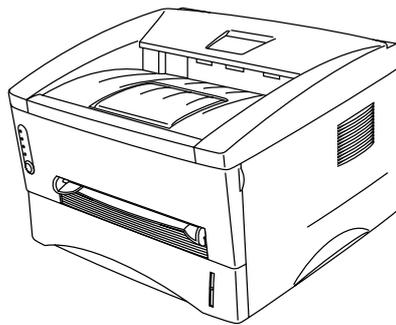


**brother**<sup>®</sup>

**Brother Laser Printer**

**HL-1030/1240/1250**

## **User's Guide**



**Please read this manual thoroughly before using the printer. You can print or view this manual from the CD-ROM at any time, please keep the CD-ROM in a convenient place for quick and easy reference at all times.**

## TABLE OF CONTENTS

---

Definitions of Warnings, Cautions, and Notes	
To Use the Printer Safely	
Shipment of the Printer	
For technical and operational assistance	
	(For USA & CANADA Only)

## CHAPTER1 ABOUT THIS PRINTER

What is included in the carton .....	1-1
Components .....	1-1
About your printer .....	1-2
Features of your printer .....	1-3
What printer options are available .....	1-7
Place the printer .....	1-8
Power Supply .....	1-8
Environment.....	1-8
System Requirements for the Brother Printing Solution for Windows .....	1-9
What kind of paper can I use .....	1-10
How to load paper into the Paper Cassette .....	1-15
How to load a sheet of paper manually .....	1-18
How to print on both sides of the paper (Manual Duplexing).....	1-24
What do the LED indications mean.....	1-27
Ready (Paper) LED indications .....	1-28
Data (Toner) LED indications .....	1-29
Drum LED indications.....	1-31
Alarm LED indications .....	1-31
Control Panel Button Operations .....	1-32
Other Control Features .....	1-33

## CHAPTER 2 OPTIONS

Optional Accessories and Supplies.....	2-1
The Lower Tray unit (For HL-1250 Only) .....	2-2
How to use the SERIAL INTERFACE (RS-100M) Connection (For HL-1250 Only).....	2-3
How to select the RS-422A (Apple) or RS-232C (IBM) Serial Interface (For HL-1250 Only) .....	2-4
How to set the Serial Interface Parameters.....	2-5
How to connect the Serial Interface Cable .....	2-8
What is the Brother print server (NC-2010p) .....	2-10
Features .....	2-10
How to add extra Memory (For HL-1250 Only) ...	2-11
How to install additional SIMM memory .....	2-12

## CHAPTER 3 MAINTENANCE

How to replace the Toner Cartridge.....	3-3
How to replace the Drum Unit .....	3-9
How to clean the printer .....	3-14
Cleaning the printer exterior.....	3-14
Cleaning the printer interior and Drum Unit.....	3-16

## CHAPTER 4 TROUBLESHOOTING

Identifying your problem .....	4-1
Control Panel Indications .....	4-2
Operator calls and how to clear them.....	4-2
Service call indications.....	4-4
Error messages in the Status Monitor.....	4-6
Error message printouts.....	4-8
Paper Handling.....	4-10
PAPER JAMS and how to clear them .....	4-11
Others .....	4-16
For printing with the Serial Interface (For HL-1250 Only)...	4-16
For DOS users (For HL-1240/1250 Only).....	4-16
For Apple Macintosh Computers user using RS-100M (For HL-1250 Only) .....	4-17
For iMac and Power Macintosh G3 with USB (For HL-1240/1250 Only).....	4-17
Improving the print quality .....	4-18
How to print correctly .....	4-24
For DOS users (For HL-1240/1250 Only).....	4-25

# APPENDIX

Printer Technical Specifications.....	A-1
Printing .....	A-1
Functions .....	A-3
Electrical and Mechanical .....	A-4
Parallel Interface Specifications .....	A-5
USB (Universal Serial Bus) Interface (HL-1240/1250 Only) .....	A-7
Resident Font (HL-1240/1250 Only) .....	A-8
HL-1240:.....	A-8
Bitmapped Fonts.....	A-8
HL-1250 :.....	A-8
Bitmapped Fonts.....	A-8
Scalable Fonts.....	A-9
Symbol Sets / Character Sets (HL-1240/1250 Only) .....	A-10
OCR Symbol Sets (HL-1250 Only) .....	A-10
HP LaserJet IIP Mode (HL-1240).....	A-10
HP LaserJet 6P Mode (HL-1250).....	A-10
EPSON Mode (HL-1250 Only).....	A-11
IBM Mode (HL-1250 Only).....	A-11
REGULATIONS .....	A-17

## Definitions of Warnings, Cautions, and Notes

The following conventions are used in this User's Guide:

### **Warning**

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

### **Caution**

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

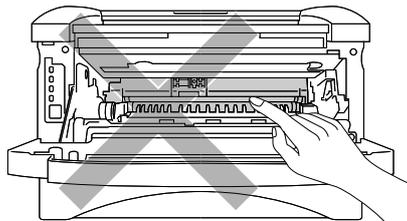
### **Note**

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

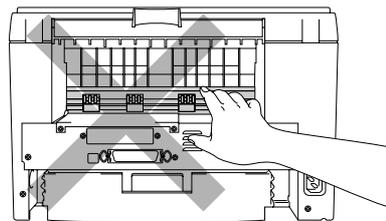
## To Use the Printer Safely

### **Warning**

- After you have just used the printer, some internal parts of the printer are extremely hot. When you open the front cover or rear cover of the printer, never touch the shaded parts shown in the following illustration.

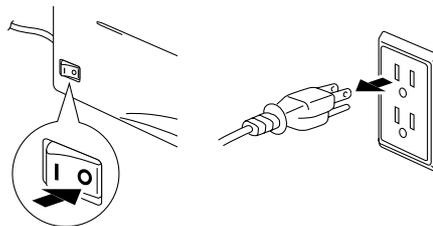


 **High Temperature**  
Front view



 **High Temperature**  
Rear view

- There are high voltage electrodes inside the printer. Before cleaning the printer, make sure you have turned off the power switch and unplugged the power cord from the power outlet.



Turning off the Power Switch and Unplug the Printer

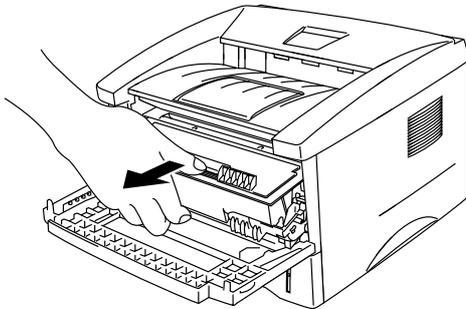
## Shipment of the Printer

If for any reason you must ship your Printer, carefully package the Printer to avoid any damage during transit. It is recommended that you save and use the original packaging. The Printer should also be adequately insured with the carrier.

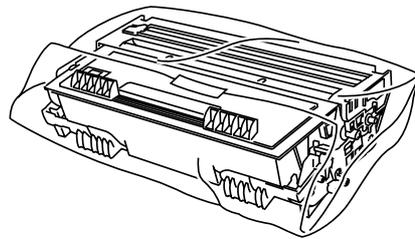
### ⚠ Caution

When shipping the Printer, the DRUM UNIT assembly including the TONER CARTRIDGE must be removed from the Printer and placed in the plastic bag. **Failure to remove the unit and place it in the plastic bag during shipping will cause severe damage to the Printer and will VOID THE WARRANTY.**

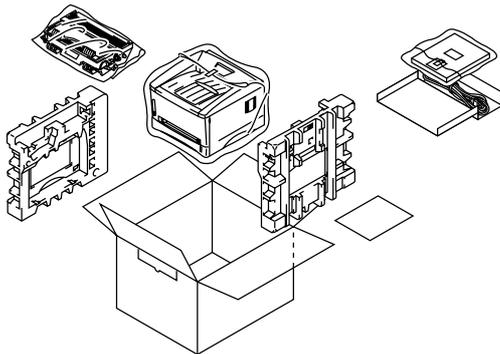
1 Remove the drum unit assembly.



2 Place it in the plastic bag and seal the bag completely.



3 Remove the AC cord from the printer. Re-pack the printer.



**(For USA & CANADA Only)**

For technical and operational assistance, please call:

In USA	1-800-276-7746	(within US)
In CANADA	1-800-853-6660 514-685-6464	(within Montreal)

If you have comments or suggestions, please write us at:

In USA	Printer Customer Support Brother International Corporation 15 Musick Irvine, CA 92618
In CANADA	Brother International Corporation (Canada), Ltd. - Marketing Dept. 1, rue Hôtel de Ville Dollard-des-Ormeaux, PQ, Canada H9B 3H6

**BBS**

For downloading drivers from our Bulletin Board Service, call:

In USA	1-888-298-3616
In CANADA	1-514-685-2040

Please log on to our BBS with your first name, last name and a four digit number for your password. Our BBS supports modem speeds up to 14,400, 8 bits no parity, 1 stop bit.

**Fax-Back System**

Brother Customer Service has installed an easy to use Fax-Back System so you can get instant answers to common technical questions and product information for all Brother products. This is available 24 hours a day, 7 days a week. You can use the system to send the information to any fax machine, not just the one you are calling from. Please call 1-800-521-2846 (U.S.A) or 1-800-681-9838 (Canada) and follow the voice prompts to receive faxed instructions on how to use the system and your index of Fax-Back subjects.

**DEALERS/SERVICE CENTERS (USA only)**

For the name of an authorized dealer or service center, call 1-800-284-4357.

**SERVICE CENTERS (Canada only)**

For service center addresses in Canada, call 1-800-853-6660

**INTERNET ADDRESS**

For technical questions and downloading drivers: <http://www.brother.com>

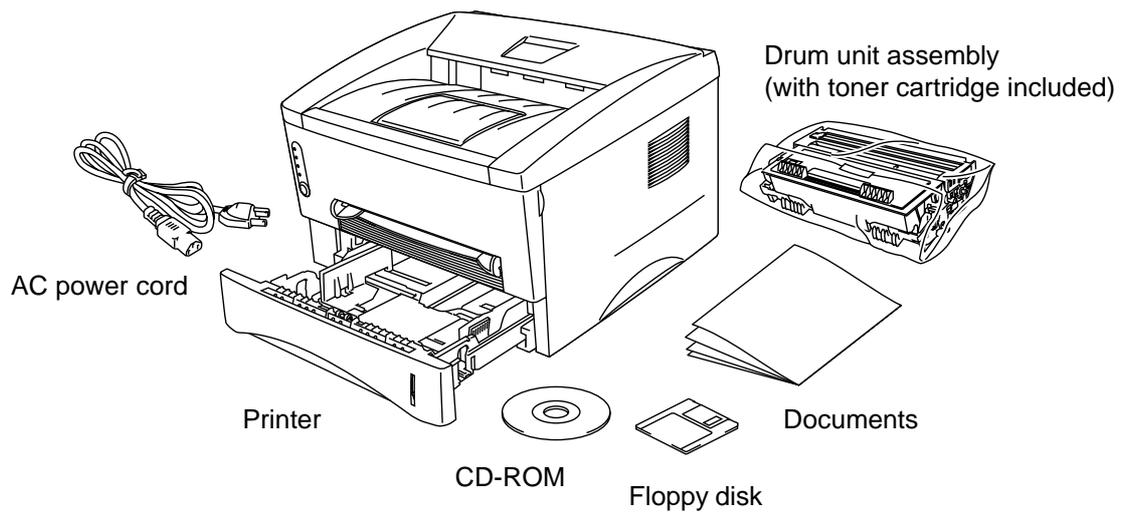
# CHAPTER 1 ABOUT THIS PRINTER

## What is included in the carton

---

### Components

When you unpack the printer, check to see that you have all of the following parts:

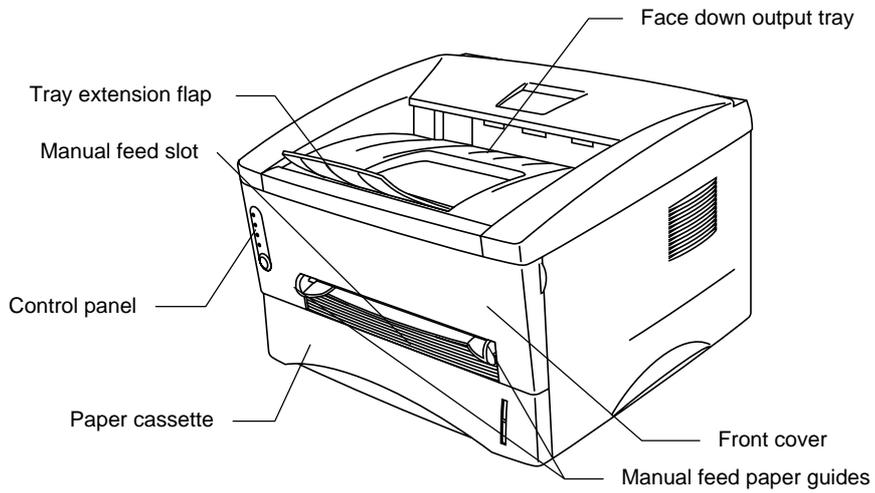


**Fig. 1-1 Components in the Printer Carton**

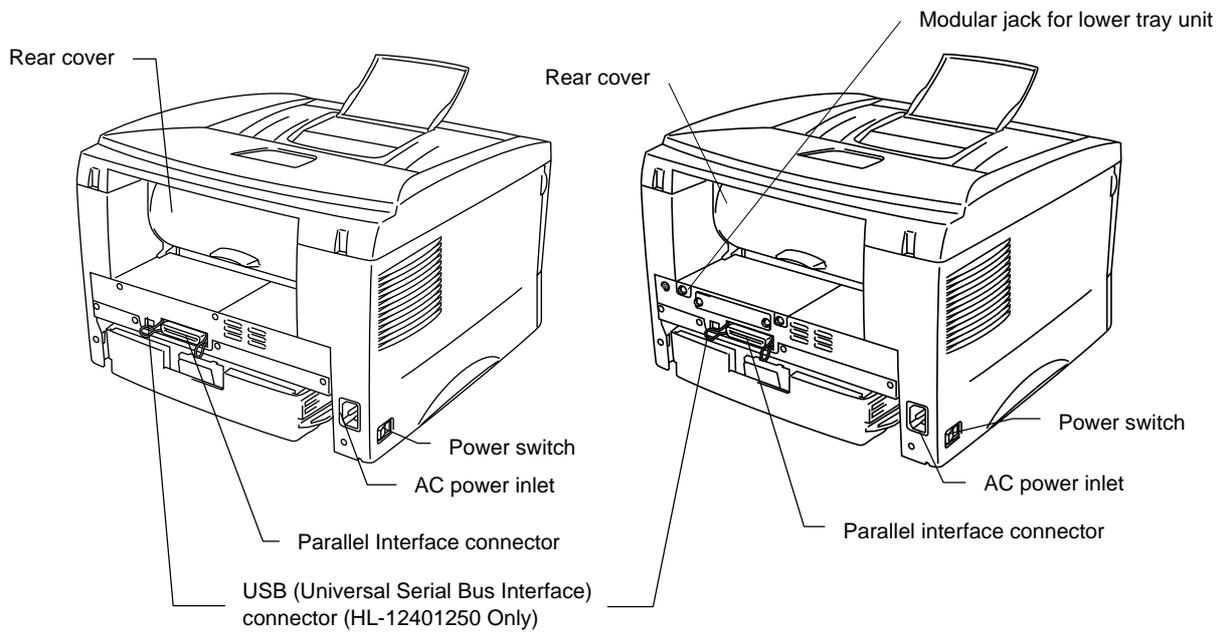
Components may differ from one country to another.

# About your printer

---



**Fig. 1-2 Front View**



**Fig. 1-3 HL-1030/1240 Rear View**

**Fig. 1-4 HL-1250 Rear View**

## Features of your printer

---

### ❑ High Resolution and Fast Printing Speed

#### ***HL-1030 :***

True 600 x 600 dots per inch (dpi) (GDI mode), with microfine toner and up to 10 pages per minute (ppm) print speed (A4 or Letter paper).

#### ***HL-1240 :***

True 600 x 600 dots per inch (dpi) (GDI mode), True 300 x 300 dots per inch (dpi) (PCL mode) with microfine toner and up to 12 pages per minute (ppm) print speed (A4 or Letter paper).

#### ***HL-1250 :***

True 600 x 600 dots per inch (dpi) and 1200 x 600 dpi for graphics with microfine toner and up to 12 pages per minute (ppm) print speed (A4 or Letter paper).

### ❑ Front Operation

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

### ❑ Versatile Paper Handling

This printer loads paper automatically from the paper cassette. The paper cassette can hold A4, letter, B5, Executive, A5 and A6 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. **For additional information, see “What kind of paper can I use” in Chapter 1.**

### ❑ Enhanced Printing Performance and User-Friendly Operation for Windows®

The dedicated printer drivers for Microsoft® Windows® 95/98, Windows 3.1 and Windows NT 4.0 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 supports our unique compression mode to enhance the printing speed in Windows applications and allows you to choose various printer settings including toner save mode, custom paper size, sleep mode, gray scale adjustment, resolution and many layout functions. You can easily set these print options through the Printer Setup Menu.

## ❑ Quick Print Setup

You can easily make changes to settings which you need to change frequently in a small selection window on your screen.

## ❑ Remote Printer Console Program for DOS (For HL-1240/1250 Only)

The Remote Printer Console (RPC) utility program is available on the CD-ROM supplied with your printer. When you operate your computer in a DOS (Disk Operating System) environment, this program allows you to easily change the default settings of the printer such as fonts, page setup, and emulations.

This program also provides a status monitor program, which is a Terminate-and-Stay Resident (TSR) program. It can monitor the printer status while running in the background and report the current status or errors on your computer screen.

## ❑ Popular Printer Emulation Support (For HL-1240/1250 Only)

These printers support the following popular printer emulation modes.

The *HL-1240* supports HP LaserJet IIP (PCL4).

The *HL-1250* supports HP LaserJet 6P (PCL6), Epson FX-850 and IBM Proprinter XL. 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 and Epson or HP and IBM. If you want to select the printer emulation, you can do it using the Remote Printer Console Program.

## ❑ Printer Status Monitor with Bi-directional Parallel Interface

The printer driver can monitor the status of your printer using bi-directional parallel communications. IEEE-1284 bi-directional parallel printer cable is recommended.

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. For example: when your printer is out of paper, the dialog box will display "No Paper" and instructions for the proper corrective action.

**❑ USB Interface (For Windows 98, iMac and Power Macintosh G3 with USB users Only) (For HL-1240/1250 Only)**

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

**❑ High Resolution Control & Advanced Photoscale Technology (For HL-1250 Only)**

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.

**❑ Enhanced Memory Management**

The printer provides its own data compression technology in the printer hardware and the supplied printer driver software, which can automatically compress graphic 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 larger fonts, with the printer's standard memory.

## ❑ Environment-Friendly

### **Economy Printing Mode**

This feature will cut your printing cost by saving toner. It is useful to obtain draft copies for proof-reading. You can select from two economy modes—25% toner saving and 50% toner saving—through the Windows printer driver supplied with your printer.

### **Sleep Mode (Power Save Mode)**

When the printer is not used for a certain period of time, sleep mode automatically reduces power consumption. The HL-1030/1240 consumes less than 5 Watts, the HL-1250 consumes less than 6 Watts when in sleep mode.

### **Low Running Cost**

Since the toner cartridge is separate from the drum unit, you need to replace only the toner cartridge after approximately 3,000 pages, which is both cost effective and ecologically friendly. **(An optional high capacity toner unit that will print up to 6,000 pages can also be used in this printer.)**

The actual number of pages printed with a toner cartridge may vary depending on your average type of print job, the figures quoted are based on 5% coverage per page.

You can print up to 20,000 pages with the drum unit, however there are many factors that determine the actual drum life.

## ❑ Bar Code Print (HL-1250 Only)

This printer can print the following 11 types of bar codes:

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

## What printer options are available

---

### ❑ External Print Server (Brother NC-2010p)

An optional Network print server Brother NC-2010p is available, which allows your printer to be connected to your Network via the parallel interface. See [“What is the Brother print server \(NC-2010p\)”](#) in Chapter 2

### ❑ Lower Tray Unit (LT-400) (HL-1250 Only)

A lower tray unit expands the paper source capacity. You can load extra paper and switch between the upper and lower paper sources automatically. See [“The Lower Tray Unit”](#) in Chapter 2.

### ❑ Serial Interface (RS-100M) (HL-1250 Only)

To connect the printer to a computer or a Unix workstation with a serial interface or to an Apple Macintosh computer, you need to install the optional interface board (RS-100M). See [“How to use the SERIAL INTERFACE \(RS-100M\) connection”](#) in Chapter 2.

### ❑ SIMM (Memory) (HL-1250 Only)

The printer has 4.0 Mbytes of standard memory and one slot for optional additional memory. The memory can be expanded up to 36 Mbytes by installing a commercially available single in-line memory modules (SIMM). It is recommended to add memory if you want to print graphics at higher resolutions.

## Place the printer

---

Please take note of the following before using the printer.

### Power Supply

- Use the printer within the specified power range.
  - AC power:  $\pm 10\%$  of the rated power voltage in your country
  - Frequency: 50 Hz (220 V– 240 V) or 50/60 Hz (110–120 V)Check the rating plate on the back of the printer for your model's specification.
- The power cord, including extensions, should not exceed 5 meters (16.5 feet).
- Do not share the same power circuit with other high-power appliances, particularly an air conditioner, copier, shredder and so on. 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.

