im Falle von Störungen der Lasereinheit muß diese ersetzt werden. Das Gehäuse der Lasereinheit darf nicht geöffnet werden, da sonst Laserstrahlen austreten können.

<Location of the laser beam window>



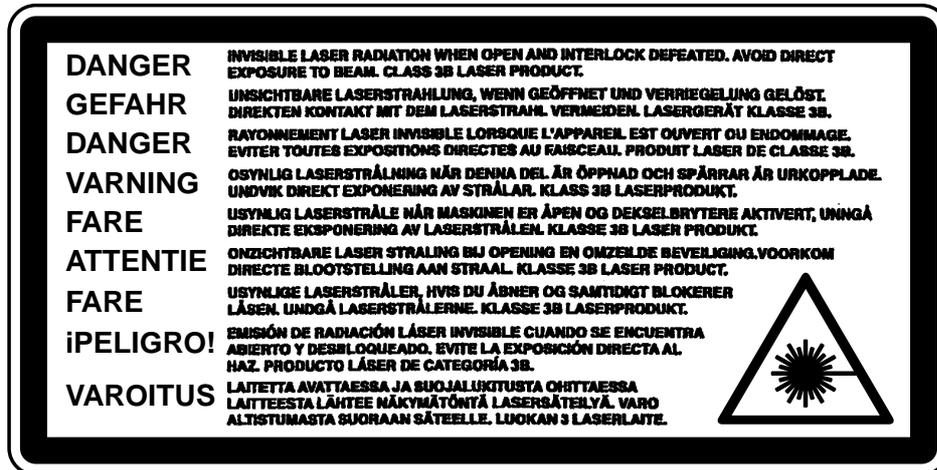
LITHIUM BATTERIES

- CAUTION:** DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER. DISPOSE OF USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
- VORSICHT:** EXPLOSIONSGEFAHR BEI UNSACHGEMÄßEM AUSTAUSCH DER BATTERIE. ERSATZ NUR DURCH DENSELBE ODER EINEN VOM HERSTELLER EMPFOHLENEÄHNLICHEN TYP. ENTSORGUNG GEBRAUCHTER BATTERIEN NACH ANGABEN DES HERSTELLERS.

ADDITIONAL INFORMATION

When servicing the optical system of the printer, be careful not to place a screwdriver or other reflective object in the path of the laser beam. Be sure to take off any personal accessories such as watches and rings before working on the printer. A reflected beam, though invisible, can permanently damage the eyes.

Since the beam is invisible, the following caution label is attached on the laser unit.



DEFINITIONS OF WARNINGS, CAUTIONS AND NOTES

The following conventions are used in this service manual:



Indicates warnings that must be observed to prevent possible personal injury.



Indicates cautions that must be observed to service the printer properly or prevent damage to the printer.

NOTE:

Indicates notes and useful tips to remember when servicing the printer.

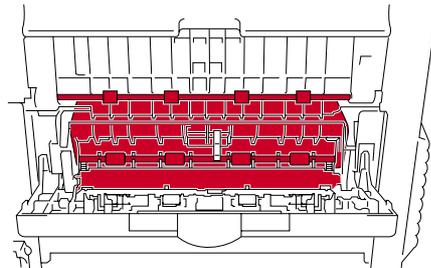
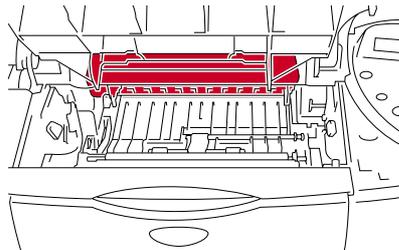
**Listed below are the various kinds of "WARNING" messages included in this manual.



Always turn off the power switch and unplug the power cord from the power outlet before accessing any parts inside the printer.



Some parts inside the printer are extremely hot immediately after the printer is used. When opening the front cover or rear cover to access any parts inside the printer, never touch the red colored parts shown in the following figures.



If you analyze malfunctions with the power plug inserted into the power outlet, special caution should be exercised even if the power switch is OFF because it is a single pole switch.

CHAPTER 1 GENERAL

1. FEATURES

This printer has the following features;

High Resolution and Fast Print Speed

True 600 x 600 dots per inch (dpi) and HQ1200 for graphics with microfine toner and up to 24 pages per minutes (ppm) print speed (A4) and 25 pages per minutes (ppm) print speed (Letter paper).

Versatile Paper Handling

The printer loads paper automatically from the paper cassette. The paper cassette can hold A4, letter, B5 (ISO), B5 (JIS), A5, B6 (ISO), A6, Executive and Legal sizes of paper. The manual feed slot allows manual paper loading sheet by sheet so you can use a variety of types and sizes of paper.

Front Operation

Basic operation of the printer can be controlled from the front panel.

Enhanced Printing Performance and User-Friendly Operation for Windows®

The dedicated printer driver for Microsoft® Windows® 95/98/Me and Windows® NT 4.0/2000 are available on the CD-ROM supplied with your printer. You can easily install them into your Windows® system using our installer program. The driver allows you to choose various printer settings including toner save mode, custom paper size, sleep mode, gray scale adjustment, resolution, water mark and many layout functions. You can easily setup these print options through the Printer Setup Menu.

