

SAMSUNG

SAMSUNG LASER PRINTER
User's Guide

ML-2150 Series



For UK customers:

To reorder your consumables
Call 0800 3164060

For Technical Assistance
Call 0870 2420303

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Environmental and Safety Consideration

Laser Safety Statement

The printer is certified in the U.S. to conform to the requirements of DHHS 21 CFR, chapter 1 Subchapter J for Class I(1) laser products, and elsewhere, is certified as a Class I laser product conforming to the requirements of IEC 825.

Class I laser products are not considered to be hazardous. The laser system and printer are designed so there is never any human access to laser radiation above a Class I level during normal operation, user maintenance, or prescribed service condition.

WARNING

Never operate or service the printer with the protective cover removed from Laser/Scanner assembly. The reflected beam, although invisible, can damage your eyes. When using this product, these basic safety precautions should always be followed to reduce risk of fire, electric shock, and injury to persons:



CAUTION - INVISIBLE LASER RADIATION
WHEN THIS COVER OPEN.
DO NOT OPEN THIS COVER.

VORSICHT - UNSICHTBARE LASERSTRAHLUNG,
WENN ABDECKUNG GEÖFFNET.
NICHT DEM STRAHL AUSSETZEN.

ATTENTION - RAYONNEMENT LASER INVISIBLE EN CAS
D'OUVERTURE. EXPOSITION DANGEREUSE
AU FAISCEAU.

ATTENZIONE - RADIAZIONE LASER INVISIBILE IN CASO DI
APERTURA. EVITARE L'ESPOSIZIONE AL FASCIO.

PRECAUCIÓN - RADIACIÓN LASER INVISIBLE CUANDO SE ABRE.
EVITAR EXPONERSE AL RAYO.

PERIGO - RADIAÇÃO LASER INVISÍVEL AO ABRIR. EVITE
EXPOSIÇÃO DIRECTA AO FEIXE.

GEVAAR - ONZICHTBARE LASERSTRALEN BIJ GEOPENDE
KLEP. DEZE KLEP NIET OPENEN.

ADVARSEL - USYNLIG LASERSTRÅLNING VED ÅBNING, NÅR
SIKKERHEDSBRYDERE ER UDE AF FUNKTION.
UNDGÅ UDSAETTEELSE FOR STRÅLNING.

ADVARSEL - USYNLIG LASERSTRÅLNING NÅR DEKSEL
ÅPNES. STIRR IKKE INN I STRÅLEN. UNNGÅ
EKSPONERING FOR STRÅLEN.

VARNING - OSYNLIG LASERSTRÅLNING NÅR DENNA DEL
ÄR ÖPPEN OCH SPÄRREN ÄR URKOPPLAD.
BETRAKTA EJ STRÅLEN. STRÅLEN ÄR FARLIG.

VARO! - AVATTAESSA JA SUOJALUKITUS OHITETTAESSA
OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASER-
SÄTEILYLLE ÄLÄ KATSO SÄTEESEEN.

注 意 - 严禁揭开此盖, 以免激光泄露灼伤

주 의 - 이 덮개를 열면 레이저광에 노출될 수 있으므로
주의하십시오.

Ozone Safety



During normal operation, this machine produces ozone. The ozone produced does not present a hazard to the operator. However, it is advisable that the machine be operated in a well ventilated area.

If you need additional information about ozone, please contact your nearest Samsung dealer.

Power Saver



This printer contains advanced energy conservation technology that reduces power consumption when it is not in active use.

When the printer does not receive data for an extended period of time, power consumption is automatically lowered.

The energy star emblem does not represent EPA endorsement of any product or service.

Recycling



Please recycle or dispose of the packaging material for this product in an environmentally responsible manner.

Radio Frequency Emissions

FCC regulations

This device 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:

1. Reposition the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

CAUTION: Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

Canadian Radio Interference Regulations

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus", ICES-003 of the Industry and Science Canada.

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques", ICES-003 édictée par l'Industrie et Sciences Canada.

United States of America

Federal Communications Commission (FCC)

Intentional emitter per FCC Part 15

Low power, Radio LAN type devices (radio frequency (RF) wireless communication devices), operating in the 2.4 GHz Band, may be present (embedded) in your printer system. This section is only applicable if these devices are present. Refer to the system label to verify the presence of wireless devices.

Wireless devices that may be in your system are only qualified for use in the United States of America if an FCC ID number is on the system label.

The FCC has set a general guideline of 20 cm (8 inches) separation between the device and the body, for use of a wireless device near the body (this does not include extremities). This device should be used more than 20 cm (8 inches) from the body when wireless devices are on. The power output of the wireless device (or devices), which may be embedded in your printer, is well below the RF exposure limits as set by the FCC.

This transmitter must not be collocated or operation in conjunction with any other antenna or transmitter.

Operation of this device 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 of the device.



Wireless devices are not user serviceable. Do not modify them in any way. Modification to a wireless device will void the authorization to use it. Contact manufacturer for service.



FCC Statement for Wireless LAN use:

"While installing and operating this transmitter and antenna combination the radio frequency exposure limit of 1mW/cm² may be exceeded at distances close to the antenna installed. Therefore, the user must maintain a minimum distance of 20cm from the antenna at all times. This device can not be collocated with another transmitter and transmitting antenna."

Declaration of Conformity (European Countries)

Approvals and Certifications



The CE marking applied to this product symbolises Samsung Electronics Co., Ltd. Declaration of Conformity with the following applicable 93/68/EEC Directives of the European Union as of the dates indicated:

January 1, 1995: Council Directive 73/23/EEC Approximation of the laws of the member states related to low voltage equipment.

January 1, 1996: Council Directive 89/336/EEC (92/31/EEC), approximation of the laws of the Member States related to electromagnetic compatibility.

March 9, 1999: Council Directive 1999/5/EC on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity.

A full declaration, defining the relevant Directives and referenced standards can be obtained from your Samsung Electronics Co., Ltd. representative.

EC Certification

Certification to 1999/5/EC Radio Equipment & Telecommunications Terminal Equipment Directive (FAX)

This Samsung product has been self-certified by Samsung for pan-European single terminal connection to the analogue public switched telephone network (PSTN) in accordance with Directive 1999/5/EC. The product has been designed to work with the national PSTNs and compatible PBXs of the European countries:

In the event of problems, you should contact the Euro QA Lab of Samsung Electronics Co., Ltd. in the first instance.

The product has been tested against TBR21 and/or TBR 38. To assist in the use and application of terminal equipment which complies with this standard, the European Telecommunication Standards Institute (ETSI) has issued an advisory document (EG 201 121) which contains notes and additional requirements to ensure network compatibility of TBR21 terminals. The product has been designed against, and is fully compliant with, all of the relevant advisory notes contained in this document.

European Radio Approval Information (for products fitted with EU-approved radio devices)

This Product is a printer; low power, Radio LAN type devices (radio frequency (RF) wireless communication devices), operating in the 2.4 GHz band, may be present (embedded) in your printer system which is intended for home or office use. This section is only applicable if these devices are present. Refer to the system label to verify the presence of wireless devices.

Wireless devices that may be in your system are only qualified for use in the European Union or associated areas if a CE mark with **CE** a Notified Body Registration Number and the Alert Symbol is on the system label.

The power output of the wireless device or devices that may be embedded in your printer is well below the RF exposure limits as set by the European Commission through the R&TTE directive.

European States qualified under wireless approvals:

EU Austria, Belgium, Denmark, Finland, France (with frequency restrictions), Germany, Greece, Ireland, Italy, Luxembourg, The Netherlands, Portugal, Spain, Sweden and the United

Accept EU Iceland, Liechtenstein, Norway and Switzerland

European States with restrictions on use:

EU In France, the frequency range is restricted to 2446.5-2483.5 MHz for devices above 10 mW transmitting power such as wireless

Accept EU No limitations at this time.

Regulatory Compliance Statements

Wireless Guidance

Low power, Radio LAN type devices (radio frequency (RF) wireless communication devices), operating in the 2.4 GHz Band, may be present (embedded) in your printer system. The following section is a general overview of considerations while operating a wireless device.

Additional limitations, cautions, and concerns for specific countries are listed in the specific country sections (or country group sections). The wireless devices in your system are only qualified for use in the countries identified by the Radio Approval Marks on the system rating label. If the country you will be using the wireless device in, is not listed, please contact your local Radio Approval agency for requirements. Wireless devices are closely regulated and use may not be allowed.

The power output of the wireless device or devices that may be embedded in your printer is well below the RF exposure limits as known at this time. Because the wireless devices (which may be embedded into your printer) emit less energy than is allowed in radio frequency safety standards and recommendations, manufacturer believes these devices are safe for use. Regardless of the power levels, care should be taken to minimize human contact during normal operation.

As a general guideline, a separation of 20 cm (8 inches) between the wireless device and the body, for use of a wireless device near the body (this does not include

extremities) is typical. This device should be used more than 20 cm (8 inches) from the body when wireless devices are on and transmitting.

This transmitter must not be collocated or operation in conjunction with any other antenna or transmitter.

Some circumstances require restrictions n wireless devices. Examples of common restrictions are listed below:



Radio frequency wireless communication can interfere with equipment on commercial aircraft. Current aviation regulations require wireless devices to be turned off while traveling in an airplane. 802.11B (also known as wireless Ethernet) and Bluetooth communication devices are examples of devices that provide wireless communication.



In environments where the risk of interference to other devices or services is harmful or perceived as harmful, the option to use a wireless device may be restricted or eliminated. Airports, Hospitals, and Oxygen or flammable gas laden atmospheres are limited examples where use of wireless devices may be restricted or eliminated. When in environments where you are uncertain of the sanction to use wireless devices, ask the applicable authority for authorization prior to use or turning on the wireless device.



Every country has different restrictions on the use of wireless devices. Since your system is equipped with a wireless device, when traveling between countries with your system, check with the local Radio Approval authorities prior to any move or trip for any restrictions on the use of a wireless device in the destination country.



If your system came equipped with an internal embedded wireless device, do not operate the wireless device unless all covers and shields are in place and the system is fully assembled.



Wireless devices are not user serviceable. Do not modify them in any way. Modification to a wireless device will void the authorization to use it. Please contact manufacturer for service.



Only use drivers approved for the country in which the device will be used. See the manufacturer System Restoration Kit, or contact manufacturer Technical Support for additional information.



ELECTRONICS

EU Declaration of Conformity (RTTE)

We, Samsung Electronics Co, Ltd.,

of #259, GongDan-Dong, Gumi-Si, GyungBuk, KOREA 730-030
(factory name, address)

declare under our sole responsibility that the product
Laser Beam Printer
model "ML-2150, ML-2151N, ML-2152W"

to which this declaration relates is in conformity with

RTTE Directive 1999/5/EC (Annex II)
Low Voltage Directive 73/23/EEC
EMC Directive 89/336/EEC:92/31/EEC

By application of the following standards

RTTE : ETSI EN 300 328, , ETSI EN 301 489

LVD : EN 60950:1992 +A1+A2+A3+A4+A11

EMC : EN55022:1998, EN61000-3-2:1995+A1+A2:1998, EN61000-3-3:1995, EN55024:1998

(Manufacturer)

Samsung Electronics Co., Ltd
#259, KongDan-Dong, GuMi-City
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2008-08-17

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(place and date of issue)

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2008-08-17

.....
(place and date of issue)

In-Seop Lee / Manager

.....
(name and signature of authorized person)

WARNING

- Do not disassemble the printer. Doing so may give you an electric shock.
- If you continuously print many pages, the surface of the output tray may become hot. Be careful not to touch the surface, especially for children.

1

INTRODUCTION

Congratulations on the purchase of your printer!

This chapter includes:

- **Special Features**
- **Printer Components**

Special Features

Your new printer is equipped with special features that improve the print quality, giving you a competitive edge. You can:



Print with excellent quality and high speed

- You can print at **1200 dots per inch** (dpi). See page 5.25.
- Your printer prints **21 pages-per-minute (Letter size), 20 pages-per-minute (A4 size)**.



Handle paper flexibly

- A 100-sheet **Multi-Purpose Tray** supports letterheads, envelopes, labels, transparencies, custom-sized materials, postcards, and heavy paper.
- **Standard 500-sheet input tray** (Tray1) and **optional 500-sheet input tray** (Tray2) supports all standard sizes of paper.
- Two output tray; select either **the top output (face-down)** or **the rear output tray (face-up)** for the most convenient access.
- **Straight-through paper path** capability from the Multi-Purpose Tray to the rear output tray.



Create professional documents

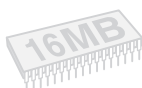
- You can customise your documents using **Watermarks**, such as "Confidential." See page 5.18.
- Print **Booklets**. This feature enables you to easily print the pages required to create books. Once printed, all you have to do is to fold and staple the pages.
- Print **Posters**. The text and pictures of each page of your document are magnified and printed across the selected sheet of paper. After the document has printed, trim off the white edges of each sheet. Tape the sheets together to form a poster.



Save your time and money

- This printer allows you to use **Toner Save mode** to save toner. See page 5.9.
- You can print on both sides of the paper to save paper (**double-sided printing**). See page 5.11.
- You can print multiple pages on one single sheet of paper to save paper (**N-Up printing**). See page 5.13.
- Preprinted forms and letterheads can be printed on plain paper. See "Using Overlays" on page 5.21.
- This printer automatically **conserves electricity** by substantially reducing power consumption when not printing.
- This printer meets **Energy Star** guidelines for energy efficiency.

1



Expand the printer capacity

- This printer has 16 MB of memory which can be expanded to **144 MB**.
- An optional **PostScript 3 Emulation*** (PS) DIMM adds PS printing.

ML-2151N and ML-2152W comes with PostScript 3 Emulation.

- An optional **Serial interface** card allows you to use the serial connection.
- **Network interface** enables network printing. You can add the optional network interface card to ML-2150.

ML-2151N and ML-2152W comes with a built-in network interface, 10/100 Base TX. ML-2152W also has a wireless network interface.



* PostScript 3 Emulation
IPS-PRINT_Printer language Emulation© Copyright
1995-2003, Oak Technology, Inc., All rights reserved

* 136 PS3 fonts
Contains UFST and MicroType from Agfa Monotype
Corporation.



Print in various environments

- You can print in **Windows 95/98/Me/NT 4.0/2000/XP**.
- Your printer is compatible with **Linux** and **Macintosh**.
- Your printer comes with both the **Parallel** and **USB** interfaces.

You can also use a **network interface**. ML-2151N and ML-2152W comes with a built-in network interface, 10/100 Base TX. ML-2152W also has a wireless network interface. But, you need to add the optional network interface card to ML-2150.

Printer Features

The table below lists a general overview of features supported by your printer.

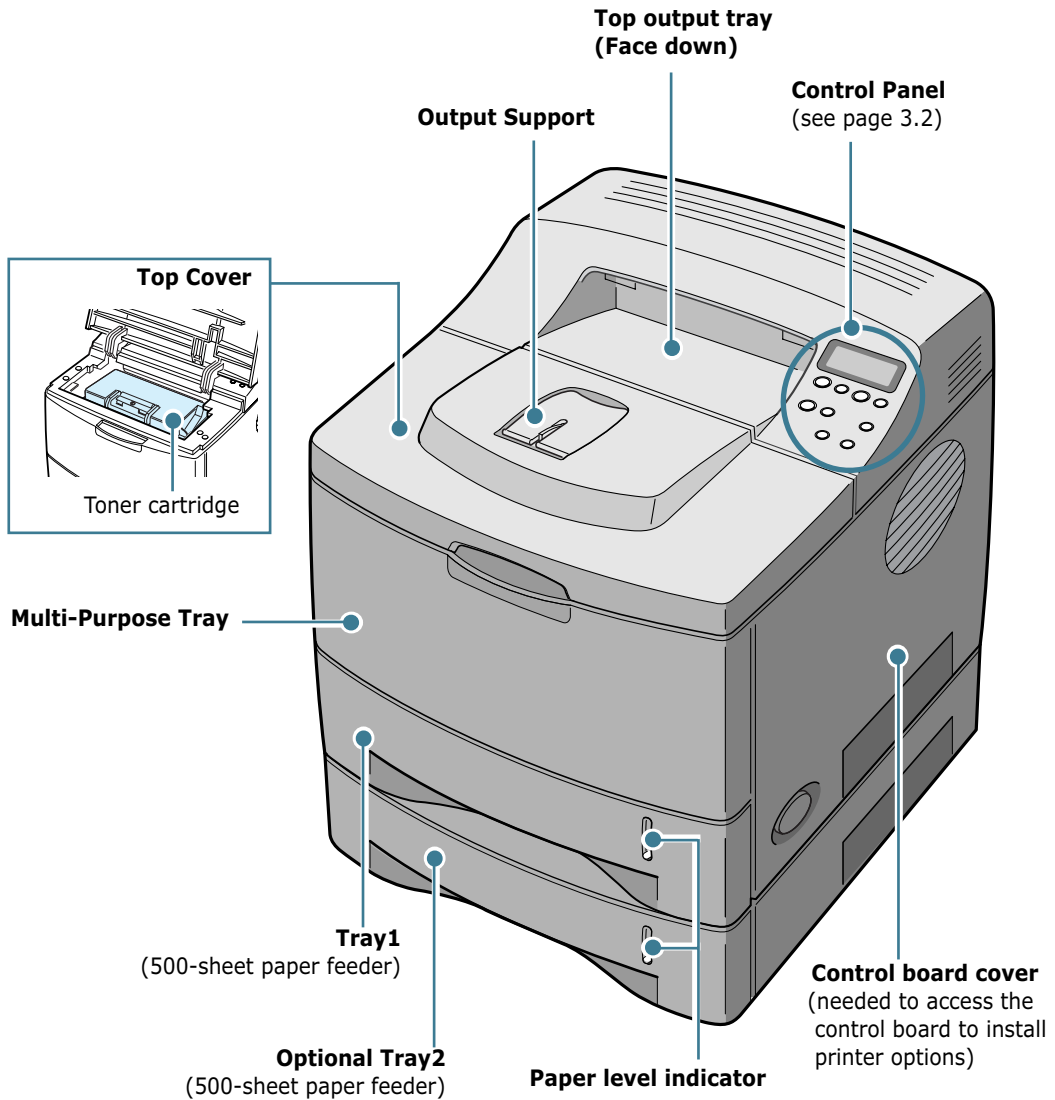
(S: Standard, O: Option)

Features	ML-2150	ML-2151N	ML-2152W
IEEE 1284	S	S	S
USB 2.0	S	S	S
Network Interface	O	S	S
Wireless LAN	O	O	S
PostScript Emulation	O	S	S
Serial Interface	O	O	O

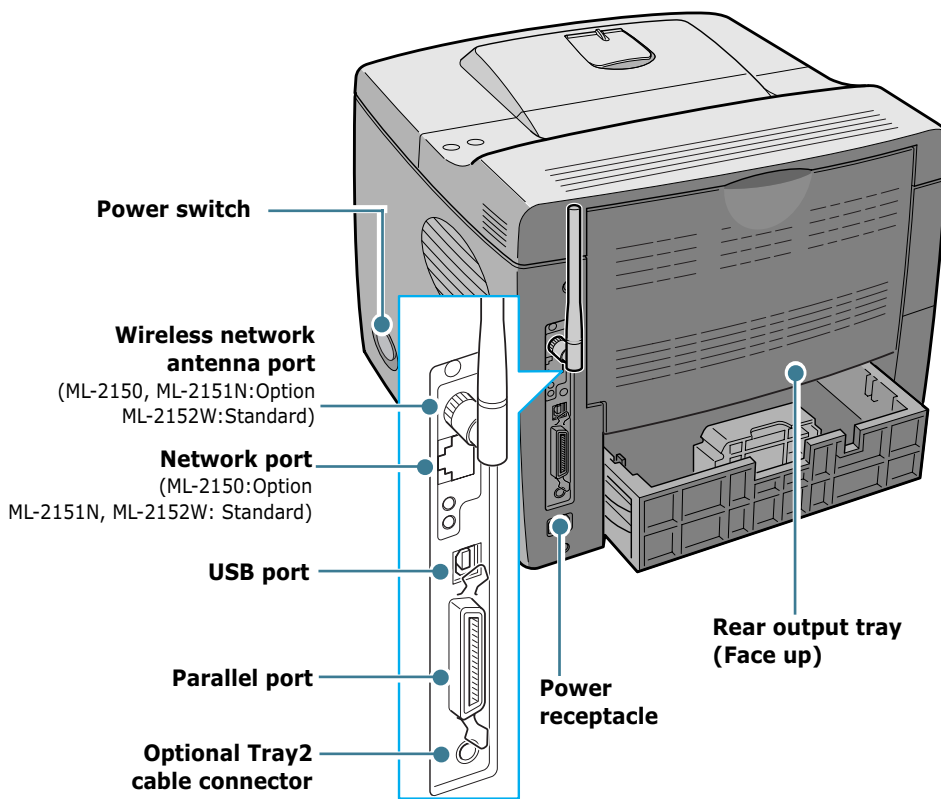
Printer Components

1

Front View



Rear View



* The figure above shows a ML-2152W.



2

SETTING UP YOUR PRINTER

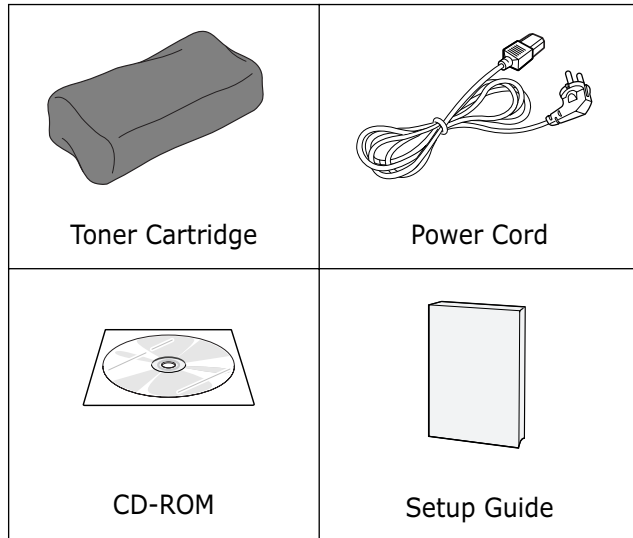
This chapter provides step by step information on setting up your printer.

This chapter includes:

- **Unpacking**
- **Installing the Toner Cartridge**
- **Loading Paper**
- **Connecting a Printer Cable**
- **Turning the Printer On**
- **Printing a Demo Page**
- **Changing the Display Language**
- **Installing Printer Software**

Unpacking

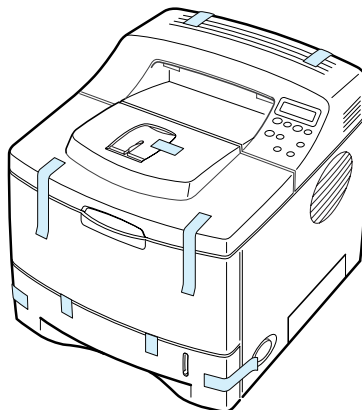
- 1 Remove the Printer and all accessories from the packing carton. Make sure that the printer has been packed with the following items:



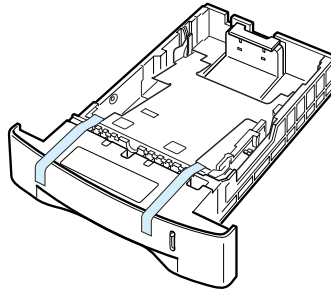
NOTES:

- If any items are missing or damaged, notify your dealer immediately.
- **Components may differ from one country to another.**
- The CD-ROM contains the printer driver, the User's Guide and the Adobe Acrobat Reader programme.

- 2 Carefully remove all of the packing tapes from the printer.



- 3 Pull the paper tray out of the printer. Remove the packing tapes from the tray.



2

Selecting a Location

Select a level, stable place with adequate space for air circulation. Allow extra space for opening covers and trays. The area should be well-ventilated and away from direct sunlight or sources of heat, cold, and humidity. Do not set the printer close to the edge of your desk or table.

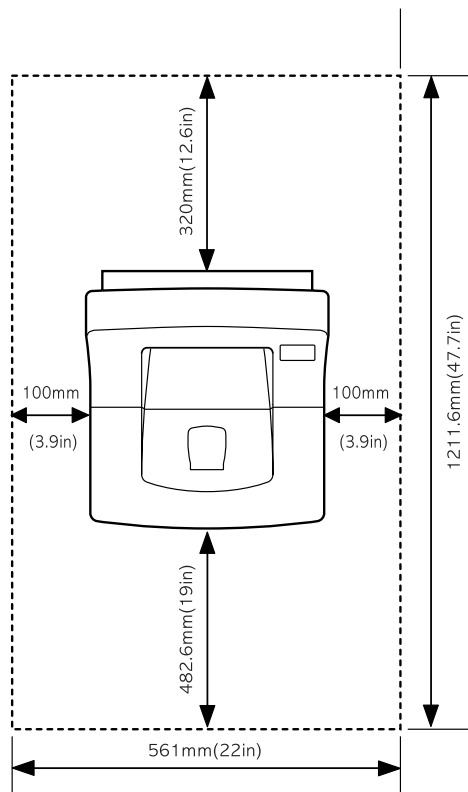
Clearance Space

Front: 482.6 mm
(enough space so that trays can be removed)

Back: 320 mm (enough space to allow opening of the rear cover)

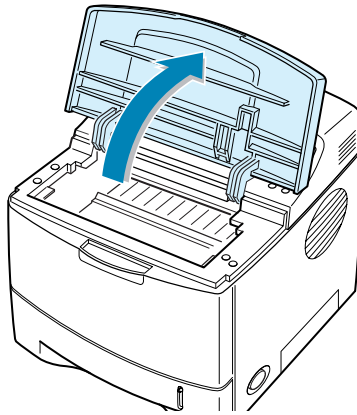
Right: 100 mm

Left: 100 mm (enough space for ventilation)

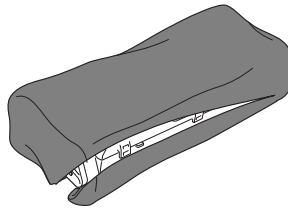


Installing the Toner Cartridge

- 1 Open the top cover. Pull up on the handle to open the cover.

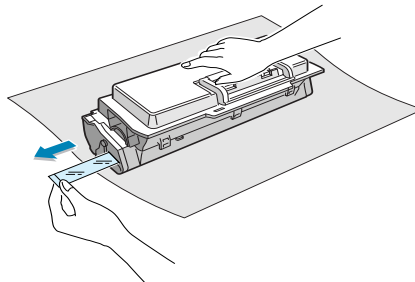


- 2 Remove the toner cartridge from its bag.



Don't use a knife or other sharp objects as they might scratch the drum of the cartridge.

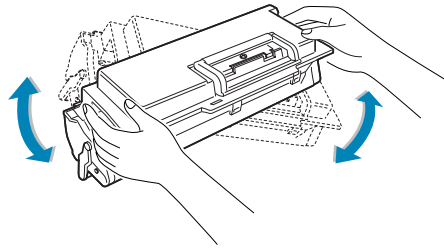
- 3 Locate the sealing tape at the end of the toner cartridge. Carefully pull the tape completely out of the cartridge and discard it.



NOTE:

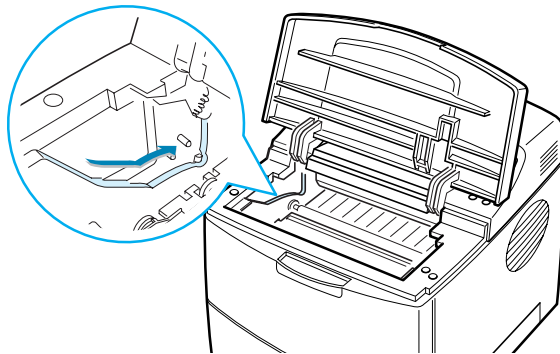
- The sealing tape should be longer than 550 mm when correctly removed.
- Holding the toner cartridge, pull the sealing tape straight to remove it from the cartridge. Be careful not to cut the tape. If this happens, you cannot use the toner cartridge

- 4 Gently shake the cartridge from side to side to distribute the toner evenly inside the cartridge.

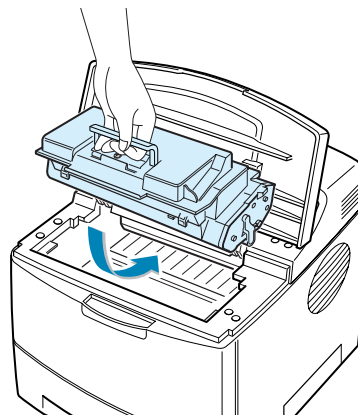
**CAUTIONS:**

- To prevent damage, do not expose the toner cartridge to light for more than a few minutes. Cover it with a piece of paper, if left exposed for more than a few minutes.
- If toner gets on your clothing, wipe it off with a dry cloth and wash clothing in cold water. Hot water sets toner into fabric.

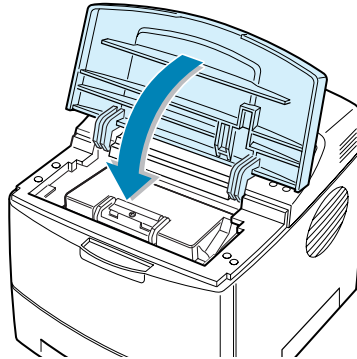
- 5 Locate the cartridge slots inside the printer, one on each side.



- 6 Grasp the handle and insert the cartridge in the printer until it snaps into place.



- 7 Close the top cover. Make sure that the cover is securely closed.

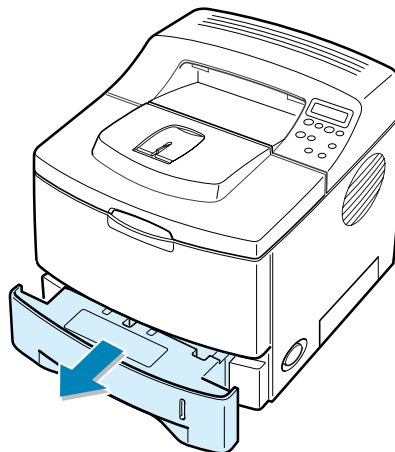


NOTE: When printing text at 5% coverage, you can expect a toner cartridge life of approximately 8,000 pages (4,000 pages for the toner cartridge that is shipped with the printer).

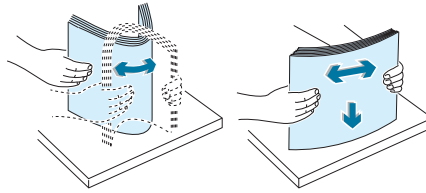
Loading Paper

You can load approximately 500 sheets of paper in the tray.

- 1 Pull the tray out of the printer.

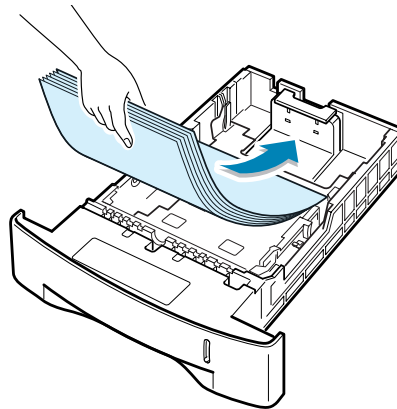


- 2 Prepare a stack of paper for loading by flexing or fanning them back and forth. Straighten the edges on a level surface.

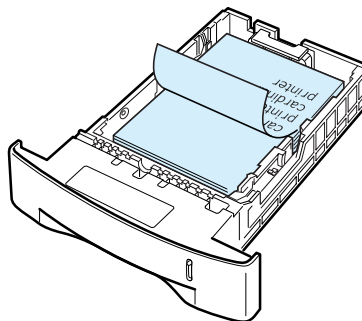


2

- 3 Load paper **with the print side facing down**.

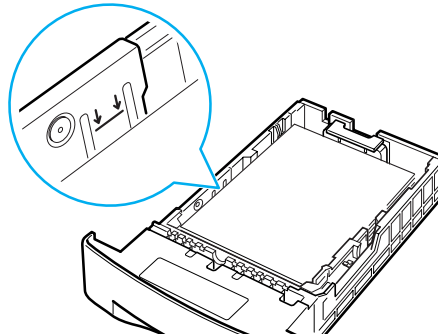


You can load previously printed paper. The printed side should be facing up with an uncurled edge at the top side. If you experience problems with paper feed, turn the paper around.



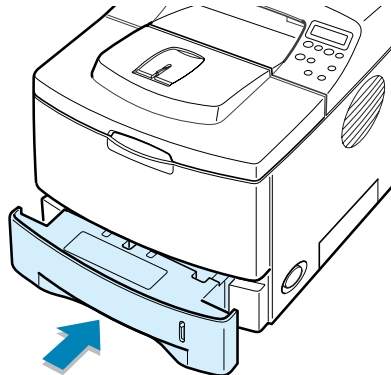
Make sure that all four corners are flat in the tray.

- 4 Pay attention to the paper limit mark on the left inside wall of the tray. Paper overloading may cause paper jams.



NOTE: If you want to change the paper size in the tray, refer to "Changing the Paper Size in the Tray" below.

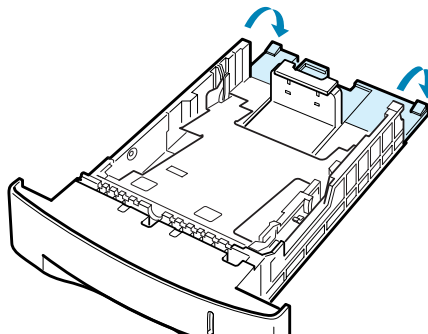
- 5 Slide the tray back into the printer.