### Environment

- The printer should be installed near a power outlet, which is easily accessible.
- Use the printer only within the following ranges of temperature and humidity.
  - Ambient temperature: 10°C to 32.5°C (50°F to 90.5°F)
  - Ambient humidity: 20% to 80% (without condensation)
- The printer should be used in a well ventilation 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 obstructed. Keep a gap of 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 top cover.

## **System Requirements for the Brother Printing Solution for Windows**

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

- IBM PC or compatible with 80486 SX or higher microprocessor
- 10 MB of space available on your hard disk for the printer driver and all fonts
- Microsoft Windows 3.1/3.11, Windows 95/98 or Windows NT 4.0

# What kind of paper can I use

---

## Media Type

	Paper type	Paper size
Paper cassette (standard)	cut sheet	letter, A4, ISO B5, Executive, A5, A6, and legal (US and Canada Only)
	Transparencies	A4, Letter
Manual feed slot	cut sheet	letter, A4, B5 (JIS/ISO), Executive, A5, A6, legal
	envelope	COM 10, Monarch, C5, DL and ISO B5
	organizer	Day-Timer® J, K, L
	Transparencies	A4, Letter
	Labels	A4, Letter
other sizes	70-216 x 116-356 mm, 2.75-8.5 x 4.57-14 inches	
Optional lower paper cassette (For HL-1250 Only)	cut sheet	letter, A4, ISO B5, Executive, A5 and legal (US and Canada Only)

## Paper Specification

### Paper Cassette

	Cut Sheet
Basis Weight	64 to 105 g/m <sup>2</sup> (17 to 28 lb.)
Caliper	0.08 to 0.13 mm (0.003 to 0.005 in.)
Moisture Content	4% to 6% by weight

### Manual Feed Slot

	Cut Sheet	Envelope
Basis Weight	64 to 158 g/m <sup>2</sup> (17 to 43 lb.)	75 to 90 g/m <sup>2</sup> single thickness (20 to 24 lb.)
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

**Note**

- We recommend you use labels or transparencies which are designed for use in laser printers.
- The printing speed may change, depending on the paper size and the media type in use, in order to avoid damage to the printer.

**Paper Capacity****Upper Paper Cassette**

A4/Letter paper:	Approx. 250 sheets of 80 g/m <sup>2</sup> (21 lb.)	Up to 27 mm (1.06 inch) in height (up to the mark)
Transparencies	10 sheets	

**Face down printing into the output tray**

A4/Letter paper:	Approx. 150 sheets of 80 g/m <sup>2</sup> (21 lb.)
------------------	--

**Face up printing out of the rear of the printer**

Thicker paper:	Single sheet of thicker paper
----------------	-------------------------------

**Recommended Paper**

Cut sheet:	Xerox 4200 (in USA) / Xerox 80 Premier Paper (in Europe) or equivalent
Label:	Avery laser label or equivalent
Transparencies:	3M CG3300 or equivalent

## Remarks

It is recommended that you test paper, especially special sizes and types of paper and heavy paper, on this printer before purchasing large quantities.

Avoid using coated paper, such as vinyl coated paper.

Avoid using preprinted or highly textured paper.

Use a recommended type of paper, especially plain paper and transparencies, for optimum printing. For more information on paper specifications, consult your nearest authorized sales representative or the place you purchased your printer.

If the paper has problems feeding from the paper cassette, use the manual feed slot and try again.

Use neutral paper. Do not use acid paper to avoid any damage to the printer drum unit.

Make sure that you have selected the appropriate media type in the printer driver for optimum printing.

The print quality might be degraded or the life of the drum unit might be shortened with the following usage. Using the printer for special print jobs for long periods of time (i.e. printing name cards, etc.)

## Cut Sheet

We recommend you use long-grained paper for the best print quality. If you are using short-grained paper, it may be the cause of paper jams.

## Labels / Transparencies

Avoid feeding labels with the carrier sheet exposed, or your printer will be damaged.

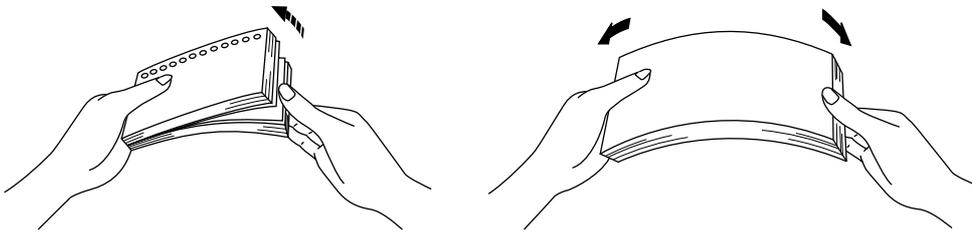
We recommend you use labels or transparencies which are designed for use in laser printers.

## Special Paper

Before using paper with holes, such as organizer sheets, you must fan the stack well to avoid paper jams and misfeeds.

Do not use organizer sheets that are stuck together. The glue that is used might cause damage to the printer.

Before using any paper, make sure that it is not curled. If it is, you should straighten the paper as much as possible. Feeding curled paper can cause paper jams and misfeeds.



**Fig. 1-5 Fan the Paper and Straighten the Paper**

Different types of paper should not be loaded at the same time in the paper cassette, it may cause paper jams or misfeeds.

## Envelopes

The following types of envelopes are not recommended for use.

- Damaged, curled, wrinkled, or irregularly shaped envelopes
- Extremely shiny or highly textured envelopes
- Envelopes with clasps
- Envelopes with self-adhesive closures
- Envelopes of baggy construction
- Envelopes not sharply creased
- Embossed envelopes
- Envelopes already printed by a laser printer
- Envelopes pre-printed on the inside
- Envelopes that cannot be arranged uniformly when placed in a pile

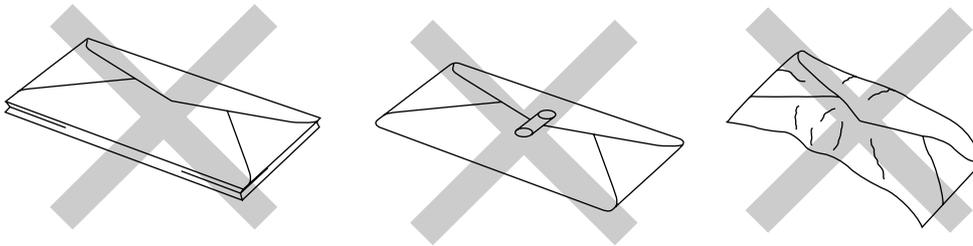


Fig. 1-6 Envelopes

## Printable Area

The figure below shows the physically printable area.

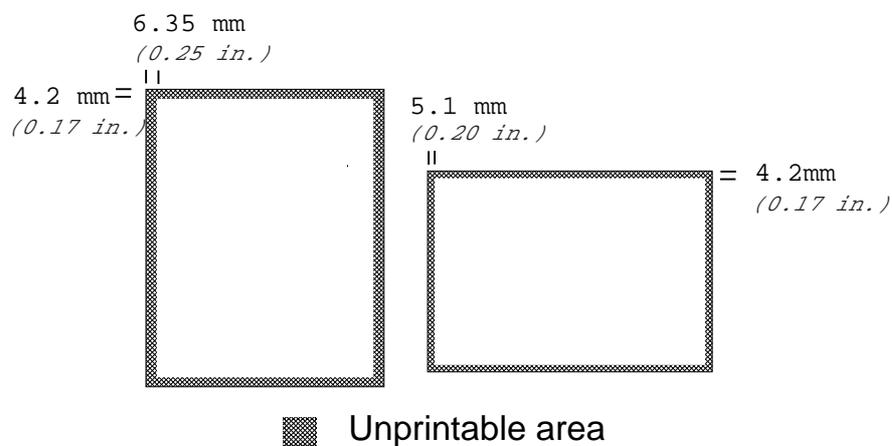


Fig. 1-7 Printable Area

## How to load paper into the Paper Cassette

---

1. Pull the paper cassette completely out of the printer.

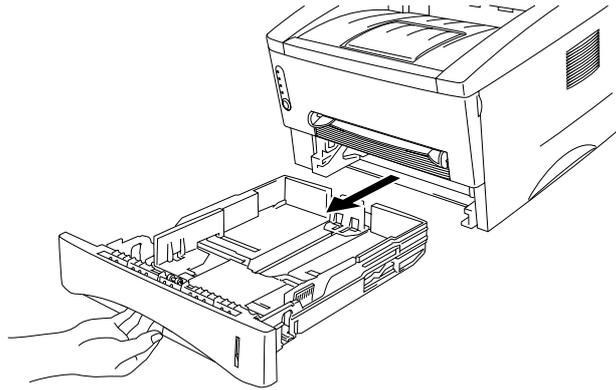


Fig. 1-8 Pull out the paper cassette

2. Adjust the paper guides at the right and rear of the paper cassette to match the paper size you want to load. Make sure that the tip of the paper guides fit into the slots correctly.

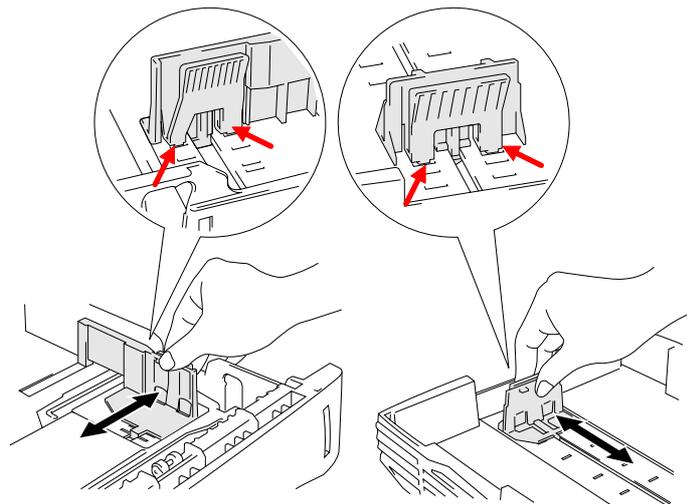


Fig. 1-9 Adjust the paper guides

3. Load paper into the paper cassette. Make sure that the paper is flat in the cassette at all four corners.

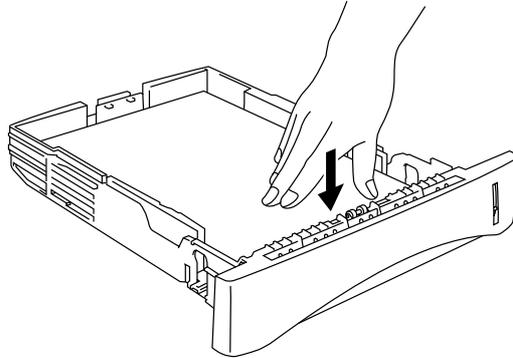


Fig. 1-10 Load the paper

► **Note**

Do not load more than 250 sheets of paper (80 g/m<sup>2</sup>) in the cassette, or paper jams may occur. Paper should be loaded up to the lines on the sliding guide.

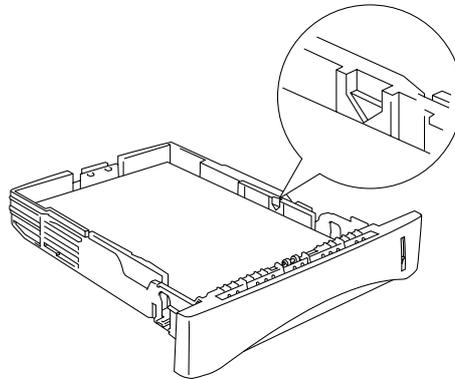
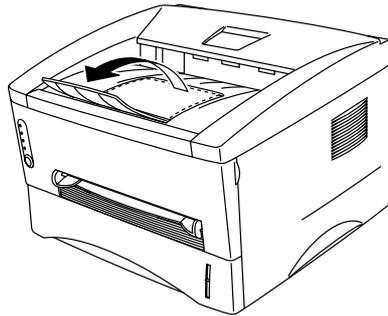


Fig. 1-11 Paper Lines

4. Install the paper cassette into the printer. Make sure it is inserted fully into the printer.

► **Note**

- Extend the Output tray extension flap to prevent the paper from sliding off the face down output tray.

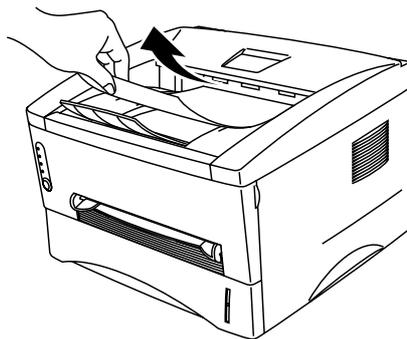


**Fig. 1-12 Extend the Output tray extension flap**

- We recommend that you remove printed pages immediately after printing if you choose not to extend the Output tray extension flap.

⚠ **Caution**

Remove each sheet immediately especially when you use transparencies.



**Fig. 1-13 Remove each sheet**

## How to load a sheet of paper manually

---

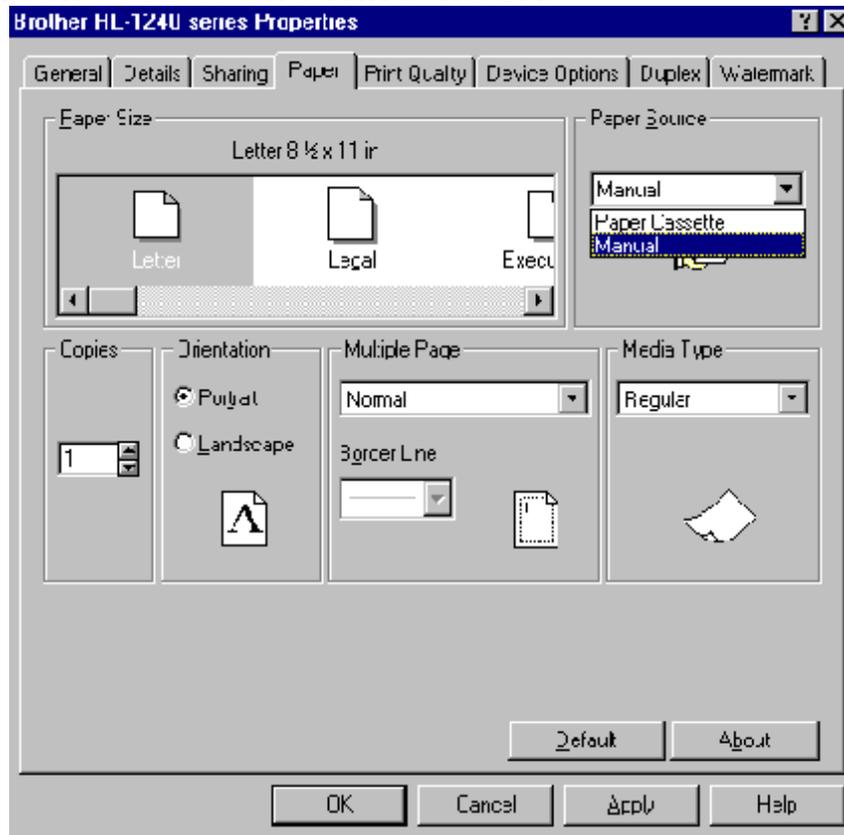
► **Note**

- Insert the paper into the manual feed slot using both hands.
- The printer turns the manual feed mode on automatically when you insert paper into the manual feed slot.
- If the paper you are printing is between A4 and A6 in size, and between 64 g/m<sup>2</sup> and 105 g/m<sup>2</sup> we recommend that you use the paper cassette.

You may also view the technique of loading one sheet of paper manually in the instructional video on the supplied CD-ROM.

1. Select manual feed mode in the printer driver.

### <Windows 95 / 98 and Windows 3.1>



## <Windows NT4.0>

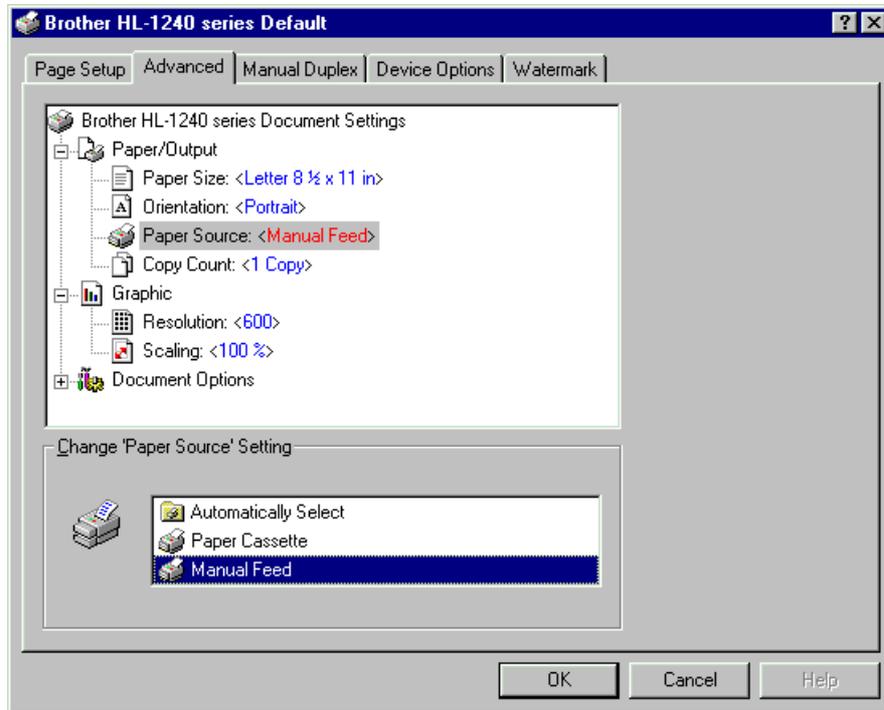


Fig. 1-14 Select manual feed mode

2. Send the print data to the printer.

### • Note

A "NO PAPER" message is shown in the Status Monitor until you insert a sheet of paper into the manual feed slot.



Fig. 1-15 No paper

3. Set the width of the manual feed slot paper guides using both hands to the paper width to be used.

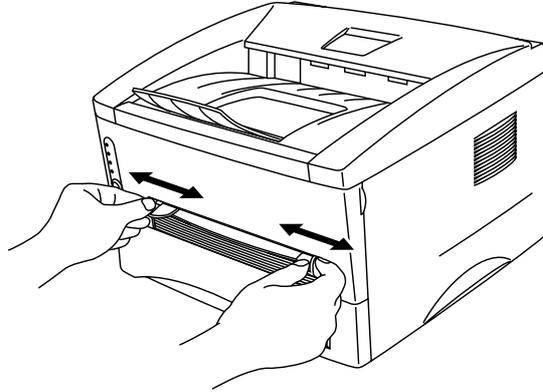


Fig. 1-16 Set the width of the manual feed slot paper guides

4. Insert the paper into the manual feed slot with both hands until the front edge of the paper touches the paper feed roller. Hold the paper in this position until the printer feeds the paper in automatically a short distance and then let go of the paper.

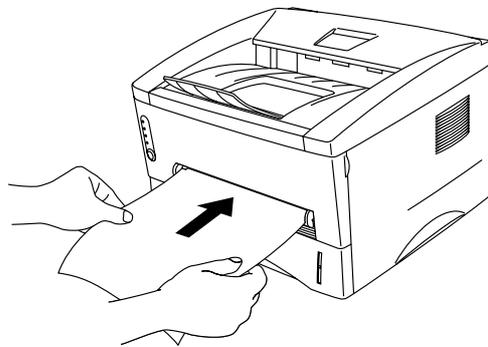


Fig. 1-17 Insert the paper

5. After the printer ejects the printed page, insert the next sheet of paper as in step 4 above. The printer will wait until you insert the next sheet of paper. Repeat this as necessary for the number of pages you need to print.

## To print on thicker paper and card

The printer has a straight paper path from the manual feed slot to the rear of the printer when the rear cover is lifted upwards. Use this paper feed and output method when you want to print on thicker paper or card.

1. Select manual feed mode in the printer driver.
2. Lift up the rear cover at the rear of the printer.

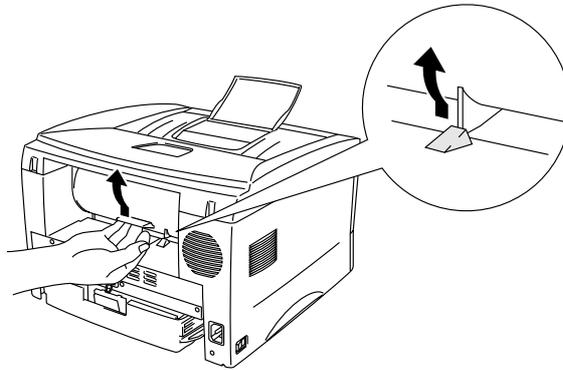


Fig. 1-18 Lift up the rear cover

3. Send the print data as usual.

### Note

A “NO PAPER” message is shown in the Status Monitor until you insert a sheet of paper into the manual feed slot.