Printer Status Monitor

The printer status monitor program can show the current status of your printer. When printing, the animated dialog box appears on your computer screen to show the current printing process. If an error occurs, a dialog box will appear to let you know what to correct. If you have turned on the interactive Help (Windows® 95/98/Me only) you can get visual guidance on your PC screen on the actions in the event of certain printer errors.

Quick Print Setup

The Quick Print Setup is a convenient utility to allow you to make changes to frequently used driver settings easily without having to open the printer properties selection box every time. It is launched automatically when this printer driver is selected. You can change the settings by clicking on the icon with the right mouse button.

Enhanced Memory Management

The printer provides its own data compression technology in its printer hardware and the supplied printer driver software, which can automatically compress graphic data and font data efficiently into the printer's memory. You can avoid memory errors and print most full-page 600 dpi graphic and text data, including large fonts, with the standard printer memory.

USB Interface (for Windows® 98, iMac and Power Macintosh with USB installed)

The printer can be connected using the Universal Serial Bus (USB) interface to a PC or Macintosh, which has the USB interface. Drivers that allow you to use the USB port are provided on the CD-ROM supplied with the printer.

Popular Printer Emulation Support

The printer supports the following printer emulation modes; HP LaserJet (PCL6), Epson FX-850, IBM Proprinter XL, HP-GL and PostScript® Level 3 language emulation (Brother BR-Script Level 3).

When you use DOS application software or Windows® version 3.0 or earlier, you can use any of these emulations to operate the printer. The printer also supports auto-emulation switching between HP, Brother BR-Script 3, HP-GL and Epson or HP, BR-Script 3, HP-GL and IBM. If you want to set the printer emulation, you can do it by operating the font panel.

High Resolution Control & Advanced Photoscale Technology

High Resolution Control (HRC) technology provides clear and crisp printouts. Use this function to get smooth text print quality.

Advanced Photoscale Technology (APT) enables the printer to print graphics in 256 grayscales, producing nearly photographic quality. Use this function when you want to print photographic images.

Environment-Friendly

<Economy Printing Mode>

This feature will cut your printing cost by saving toner. It is useful for obtaining draft copies for proof-reading. You can select from two economy modes, 50% toner saving through the Windows® printer driver supplied with your printer.

<Sleep Mode (Power Save Mode)>

Sleep mode automatically reduces power consumption when the printer is not in use for a certain period of time. The printer consumes less than 16W when in sleep mode.

Bar Code Print

The printer can print the following 11 types of bar codes;

- Code 39
- Code 128
- Interleaved 2 of 5
- Codabar
- US-PostNet
- ISBN
- UPC-A
- UPC-E
- EAN-8
- EAN-13
- EAN-128

Network Feature

The Brother printer has built in multi protocol network capability as standard. This allows multiple host computers to share the printer on a 10/100Mbit Ethernet network. Any users can print their jobs as if the printer was directly connected to their computer. Users on Windows® 95/98/Me, Windows® NT/2000, UNIX, Novell, Apple Macintosh, LAN server and OS/2 Warp server computer simultaneously can access this printer. For further information, see the Network User's Guide supplied with the printer.