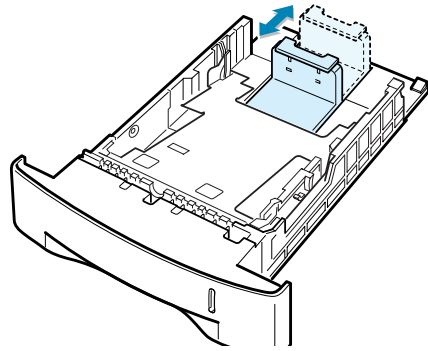
Changing the Paper Size in the Tray

If you load long paper in the tray, you should adjust the paper guides to the paper length.

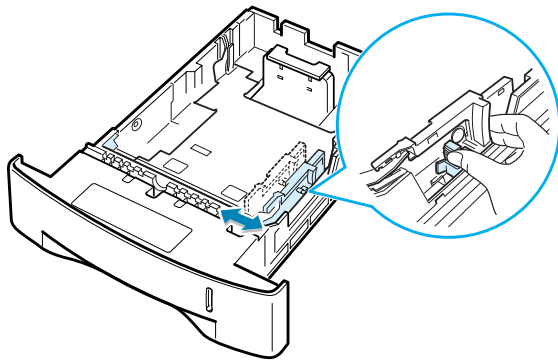
- 1 Push the back plate of the tray outwards completely so that it can extend the length of the tray.



- 2 Squeeze the tab on the paper length guide and adjust it, so that it fits to the desired paper size marked at the bottom of the tray.

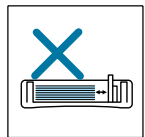
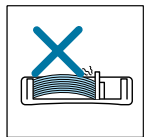
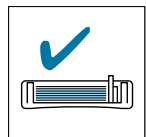


- 3 Squeeze the paper width guide and adjust it to the desired paper size marked at the bottom of the tray.



NOTES:

- Do not push the width guide far enough to cause the material to warp.
- If you do not adjust the width guide, it may cause paper jams.



Connecting a Printer Cable

For Local Printing

To print from your computer in a local environment, you need to connect your printer to the computer with either a parallel interface cable or a Universal Serial Bus (USB) cable.

If you are a Macintosh user, you can use only the USB cable.

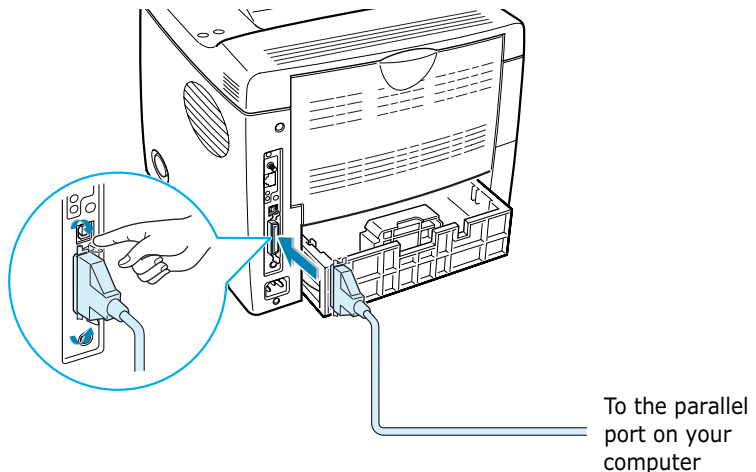
Using a Parallel Cable



NOTE: To connect the printer to the parallel port of the computer requires a certified parallel cable. You will need to buy a IEEE1284 compliant cable.

- 1 Make sure that both the printer and the computer are turned off.
- 2 Plug the parallel printer cable into the connector on the back of the printer.

Push the metal clips down to fit inside the notches on the cable plug.



- 3 Connect the other end of the cable to the parallel interface port on your computer, and tighten the screws.

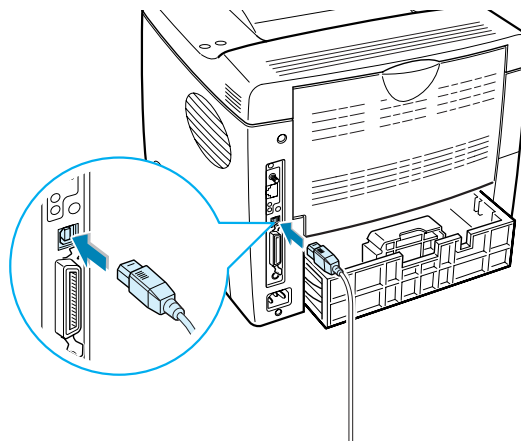
See your computer User's Guide, if you need help.

Using a USB Cable



NOTE: Connecting the printer to the USB port of the computer requires a certified USB cable. You will need to buy a USB 2.0 compliant cable that is within 3 m in length.

- 1 Make sure that both the printer and the computer are turned off.
- 2 Plug the USB printer cable into the connector on the back of the printer.



To the USB port
on your computer

- 3 Connect the other end of the cable to the USB port on your computer.

See your computer User's Guide, if you need help.



NOTES:

- For printing using the USB interface, you must be running Windows 98/Me/2000/XP or Macintosh with the OS 8.6 and the G3 processor or higher.
- If you want to print using the USB interface in Windows 98/Me, you must install the USB driver to add the USB port. See page 2.20.

For Network Printing

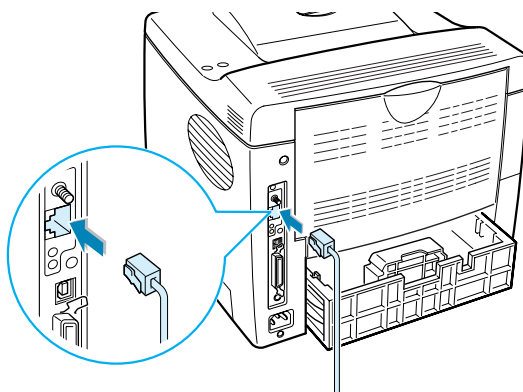
You can attach your ML-2151N or ML-2152W printer to a network using an Ethernet cable (UTP cable with RJ.45 connector).

ML-2152W also has a network antenna which allows you to use a wireless LAN interface.

If you are a ML-2150 user, you need to install the optional network interface card. For a ML-2151N printer, you can replace the network interface card to one supporting the wireless LAN interface. For details about installing the card, see page F.6.

Using an Ethernet Cable

- 1 Make sure that both the printer and the computer are turned off.
- 2 Plug one end of the Ethernet cable into the Ethernet network port on the Printer.



To the network LAN connection

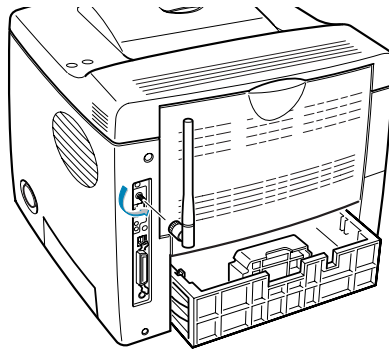
- 3 Plug the other end of the cable into a network LAN connection.

See your computer User's Guide, if you need help.

Using a Network Antenna

- 1 Screw the wireless network antenna counterclockwise into the port.

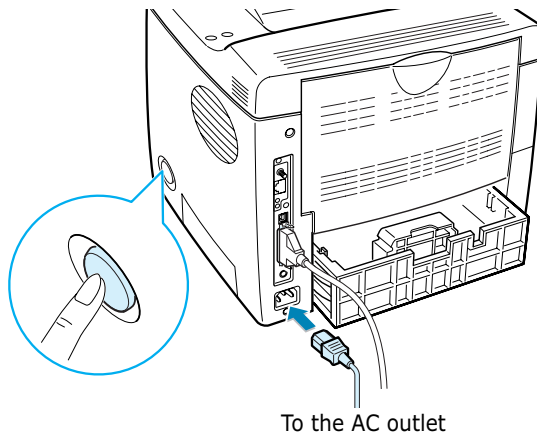
- 2 Set the antenna upright.



NOTE: After connecting the printer, you need to configure the network parameters on the control panel. See page E.6. You can use the software supplied with the card. Refer to the software User's Guide.

Turning the Printer On

- 1 Plug the power cord into the power receptacle on the back of the printer.
- 2 Plug the other end into a properly grounded AC outlet and turn on the printer using the power switch.



CAUTIONS:

- The fusing area at the rear portion of the inside of your printer is hot when powered. Be careful not to be burned when accessing this area.
- Do not disassemble the printer when it is powered. Doing so may give you an electric shock.

Printing a Demo Page

Print a demo page to make sure that the printer is operating correctly.

- 1 Press the **Menu** button (ⓘ) on the control panel until you see "Information" on the bottom line of the display.
- 2 Press the **Enter** button (⌘) to access the menu.
- 3 Press the scroll button (◀ or ▶) until you see "Demo Page" on the bottom line.
- 4 Press the **Enter** button (⌘).

A demo page showing the printer's features and capabilities prints out.

Changing the Display Language

To change the language that is displayed on the control panel, take the following steps:

- 1 Press the **Menu** button (ⓘ) on the control panel until you see "Setup" on the bottom line of the display.
- 2 Press the **Enter** button (⌘) to access the menu.
- 3 Press the scroll button (◀ or ▶) until you see "LCD Language" on the bottom line.
- 4 Press the **Enter** button (⌘) to confirm the menu item.
- 5 Press the scroll button (◀ or ▶) to display the language you want to use.
- 6 Press the **Enter** button (⌘) to save the selection.

Installing Printer Software

The supplied CD-ROM contains Windows Printing software, Macintosh Printing software, Linux Printing software, Win RCP, on-line User's Guide, and Acrobat Reader to view the User's Guide.

If you are printing from a Windows

Using the supplied CD-ROM, you can install:

- **SPL** printer driver for Windows. Use this driver to take full advantage of your printer's features. Go to page 2.17 for information about installing the Samsung SPL printer driver.
- **PostScript** Printer Description (PPD) file for Windows to allow installation of the PostScript driver. Go to Appendix B, "Using Windows PostScript Driver" for information about installing the PostScript driver.
- **Remote Control Panel** for Dos applications. Go to Appendix D, "Printing From DOS Applications" for information about installing the DOS print software and printing from DOS applications.
- **USB** driver for adding the USB port to Windows 98/Me. You must first install the USB driver for the USB connection in Windows 98/Me. See "Installing the USB Driver in Windows 98/Me" on page 2.20. In Windows 2000/XP, the USB port is provided so that you don't have to install the USB driver. Just install the printer driver.

If you are printing from a Macintosh

Go to Appendix A, "Using Your Printer with a Macintosh" for information about installing the print software and printing from a Macintosh.

If you are printing in Linux

Go to Appendix C, "Using Your Printer in Linux" for information about installing the Linux driver.

Printer Driver Features

The Samsung ML-2150 series printer drivers will support the following standard features:

- Paper source selection
- Paper size, orientation and media type
- Number of copies

Table below lists a general overview of features supported by the your printer drivers.

Driver Feature	SPL				PostScript			
	Win 2000/XP	Win 9x	Win NT4.0	Mac	Win 2000/XP	Win 9x	Win NT4.0	Mac
Toner Save	Y	Y	Y	N	Y	Y	Y	N
Print quality option	Y	Y	Y	Y	Y	Y	Y	Y
Double-sided printing	Y	Y	Y	N	Y	Y	Y	Y
Booklet printing	Y	Y	Y	N	Y	N	N	N
Poster printing	Y	Y	Y	N	N	N	N	N
Multiple pages per sheet (N-up)	Y	Y	Y	Y	Y	Y	N	Y
Scale printing	Y	Y	Y	Y	Y	Y	Y	Y
Fit to page printing	Y	Y	Y	N	Y	Y	Y	Y
Different source for first page	Y	Y	Y	N	N	N	N	Y
Watermark	Y	Y	Y	Y	N	N	N	N
Overlay	Y	Y	Y	N	N	N	N	N
TrueType fonts option	Y	Y	Y	N	Y	Y	Y	N

Installing Printer Software in Windows

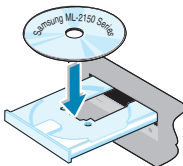
System Requirements

Verify the following:

Item	Requirements	
Operating system	Windows 95/98/Me/NT 4.0/2000/XP	
RAM	95/98/Me	32 MB
	NT 4.0/2000	64 MB
	XP	128 MB
Free disk space	95/98/Me	200 MB
	NT 4.0/2000	200 MB
	XP	200 MB
At least Internet Explorer 5.0		

All applications should be closed on your PC before beginning installation.

Installing printer software



- 1 Place the CD-ROM in the CD-ROM drive. Installation will start automatically.

If the CD-ROM drive does not automatically run:

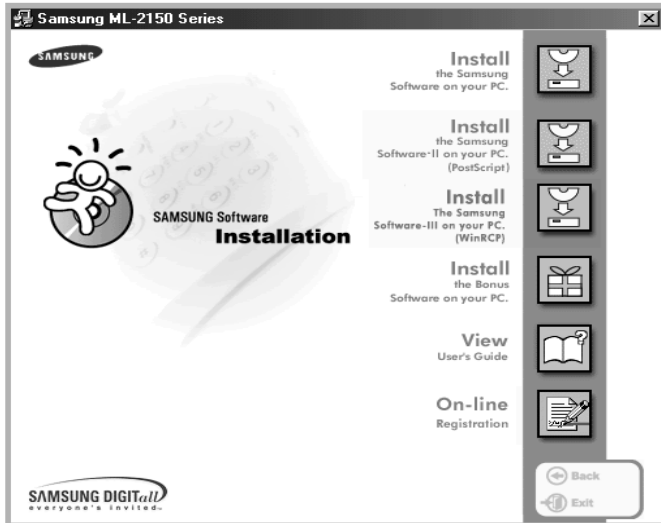
Select **Run** from the **Start** menu, type **x:\cdsetup.exe** in the Open box (where **x** is the drive letter for the CD-ROM drive) and click **OK**.



NOTE: If the New Hardware Found window appears during the installation procedure, click the **X** icon in the upper right corner of the window, or click **Cancel**.

- 2 When the language selection window appears, select the appropriate language.
If you can't find the desired language from the window, use the scroll button on the bottom right of the screen to display more languages.

3 Click **Install the Samsung Software on your PC.**



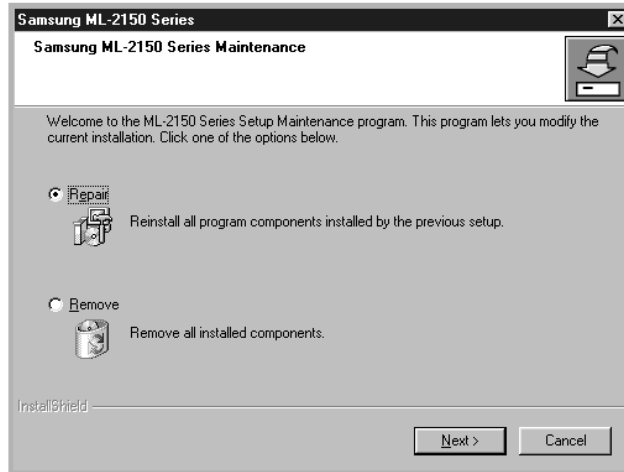
4 Click **Next.**

5 When the installation is completed, click **Finish.**



Reinstalling Printer Software

- 1 From the **Start** menu, select **Programs**.
- 2 Select **Samsung ML-2150 Series**, and then **Samsung ML-2150 Series Driver Maintenance**.
- 3 The Samsung ML-2150 Series Driver Maintenance window appears. Click **Repair** and then click **Next**.



- 4 When reinstallation is done, click **Finish**.

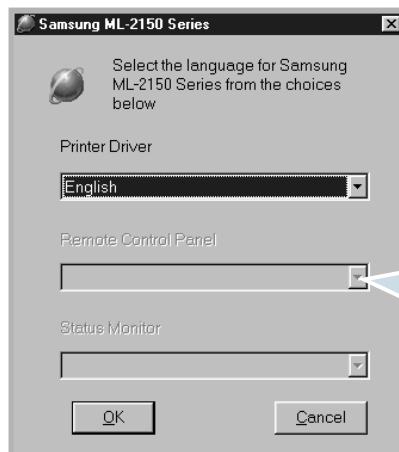
Removing Printer Software

- 1 From the **Start** menu, select **Programs**.
- 2 Select **Samsung ML-2150 Series**, and then **Samsung ML-2150 Series Driver Maintenance**.
- 3 The Samsung ML-2150 Series Driver Maintenance window appears. Check **Remove** and then click **Next**.
- 4 When you are asked to confirm your selection, click **OK**.
The Samsung ML-2150 Series printer driver and all of its components are removed from your computer.
- 5 When removing is completed, click **Finish**.

Changing the Display Language

After installing the software, you can change the display language.

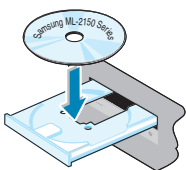
- 1 From the **Start** menu, select **Programs**.
- 2 Select **Samsung ML-2150 Series** and **Language Selection**.
- 3 Select the desired language from the **Printer Driver** drop-down list, and click **OK**.



Once you have installed the Remote Control Panel programme, this list is activated. You can select a language for the programme.

Installing the USB Driver in Windows 98/Me


- 1 Connect the printer to your computer using the USB cable and turn them on. For further details, see page 2.11.
- 2 The Add New Hardware Wizard window appears. Click **Next**.
- 3 Place the CD-ROM in the CD-ROM drive and check **Search for the best driver for your device** and click **Next**.




- 4 Check **CD-ROM drive** and click **Browse**. Choose **x:\USB** (where **x** is the drive letter for the CD-ROM drive) and click **Next**.



- 5 Click **Next**. The USB driver will be installed.
- 6 When the installation is completed, click **Finish**.
- 7 When the language selection window appears, select the appropriate language.

 **NOTE:** If you already installed the printer software, this window doesn't appear.

- 8 Follow the instructions on the window to complete the printer software installation. For more details, see page 2.17.

 **NOTES:**

- If you want to use your printer with a parallel cable, remove the USB cable and connect the parallel cable. Then reinstall the printer driver.
- If your printer doesn't work properly, reinstall the printer driver.

MEMO



2.22 SETTING UP YOUR PRINTER

3

USING THE CONTROL PANEL

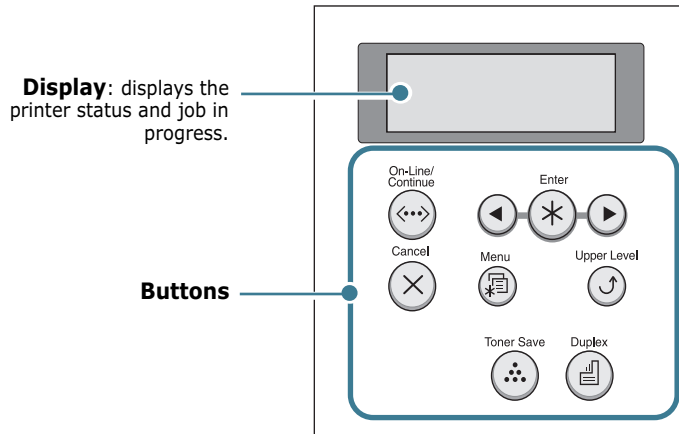
This chapter describes how to use the printer's control panel.

This chapter includes:

- **Understanding the Control Panel**
- **Using Control Panel Menus**

Understanding the Control Panel

The control panel on the top right side of your printer has the display and the nine buttons.











Display

Message	Description
Ready	<ul style="list-style-type: none"> The printer is on-line and ready to print. If you press On-Line/Continue, the printer switches to off-line.
Offline	<ul style="list-style-type: none"> The printer is off-line and cannot print. If you press On-Line/Continue, the printer switches to on-line.
Printing XXX * xxx is the current emulation.	<ul style="list-style-type: none"> The printer is printing. If you want to cancel printing, press Cancel.
Sleeping...	<ul style="list-style-type: none"> The printer is in Power Save mode, consuming less power. When a print job is received from the computer or if any button is pressed, the printer switches to on-line. To deactivate the Power Save mode or change the power-saving time, see page 3.13.

See "Understanding Display Messages" on page 7.20 for a complete listing of all the printer messages.

Buttons

Button	Description		
 <p>On-Line/Continue</p>	<ul style="list-style-type: none"> • Press to switch between on-line and off-line. • In menu mode, press to return to ready mode. <p>You can check the printer status according to the button backlight.</p>		
	Green	On	The printer is on-line and can receive data from the computer.
		Blinking	<ul style="list-style-type: none"> • When the backlight slowly blinks, the printer is receiving data from the computer. • When the backlight fast blinks, the printer is receiving and printing data. <p>If you want to pause printing, switch the printer to off-line.</p>
	Orange	On	The printer stops printing due to a major error. Check the display message. See page 7.20 for details on the meaning of the error message.
		Blinking	A minor error occurs and the printer is waiting an error to be cleared. Check the display message. When the problem is cleared, the printer resumes printing. If you want to ignore this warning, press this button.
Off	<ul style="list-style-type: none"> • The printer is off-line and cannot print. • The printer is in Power Save mode. When data is received, it switches to on-line. 		
 <p>Menu</p>	<ul style="list-style-type: none"> • Press to enter menu mode. • In menu mode, press to scroll through the menus. 		
 <p>Enter</p>	In menu mode, press to select the displayed submenu item or confirm the changed setting. You can see the selected value marked with *.		

Button	Description
	<p>In menu mode, press to scroll through submenu items or setting options. Pressing ► moves you to the next option and pressing ◀ sends you back to the previous option.</p>
<p>Cancel</p> 	<ul style="list-style-type: none"> • Press to cancel the current print job. • In menu mode, press to return to ready mode.
<p>Upper Level</p> 	<p>In menu mode, press to go back to the upper menu level.</p>
<p>Toner Save</p> 	<p>Press to enable or disable Toner Save mode.</p> <ul style="list-style-type: none"> • If the button backlight is on, the mode is enabled and the printer uses less toner to print a document. • If the button backlight is off, the mode is disabled and the printer will print in the normal quality. <p>For more information on the Toner Save mode, see page 5.9.</p>
<p>Duplex</p> 	<p>Press to enable or disable the double-sided printing.</p> <ul style="list-style-type: none"> • If the button backlight is on, the printer print on both sides of paper with long edge binding. • If the button backlight is off, the double-side printing is disabled and the printer prints on one side of paper. <hr/> <p>Note: The double-sided printing setting in the printer driver overrides that on the control panel.</p> <hr/>

Using Control Panel Menus

A number of menus are available to make it easy for you to change printer settings. The diagram on page 3.6 shows the menus and all of the menu items available in each menu. The items in each menu and the values you can select are described in more detail in the tables beginning on page 3.7.

Accessing Control Panel Menus

You can control your printer from the printer's control panel. You can also set the control panel menus while the printer is in use.

3

- 1 Press the **Menu** button (Ⓜ) until you see the desired menu on the bottom line of the display or Press the scroll button (◀ or ▶) until the desired menu item displays on the bottom line
- 2 Press the **Enter** button (Ⓝ) to access the menu.
- 3 Press the scroll button (◀ or ▶) until the desired menu item displays on the bottom line.
- 4 Press the **Enter** button (Ⓝ) to confirm the selected item.
- 5 If the selected menu item has submenus, repeat steps 3 and 4.
- 6 Press the scroll button (◀ or ▶) until the desired setting option displays on the bottom line or enter the required value.
- 7 Press the **Enter** button (Ⓝ) to save your input or selection.

An asterisk (*) appears next to the selection on the display, indicating that it is now the default.
- 8 To exit the menu, press the **Upper Level** button (Ⓢ) repeatedly, or the **Cancel** button (✕).

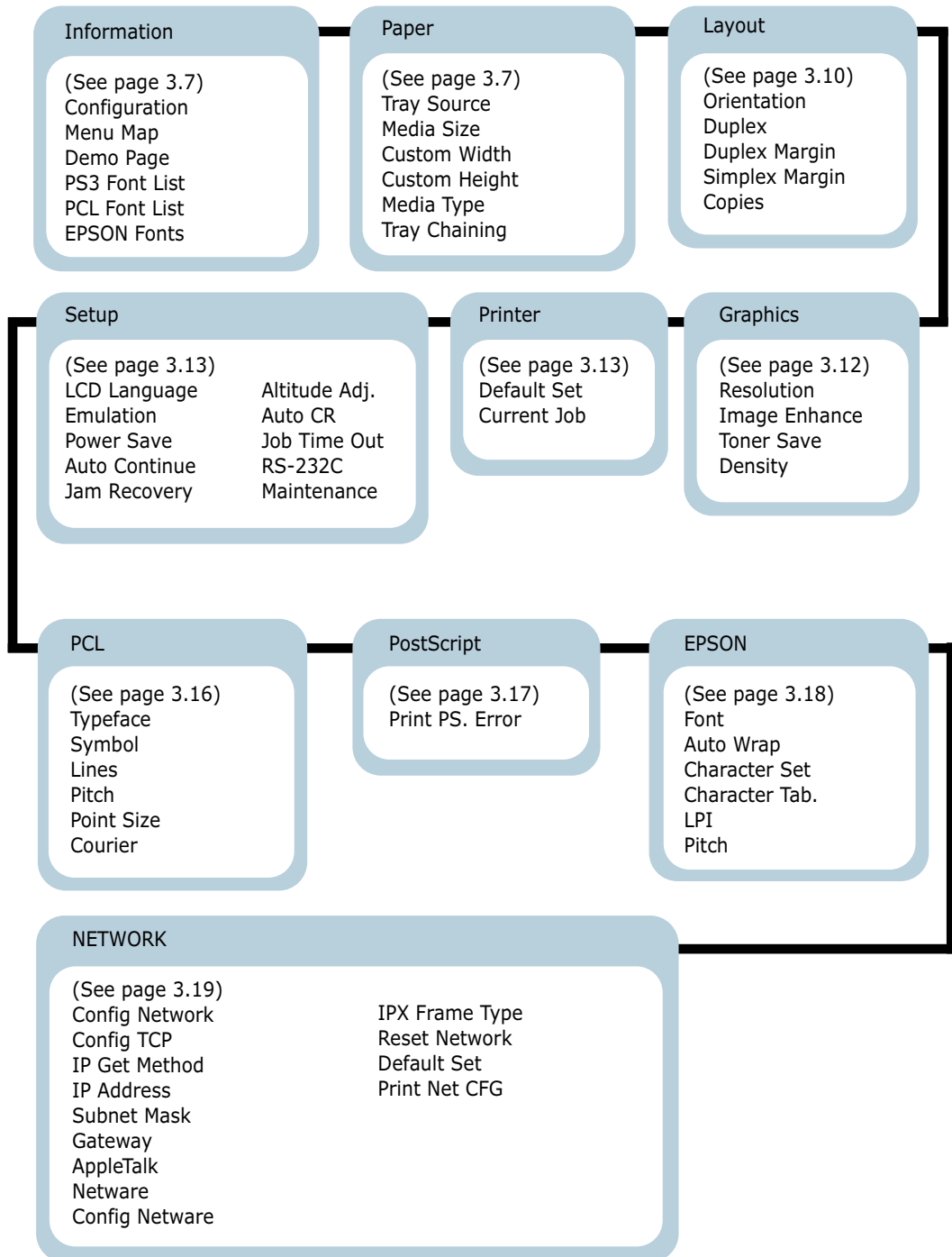
After 60 seconds of inactivity (no key has been pressed), the printer automatically returns to ready mode.



NOTE: Duplicate print settings that are selected in the printer driver override the settings on the control panel.

Overview of Control Panel Menus

The control panel menus are used to configure the printer for your environment. The control panel provides access to the following menus.



Information Menu

This menu contains printer information pages that give details about the printer and its configuration.

Item	Explanation
Configuration	The configuration page shows the printer's current configuration. See page 6.2.
Menu Map	The menu map shows the layout and current settings of the control panel menu items
Demo Page	The demo page allows you to check if your printer properly performs printing.
PS3 Font List PCL Font List EPSON Fonts	The font sample list shows all of the fonts currently available in the selected language. For a ML-2150 printer, the PS3 Font list item is available only when the optional PS DIMM is installed.

3

Paper Menu

Use this menu to define all settings relating to print material input and output, as well as the specific print material you are using with your printer.

(*: the default setting)

Item	Explanation
Tray Source	<p>Values: Auto Select*, Tray 1, MP Tray, Tray 2 , Manual Tray.</p> <p>Using this item, you can set the tray you will use.</p> <ul style="list-style-type: none">• If you select Auto Select, the printer can automatically determine the source.• Select MP Tray or Manual Tray to use the Multi-Purpose Tray. If you select Manual Tray, you need to press the On-Line/Continue button each time you print a page.• The Tray 2 item is available only when the optional Tray2 is installed.



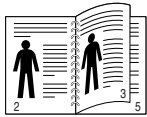
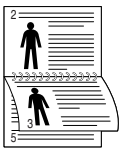

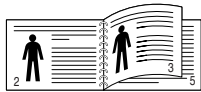
Item	Explanation
Media Size	<p>Values: Letter, Legal, A4, Executive, JIS B5, ISO B5, No. 10 Env., Monarch Env., DL Env. , C5 Env., C6 Env. , Folio, A5, A6,Custom</p> <p>* Letter for USA, A4 for Europe and Asia</p> <p>Select the paper size currently loaded in the tray.</p>
Custom Width	<p>Values: A4:210 mm/ Letter:215 mm</p> <p>* Letter for USA, A4 for Europe and Asia</p> <p>Select the paper size currently loaded in the tray. This Menu is shown when Media size value is set up by custom.</p> <ul style="list-style-type: none"> • Custom Width: Set the custom width, from 76 to 216 mm
Custom Height	<p>Values: A4:297 mm/ Letter:279 mm</p> <p>* Letter for USA, A4 for Europe and Asia</p> <p>Select the paper size currently loaded in the tray. This Menu is shown when Media size value is set up by custom.</p> <ul style="list-style-type: none"> • Custom Height: Set the custom height, from 127 to 356 mm
Media Type	<p>Values: Off*, Plain Paper, Thick, Thin, Bond, Color Paper, Card Stock, Labels, Transparency, Envelope,Preprinted,</p> <p>The Media Type setting lets you specify the type of print material you are using to get the best result.</p> <ul style="list-style-type: none"> • Plain Paper: Select for plain paper. • Thick: Select for thick paper • Thin: Select for thin paper • Bond: Select for thick paper. • Color Paper: Select for coloured paper. • Card Stock: Select for card stocks. • Labels: Select for labels. • Transparency: Select for transparencies. • Envelope: Select for envelopes. • Preprinted: Preprinted is for paper with something else printed on it, such as letterhead.

Item	Explanation
Tray Chaining	<p data-bbox="696 200 1214 249">Values: Off, On*</p> <p data-bbox="677 272 1214 523">When you select any other value except Auto Select from Tray Source and the selected tray is empty, the printer automatically prints from other trays. If this menu item is set to Off, the On-Line/Continue button backlight blinks in orange and the printer doesn't work until you insert paper into the specified tray.</p>

Layout Menu

Use the **Layout** menu to define all settings relating to output.

(*: the default setting)

Item	Explanation
<p>Orientation</p>	<p>Values: Portrait*, Landscape</p> <p>Choose the default orientation of print image on the page.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Portrait</p> </div> <div style="text-align: center;">  <p>Landscape</p> </div> </div>
<p>Duplex</p>	<p>Values: Off*, Long Edge, Short Edge</p> <p>To print on both sides of paper, choose the binding edge as followings.</p> <ul style="list-style-type: none"> • Long Edge: Flip on long edge. Prints pages to read like a book. • Short Edge: Flip on short edge. Prints pages to read by flipping over like a note pad. <div style="display: grid; grid-template-columns: 1fr 1fr; gap: 20px;"> <div style="text-align: center;">  <p>Long Edge in the Portrait orientation</p> </div> <div style="text-align: center;">  <p>Long Edge in the Landscape orientation</p> </div> <div style="text-align: center;">  <p>Short Edge in the Portrait orientation</p> </div> <div style="text-align: center;">  <p>Short Edge in the Landscape orientation</p> </div> </div> <p>Select Off to print on one side of paper.</p>

Item	Explanation
Duplex Margin	<p data-bbox="686 208 1190 262">Values: Top/Left:5.0* , Short/Long: 0*</p> <p data-bbox="662 282 1199 340">In this menu, you can set the margin of print materials for double-sided printing.</p> <ul data-bbox="662 365 1199 736" style="list-style-type: none"> <li data-bbox="662 365 1199 426">• Top Margin: Set the top margin, from 0.0 to 9.9 mm.(increasing by 0.1mm) <li data-bbox="662 452 1199 513">• Left Margin: Set the left margin, from 0.0 to 9.9 mm.(increasing by 0.1mm) <li data-bbox="662 539 1199 624">• Short Binding: Set the bottom margin of the rear side for short binding, from 0.0 to 22 mm.(increasing by 1mm) <li data-bbox="662 649 1199 736">• Long Binding: Set the right margin of the rear side for long binding, from 0.0 to 22 mm.(increasing by 1mm)
Simplex Margin	<p data-bbox="686 799 1201 853">Values: 0.0*</p> <p data-bbox="662 890 1103 948">Set the margin of print materials for one-sided printing.</p> <ul data-bbox="662 967 1167 1151" style="list-style-type: none"> <li data-bbox="662 967 1167 1052">• Top Margin: Set the top margin, from 0.0 to 9.9 inches. (increasing by 0.1 inches) <li data-bbox="662 1064 1167 1151">• Left Margin: Set the left margin, from 0.0 to 9.9 inches. (increasing by 0.1 inches)
Copies	<p data-bbox="686 1209 1195 1263">Values: 1* ~ 999</p> <p data-bbox="662 1280 1105 1338">Set the default number of copies by selecting any number from 1 to 999.</p>

Graphics Menu

Use the **Graphics** menu to change settings affecting the quality of the printed characters and images.