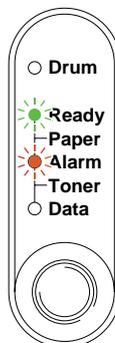
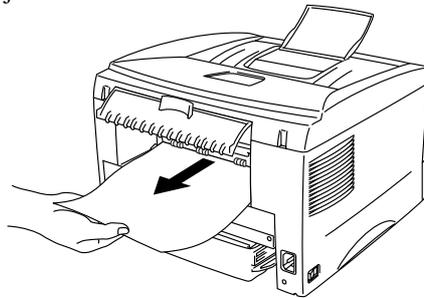


Fig. 1-19 No paper

4. Set the width of the manual feed paper guides using both hands to the paper width you want to use.
5. Insert the paper into the manual feed slot with both hands until the front edge of the paper touches the paper feed roller. Hold the paper in this position until the printer feeds the paper in automatically a short distance and then let go of the paper.
6. After the printer ejects the printed page, insert the next sheet of paper as in step 5 above. The printer will wait until you insert the next sheet of paper. Repeat this as necessary for the number of pages you need to print.
7. Close the rear cover of the printer.

**⚠ Caution**

- Remove each sheet immediately after printing. Stacking the sheets may cause curl or media feed jams.



**Fig. 1-20 Remove each sheet immediately**

## How to print on both sides of the paper (Manual Duplexing)

---

The supplied printer drivers for Windows 95/98, Windows 3.1 and Windows NT 4.0 all enable manual duplex printing. For more information about how to make the settings, see the Help text in the printer driver.

### **Guidelines for printing on both sides of the paper**

- 1 It may cause wrinkling if the paper is too thin.
- 2 If paper is curled, straighten it and then set it into the paper cassette.
- 3 The paper type should be regular paper. Do not use bond paper.
- 4 When setting paper into the paper cassette, empty the cassette first, then insert the printed paper only, printed side face up. (Do not add the printed paper onto the top of the unprinted paper stack.)
- 5 If the paper is not feeding correctly, it is possible that the paper is curled, remove the paper and straighten it.

## To print on both sides of the paper from the paper cassette

1. Select the required manual duplex printing mode from the driver.
2. The printer will automatically print all the even numbered pages on one side of the paper first.
3. Remove the printed even numbered pages from the output tray and re-insert them into the paper cassette, loading the paper with the side to be printed (blank side) face down, and the top edge toward you. Follow the instructions on the computer screen.

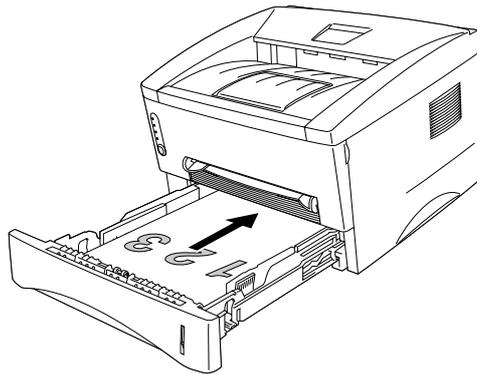


Fig. 1-21 Paper orientation for the paper cassette

4. The printer will now automatically print all the odd pages on the reverse side of the paper.

## To print on both sides of the paper from the manual feed slot

### ⚠ Caution

- Before re-inserting the sheets, you have to straighten them, or you may get paper feed errors.
- The use of very thin or very thick paper is not recommended.
- When you use the Manual Duplex function, it is possible that paper jams may occur or print quality might not be satisfactory. If a paper jam has occurred, please refer to “PAPER JAMS and how to clear them” in Chapter 4.

- **1.** Select the required manual duplex printing mode and manual feed mode from the driver.
- **2.** Using both hands, insert the paper into the manual feed slot with the side to be printed first facing upwards.  
Follow the instructions on the computer screen.  
Repeat this until you have printed all the even numbered pages.
- **3.** Remove the printed even numbered pages from the output tray and re-insert them in order into the manual feed slot, loading the paper with the side to be printed (blank side) face up, and the top of the printed side towards the printer. Follow the instructions on the computer screen.

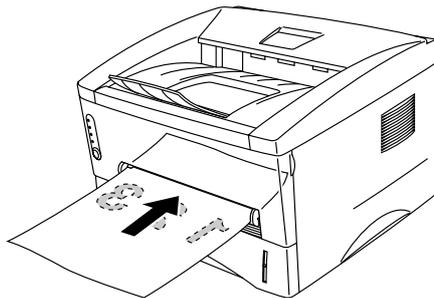


Fig. 1-22 Paper operation for the manual feed slot

- **4.** Repeat action 3 until you have printed all the odd numbered pages on the reverse side of the paper.

## What do the LED indications mean

---

This section refers to the following LED and button on the printer control panel.

The LED indications as shown in the table below are used in the illustrations in this chapter.

	LED is Off
	LED is Blinking
	LED is On

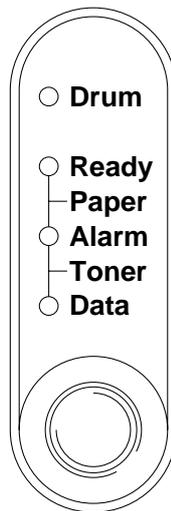


Fig. 1-23 LEDs and Button on the Control Panel

 **Note**

When the power switch is off or the printer is in sleep mode, all LEDs including the **Ready** LED are off.

## Ready (Paper) LED indications

The **Ready** LED indicates the current status of the printer.

LED	Printer status
Off 	The power switch is off or the printer is in sleep mode. If the printer is in sleep mode, it will wake up automatically when it receives data or when you press the control panel button.
Blinking 	(Blinking at 1 second intervals) The printer is warming up. (Blinking at 2 seconds intervals) The printer is cooling down and stops printing until the internal temperature of the printer lowers.
On 	The printer is ready to print.

This LED also works as the **Paper** LED with the **Alarm** LED. They blink simultaneously to indicate a paper error

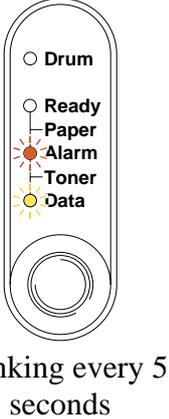
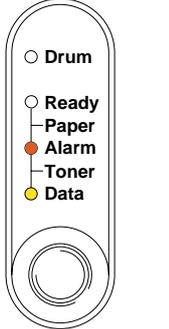
LED	Error	Action
	Paper jam	Clear the paper jam referring to Chapter 4 "PAPER JAMS and How to clear them" and press the panel button if the printer does not automatically resume printing.
	No paper	Load paper in the printer referring to "How to load paper into the Paper cassette" in Chapter 1 and press the panel button.
	Misfeed	Reinstall the paper and press the panel button.

## Data (Toner) LED indications

The **Data** LED indicates the current status of the print data process.

LED	Printer status
Off 	The printer has no print data.
Blinking 	The printer is receiving data from the computer or the printer is processing data in memory.
On 	Print data remains in the printer memory. If the <b>Data</b> LED is on for a long period of time and nothing has printed, you need to press the button to print the remaining data.

This LED also works as the **Toner** LED with the **Alarm** LED. They blink simultaneously to indicate a toner error. See “How to replace the Toner cartridge” in Chapter 3 .

LED	Error	Action
 <p>Blinking every 5 seconds</p>	Toner low	Indicates that the toner cartridge is nearly empty. Purchase a new toner cartridge and have it ready for when Toner empty is indicated.
	Toner empty	Replace the toner cartridge with a new one referring to Chapter 3.

## Drum LED indications

The **Drum** LED indicates the Drum unit is nearly at the end of its life.

LED	Printer status
Off ○	The drum unit can be used.
On ●	The drum unit is nearly at the end of its life. We recommend you to obtain a new drum unit to replace the current one. See “How to replace the drum unit” in Chapter 3.

## Alarm LED indications

The **Alarm** LED blinks (with no other LEDs) to indicate a printer error status such as “COVER OPEN” or “MEMORY FULL.” If any other error occurs, the printer indicates the error by blinking the **Alarm** LED with another LED or by printing an error report. For additional information, see “Control Panel Indications” in Chapter 4.

## Control Panel Button Operations

The control panel button is used for the following purposes depending on the situation.

### **Cancel Printing**

If you press the button during printing, the printer immediately stops printing and ejects the paper.

### **Wake-Up**

If the printer is in sleep mode, pressing the button wakes it up into the ready state. It will take up to 45 seconds for the printer to go into the **Ready** state.

### **Form Feed**

If the **Data** LED is on, press the button. The printer prints any data remaining in the printer memory: this operation is called “Form Feed.”

### **Error Recovery**

If an error occurs, the printer will recover from some errors automatically. If the error does not clear automatically, press the button to clear the error and continue printer operation.

## Other Control Features

The printer has the following useful features:

### Sleep Mode

When the printer does not receive data for a certain period of time (timeout), it enters sleep mode. Sleep mode acts as though the printer was turned off. The default timeout is 5 minutes and it is automatically adjusted to the most suitable time-out setting depending on the frequency of your printer use (Intelligent Sleep Mode). While the printer is in sleep mode, all the LEDs are off and it is as if it was turned off, but the printer can still receive data from the computer. Receiving a print file or document automatically wakes up the printer to start printing. Pressing the button also wakes up the printer.

#### Note

- When the printer goes into sleep mode, the fan will not stop until the printer engine has cooled down.
- Sleep mode allows the print engine to cool, so the temperature of your room and how long the printer has been in sleep mode affects the warm-up time. This warm-up time can take up to 45 seconds. The **Ready** LED blinks to indicate that the printer is warming up.
- You can change the timeout for the sleep mode with the supplied printer driver (all models) or Remote Printer Console program. Refer to the Help section in the printer driver or RPC program for more information about the sleep mode setting.

## Test Print Mode

The printer has the following test print modes. Follow these steps:

1. Make sure that the front cover is closed.
2. Hold down the control panel button and turn on the power switch. Keep the button depressed until the **Drum** LED comes on.

The **Drum** LED illuminates to indicate that the printer is in the test print mode.

3. Release and then press the button again to execute the test print or hold down the button to select another option as shown in the table below and release the button to execute the selected option.

LED Lit	Choice	Function
<b>Drum</b>	Test sample page	The printer prints a test sample page. The printer returns to the ready status after printing.
<b>Ready</b>	Print Config & Print Fonts I	The printer prints the current configuration of the printer and a list of the internal fonts. The printer returns to the ready status after printing.
<b>Alarm</b>	Factory Reset	The printer is restored to the factory setting and permanent fonts and macros are cleared. The printer returns to the ready status after printing.
<b>Data</b>	Hex Dump Print	The printer can print data as hexadecimal values so that you can check data errors and problems. To exit from this mode, you have to turn off the printer.

# CHAPTER 2 OPTIONS

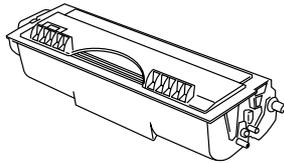
## Optional Accessories and Supplies

This printer has the following optional accessories and supplies, and you can increase the capabilities of the printer with these items.

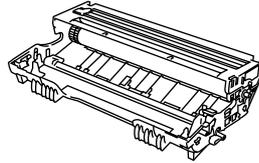
### Supplies

	Item	Information
1	Toner cartridge	See page 3-3
2	Drum unit	See page 3-9
3	Print Server	See page 2-10

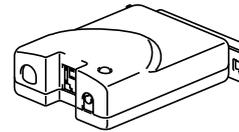
1



2



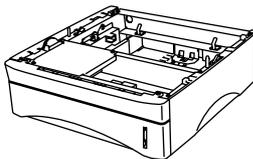
3



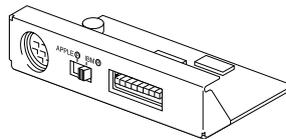
### <For HL-1250 Only>

	Item	Features	Information
1	Lower Tray Unit	Paper feeder and 250 sheet tray	See page 2-2
2	Serial Interface	Connect the printer to the computer serial port or to a Unix workstation.	See page 2-3
3	SIMM	The memory can be expanded up to 36 Mbytes	See page 2-11

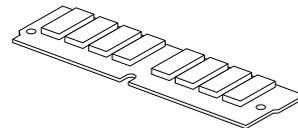
1



2



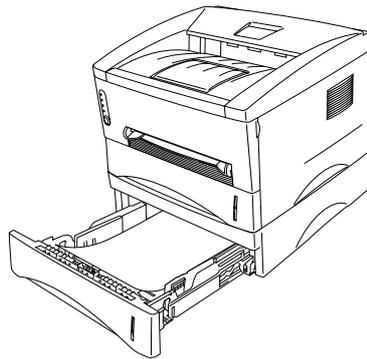
3



## The Lower Tray unit (For HL-1250 Only)

---

The lower tray unit is an optional device that functions as a third paper source. It can contain a maximum of 250 sheets of paper (80 g/m<sup>2</sup>). To obtain the optional lower tray unit, please consult the dealer or store where you purchased the printer.



**Fig. 2-1 Loading Paper in the Lower Tray Unit**

With the lower tray unit installed, load paper into the lower paper cassette in exactly the same way as you load paper in the upper paper cassette.

The paper sizes that may be used in the lower paper cassette are not the same for the upper paper cassette as shown below.

<b>Paper type</b>	<b>Available size</b>	<b>Weight and capacity</b>
Cut sheet	letter, A4, ISO B5, Executive, A5 and legal (US and Canada Only)	64 to 105 g/m <sup>2</sup> plain paper (17 to 28 lb.) 250 sheets

**⚠ Caution**

If a paper jam occurs when using the lower tray unit, check for correct installation of the paper cassette.

## How to use the SERIAL INTERFACE (RS-100M) Connection (For HL-1250 Only)

---

To connect the printer to a DOS computer with a serial interface or to an Apple Macintosh computer with a serial interface, you need to install the optional serial interface board (RS-100M). When you have installed the serial interface board, you can share the printer between two computers (two IBM compatible PCs or one IBM compatible PC and one Apple Macintosh) using the parallel and serial interfaces at the same time. Automatic interface selection between the two connections is a standard feature.

 **Note**

- The serial interface board for this printer is an option, but in some countries the serial interface board may have been installed by either the factory or dealer.
- The serial interface for Apple Macintosh (RS-422A) will only print at 300 dpi.

The serial interface board is installed onto the main controller board inside the printer. For installation details, see the instruction guide which is provided with the serial interface board.

## How to select the RS-422A (Apple) or RS-232C (IBM) Serial Interface (For HL-1250 Only)

### Note

This section is only for printer models which have had the serial interface installed.

### Caution

Be sure to select the serial interface type to match your computer as follows:

- For Apple Macintosh computers: you should not have to change any settings because the Apple (RS-422A) setting is factory selected (default).
- For IBM compatible PCs you should move the switch to the IBM (RS-232C) setting.
- If you are using an Apple Macintosh on the RS-422A port and an IBM compatible PC on the parallel port, it is not necessary to make any changes to the switch setting.

If necessary, select the interface type as follows:

-  1. Make sure that the printer is in the off-line state.
-  2. Select the RS-422A(Apple) or RS-232C(IBM) interface by changing the serial interface slide switch to the right to select the IBM(RS-232C) interface or to the left to select the Apple(RS-422A) interface.

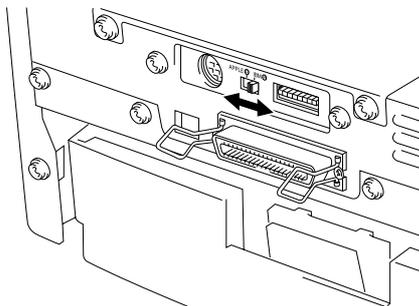


Fig. 2-2 Selecting the RS-422A (Apple) or RS-232C (IBM) Serial Interface

## How to set the Serial Interface Parameters

### Note

This section is only for printer models which have had the serial interface installed.

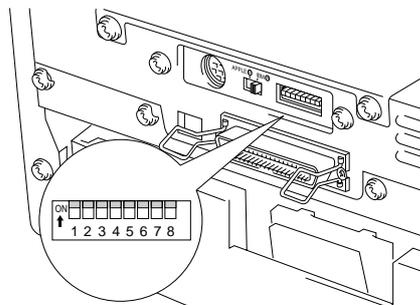
### Caution

Be sure to set the parameters to match your computer as follows:

- Never change the RS-422A parameters for Apple Macintosh computers. The RS-422A parameters have been correctly set at the factory for Apple Macintosh computers, you do not need to change the settings. You may skip this section. If you change parameters for the RS-232C serial interface and you switch back to RS-422A for Apple Macintosh computers, be sure to restore the parameters to the factory settings.
- Set the RS-232C parameters to match your computer. You can change the serial settings for your PC in several different places; within your DOS application, within the Windows Printer Icon (for Windows application software only) or within your AUTOEXEC.BAT file using MODE commands. For information on serial interface parameters, see the user's guide of your computer or software.
- Do not alter the dual in - line package (DIP) switch settings when the printer power is on.

If necessary, set the serial interface parameters as follow:

-  **1.** Make sure that the printer is in the off-line state.
-  **2.** Set the serial interface parameters you require by referring to Table 1 below and by moving up (on) or down (off) the selectors of the dual in-line package (DIP) switch. The default settings for both RS-422A and RS-232C modes are all switches set to OFF (down).



**Fig. 2-3 Setting the Serial Interface Parameters**

Table 1: Serial Interface Parameters Settings

Selector	Parameters	On (up)	Off (down)
1	Baud Rate	See Table 2	
2	Baud Rate	See Table 2	
3	Data Length	7 bits	8 bits
4	Stop Bit	2 bits	1 bit
5	Parity	See Table 3.	
6	Parity	See Table 3.	
7	Protocol	Xon/Xoff + DTR	DTR only
8	Robust Xon	On	Off

Table 2: Baud Rate Settings

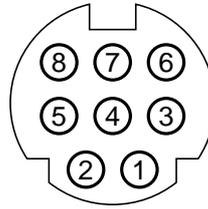
Selector 1	Selector 2	For RS-422A	For RS-232C
<b>Off</b>	<b>Off</b>	57600	9600
On	Off	9600	4800
Off	On	1200	1200
On	On	19200	19200

Table 3: Parity Settings

Selector 5	Selector 6	Parity
On	On	Odd
On	Off	Even
<b>Off</b>	<b>Off</b>	None

**Note**

- The factory settings are indicated in bold ( all switches OFF ).
- If the robust Xon setting is turned on with selector 8, the printer sends Xon signals at one second intervals to the connected computer until it receives data. It is effective only if selector 7 is set to the On position for the Xon/Xoff plus DTR setting.

**RS-100M Interface Connector****Fig. 2-4 Interface Connector**

## Pin Assignment

Pin No.	Signal	
	IBM(RS-232C)	Apple(RS-422A)
1	DTR	DTR
2	DSR	DSR
3	TxD	TxD-
4	0V	0V
5	RxD	RxD-
6		TxD+
7		N.C.
8		RxD+

## How to connect the Serial Interface Cable

 **Note**

This section is only for printer models which have had the serial interface installed.

You need a serial interface cable with an 8-pin, DIN-type connector to connect your printer and computer.

 **Note**

- Consult your dealer for a serial interface cable.
- If you are a Macintosh user, you can easily find the necessary cable at a local computer store. Look for Apple serial cables labeled as “Macintosh to StyleWriter™” or “Macintosh to Personal LaserWriter™ LS” or the “Apple System Peripheral 8 Cable”. Do not purchase a serial cable labeled as “Straight-through” or “LocalTalk”.
- If you are a PC user, you need to purchase a special serial cable from your dealer. If you have a 9-pin connector on your computer, look for a cable labeled “IBM AT to ImageWriter II” cable. If you have a 25-pin connector, look for a cable labeled “DB25 to ImageWriter II.” These cables most likely would be found in the Apple Macintosh section at your computer dealer. For more information about the interface specification, consult your dealer.

You can connect a parallel and a serial interface cable at the same time. The auto interface selection function allows you to share the printer with two computers. To do this, connect the parallel interface cable and then connect the serial interface cable as follows:

1. Make sure that the power switch is turned off.

**⚠ Caution**

Be sure to turn off the power switch before connecting or disconnecting the interface cables, or the printer may be damaged.

2. Insert and secure the parallel interface connector from the computer into the parallel interface port of the printer.
3. Insert and secure the serial interface connector from the computer or Macintosh into the serial interface port of the printer.
4. Turn on the power switch.

## What is the Brother print server (NC-2010p)

---

An optional Network print server Brother NC-2010p is available, which allows your printer to be connected to your network via the parallel interface.

Brother print servers allow multiple host computers to share a Brother printer on a 10 Mbit Ethernet network. Any user can print their job as if the printer was directly connected to their computer. No special software is required on the host computers and users on DEC, UNIX, Novell, AppleTalk, LAN Server/Warp Server, Windows NT, Windows 95/98, NetBIOS and Banyan VINES computers can simultaneously access the same printer.

### Features

The Brother print servers offers the widest range of features in the industry, including:

- LAT, TCP/IP, Netware, AppleTalk, NetBIOS, Banyan VINES and DLC/LLC protocols
- Network Operating System compatibility:
  - Digital Equipment Corporation networks, including PATHWORKS and DECprint Server
  - UNIX systems that support either the Berkeley lpr/lpd printing protocol, printing to a raw TCP port
  - Novell Netware V2.15 or above, V3.xx, or V4.xx, including support for NetWare Directory Services (NDS)
  - AppleTalk Phase 2
  - Windows NT4.0 and NT3.5x
  - IBM LAN Server V4.0 or above, or any earlier version that has IBM TCP/IP V2.xx
  - Windows 95/98 (Peer-to-Peer or client mode)
- Very high performance
- Superior network and printer management::
  - BRAdmin and BRAdmin32 Windows-based Management utilities.
  - SNMP MIB I and MIB II over IP or IPX
  - Remote console management via DEC NCP, TELNET or NetWare.
  - HTTP web browser management capability
- Ipd-Plus feature for providing multiple services with custom setup and reset strings plus text-to-PostScript conversion
- Flash memory for easy updating of firmware

## How to add extra Memory (For HL-1250 Only)

---

**The HL-1030/1240** printer has 2 Mbyte of standard memory and is not able to be upgraded with additional memory.

**The HL-1250** printer has 4 Mbyte of standard memory and a slot for optional additional memory. The memory can be expanded up to a total of 36 Mbytes by installing a commercially available single in-line memory module (SIMM).