2. OVERVIEW

<Front View>

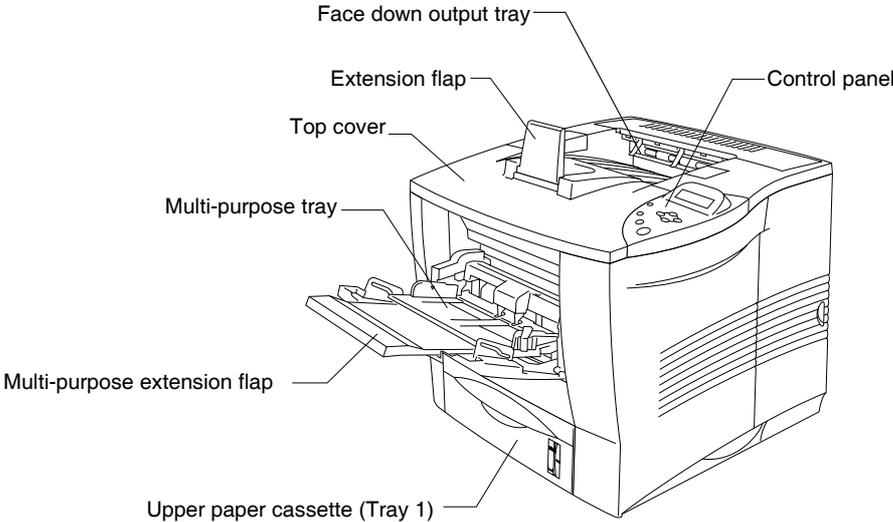


Fig. 1-1

<Rear View>

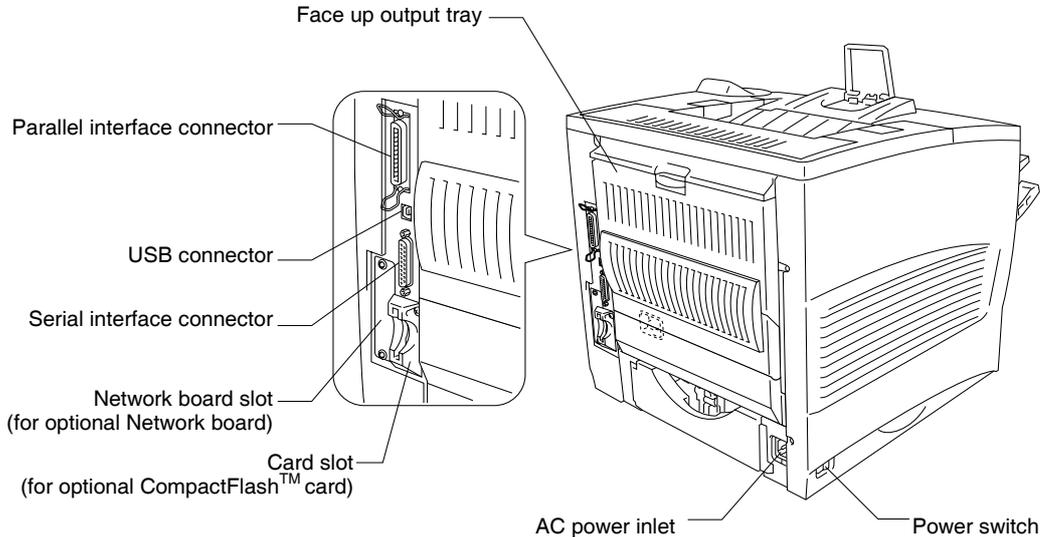


Fig. 1-2

3. SPECIFICATIONS

3.1 Printing

Print method	Electrophotography (single-component dry toner)
Laser	Semiconductor laser Wave length: 780 nm Output: 5mW max
Resolution	HQ1200 (for Windows® 95/98/Me, WindowsNT® 4.0, Windows® 2000 and Mac OS) 600 dpi (for Windows® 95/98/Me, WindowsNT® 4.0, Windows® 2000, DOS and Mac OS) 300 dpi (for Windows® 95/98/Me, WindowsNT® 4.0, Windows® 2000, and Mac OS)
Print quality	Normal printing mode Economy printing mode (up to 25% and 50% toner saving)
Print speed	Up to 24 pages/minute* (When loading A4) Up to 25 pages/minute* (When loading Letter-size paper.)
Warm-up	Max. 20 seconds at 23°C (68°F)
First print	Max. 12 seconds (When loading A4 or Letter-size paper using face down print delivery from cassette feeder.)
Print media	Toner cartridge Life expectancy: 11,000 pages/cartridge (When printing A4 or Letter-size paper with the print density set at level 0 with about 5% print coverage)

***NOTE:**

Print speed varies depending on the paper size or media type. For details, refer to [APPENDIX 17 'PRINT SPEEDS WITH VARIOUS SETTINGS'](#).

3.2 Functions

CPU	Toshiba TMPR4955 200MHz
Emulation	Brother Printing Solution for Windows® Automatic emulation selection among HP LaserJet 5(PCL 6), Brother BR-Script Level 3, HP-GL, EPSON FX-850 or IBM Proprinter XL
Printer driver	<PCL Driver> Windows® 95/98/Me, Windows® NT 4.0/2000 driver, supporting Brother Native Compression mode <PS Driver> PPD file driver for Windows® 95/98/Me, Windows NT® 4.0/2000 driver and Macintosh driver
Interface	<ul style="list-style-type: none"> • Bi-directional parallel • Universal Serial Bus (USB) • RS-232C • Network
Memory	HL2460 : 16.0 Mbytes* ¹ HL2460N : 32.0 Mbytes Expandable up to 272 Mbytes by installing an industry standard DIMM* ²
Control Panel	<ul style="list-style-type: none"> • Display LCD: 2 lines by 16-column liquid crystal display with back light LED: 1 LED • Buttons 7 switches
Diagnostics	Self-diagnostic program

*¹ *NOTE:

The standard memory installed varies depending on the country.

*²NOTE:

The DIMM must have the following specifications: -

Type: 100 pin

Access time: 60 nsec - 80 nsec

Capacity: 16, 32, 64, 128 Mbytes

Height: 35.0 mm (1.38 inches) or less

Output: 32 bit or 36 bit (independent of parity)

3.3 Options

Paper handling	<ul style="list-style-type: none"> • Lower tray unit (LT-4000); Maximum 500 sheets x 3 trays • Duplex unit for duplex printing (DX-4000) • Mailbox unit for output source (MX-4000 series)
Stabilizer	Stabilizer for safe installation of the printer with options fitted (SB-4000)
Storage Device	Hard Disk Drive, CompactFlash Card