(*: the default setting)

Item	Explanation
Resolution	<p>Values: 300dpi-Draft, 600dpi-Normal*, 1200dpi-Best</p> <p>Specify the number of dots printed per inch (dpi). The higher the setting, the sharper the clarity of printed characters and graphics.</p> <ul style="list-style-type: none"> • Select 300dpi-Draft to print a draft document. • If your print jobs are mostly text, select 600dpi-Normal for the highest quality output. • Select 1200dpi-Best when your job contains bitmapped images, such as scanned photos or some business graphics, that will benefit from enhanced line screening.
Image Enhance	<p>Values: Normal*, Image Enhance, Text Enhance,</p> <p>This item enhances the print quality.</p> <ul style="list-style-type: none"> • Normal: Doesn't enhance the quality. • Image Enhance: Enhances bitmap images, like scanned pictures. • Text Enhance: Enhances letters and simple figures.
Toner Save	<p>Values: Off*, On</p> <p>To get the most from your toner supply, set this menu to Off. If you set this menu to On, the print quality may be reduced.</p>
Density	<p>Values: Light, Medium*, Dark</p> <p>You can lighten or darken the print on the page by changing the toner density setting. The Medium setting usually produces the best result. Use the Light toner density setting to save toner.</p>

Printer Menu

This menu allows you to reset the printer settings or cancel the current job.

Item	Explanation
Default Set	This menu item allows you to restore the printer's factory default settings.
Current Job	You can cancel the current print job and remove it from the printer buffer.

3

Setup Menu

Use the **Setup** menu to configure a variety of printer features.

(*: the default setting)

Item	Explanation
LCD Language	<p>Values: English*, German, French, Italian, Spanish</p> <p>The LCD Language setting determines the language of the text that appears on the control panel display and information printing.</p>
Emulation	<p>Values: Auto*, PCL, HEXDUMP, PS3, EPSON, IBM ProPrint</p> <p>The printer language defines how the computer communicates with the printer. If you select Auto, your printer can change the printer language automatically.</p> <p>For a ML-2150 printer, PS3 is available only when the optional PS DIMM is installed.</p>
Power Save	<p>Values: Off, 5Minutes*, 10 Minutes, 15 Minutes, 30 Minutes, 45 Minutes, 60 Minutes</p> <p>When the printer does not receive data for an extended period of time, power consumption is automatically lowered. Set how long the printer waits before going to the power save state.</p>

Item	Explanation
Auto Continue	<p>Values: Off, On*</p> <p>This item determines whether or not the printer continues printing when it detects the paper mismatching to your paper setting.</p> <ul style="list-style-type: none"> • Off: If the paper mismatch occurs, the message will remain on the display and the printer will remain off-line until you insert the correct paper. • On: If the paper mismatches, an error message will display. The printer will go offline for 30 seconds and automatically clear the message and continue printing.
Jam Recovery	<p>Values: Off*, On</p> <p>This item determines how the printer behaves when a paper jam occurs.</p> <ul style="list-style-type: none"> • Off: The printer does not reprint pages. Printing performance might be increased with this setting. • On: The printer automatically reprints pages after you clear the paper jam.
Altitude Adj.	<p>Values: Low*, High</p> <p>You can optimise the print quality depending on the air pressure, such as in a high ground.</p>
Auto CR	<p>Values: LF*, LF+CR</p> <p>This item allows you to append the required carriage return to each line feed.</p> <p>Refer to the following samples:</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="border: 1px solid black; padding: 5px; text-align: center;"> AA BB CC </div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> AA BB CC </div> </div> <p style="display: flex; justify-content: space-around; margin-top: 5px;"> LF LF+CR </p>

Item	Explanation
Job Time Out	<div style="border: 1px solid #ccc; border-radius: 10px; background-color: #e0f0f0; padding: 5px; margin-bottom: 10px;"> Values: 0 ~ 300 sec *15 sec </div> <p>You can set the time length the printer waits before printing the last page of a print job that does not end with a command to print the page.</p> <p>When a print time-out occurs, the printer prints the page in the print buffer.</p>
RS-232C	<p>This item is only available if the optional serial interface card is installed in your printer. For details, see page F.6.</p> <ul style="list-style-type: none"> • Baud Rate: Lets you select the rate at which data is being sent to or from your computer using the serial communication. Note that using a setting higher than 19200 bps with the COM port may cause unexpected errors in DOS mode. • Robust XON: Turns use of XON/OFF of serial communication control on or off. When this item is set to On, the printer sends a continuous stream of XONs to the computer to indicate that the serial port is ready to receive more data.
Maintenance	<p>This item allows you to maintain the toner cartridge.</p> <ul style="list-style-type: none"> • OPC Cleaning: Cleans the OPC drum of the cartridge and produces a cleaning sheet with toner debris on it. • Fuser Cleaning: Cleans the fuser unit inside of the printer and produces a cleaning sheet with toner debris on it. • Remain Toner: This item allows you to check how much toner are left in the cartridge.

PCL Menu

This menu sets the PCL emulation configuration. You can set the font type, symbol type, lines per page, and point size.

(*: the default setting)

Item	Explanation
Typeface	<p>Values: PCL1* ~ PCL54</p> <p>You can select the standard font to be used in PCL emulation.</p> <ul style="list-style-type: none"> • PCL1~PCL7's interval between letters is fixed, and PCL8~PCL45's interval is proportional to the font type and point size. You can adjust the font size of PCL1~PCL7 using the Pitch item, and PCL8~PCL45 can do using Point Size item (see page 3.17). • PCL46~PCL54's interval and point size are fixed.
Symbol	<p>Values: ROMAN8 ~ PCCYRIL *PC8</p> <p>This item selects the symbol to be used in PCL emulation. The symbol is the group of numbers, marks, and special signs being used when printing letters.</p>
Lines	<p>Values: 5 ~ 128 *60 (Letter), 64 (A4)</p> <p>This item allows you to set vertical spacing from 5 to 128 lines for the default paper size. The lines may differ according to the paper size and printing orientation.</p>
Pitch	<p>Values: 0.44 ~ 99.99 (0.01 unit) *10</p> <p>When you select one between PCL1 and PCL7 from the Typeface menu, you can determine the font size by setting the number of characters that will print in one horizontal inch of type. The default value, 10 is the best size.</p>

Item	Explanation
Point Size	<p>Values: 4.00 ~ 999.75 (0.25 unit) *12</p> <p>When you select one between PCL8 and PCL45 from the Typeface menu, you can determine the font size by setting the height of the characters in the font.</p>
Courier	<p>Values: Regular*, Dark</p> <p>This item lets you select the version of Courier font to use.</p>

PostScript Menu

This menu provides you with the **Print PS. Error** menu item.

(*: the default setting)

Item	Explanation
Print PS.Error	<p>Values: Off*, On</p> <p>You can select whether or not your printer prints an error list when a PS error occurs.</p> <ul style="list-style-type: none"> • Select On to print PS 3 emulation errors. If an error occurs, the job stops processing, the error message prints, and the printer flushes the job. • If this menu is set to Off, the job is flushed without an indication of the error. <p>For a ML-2150 printer, this menu is available only when you installed the optional PS DIMM; for details, see page F.3.</p>

EPSON Menu

This menu sets the EPSON emulation configuration.

(*: the default setting)

Item	Explanation
Font	<p>Values: SANSERIF*, ROMAN</p> <p>You can select the standard font will use in EPSON emulation.</p>
Auto Wrap	<p>Values: On, Off*</p> <p>This item determines whether or not the printer automatically performs line feed when the data overflows the printable area of the print material.</p>
Character Set	<p>Values: USA*, FRANCE, GERMANY, UK, DENMARK1, SWEDEN, ITALY, SPAIN1, JAPAN, NORWAY, DENMARK2, SPAIN2, LATIN</p> <p>This item allows you to select a character set of the desired language.</p>
Character Tab.	<p>Values: ITALIC, PC437US*, PC850</p> <p>This item selects the character set.</p>
LPI	<p>Values: 6*, 8</p> <p>You can set the number of lines printed in one vertical inch.</p>
Pitch	<p>Values: 10*, 12, 17.14, 20</p> <p>You can determine the font size by setting the number of characters that will print in one horizontal inch of type.</p>

Network Menu

This menu lets you set the network interface card's configuration .

(*: the default setting)

Item	Explanation
Config Network	<p>Values: Yes, No*</p> <p>Set whether or not you want to configure network values.</p> <p>If you select Yes, you can configure TCP/IP, AppleTalk and Netware menu.</p>
Config TCP	<p>Values: Yes, No*</p> <p>Select whether you want to set the IP address item or not.</p> <p>If you select Yes, you can configure IP address item.</p>
IP Get Method	<p>Values: Static*, BOOTP, DHCP</p> <p>You can set this item only when you set Config TCP to Yes.</p> <ul style="list-style-type: none">• Static: You can enter IP address, subnetmask, and gateway manually.• BOOTP: The BOOTP server allots the IP address to you automatically.• DHCP: The DHCP server allots the IP address to you automatically.
IP Address	<p>You can select this item only when you set IP Get Method to Static. This item lets you enter the IP address manually. Press the scroll button to set the value of the 1st byte between 0 and 255, and then press the Enter button.</p> <p>For the 2nd to the 4th byte, you can set the value in the same way.</p>

Item	Explanation
Subnet Mask	<p>You can set this item only when you set IP Get Method to Static. This item lets you enter the subnet mask manually. Press the scroll button to set the value of the 1st byte between 0 and 255, and then press the Enter button.</p> <p>For the 2nd to the 4th byte, you can set the value in the same way.</p>
Gateway	<p>You can set this item only when you set IP Get Method to Static. This item lets you enter the gateway manually. Press the scroll button to set the value of the 1st byte between 0 and 255, and then press the Enter button.</p> <p>For the 2nd to the 4th byte, you can set the value in the same way.</p>
AppleTalk	<p>Values: On*, Off</p> <p>This item lets you select whether or not you use the AppleTalk protocol. Select On to use the protocol</p>
Netware	<p>Values: On*, Off</p> <p>This item selects whether you want to use the Netware protocol.</p> <p>If you select On, you can access the Config Netware menu item.</p> <p>In the Config Netware menu, you can specify the frame type parameter used on your network.</p>
Config Netware	<p>Values: Yes, No*</p> <p>You can set this item only when you set Netware to On. This item lets you select whether or not you set the frame type parameter. Select Yes to select the frame type.</p>

Item	Explanation
IPX Frame Type	<div data-bbox="714 198 1208 291" style="border: 1px solid #ccc; border-radius: 10px; padding: 5px; background-color: #e0f0ff;"> Values:Auto*,EN_8022,EN_8023,EN_II,EN_SNAP </div> <p>You can select this item only when you set Config Network to Yes. This item lets you select IPX Frame Type.</p> <ul style="list-style-type: none"> • Auto:You can set the frame type automatically. • EN_8022: Select this value to use the IEEE 802.2 frame type. • EN_8023:Select this value to use the IEEE 802.3 frame type. • EN_II :Select this value to use the ETHERNET II frame type. • EN_SNAP:Select this value to use the SNAP frame type.
Reset Network	This item reboots the network interface card.
Default Set	This item restores the factory default of the network configuration. This setting will only take effect after you have reset the printer.
Print Net CFG	This item print a page showing the network parameters you set.

MEMO



3.22 USING THE CONTROL PANEL

4

USING PRINT MATERIALS

This chapter will help you understand types of paper you can use with your printer and how to properly load paper in the different paper trays for the best print quality.

This chapter includes:

- **Choosing Paper and Other Materials**
- **Selecting the Output Location**
- **Loading Paper**
- **Printing on Envelopes**
- **Printing on Labels**
- **Printing on Transparencies**
- **Printing on Preprinted Paper**
- **Printing on Card Stock or Custom-sized Materials**

Choosing Paper and Other Materials

You can print on a variety of print materials, such as plain paper, envelopes, labels, transparencies and so on. See "Paper Specifications" on page G.3. To get the best possible print quality, use only high-quality copier-grade paper.

When you choose print materials, consider the following:

- **Desired outcome:** The paper you choose should be appropriate for the project.
- **Size:** You can use any size paper that fits easily within the paper adjusters of the paper tray.
- **Weight :** Your printer supports paper weight as follows:
 - 16~28 lbs (60~105 g/m²) bond for the Tray1 or optional Tray2
 - 16~43 lbs (60~163 g/m²) bond for the Multi-Purpose Tray
- **Brightness:** Some papers are whiter than others and produce sharper, more vibrant images.
- **Surface smoothness:** The smoothness of the paper affects how crisp the printing looks on the paper.



CAUTION: Using a material that does not conform to the specification listed in the paper specification can cause problems that may require service. This service is not covered by the warranty or service agreements.

Sizes and Capacities

Size	Input Source/Capacity ^{*a}		
	Tray1 or optional Tray2	Multi-Purpose Tray	Manual Feed
Plain Paper			
Letter (8.5 x 11 in.)	500	100	1
Legal (8.5 x 14 in.)	500	100	1
Executive (7.25 x 10.5 in.)	500	100	1
Folio (8.5 x 13 in.)	500	100	1
A4 (210 x 297 mm)	500	100	1
B5 (182 x 257 mm)	500	100	1
A5 (148 x 210 mm)	200	100	1
Envelopes			
No. 10 (4.12 x 9.5 in.)	-	10	1
Monarch (3.87 x 7.5 in.)	-	10	1
C5 (162 x 229 mm)	-	10	1
DL (110 x 220 mm)	-	10	1
B5 (176 x 250 mm)	-	10	1
Labels^{*b}			
Letter (8.5 x 11 in.)	-	25	1
A4 (210 x 297 mm)	-	25	1
Transparencies^{*b}			
Letter (8.5 x 11 in.)	-	50	1
A4 (210 x 297 mm)	-	50	1
Card stocks^{*b}			
	-	10	1
Bond^{*b}			
	-	10	1

^{*a.} Depending on paper thickness, the maximum capacity may be reduced.

^{*b.} If you are experiencing excessive jamming, feed one sheet at a time through the Multi-Purpose Tray.

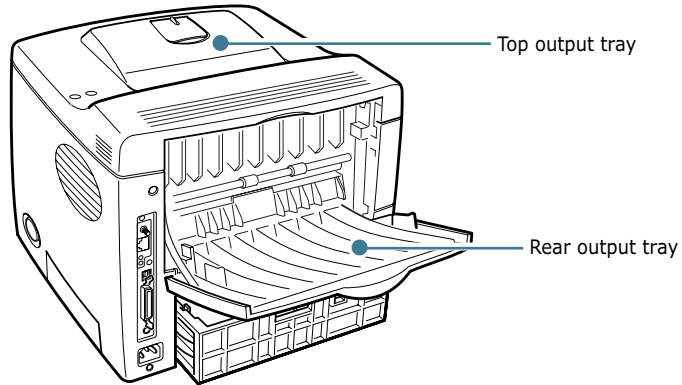
Guidelines for Paper and Special Materials

When selecting or loading paper, envelopes, or other special materials, keep these guidelines in mind:

- Attempting to print on damp, curled, wrinkled, or torn paper can cause paper jams and poor print quality.
- Use cut-sheet paper only. You cannot use multi-part paper.
- Use only high-quality, copier grade paper for the best print quality.
- Do not use paper that has been already printed on or that has been fed through a photocopier.
- Do not use paper with irregularities, such as tabs or staples.
- Do not attempt to load any tray during printing and never overfill the tray. This could cause a paper jam.
- Avoid paper with embossed lettering, perforations, or texture that is too smooth or too rough.
- Coloured paper should be of the same high quality as white photocopy paper. The pigments must withstand the printer's fusing temperature of 400°F (205°C) for 0.1 second without deterioration. Do not use paper with a coloured coating that was added after the paper was produced.
- Preprinted forms must be printed with nonflammable, heat-resistant ink that do not melt, vaporize, or release hazardous emissions when subject to the printer's approximately 400°F (205°C) fusing temperature for 0.1 second.
- Store paper in its ream wrapper until ready to use. Place cartons on pallets or shelves, not on the floor.
- Do not place heavy objects on top of the paper, whether it is packaged or unpackaged.
- Keep paper away from moisture, direct sunlight or other conditions that can cause it to wrinkle or curl.

Selecting the Output Location

The printer has two output locations; the rear output tray and the top output tray.



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To use the top output tray, be sure that the rear output tray is closed. To use the rear output tray, open it.

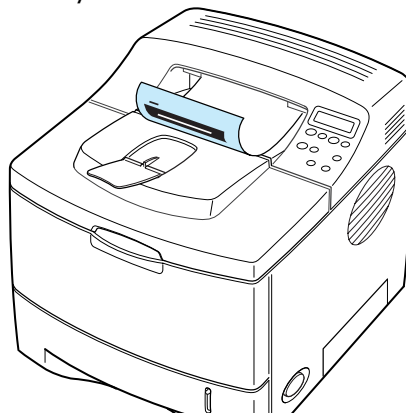


NOTES:

- If paper coming out of the top output tray has problems, such as excessive curl, try printing to the rear output tray.
 - To avoid paper jams, do not open or close the rear output tray while the printer is printing.
-

Printing to the Top Output Tray *(Face down)*

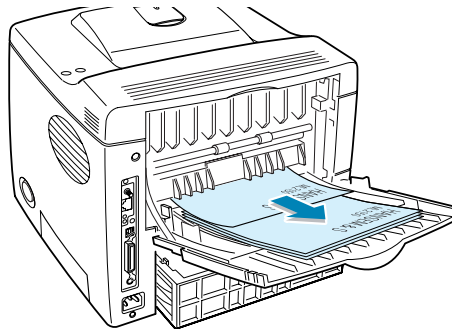
The top output tray collects paper face-down, in correct order. The top output tray should be used for most print jobs.



NOTE: If you continuously print many pages, the surface of the output tray may become hot. Be careful not to touch the surface, especially for children.

Printing to the Rear Output Tray (Face up)

The printer always prints to the rear output tray if it is open. Paper comes out of the printer face-up, with the last page on top.

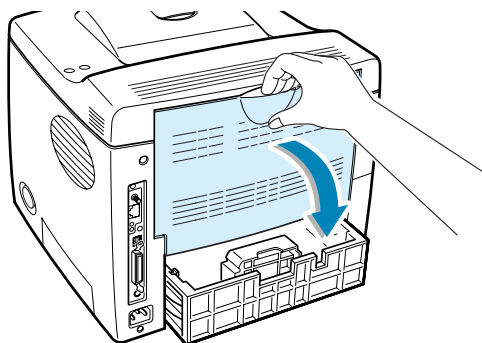


Printing from the Multi-Purpose Tray to the rear output tray provides the **straight paper path**. Opening the rear output tray might improve output quality with the following:

- over 100 sheets of paper continuously
- envelopes
- labels
- small custom-size paper
- postcards
- paper lighter than 60 g/m² (16 lb) or heavier than 105 g/m² (28 lb)
- transparencies: some special transparencies may have stacking problem by curl. In that case, please use the top output tray (face down).

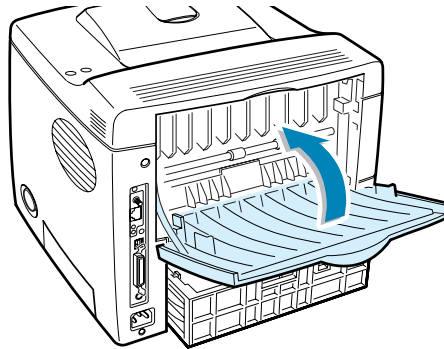
To open the rear output tray:

- 1 Open the rear door by pulling it down. The cover functions as the output tray.



CAUTION: The fusing area at the rear portion of the inside of your printer is hot when powered. Be careful not to be burned when accessing this area.

- 2 Pull the extender to extend the output tray to its full-length position to hold longer paper.
- 3 If you do not want to stack the printed pages on the rear output tray, slide the extender to its place and close the tray. The pages will stack on the top output tray.

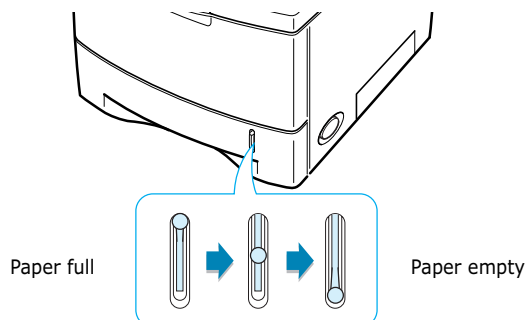


NOTE: The rear output tray can hold up to 100 sheets of paper. If the tray is overloaded with printed pages, it may fall from the printer. Remove the pages so that the tray is not overloaded.

Loading Paper

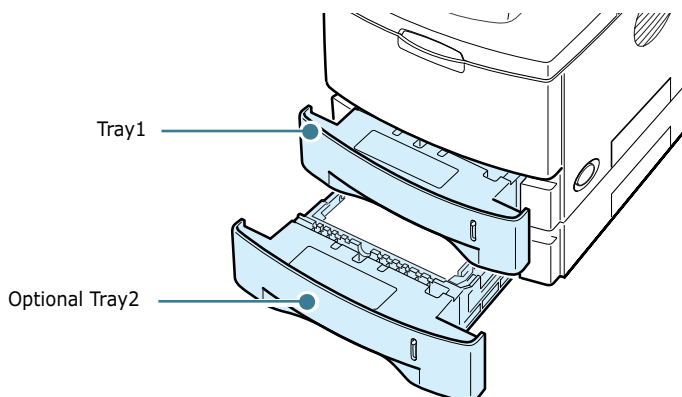
Proper paper loading helps prevent paper jams and ensure trouble-free printing. Do not remove the paper tray while a job is printing. Doing so may cause a paper jam. See "Sizes and Capacities" on page 4.3 for acceptable paper size and capacities for each tray.

The paper level bar on the front of the paper tray(s) shows the amount of paper currently left in the tray. When the tray is empty, the indicator of the bar is lowered.



Using the Tray1 or the Optional Tray2

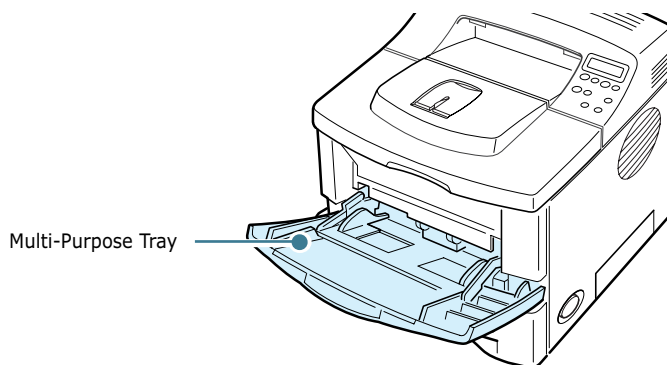
The Tray1 and the optional Tray2 can hold up to 500 sheets of paper. See "Sizes and Capacities" on page 4.3 for acceptable paper size and capacities of each tray.



Load a stack of paper into the tray and print. For details about loading paper in the Tray1 or the optional Tray2, see "Loading Paper" on page 2.6.

Using the Multi-Purpose Tray

Multi-Purpose Tray is located in the front of your printer. It can be closed when you are not using it, making the printer more compact.

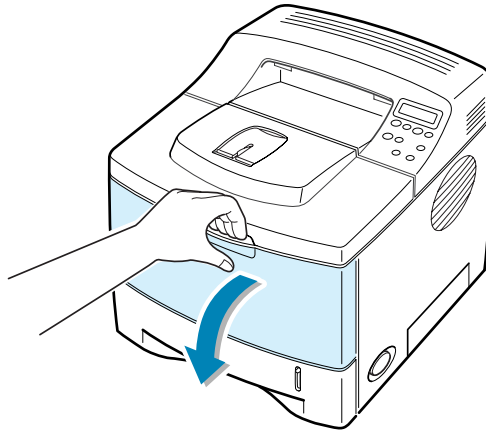


The Multi-Purpose Tray can hold several sizes and types of paper, such as transparencies, cards and envelopes. You may also want to use the Multi-Purpose Tray for single page print jobs on letterheads, coloured paper for use as separator sheets, or other special materials that you do not normally keep in the paper tray. You can load approximately 100 sheets of plain paper, 10 envelopes, 50 transparencies, 10 card stocks or 25 labels at a time.

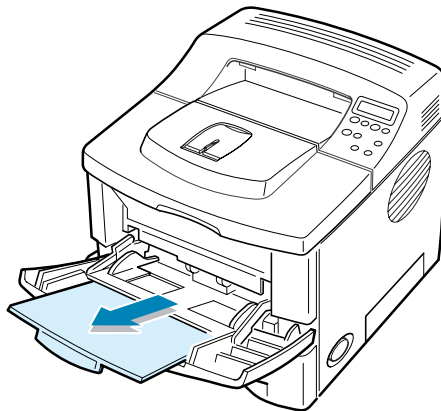
- Load only one size of print material at a time in the Multi-Purpose Tray.
- To prevent paper jams, do not add paper when there is still paper in the Multi-Purpose Tray. This also applies to other types of print materials.
- Print materials should be loaded face up with the top edge going into the Multi-Purpose Tray first and be placed on the centre of the tray.
- Do not place objects on the Multi-Purpose Tray. Also avoid pressing down or applying excessive force on it. The tray may fall apart from the printer.

To load paper in the Multi-Purpose Tray:

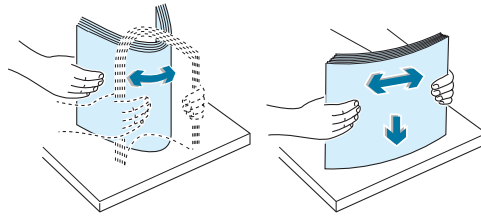
- 1 Pull the Multi-Purpose Tray down towards you.



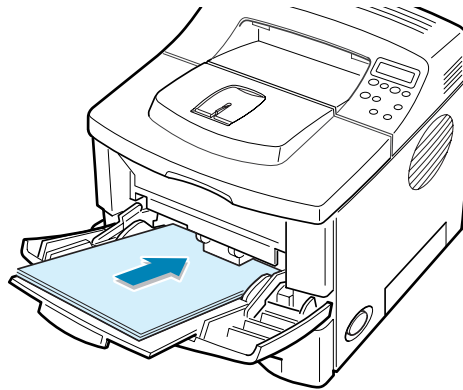
- 2 Slide the extender to extend the tray to its full-length position to hold longer paper.



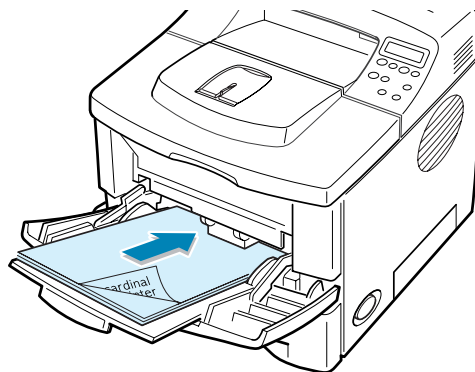
- 3** Prepare a stack of paper for loading by flexing or fanning them back and forth. Straighten the edges on a level surface.



- 4** Place paper on the centre of the tray **with the print side face up**.

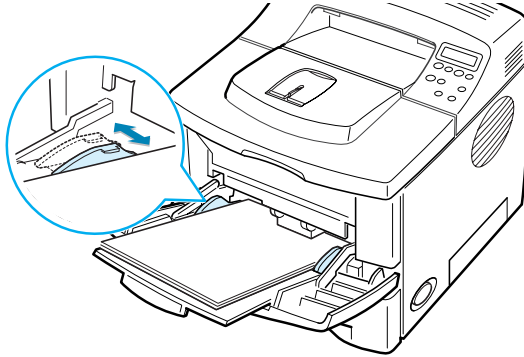


If you want to print on previously printed paper from the Multi-Purpose Tray, the printed side should be facing down with an uncurled edge to the printer. If you experience problems with paper feed, turn the paper around.



NOTE: Make sure that you have not loaded too much print materials. The print material buckles if you load a stack that is too deep or push it in too far.

- 5 Slide the paper width guide and adjust it against the stack of print material without bending.



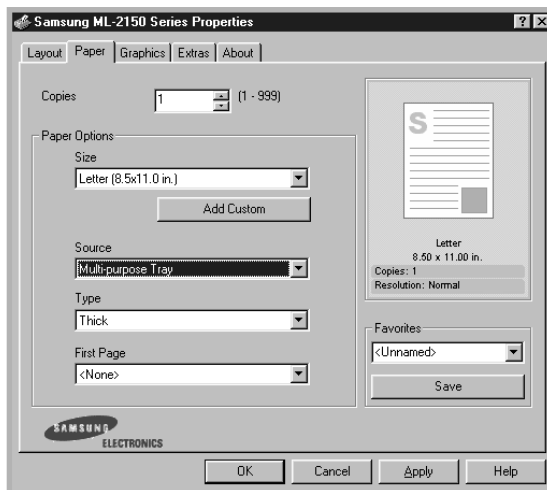
Now, the display on the front panel prompts you to confirm the paper size in the Multi-Purpose Tray.



NOTE: Your printer cannot automatically detect the size of paper loaded in the Multi-Purpose Tray. Configuring the Multi-Purpose Tray with the correct paper size allows you to select paper by size rather than paper source when you print from your software application. You do not have to check which paper is loaded in the Multi-purpose Tray before printing.

4

- 6 Press the scroll button (◀ or ▶) until the size of paper you loaded appears on the bottom line of the display.
- 7 Press the **Enter** button (⊛). Now, you are ready to print.
- 8 When you print a document, configure the paper source and type in the software application.



For information about setting on the control panel, see page 3.5.

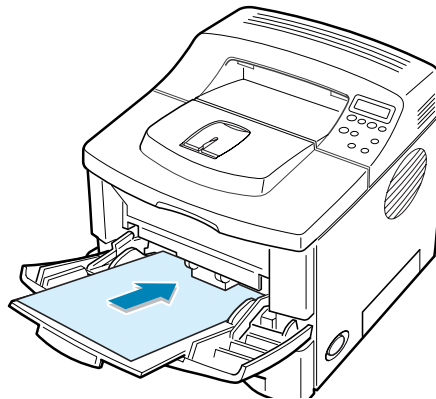
- 9 After printing, push the extender back to its place and close the Multi-Purpose Tray.

Using the Manual Feed Mode

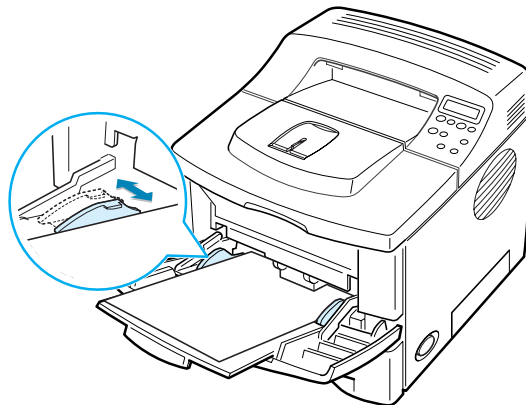
If you select **Manual Feed** in the **Source** option when changing print settings, you can manually load a sheet of print material in the Multi-Purpose Tray. Manually loading paper can be helpful when you want to check the print quality after each page is printed.

This loading procedure is almost the same as the procedure for loading in the Multi-Purpose Tray, except you load paper sheet-by-sheet in the Tray, send print data to print the first page, and press the **On-Line/Continue** button (⏪) on the control panel to print each following page.

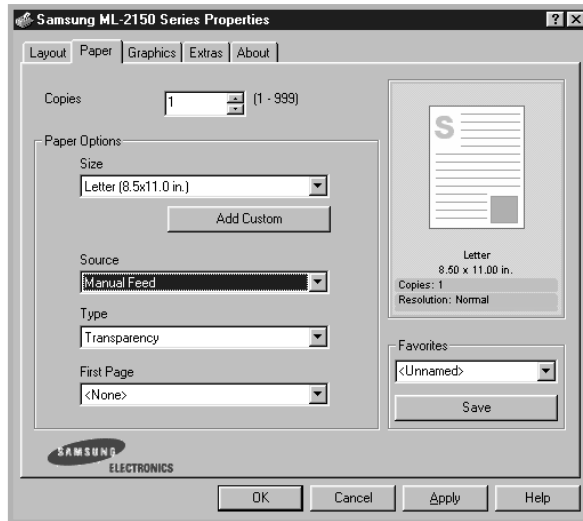
- 1 Load a sheet of print material on the centre of the Multi-Purpose Tray **with the print side up**.



- 2 Slide the paper width guide and adjust it against the material without bending.



- 3 When you print a document, you must select **Manual Feed** for **Source** from the software application, and then select the correct paper size and type.



4

- 4 Print a document.

The display shows a message prompting you to load paper and press the **On-Line/Continue** button (⏪).

- 5 Press the **On-Line/Continue** button (⏪).