Additional memory is useful and may be necessary if you are using the Page Protection function.

### Minimum Memory Recommendation (including resident memory)

Page Protect = AUTO or Off

	300 dpi	600 dpi
Letter/A4	2 MB	2 MB
Legal	2 MB	2 MB

Page Protection = Letter, A4, or Legal

	300 dpi	600 dpi
Letter/A4	2 MB	6 MB
Legal	3 MB	6 MB

This printer can accept memory SIMM with the following specifications:

Speed	60 nsec - 80 nsec
Pin Type	72 pin
Height	25.4 mm (1.00") or less
Output	32 bit or 36 bit

**Note**

The HL-1250 can also support a resolution of true 600 dpi and 1200 x 600 dpi under Windows 95/98, Windows 3.1 and Windows NT 4.0 with the supplied printer driver. We recommend you expand the printer memory to avoid any memory full errors.

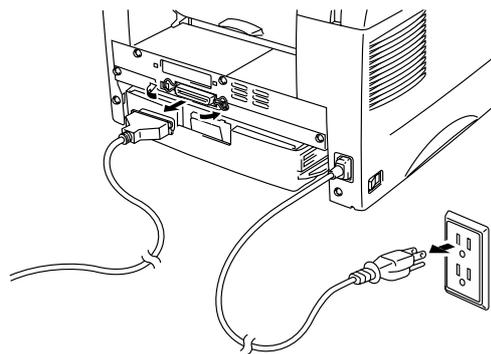
**Note**

The printer has only one slot for a SIMM upgrade. If you want to increase your printer memory again after you have already installed a SIMM module into the slot, you will need to remove the previously installed SIMM first. For example, if you had previously increased the printer memory from the standard 4MB to 12MB by adding an 8MB SIMM and you wish to increase your total memory to 36 MB, you need to remove the installed 8MB SIMM and install a new 32MB SIMM into the printer.

## How to install additional SIMM memory

To install the SIMM, follow these steps:

1. Turn off the power switch and unplug the AC cord from the AC outlet. Disconnect the interface cable (printer cable) from the printer.

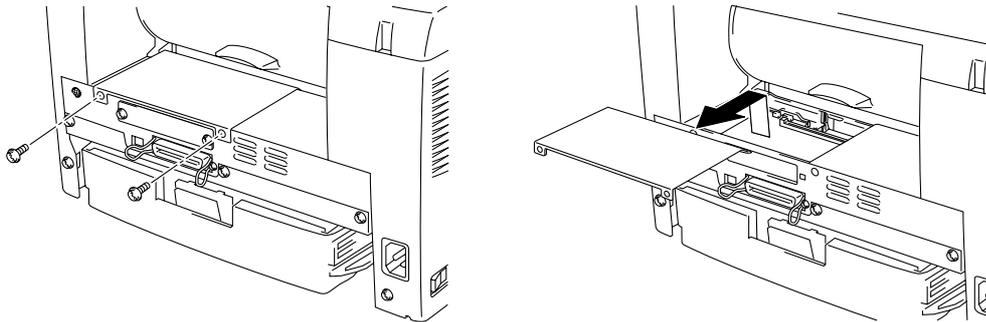


**Fig. 2-5 Unplug the AC Cord and Disconnect the Interface Cable**

**⚠ Caution**

Be sure to turn off the power switch and unplug the AC cord to the printer before installing or removing the SIMM to/from the main controller PCB.

- **2.** Open the rear cover. Unscrew the screws securing the access cover and remove it.



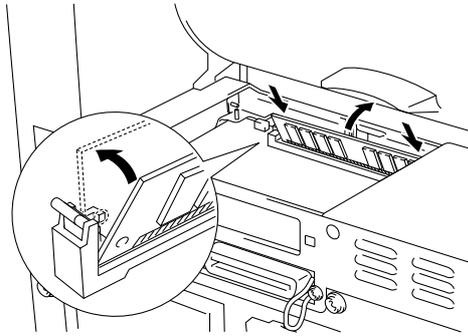
**Fig. 2-6 Removing the Main Controller PCB**

- **3.** Unpack the SIMM and hold it by its edge.

**⚠ Caution**

SIMM boards may be damaged by even a small amount of static electricity. Do not touch the memory chips or the board surface. When handling the board and before installing or removing it, wear an antistatic wrist strap, or frequently touch the surface of the antistatic package or bare metal on the printer.

4. Install the SIMM into the slot at an angle and then push it gently towards the vertical until it clicks into place.



**Fig. 2-7 Install the SIMM**

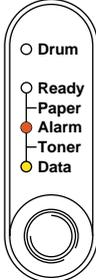
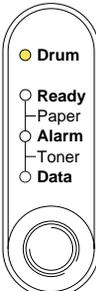
5. Install the access cover.
6. Secure the access cover with the two screws. Close the rear cover.
7. Reconnect the interface cable (printer cable) from your computer. Plug the power cord into the AC outlet and turn on the power switch.
8. To check that the SIMM is installed correctly, you should perform a Test Print "Print Configuration" which will print the current total memory size.

**Note**

If you have already installed the serial interface (RS-100M), remove it first, and then install the SIMM.

# CHAPTER 3 MAINTENANCE

The following are maintenance messages and appear on the LEDs. These messages prompt you to replace each of the consumables before they run out.

LED maintenance message	Consumable to replace	Approximate life	How to replace
Toner empty	Toner cartridge	3,000 pages * (standard toner cartridge)  6,000 pages * (high capacity toner cartridge)	<a href="#">See 3-3</a>
			
Drum life	Drum unit	Up to 20,000 pages *	<a href="#">See 3-9</a>
			

## Periodic maintenance parts

To maintain print quality, the fixing unit should be replaced after printing the following number of pages.

Item	Approximate life	To purchase replacement
Fixing unit	50,000 pages *	Call customer support
Separator pad holder assy	50,000 pages *	Call customer support
Pick up roller assy	50,000 pages *	Call customer support

\* The actual number of printed pages may vary depending on your average type of print job and type of paper. The figures quoted are based upon 5% coverage per page.

## How to replace the Toner Cartridge

The printer, when the standard capacity toner cartridge is used, can print approximately 3,000 pages at 5% coverage on A4/Letter size paper with one toner cartridge. When the High capacity toner cartridge is used, approximately 6,000 pages can be printed under the same conditions. When the toner cartridge is running low, the **Alarm** and **Data** (Toner) LEDs blink once every 5 seconds to indicate toner low.

### Note

- Actual page count will vary depending on your average document type. (i.e.: standard letter, detailed graphics, etc.)
- It is recommended that you always keep a new toner cartridge ready for use in case you get a toner low warning.
- Discard the used toner cartridge according to your local regulations. If you are not sure of them, consult your local dealer. Be sure to seal the toner cartridge tightly so that toner powder does not spill out of the cartridge. Dispose of the used toner cartridge in accordance with local plastic waste regulations.
- It is recommended that you clean the printer when you replace the toner cartridge. See [“How to clean the printer” in this chapter](#), you can also view the CD video.
- There are many factors that determine the actual toner life, such as temperature, humidity, type of paper that you use, the number of pages per print job, etc. Under ideal conditions, the average toner life is estimated at approximately 3,000 pages (standard) / 6,000 pages (High capacity toner cartridge). The actual number of pages that your toner will print may be significantly less than this estimate. Because we have no control over the many factors that determine the actual toner life, we cannot guarantee a minimum number of pages that will be printed by your toner.

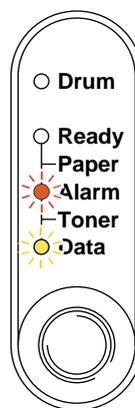


Fig. 3-1 Toner low indication

**Note**

Both **Alarm** and **Data** (Toner) LEDs will blink continuously to indicate that the toner is nearly empty. This blinking does not stop until you have installed a new toner cartridge.

The toner cartridge is replaced in the following way. You can also view the toner cartridge replacement method in the instructional video on the supplied CD-ROM:

1. Open the front cover. Pull out the drum unit assembly.

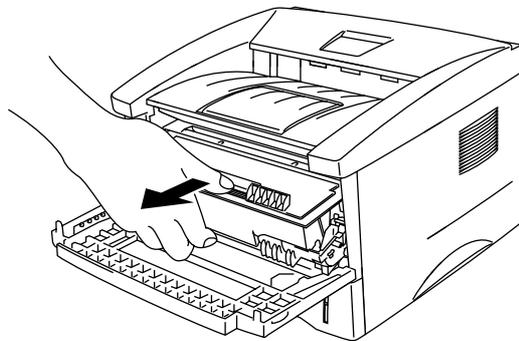


Fig. 3-2 Removing the drum Unit

**Caution**

- It is recommended that you put the drum unit assembly on a piece of disposable paper or cloth in case of accidental toner spill or scatter.
- Do not touch the electrodes shown below to prevent damage to the printer caused by static electricity.

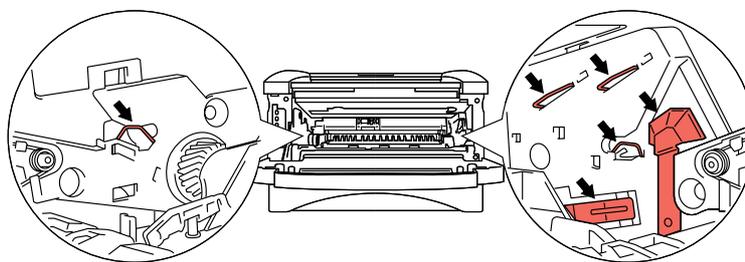


Fig 3-3 Electrodes

2. Place the drum unit assembly containing the old toner cartridge on a flat, horizontal surface, and pull the toner cartridge out of the drum unit assembly while pushing the lock lever down with your right hand.

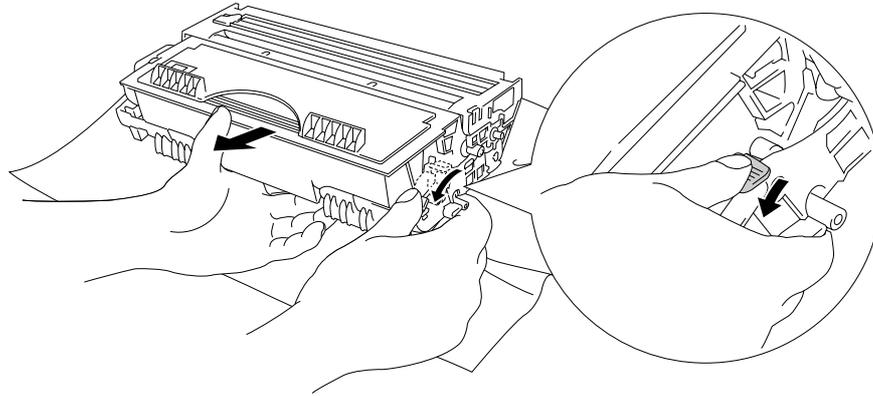


Fig. 3-4 Removing the old toner cartridge

**⚠ Caution**

Handle the toner cartridge carefully. If toner scatters on your hands or clothes, wipe or wash it off with cold water immediately.

3. Unpack the new toner cartridge, gently rock it from side to side 5 or 6 times keeping it horizontal.

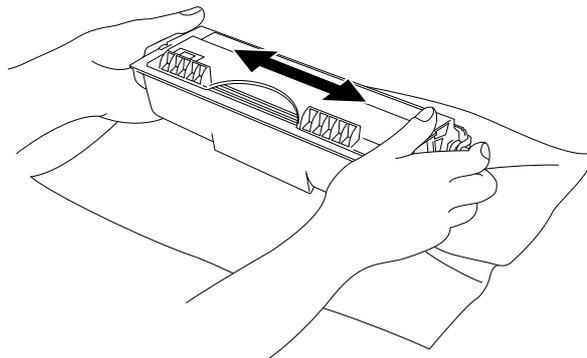


Fig. 3-5 Rocking the toner cartridge

4. Remove the protective cover.

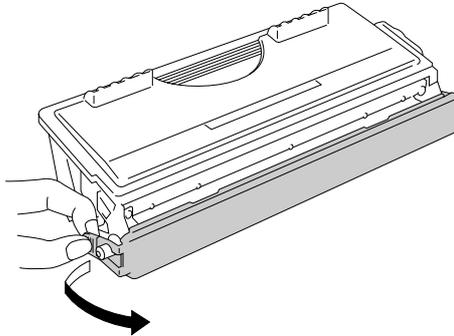


Fig.3-6 Remove the protective cover

**Caution**

- Only unpack the toner cartridge immediately before you need to install it into the printer. If toner cartridges are left unpacked for a long period of time, the toner life is shortened.
- If an unpacked drum unit is subjected to excessive direct sunlight or room light, the unit may be damaged.
- Use a Brother genuine toner cartridge which is specially formulated to ensure top print quality.
- Printing with a 3rd party toner or 3rd party toner cartridge may reduce not only the printing quality but also the quality and life of the printer itself. It may also cause serious damage to the performance and life of a genuine Brother drum unit. Warranty coverage does not apply to problems caused by the use of 3rd party toner or 3rd party toner cartridges.
- Printing with a 3rd party drum unit or OPC drum may reduce not only the printing quality but also the quality and life of the printer itself. It may also cause serious damage to the performance and life of a genuine Brother drum unit. Warranty coverage does not apply to problems or damage caused by the use of a 3rd party drum unit or OPC drum.
- Install the toner cartridge immediately after you remove the protective part. Do not touch the shaded part shown below.

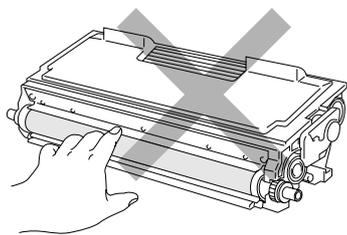


Fig. 3-7 Developer roller

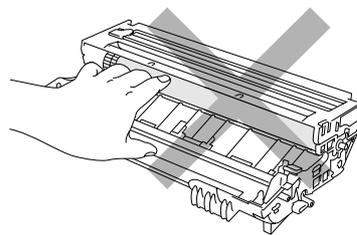


Fig. 3-8 OPC drum

5. Install the new toner cartridge into the drum unit until it locks into place, indicated by a click. When the toner cartridge is installed correctly, the lock lever is lifted automatically.

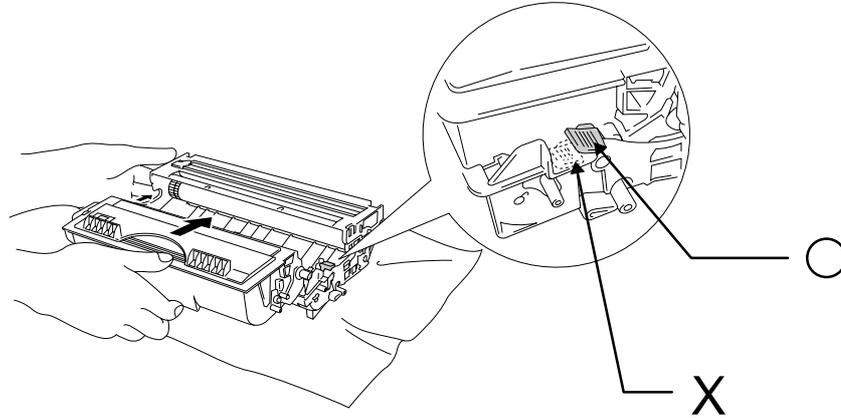


Fig. 3-9 Installing the toner cartridge into the drum unit

**! Caution**

Make sure that the toner cartridge is installed correctly, or the toner cartridge may separate from the drum unit when you hold the drum unit assembly.

6. Clean the primary corona wire inside the drum unit by gently sliding the blue tab to the right end and left end several times. Return the tab to the home position before reinstalling the drum unit assembly.

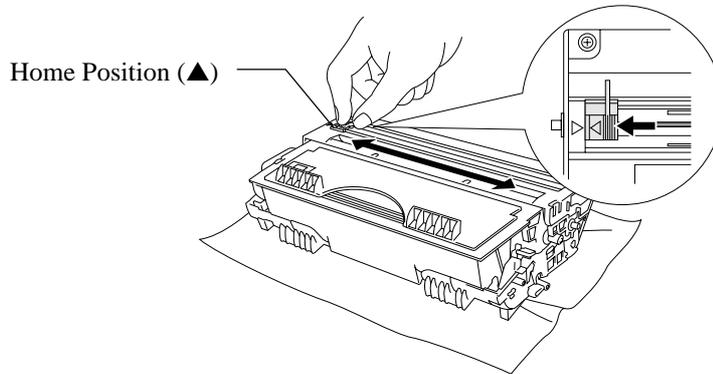


Fig. 3-10 Cleaning the primary corona wire

**! Caution**

Make sure that you return the tab to the home position (▲ mark position) before reinstalling the drum unit assembly into the printer or printed pages may have vertical stripes.

7. Re-install the drum unit assembly into the printer and close the front cover.

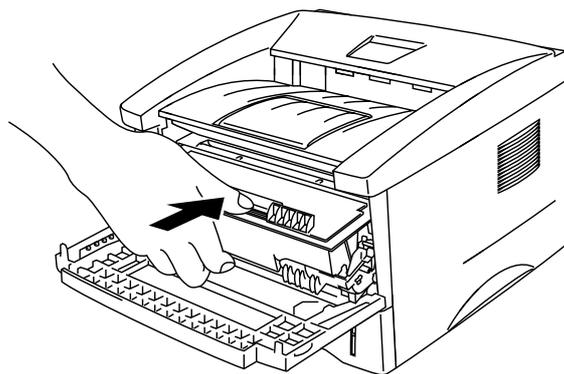


Fig 3-11 Re-install the drum unit assembly

## How to replace the Drum Unit

The printer uses a drum unit to create the print images on paper. If the **Drum** LED is on, it indicates the drum unit is nearly at the end of its life. We recommend you obtain a new drum unit to replace the current one. Even if the **Drum** LED is on, you may be able to continue to print without replacing the drum unit for a while. If there is a noticeable deterioration in the output print quality even before the **Drum** LED lights, then the drum unit should be replaced.

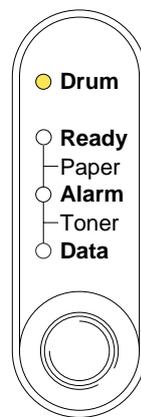


Fig. 3-12 Drum unit nearly at the end of its Life

### ⚠ Caution

- When removing the drum unit, handle it carefully as it may contain toner.
- You should clean the printer when you replace the drum unit. See [“How to clean the printer” in this chapter](#) and in the instructional video on the supplied CD-ROM.

### 🔧 Note

- The drum unit is a consumable, and it is necessary to replace it periodically.
- There are many factors that determine the actual drum life, such as temperature, humidity, type of paper and toner that you use, the number of pages per print job, etc. Under ideal conditions, the average drum life is estimated at approximately 20,000 pages. The actual number of pages that your drum will print may be significantly less than this estimate. Because we have no control over the many factors that determine the actual drum life, we cannot guarantee a minimum number of pages that will be printed by your drum.
- For best performance, use only genuine Brother toner. The product should only be used in a clean, dust-free environment with adequate ventilation.

Follow these steps to replace the drum unit. You can also view the drum unit replacement method in the instructional video on the supplied CD-ROM:

1. Open the front cover of the printer and pull out the drum unit assembly.

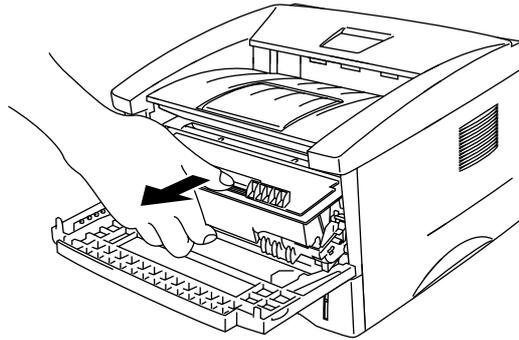


Fig. 3-13 Removing the drum unit assembly

**⚠ Caution**

Do not touch the electrodes shown below to prevent damage to the printer caused by static electricity.

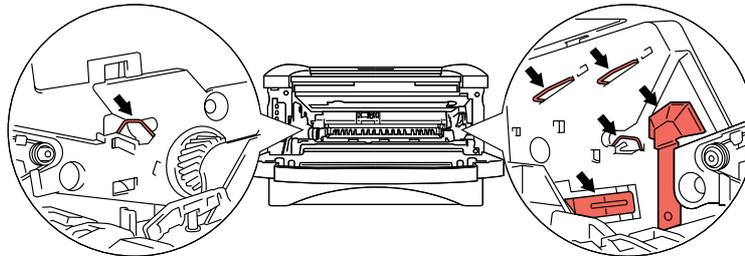


Fig. 3-14 Electrodes

2. Place the drum unit assembly on a flat, horizontal surface, and pull the toner cartridge out of the drum unit assembly while pushing the lock lever down with your right hand.