3.4 Electrical and Mechanical

Power source	U.S.A. and Canada: AC 110 to 120V, 50 Hz/60 Hz Europe and Australia: AC 220 to 240V, 50 Hz/60 Hz
Power consumption	Printing (average): 600 W or less Standing by: 80 W or less Sleep* ¹ : 16 W or less (default activation time: 30 min.)
Noise	Printing: 55 dB A or less Standing by: 40 dB A or less Noise per ISO 9296: Printing: Lwad = about 67 dB (A) * ² Lwad = about 48 dB (A)
Temperature	Operating: 10 to 32.5°C (50 to 90.5°F) Storage: 0 to 35°C (38 to 95°F)
Humidity	Operating: 20 to 80% (non condensing) Storage: 10 to 80% (non condensing)
Dimensions	471 x 480 x 422 mm (W x D x H) (18.5 x 18.9 x 16.6 inches)
Weight	Approx. 21 kg (46.3 lb.)

*¹NOTE:

The power consumption figure quoted for sleep mode is when the fan has stopped.

*²NOTE:

You might want to install printers with a sound power level of Lwad 63 dB (A) or more in a separate room or cubicle.

3.5 Network

Type / Speed	Ethernet 10/100BaseTX Print server (NC-4100h) Auto speed detection
Protocols	TCP/IP (DHCP, BOOTP, RARP, DHCP, NetBIOS over IP LPR/LPD, Port9100, Custom Port, POP3/SMTP SMB Print TELNET, SNMP, HTTP, TFTP), EtherTalk, IPX/SPX, DEC LAT, Banyan VINES, NetBEUI, DLC/LLC
Management	<ul style="list-style-type: none"> • Web Based Management • BRAdmin Professional Windows® based management utility
Firmware update	2MB flash ROM. Use BRAdmin Professional when upgrading print server software or BOOTP, TFTP PUT/GET or IPX for Netware.
Supplied software	<ul style="list-style-type: none"> • BRAdmin Professional management utility (for Windows® 95/98/NT 4.0) • Port driver for Windows® 95/98/Me/NT 4.0 LPR port driver (for Windows® 95/98/Me only) NetBIOS port driver SMTP port driver

3.6 Paper

3.6.1 Feedable paper

We recommend the following paper types and sizes for each paper source tray or print method.

(1) Paper type

Paper type	Tray 1 60- 105 g/m ² (16 - 28 lbs.)	MP tray 60- 200 g/m ² (16 - 53 lbs.)	Tray 2/3/4 60- 105 g/m ² (16 - 28 lbs.)	DX 60- 105 g/m ² (16 - 28 lbs.)	MX 60- 105 g/m ² (16 - 28 lbs.)	Select the media type from the printer driver
Plain paper	✓	✓	✓	✓	✓	Plain paper
Recycled paper	✓	✓	✓	✓	✓	Plain paper
Bond paper	✓	✓	✓	✓	✓	Bond paper
Thick paper		✓				Thick paper or thicker paper
Transparency		✓ Only A4 or Letter size				Transparency
Label		✓ Only A4 or Letter size				Plain paper
Envelope		✓				Envelope
Card		✓				Thick paper or thicker paper

(2) Paper size

	Tray 1	MP tray	Tray 2/3/4	DX	MX
Paper size	A4, Letter, Legal, B5(JIS), B5(ISO), Executive, A5, A6, B6	A4, Letter, Legal, B5(JIS), B5(ISO), Executive, A5, A6, B6, COM-10, Monarch, C5, DL Width: 73.5 to 216 mm (2.89 to 8.5 in.) Length: 116 to 356 mm (4.57 to 14.0 in.)	A4, Letter, Legal, B5(JIS), B5(ISO), Executive, A5	A4, Letter, Legal, B5(JIS), Executive	A4, Letter, B5(JIS), B5(ISO), Executive
Capacity	500 sheets (80 g/m ² or 20 lbs.)	100 sheets (80 g/m ² or 20 lbs.) Transparencies: 10 sheets Envelopes: 10 sheets Label stock: 10 sheets	500 sheets (80 g/m ² or 20 lbs.)		100 sheets (80 g/m ² or 20 lbs.)

(3) Other paper specifications

Paper Cassette

	Cut sheet
Basis weight	60 to 105 g/m ² (16 to 28 lb.)
Caliper	0.08 to 0.13 mm (0.003 to 0.005 in.)
Moisture content	4% to 6% by weight

MP Tray

	Cut sheet	Envelope
Basis weight	60 to 200 g/m ² (16 to 53 lb.)	75 to 90 g/m ² (20 to 24 lb.) single thickness
Caliper	0.08 to 0.2 mm (0.003 to 0.008 in.)	0.084 to 0.14 mm (0.003 to 0.005 in.) single thickness
Moisture content	4% to 6% by weight	4% to 6% by weight

(4) Recommended paper

	Europe	USA
Plain paper	Xerox Premier 80 g/m ²	Xerox 4200DP 20 lb.
Recycled paper	Steinbis Recycling Copy 80 g/m ²	
Transparency	3M CG3300	3M CG3300
Label	Avery laser label L7163	Avery laser label #5160