The printer picks up the paper and prints. After one page is printed, the message appears again.

- 6 Insert the next sheet into the Multi-Purpose Tray and press the **On-Line/Continue** button (⏪).

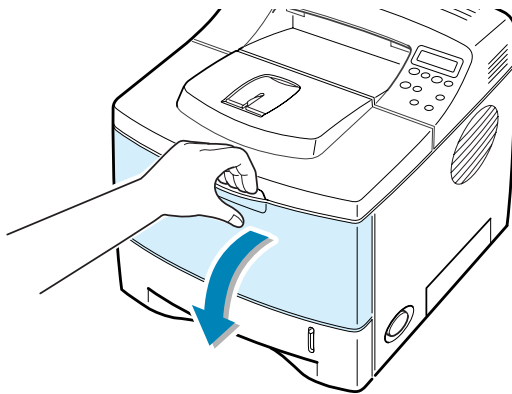
Repeat this step for every page to be printed.

Printing on Envelopes

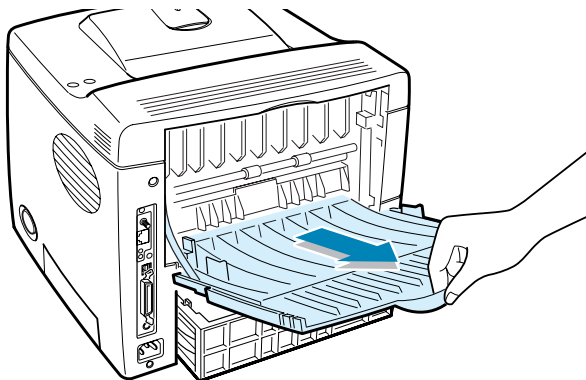
Guidelines

- Only use envelopes recommended for laser printers. Before loading envelopes in the Multi-Purpose Tray, make sure that they are undamaged and are not stuck together.
- Do not feed stamped envelopes.
- Never use envelopes with clasps, snaps, windows, coated lining, or self-stick adhesives. These envelopes may severely damage the printer.

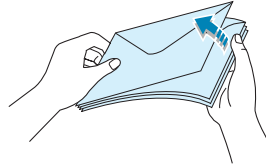
- 1** Open the Multi-Purpose Tray and slide the extender to its full-length position.



- 2** Open the rear output tray and pull the extender.

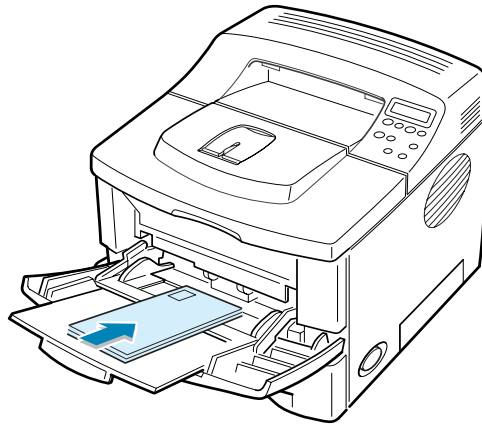


- 3 Flex or fan the edge of the envelope stack to separate the pages before loading.



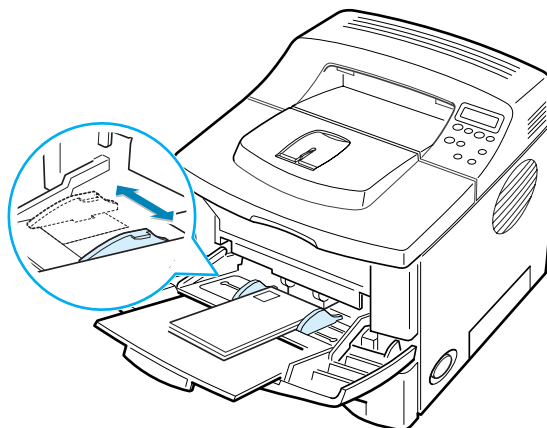
- 4 Load the envelopes onto the Multi-Purpose Tray **with the flap side down**.

The stamp area is **on the left side** and the end of the envelope **with the stamp area enters the tray first**.

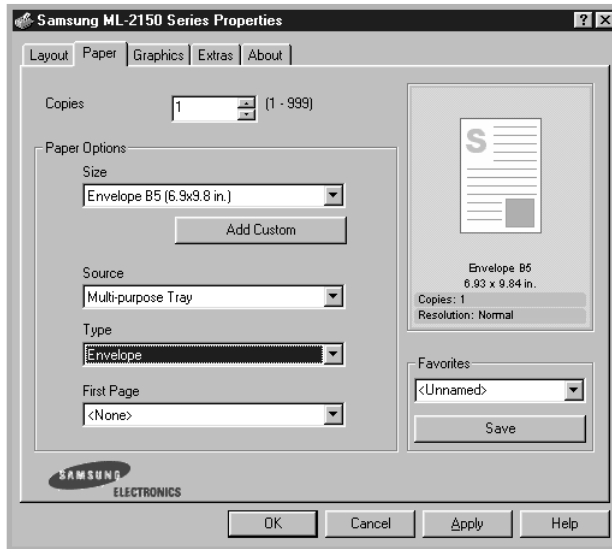


4

- 5 Adjust the guide to the edge of the envelope stack.

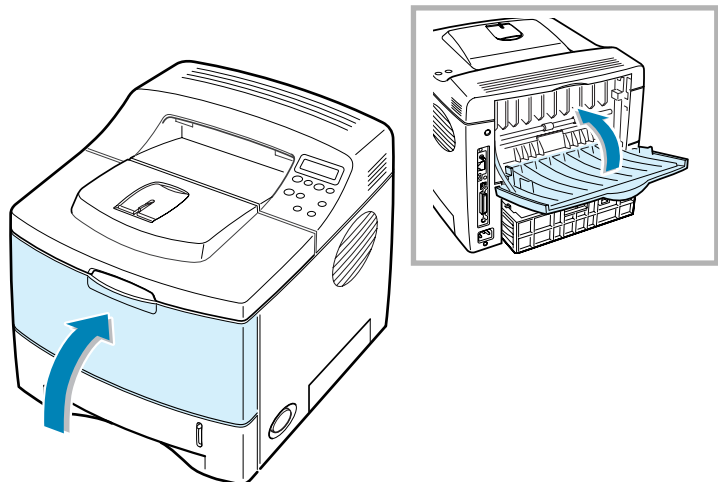


- 6 When you print on envelopes, configure the paper source, type and size properly in the software application. For details, see page 5.7.



For details about setting on the control panel, see page 3.5.

- 7 After printing, close the Multi-Purpose Tray and the rear output tray.



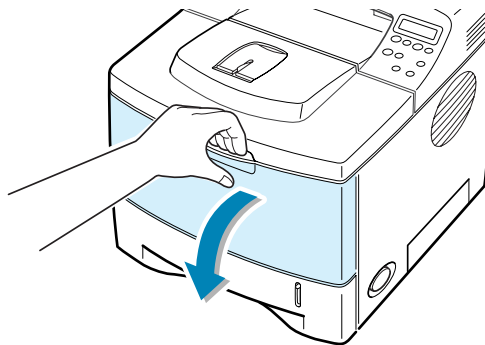
Printing on Labels

Guidelines

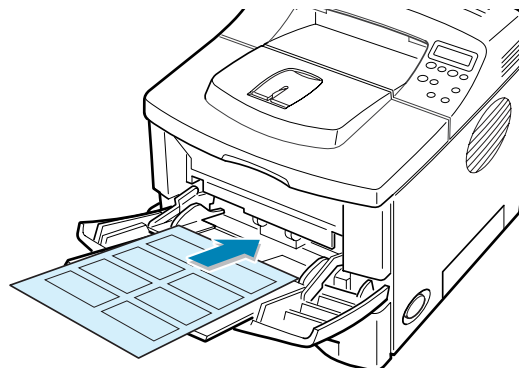
- Only use labels recommended for laser printers.
- Verify that the labels' adhesive material can tolerate fusing temperature of 200°C (392°F) for 0.1 second.
- Make sure that there is no exposed adhesive material between the labels. Exposed areas can cause labels to peel off during printing, which can cause paper jams. Exposed adhesive can also cause damage to printer components.
- Do not feed a sheet of label through the printer more than once. The adhesive backing is designed for one pass through the printer.
- Do not use labels that are separating from the backing sheet or are wrinkled, bubbled, or otherwise damaged.

4

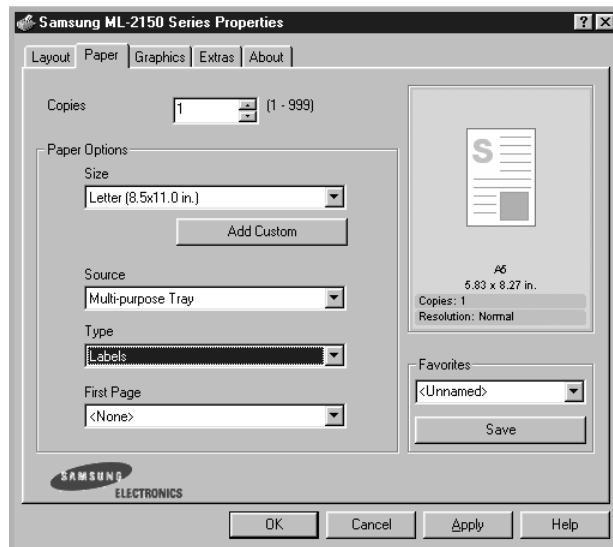
- 1 Open the Multi-Purpose Tray and the rear output tray.



- 2 Load labels **with the print side up**. Adjust the guide to fit the width of the labels.



- 3 When you print on labels, configure the paper source, type and size properly in the software application. For details, see page 5.7.



For details about setting on the control panel, see page 3.5.

- 4 After printing, close the Multi-Purpose Tray and the rear output tray.



NOTE: To prevent labels from sticking, do not let the printed label sheets stack up as they are printed out.

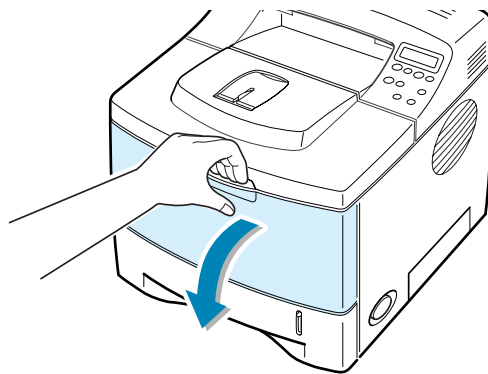
Printing on Transparencies

Guidelines

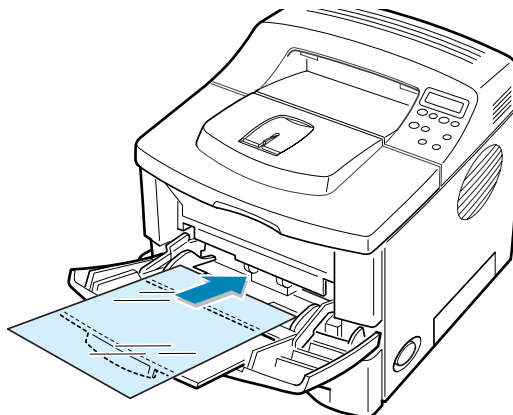
- Only use transparencies recommended for use in laser printers.
- Ensure that transparencies are not wrinkled, curled, or have any torn edges.
- Hold the transparencies by the edges and avoid touching the print side. Oils deposited on the transparency can cause print quality problems.
- Be careful not to scratch or leave fingerprints on the print side.

4

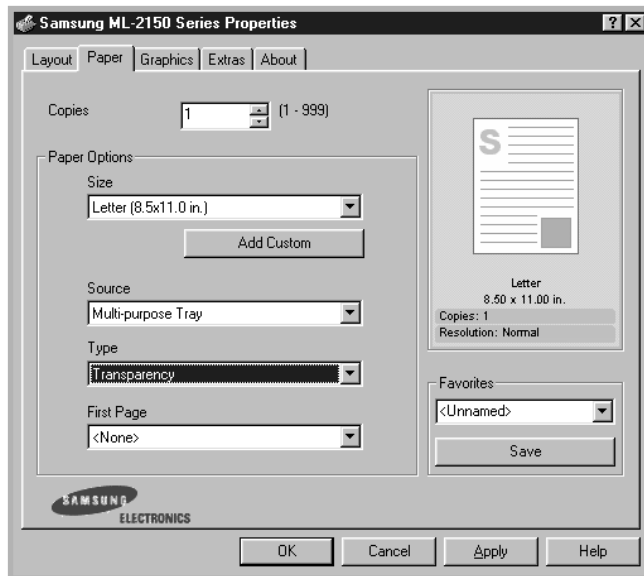
- 1 Open the Multi-Purpose Tray and the rear output tray.



- 2 Load transparencies **with the print side up**, and **the top with the adhesive strip entering the printer first**. Adjust the guide to fit the width of the transparencies.



- 3 When you print on transparencies, configure the paper source, type and size properly in the software application. For details, see page 5.7.



For details about setting on the control panel, see page 3.5.

- 4 After printing, close the Multi-Purpose Tray and the rear output tray.



NOTES:

- If you print on thin transparencies to the rear output tray, they can be curled. In this case, use the top output tray. If the problem persists, check if your transparencies meets the printer's specifications.
- To prevent transparencies from sticking, do not let the printed sheets stack up as they are printed out.
- Place transparencies on a flat surface after removing them from the printer.

Printing on Preprinted Paper

Preprinted paper is paper that has some type of printing placed on it before it is sent through the printer (paper that has a preprinted logo at the top of the page, for example).

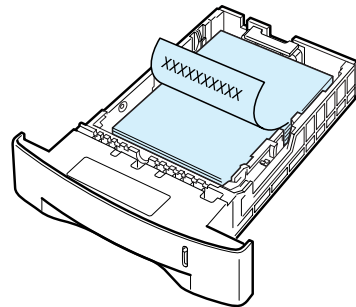
Guidelines

- Letterheads must be printed with heat-resistant ink that will not melt, vaporize, or release hazardous emissions when subjected to the printer's fusing temperature of 400 °F (205 °C) for 0.1 second.
- Ink on letterheads must be non-flammable and should not adversely affect any printer rollers.
- Forms and letterheads should be sealed in a moisture-proof wrapping to prevent changes during storage.
- Before you load preprinted paper as forms and letterheads, verify that the ink on the paper is dry. During the fusing process, wet ink can come off preprinted paper.

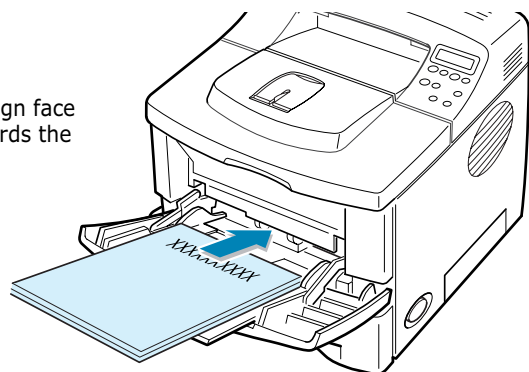
4

- 1 Load letterheads into the tray you want to use, as shown in the figures below. Adjust the guides to fit the width of the paper stack.

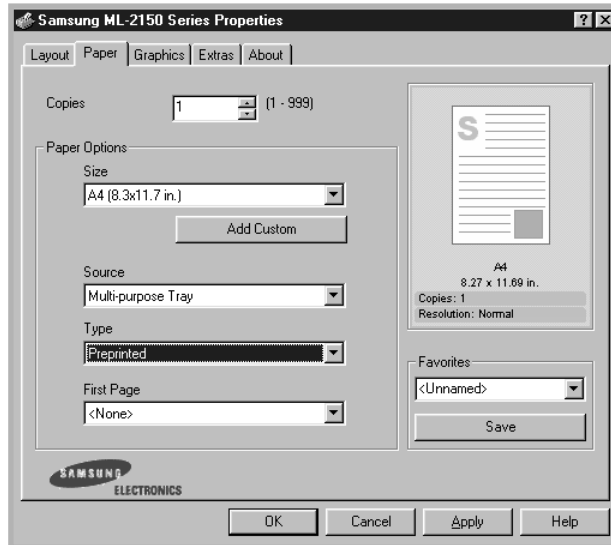
Load with the design face down, bottom edge towards the printer.



Load with the design face up, top edge towards the printer.



- 2 When you print, configure the paper source, type and size properly in the software application. For details, see page 5.7.



For details about setting on the control panel, see page 3.5.

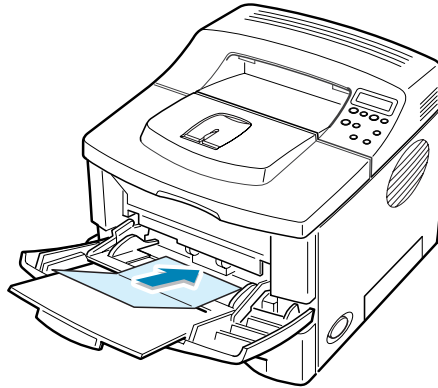
Printing on Card Stock or Custom-sized Materials

Postcards, 3.5 by 5.83 in. (index) cards and other custom-sized materials can be printed with your printer. The minimum size is 76 by 127 mm (3 by 5 in.) and the maximum size is 216 by 356 mm (8.5 by 14 in.).

Guidelines

- Always insert the short-edge into the Multi-Purpose Tray first. If you want to print in landscape mode, make this selection through your software. Inserting paper long-edge first may cause a paper jam.
- Do not load more than 10 cards into the Multi-Purpose Tray at a time.
- Do not print on media smaller than 76 mm (3 in.) wide or 127 mm(5 in.) long.
- Set margins at least 6.4 mm (0.25 in.) away from the edges of the material in the software application

- 1 Open the Multi-Purpose Tray and the rear output tray.
- 2 Load print material with print side up and short edge first. Adjust the guide to fit the width of the material stack.



- 3 When you print, configure the paper source, type and size properly in the software application. For details, see page 5.7.

4



NOTE: If the size of your print material is not listed in the **Size** box in the **Paper** tab of the printer driver properties, click the **Add Custom** button and set the size manually. See page 5.7.



CAUTIONS: When you use 76 by 127 mm (3 by 5 in.) paper and it is too thin, a paper jam may occur. Use the card stock heavier than 105g/m²

For details about setting on the control panel, see page 3.5.

- 4 After printing, close the Multi-Purpose Tray and the rear output tray.

MEMO



4.24 USING PRINT MATERIALS

5

PRINTING TASKS

This chapter explains the printing options and common printing tasks.

This chapter includes:

- **Printing a Document**
- **Setting Paper Properties**
- **Using the Toner Save Mode**
- **Printing on Both Sides of Paper**
- **Printing Multiple Pages on One Sheet of Paper (N-Up Printing)**
- **Printing the Reduced or Enlarged Document**
- **Fitting Your Document to a Selected Paper Size**
- **Printing Posters**
- **Printing Booklets**
- **Using Watermarks**
- **Using Overlays**
- **Setting Graphic Properties**
- **Using Output Options**

Printing a Document

The following procedure describes the general steps required for printing from various Windows applications. The exact steps for printing a document may vary depending on the application programme you are using. Refer to the User's Guide of your software application for the exact printing procedure.

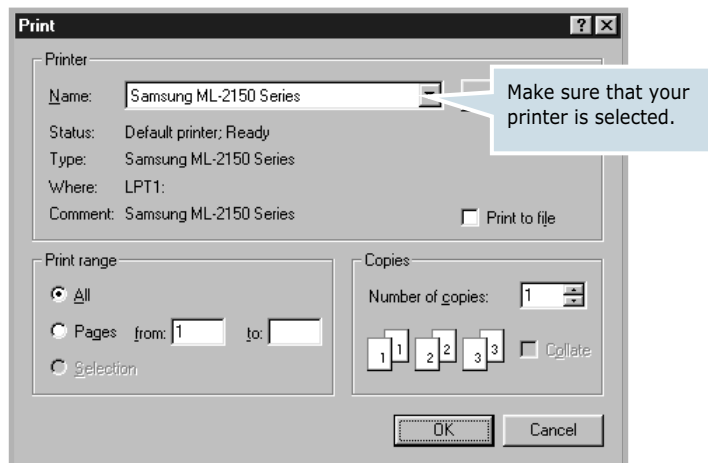


NOTES:

- For detailed information about printing from a Macintosh computer, see Appendix A, "Using Your Printer with a Macintosh."
- For detailed information about printing from a Linux system, Appendix C, "Using Your Printer in Linux."

- 1 Open the document you want to print.
- 2 Select **Print** from the **File** menu. The Print window is displayed (It may look slightly different depending on your application).

The basic print settings are selected within the Print window. These settings include the number of copies and print range.



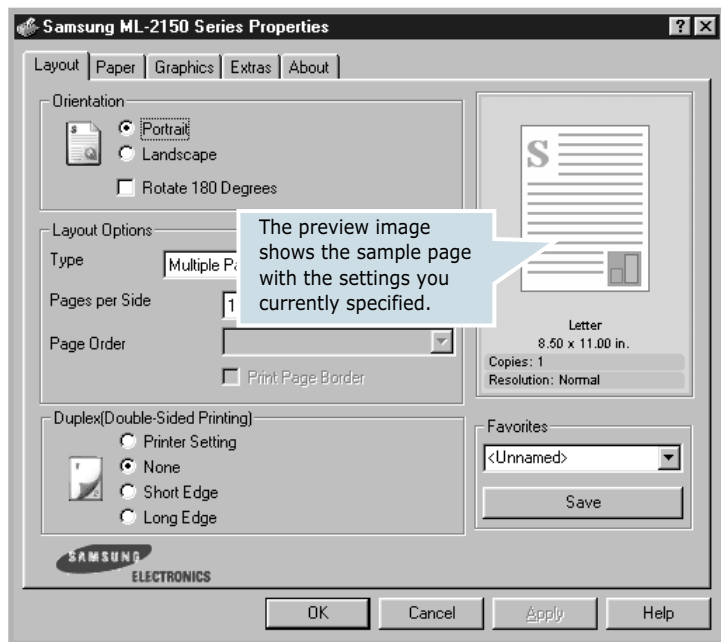
▲ Windows 98

- 3 To take advantage of the printer features provided by your printer, click **Properties** in the application's print window and go to Step 4.

If you see **Setup, Printer** or **Options**, click that button instead. Then click **Properties** in the next screen.

- 4 Now you see the Samsung ML-2150 Series Properties window, which allows you to access all the information you will need when using your printer.

The **Layout** tab is first displayed.



5

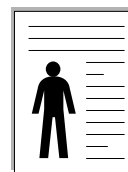
If necessary, select the **Orientation** option.

The **Orientation** option allows you to select the direction in which information is printed on a page.

- **Portrait** prints across the width of the page, letter style.
- **Landscape** prints across the length of the page, spreadsheet style.
- If you want to rotate the page in 180 degrees, select **Rotate 180 Degrees**.



▲ Landscape



▲ Portrait

- 5 From the **Paper** tab, select the paper source, size and type. For further details, see page 5.7.
- 6 Click other tabs on the top of the Samsung ML-2150 series Properties window to access other features, if needed.
- 7 When you complete setting the properties, click **OK** until the Print window is displayed.
- 8 Click **OK** to start printing.



Notes:

- Most Windows applications will override settings you specify in the printer driver. Change all print settings available in the software application first, and change any remaining settings using the printer driver.
 - The settings you change remain in effect only while you are using the current programme. To make your changes permanent, make them in the **Printers** folder. Follows this procedure:
 1. Click the Windows **Start** menu.
 2. For Windows 95/98/Me/NT 4.0/2000, select **Settings** and then **Printers**.
For Windows XP, select **Printers and Faxes**.
 3. Select the **Samsung ML-2150 Series** printer.
 4. Click the right mouse button on the printer icon and:
 - In Window 95/98/Me, select **Properties**.
 - In Windows 2000/XP, select **Print Setup** or select **Properties** and click **Printing Preferences**.
 - In Windows NT 4.0, select **Document Default**.
 5. Change the settings on each tab, and click **OK**.
-

Cancelling a Print Job

There are two ways to cancel a print job.

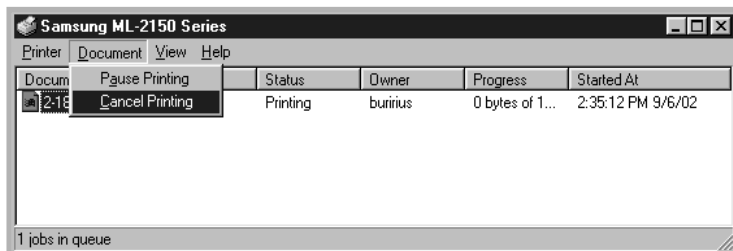
To stop a print job from the control panel:

Press the **Cancel** button (⊗).

The printer will finish printing the page that is moving through the printer and delete the rest of the print job. Pressing the button cancels only the current job in the printer. If more than one print job is in the printer memory, the button must be pressed once for each job.

To stop a print job from the Printers folder:

- 1 From the Windows **Start** menu, select **Settings**.
- 2 Select **Printers** to open the Printers window, and double-click the **Samsung ML-2150 Series** icon.
- 3 From the **Document** menu, select **Cancel Printing** (Windows 9x/Me) or **Cancel** (Windows NT 4.0/2000/XP).



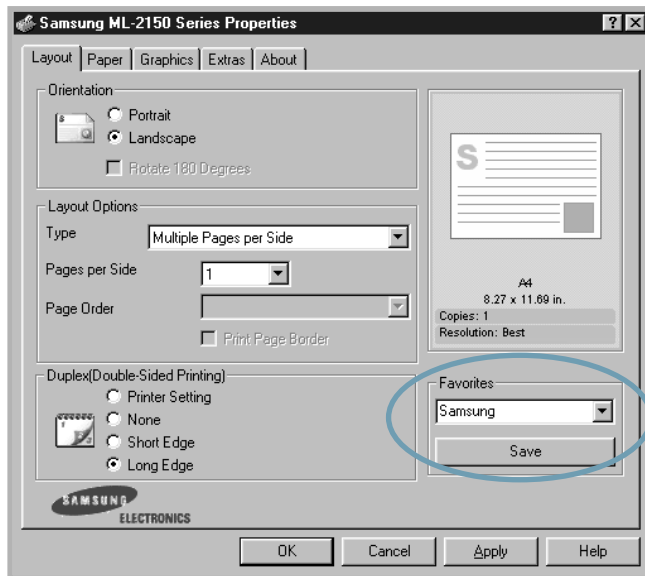
▲ Windows 98

Using a Favorite Setting

The **Favorites** option, which is visible on each properties tab, allows you to save the current properties settings for future use.

To save a Favorites item:

- 1 Change the settings as needed on each tab.
- 2 Enter a name for the item in the **Favorites** input box.



- 3 Click **Save**.

To use a saved setting, just select the item from the **Favorites** drop down list.

To delete a Favorites item, select it from the list and click **Delete**.

You can also restore the printer driver's default settings by selecting **<Printer Default>** from the list.

Using Help

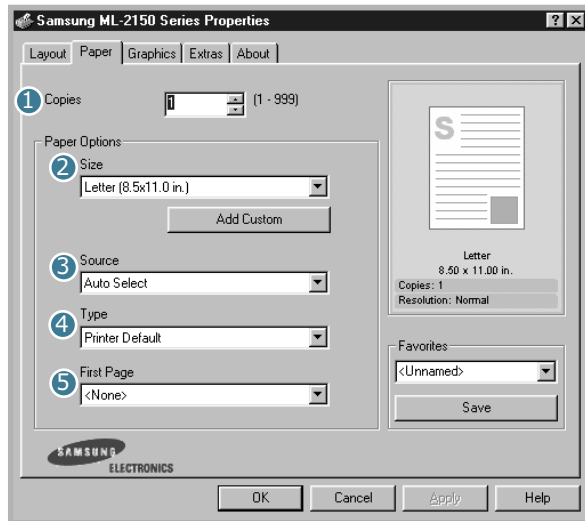
Your printer has a help screen that can be activated by the **Help** button in the printer's properties window. These help screens give detailed information about the printer features provided by the printer driver.

You can also click **?** from the upper right hand corner, and then click on any setting.

Setting Paper Properties

Use the following options to set the basic paper handling needs when you access the printer properties. See page 5.2 for more information about accessing printer properties.

Click the **Paper** tab to access various paper properties.



5

Property	Description
1 Copies	Copies allows you to choose the number of copies to be printed. You can enter up to 999.
2 Size	<p>The Size option allows you to choose the size of paper loaded in the tray.</p> <p>If the required size is not listed in the Size box, click Add Custom. When the Custom Page Size window appears, set the paper and click Ok. The size setting appears in the Size list so that you can select it.</p> <p>Enter the custom name you want to use.</p> <p>Enter the paper size.</p>



Property	Description
<p>3 Source</p>	<p>Make sure that Source is set to the corresponding paper tray.</p> <p>The Manual Feed source is used when printing to special materials. You have to load one sheet at a time into the Multi-Purpose Tray. See page 4.12.</p> <p>If the paper source is set to Auto Select, the printer automatically picks up print materials according to the following order: Multi-Purpose Tray, Tray1, Optional Tray2.</p>
<p>4 Type</p>	<p>Make sure that Type is set to Printer Default. If you load a different type of print materials, select the corresponding paper type. For more information on print materials, refer to Chapter 4, "Using Print Materials."</p> <p>If you use cotton paper, set the paper type to Thick for the best printing.</p> <p>To use recycled paper, which weights from 20lb to 24lb, or other colored paper, select Color paper.</p>
<p>5 First Page</p>	<p>This property allows you to print the first page using a different paper type from the rest of the document. You can select the paper source for the first page.</p> <p>For example, load thick stock for the first page into the Multi-Purpose Tray, and plain paper into the Tray1. Then, select Tray1 in the Source option and Multi-purpose Tray in the First Page option.</p>

Using the Toner Save Mode

Toner Save mode allows the printer to use less toner on each page. Using this mode will extend the life of your toner cartridge and reduce your cost per page, but will reduce the print quality. This setting is not available with the 1200 dpi setting.

There are three ways to enable Toner Save mode:

Using the control panel button

Press the **Toner Save** button () on the control panel. The printer must be in ready mode; the **On-Line/Continue** button () is on in green and "Ready" is shown on the display.

- If the button backlight is on, the mode is enabled and the printer uses less toner to print a page.
- If the button backlight is off, the mode is disabled and the printer prints in normal mode.

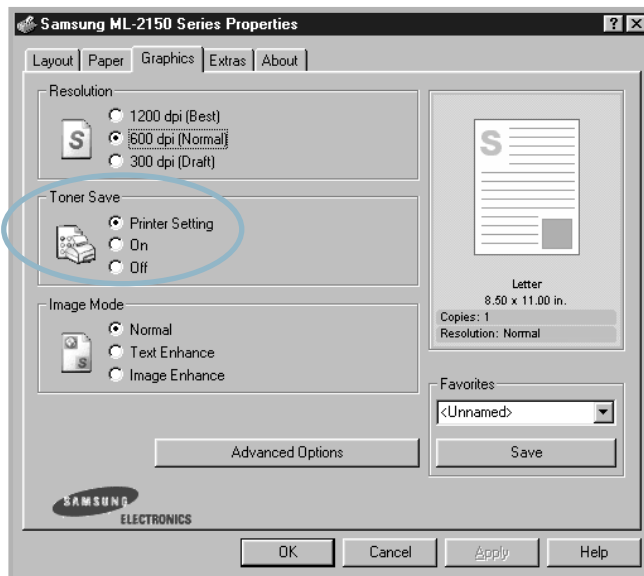
Using the control panel menu

You can set the **Toner Save** item in the **Graphics** menu to turn the Toner Save mode on or off.

For further details about using the control panel menu, see page 3.5.

From the software application

- 1 When you change the print settings from your software application, access the printer properties. See page 5.2.
- 2 Click the **Graphics** tab, and select the **Toner Save** option. You can select from:
 - **Printer Setting:** If you select this option, the Toner Save feature is determined by the setting you've made on the control panel of the printer.
 - **On:** Select this option to allow the printer to use less toner on each page.
 - **Off:** If you don't need to save toner to print a document, select this option.



- 3 Click **OK**.



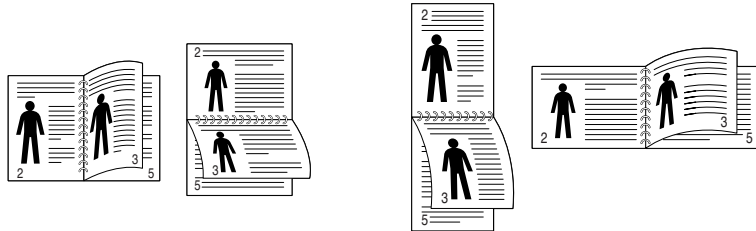
NOTE: The setting in the software application overrides that on the control panel.

Printing on Both Sides of Paper



You can print on both sides of paper. Before printing, decide on which edge you will be binding your finished document. The binding options are:

- **Long Edge**, which is the conventional layout used in book binding.
- **Short Edge**, which is the type often used with calendars.



▲ Long Edge

▲ Short Edge




NOTE:

- Do not print on both sides of labels, transparencies, envelopes, or thick paper. Damage to the printer and paper jamming might result.
- To use the double-sided printing, you can use only the following paper size: A4, Letter, Legal and Folio.
- Paper jam occurs if duplexing with rear tray open.