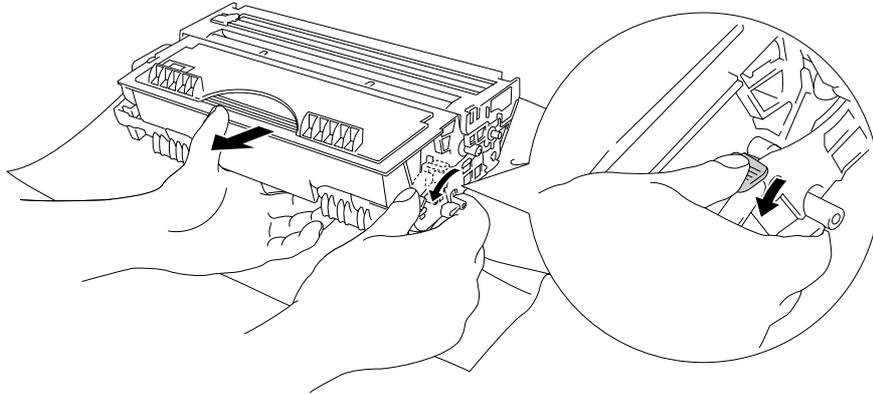


Fig. 3-15 Removing the toner cartridge

**Note**

- Discard the used drum unit according to local regulations. If you are not sure of them, consult your local dealer/retailer. Be sure to seal up the drum unit tightly so that toner powder does not spill out of the unit.
- It is recommended to put the drum unit on a piece of disposable paper or cloth in case of accidental toner spill or scatter.
- Handle the toner cartridge carefully as it contains toner. If toner scatters and your hands or clothes get dirty, wipe or wash it off with cold water immediately.

3. Unpack the new drum unit.

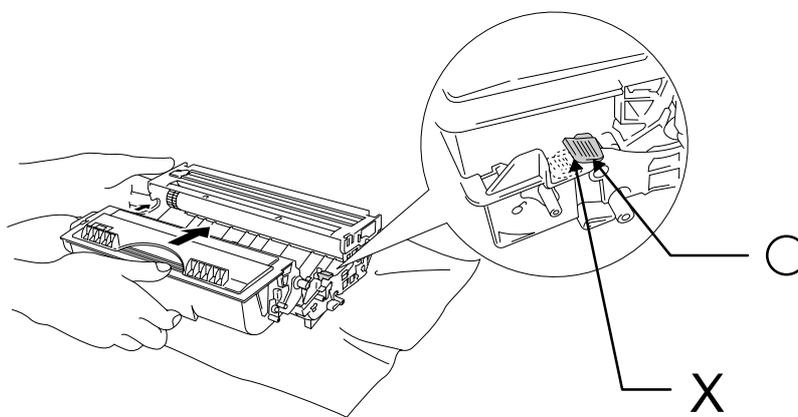
**Caution**

- Only unpack a drum unit immediately before you need to install it into the printer. If an unpacked drum unit is subjected to excessive direct sunlight or room light, the unit may be damaged.
- Handle the drum unit carefully. If toner scatters on your hands or clothes, wipe or wash it off with cold water immediately.

4. Install the toner cartridge into the new drum unit until it locks into place, indicated by a click. When the toner cartridge is installed correctly, the lock lever is lifted automatically.

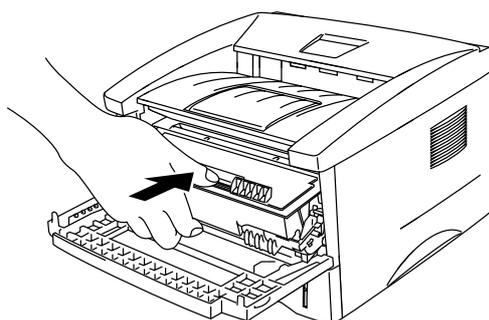
**⚠ Caution**

Make sure that the toner cartridge is installed correctly, or the toner cartridge may separate from the drum unit when you hold the drum unit assembly.



**Fig.3-16 Install the toner cartridge into the drum unit**

5. Install the drum unit assembly into the printer.



**Fig. 3-17 Installing the drum unit**

Make sure that the printer is turned on, the front cover is open and the **Drum** and **Alarm** LEDs are illuminated.

- ✎ **6.** Reset the page counter referring to the instructions supplied with the new drum unit.

 **Caution**

Do not reset the page counter when you replace the toner cartridge only.

- ✎ **7.** Close the front cover.

- ✎ **8.** Make sure that the **Drum LED** is now off.

## How to clean the printer

---

Clean the printer exterior and interior periodically. If printed pages get stained with toner, clean the printer interior and drum unit.

### Cleaning the printer exterior

**Note**

Clean the printer exterior using the information in the following instructions. This is also shown in the instructional video on the supplied CD-ROM.

1. Turn off the power switch and unplug the power cord.

**Warning**

There are high voltage electrodes inside the printer. Before cleaning the printer, make sure you have turned off the power switch and unplugged the power cord from the power outlet.

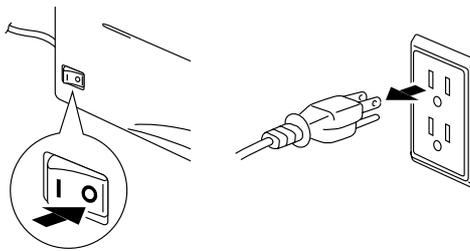


Fig. 3-18 Turning off the switch and unplugging

2. Use a damp cloth for cleaning.

 **Caution**

Use water or neutral detergents for cleaning. Cleaning with volatile liquids such as thinners or benzene will damage the surface of the printer.

-  **3.** Wipe dirt and dust away from the printer exterior with the damp cloth and allow the printer to dry completely before turning the power on again.
  
-  **4.** Plug in the power cord.

## Cleaning the printer interior and Drum Unit

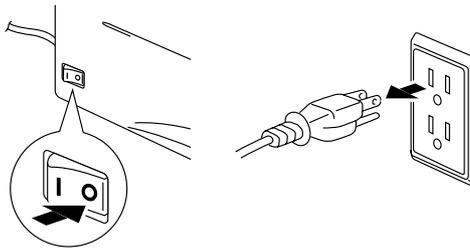
### **Note**

Clean the printer interior and the drum unit using information in the following instructions. This is also shown in the instructional video on the supplied CD-ROM.

-  **1.** Turn off the power switch and unplug the power cord.

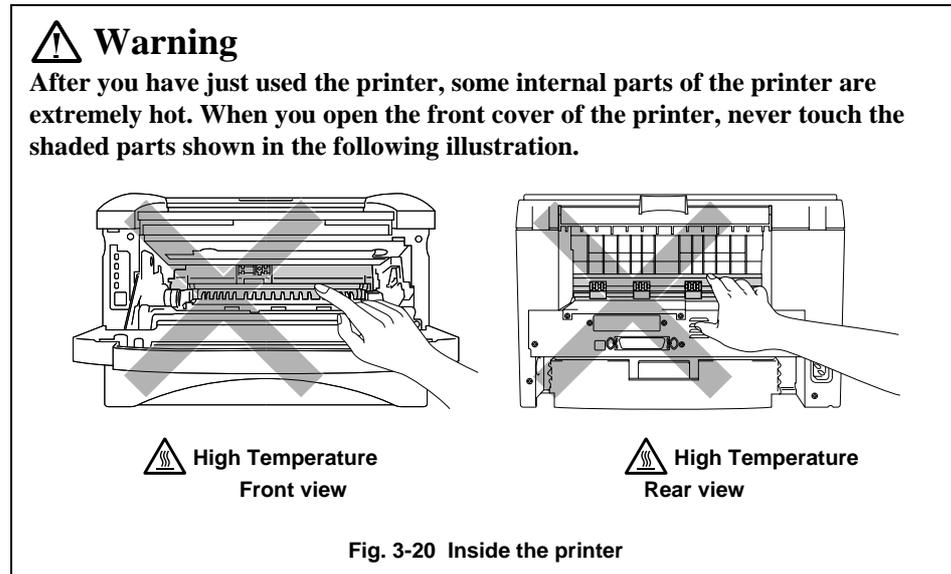
### **Warning**

- **There are high voltage electrodes inside the printer. Before cleaning the printer, make sure you have turned off the power switch and unplugged the power cord from the outlet.**

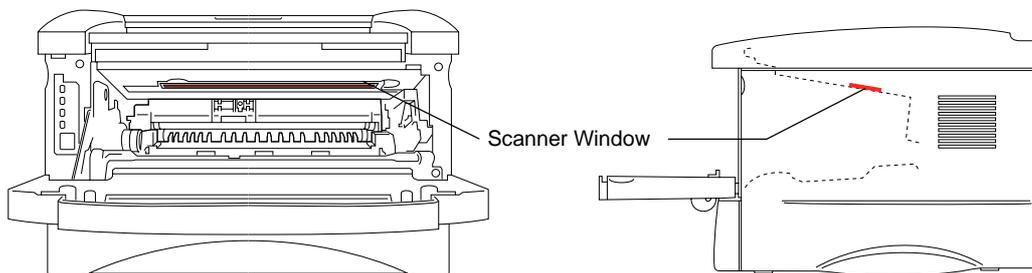


**Fig. 3-19** Turning off the switch and unplugging

-  **2.** Open the front cover of the printer.
-  **3.** Take the drum unit assembly out of the printer and put it to one side.



- ➡ **4.** Gently wipe the scanner window with a soft dry cloth.



**Fig. 3-21 Cleaning the scanner window**

**⚠ Caution**

- Do not touch the scanner window with your fingers.
- Do not wipe the scanner window with cleaning alcohol (isophorol).
- Handle the drum unit carefully as it contains toner. If toner scatters and your hands or cloths get dirty, wipe or wash it off with water immediately.

**🔧 Note**

It is recommended to put the drum unit on a piece of disposable paper or cloth in case of accidental toner spill or scatter.

- 5. Clean the primary corona wire inside the drum unit by gently sliding the tab to the right hand end and left hand end several times.

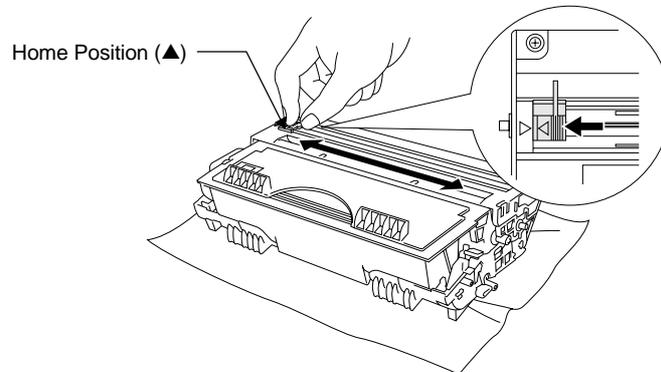


Fig. 3-22 Cleaning the primary corona wire

- 6. Return the tab to the home position (▲ mark position) before reinstalling the drum unit assembly into the printer.

**! Caution**

Be sure to position the tab at the home position, or printed pages may have vertical stripes.

- 7. Install the drum unit assembly into the printer.  
[See the section “How to replace the Drum unit” earlier in this Chapter.](#)
- 8. Close the front cover.
- 9. Plug in the power cord and turn on the power switch.

# CHAPTER 4 TROUBLESHOOTING

## Identifying your problem

---

### First, check the following:

- The power plug is connected correctly and the printer is turned on.
- All of the protective parts have been removed.
- The toner cartridge and drum unit are installed correctly.
- The Front Cover is fully closed.
- Paper is inserted correctly into the paper cassette.
- The interface cable is securely connected between the printer and computer.
- The correct driver for the printer is installed and selected.
- The PC is set up to connect to the correct printer port.

### Printer does not print

If you did not solve your problem with the above checks, please find your problem in the following list and refer to the section listed.

- **Printer LED is blinking** Go to **'Control Panel Indications'** on page 4-2
- **Status Monitor Error Message appears** Go to **'Error messages in the Status Monitor'** on page 4-6
- **Printed Error Message** Go to **'Error Messages printouts'** on page 4-8
- **Paper Handling** Go to **'Paper Handling'** on page 4-10, or **'PAPER JAMS and how to clear them'** on page 4-11
- **Others** Go to **'Others'** on page 4-16.

### Pages are printed, however there are problems with:-

- **Print quality** Go to **'Improving the print quality'** on page 4-18
- **Printout is incorrect** Go to **'How to Print correctly'** on page 4-24

# Control Panel Indications

---

## Operator calls and how to clear them

The LED indications as shown in the table below are used in the illustrations in this chapter.

	LED is Off
	LED is Blinking
	LED is On

If a recoverable error occurs, the printer indicates an 'operator call' by the LED indications as shown in the table below.

Identify the error from the table below and take the corrective action described for each indication to correct it. The printer automatically recovers from most errors, but you may also need to reset the printer with the panel button as described below.

For example, the following are the indications when the toner is low.

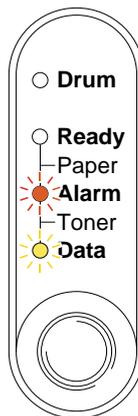


Fig. 4-1 LED indications caused by toner low

LED	Error	Action
	Paper jam	Clear the paper jam by referring to the next section “PAPER JAMS and how to clear them”. Press the panel button if the printer does not automatically resume printing.
	No paper	Load paper into the printer referring to Chapter 1 and press the panel button.
	Misfeed	Reinstall the paper and press the panel button.
 <p>(every 5 seconds)</p>	Toner low	Indicates that the toner cartridge is nearly empty. Purchase a new toner cartridge and have it ready for when Toner Empty status is indicated.
	Toner empty	Replace the toner cartridge with a new one referring to Chapter 3.
	Cover open	If the error is not cleared even after closing the printer, open and close the front cover again.
	Other errors	The error indication can be printed out or shown on your PC screen.

## Service call indications

If an unrecoverable error occurs, the printer will indicate the need for a service call by illuminating all the LEDs and then the following combination of LEDs alternately:

For example, the following are the indications when a Fuser malfunction error occurs.

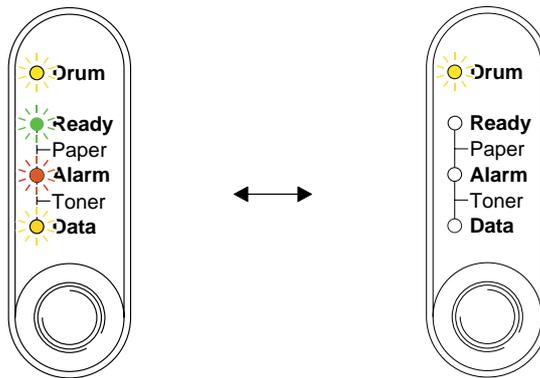


Fig. 4-2 LED indications caused by a fuser malfunction error

Service Call	Fuser malfunction	Laser BD malfunction	Scanner malfunction	ROM error
<b>Drum</b>				
<b>Ready</b>				
<b>Alarm</b>				
<b>Data</b>				

Service Call	D-RAM error	Service A	Service B	Engine Interface error
<b>Drum</b>				
<b>Ready</b>				
<b>Alarm</b>				
<b>Data</b>				

Service Call	NV-RAM error	Main motor malfunction	CPU runtime error
<b>Drum</b>			
<b>Ready</b>			
<b>Alarm</b>			
<b>Data</b>			

If you see any of these service call indications, turn off the power switch, wait a few seconds, then turn it on and try to print again.

If you cannot clear the error and see the same service call indication after turning on the printer, consult your dealer or our authorized service representative. Please note the indication and report the error status and problem by referring to the above table.

 **Note**

Ensure that the front cover is fully closed before reporting a Service call.

## Error messages in the Status Monitor

The Status Monitor will report problems with the printer as defined in the following table. Take the corrective actions for the error message the Status Monitor reports.

Error message	Action
COVER OPEN	<ul style="list-style-type: none"> <li>Close the front cover of the printer.</li> </ul>
NO PAPER or MISFEED	<ul style="list-style-type: none"> <li>The paper cassette may be out of paper or not properly installed. If it is empty, load a new stack of paper into the paper cassette.</li> <li>If there is paper in the paper cassette, make sure it is straight. If the paper is curled, you should straighten it before printing. Sometimes it is helpful to remove the paper, turn the stack over and put it back into the paper cassette.</li> <li>Reduce the amount of paper in the paper cassette, then try again.</li> <li>Make sure that you use paper that meets Brother's recommended paper specifications. See "What kind of paper can I use" in Chapter 1.</li> </ul>
PAPER JAM	<ul style="list-style-type: none"> <li>Refer to 'PAPER JAMS and how clear them'.</li> </ul>
TONER LOW	<ul style="list-style-type: none"> <li>Purchase a new toner cartridge and have it ready for when the Toner Empty status is indicated.</li> </ul>
TONER EMPTY	<ul style="list-style-type: none"> <li>Refer to 'How to replace the Toner cartridge' in Chapter 3 or view the instructional video on the CD-ROM.</li> </ul>
PRINT OVERRUN	<ul style="list-style-type: none"> <li>Press the panel button to print the data remaining in the printer.</li> <li>If this does not clear the error, reduce the complexity of your document or reduce the print resolution.</li> </ul> <p><b>(For HL-1250 Only)</b></p> <ul style="list-style-type: none"> <li>Expand the printer memory by adding a commercially available SIMM. Refer to 'How to add extra Memory' in Chapter 2. Set page protection to ON by using the supplied Windows driver or RPC program.</li> <li>Change the following settings in the supplied Windows driver and try again. The best combination of settings below will vary depending on your document. <ul style="list-style-type: none"> <li>Graphics Mode</li> <li>True Type™ mode</li> <li>Use Printer True Type™ Fonts</li> </ul> </li> </ul>

Error message	Action
MEMORY FULL	<ul style="list-style-type: none"> <li>• Press the panel button to print the data remaining in the printer.</li> <li>• Reduce the print resolution or reduce the complexity of your document.</li> </ul> <p><b>(For HL-1250 Only)</b></p> <ul style="list-style-type: none"> <li>• Expand the printer memory by adding a commercially available SIMM memory. Refer to 'How to add extra Memory' in Chapter 2.</li> </ul>
RESOLUTION ADAPTED (The printer has printed the document at a reduced resolution.)	<ul style="list-style-type: none"> <li>• Reduce the complexity of your document before you print to prevent automatic reduction of the resolution.</li> </ul> <p><b>(For HL-1250 Only)</b></p> <ul style="list-style-type: none"> <li>• Expand the printer memory by adding a commercially available SIMM memory. Refer to 'How to add extra Memory' in Chapter 2.</li> </ul>
FUSER MALFUNCTION	<ul style="list-style-type: none"> <li>• Turn the power switch off, wait a few seconds and then turn it on again.</li> <li>• Leave the printer for 10 minutes with power on. If the error occurs again, consult your dealer.</li> </ul>
LASER BD MALFUNCTION	<ul style="list-style-type: none"> <li>• Turn the power switch off, wait a few seconds and then turn it on again. If the error occurs again, consult your dealer.</li> </ul>
SCANNER MALFUNCTION	<ul style="list-style-type: none"> <li>• Turn the power switch off, wait a few seconds and then turn it on again. If the error occurs again, consult your dealer.</li> </ul>
D-RAM ERROR	<ul style="list-style-type: none"> <li>• Turn the power switch off, wait a few seconds and then turn it on again. If the error occurs again, consult your dealer.</li> </ul>
NV-RAM ERROR	<ul style="list-style-type: none"> <li>• Turn the power switch off, wait a few seconds and then turn it on again. If the error occurs again, consult your dealer.</li> </ul>
MAIN MOTOR ERROR	<ul style="list-style-type: none"> <li>• Turn the power switch off, wait a few seconds and then turn it on again. If the error occurs again, consult your dealer.</li> </ul>
ENGINE INTERFACE ERROR	<ul style="list-style-type: none"> <li>• Turn the power switch off, wait a few seconds and then turn it on again. If the error occurs again, consult your dealer.</li> </ul>

## Error message printouts

The printer will report problems by printing an error message as defined in the following table. Take the corrective actions for the error message the Printout reports.