CAUTION:

When you are choosing print media, be sure to follow the information given below to prevent any paper jams, print quality problems or printer damage;

- *It is recommended to use long-grained paper for the best print quality. If short-grained paper is being used, it might be the cause of paper jams.*
- *Use neutral paper. Do not use acid paper to avoid any damage to the drum unit.*
- *Avoid using coated paper such as vinyl coated paper.*
- *Avoid using preprinted or highly textured paper.*
- *It is recommended to use labels or transparencies, which are designed for use in laser printers.*
- *Avoid feeding labels with the carrier sheet exposed, or the printer will be damaged.*
- *Before loading paper with holes such as organizer sheets, be sure to fan the stack well.*
- *Do not use organizer sheets that are stuck together. The glue that is used might caused damaged to the printer.*
- *When printing on the back of pre-printed paper, if the paper is curled, be sure to straighten the paper as much as possible.*
- *Different types of paper should not be loaded at the same time in the paper cassette to avoid any paper jams or misfeeds.*

3.6.2 Print delivery

(1) Face down output tray

Capacity: Maximum 500 sheets (80 g/m²)
Face-down only

(2) Face up output tray

Capacity: 100 sheet **Thicker paper printing is recommended.
Face-up only

NOTE:

Face-down: Delivery with the printed face of the paper downwards.

Face-up: Delivery with the printed face of the paper upwards.

(3) We recommend the following print methods (output tray) for each paper media type.

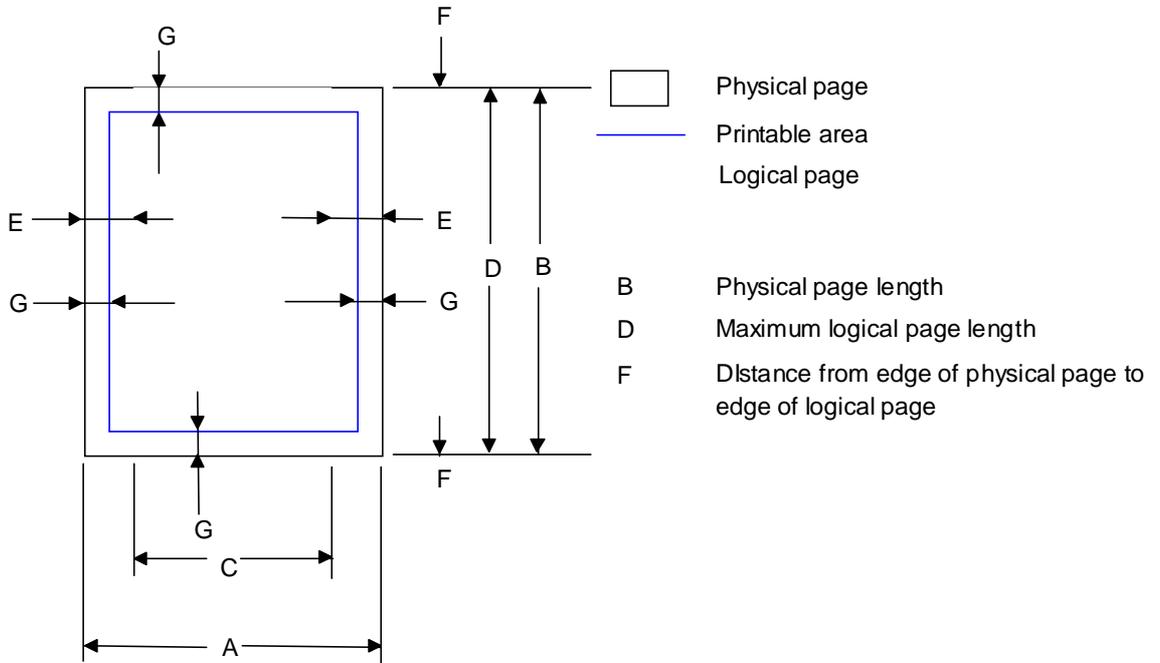
Media type	Paper output	
	Face down	Face up
Plain paper	✓	✓
Recycled paper	✓	✓
Bond paper	✓	✓
Thick paper	✓	✓
Thicker paper	✓	✓
Transparency	✓	✓
Label		✓
Envelope		✓
Card		✓

3.7 Printable Area

3.7.1 PCL5e/EPSON/IBM emulation

The figure below shows the printable area each emulation guarantees when printing on Portrait and Landscape.