There are three ways to enable or disable the double-sided printing:

Using the control panel button

Press the **Duplex** button () on the control panel.

- If the button backlight is on, the printer prints on both sides of paper with long edge binding by the default setting.
- If the button backlight is off, the printer prints on one side of paper.

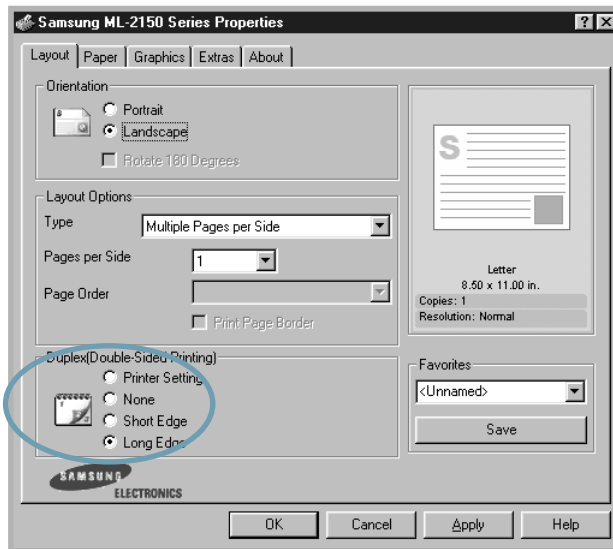
Using the control panel menu

You can use the **Duplex** item in the **Layout** menu for double-sided printing. After setting the item, set the **Duplex Margin** item in the same menu, if necessary.

For further details about using the control panel menu, see page 3.5.

From the software application

- 1 When you change the print settings from your software application, access the printer properties. See page 5.2.
- 2 From the **Layout** tab, select the paper orientation.
- 3 From the **Duplex(Double-sided Printing)** section, select the desired binding option.



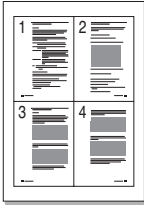
- 4 Click the **Paper** tab and select the paper source, size and type.
- 5 Click **OK** and print the document.

The printer prints on both sides of paper.



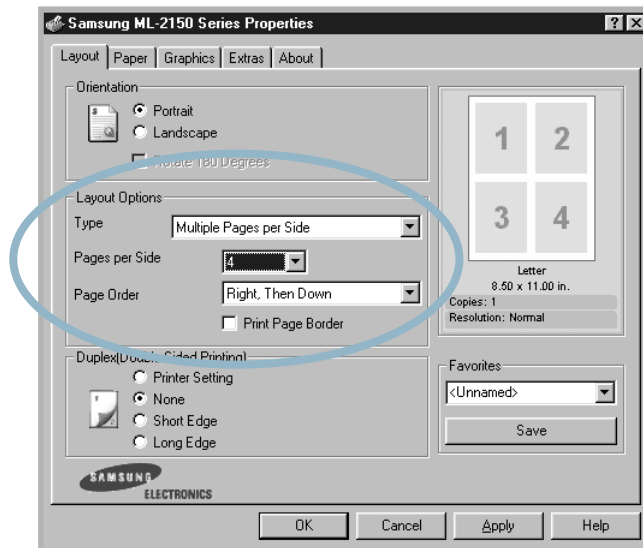
NOTE: The setting in the software application overrides that on the control panel.

Printing Multiple Pages on One Sheet of Paper (N-Up Printing)

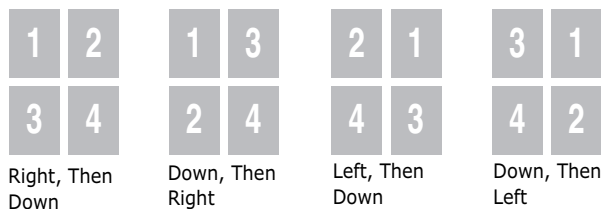


You can select the number of pages to print on a single sheet of paper. To print more than one page per sheet, the pages will appear decreased in size and arranged on the sheet. You can print up to 16 pages on one sheet.

- 1 To change the print settings from your software application, access the printer properties. See page 5.2.
- 2 From the **Layout** tab, choose **Multiple Pages per Side** in the **Type** drop-down list.
- 3 Select the number of pages you want to print per sheet (1, 2, 4, 9 or 16) in the **Pages per Side** drop-down list.



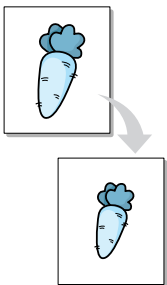
- 4 Select the page order in the **Page Order** drop-down list, if necessary.



Check **Print Page Border** to print a border around each page on the sheet. **Print Page Border** is enabled only if the pages per sheet is 2, 4, 9, or 16.

- 5 Click the **Paper** tab and select the paper source, size and type.
- 6 Click **OK** and print the document.

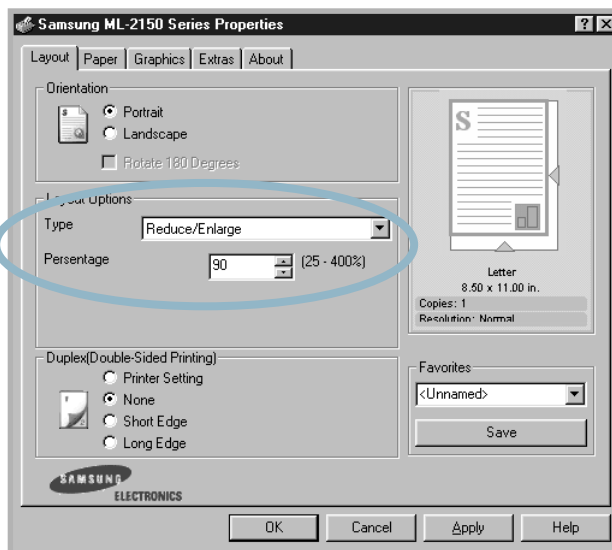
Printing the Reduced or Enlarged Document



You can scale your print job on a page.

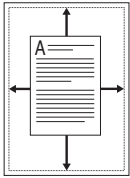
- 1 When you change the print settings from your software application, access the printer properties. See page 5.2.
- 2 From the **Layout** tab, select **Reduce/Enlarge** in the **Type** drop-down list.
- 3 Enter the desired scaling rate in the **Percentage** input box.

You can also click the ▲ or ▼ button.



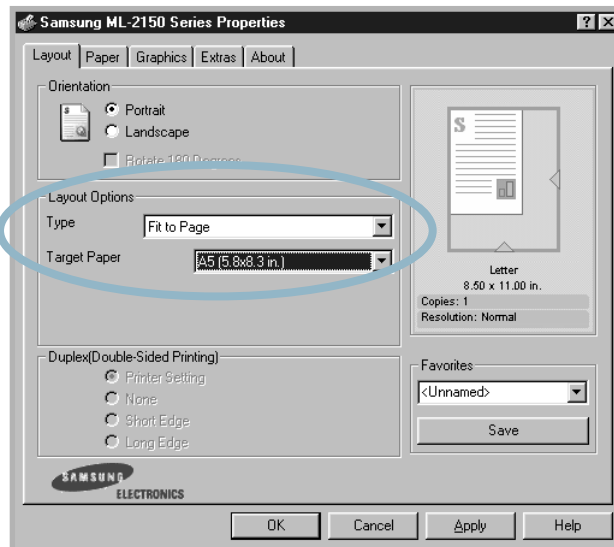
- 4 Click the **Paper** tab and select the paper source, size and type.
- 5 Click **OK** and print the document.

Fitting Your Document to a Selected Paper Size



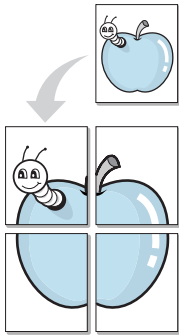
This printer feature allows you to scale your print job to any selected paper size regardless of the digital document size. This can be useful when you want to check fine details on a small document.

- 1 When you change the print settings from your software application, access the printer properties. See page 5.2.
- 2 From the **Layout** tab, select **Fit to Page** in the **Type** drop-down list.
- 3 Select the correct size from the **Target Paper** drop-down list.



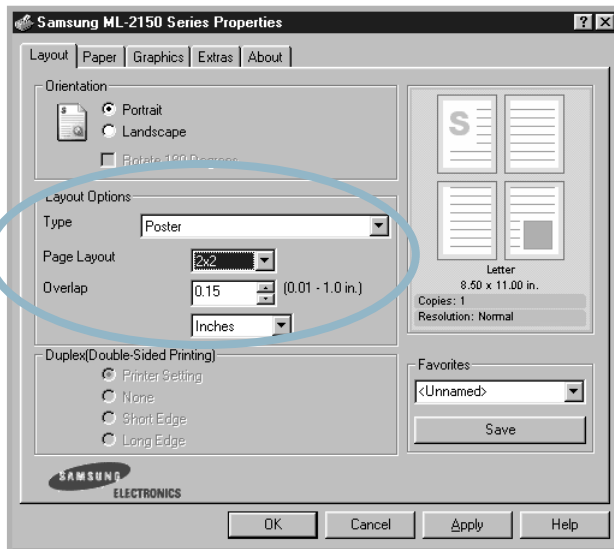
- 4 Click the **Paper** tab and select the paper source, size and type.
- 5 Click **OK** and print the document.

Printing Posters



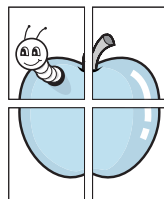
This feature allows you to print a single-page document onto 4, 9 or 16 sheets of paper, for the purpose of pasting the sheets together to form one poster-size document.

- 1 When you change the print settings from your software application, access the printer properties. See page page 5.2.
- 2 From the **Layout** tab, select **Poster** in the **Type** drop-down list.

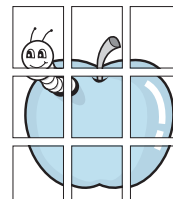


- 3 Configure the poster option:

You can select the page layout from 2x2, 3x3 or 4x4. If you select 2x2, the output will be automatically stretched to cover 4 physical pages.

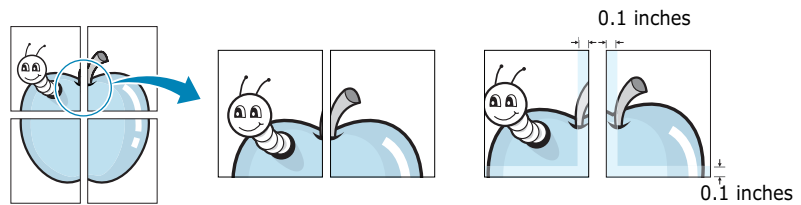


▲ 2 x 2



▲ 3 x 3

Specify an overlap in millimeters or inches to make it easier to reconstruct the resulting poster.



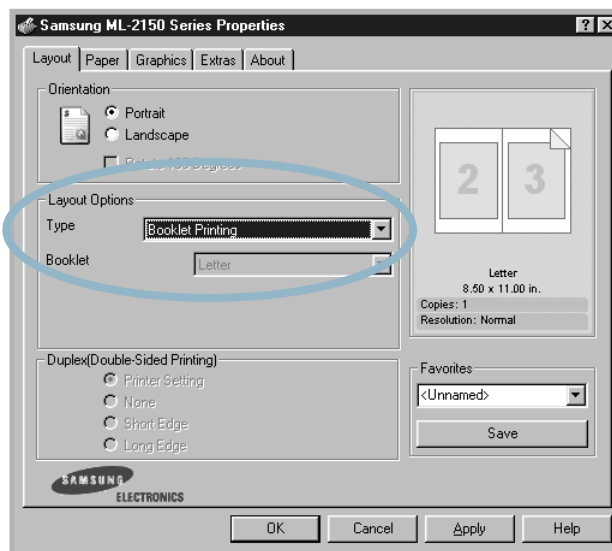
- 4 Click the **Paper** tab and select the paper source, size and type.
- 5 Click **OK** and print the document. You can complete the poster by reconstructing the results.

Printing Booklets

Booklet printing feature allows you to print your document a double-sided job and arrange the pages so that the paper can be folded in half after printing to produce a booklet.

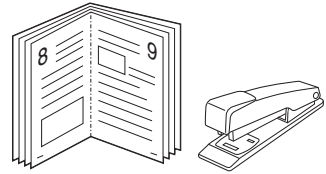
5

- 1 When you change the print settings from your software application, access the printer properties. See page 5.2.
- 2 From the **Layout** tab, choose **Booklet Printing** in the **Type** drop-down list.



NOTE: The booklet printing option is available when the A4, Letter, Legal or Folio size is selected.

- 3 Click the **Paper** tab, and select the paper source, size and type.
- 4 Click **OK** and print the document.
- 5 After printing, fold and staple the pages.



Using Watermarks

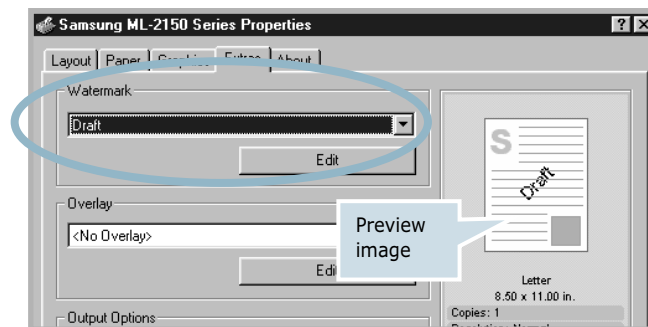


The Watermark option allows you to print text over an existing document. For example, you may want to have large gray letters reading "DRAFT" or "CONFIDENTIAL" printed diagonally across the first page or all pages of a document.

There are several predefined watermarks that come with your printer, and they can be modified or you can add new ones to the list.

Using an Existing Watermark

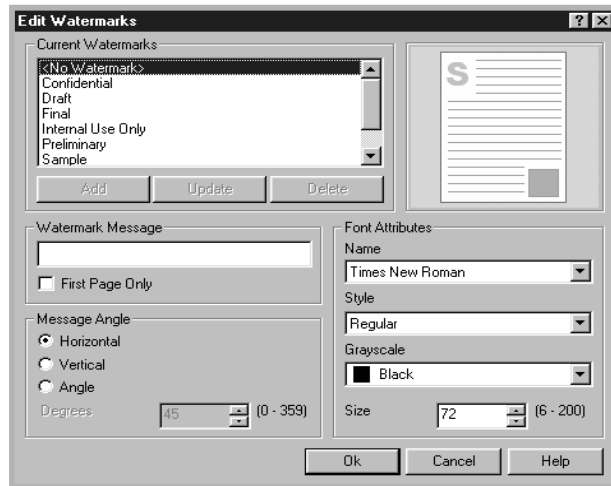
- 1 When you change the print settings from your software application, access the printer properties. See page 5.2.
- 2 Click the **Extras** tab, and select the desired watermark in the **Watermark** drop-down list. You will see the selected watermark in the preview image.



- 3 Click **OK** and start printing.

Creating a Watermark

- 1 When you change the print settings from your software application, access the printer properties. See page 5.2.
- 2 Click the **Extras** tab, and click the **Edit** button in the **Watermark** section. The Edit Watermarks window appears.



5

- 3 Enter the desired text message in the **Watermark Message** box.

This will be displayed in the preview window. The preview image is provided so that you can see how the watermark will appear on the printed page.

If the **First Page Only** box is checked, the watermark will be printed on the first page only.

- 4 Select the desired watermark options.

You can select the font name, style and size and grayscale level from the **Font Attributes** section and set the angle of the watermark from the **Message Angle** section.

- 5 Click **Add** to add a new watermark to the list.

- 6 When you finish editing, click **Ok** and start printing.

To stop printing the watermark, select **<No Watermark>** in the **Watermark** drop-down list.

Editing a Watermark

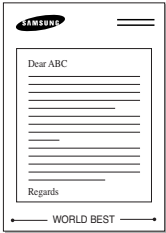
- 1 When you change the print settings from your software application, access the printer properties. See page 5.2.
- 2 Click the **Extras** tab, and click the **Edit** button in the **Watermark** section. The Edit Watermarks window appears.
- 3 Select the watermark you want to edit in the **Current Watermarks** list, and change the watermark message and the options. Refer to "Creating a Watermark" on page 5.19.
- 4 Click **Update** to save the changes.
- 5 Click **Ok**.

Deleting a Watermark

- 1 When you change the print settings from your software application, access the printer properties. See page 5.2.
- 2 From the **Extras** tab, click the **Edit** button in the **Watermark** section. The Edit Watermarks window appears.
- 3 Select the watermark you want to delete in the **Current Watermarks** list and click **Delete**.
- 4 Click **Ok**.

Using Overlays

What is an Overlay?



An overlay is text and/or images stored in the computer hard disk drive (HDD) as a special file format that can be printed on any document. Overlays are often used to take the place of preprinted forms and letterhead paper. Rather than using preprinted letterhead, you can create an overlay containing the exact same information that is currently on your letterhead. To print a letter with your company's letterhead, you do not need to load preprinted letterhead paper in the printer. You need only tell the printer to print the letterhead overlay on your document.

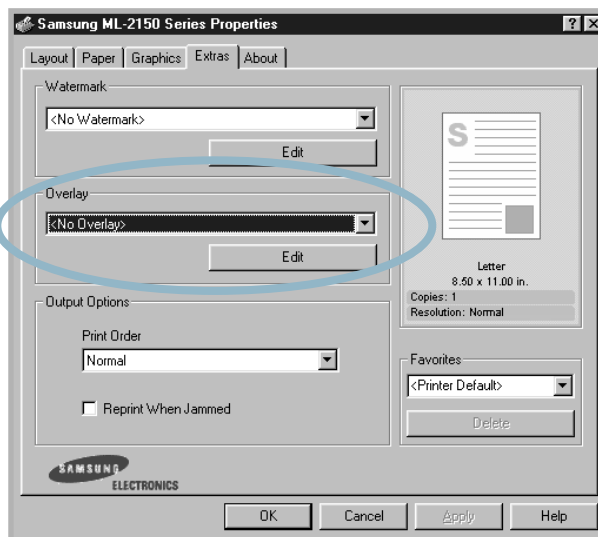
Creating a New Page Overlay



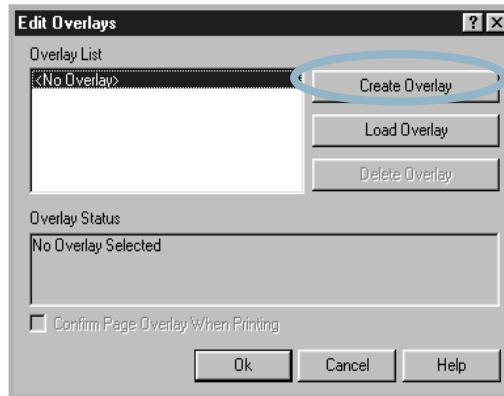
To use a page overlay, you must create a new page overlay containing your logo or image.

- 1 Create or open a document containing text or an image for use in a new page overlay. Position the items exactly as you wish them to appear when printed as an overlay. If needed, save the file for later use.
- 2 When you change the print settings from your software application, access the printer properties. See page 5.2.
- 3 Click the **Extras** tab, and click **Edit** button in the **Overlay** section.

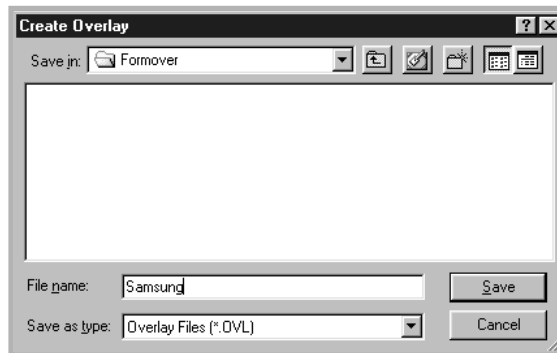
5



- 4 In the Edit Overlays window, click **Create Overlay**.



- 5 In the Create Overlay window, type a name of up to eight characters in the **File name** box. Select the destination path, if necessary. (The default is C:\Formover).



- 6 Click **Save**. You will see the name in **Overlay List**.

- 7 Click **OK** or **Yes** until you complete creating.

The file is not printed out. Instead it will be stored on your computer HDD disk.

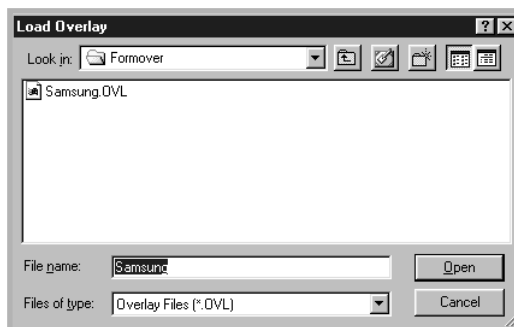


Note: The overlay document size must be the same as documents you will print with the overlay. Do not create an overlay with a watermark.

Using a Page Overlay

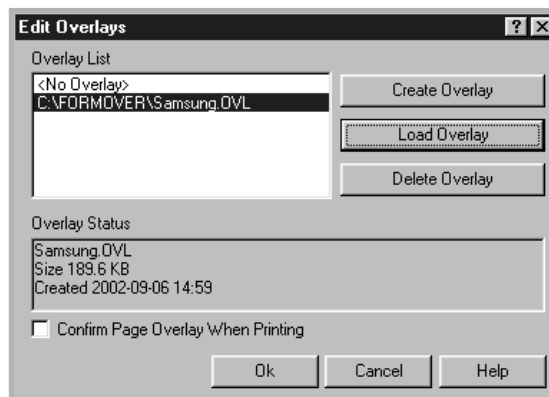
After an overlay has been created, it is ready to be printed with your document. To print an overlay with a document:

- 1 Create or open the document you want to print.
- 2 When you change the print settings from your software application, access the printer properties. See page 5.2.
- 3 Click the **Extras** tab.
- 4 Select the desired overlay from the **Overlay** drop-down list box.
- 5 If the desired overlay file does not appear in the **Overlay** list, click the **Edit** button and **Load Overlay**, and select the overlay file.



If you have stored the overlay file you want to use into an external source, you can also load the file when you access this Load Overlay window.

After you select the file, click **Open**. The file is now shown in the **Overlay List** box and is available for printing. Select the overlay from the **Overlay List** box.



- 6 If necessary, click **Confirm Page Overlay When Printing**. If this box is checked, a message window will appear each time you submit a document for printing, asking you to confirm your wish to print an overlay on your document.

Answering **Yes** to the window means that the selected overlay will be printed with your document. Answering **No** to the window cancels overlay printing.

If this box is empty and an overlay has been selected, the overlay will be automatically printed with your document.

- 7 Click **OK** or **Yes** until the printing starts.

The selected overlay will be downloaded with your print job and printed on your document.



Note: The resolution of the overlay document must be the same as that of the document you will print with the overlay.

Deleting a Page Overlay

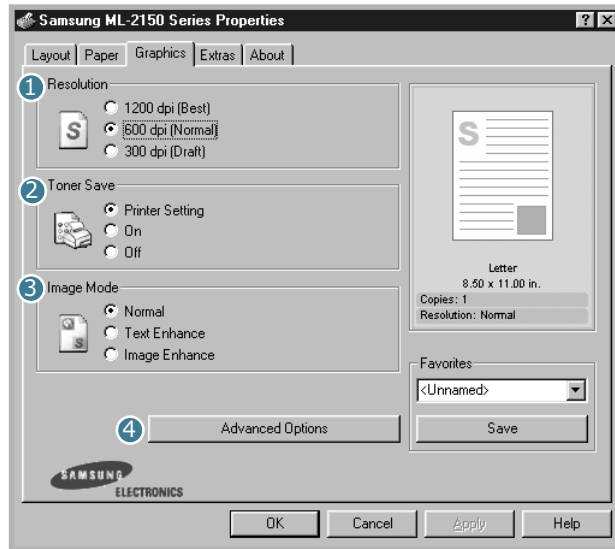
You can delete page overlays that are no longer used.

- 1 In the printer properties window, click the **Extras** tab.
- 2 Click **Edit** in the **Overlay** section.
- 3 Select the overlay you want to delete from the **Overlay List** box.
- 4 Click **Delete Overlay**.
- 5 Click **OK** until you exit the Print window.

Setting Graphic Properties

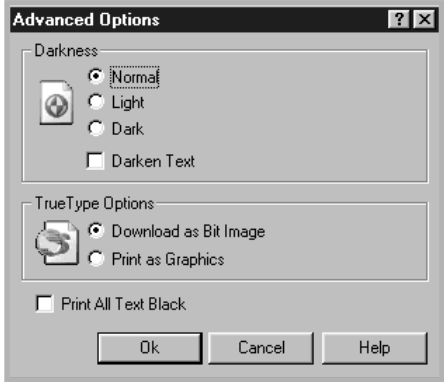
Use the following graphic options to adjust the print quality for your specific printing needs. See page 5.2 for more information about accessing printer properties.

Click the **Graphics** tab to display the properties shown below.



5

Property	Description
1 Resolution	You can select the printing resolution by choosing from 1200 dpi (Best) , 600 dpi (Normal) or 300 dpi (Draft) . The higher the setting, the sharper the clarity of printed characters and graphics. Higher settings may increase time it takes to print a document.
2 Toner Save	Selecting this option will extend the life of your toner cartridge and reduce your cost per page without a significant reduction in the print quality. For detailed information about this mode, see page 5.9.

Property	Description
<p>3 Image Mode</p>	<p>Some printed characters or images appear to have jagged or uneven edges. Set this Image Mode option to improve the print quality of your text and image, and make the characters and images appear smoother.</p> <p>The Image Mode option is only available when you select 600 dpi (Normal) in the Resolution option.</p> <ul style="list-style-type: none"> • Normal: This setting prints images in the normal mode. • Text Enhance: This setting refines the print quality of characters by smoothing out jagged edges that can occur on the angles and curves of each character. • Image Enhance: This setting refines the print quality of photo images.
<p>4 Advanced Options</p>	<p>You can set advanced settings by clicking the Advanced Options button.</p>  <p>Darkness</p> <p>Use this option to lighten or darken the image appearance in your print.</p> <ul style="list-style-type: none"> • Normal: This setting is for normal documents. • Light: This setting is for bolder line widths or darker gray-scale images. • Dark: This setting is for finer line width, higher definition in graphics, and lighter gray-scale images. <p>When the Darken Text option is checked, all text in your document is allowed to print darker than a normal document.</p>

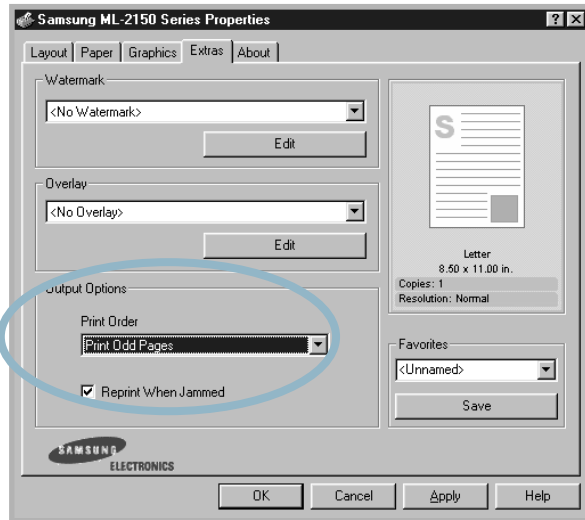
Property	Description
<p>4 Advanced Options</p>	<p>True-Type Options</p> <p>This option determines what the driver tells the printer about how to image the text in your document. Select the appropriate setting according to the status of your document.</p> <ul style="list-style-type: none"> • Download as Bit Image: When this option is selected, the driver will download the font data as bitmap images. Documents with complicated fonts, such as Korean or Chinese, or various types of fonts will print faster in this setting. • Print as Graphics: When this option is selected, the driver will download any fonts as graphics. When printing documents with high graphic content and relatively few TrueType fonts, printing performance (speed) may be enhanced in this setting. <p>Print All Text Black</p> <p>When the Print All Text Black option is checked, all text in your document is allowed to print solid black, regardless of the colour it appears on the screen. When it is not checked, coloured text is allowed to print in shades of gray.</p>

Using Output Options

You can use the options for output of your document.

See page 5.2 for more information about accessing printer properties.

Click the **Extras** tab to access the **Output Options** feature.



Option	Description
Print Order	<p>You can set in what sequence the pages will be printed. Select the required print order from the drop-down list.</p> <ul style="list-style-type: none">• Normal:Your printer prints in normal order.• Reverse All Pages:Your printer prints all pages in reversed order. This setting is helpful when you are using the rear output tray.• Print Odd Pages:Your printer prints only the odd pages of the document.• Print Even Pages:Your printer prints only the even pages of the document.
Reprint When Jammed	<p>When this option is checked, the printer keeps the image for a printed page until the printer signals that the page has successfully exited the printer. When a paper jam occurs, the printer reprints the last page after you clear the jam.</p>



6

MAINTAINING YOUR PRINTER

This chapter provides suggestions for high-quality and economical printing and information for maintaining the toner cartridge and the printer.

This chapter includes:

- **Printing a Configuration Page**
- **Maintaining the Toner Cartridge**
- **Cleaning the Printer**
- **Consumables and Replacement Parts**

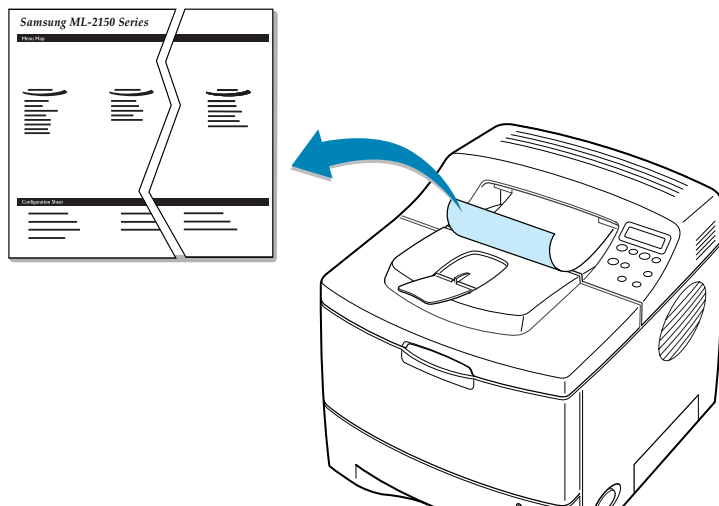
Printing a Configuration Page

From the printer's control panel, you can print a Configuration page. Use the configuration page to view current printer settings, to help troubleshoot printer problems, or to verify installation of optional accessories, such as memory, optional tray and printer languages.

To print a configuration page:

- 1 Press the **Menu** button (ⓘ) on the control panel until you see "Information" on the bottom line of the display.
- 2 Press the **Enter** button (⊛) to access the menu.
- 3 Press the **Enter** button (⊛) when "Configuration" displays on the bottom line.

A Configuration page prints out.



Maintaining the Toner Cartridge

Toner cartridge storage

To get the maximum results from the toner cartridge, keep the following guidelines in mind:

- Do not remove the toner cartridge from its package until ready for use.
- Do not refill the toner cartridge. **The printer warranty does not cover damage caused by using a refilled cartridge.**
- Store toner cartridges in the same environment as the printer.
- To prevent damage to the toner cartridge, do not expose it to light for more than a few minute.

Toner cartridge life expectancy

The life of the toner cartridge depends on the amount of toner that print jobs require. When printing text at 5% coverage, a new toner cartridge lasts an average of 8,000 pages. (The original toner cartridge supplied with the printer lasts an average of 4,000 pages.)

Saving toner

To save toner, press the **Toner Save** button on the printer control panel. The button backlight will be lit. You can also enable Toner Save mode in the printer properties or from the control panel menu. Refer to "Using the Toner Save Mode" on page 5.9 and "Using Control Panel Menus" on page 3.5.

Selecting this option will extend the life of the toner cartridge and reduce your cost per page, but it will reduce the print quality.

Checking the Toner Remains

You can check the level of toner currently left in the cartridge.

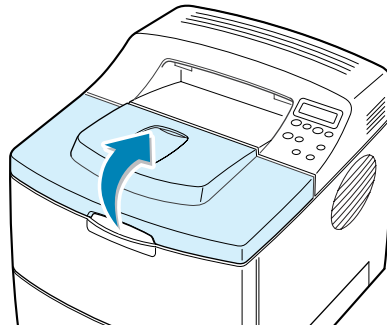
- 1 Press the **Menu** button (Ⓜ) on the control panel until you see "Setup" on the bottom line of the display.
- 2 Press the **Enter** button (Ⓢ) to access the menu.
- 3 Press the scroll button (⏪ or ⏩) until "Maintenance" displays on the bottom line and press the **Enter** button (Ⓢ).
- 4 Press the scroll button (⏪ or ⏩) to select the required option, "Remain Toner".
- 5 Press the **Enter** button (Ⓢ).

The display shows the percentage of the toner remains.

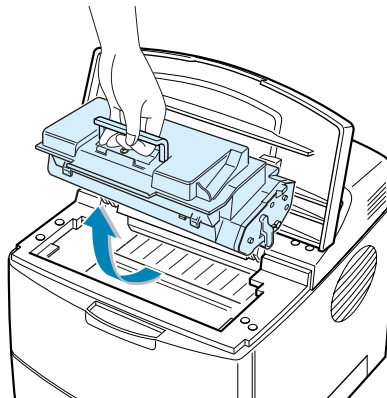
Redistributing Toner

When the toner cartridge is nearly empty, "Low Toner" appears on the display and faded or light areas may appear on a printed page. You may be able to temporarily improve the print quality by redistributing the toner.