Error message	Action
MEMORY FULL	<ul style="list-style-type: none"> <li>• Press the panel button to print the data remaining in the printer.</li> <li>• Reduce the print resolution or reduce the complexity of your document.</li> </ul> <p><b>(For HL-1250 Only)</b></p> <ul style="list-style-type: none"> <li>• Expand the printer memory by adding a commercially available SIMM. Refer to 'How to add extra Memory' in Chapter 2.</li> </ul>
PRINT OVERRUN	<ul style="list-style-type: none"> <li>• Press the panel button to print the data remaining in the printer.</li> <li>• If this does not clear the error, reduce the complexity of your document or reduce the print resolution.</li> </ul> <p><b>(For HL-1250 Only)</b></p> <ul style="list-style-type: none"> <li>• Expand the printer memory by adding a commercially available SIMM. Refer to 'How to add extra Memory' in Chapter 2. Set page protection to ON by using the supplied Windows driver or RPC program.</li> <li>• Change the following settings in the supplied Windows driver and try again. The best combination of settings below will vary depending on your document. <ul style="list-style-type: none"> <li>Graphics Mode</li> <li>True Type™ mode</li> <li>Use Printer True Type™ Fonts</li> </ul> </li> </ul>
RESOLUTION ADAPTED (The printer has printed the document at a reduced resolution)	<ul style="list-style-type: none"> <li>• Reduce the complexity of your document before you print to prevent automatic reduction in the resolution.</li> </ul> <p><b>(For HL-1250 Only)</b></p> <ul style="list-style-type: none"> <li>• Expand the printer memory by adding a commercially available SIMM. Refer to 'How to add extra Memory' in Chapter 2.</li> </ul>
SERIAL INTERFACE FRAMING ERROR <b>(HL-1250 Only)</b>	<ul style="list-style-type: none"> <li>• Press the control panel button to resume printing.</li> <li>• Check the communication parameter settings such as baud rate and stop bit on both your computer and printer are the same.</li> </ul>
SERIAL INTERFACE PARITY ERROR <b>(HL-1250 Only)</b>	<ul style="list-style-type: none"> <li>• Press the control panel button to resuming printing.</li> <li>• Check that the communication parameter setting such as bit length and parity on both your computer and printer are the same.</li> </ul>

<b>Error Message</b>	<b>Action</b>
SERIAL INTERFACE OVERRUN ERROR <b>(HL-1250 Only)</b>	<ul style="list-style-type: none"> <li>• Press the control panel button to resume printing.</li> <li>• If the error occurs again, the interface's hardware may be damaged. Please consult your dealer.</li> </ul>
SERIAL INTERFACE INPUT BUFFER OVERFLOW <b>(HL-1250 Only)</b>	<ul style="list-style-type: none"> <li>• Press the control panel button to resume printing.</li> <li>• Check the communication parameter settings such as the handshake protocols on both your computer and printer.</li> <li>• If the error occurs again, the interface hardware may be damaged, consult your dealer.</li> </ul>

## Paper Handling

---

First, ensure that you are using paper that meets Brother recommended paper specifications. See “What kind of paper can I use” in Chapter 1.

Problem	Recommendation
The printer does not load paper.	<ul style="list-style-type: none"> <li>• If there is paper in the paper cassette, make sure it is straight. If the paper is curled, you should straighten it before printing. Sometimes it is helpful to remove the paper, turn the stack over and put it back into the paper cassette.</li> <li>• Reduce the amount of paper in the paper cassette, then try again.</li> <li>• Check that manual feed mode is not selected in the printer driver.</li> </ul>
The printer does not load paper from the manual feed slot.	<ul style="list-style-type: none"> <li>• Re-insert the paper firmly, one sheet at a time.</li> <li>• Make sure that manual feed mode is selected in the printer driver.</li> </ul>
The printer will not load envelopes.	<ul style="list-style-type: none"> <li>• The printer can load envelopes from the manual feed slot. Your application software must be set up correctly to print on the envelope size you are using. This is usually done in the page setup or document setup menu of your software. Refer to your software application manual.</li> </ul>
A paper jam has occurred.	<ul style="list-style-type: none"> <li>• <a href="#">Clear the jammed paper referring to “PAPER JAMS and how to clear them”</a> or the paper jam instructional video on the CD-ROM.</li> </ul>
The printer does not print into the output tray.	<ul style="list-style-type: none"> <li>• Close the rear cover.</li> </ul>
The printer does not print on the specified paper. <b>(HL-1250 with optional Lower Tray Unit Only)</b>	<ul style="list-style-type: none"> <li>• Make sure that the cable is connected to the printer</li> <li>• Make sure that the appropriate printer driver is selected.</li> </ul>

# PAPER JAMS and how to clear them

When a paper jam occurs, the printer indicates by lighting the LEDs as shown below.

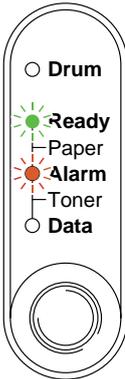


Fig. 4-3 LED indication caused by a paper jam

**Warning**  
After you have just used the printer, some internal parts of the printer are extremely hot. When you open the front or rear cover of the printer, never touch the shaded parts shown in the following diagram.

The diagram shows two views of a printer with its covers open. In the front view, a hand is shown reaching towards the drum unit area, which is shaded with a grey cross-hatch pattern. In the rear view, a hand is shown reaching towards the toner cartridge area, which is also shaded with a grey cross-hatch pattern. Below each view is a warning icon (a triangle with a flame) and the text 'High temperature' followed by the view name.

**High temperature Front view**

**High temperature Rear view**

Fig 4-4 Inside the printer

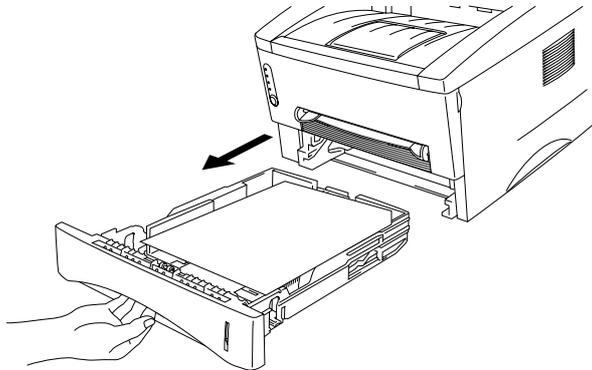
Clear the jammed paper referring to the following description or you can view the paper jam instructional video on the CD-ROM.

If the jammed paper is removed completely by using the information in the following steps, you can close the paper cassette first, then close the front cover and the printer will resume printing automatically. If the printer does not resume printing automatically, press the control panel button. If the printer still does not resume printing, please check that all the remaining jammed paper has been removed from the printer. Then try printing again.

**Note**

- If a paper jam occurs when using the lower tray unit, check for correct installation of the upper paper cassette.
- Always remove all paper from the paper cassette and straighten the stack when new paper is added. This helps prevent multiple sheets of paper from feeding through the printer at one time and reduces paper jams.

1. Remove the paper cassette completely from the printer.



**Fig. 4-5 Remove the paper cassette**

2. Pull any jammed paper up and out of the printer.

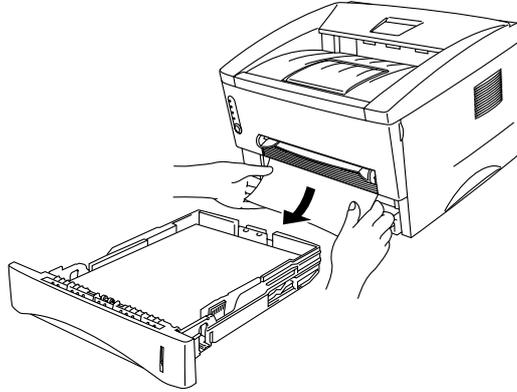


Fig. 4-6 Pull the jammed paper up and out

3. Open the front cover.

4. Remove the drum unit assembly. Pull any jammed paper up and out of the printer. Do not remove the drum unit assembly with additional force at this time if you cannot remove it easily. Instead, pull the edge of the jammed paper from the paper cassette.

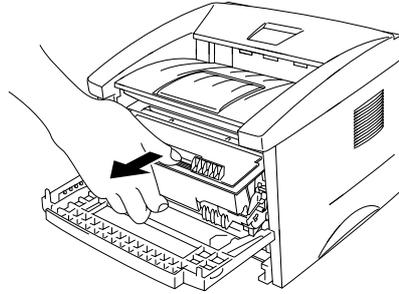


Fig. 4-7 Remove the drum unit assembly

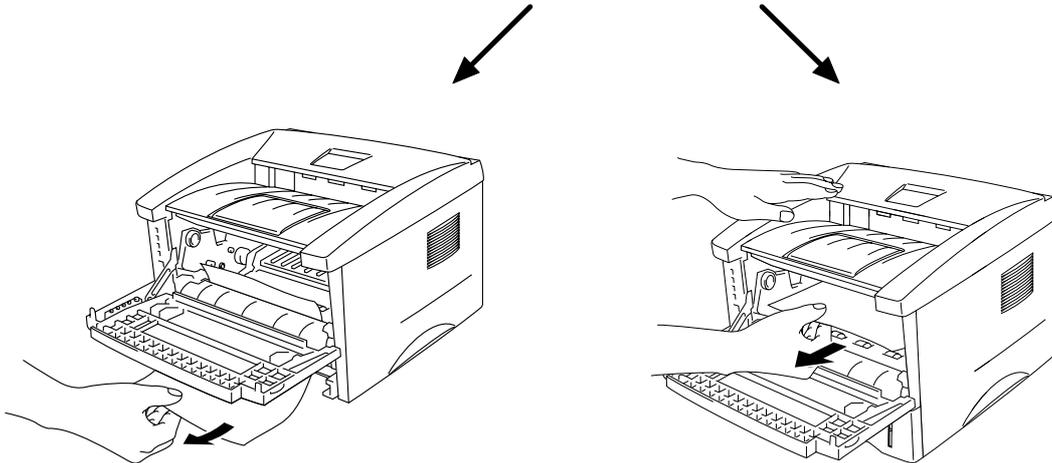
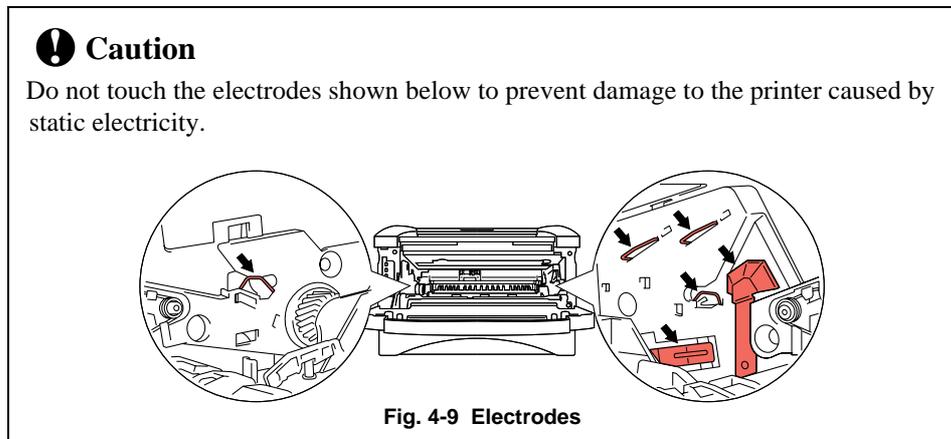
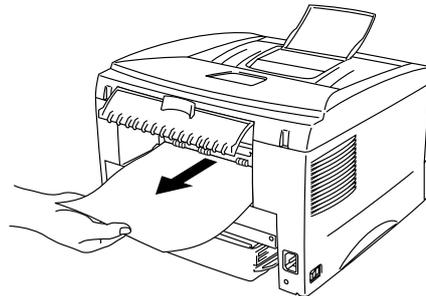


Fig. 4-8 Pull the jammed paper



- **5.** Open the rear cover and pull the jammed paper out of the fuser unit.  
If you have to pull the paper towards the back of the printer, the fuser may get dirty with toner powder and may result in toner scatter on the next printed page or pages. Print a few copies of the test page until the toner scatter on the printed pages stops.



**Fig. 4-10 Pull the jammed paper**

- **6.** Close the rear cover.
- **7.** Install the drum unit assembly and close the front cover.

## Others

---

<b>Problem</b>	<b>Recommendation</b>
The printer cannot print. “There was an error writing to LPT1: (or BRUSB) for the printer.” error message occurs on your PC.	<ul style="list-style-type: none"><li>• Check that the printer cable is not damaged or broken.</li><li>• Make sure the correct printer is selected if you have an interface switching device.</li></ul>

### For printing with the Serial Interface (For HL-1250 Only)

<b>Problem</b>	<b>Recommendation</b>
Unable to print from application software.	<ul style="list-style-type: none"><li>• If you use the serial interface, make sure that the slide switch of the serial interface is in the correct serial position and the interface settings are correctly set up with the DIP switches.</li></ul>

### For DOS users (For HL-1240/1250 Only)

<b>Problem</b>	<b>Recommendation</b>
Unable to print from application software.	<ul style="list-style-type: none"><li>• Check that the DOS application software interface settings match that of your printer : for example, if you are using a parallel printer cable, you would most likely set your DOS software printer port to LPT1.</li><li>• Check if the printer has any printer alarms.</li><li>• Check if the appropriate printer is selected in your application software.</li></ul> <p><b>(For HL-1250 Only)</b></p> <ul style="list-style-type: none"><li>• If the serial interface is used, make sure that the RS-232C serial interface is selected with the slide switch. Make sure that the interface settings are correctly set up with the proper DIP switches. Make sure the serial parameters of baud rates, parity and stop bits match between your application software and the printer.</li></ul>

## For Apple Macintosh Computers user using RS-100M (For HL-1250 Only)

Problem	Recommendation
Unable to print from application software.	<ul style="list-style-type: none"> <li>• Make sure that the supplied Macintosh printer driver is installed in the System Folder and it is selected with Chooser.</li> <li>• Check the PORT selection within the Chooser : it should match the port to which you physically attached the printer cable.</li> <li>• The serial slide switch of the optional interface board should be in the Apple (RS-422A) position.</li> <li>• Check the printer cable type : you cannot use a Local Talk or straight-through cable. Refer to Chapter 2 for details on printer cable types.</li> </ul>

## For iMac and Power Macintosh G3 with USB (For HL-1240/1250 Only)

Problem	Recommendation
HL-1240 (or HL-1250) does not appear in Chooser.	<ul style="list-style-type: none"> <li>• Check the printer is turned on.</li> <li>• Check the USB interface cable is connected correctly.</li> <li>• Check the printer driver is installed correctly.</li> </ul>
Unable to print from application software.	Make sure that the supplied Macintosh printer driver is installed in the System Folder and it is selected with Chooser.

# Improving the print quality

**! Caution**

If the **Drum LED** is on you can clear a print quality problem by replacing the drum unit with a new one. The Drum LED indicates that the drum unit is at the end of life.

This section provides information on the following topics:

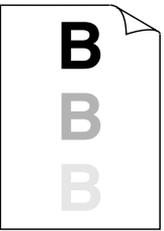
Image defect examples	Recommendation
 <p>Faint</p>	<ul style="list-style-type: none"> <li>• Check the printer's environment. Conditions such as humidity, high temperatures, etc. may cause this print defect to occur.</li> <li>• If the whole page is too light, toner save mode may be on. Disable toner save mode within the Printer Properties tab of the Driver.</li> <li>• Try installing a new toner cartridge. See "How to replace the Toner cartridge" in Chapter 3.</li> <li>• Try installing a new drum unit. See "How to replace the Drum unit" in Chapter 3.</li> </ul>
 <p>Gray background</p>	<ul style="list-style-type: none"> <li>• Make sure that you use paper that meets the Brother's recommended specifications. See "What kind of paper can I use" in Chapter 1.</li> <li>• Check the printer's environment; high temperature and high humidity conditions can increase the amount of background shading.</li> <li>• Installing a new toner cartridge. See "How to replace the Toner cartridge" in Chapter 3.</li> <li>• Installing a new drum unit. See "How to replace the Drum unit" in Chapter 3.</li> </ul>
 <p>Ghost</p>	<ul style="list-style-type: none"> <li>• Make sure that you use paper that meets the specifications. A rough surfaced paper, paper that has absorbed moisture or thick media can cause the problem.</li> <li>• Make sure that you select the appropriate media type in the printer driver. See "What kind of paper can I use" in Chapter 1.</li> <li>• Try installing a new drum unit. See "How to replace the Drum unit" in Chapter 3.</li> </ul>

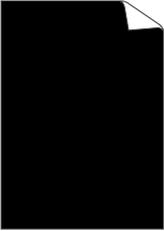
Image defect examples	Recommendation
 <p data-bbox="327 609 469 629">Toner specks</p>	<ul data-bbox="596 353 1321 510" style="list-style-type: none"> <li>• Make sure that you use paper that meets the specifications. A rough surfaced paper may cause the problem. See “What kind of paper can I use” in Chapter 1.</li> <li>• The drum unit may be damaged. Install a new drum unit. See “How to replace the Drum unit” in Chapter 3.</li> </ul>
 <p data-bbox="333 904 462 925">Hollow print</p>	<ul data-bbox="596 665 1283 853" style="list-style-type: none"> <li>• Make sure that you use paper that meets the specifications. See “What kind of paper can I use” in Chapter 1.</li> <li>• Select the ‘Thick paper mode’ in the printer driver, or use thinner paper than you are currently using.</li> <li>• Check the printer’s environment as conditions such as high humidity may cause this situation to occur.</li> </ul>
 <p data-bbox="349 1216 446 1236">All black</p>	<ul data-bbox="596 963 1310 1088" style="list-style-type: none"> <li>• Clean the primary corona wire of the drum unit. See “How to clean the printer interior and Drum unit”.</li> <li>• The drum unit may be damaged. Install a new drum unit. See “How to replace the Drum unit” in Chapter 3.</li> </ul>

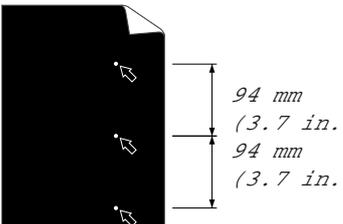
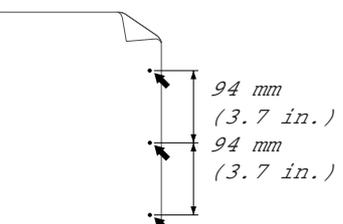
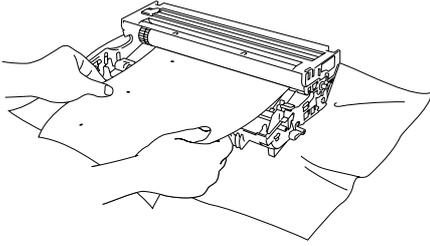
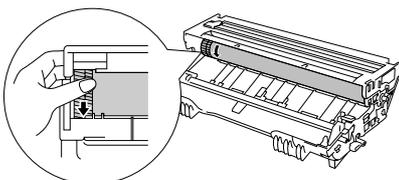
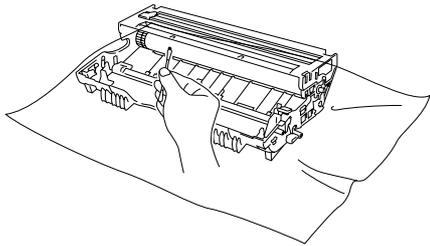
Image defect examples	Recommendation
 <p><b>White Spots</b> Printed pages have white spots in black text and graphics at intervals of 94 mm (3.7 in.).</p>  <p><b>Black Spots</b> Printed pages have black spots at intervals of 94 mm (3.7 in.).</p>	<ul style="list-style-type: none"> <li>If the problem is not solved after printing a few pages, the drum unit may have glue from label stock on the OPC drum surface. Clean the drum unit as follows</li> </ul> <ol style="list-style-type: none"> <li>Position the print sample in front of the drum unit, and find the exact position of the image defect.            <p><b>Fig.4-11 Find the exact position of the image defect</b></p> </li> <li>Turn the drum unit gear by hand while looking at the surface of the OPC drum.            <p><b>Fig. 4-12 Turn the drum gear</b></p> </li> <li>When you have located the mark on the drum that matches the print sample, wipe the surface of the OPC drum with a cotton swab until the dust or paper powder on the surface comes off.            <p><b>Fig. 4-13 Wipe the surface of the OPC drum</b></p> </li> </ol>

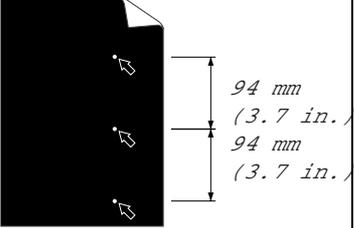
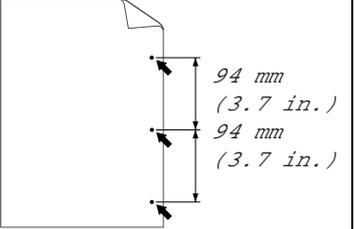
Image defect examples	Recommendation
 <p><b>White Spots</b> Printed pages have white spots in black text and graphics at intervals of 94 mm (3.7 in.).</p>  <p>Printed pages have black spots at intervals of 94 mm (3.7 in.).</p>	<p><b>⚠ Caution</b></p> <p>Do not try to clean the surface of the photosensitive drum with anything sharp such as ball-point pen etc.</p> <ul style="list-style-type: none"><li>• The drum unit may be damaged. <b>Install a new drum unit.</b> See <b>“How to replace the Drum unit”</b> in Chapter 3.</li></ul>