Portrait



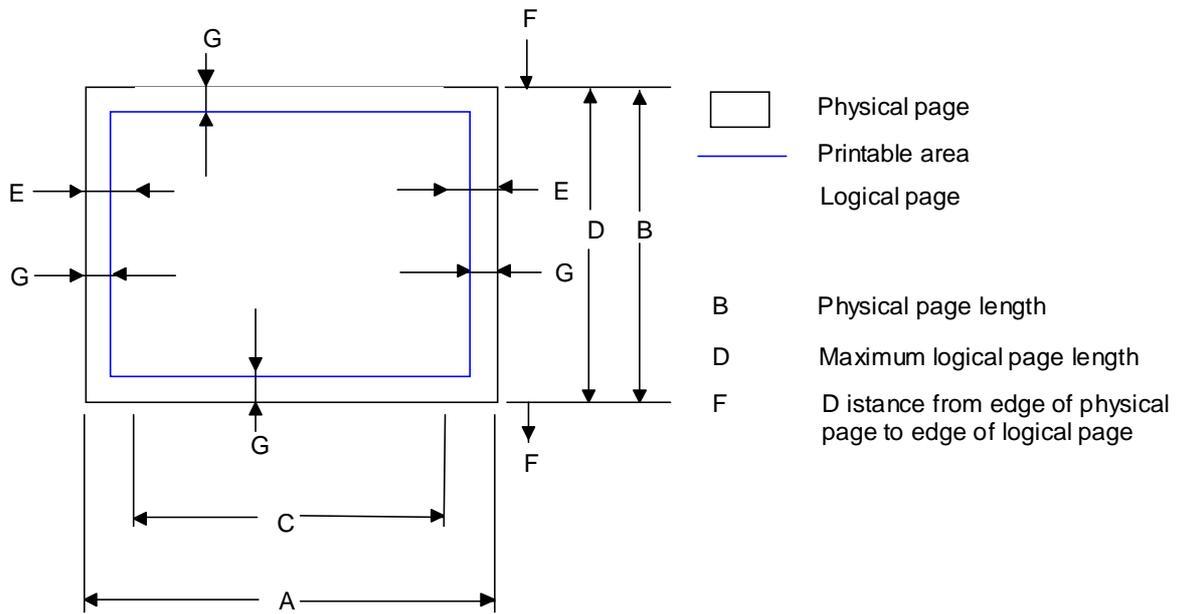
The table below shows the printable areas when printing on Portrait for each paper size.

Size	A	B	C	D	E	F	G
Letter	215.9 mm 8.5" (2,550 dots)	279.4 mm 11.0" (3,300 dots)	203.2 mm 8.0" (2,400 dots)	279.4 mm 11.0" (3,300 dots)	6.35 mm 0.25" (75 dots)	0 mm	4.2 mm 0.16" (50 dots)
Legal	215.9 mm 8.5" (2,550 dots)	355.6 mm 14.0" (4,200 dots)	203.2 mm 8.0" (2,400 dots)	355.6 mm 14.0" (4,200 dots)	↑	0 mm	4.2 mm 0.16" (50 dots)
Executive	184.15 mm 7.25" (2,175 dots)	266.7 mm 10.5" (3,150 dots)	175.7 mm 6.92" (2,025 dots)	266.7 mm 10.5" (3,150 dots)	6.35 mm 0.25" (75 dots)	0 mm	4.2 mm 0.16" (50 dots)
A 4	210.0 mm 8.27" (2,480 dots)	297.0 mm 11.69" (3,507 dots)	198.0 mm 7.79" (2,338 dots)	297.0 mm 11.69" (3,507 dots)	6.01 mm 0.24" (71 dots)	0 mm	4.2 mm 0.16" (50 dots)
A 5	148.5 mm 5.85" (1,754 dots)	210.0 mm 8.27" (2,480 dots)	136.5 mm 5.37" (1,612 dots)	210.0 mm 8.27" (2,480 dots)	↑	0 mm	4.2 mm 0.16" (50 dots)
A 6	105.0 mm 4.13" (1,240 dots)	148.5 mm 5.85" (1,754 dots)	93.0 mm 3.66" (1,098 dots)	148.5 mm 5.85" (1,754 dots)	↑	0 mm	4.2 mm 0.16" (50 dots)
B 5 (JIS)	182.0 mm 7.1" (2,130 dots)	257.0 mm 10.11" (3,033 dots)	170.0 mm 6.69" (2,007 dots)	257.0 mm 10.11" (3,033 dots)	↑	0 mm	4.2 mm 0.16" (50 dots)
B 5 (ISO)	176.0 mm 6.93" (2,078 dots)	250.0 mm 9.84" (2,952 dots)	164.0 mm 6.46" (1,936 dots)	250.0 mm 9.84" (2,952 dots)	↑	0 mm	4.2 mm 0.16" (50 dots)
B 6	125.0 mm 4.92" (1,476 dots)	176.0 mm 6.93" (2,078 dots)	164.0 mm 4.44" (1,334 dots)	176.0 mm 6.93" (2,078 dots)	↑	0 mm	4.2 mm 0.16" (50 dots)
COM10	104.78 mm 4.125" (1,237 dots)	241.3 mm 9.5" (2,850 dots)	92.11 mm 3.63" (1,087 dots)	241.3 mm 9.5" (2,850 dots)	6.35 mm 0.25" (75 dots)	0 mm	4.2 mm 0.16" (50 dots)
MONARCH	98.43 mm 3.875" (1,162 dots)	190.5 mm 7.5" (2,250 dots)	85.7 mm 3.37" (1,012 dots)	190.5 mm 7.5" (2,250 dots)	↑	0 mm	4.2 mm 0.16" (50 dots)
C 5	162.0 mm 6.38" (1,913 dots)	229.0 mm 9.01" (2,704 dots)	150.0 mm 5.9" (1,771 dots)	229.0 mm 9.01" (2,704 dots)	6.01 mm 0.24" (71 dots)	0 mm	4.2 mm 0.16" (50 dots)
DL	110.0 mm 4.33" (1,299 dots)	220.0 mm 8.66" (2,598 dots)	98.0 mm 3.86" (1,157 dots)	220.0 mm 8.66" (2,598 dots)	↑	0 mm	4.2 mm 0.16" (50 dots)