- 1 Open the top cover.



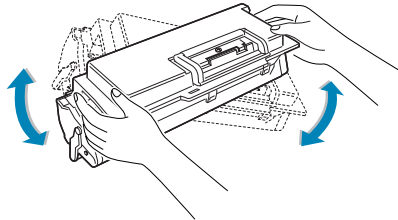
- 2 Remove the toner cartridge from the printer.



**CAUTIONS:**

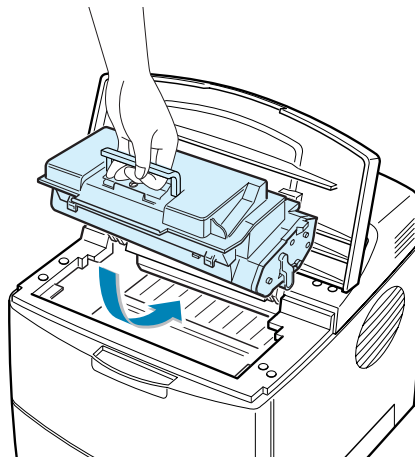
- Avoid reaching too far into the printer. The fusing area may be hot.
- To prevent damage, do not expose the toner cartridge to light for more than a few minutes.

- 3 Gently shake the toner cartridge from side to side 5 or 6 times to redistribute the toner evenly.



NOTE: If toner gets on your clothing, wipe it off with a dry cloth and wash clothing in cold water. Hot water sets toner into fabric.

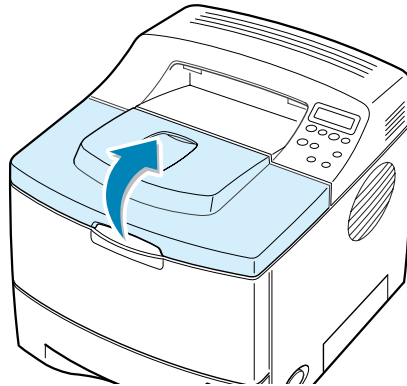
- 4 Reinstall the cartridge and close the cover.



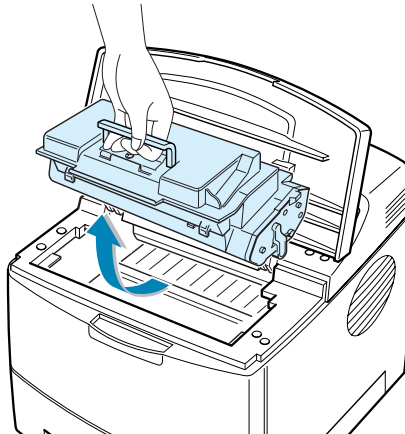
When "Ready Replace Cart" appears on the display, you need to replace the toner cartridge. Refer to the procedures under "Replacing the Toner Cartridge" on the next page.

Replacing the Toner Cartridge

- 1 Open the top cover.



- 2 Remove the old cartridge.



- 3 Install a new toner cartridge. See page 2.4.

Cleaning the Printer

To maintain the print quality, follow the cleaning procedures below each time the toner cartridge is replaced or if print quality problems occur.



NOTES:

- Do not use ammonia-based cleaners or volatile solvents, such as thinner, on or around the printer. These can damage the printer.
- While cleaning the inside of the printer, be careful not to touch the transfer roller (located underneath the toner cartridge). Oil from your fingers can cause print quality problems.



CAUTIONS: Cleaning the cabinet of the printer with surfactants containing large amounts of alcohol, solvent or other strong substances can discolor or crack the cabinet .

Cleaning the Outside

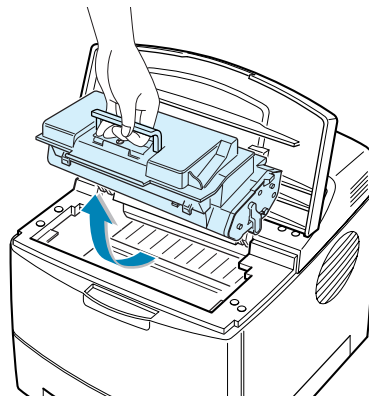
Clean the cabinet of the printer with a soft, lint-free cloth. You can dampen the cloth slightly with water, but be careful not to let any water drip onto the printer or inside of it.

Cleaning the Inside

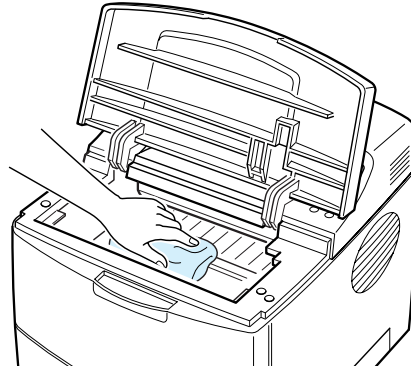
During the printing process, paper, toner, and dust particles can accumulate inside the printer. This buildup can cause print quality problems, such as toner specks or smearing. Cleaning the inside of the printer will eliminate or reduce these problems.

Cleaning inside the printer

- 1 Turn the printer off and unplug the power cord, then wait for the printer to cool.
- 2 Open the top cover and remove the toner cartridge.

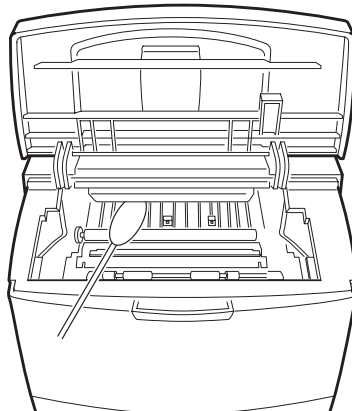


- 3 With a dry and lint-free cloth, wipe away any dust and spilled toner from the toner cartridge area and the toner cartridge cavity.



CAUTION: To prevent damage to the toner cartridge, do not expose it to light for more than a few minute. Cover it with a piece of paper, if necessary. Also, do not touch the black transfer roller inside the printer.

- 4 Locate the long strip of glass (LSU) inside the top of the cartridge compartment, and gently swab the glass to see if dirt turns the white cotton black.



- 5 Reinsert the toner cartridge and close the cover.
- 6 Plug in the power cord and turn the printer on.

Printing a cleaning sheet

If you are experiencing blurred, faded or smeared printouts, you can clear the problem by printing a cleaning sheet, provided by your printer. You can print:

- OPC Cleaning sheet: cleans the OPC drum of the toner cartridge.
- Fuser Cleaning sheet: cleans the fuser unit inside the printer.

This process will produce a page with toner debris, which should be discarded.

- 1** Ensure that the printer is turned on and in ready mode with paper loaded in the tray.
- 2** Press the **Menu** button (☰) on the control panel until you see "Setup" on the bottom line of the display.
- 3** Press the **Enter** button (⊛) to access the menu.
- 4** Press the scroll button (◀ or ▶) until "Maintenance" displays on the bottom line and press the **Enter** button (⊛).
- 5** Press the scroll button (◀ or ▶) to select the required option, "OPC Cleaning" or "Fuser Cleaning."
- 6** Press the **Enter** button (⊛).

Your printer automatically picks up a sheet of paper from the tray and prints out a cleaning sheet with dust or toner particles on it.

Consumables and Replacement Parts

From time to time, you will need to replace the toner cartridge, roller, and fuser unit to maintain top performance and avoid print quality problems and paper feed problems resulting from worn parts.

The following items should be replaced after you have printed a specified number of pages. See the table below.

Items	Yield (Average)
Paper feeding roller	100,000
Transfer roller	100,000
Pick-up roller	100,000
Fuser unit	100,000

To purchase the consumables and replacement parts, contact your Samsung dealer or the retailer where you bought your machine. We strongly recommend that items be installed by a trained service professional, except for the toner cartridge.



7

SOLVING PROBLEMS

This chapter provides helpful information for what to do if you encounter an error while using your printer.

This chapter includes:

- **Troubleshooting Checklist**
- **Solving General Printing Problems**
- **Clearing Paper Jams**
- **Solving Print Quality Problems**
- **Understanding Display Messages**
- **Common Windows Problems**
- **Common Macintosh Problems**
- **Troubleshooting PS Errors**
- **Common Linux Problems**
- **Common DOS Problem**

Troubleshooting Checklist

If the printer is not working properly, consult the following checklist. If the printer does not pass a step, follow the corresponding troubleshooting suggestions.

Check	Solution
<p>Make sure that the On-Line/Continue button on the control panel is on in green and "Ready" is shown on the display.</p>	<ul style="list-style-type: none"> • If the button backlight are off, check the power cord connection. Check the power switch. Check the power source by plugging into another outlet. • If the button backlight are on in orange, check the display message and go to "Understanding Display Messages" on page 7.20.
<p>Print a demo page to verify that the printer is feeding paper correctly. See page 2.14.</p>	<ul style="list-style-type: none"> • If a demo page does not print, check the paper supply in the paper tray. • If the paper jams in the printer, go to "Clearing Paper Jams" on page 7.7. • If an error message appears on the display, go to "Understanding Display Messages" on page 7.20.
<p>Check the demo page to see if it is printed correctly.</p>	<p>If there is a print quality problem, go to "Solving Print Quality Problems" on page 7.15.</p>
<p>Print a short document from a software application to verify that the computer and printer are connected and are communicating correctly.</p>	<ul style="list-style-type: none"> • If the page does not print, check the cable connection between the printer and the computer. • Check the print queue or print spooler to see if the printer has been paused. • Check the software application to ensure that you are using the proper printer driver and communication port. If the page is interrupted during printing, go to "Solving General Printing Problems" on page 7.3.
<p>If completing the checklist does not resolve the printer problem, check the following troubleshooting sections.</p>	<ul style="list-style-type: none"> • "Solving General Printing Problems" on page 7.3. • "Understanding Display Messages" on page 7.20. • "Common Windows Problems" on page 7.22. • "Common Macintosh Problems" on page 7.23. • "Troubleshooting PS Errors" on page 7.24. • "Common Linux Problems" on page 7.25. • "Common DOS Problem" on page 7.27.

Solving General Printing Problems

For problems with the operation of your printer, refer to the table for suggested solutions.

Problem	Possible Cause	Solution
The printer does not print.	The printer is not receiving power.	Check the power cord connections. Check the power switch and the power source.
	The printer is not selected as the default printer.	Select Samsung ML-2150 Series or Samsung ML-2150 Series PS as your default printer.
	Check the printer for the following:	<ul style="list-style-type: none">• The printer cover is not closed.• Paper is jammed.• No paper is loaded.• The toner cartridge is not installed. If a printer system error occurs, contact your service representative.
	The printer may be in manual feed mode and out of paper.	Check the display message, add paper to the Multi-Purpose Tray and press the On-Line/Continue button on the printer's control panel.
	The connection cable between the computer and the printer is not connected properly.	Disconnect the printer cable and reconnect it.
	The connection cable between the computer and the printer is defective.	If possible, attach the cable to another computer that is working properly and print a job. You can also try using a different printer cable.
	The port setting is incorrect.	Check the Windows printer setting to make sure that the print job is sent to the correct port, for example, LPT1. If the computer has more than one port, make sure that the printer is attached to the correct one.
	The printer may be configured incorrectly.	Check the printer properties to ensure that all of the print settings are correct.

Problem	Possible Cause	Solution
The printer does not print. <i>(continued)</i>	The printer driver may be incorrectly installed.	Reinstall the printer driver; see page 2.19. Try printing a demo page.
	The printer is malfunctioning.	Check the display message on the control panel to determine if the printer is indicating a system error.
Printer selects print materials from the wrong paper source.	The paper source selection in the printer properties may be incorrect.	For many software applications, the paper source selection is found under the Paper tab within the printer properties. Select the correct paper source. See page 5.7.
Paper does not feed into the printer.	Paper has not been loaded correctly.	Remove paper from the tray and reload it correctly.
	There is too much paper in the paper tray.	Remove excess paper from the tray.
	The paper is too thick.	Use only paper that meets the specifications required by the printer.
Print job is extremely slow.	The job may be very complex.	Reduce the complexity of the page or try adjusting the print quality settings. The maximum print speed of your printer is 20 PPM (pages per minute) for A4-sized paper or 21 PPM for Letter-sized paper.
	If using Windows 9x/Me, the Spooling Setting may be set incorrectly.	From the Start menu, choose Settings and Printers . Right-click the Samsung ML-2150 Series printer icon, choose Properties , click the Details tab, and then choose the Spool Settings button. Select the desired spool setting.
	The computer may have insufficient random-access memory (RAM).	Install more memory in your printer. See "Installing Memory and PostScript DIMMs" on page F.3.

Problem	Possible Cause	Solution
Half the page is blank.	The page layout is too complex.	Simplify the page layout and remove any unnecessary graphics from the document. Install more memory in your printer. See "Installing Memory and PostScript DIMMs" on page F.3.
	The page orientation setting may be incorrect.	Change the page orientation in your application. See page 5.3.
	The paper size and the paper size settings do not match.	Ensure that the paper size in the printer driver settings matches the paper in the tray.
The paper keeps jamming.	There is too much paper in the paper tray.	Remove excess paper from the tray. If printing on special materials, use the Multi-Purpose Tray.
	An incorrect type of paper is being used.	Use only paper that meets the specifications required by the printer.
	An incorrect output method is being used.	Special print materials, such as thick paper, should not be printed using the top output tray (face-down). Use the rear output tray (face-up) instead.
	There may be debris inside the machine.	Open the top cover and remove the debris.
The printer prints, but the text is wrong, garbled, or incomplete.	The printer cable is loose or defective.	Disconnect the printer cable and reconnect. Try a print job that you have already printed successfully. If possible, attach the cable and printer to another computer and try a print job that you know works. Finally, try a new printer cable.
	The wrong printer driver was selected.	Check the application's printer selection menu to ensure that your printer is selected.
	The software application is malfunctioning.	Try printing a job from another application.
	The operating system is malfunctioning.	If printing from Windows (any version), exit to a DOS prompt and verify functionality with the following command: At a C:\ prompt, type Dir LPT1 , and press Enter . (This assumes you are connected to LPT1.) Exit Windows and reboot the computer. Turn the printer off and then back on again.

Problem	Possible Cause	Solution
Pages print, but are blank.	The toner cartridge is defective or out of toner.	Redistribute the toner, if necessary. See page 6.4. If necessary, replace the toner cartridge.
	The file may have blank pages.	Check the file to ensure that it does not contain blank pages.
	Some parts, such as the controller or the board, may be defective.	Contact a service representative.
The illustrations print incorrectly in Adobe Illustrator.	The setting in the software application is wrong.	Print the document with selecting Download as Bit Image in the Advanced Options window of the graphic properties.

ATTENTION:

If you have any printing problem after your printer prints about 100,000 pages, you must contact the customer service to replace the transfer roller.

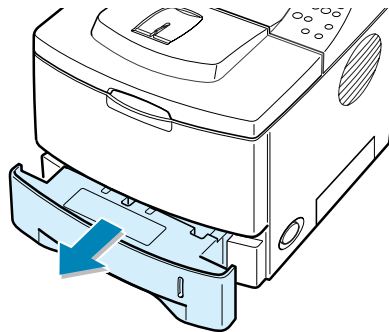
Clearing Paper Jams

When a paper jam occurs, the display on the control panel shows the message indicating the corresponding location of the paper jam. Refer to the table below to locate the paper jam and to clear it.

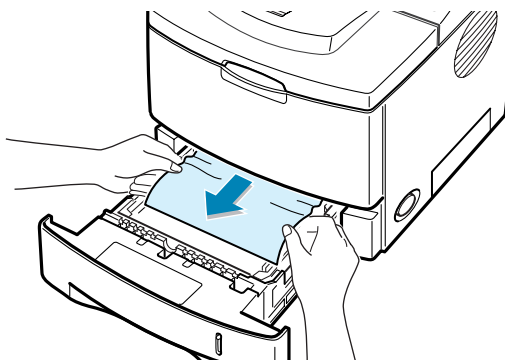
Message	Location of Jam	Go to...
Jam0	In the paper feed area	below
Jam1	Around the toner cartridge	page 7.10
Jam2	In the paper exit area	page 7.12
Jam Duplex1/2	In the duplex area	page 7.13

In the Paper Feed Area

- 1 Slide out the Tray1 to expose the jammed paper.



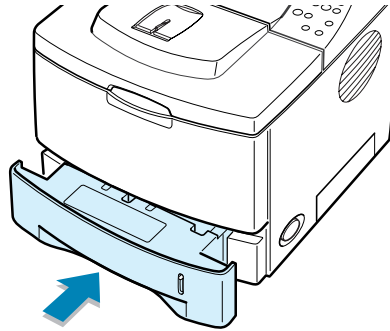
- 2 Remove any misfed paper by pulling it out by the visible edge from the tray. Make sure that all of the paper is properly aligned in the tray.





NOTE: If the jammed paper is not invisible or if there is resistance when you pull the paper, remove the tray from the printer and carefully pull the jammed paper free from the printer.

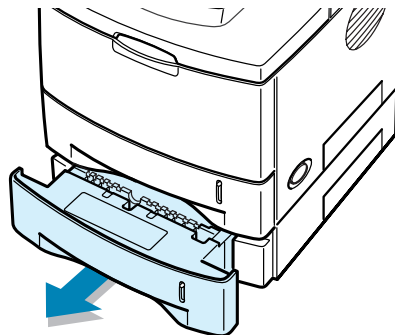
- 3 Slide the tray back into the printer.



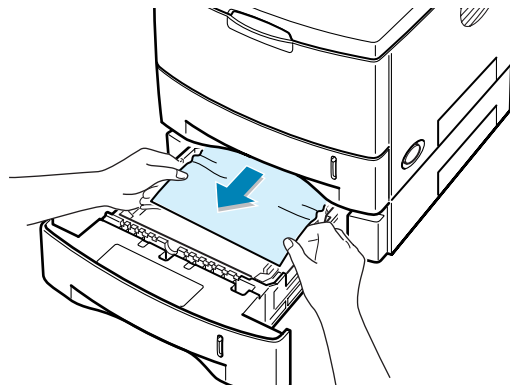
- 4 Open and close the top cover to resume printing.

In the Optional Tray2

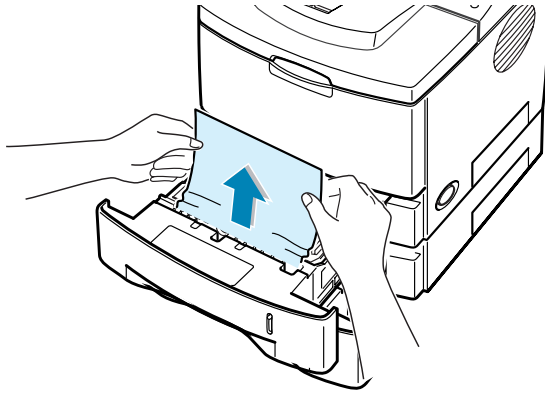
- 1 Pull the optional Tray2 out of the printer.



- 2 If you see the jammed paper, remove the paper from the tray.



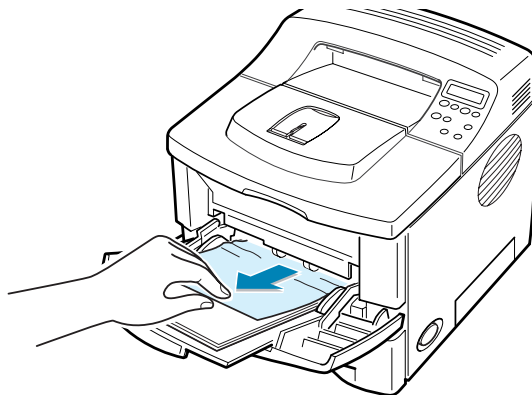
- 3 If you cannot find the jammed paper in the Tray2, pull the Tray1 half way out of the printer, and remove the paper.



- 4 Slide the trays back into the printer. Open and close the top cover. Printing can be resumed.

In the Multi-Purpose Tray

- 1 Open the Multi-Purpose Tray.
- 2 Carefully remove the jammed paper from the tray.



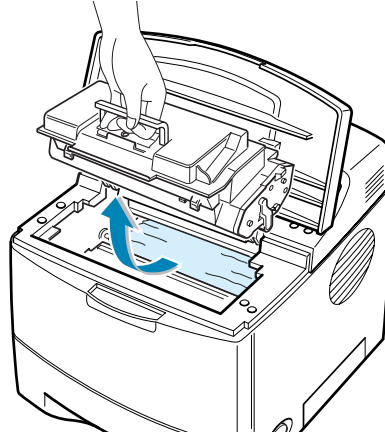
- 3 Open and close the top cover. Printing can be resumed.

Around the Toner Cartridge

- 1 Open and close the top cover, and the jammed paper is automatically exits the printer.

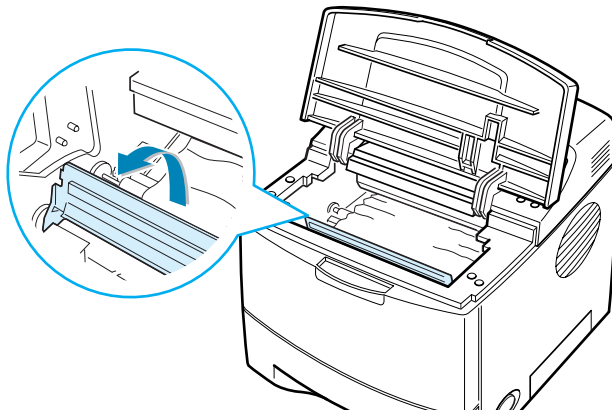
If not, continue to Step 2.

- 2 Open the top cover and remove the toner cartridge.

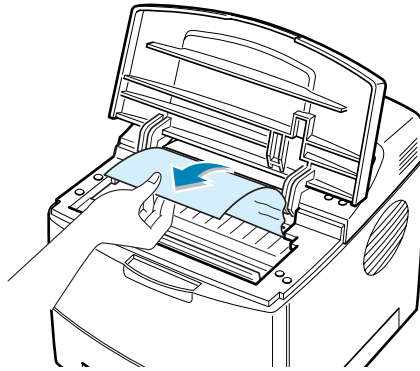


CAUTION: To prevent damage to the toner cartridge, do not expose it to light for more than a few minutes. Place a piece of paper over the top of the toner cartridge to shield it while it is out of the printer.

- 3 Carefully lift up the guide feed.

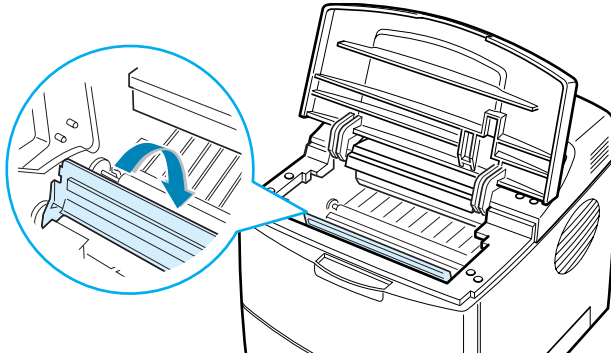


- 4 Gently pull the jammed paper towards you to remove it from the printer.



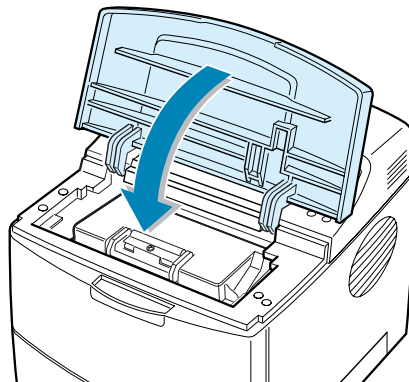
If the jammed paper is not visible or there is resistance when you pull the paper, go to "In the Paper Exit Area" on page 7.12.

- 5 Flip down the guide feed and reinstall the toner cartridge.



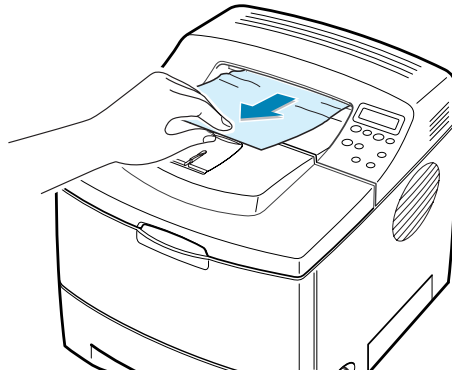
NOTE: If the toner cartridge is difficult to reinstall, make sure that the guide feed has been flipped back down into position.

- 6 Close the top cover. Printing can be resumed.

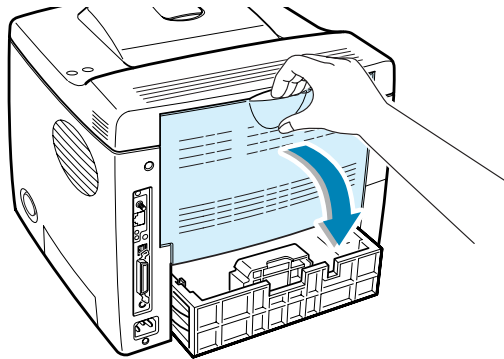


In the Paper Exit Area

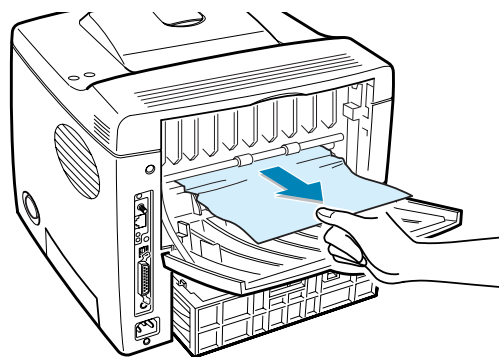
- 1 If a long portion of the paper is visible, pull it straight out. If not, continue to Step 2.



- 2 Open the rear output tray.



- 3 Loosen the paper if it is caught in the feed rollers. Then gently pull the paper out.

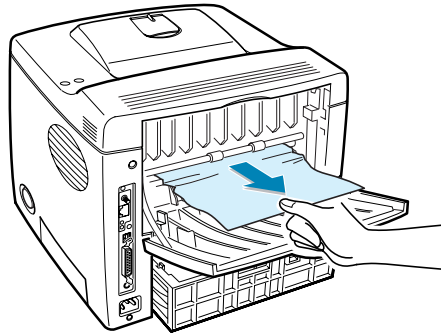


- 4 Close the rear output tray.
- 5 Open and close the top cover. Printing can be resumed.

In the Duplex Area

Jam Duplex1

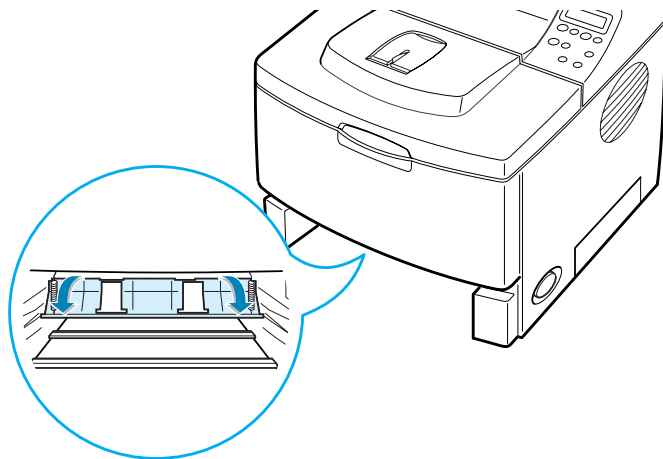
- 1 Open the rear output tray.
- 2 Remove the jammed paper.



- 3 Close the rear output cover.
- 4 Open and close the top cover. Printing can be resumed.

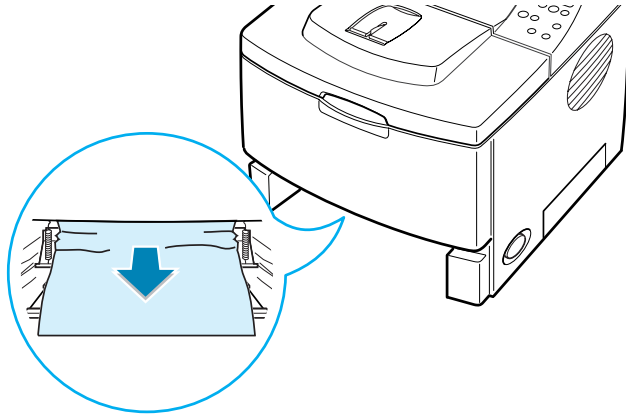
Jam Duplex2

- 1 Pull the paper tray out of the printer.
- 2 Pull down the metal plate inside of the printer.



CAUTION: Pulling the plate may do you an injury. Use the lever on the left.

- 3 Remove the jammed paper.



- 4 Slide the tray back into the printer.
- 5 Open and close the top cover. Printing can be resumed.

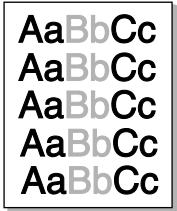
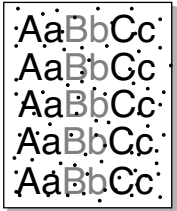
Tips for Avoiding Paper Jams

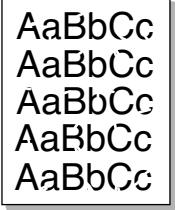
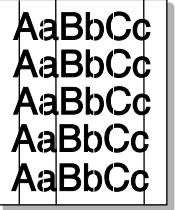
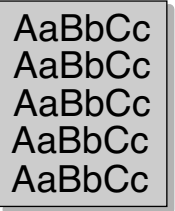
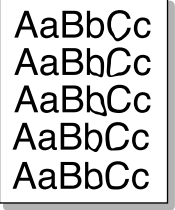
By selecting the correct paper types, most paper jams can be avoided. If a paper jam occurs, follow the steps outlined in "Clearing Paper Jams" on page 7.7.

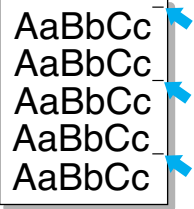
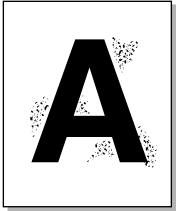
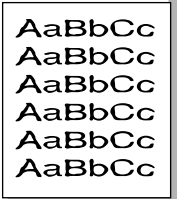
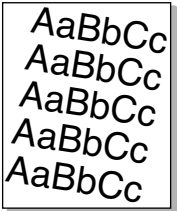
- Follow the procedures in "Loading Paper" on page 2.6. Ensure that the adjustable guides are positioned correctly.
- Do not overload the paper tray. Ensure that the paper is below the paper limit mark on the inside wall of the tray.
- Do not remove the paper from the tray while printing.
- Flex, fan and straighten the paper before loading.
- Do not use creased, damp or highly curled paper.
- Do not mix paper types in the tray.
- Use only recommended print materials. See "Paper Specifications" on page G.3.
- Ensure that the recommended print side is facing down when loading paper in the tray and facing up in the Multi-Purpose Tray.

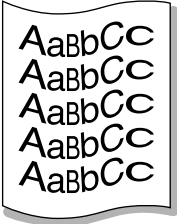
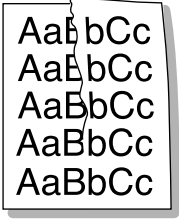
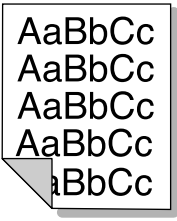
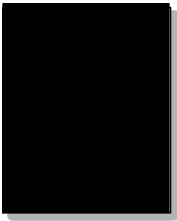
Solving Print Quality Problems

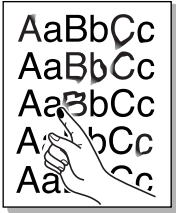
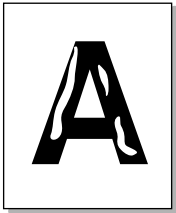
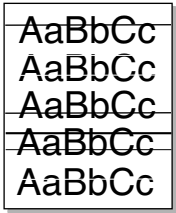
The dirty inside of the printer or improper paper loading may reduce the print quality. See the table below to troubleshoot the problem.

Problem	Solution
<p>Light or faded print</p> 	<p>If a vertical white streak or faded area appears on the page:</p> <ul style="list-style-type: none"> • The toner supply is low. You may be able to temporarily extend the toner cartridge life. See "Redistributing Toner" on page 6.4. If this does not improve the print quality, install a new toner cartridge. • The paper may not meet paper specifications (for example, the paper is too moist or too rough). See "Paper Specifications" on page G.3. • If the entire page is light, the print resolution setting is too light or Toner Save Mode is on. Adjust the print resolution and Toner Save Mode in the printer properties. See page 5.25 and page 5.9 respectively. • A combination of faded or smeared defects may indicate that the toner cartridge needs cleaning. See "Cleaning the Inside" on page 6.7. • The surface of LSU may be dirty. Clean the LSU. See "Cleaning the Inside" on page 6.7.
<p>Toner specs</p> 	<ul style="list-style-type: none"> • The paper may not meet specifications (for example, the paper is too moist or too rough). See "Paper Specifications" on page G.3. • The transfer roller may be dirty. See "Cleaning the Inside" on page 6.7. • The paper path may need cleaning. See "Cleaning the Inside" on page 6.7.