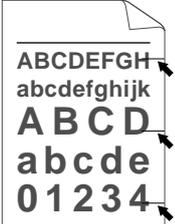
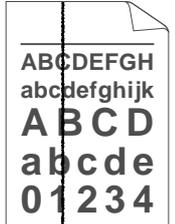
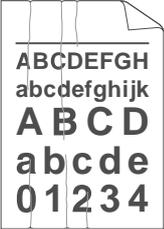
Image defect examples	Recommendation
 <p><b>Black Horizontal repetitive defects</b> Toner scatters and stains the printed page.</p>	<ul style="list-style-type: none"> <li>• The drum unit may be damaged. Install a new drum unit. See <a href="#">"How to replace the Drum unit" in Chapter 3.</a></li> <li>• Make sure that you use paper that meets specifications. See <a href="#">"What kind of paper can I use" in Chapter 1.</a></li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• If you use label sheets for laser printers, the glue from the sheets may sometimes stick to the OPC drum surface. Clean the drum unit. See <a href="#">the previous page.</a></li> <li>• Do not use paper which has clips or staples because they will scratch the surface of the drum.</li> <li>• If the unpacked drum unit is subject to excessive direct sunlight or room light, the unit may be damaged.</li> </ul>
 <p><b>White horizontal stripes</b></p>	<ul style="list-style-type: none"> <li>• Make sure that you use paper that meets the specifications. A rough surfaced paper or thick media can cause the problem.</li> <li>• Make sure that you select the appropriate media type in the printer driver.</li> <li>• The problem may disappear by itself. Try printing multiple pages to clear this problem especially if the printer has not been used for a long time.</li> <li>• The drum unit may be damaged. Install a new drum unit. See <a href="#">"How to replace the Drum unit" in Chapter 3.</a></li> </ul>
 <p><b>Horizontal Lines</b></p>	<ul style="list-style-type: none"> <li>• Clean the printer interior and the primary corona wire in the drum unit. See <a href="#">"How to clean the printer" in Chapter 3.</a></li> <li>• The drum unit may be damaged. Install a new drum unit. See <a href="#">"How to replace the Drum unit" in Chapter 3.</a></li> </ul>
 <p><b>Black Vertical lines</b> Printed pages are stained with toner or have vertical stripes.</p>	<ul style="list-style-type: none"> <li>• Clean the primary corona wire of the drum unit. See <a href="#">"How to clean the printer interior and Drum unit".</a></li> <li>• Make sure that the primary corona wire cleaner is at the home position.</li> <li>• The drum unit may be damaged. Install a new drum unit. See <a href="#">"How to replace the Drum unit" in Chapter 3.</a></li> <li>• The toner cartridge may be damaged. Install a new toner cartridge. See <a href="#">"How to replace the Toner cartridge" in Chapter 3.</a> Make sure that a torn piece of paper is not inside the printer covering the scanner window.</li> <li>• The fixing unit may be smudged. Call customer support.</li> </ul>

Image defect examples	Recommendation
 <p data-bbox="284 658 512 683">White Vertical streaks</p>	<ul data-bbox="598 398 1332 555" style="list-style-type: none"> <li>• You may clear the problem by wiping the scanner window with a soft cloth. See “How to clean the printer” in Chapter 3.</li> <li>• The toner cartridge may be damaged. Install a new toner cartridge. See “How to replace the Toner cartridge” in Chapter 3.</li> </ul>
 <p data-bbox="341 978 454 1003">Page skew</p>	<ul data-bbox="598 689 1332 1064" style="list-style-type: none"> <li>• Make sure the paper or other media is loaded into the paper cassette correctly and that the guides are not too tight or too loose against the paper stack.</li> <li>• Set the paper guides correctly. Make sure that the tip of the paper guides fit into the slot correctly. See “How to load paper into the Paper cassette” in Chapter 2.</li> <li>• If you are using the manual feed slot see “How to load one sheet of paper manually” in Chapter 1.</li> <li>• The paper cassette may be too full. See “How to load paper into the paper cassette” in Chapter 2.</li> <li>• Check the paper type and quality. See “What kind of paper can I use” in Chapter 1.</li> </ul>
 <p data-bbox="331 1335 470 1359">Curl or wave</p>	<ul data-bbox="598 1077 1332 1361" style="list-style-type: none"> <li>• Check the paper type and quality. Both high temperature and humidity will cause paper to curl. See “What kind of paper can I use” in Chapter 1.</li> <li>• If you use the printer infrequently, the paper may have sat for too long in the paper cassette. Turn over the stack of paper in the paper cassette. Also, try rotating the paper 180° in the paper cassette.</li> <li>• Try printing using the straight-through output path. See “How to load one sheet of paper manually” in Chapter 1.</li> </ul>
 <p data-bbox="293 1657 502 1682">Wrinkles or creases</p>	<ul data-bbox="598 1400 1332 1653" style="list-style-type: none"> <li>• Make sure that paper is loaded properly. See “How to load paper into the paper cassette” in Chapter 1.</li> <li>• Check the paper type and quality. See “What kind of paper can I use” in Chapter 1.</li> <li>• Try printing using the straight-through output path. See “How to load one sheet of paper manually” in Chapter 1.</li> <li>• Turn over the stack of paper in the tray or try rotating the paper 180° in the input tray.</li> </ul>

## How to print correctly

---

Problem	Recommendation
<p>The printer prints unexpectedly or it prints garbage.</p>	<ul style="list-style-type: none"> <li>• Make sure the printer cable is not too long. We recommend you use a parallel cable of less than 2 metres (6.6 feet) in length.</li> <li>• Check if the printer cable is damaged or broken.</li> <li>• If you are using an interface switching device, remove it and connect your computer directly to your printer and try again.</li> <li>• Check that the appropriate printer driver is selected as 'Set as Default'.</li> <li>• Check that the printer is not connected to the same port which is also connected to a mass storage device or scanner. Remove all other devices and connect the port to the printer only.</li> </ul> <p>Turn off printer status reporting in the device options tab in the printer driver.</p>
<p>The printer cannot print full pages of a document. An error message "PRINT OVERRUN" occurs.</p>	<ul style="list-style-type: none"> <li>• Press the panel button to print the data remaining in the printer.</li> <li>• If this does not clear the error, reduce the complexity of your document or reduce the print resolution.</li> </ul> <p><b>(HL-1250 Only)</b></p> <ul style="list-style-type: none"> <li>• Expand the printer memory by adding a commercially available SIMM. Refer to 'How to add extra Memory' in Chapter 2. Set page protection to ON by using the supplied Windows driver or RPC program.</li> <li>• Change the following settings in the supplied Windows driver and try again. The best combination of settings below will vary depending on your document. <ul style="list-style-type: none"> <li>Graphics Mode</li> <li>True Type™ mode</li> <li>Use Printer True Type™ Fonts</li> </ul> </li> </ul>
<p>The printer cannot print full pages of a document. A "MEMORY FULL" error message occurs.</p>	<ul style="list-style-type: none"> <li>• Press the panel button to print the data remaining in the printer.</li> <li>• Reduce the print resolution or reduce the complexity of your document.</li> </ul> <p><b>(HL-1250 Only)</b></p> <ul style="list-style-type: none"> <li>• Expand the printer memory by adding a commercially available SIMM. Refer to 'How to add extra Memory' in Chapter 2.</li> </ul>

Problem	Recommendation
My headers or footers appear when I view my document on screen but do not show up when I print them.	<ul style="list-style-type: none"> <li>• Most laser printers have a restricted area that cannot be printed on. Usually the first two lines and the last two lines of a page cannot have print (leaving 62 printable lines). Adjust the top and bottom margins in your document to allow for this.</li> </ul>
<p><b>(For connecting using the RS-232C/422A interface on HL-1250 Only)</b></p> <p>The printer prints the first couple of pages correctly, then some pages have text missing.</p>	<ul style="list-style-type: none"> <li>• This is a problem usually relating to serial interface settings. Your computer is not recognizing the printer's input buffer full signal. This could be caused by incorrect serial cable (incorrectly wired or too long) or incorrect setting of your computer serial interface.</li> </ul>

### For DOS users (For HL-1240/1250 Only)

Problem	Recommendation
The printer prints, but it prints incorrect information. Sometimes it prints a couple of characters and then ejects the page, etc..	<ul style="list-style-type: none"> <li>• This is an indication that your application printer emulation setting and the printer's emulation do not match. Check in your application software which printer you have selected to make sure the printer is set up correctly. Remember the printer emulate widely used printer selections: HL-1240 (HP LaserJet IIP) / HL-1250 (HP LaserJet 6P, Epson FX-850 and IBM Proprinter XL). Try setting the printer into HP emulation and then select the HP LaserJet IIP (for HL-1240) or HP LaserJet 6P (for HL-1250) printer in your application software.</li> </ul>

# APPENDIX

## Printer Technical Specifications

---

### Printing

<b>Print Method</b>	Electrophotography by semiconductor laser beam scanning	
<b>Laser</b>	Wavelength:	780 nm
	Output:	5 mW max
<b>Resolution</b>	HL-1030:	600 dots/inch (under Brother Printing Solution for Windows )
	HL-1240:	600 dots/inch (under Brother Printing Solution for Windows)
		300 dots/inch (under DOS and other operating systems)
	HL-1250:	1200 (H) x 600 (V) dots/inch (for Windows DIB graphics)
		600 (H) x 600 (V) dots/inch (for Windows and DOS)
		600 (H) x 600 (V) dots/inch (using Apple Macintosh with USB)
		300 (H) x 300 (V) dots/inch (using Apple Macintosh with the optional RS-100M)
<b>Print Quality</b>	Normal printing mode	Economy printing mode (up to 25% and 50% toner saving)

<b>Print Speed</b>	HL-1030: HL1240/1250:  NOTE:	Up to 10 pages per minute Up to 12 pages per minute (When A4 or letter-size paper is loaded from the paper cassette)  Maximum print speed is obtained by printing several copies of the same page. Print speed may vary depending on interface type, emulation, processing power of the computer, memory allocated to the print job, paper size and graphic quality.
<b>Warm-Up</b>	Max. 45 seconds at 23°C (73.4°F)	The warm up time depends on the ambient temperature and humidity.
<b>First Print</b>	15 seconds	When A4 or letter-size paper is loaded from the paper cassette
<b>Print Media</b> Life Expectancy:	Toner cartridge: 6,000 pages/high capacity toner cartridge 3,000 pages/standard toner cartridge  NOTE:  Drum unit: Average up to 20,000 pages  NOTE:	When printing A4- or letter-size paper at 5% print coverage.  Toner life expectancy will vary depending on the type of average print job printed.  There are many factors that determine the actual drum life, such as temperature, humidity, type of paper and toner that you use, the number of pages per print job, etc.

## Functions

<b>TrueType Fonts on CD</b>	TrueType-compatible soft-fonts for Windows are provided on the supplied CD. Quantity of fonts is 35.	
<b>Emulation</b>		
HL-1030:	Brother Printing Solution for Windows	
HL-1240:	Brother Printing Solution for Windows HP LaserJet IIP (PCL 4)	
HL-1250:	Brother Printing Solution for Windows Automatic emulation selection among HP LaserJet6P (PCL 6), EPSON FX-850 or IBM Proprinter XL	
<b>Printer Driver</b>	Windows 3.1/3.11, Windows 95/98 and Windows NT 4.0 driver, supporting Brother Native Compression mode Windows 3.1/3.11, Windows 95/98 driver, supporting bi-directional capacity iMac, Power Macintosh G3 with USB printer driver (HL-1240/1250 Only)	
	Optional Macintosh driver available for System 6.0.7 or higher (HL-1250 with RS-100M user only)	
<b>Interface</b>	Bi-directional parallel USB interface (HL-1240/1250 Only) An RS-422A/RS 232C serial interface (RS-100M) is optionally available. (HL-1250 Only)	
<b>Memory</b>		
HL-1030/1240 :	2 MB	
HL-1250:	4 MB	Expandable up to 36 MB by installing an industry standard SIMM
<b>Diagnostics</b>	Self-diagnostic program	

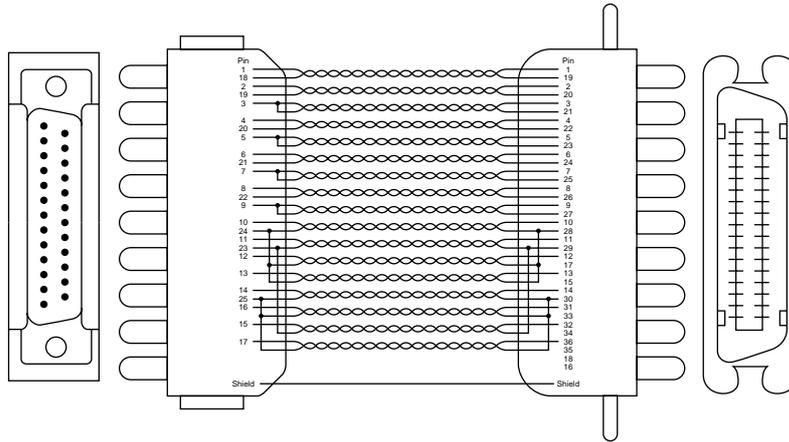
## Electrical and Mechanical

<b>Power Source</b>	U.S.A. and Canada: Europe and Australia:	AC 110 to 120 V, 50 / 60 Hz AC 220 to 240 V, 50 /60 Hz
<b>Power Consumption</b>	Printing (average):  Stand-by: Sleep (HL-1030/1240): (HL-1250):	340 W or less  80 W or less 5 W or less 6 W or less (When the fan stops)
<b>Noise</b>	Printing: Sleep:	49 dB A or less 27 dB A or less
<b>Temperature</b>	Operating: Non operational:	10 to 32.5°C (50 to 90.5°F) 0 to 40°C (38 to 104°F)
<b>Humidity</b>	Operating: Storage:	20 to 80% (without condensation) 10 to 85% (without condensation)
<b>Dimensions (W x D x H)</b>	A4 paper cassette:  Legal paper cassette: (US and Canada Only)	360 x 370 x 235 mm (14.2 x 14.6 x 9.3 inches) 360 x 430 x 235 mm (14.2 x 16.9 x 9.3 inches)
<b>Weight</b>		Approx. 9.5 kg (20.9 lbs) including the drum unit and toner cartridge



**Note**

To use bi-directional communication, an interface cable which has the pin connections above must be used.



**Fig. A-1 Parallel interface cable**

## USB (Universal Serial Bus) Interface (For HL-1240/1250 Only)

---

Interface connector

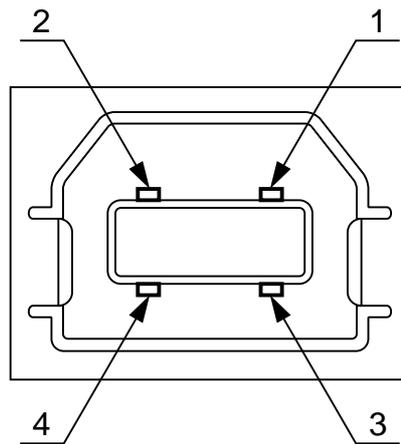


Fig. A-2 USB interface connector

Pin Assignment

Pin No.	Signal
1	Vcc (+5V)
2	- Data
3	+ Data
4	Ground

## **Resident Font (For HL-1240/1250 Only)**

---

The following bitmapped fonts are resident in this printer.

### **HL-1240: Bitmapped Fonts**

- Brougham 10 (12 point) Normal, Italic, Bold, BoldItalic (Portrait & Landscape)
- Brougham 12 (10 point) Normal, Italic, Bold, BoldItalic (Portrait & Landscape)
- Letter Gothic 16.66 (8.5 point) Normal, Italic, Bold, BoldItalic (Portrait & Landscape)

### **HL-1250 : Bitmapped Fonts**

This printer has the following bitmapped fonts. They can be used in the HP LaserJet 6P, EPSON FX-850, and IBM Proprinter XL modes. They have the following characteristics.

- Letter Gothic 16.66 Normal, Italic, Bold, BoldItalic (Portrait & Landscape)
- OCR-A(Portrait & Landscape)
- OCR-B(Portrait & Landscape)

## Scalable Fonts

The following scalable fonts can be used in the HP LaserJet 6P, EPSON FX-850 and IBM Proprinter XL modes.

### Intellifont Compatible Fonts

- Alaska (Extrabold)
- Antique Oakland (Oblique, Bold)
- Brougham (Oblique, Bold, BoldOblique)
- Cleveland Condensed
- Connecticut
- Guatemala Antique (Italic, Bold, BoldItalic)
- Letter Gothic (Oblique, Bold)
- Maryland
- Oklahoma (Oblique, Bold, BoldOblique)
- PC Tennessee Roman (Italic, Bold, BoldItalic)
- PC Brussels Light (Italic, Demi, DemiItalic)
- Utah (Oblique, Bold, BoldOblique)
- Utah Condensed (Oblique, Bold, BoldOblique)

### Microsoft Windows 3.1 TrueType Compatible Fonts

- BR Symbol
- Helsinki (Oblique, Bold, BoldOblique)
- Tennessee Roman (Italic, Bold, BoldItalic)
- W Dingbats

# Symbol Sets / Character Sets (HL-1240/1250 Only)

## OCR Symbol Sets (HL-1250 Only)

When the OCR-A or OCR-B font is selected, the corresponding symbol set is always used.

- OCR-A
- OCR-B

## HP LaserJet IIP Mode (HL-1240)

Roman 8 (8U)	ISO4 UK (1E)	ISO25 French (6F)
ISO Latin1 (0N)	ISO6 ASCII (0U)	ISO57 Chinese (2K)
PC-8 (10U)	ISO10 Swedish (3S)	ISO60 Norwegian1 (0D)
PC-850 (12U)	ISO11 Swedish (0S)	ISO61 Norwegian2 (1D)
PC-852 (17U)	ISO14 JIS ASCII (0K)	ISO69 French (1F)
PC-8 Turkish (9T)	ISO15 Italian (0I)	ISO84 Portuguese (5S)
Windows Latin1 (19U)	ISO16 Portuguese (4S)	ISO85 Spanish (6S)
Legal (1U)	ISO17 Spanish (2S)	HP German (0G)
ISO2 IRV (2U)	ISO21 German (1G)	HP Spanish (1S)

## HP LaserJet 6P Mode (HL-1250)

Roman 8 (8U)	Legal (1U)	ISO6 ASCII (0U)
ISO Latin1 (0N)	Ventura Math (6M)	ISO10 Swedish (3S)
ISO Latin2 (2N)	Ventura Intl (13J)	ISO11 Swedish (0S)
ISO Latin5 (5N)	Ventura US (14J)	ISO14 JIS ASCII (0K)
ISO Latin6 (6N)	PS Math (5M)	ISO15 Italian (0I)
PC-8 (10U)	PS Text (10J)	ISO16 Portuguese (4S)
PC-8 D/N (11U)	Math-8 (8M)	ISO17 Spanish (2S)
PC-850 (12U)	Pi Font (15U)	ISO21 German (1G)
PC-852 (17U)	MS Publishing (6J)	ISO25 French (6F)
PC-775 (26U)	Windows 3.0 (9U)	ISO57 Chinese (2K)
PC-1004 (9J)	Desktop (7J)	ISO60 Norwegian1 (0D)
PC-8 Turkish (9T)	MC Text (12J)	ISO61 Norwegian2 (1D)
Windows Latin1 (19U)	Symbol (19M)	ISO69 French (1F)
Windows Latin2 (9E)	Windings (579L)	ISO84 Portuguese (5S)
Windows Latin5 (5T)	ISO2 IRV (2U)	ISO85 Spanish (6S)
Windows Baltic (19L)	ISO4 UK (1E)	HP German (0G)
		HP Spanish (1S)

## EPSON Mode (HL-1250 Only)

US ASCII	PC-8 Turkish	Japanese
PC-8	German	Norwegian
PC-8 D/N	UK ASCII I	Danish II
PC-850	French I	UK ASCII II
PC-852	Danish I	French II
PC-860	Italy	Dutch
PC-863	Spanish	South African
PC-865	Swedish	

## IBM Mode (HL-1250 Only)

PC-8	PC-852	PC-865
PC-8 D/N	PC-860	PC-8 Turkish
PC-850	PC-863	

 **Note**

If you want to know what characters are in each symbol/character set, print the CHARSETS.PRN file from the "Print form" option in the Direct Access Menu of the Remote Printer Console Program.