NOTE:

- The paper sizes indicated here should confirm to the nominal dimensions specified by JIS except B5 (ISO).
- The dot size is based on 300 dpi resolution.

Landscape



The table below shows the printable areas when printing on Landscape for each paper size.

Size	A	B	C	D	E	F	G
Letter	279.4 mm 11.0" (3,300 dots)	215.9 mm 8.5" (2,550 dots)	269.3 mm 10.6" (3,180 dots)	215.9 mm 8.5" (2,550 dots)	5.0 mm 0.2" (60 dots)	0 mm	4.2 mm 0.16" (50 dots)
Legal	355.6 mm 14.0" (4,200 dots)	215.9 mm 8.5" (2,550 dots)	345.5 mm 13.6" (4,080 dots)	215.9 mm 8.5" (2,550 dots)	↑	0 mm	4.2 mm 0.16" (50 dots)
Executive	266.7 mm 10.5" (3,150 dots)	184.15 mm 7.25" (2,175 dots)	256.6 mm 10.1" (3,030 dots)	184.15 mm 7.25" (2,175 dots)	5.0 mm 0.2" (60 dots)	0 mm	4.2 mm 0.16" (50 dots)
A 4	297.0 mm 11.69" (3,507 dots)	210.0 mm 8.27" (2,480 dots)	287.0 mm 11.2" (3,389 dots)	210.0 mm 8.27" (2,480 dots)	4.8 mm 0.19" (59 dots)	0 mm	4.2 mm 0.16" (50 dots)
A 5	210.0 mm 8.27" (2,480 dots)	148.5 mm 5.85" (1,754 dots)	200.0mm 7.87" (2,362 dots)	148.5 mm 5.85" (1,754 dots)	↑	0 mm	4.2 mm 0.16" (50 dots)
A 6	148.5 mm 5.85" (1,754 dots)	105.0 mm 4.13" (1,240 dots)	138.5 mm 5.45" (1,636 dots)	105.0 mm 4.13" (1,240 dots)	↑	0 mm	4.2 mm 0.16" (50 dots)
B 5 (JIS)	257.0 mm 10.11" (3,033 dots)	182.0 mm 7.1" (2,130 dots)	247.0 mm 9.72" (2,916 dots)	182.0 mm 7.1" (2,130 dots)	↑	0 mm	4.2 mm 0.16" (50 dots)
B 5 (ISO)	250.0 mm 9.84" (2,952 dots)	176.0 mm 6.93" (2,078 dots)	240.0 mm 9.44" (2,834 dots)	176.0 mm 6.93" (2,078 dots)	↑	0 mm	4.2 mm 0.16" (50 dots)
B 6	176.0 mm 6.93" (2,078 dots)	125.0 mm 4.92" (1,476 dots)	166.4 mm 6.55" (1,960 dots)	125.0 mm 4.92" (1,476 dots)	↑	0 mm	4.2 mm 0.16" (50 dots)
COM10	241.3 mm 9.5" (2,850 dots)	104.78 mm 4.125" (1,237 dots)	231.1 mm 9.1" (2,730 dots)	104.78 mm 4.125" (1,237 dots)	5.0 mm 0.2" (60 dots)	0 mm	4.2 mm 0.16" (50 dots)
MONARCH	190.5 mm 7.5" (2,250 dots)	98.43 mm 3.875" (1,162 dots)	180.4 mm 7.1" (2,130 dots)	98.43 mm 3.875" (1,162 dots)	↑	0 mm	4.2 mm 0.16" (50 dots)
C 5	229 mm 9.01" (2,704 dots)	162 mm 6.38" (1,913 dots)	219.0 mm 8.62" (2,586 dots)	162 mm 6.38" (1,913 dots)	4.8 mm 0.19" (59 dots)	0 mm	4.2 mm 0.16" (50 dots)
DL	220 mm 8.66" (2,598 dots)	110 mm 4.33" (1,299 dots)	210.0 mm 8.26" (2,480 dots)	110 mm 4.33" (1,299 dots)	↑	0 mm	4.2 mm 0.16" (50 dots)

NOTE:

- The paper sizes indicated here should confirm to the nominal dimensions specified by JIS except B5 (ISO).
- The dot size is based on 300 dpi resolution.

3.7.2 PCL6/BR-Script3 emulation

You can not print within 4.2 mm (50dots in 300-dpi mode) on all four sides of the paper.