Problem	Solution
<p>Dropouts</p> 	<p>If faded areas, generally rounded, occur randomly on the page:</p> <ul style="list-style-type: none"> • A single sheet of paper may be defective. Try reprinting the job. • The moisture content of the paper is uneven or the paper has moist spots on its surface. Try a different brand of paper. See "Paper Specifications" on page G.3. • The paper lot is bad. The manufacturing processes can cause some areas to reject toner. Try a different kind or brand of paper. • The toner cartridge may be defective. See "Vertical repetitive defects" on the next page. • If these steps do not correct the problems, contact a service representative.
<p>Vertical lines</p> 	<p>If black vertical streaks appear on the page:</p> <ul style="list-style-type: none"> • The drum inside the toner cartridge has probably been scratched. Install a new toner cartridge.
<p>Gray background</p> 	<p>If the amount of background shading becomes unacceptable, the procedures below may fix the problem.</p> <ul style="list-style-type: none"> • Change to a lighter weight pages. See "Paper Specifications" on page G.3. • Check the printer's environment; very dry (low humidity) or high humidity (higher than 80% RH) conditions can increase the amount of background shading. • Remove the old toner cartridge and install a new one. See "Installing the Toner Cartridge" on page 2.4.
<p>Toner smear</p> 	<ul style="list-style-type: none"> • Clean the inside of the printer. See "Cleaning the Inside" on page 6.7. • Check the paper type and quality. See "Paper Specifications" on page G.3. • Remove the toner cartridge and install a new one. See "Installing the Toner Cartridge" on page 2.4.

Problem	Solution
<p>Vertical repetitive defects</p> 	<p>If marks repeatedly appear on the printed side of the page at even intervals:</p> <ul style="list-style-type: none"> • The toner cartridge may be damaged. If a repetitive mark occurs on the page, print a cleaning sheet several times to clean the cartridge; see page 6.9. After the printout, if you still have the same problems, install a new toner cartridge. See "Installing the Toner Cartridge" on page 2.4. • Parts of the printer may have toner on them. If the defects occur on the back of the page, the problem will likely correct itself after a few more pages. • The fusing assembly may be damaged. Contact a service representative.
<p>Background scatter</p> 	<p>Background scatter results from bits of toner distributed on the printed page.</p> <ul style="list-style-type: none"> • The paper may be too damp. Try printing with a different batch of paper. Do not open packages of paper until necessary so that the paper does not absorb too much moisture. • If background scatter occurs on an envelope, change the printing layout to avoid printing over areas that have overlapping seams on the reverse side. Printing on seams can cause problems. • If background scatter covers the entire surface area of a printed page, adjust the print resolution through your software application or the printer properties.
<p>Misformed characters</p> 	<ul style="list-style-type: none"> • If characters are improperly formed and producing hollow images, the paper stock may be too slick. Try a different paper. See "Paper Specifications" on page G.3. • If characters are improperly formed and producing a wavy effect, the scanner unit may need service. Verify that it also occurs on a demo page (see page 2.14). For service, contact a service representative.
<p>Page skew</p> 	<ul style="list-style-type: none"> • Check the paper type and quality. See "Paper Specifications" on page G.3. • Ensure that the paper or other material is loaded correctly and the guides are not too tight or too loose against the paper stack.

Problem	Solution
<p>Curl or wave</p> 	<ul style="list-style-type: none"> • Check the paper type and quality. Both high temperature and humidity can cause paper curl. See "Paper Specifications" on page G.3. • Turn over the stack of paper in the tray. Also try rotating the paper 180° in the tray. • Try printing to the face up output slot.
<p>Wrinkles or creases</p> 	<p>Ensure that the paper is loaded properly.</p> <ul style="list-style-type: none"> • Check the paper type and quality. See "Paper Specifications" on page G.3. • Open the rear cover and try printing to the rear output tray (face-up). • Turn over the stack of paper in the paper tray. Also try rotating the paper 180° in the tray.
<p>Back of printouts are dirty</p> 	<ul style="list-style-type: none"> • The transfer roller may be dirty. "Cleaning the Inside" on page 6.7. • Check for leaking toner. Clean the inside of the printer.
<p>Black pages</p> 	<ul style="list-style-type: none"> • The toner cartridge may not be installed properly. Remove the cartridge and reinsert. • The toner cartridge may be defective and need replacing. Install a new toner cartridge. • The printer may require repair. Contact a service representative.

Problem	Solution
<p>Loose toner</p> 	<p>Clean the inside of the printer.</p> <ul style="list-style-type: none"> • Check the paper type and quality. See "Paper Specifications" on page G.3. • Install a new toner cartridge. See "Installing the Toner Cartridge" on page 2.4. • If the problem persists, the printer may require repair. Contact a service representative.
<p>Character Voids</p> 	<p>Character voids are white areas within the parts of characters that should be solid black:</p> <ul style="list-style-type: none"> • If you are using transparencies, try another type of transparency. Because of the composition of the transparency, some character voids are normal. • You may be printing on the wrong surface on the paper. Remove the paper and turn it around. • The paper may not meet paper specifications. See "Paper Specifications" on page G.3.
<p>Horizontal stripes</p> 	<p>If horizontally aligned black streaks or smears appear:</p> <ul style="list-style-type: none"> • The toner cartridge may be installed improperly. Remove the cartridge and reinsert. • The toner cartridge may be defective. Install a new toner cartridge. See "Installing the Toner Cartridge" on page 2.4. • If the problem persists, the printer may require repair. Contact a service representative.

Understanding Display Messages

The display on the front panel shows the messages to indicate the printer's status or errors. Refer to the tables below to understand the message's meaning and clear the problem if necessary. Messages and their meanings are listed in alphabetical order.



NOTE: When you call for service, it is very convenient to tell the specified message.

Message	Status	Do this...
Cover Open/No Toner Cartridge	A cover is open/There is no toner cartridge installed in your printer	Close the top cover firmly/Install the cartridge.
Invalid Toner	Your toner cartridge is not for your printer.	Install a Samsung-approved toner cartridge, designed for your printer.
Jam 0	A paper jam occurs in the paper feed area.	Remove the jammed paper from the tray in use, referring to page 7.7.
Jam 1	A paper jam occurs around the toner cartridge.	Remove the jammed paper from the printer, referring to page 7.10.
Jam 2	A paper jam occurs in the paper exit area.	Remove the jammed paper from the output tray, referring to page 7.12.
JAM Duplex1/2	A paper jam occurs while printing on both sides of paper.	Remove the jammed paper from the printer, referring to page 7.13.
Load Manual Press Cont Key	The Multi-Purpose Tray is empty in manual feed mode.	Load a sheet of print material and press the On-Line/Continue button. You need to press the button each page to be printed.
Memory Overflow	The printer does not have enough memory to print the current job.	The job will be automatically cleared and the printer will return to ready mode. <ul style="list-style-type: none"> Expand the memory in your printer. See "Installing Memory and PostScript DIMMs" on page F.3.

Message	Status	Do this...
Page Too Complex	Too complicated data was sent to the printer.	Simplify the page layout and remove unnecessary graphics from your document. If the message persists, expand the memory in your printer. See "Installing Memory and PostScript DIMMs" on page F.3.
Paper Empty [Size]In[Tray]	The displayed tray is empty.	Load the corresponding size of paper into the tray.
Ready Low Toner	The toner cartridge in your printer is nearly empty.	Redistribute the toner, referring to page 6.4.
Serial Error <i>* may be shown only if you installed the optional serial interface card.</i>	The printer detects a serial interface error.	Set the baud rate the same as the setting on your computer.
Ready Replace Cart	The life of some parts on the toner cartridge ends	The overflow of the waste toner contaminates the inside of the machine. Regardless of the remaining toner, this is warning message showing that The toner cartridge replacement is needed as the parts life there of is exhausted. the toner cartridge is at the end of its life and the print quality lowers, You need to replace the cartridge to new one. to continue printing, press On-Line/ Continue each time you print a page.
Wait Image	The firmware programme in the printer has been damaged.	You need to download the programme to the printer again. Contact your local Samsung dealer.

Common Windows Problems

Problem	Possible Cause and Solution
"File in Use" message appears during installation.	Exit all software applications. Remove all software from the StartUp Group, then restart Windows. Reinstall the printer driver.
"Error Writing to LPTx" message appears.	<ul style="list-style-type: none">• Ensure that the cables are connected correctly, the printer is on.• If bi-directional communication is not turned on in the driver, it will also cause this message.
"General Protection Fault", "Exception OE", "Spool32", or "Illegal Operation" messages appear.	Close all other applications, reboot Windows and try printing again.

NOTE: Refer to Microsoft Windows 9x/Me/NT 4.0/2000/XP User's Guide that came with your PC for further information on Windows error messages.

Common Macintosh Problems

Problems in the Chooser

Problem	Possible Cause and Solution
The printer driver icon does not appear in Chooser.	Software is not installed correctly. <ul style="list-style-type: none">• The LaserWriter driver should be present as a part of the Macintosh OS. Make sure that the LaserWriter driver is in the Extensions folder within the Systems folder. If not, install the LaserWriter driver component from the Macintosh OS CD.• Make sure that you are using a high-quality cable.• Make sure that the printer is on the correct network. Select Network or AppleTalk Control Panel from Control Panels in the Apple menu and then choose the correct network.
The printer name does not appear in the Select a PostScript Printer box in the Chooser.	<ul style="list-style-type: none">• Make sure that the cables are connected correctly and the printer is turned on.• Check if "Ready" appears on the display of the control panel. If not, press the On-Line/Continue button to switch your printer to on-line.• Make sure that the correct printer driver has been selected in Chooser.• If the printer resides on a network with multiple zones, make sure that the correct zone is selected in the AppleTalk Zones box in Chooser.• Make sure that AppleTalk is on; the button next to Active is selected in Chooser. You may need to restart the computer to activate the change.

7

Printing Errors

Problem	Possible Cause and Solution
You cannot use the computer while the printer is printing.	Background Printing has not been selected. <ul style="list-style-type: none">• For LaserWriter 8.3, turn Background Printing on in the Chooser. Status messages will now be redirected to the Print Monitor allowing you to continue working while the computer is processing data to be sent to the printer.• For LaserWriter 8.4 or higher, turn Background Printing on at the Print window.

Troubleshooting PS Errors

The following situations are PS language specific and may occur when several printer languages are being used.



NOTE: To receive a printed or screen displayed message when PS errors occur, open the Print Options window and click the desired selection next to the PostScript errors section.

Problem	Possible Cause	Solution
PostScript file can not be printed.	The PostScript option may not be installed.	<ul style="list-style-type: none">• Print a configuration page and verify that the PS version is available for printing.• If PostScript is not available, install the PostScript option. See "Installing Memory and PostScript DIMMs" on page F.3.
"This job contains binary data..." message appears.	The pure binary data option is not supported by the PostScript driver.	Open the Properties of the PostScript driver, click on PostScript , and click on Advanced . The pure binary data option is not supported. Choose another.
A PS error page prints.	Print job may not be PS.	Make sure that the print job is a PS job. Check to see whether the software application expected a setup or PS header file to be sent to the printer.
The optional Tray2 is not selected in the driver.	The printer driver has not been configured to recognise the optional Tray2.	Open the PostScript driver properties and set the Tray2 item of the Device option to Installed .

Common Linux Problems

Problem	Possible Cause and Solution
I can't change settings in the configuration tool.	You need to have administrator privileges to be able to affect global settings.
I am using the KDE desktop but the configuration tool and LLPR won't start.	Maybe you do not have the GTK libraries installed. These usually come with most Linux distributions, but you may have to install them manually. Refer to your distribution's installation manual for more details about installing additional packages.
I just installed this package but can't find entries in the KDE/Gnome menus.	Some versions of the KDE or GNOME desktop environments may require that you restart your session for the changes to take effect.
I get a "Some options are not selected" error message while editing the printer settings.	Some printers have conflicting settings, meaning that some settings for two options can't be selected at the same time. When you change a setting and the Printer Package detects such a conflict, the conflicting option is changed to a "No Choice" value, and you have to choose an option that does not conflict before being able to submit the changes.
I can't make a printer the system default.	<p>In some conditions, it may not be possible to change the default queue. This happens with some variants of LPRng, especially on recent RedHat systems that use the "printconf" database of queues.</p> <p>When using printconf, the /etc/printcap file is automatically refreshed from the database of printers managed by the system (usually through the "printtool" command), and the queues in /etc/printcap.local are appended to the resulting file. Since the default queue in LPRng is defined as the first queue in /etc/printcap, therefore it is not possible for the Linux Printer Package to change the default when some queues have otherwise been defined using printtool.</p> <p>LPD systems identify the default queue as the one named "lp". Thus, if there is already a queue by this name, and if it doesn't have any alias, then you won't be able to change the default. To work around this, you can either delete the queue or rename it by manually editing the /etc/printcap file.</p>
The N-up setting does not work correctly for some of my documents.	The N-up feature is achieved through post-processing of the PostScript data that is being sent to the printing system. However, such post-processing can only be adequately achieved if the PostScript data conforms to the Adobe Document Structuring Conventions. Problems may arise when using N-up and other features relying on post-processing if the document being printed isn't compliant.

Problem	Possible Cause and Solution
I am using BSD lpr (Slackware, Debian, older distributions) and some options chosen in LLPR don't seem to take effect.	Legacy BSD lpr systems have a hard limitation on the length of the option string that can be passed to the printing system. As such, if you selected a number of different options, the length of the options may be exceeded and some of your choices won't be passed to the programmes responsible for implementing them. Try to select less options that deviate from the defaults, to save on memory usage.
I am trying to print a document in Landscape mode, but it prints rotated and cropped.	Most Unix applications that offer a Landscape orientation option in their printing options will generate correct PostScript code that should be printed as is. In that case, you need to make sure that you leave the LLPR option to its default Portrait setting, to avoid unwanted rotations of the page that would result in a cropped output.
Some pages come out all white (nothing is printed), and I am using CUPS.	If the data being sent is in Encapsulated PostScript (EPS) format, some earlier versions of CUPS (1.1.10 and before) have a bug preventing them from being processed correctly. When going through LLPR to print, the Printer Package will work around this issue by converting the data to regular PostScript. However, if your application bypasses LLPR and feeds EPS data to CUPS, the document may not print correctly.
I can't print to a SMB (Windows) printer.	To be able to configure and use SMB-shared printers (such as printers shared on a Windows machine), you need to have a correct installation of the SAMBA package that enables that feature. The "smbclient" command should be available and usable on your system.
My application seems to be frozen while LLPR is running.	Most Unix applications will expect a command like the regular "lpr" command to be non-interactive and thus return immediately. Since LLPR is waiting for user input before passing the job on to the print spooler, very often the application will wait for the process to return, and thus will appear to be frozen (its windows won't refresh). This is normal and the application should resume functioning correctly after the user exits LLPR.
How do I specify the IP address of my SMB server?	It can be specified in the "Add Printer" dialogue of the configuration tool, if you don't use the CUPS printing system. Unfortunately, CUPS currently doesn't allow to specify the IP address of SMB printers, so you will have to be able to browse the resource with Samba in order to be able to print.
Some documents come out as white pages when printing.	Some versions of CUPS, especially those shipped with Mandrake Linux before the 8.1 release, have some known bugs when processing the PostScript output from some applications. Try upgrading to the latest version of CUPS (at least 1.1.14). Some RPM packages for most popular distributions are provided as a convenience with this Linux Printing Package.

Problem	Possible Cause and Solution
I have CUPS and some options (such as N-up) seem to be always enabled even though I don't pick them in LLPR.	There may be some local options defined in your ~/.lpoptions file, which is manipulated by the lpoptions command. These options will always be used if not overridden by LLPR settings. To get rid of all options for a printer, run the following command, replacing "printer" with the name of the queue: lpoptions -x printer
I configured a printer to print to a file, but I get "Permission denied" errors.	Most printing systems will not run as the super-user but as a special user (usually "lp"). Therefore, make sure that the file you have chosen to print to is accessible to the user owning the spooler daemon.
On my PCL (or SPL) printer, I sometimes get error messages printing instead of my document.	Unfortunately, some Unix applications may generate non-compliant PostScript output that may not be supported by Ghostscript, or even the printer itself in PostScript mode. You can try to capture the output to a file and view the results with Ghostscript (gv or ghostview will allow you to do so interactively) and see if you get error messages. However, since the application is at probably fault, contact your software vendor to inform them of the issue.

Common DOS Problem

Problem	Possible Cause and Solution
When using the printer in EPSON Dot Printer Environment, sometimes I can not get the output I want.	Change the emulation to EPSON in the Config tab in the Remote Control Panel. For detailed information about selecting printer settings in the Remote Control Panel, see page D.4.

MEMO



7.28 SOLVING PROBLEMS



USING YOUR PRINTER WITH A MACINTOSH

Your printer supports Macintosh systems with a built-in USB interface or 10/100 Base-TX network interface card (option for ML-2150). When you print a file from a Macintosh computer, you can use the Samsung SPL II driver to support your printer's major printing features. You can also use PostScript driver by installing the PPD file.

This chapter includes:

- **Installing Software for Macintosh**
- **Creating a Desktop Printer**
- **Printing a Document**
- **Using Advanced Printing Features**

Installing Software for Macintosh

The CD-ROM that came with your printer provides you with the SPL printer driver and the PPD file to use the PS driver, Apple LaserWriter driver, for printing on a Macintosh computer.

Refer to the table below for the driver available for your printer and system requirements.

Your Printer	Available Driver	Connection	System Requirements
ML-2150	SPL driver	USB interface (see page 2.11)	Mac OS 8.6 and G3 processor or higher
ML-2151N/ ML-2152W	• SPL driver • PS driver	USB interface (see page 2.11)	Mac OS 8.6 and G3 processor or higher
		Network interface (see page 2.12)	Mac OS 7.5 and 7200 processor or higher



NOTES:

- If you are a ML-2150 user, you need to install the optional PS DIMM (see page F.3) for using the PS driver.
- Please refer Samsung homepage for MAC OS 10.x Printer Driver. Samsung homepage : www.samsungprinter.com

- 1 Turn on your computer and printer.
- 2 Insert the CD-ROM which came with your printer into the CD-ROM drive.
- 3 Double-click **SAMSUNG_LBP** on your Macintosh desktop.
- 4 Double-click the **West** folder.
- 5 Double-click the **Samsung Laser Printer Installer** icon next to each language to select the correct one.
- 6 Click **Continue**, and then click **Continue**.

- 7 The Samsung Laser Printer Installer window opens. Select the installation type.

The window provides two options for software installation:

- **Easy Install** (recommended method): This option loads the PPD file and installs the SPL driver.
- **Custom Install**: This option allows you to choose which components will be installed, the SPL II driver, the PS Level 3 PPDs and the Adobe Acrobat Reader programme for opening the User's Guide.

- 8 Click **Install**.

If other programmes are operating, the alert message appears. Click **Continue** to install the software, or click **Cancel** and close other programmes, and install the software.

- 9 After the installation is completed, click **Restart**.

Creating a Desktop Printer

After installing print software, you need to create a desktop printer for using your printer. Depending on the connection you are using, the procedure differs.

Creating a Desktop Printer for the SPL Driver

- 1 From the **Apple** menu, select **Chooser**.
- 2 From the left pane of the Chooser window, click **SAMSUNG SPL II**. Then your printer name will appear in the right pane of the Chooser window.
- 3 Click your printer name, and close the window.
- 4 The message box indicating that you have changed your current printer appears. Click **OK**.
- 5 A SAMSUNG SPL II printer icon will be created on your desktop.

Creating a Desktop Printer for the PS Driver

For a USB-connected Macintosh

- 1 Open **Macintosh HD** and double-click **Application**.
- 2 Double-click **Utilities**.
- 3 Double-click **Desktop Printer Utility**.



NOTE: The position of Desktop Printer Utility may vary depending to the MAC OS.

- 4 Select **LaserWriter 8**, and select **Printer (USB)** in the list box. Then click **OK**.

- 5 Click **Change** in the USB Printer Selection section. The name of your printer appears in the list.
- 6 Click **ML-2150**, and click **OK**.
- 7 Click **Auto Setup** in the PostScript Printer Description (PPD) File section.

If Auto Setup does not work properly, click **Select PPD** and choose **Samsung ML-2150 Series**.

- 8 When the setup is completed, click **Create**.
- 9 Click **Save**.

For a Network-connected Macintosh

- 1 From the **Apple** menu, select **Chooser**.
- 2 Click **LaserWriter 8** (the PostScript driver provided with your Macintosh).

The name of your printer appears in the list.

- 3 Select **SEC000xxxxxxxx** from the printer box (where the xxxxxxxxx varies depending on each of the products).
- 4 When the setup is completed, you see your printer icon is created as a desktop printer.

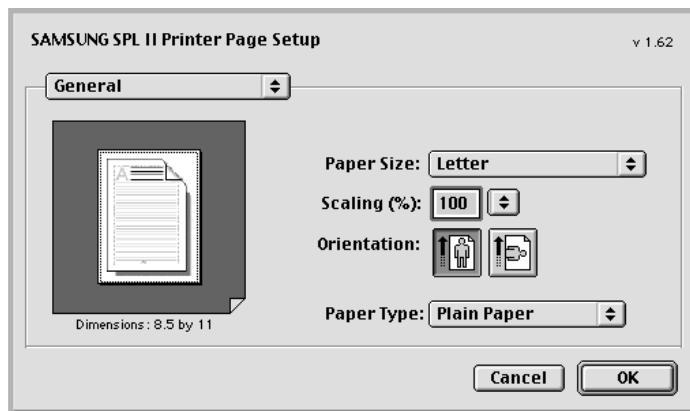
If Auto Setup does not work properly, click **Select PPD**, choose **SAMSUNG ML-2150 Series** and click **OK**.

A

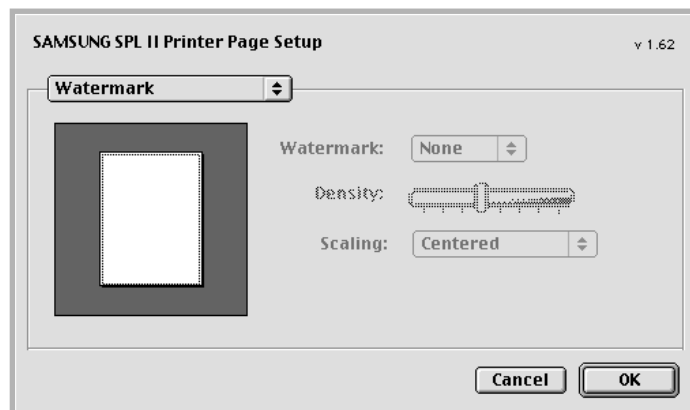
Printing a Document

When you print with a Macintosh, you need to check the printer software setting in each application you use. Follow these steps to print from a Macintosh:

- 1 Open a Macintosh application and select a file you want to print.
- 2 Open the **File** menu and click **Page Setup (Document Setup** in some applications).
- 3 Choose your paper size, orientation, paper type and other options and click **OK**.



Choose **Watermark** to add a watermark to each page in your document to emphasize its purpose or indicate how it should be handled. For details on the watermark options, see page 5.18.

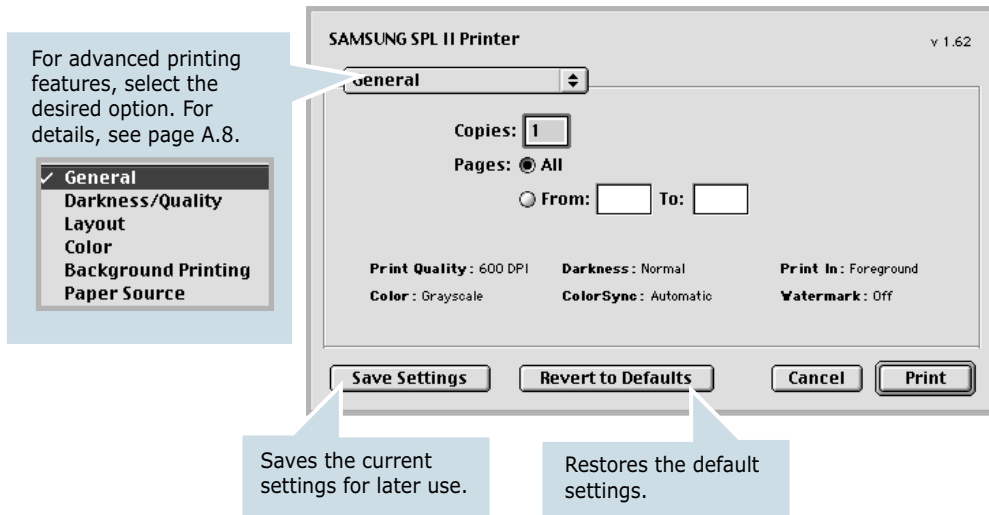


- Mac OS 9.1 doesn't support the Watermark feature.

- 4 Open the **File** menu and click **Print**. You will see the SAMSUNG SPL II Printer window.

If you are using the PS driver, the LaserWriter 8 driver window appears.

- 5 Choose the number of copies and indicate which pages you want to print.



- 6 Click **Print** when you finish setting the options.

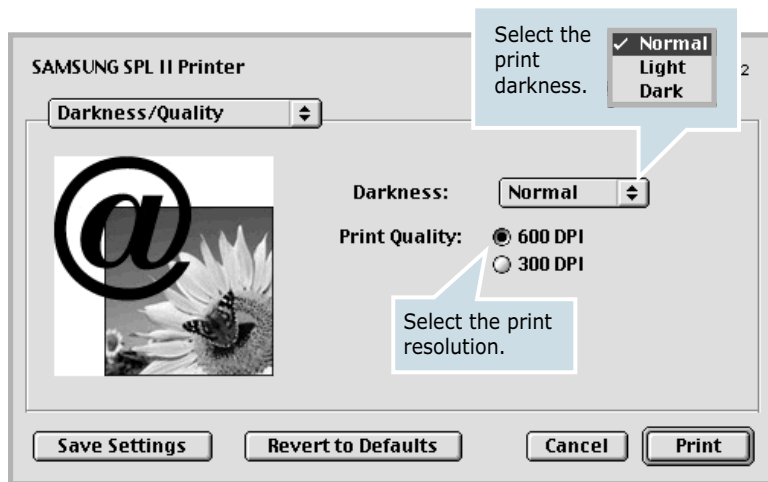
Using Advanced Printing Features

The SAMSUNG SPL II Printer window contains five categories of advanced properties. Listed below is the name of each property.

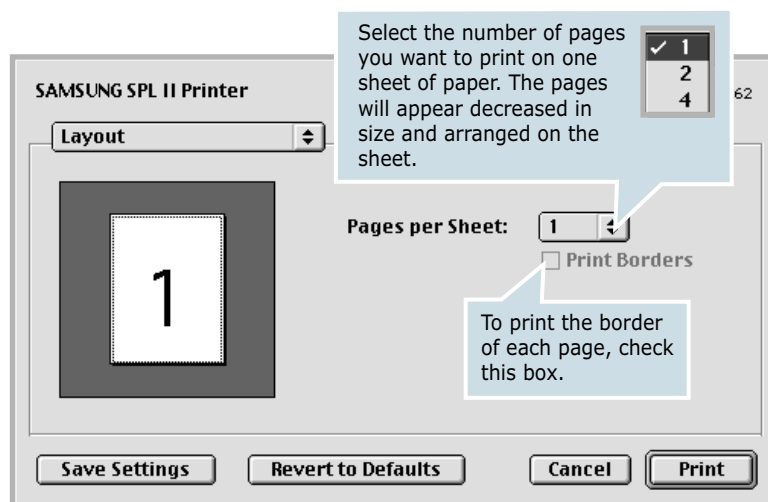
- Darkness/Quality
- Layout
- Color
- Background Printing
- Paper Source

Figures below display each property in the SAMSUNG SPL II Printer window.

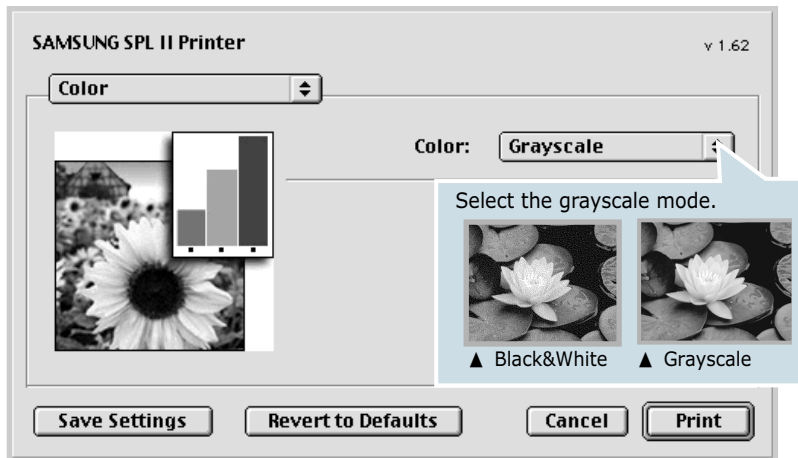
Darkness/Quality



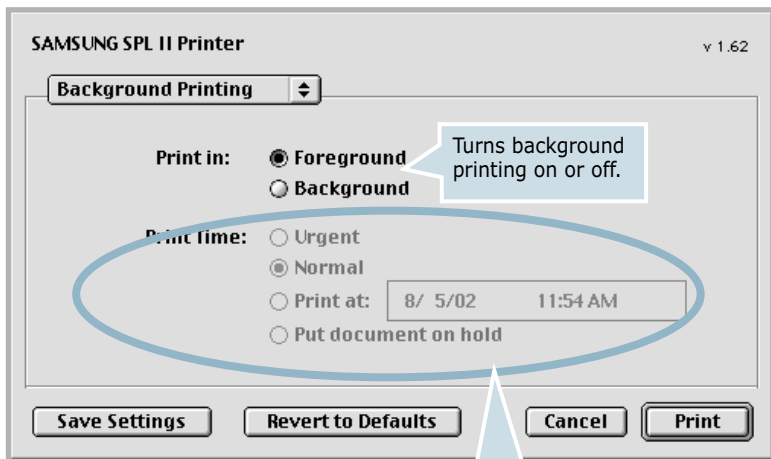
Layout



Color



Background Printing

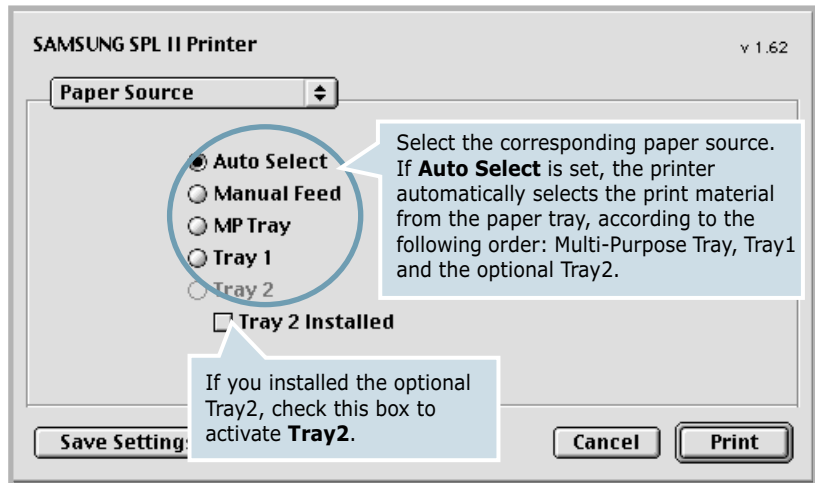


Select a priority for your print job in the queue of jobs waiting to print, click one of the following:

- **Urgent:** to print before any Normal priority job.
- **Normal:** to print in the order the job is received.
- **Print at:** to print at the specific time you enter in the day and time in the fields to the right.
- **Put document on hold:** to hold the print job in the print queue until you are ready to release it.

A

Paper Source





USING WINDOWS POSTSCRIPT DRIVER

If you want to use the PostScript driver provided with your system CD-ROM to print a document, use the information on this Appendix.

This chapter includes:

- **Installing PPD Files**
- **Using PS Printer Driver Features**

NOTE: If you are a ML-2150 user, you need to install an optional PS DIMM for using the PostScript driver. For more information, see Appendix F, "Programme Installing Printer Options."

Installing PPD Files

PPDs, in combination with the PostScript driver, access the printer features and allow the computer to communicate with the printer. An installation programme for the PPDs is provided on the supplied software CD-ROM.



NOTE:

- Installing the PostScript printer driver in Windows 9x/Me/NT 4.0 may require the use of the operating system files on the original CD-ROM that came with your system.
 - If you have a PostScript 3 driver in Windows 9x/Me/NT 4.0 and want to use it, you must install the PostScript 3 PPD which is also provided on the CD-ROM.
-

Before installing PPD files, make sure that the printer and the PC are properly connected with parallel, USB or network interface. For information about:

- connecting with the parallel interface, see page 2.10.
- connecting with the USB interface, see page 2.11. For Windows 98/Me, the USB driver must be installed. See page 2.20.
- connecting with a network interface, see page 2.12. For a ML-2150, you need to install an optional network interface card; see "Installing a Network or Serial Interface Card" on page F.6.

In Windows 95/98/Me

- 1 Place the CD-ROM in the CD-ROM drive. Installation will start automatically.

If the CD-ROM drive does not automatically run:

Select **Run** from the **Start** menu, type **x:\cdsetup.exe** in the Open box (where x is the drive letter for the CD-ROM drive) and click **OK**.

- 2 Select the appropriate language.

If you can't find the desired language from the screen, use the scroll button on the bottom right of the window to display more languages.