□ HP LaserJet IIP/ HP LaserJet 6P

Roman8

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0			@	P	‘	p					À	Á	Â	Ã	Ä	Å
1	!	1	A	Q	a	q					Ä	Å	Ä	Å	Ä	Å
2		2	B	R	b	r					Ä	Å	Ä	Å	Ä	Å
3	#	3	C	S	c	s					Ä	Å	Ä	Å	Ä	Å
4	\$	4	D	T	d	t					Ä	Å	Ä	Å	Ä	Å
5	%	5	E	U	e	u					Ä	Å	Ä	Å	Ä	Å
6	&	6	F	V	f	v					Ä	Å	Ä	Å	Ä	Å
7	'	7	G	W	g	w					Ä	Å	Ä	Å	Ä	Å
8	(	8	H	X	h	x					Ä	Å	Ä	Å	Ä	Å
9	)	9	I	Y	i	y					Ä	Å	Ä	Å	Ä	Å
A	*	A	J	Z	j	z					Ä	Å	Ä	Å	Ä	Å
B	+	B	K	[	[	[					Ä	Å	Ä	Å	Ä	Å
C	,	C	L	\	\	\					Ä	Å	Ä	Å	Ä	Å
D	=	D	M	]	]	]					Ä	Å	Ä	Å	Ä	Å
E	-	E	N	^	^	^					Ä	Å	Ä	Å	Ä	Å
F	.	F	O	_	_	_					Ä	Å	Ä	Å	Ä	Å
	/										Ä	Å	Ä	Å	Ä	Å

ISO Latin1

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0			@	P	‘	p					°	À	Á	Â	Ã	Ä
1	!	1	A	Q	a	q					°	À	Á	Â	Ã	Ä
2		2	B	R	b	r					°	À	Á	Â	Ã	Ä
3	#	3	C	S	c	s					°	À	Á	Â	Ã	Ä
4	\$	4	D	T	d	t					°	À	Á	Â	Ã	Ä
5	%	5	E	U	e	u					°	À	Á	Â	Ã	Ä
6	&	6	F	V	f	v					°	À	Á	Â	Ã	Ä
7	'	7	G	W	g	w					°	À	Á	Â	Ã	Ä
8	(	8	H	X	h	x					°	À	Á	Â	Ã	Ä
9	)	9	I	Y	i	y					°	À	Á	Â	Ã	Ä
A	*	A	J	Z	j	z					°	À	Á	Â	Ã	Ä
B	+	B	K	[	[	[					°	À	Á	Â	Ã	Ä
C	,	C	L	\	\	\					°	À	Á	Â	Ã	Ä
D	=	D	M	]	]	]					°	À	Á	Â	Ã	Ä
E	-	E	N	^	^	^					°	À	Á	Â	Ã	Ä
F	.	F	O	_	_	_					°	À	Á	Â	Ã	Ä
	/										°	À	Á	Â	Ã	Ä

Windows Latin1

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0			@	P	‘	p					°	À	Á	Â	Ã	Ä
1	!	1	A	Q	a	q					°	À	Á	Â	Ã	Ä
2		2	B	R	b	r					°	À	Á	Â	Ã	Ä
3	#	3	C	S	c	s					°	À	Á	Â	Ã	Ä
4	\$	4	D	T	d	t					°	À	Á	Â	Ã	Ä
5	%	5	E	U	e	u					°	À	Á	Â	Ã	Ä
6	&	6	F	V	f	v					°	À	Á	Â	Ã	Ä
7	'	7	G	W	g	w					°	À	Á	Â	Ã	Ä
8	(	8	H	X	h	x					°	À	Á	Â	Ã	Ä
9	)	9	I	Y	i	y					°	À	Á	Â	Ã	Ä
A	*	A	J	Z	j	z					°	À	Á	Â	Ã	Ä
B	+	B	K	[	[	[					°	À	Á	Â	Ã	Ä
C	,	C	L	\	\	\					°	À	Á	Â	Ã	Ä
D	=	D	M	]	]	]					°	À	Á	Â	Ã	Ä
E	-	E	N	^	^	^					°	À	Á	Â	Ã	Ä
F	.	F	O	_	_	_					°	À	Á	Â	Ã	Ä
	/										°	À	Á	Â	Ã	Ä

(HL-1250 only)

Windows Latin2

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0			@	P	‘	p					°	À	Á	Â	Ã	Ä
1	!	1	A	Q	a	q					°	À	Á	Â	Ã	Ä
2		2	B	R	b	r					°	À	Á	Â	Ã	Ä
3	#	3	C	S	c	s					°	À	Á	Â	Ã	Ä
4	\$	4	D	T	d	t					°	À	Á	Â	Ã	Ä
5	%	5	E	U	e	u					°	À	Á	Â	Ã	Ä
6	&	6	F	V	f	v					°	À	Á	Â	Ã	Ä
7	'	7	G	W	g	w					°	À	Á	Â	Ã	Ä
8	(	8	H	X	h	x					°	À	Á	Â	Ã	Ä
9	)	9	I	Y	i	y					°	À	Á	Â	Ã	Ä
A	*	A	J	Z	j	z					°	À	Á	Â	Ã	Ä
B	+	B	K	[	[	[					°	À	Á	Â	Ã	Ä
C	,	C	L	\	\	\					°	À	Á	Â	Ã	Ä
D	=	D	M	]	]	]					°	À	Á	Â	Ã	Ä
E	-	E	N	^	^	^					°	À	Á	Â	Ã	Ä
F	.	F	O	_	_	_					°	À	Á	Â	Ã	Ä
	/										°	À	Á	Â	Ã	Ä

APPENDIX

The following table shows characters available only in the corresponding character set. The numbers at the top of the table are code values with which characters are to be replaced in the Roman 8 character set. For other characters, see the Roman 8 character set.

SYMBOL SET	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
ISO2 IRV	#	¤	e	[	\	]	^	`	{		}	_
ISO4 UK	E	\$	e	[	\	]	^	`	{		}	_
ISO6 ASCII	#	\$	e	[	\	]	^	`	{		}	_
ISO10 Swedish	#	¤	e	Ä	Ö	Å	^	`	ä	ö	å	_
ISO11 Swedish	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
ISO14 JIS ASCII	#	\$	e	[	¥	]	^	`	{		}	_
ISO15 Italian	E	\$	§	°	ç	é	è	ù	à	ò	è	ì
ISO16 Portuguese	#	\$	§	À	Ç	Õ	^	`	ã	ç	õ	°
ISO17 Spanish	E	\$	§	¡	Ñ	¿	^	`	á	ñ	¿	°
ISO21 German	#	\$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
ISO25 French	E	\$	à	°	ç	§	^	`	é	ù	è	°
ISO57 Chinese	#	¥	e	[	\	]	^	`	{		}	_
ISO60 Norwegian1	#	\$	e	Æ	Ø	Å	^	`	æ	ø	å	_
ISO61 Norwegian2	§	\$	e	Æ	Ø	Å	^	`	æ	ø	å	
ISO69 French	E	\$	à	°	ç	§	^	μ	é	ù	è	°
ISO84 Portuguese	#	\$	·	À	Ç	Õ	^	`	ã	ç	õ	°
ISO85 Spanish	#	\$	·	¡	Ñ	¿	^	`	á	ñ	¿	°
HP German	E	\$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
HP Spanish	#	\$	e	¡	Ñ	¿	^	`	{		}	_

□ HP LaserJet IIP/6P, EPSON FX-850, IBM Proprinter XL

PC-8

0	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	▸	0	@	P	`	p	Ç	É	á	í	ó	ñ	±	±	±	±
1	⊙	◀	!	1	A	Q	a	q	ü	æ	í	ó	ñ	±	±	±
2	⊙	†	"	2	B	R	b	r	é	æ	ó	ú	ñ	±	±	±
3	♥	‡	#	3	C	S	c	s	â	ô	û	ñ	±	±	±	±
4	♣	§	\$	4	D	T	d	t	ä	ö	ü	ñ	±	±	±	±
5	♠	§	%	5	E	U	e	u	à	ò	ù	ñ	±	±	±	±
6	♣	-	&	6	F	V	f	v	â	ô	û	ñ	±	±	±	±
7	•	‡	'	7	G	W	g	w	ç	è	ù	ñ	±	±	±	±
8	□	†	(	8	H	X	h	x	ç	è	ù	ñ	±	±	±	±
9	○	↓	)	9	I	Y	i	y	è	ë	ö	ñ	±	±	±	±
A	⊠	→	*	:	J	Z	j	z	è	ë	ö	ñ	±	±	±	±
B	⊙	←	+	;	K	[	k	{	è	ë	ö	ñ	±	±	±	±
C	♀	↳	,	<	L	\	l		è	ë	ö	ñ	±	±	±	±
D	♣	⊕	-	=	M	]	m	}	è	ë	ö	ñ	±	±	±	±
E	♠	↖	.	>	N	^	n	~	è	ë	ö	ñ	±	±	±	±
F	⊙	↘	/	?	O	_	o	△	è	ë	ö	ñ	±	±	±	±

PC-850

0	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	▸	0	@	P	`	p	Ç	É	á	í	ó	ñ	±	±	±	±
1	⊙	◀	!	1	A	Q	a	q	ü	æ	í	ó	ñ	±	±	±
2	⊙	†	"	2	B	R	b	r	é	æ	ó	ú	ñ	±	±	±
3	♥	‡	#	3	C	S	c	s	â	ô	û	ñ	±	±	±	±
4	♣	§	\$	4	D	T	d	t	ä	ö	ü	ñ	±	±	±	±
5	♠	§	%	5	E	U	e	u	à	ò	ù	ñ	±	±	±	±
6	♣	-	&	6	F	V	f	v	â	ô	û	ñ	±	±	±	±
7	•	‡	'	7	G	W	g	w	ç	è	ù	ñ	±	±	±	±
8	□	†	(	8	H	X	h	x	ç	è	ù	ñ	±	±	±	±
9	○	↓	)	9	I	Y	i	y	è	ë	ö	ñ	±	±	±	±
A	⊠	→	*	:	J	Z	j	z	è	ë	ö	ñ	±	±	±	±
B	⊙	←	+	;	K	[	k	{	è	ë	ö	ñ	±	±	±	±
C	♀	↳	,	<	L	\	l		è	ë	ö	ñ	±	±	±	±
D	♣	⊕	-	=	M	]	m	}	è	ë	ö	ñ	±	±	±	±
E	♠	↖	.	>	N	^	n	~	è	ë	ö	ñ	±	±	±	±
F	⊙	↘	/	?	O	_	o	△	è	ë	ö	ñ	±	±	±	±

□ EPSON FX-850

US ASCII

0	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0					0	@	P	`	p		0	@	P	`	p	
1					!	1	A	Q	a	q	!	!	A	Q	a	q
2					"	2	B	R	b	r	"	"	B	R	b	r
3					#	3	C	S	c	s	#	#	C	S	c	s
4					\$	4	D	T	d	t	\$	\$	D	T	d	t
5					%	5	E	U	e	u	%	%	E	U	e	u
6					&	6	F	V	f	v	&	&	F	V	f	v
7					'	7	G	W	g	w	'	'	G	W	g	w
8					(	8	H	X	h	x	(	(	H	X	h	x
9					)	9	I	Y	i	y	)	)	I	Y	i	y
A					*	:	J	Z	j	z	*	*	J	Z	j	z
B					+	;	K	[	k	{	+	+	K	[	k	{
C					,	<	L	\	l		,	,	L	\	l	
D					-	=	M	]	m	}	-	-	M	]	m	}
E					.	>	N	^	n	~	.	.	N	^	n	~
F					/	?	O	_	o		/	/	O	_	o	

APPENDIX

The following table shows characters available only in the corresponding character set. The numbers at the top of the table are code values with which characters are to be replaced in the US ASCII character set. For other characters, see the US ASCII character set.

SYMBOL SET	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
German	#	\$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
UK ASCII I	£	\$	@	[	\	]	^	`	{		}	~
French I	#	\$	à	°	ç	§	^	`	é	ù	è	''
Danish I	#	\$	@	Æ	Ø	Å	^	`	æ	ø	å	'
Italy	#	\$	@	°	\	é	^	ù	à	ò	è	ì
Spanish	¢	\$	@	¡	Ñ	¿	^	`	ñ	}	}	~
Swedish	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
Japanese	#	\$	@	[	v	]	^	`	{		}	~
Norwegian	#	¤	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
Danish II	#	\$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
UK ASCII II	#	£	@	[	\	]	^	`	{		}	~
French II	#	â	à	î	ç	ê	û	ô	é	ú	è	ï
Dutch	#	\$	@	[	]	f	^	`	é	ij	à	''
South African	#	ê	É	Ê	Ö	à	Ü	é	ë	ö	ô	ü

## Trademarks

The Brother logo is a registered trademark of Brother Industries, Ltd.

Apple, the Apple Logo, and Macintosh are trademarks, registered in the United States and other countries, and TrueType is a trademark of Apple Computer, Inc. Epson is a registered trademark and FX-80 and FX-850 are trademarks of Seiko Epson Corporation.

Hewlett Packard is a registered trademark and HP LaserJet 6P, 6L, 5P, 5L, 4, 4L 4P, III, IIIP, II, and IIP are trademarks of Hewlett-Packard Company.

IBM, IBM PC, and Proprinter are registered trademarks of International Business Machines Corporation.

Microsoft and MS-DOS are registered trademarks of Microsoft Corporation.

Windows is a registered trademark of Microsoft Corporation in the U.S. and other countries.

ENERGY STAR is a U.S. registered mark.

All other brand and product names mentioned in this User's Guide are registered trademarks of their respective companies.

## Compilation and Publication Notice

Under the supervision of Brother Industries Ltd., this manual has been compiled and published, covering the latest product's descriptions and specifications.

The contents of this manual and the specifications of this product are subject to change without notice.

Brother reserves the right to make changes without notice in the specifications and materials contained herein and shall not be responsible for any damages (including consequential) caused by reliance on the materials presented, including but not limited to typographical and other errors relating to the publication.

©1999 Brother Industries Ltd.

## REGULATIONS

---

### Federal Communications Commission(FCC) Declaration of Conformity (For USA Only)

Responsible Party : Brother International Corporation  
100 Somerset Corporate Boulevard  
Bridgewater, NJ 08807-0911, USA  
TEL : (908) 704-1700

declares, that the products

Product Name : Brother Laser Printer HL-1030, HL-1240, HL-1250  
Model Numbers : HL-12  
Product Options : ALL

complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:  
(1) This device may not cause harmful interference, and (2) this device must accept any  
interference received, including interference that may cause undesired operation.

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 and, if not installed and used in accordance with the instructions, 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 the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### Important

A shielded interface cable should be used in order to ensure compliance with the limits for a Class B digital device.

Changes or modifications not expressly approved by Brother Industries, Ltd. could void the user's authority to operate the equipment.

### **Industry Canada Compliance Statement (For Canada Only)**

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

### **International ENERGY STAR Compliance Statement**

The purpose of the International ENERGY STAR Program is to promote the development and popularization of energy-efficient office equipments, which includes computers, monitors, printers, facsimile receivers and copy machines world-wide.

As an International ENERGY STAR partner, Brother Industries, Ltd. has decided that this product meets the guideline of the program.



### **Radio Interference (220-240 V Model Only)**

This printer complies with EN55022(CISPR Publication 22)/Class B.

Before this product is used, ensure that you use a double-shielded interface cable with twisted-pair conductors and that it is marked "IEEE 1284 compliant". We recommend to use a parallel cable that is 2.0 meters (6.6 feet) or less.

### **Laser Safety (For 110–120 V Model Only)**

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

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

**FDA Regulations (For 110-120 V Model Only)**

U.S. 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.

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

MANUFACTURED:  
BROTHER INDUSTRIES (USA) INC.  
2950 Brother Blvd., Bartlett, TN 38133, U.S.A.  
This product complies with FDA radiation performance standards, 21 CFR Subchapter J

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

**Caution**

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

**Declaration of Conformity (For Europe)**

We, Brother Industries, Ltd.,  
15-1, Naeshiro-cho, Mizuho-ku, Nagoya 467-8561, Japan

declare that this product is in conformity with the following normative documents.

Safety:	EN 60950,	EN 60825
EMC:	EN 55022 Class B,	EN 55024
	EN 61000-3-2,	EN 61000-3-3

following the provisions of the Low Voltage Directive 73/23/EEC and the Electromagnetic Compatibility Directive 89/336/EEC (as amended by 91/263/EEC and 92/31/EEC).

Issued by:  
Brother Industries, Ltd.  
Printer Products Division

### **IEC 825 Specification (For 220–240 V Model Only)**

This printer is a Class 1 laser product as defined in IEC 825 specifications. The label shown below is attached in countries where it is required.



This printer has a Class 3B Laser Diode which emits invisible laser radiation in the Scanner Unit. The Scanner Unit should not be opened under any circumstances.

#### **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.

### **IMPORTANT - For Your Safety**

To ensure safe operation the three-pin electrical plug supplied must be inserted only into a standard three-pin power point which is properly grounded through normal household wiring.

Extension cords used with the equipment must be three-pin plug type and correctly wired to provide proper grounding. Incorrectly wired extension cords may cause personal injury and equipment damage.

The fact that the equipment operates satisfactorily does not imply that the power is grounded and that the installation is completely safe. For your safety, if in any doubt about the effective grounding of the power, consult a qualified electrician.

#### **Disconnect device**

This printer must be installed near a power outlet which is easily accessible. In case of emergencies, you must disconnect the power cord from the power outlet in order to shut off power completely.

### **Geräuschemission / Acoustic Noise Emission (For Germany Only)**

L<sub>pa</sub> < 70 dB (A) DIN 45635-19-01-KL2

## **IMPORTANT - Wiring Information (For U.K. only)**

If the power cord supplied with this printer is not suitable for your electrical outlet, remove the plug from the mains cord and fit an appropriate three pin plug. If the replacement plug is intended to take a fuse then fit a fuse with the same rating as the original.

If a moulded plug is severed from the power cord then it should be destroyed because a plug with cut wires is dangerous if plugged into a live socket outlet. Do not leave it where a child might find it.

In the event of replacing the plug fuse, fit a fuse approved by ASTA to BS1362 with the same rating as the original fuse.

Always replace the fuse cover. Never use a plug with the cover omitted.

**WARNING - THIS PRINTER MUST BE PROPERLY EARTHED.**

The wires in the mains cord are coloured in accordance with the following code:

Green and yellow:	Ground
Blue:	Neutral
Brown:	Live

The colours of the wiring in the power lead of this printer may not correspond with the markings which identify the terminals in your plug. If you need to fit a different plug, proceed as follows.

Remove a length of the cord outer sheath, taking care not to damage the coloured insulation of the wires inside.

Cut each of the three wires to the appropriate length. If the construction of the plug permits, leave the green and yellow wire longer than the others so that, in the event that the cord is pulled out of the plug, the green and yellow wire will be the last to disconnect.

Remove a short section of the coloured insulation to expose the wires.

The wire which is coloured green and yellow must be connected to the terminal in the plug which is marked with the letter "E" or by the earth symbol or coloured green or green and yellow.

The wire which is coloured blue must be connected to the terminal which is marked with the letter "N" or coloured black or blue.

The wire which is coloured brown must be connected to the terminal which is marked with the letter "L" or coloured red or brown.

The outer sheath of the cord must be secured inside the plug. The coloured wires should not hang out of the plug.

# INDEX

- A-**
- AC power inlet ..... 1-2
  - advanced photoscale technology ..... 1-5
  - Alarm lamp ..... 4-2
  - Alarm LED ..... 1-31
  - Apple Macintosh ..... 2-4
  - APT ..... 1-5
  - auto-emulation switching ..... 1-4
- B-**
- baud rate ..... 2-6
  - bitmapped font ..... A-8
  - button ..... 1-27
- C-**
- card ..... 1-22
  - character set ..... A-10
  - control panel ..... 1-2, 1-27
  - control panel button ..... 1-32
- D-**
- data compression technology ..... 1-5
  - Data LED ..... 1-29
  - data length ..... 2-6
  - DIP switch ..... 2-5
  - DOS ..... 2-3
  - dpi ..... 1-3
  - Drum LED ..... 1-31
  - drum unit ..... 3-9
  - drum unit life ..... A-2
  - DTR ..... 2-6
  - duplex printing ..... 1-24
- E-**
- economy mode ..... 1-6
  - emulation ..... 1-4, A-3
  - error recoverable ..... 4-2
  - error unrecoverable ..... 4-4
- F-**
- Factory Reset ..... 1-34
  - front cover ..... 1-2
- H-**
- hex dump print ..... 1-34
  - high resolution control ..... 1-5
  - HRC ..... 1-5
- I-**
- IBM ..... 2-4
  - interface ..... A-3
- L-**
- LED ..... 1-27
  - LEDs ..... 1-27
  - lower paper cassette ..... 1-10
  - lower tray unit ..... 1-7, 2-2
- M-**
- manual feed paper guide ..... 1-2
  - manual feed slot ..... 1-2, 1-10, 1-18
  - manual feed slot paper guide ..... 1-21
  - memory ..... A-3
  - memory SIMM ..... 2-11
  - misfeed ..... 1-28, 4-3
- N-**
- network print server ..... 1-7, 2-10
- O-**
- operator call ..... 4-2
- P-**
- paper
    - empty ..... 1-28, 4-3
    - jam ..... 1-28, 4-3
  - paper capacity ..... 1-11
  - paper cassette ..... 1-10, 1-11, 1-15
  - paper guides ..... 1-15
  - Paper lamp ..... 1-28
  - paper LED ..... 1-28
  - paper recommended ..... 1-11
  - paper size ..... 1-10
  - paper type ..... 1-10
  - parallel interface ..... 1-2
  - parallel interface pin assignment ..... A-5
  - parallel interface specification ..... A-5
  - parity ..... 2-6
  - ppm ..... 1-3
  - primary corona wire ..... 3-8, 3-18
  - Print Config ..... 1-34

Print Fonts I ..... 1-34  
 print method ..... A-1  
 print quality ..... A-1  
 printable area ..... 1-14  
 printer driver ..... A-3  
 printer status monitor ..... 1-4  
 protocol ..... 2-6

**-Q-**

quick print setup ..... 1-4

**-R-**

Ready LED ..... 1-28  
 rear cover ..... 1-2  
 rear paper guide ..... 1-2  
 Remote Printer Console ..... 1-4  
 resident font ..... A-8  
 resolution ..... 1-3, A-1  
 robust ..... 2-6  
 RPC ..... 1-4  
 RS-232C ..... 2-4  
 RS-422A ..... 2-4

**-S-**

scalable font ..... A-9  
 scanner window ..... 3-17  
 serial interface ..... 2-3  
 serial interface cable ..... 2-8  
 serial interface parameter ..... 2-6  
 service call ..... 4-4  
 SIMM ..... 2-11  
 sleep mode ..... 1-6, 1-33  
 slide switch ..... 2-4  
 stop bit ..... 2-6  
 symbol set ..... A-10, A-11

**-T-**

test print mode ..... 1-34  
 test sample page ..... 1-34  
 thicker paper ..... 1-22  
 timeout ..... 1-33  
 toner  
   empty ..... 1-30, 4-3  
   low ..... 1-30, 4-3  
 toner cartridge ..... 3-3  
 toner cartridge high capacity ..... 1-6  
 toner cartridge life ..... A-2  
 toner LED ..... 1-29

**-U-**

universal serial bus interface ..... 1-5

USB interface ..... 1-2  
 USB (universal serial bus) interface .....  
 ..... 1-2, 1-5, A-7

**-W-**

warm-up ..... A-2  
 Windows DIB graphic ..... A-1

**-X-**

Xon/Xoff ..... 2-6