CHAPTER 2 INSTALLATION AND BASIC OPERATION

1. CONDITIONS REQUIRED FOR INSTALLATION

1.1 Power Supply

- The source voltage must stay within $\pm 10\%$ of the rated voltage shown on the rating plate.
- The power cord, including extensions, should not exceed 3 meters (10 feet).
- Do not share the same power circuit with other high-power appliances, particularly an air conditioner, copier or shredder. If it is unavoidable that you must use the printer with these appliances, it is recommended that you use an isolation transformer or a high-frequency noise filter.
- Use a voltage regulator if the power source is not stable.

1.2 Environment

- The printer should be installed near a power outlet, which is easily accessible.
- The room temperature is maintained between 10°C and 32.5°C. The relative humidity is maintained between 20% and 80%.
- The printer should be used in a well ventilated room.
- Place the printer on a flat, horizontal surface.
- Keep the printer clean. Do not place the printer in a dusty place.
- Do not place the printer where the ventilation hole of the printer is blocked. Keep approximately 100 mm (4 inches) between the ventilation hole and the wall.
- Do not place the printer where it is exposed to direct sunlight. Use a blind or a heavy curtain to protect the printer from direct sunlight when the printer is unavoidably set up near a window.
- Do not place the printer near devices that contain magnets or generate magnetic fields.
- Do not subject the printer to strong physical shocks or vibrations.
- Do not expose the printer to open flames or salty or corrosive gasses.
- Do not place objects on top of the printer.
- Do not place the printer near an air conditioner.
- Keep the printer horizontal when carrying.
- Do not cover the slots in the side cover.

1.3 System Requirements for Brother Printer Solution for Windows®

Check the following system requirements to setup and operate the printer using Brother Printing Solution for Windows®:

Operating system	Computer / Processor	Memory
Windows® 95	486DX / 66MHz or higher processor	24MB
Windows® 98	Pentium 150MHz or higher processor	32MB
Windows® Me	Pentium 150MHz or higher processor	32MB
Windows® NT 4.0	Pentium 150MHz or higher processor	24MB
Windows® 2000	Pentium 133MHz or higher processor	64MB

2. UNPACKING

When unpacking the printer, check to see that all of the following components are included in the carton.

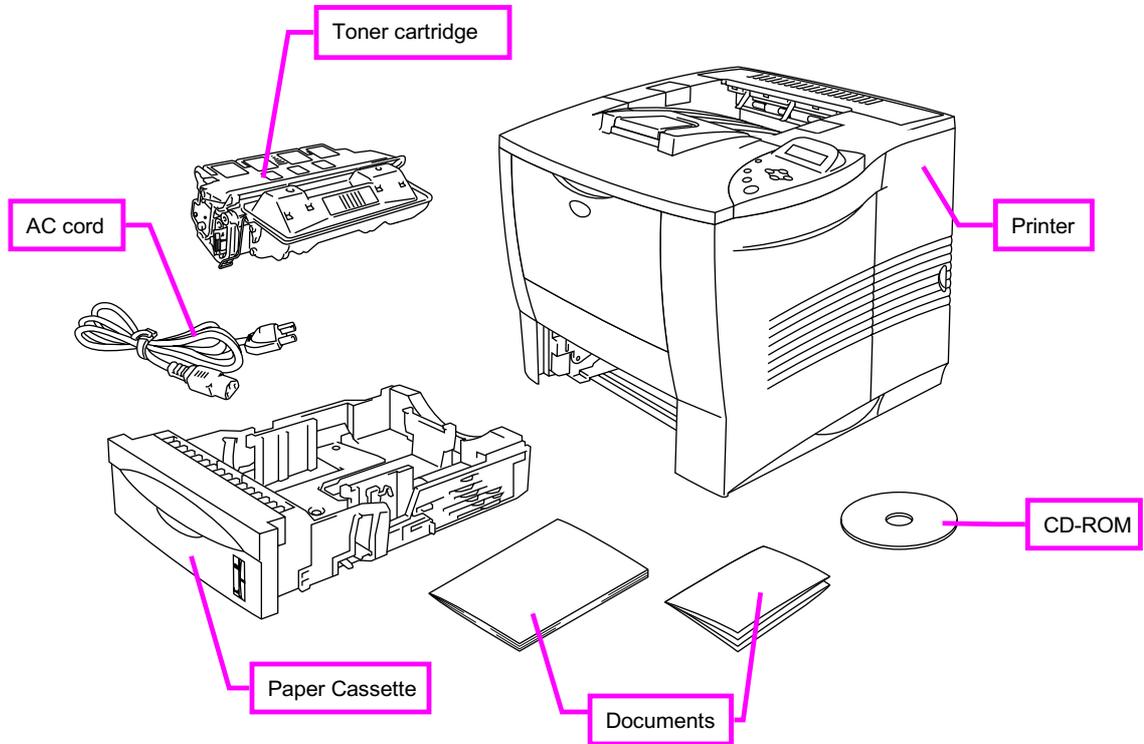


Fig. 2-1

NOTE:

Components may vary depending on the country.