- 3 Click **Install the Samsung Software-II on your PC (PostScript)**.

- 4 Click **Next**.
- 5 Select **Local Printer** and click **Next**.
- 6 Click on **Have Disk**, and then choose:
 - for Windows 95/98, **x:\ML-2150\PS_DRV\ AddPrint\ English** (or the desired language)\Win9598\level2
 - for Windows Me, **x:\ML-2150\PS_DRV\ AddPrint\ English** (or the desired language)\WinME\level2(where x is the drive letter for the CD-ROM drive)
- 7 Click **OK**.
- 8 When **Samsung ML-2150 Series PS** appears in the Printers list, click **Next**.



NOTE: If you are prompted to insert the Windows CD-ROM, insert the CD-ROM that came with your Windows into the CD-ROM drive. Follows the instructions on the screen.

- 9 Select the port you want use and click **Next**.
- 10 Click **Next**.
- 11 When a window prompting to print a test page appears, select **Yes** or **No** and click **Finish**.
- 12 If you select **Yes** in Step 11, the printer prints a test page. When the page prints out properly, click **Yes**.
- 13 When the installation is completed, click **Finish**.

In Windows NT 4.0

- 1 Follow steps from 1 to 4 in "In Windows 95/98/Me" on page B.2.
- 2 Select the port you want use and click **Next**.
- 3 Click on **Have Disk**, and then choose **x:\ML-2150\ PS_DRV\ AddPrint\ English** (or the desired language)\WinNT\level2. Click **OK**.



NOTE: If you are prompted to insert the Windows CD-ROM, insert the CD-ROM that came with your Windows into the CD-ROM drive. Follows the instructions on the screen.

- 4 When **Samsung ML-2150 Series PS** appears in the Printers list, click **Next**.
- 5 Click **Next**.
- 6 When a window prompting to print a test page appears, select **Yes** or **No** and click **Finish**.
- 7 If you select **Yes** in Step 6, the printer prints a test page. When the page prints out properly, click **Yes**.
- 8 When the installation is completed, click **Finish**.

In Windows 2000/XP

- 1 Follow steps from 1 to 4 in "In Windows 95/98/Me" on page B.2.
- 2 When the installation is completed, click **Finish**.

Reinstalling the PS Driver (Windows 2000/XP)

- 1 From the **Start** menu, select **Programs**.
- 2 Select **Samsung ML-2150 Series**, and then **Samsung ML-2150 Series PS Driver Maintenance**.

The Samsung ML-2150 Series PS Driver Maintenance window appears.

- 3 Check **Repair** and then click **Next**.
- 4 Click **Finish**.

Uninstalling the PS Driver

In Windows 9x/Me/NT 4.0

- 1 From the **Start** menu, select **Programs**.
- 2 Select **Samsung ML-2150 Series**, and then **Uninstall Samsung ML-2150 Series PS Driver**.
- 3 When you are asked to confirm your selection, click **OK**.

The Samsung ML-2150 Series PS driver and all of its components are removed from your computer.

- 4 Click **Finish**.

In Windows 2000/XP

- 1 From the **Start** menu, select **Programs**.
- 2 Select **Samsung ML-2150 Series**, and then **Samsung ML-2150 Series PS Driver Maintenance**.

The Samsung ML-2150 Series PS Driver Maintenance window appears.

- 3 Check **Remove** and then click **Next**.
- 4 When you are asked to confirm your selection, click **OK**.

The Samsung ML-2150 Series PS driver and all of its components are removed from your computer.

- 5 Click **Finish**.

B

Using PS Printer Driver Features

Certain printer features are not available in this PS driver. For details about the features, refer to Chapter 5, "Printing Tasks."

The printer automatically switches between PS and SPL printer languages depending on the driver you have selected.

Accessing Printer Properties

The properties window for the Windows PostScript printer driver can be opened from the Printers folder or an application.

To open the properties window from the Printer folder:

- 1 Click the Windows **Start** button.
- 2 Select **Settings** then **Printers** to open the Printers window.
- 3 Select **Samsung ML-2150 Series PS**.
- 4 Click the right mouse button and select **Properties** to open the properties window.

To open the properties window from an application:

- 1 From the **File** menu, select **Print** to open the Print window.
- 2 Make sure that **Samsung ML-2150 Series PS** is selected in the **Name** drop-down list.
- 3 Click **Properties** to open the properties window.





USING YOUR PRINTER IN LINUX

You can use your printer in a Linux environment.

This chapter includes:

- **Installing the Printer Driver**
- **Using the Configuration Tool**
- **Changing LLPR Properties**

Installing the Printer Driver

System Requirements

Supported OS

- Redhat 6.2/7.0/7.1 and above
- Linux Mandrake 7.1/8.0 and above
- SuSE 6.4/7.0/7.1 and above
- Debian 2.2 and above
- Caldera OpenLinux 2.3/2.4 and above
- Turbo Linux 6.0 and above
- Slackware 7.0/7.1 and above

Recommended Requirements

- Pentium II or Power PC G3
- RAM 64 MB or higher
- HDD 20 MB or higher

Softwares

- Glibc 2.1 or higher
- GTK+ 1.2 or higher
- GhostScript

Installing the Printer Driver


- 1 Make sure that you connect the printer to your computer. Turn both the computer and the printer on.
- 2 When the Administrator Login window appears, type in "root" in the Login field and enter the system password.



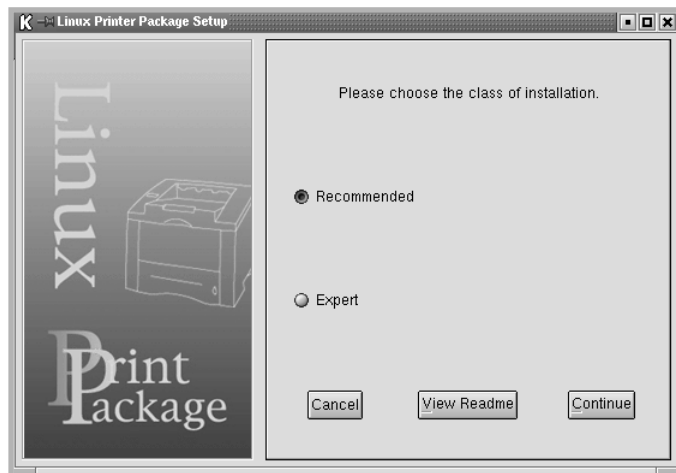
NOTE: You must log in as a super user (root) to install the printer software. If you are not, ask your system administrator.

- 3 Insert the printer software CD-ROM. The CD-ROM automatically runs.



NOTE: If the CD-ROM does not automatically run, click the  icon at the bottom of the window. When the Terminal screen appears, type in:
[root@local /root]# **cd /mnt/cdrom** (the CD-ROM directory)
[root@local cdrom]# **./setup.sh**

- 4 Select the installation type, either **Recommended** or **Expert**, and then click **Continue**.



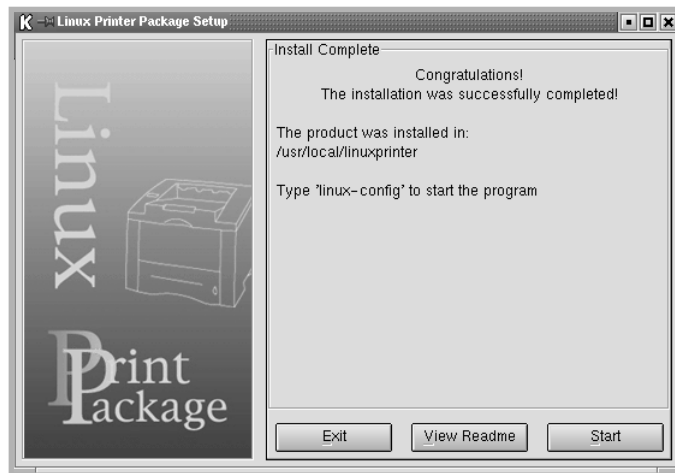
Recommended is fully automated and is not required any interaction. **Expert** installation allows you to select the install path or printing system.

- 5 If you selected **Recommended**, go to Step 6.

For **Expert**, select the desired option and then click **Begin Install**.



- 6 The printer driver installation begins. When the installation is completed, click **Start**.

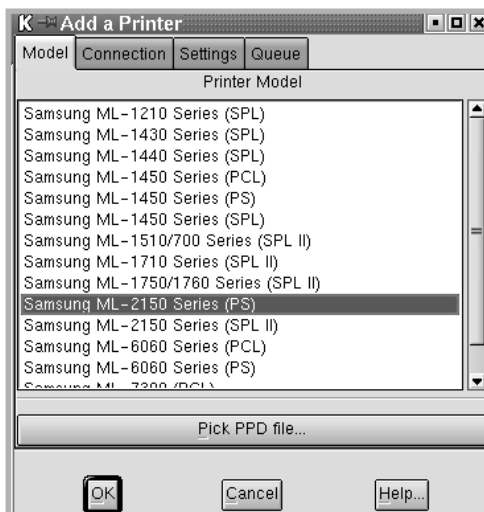


- 7 The Linux Printer Configuration window opens. Click the **Add Printer** icon on the tool bar at the top of the window.



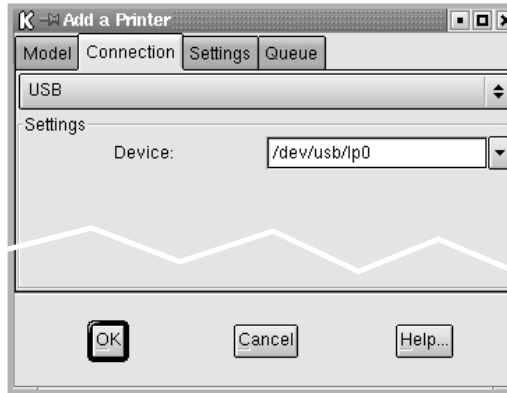
NOTE: Depending on the printing system in use, the Administrator Login window may appear. Type in "**root**" in the Login field and enter the system password.

- 8 You see the printers currently added in your system. Select the printer you will use. The function tabs available for the selected printer appear at the top of the Add a Printer window.



NOTE: If the printer supports PS printing, it is recommended to select the PS driver.

- 9 Click the **Connection** tab and ensure that the printer port is set properly. If not proper, change the device setting.



- 10 You can use the **Settings** tab and the **Queue** tab to view the printer's current setting. If necessary, you can change the settings.

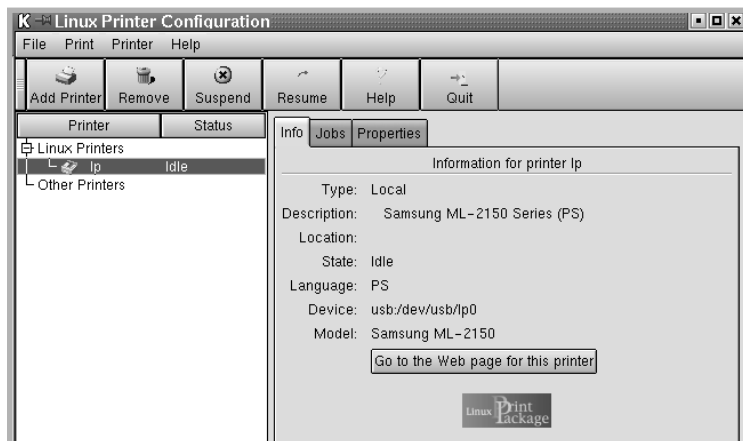


NOTE: The options may differ depending on the printer in use. The Description and the Location field in the Queue screen may not appear depending on the printing system in use.

- 11 To exit, click **OK**.

- 12 When the window prompts that the new printer is successfully configured, click **OK**.

- 13 The Linux Printer Configuration window re-appears. From the **Info** tab, you can view the information about your printer. If necessary, you can change the printer configuration. For details about changing the printer configuration, see "Using the Configuration Tool" on page C.8.



Changing the Printer Connection Method

If you change the printer connection method from USB to parallel or vice versa while in use, you must re-configure your Linux printer by adding the printer in your system. Take the following steps:

- 1 Make sure that you connect the printer to your computer. Turn both the computer and the printer on.
- 2 When the Administrator Login window appears, type in "**root**" in the Login field and enter the system password.



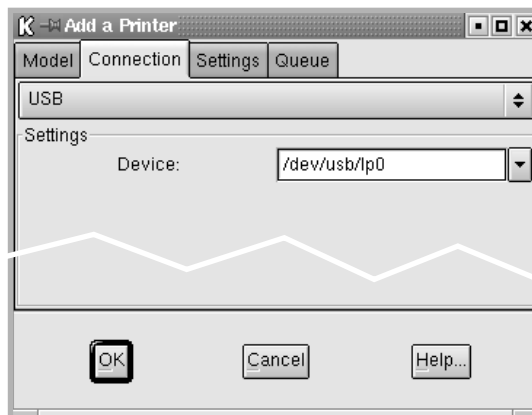
NOTE: You must log in as a super user (root) to install a new printer to the printing system. If you are not, ask your system administrator.

- 3 From the Startup Menu icon at the bottom of the desktop, select **Linux Printer** and then **Configuration Tool**.

You can also access the Linux Printer Configuration window by typing in "**linux-config**" from the Terminal screen.

- 4 When the Linux Printer Configuration window appears, click the **Add Printer** icon on the tool bar at the top of the window.
- 5 Click the **Connection** tab at the top of the Add a Printer window.

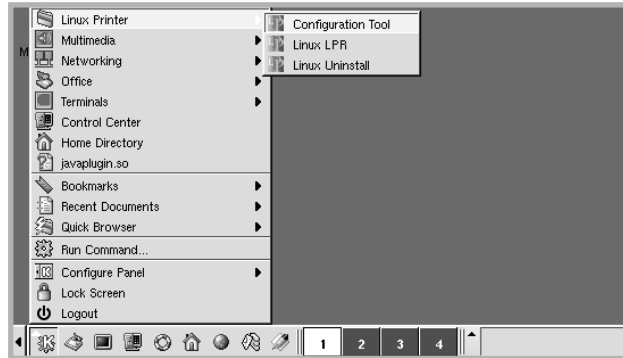
Ensure that the printer port is set properly. If not proper, change the device setting.



- 6 Click **OK**.

Uninstalling the Printer Driver

- 1 From the Startup Menu icon at the bottom of the desktop, select **Linux Printer** and then **Configuration Tool**.



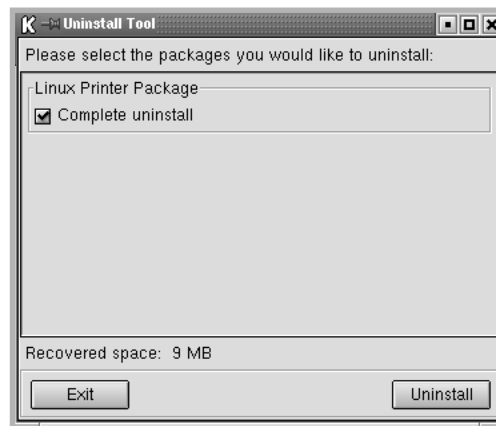
You can also access the Linux Printer Configuration window by typing in "**linux-config**" from the Terminal screen.

- 2 In the Linux Printer Configuration window, select the **Uninstall** command from the **File** menu.
- 3 The Administrator Login window appears. Type in "**root**" in the Login field and enter the system password. Click **Proceed**.



NOTE: You must log in as a super user (root) to uninstall the printer software. If you are not, ask your system administrator.

- 4 The message window which is asking your confirmation to proceed with the uninstallation appears. Click **Yes**.
- 5 Select **Complete uninstall** and then click **Uninstall**.



- 6 Click **OK** to begin uninstallation.
- 7 When the uninstallation is completed, click **Finished**.

Using the Configuration Tool

The configuration tool allows the administrative tasks, including adding and removing new printer, and changing their global settings. Regular users can also run it to easily inspect job queues, examine the printer properties and changing their local preference.

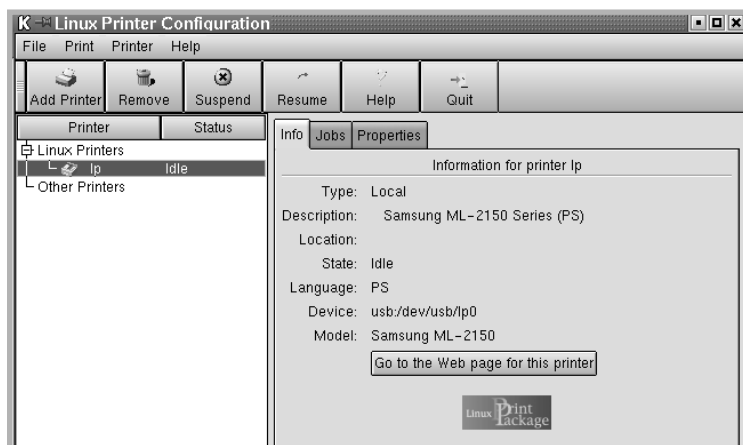
To access the Configuration Tool:

- 1 From the Startup Menu icon at the bottom of the screen, select **Linux Printer** and then **Configuration Tool**. The Linux Printer Configuration window appears.

You can also open this window from the Terminal screen by typing in "**linux-config**."

- 2 The Linux Printer Configuration window shows a list of installed printers at the left pane. The right pane shows a number of tabs that display information regarding the currently selected printer.

Select your printer, if not currently selected.

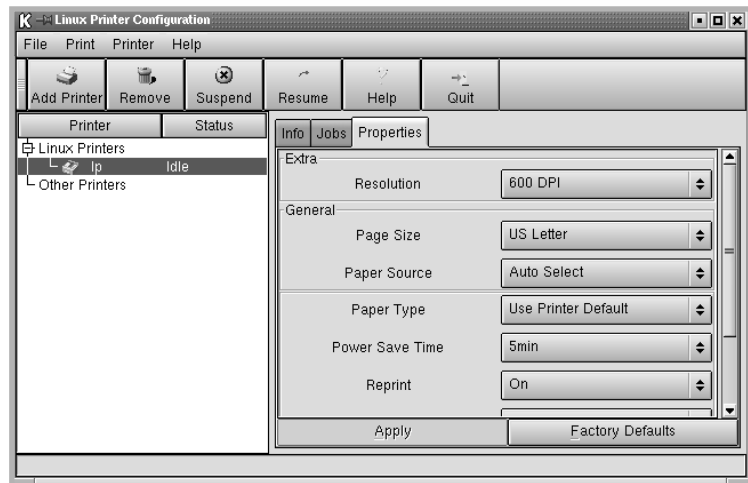


3 The **Info** tab shows general information about the printer.

If you are an Internet user, you can click **Go to the Web page for this printer** to access the web page.

Click the **Job** tab to inspect and manage the job queue for the selected printer. You can suspend, resume or delete a specific job(s) in the queue. If you drag a specific job(s), you can drop it into the print queue of another printer.

The **Properties** tab allows you to change the default printer settings.



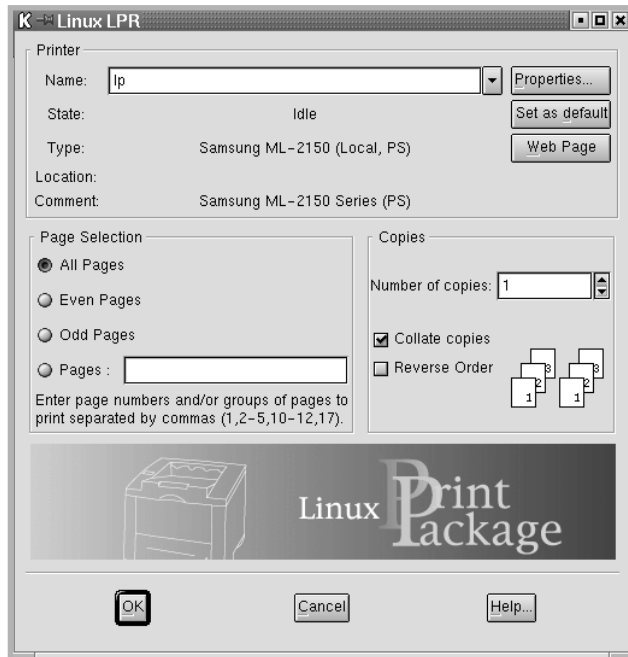
NOTE: Regular users are able to override the system-wide default settings defined by the administrator. When a regular user clicks **Apply**, these custom settings will be saved in the user's profile and may be later used with LLPR. If the administrator is running the configuration tool, then the settings will be saved as the new global defaults.

Changing LLPR Properties

You can fine tune the printer's properties by opening the LLPR Properties window.

To open the LLPR Properties window:

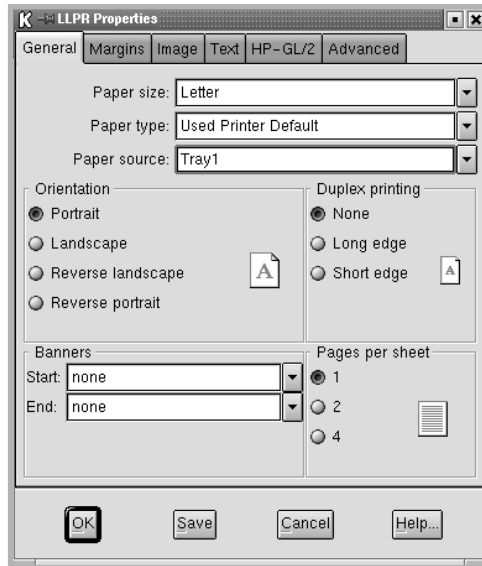
- 1 From the application you are using, select the **Print** command.
- 2 When the Linux LPR window opens, click **Properties**.



You can also open the LLPR window by using the following:

- Click the Startup Menu icon at the bottom of the screen and select **Linux Printer** and then **Linux LPR**.
- If the Linux Printer Configuration window is currently open, select **Test Print** from the **Print** menu.

3 The LLPR Properties window opens.



You will see the following six tabs at the top of the window:

- **General** - allows you to change the paper size, the paper type, the paper source, the orientation of the documents, enable duplex feature, add start and end banners, and change the number of pages per sheet.
- **Margins** - allows you to specify the page margins. The graphics on the right shows the current settings. These margins do not apply when printing regular PostScript data.
- **Image** - allows you to set image options that will be used when printing images files, i.e. when a non-PostScript document is passed to LLPR on the command line. But colour settings will also take effect for postscript documents.
- **Text** - allows you to select the density of the text and turn the syntax colouring on or off.
- **HP-GL/2** - allows you to set default options to print documents of the HP-GL/2 format, which is used by some plotters.
- **Advanced** - allows you to override the default settings for the printer.

If you click the **Save** button at the bottom of the window, the options will be kept between LLPR session.

Use the **Help** button to view details about the options in the window.

- 4 To apply the options, click **OK** in the **LLPR Properties** window. You will return to the **Linux LPR** window. To start printing, click **OK**.

MEMO



C.12 USING YOUR PRINTER IN LINUX



PRINTING FROM DOS APPLICATIONS

While your printer is primarily a Windows printer, you can also print from a DOS software Programme using the Remote Control Panel utility provided in the supplied software CD-ROM.

This chapter includes:

- **About the Remote Control Panel**
- **Installing the Remote Control Panel**
- **Selecting Print Settings**

About the Remote Control Panel

DOS users have access to many printer features through specific DOS printer drivers; however, many software manufacturers do not develop printer drivers for their software programmes. Your printer provides the software control panel for improved printer control when DOS printer drivers are not available or when certain print settings are not available through DOS software programmes.



NOTE: The printer's Remote Control Panel is not a printer driver. It should be used to set print settings that are not available through DOS software programmes. Printer drivers are supplied by the manufacturers of your DOS software programmes. If your DOS software Programme does not include a printer driver for your printer, contact the manufacturer of the software or use one of the alternate printer drivers.

Installing the Remote Control Panel

- 1 Place the CD-ROM in the CD-ROM drive. Installation will start automatically.

If the CD-ROM drive does not automatically run:

Select **Run** from the **Start** menu, type **x:\cdsetup.exe** in the Open box (where x is the drive letter for the CD-ROM drive) and click **OK**.

- 2 Select the appropriate language.

If you can't find the desired language from the screen, use the scroll button on the bottom right of the window to display more languages.

- 3 Click **Install the Samsung Software-III on your PC (WinRCP)**.

- 4 Click **Next**.

The files are copied into the appropriate directory.

- 5 After the installation is completed, click **Finish**.

Uninstalling the Remote Control Panel

- 1 From the **Start** menu, select **Programs**.

- 2 Select **Samsung ML-2150 Series**, and then **Uninstall Remote Control Panel**.

- 3 Click **OK**.

The Samsung ML-2150 Series Remote Control Panel and all of its components are removed from your computer.

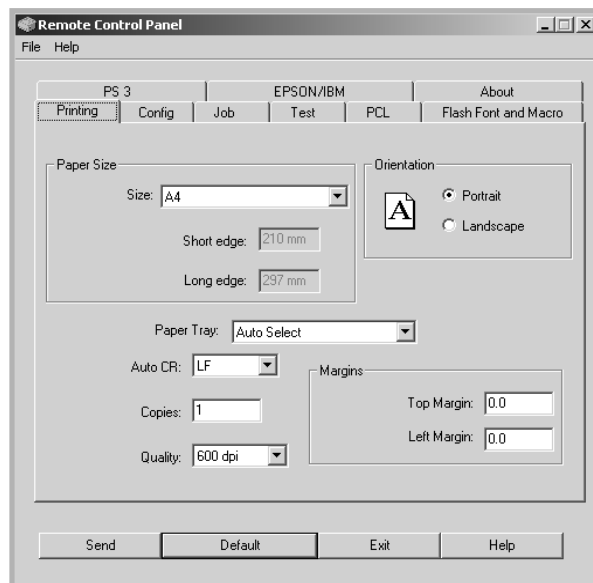
- 4 Click **Finish**.

Selecting Print Settings

You can use this Remote Control Panel to select print settings that may not be available on some DOS Programmes. Typically, duplicate print settings that are selected from a DOS software programme override the ones that are selected in the Remote Control Panel.

Starting the Remote Control Panel

- 1 From the **Start** menu, select **Programs**.
- 2 Select **Samsung ML-2150 Series** and then **Remote Control Panel**.
- 3 The Remote Control Panel window allows you to access all the information you need when using your printer. If necessary, click the other tabs on the top of the window to access other features.



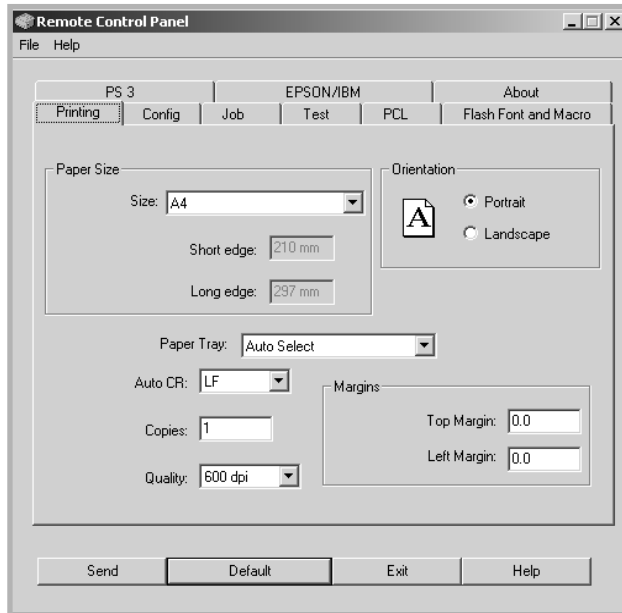
- 4 When you finish changing the settings, click **Send**.

Using the Remote Control Panel Tabs

The Remote Control Panel allows you to access the following features:

Printing Tab

In this tab, you can configure general settings for printing.

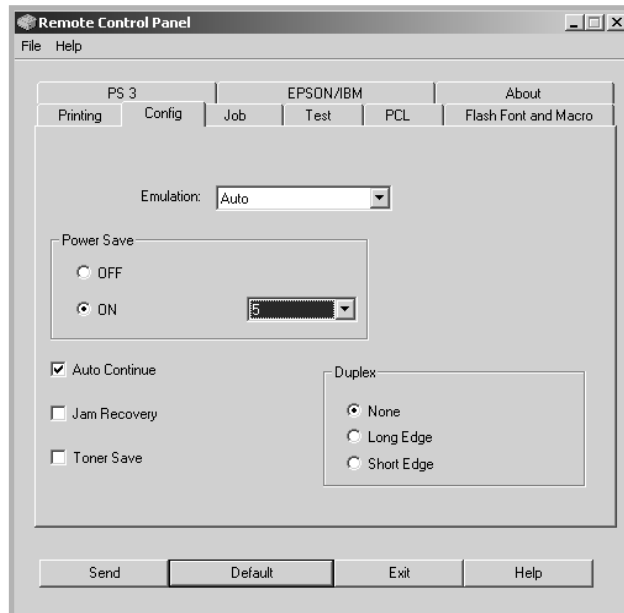


- **Paper Size** sets the paper size.
- **Orientation** determines how the output is printed on the page.
- **Paper Tray** sets the default paper source.
- **Auto CR** sets how the printer performs a carriage return.
- **Copies** sets the number of copies printed for each page.
- **Quality** specifies the print quality.
- **Margins** sets the top and left margin of the print material.

D

Config Tab

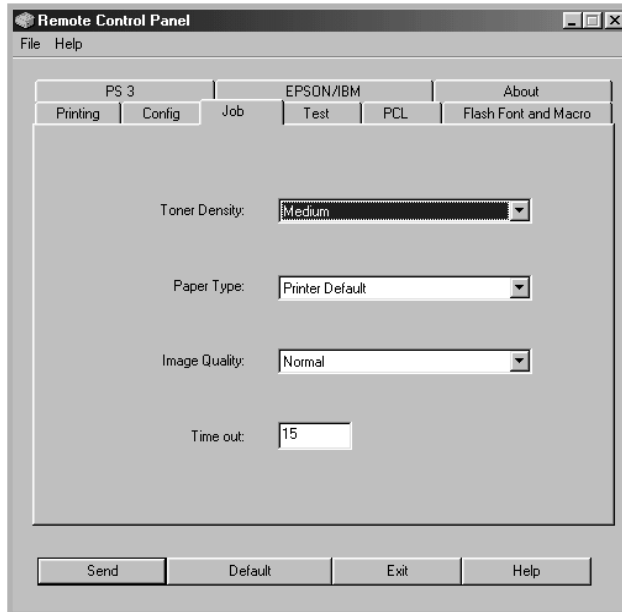
You can configure various printer features.



- **Emulation** selects the emulation for printing a document. The factory default is **Auto**.
- **Power Save** determines the length of time the printer waits after a job is printed before it goes to a reduced power state. If the printer is used frequently, select **OFF** which keeps the printer ready to print with the minimum warm-up time. This uses more power to keep the printer warm and ready to print.
- **Auto Continue** determines what action the printer should take if the Multi-Purpose Tray is empty when a manual feed print job is sent to the printer. If it is checked, the printer will pick up the paper from the tray after fifteen seconds. Otherwise, the printer will wait for you to load paper in the Multi-Purpose Tray.
- **Jam Recovery** determines what action the printer should take when a paper jam occurs. If it is unchecked, the printer does not reprint a page that has jammed. If it is checked, the printer keeps the image in memory for a printed page until the printer signals that the page has successfully printed. The printer reprints all jammed pages.
- **Toner save** determines the toner quantity the printer should use when printing. If it is checked, the printer conserves toner when printing. The default value is unchecked, which provides 100% usage.
- **Duplex** allows you to print on both sides of paper. For details, see page 5.11.

Job Tab

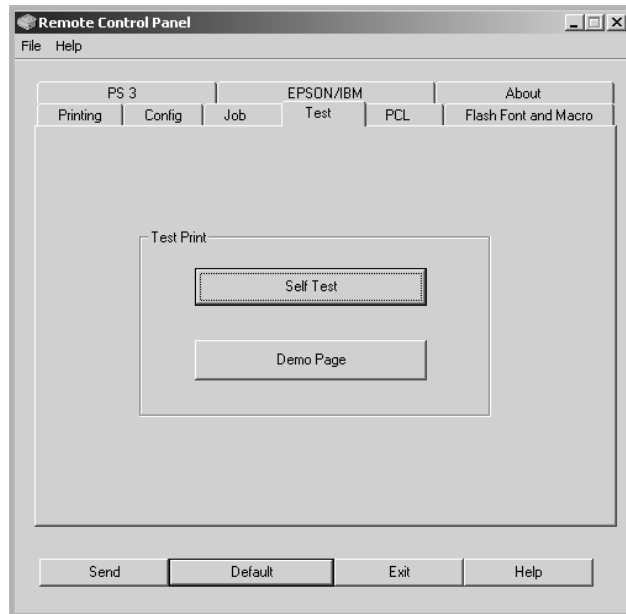
You can set options for improving the quality of your print job.



- **Toner Density** determines the toner density of page. The default value is **Medium**.
- **Paper Type** provides the printer with information about the type of paper to be used for a print job. For the best result, set this to the paper type you loaded in the tray of the printer. When using the plain paper, set this to **Printer Default**.
- **Image Quality** improves the print quality of your text and image and make the characters and images appear smoother. It is preset to **Normal** at the factory.
- **Time out** determines the amount of time (in seconds) the printer will wait before printing the last page of a print job that does not end with a command to print the page or a formfeed character. You can set from 0 to 300 seconds.

Test Tab

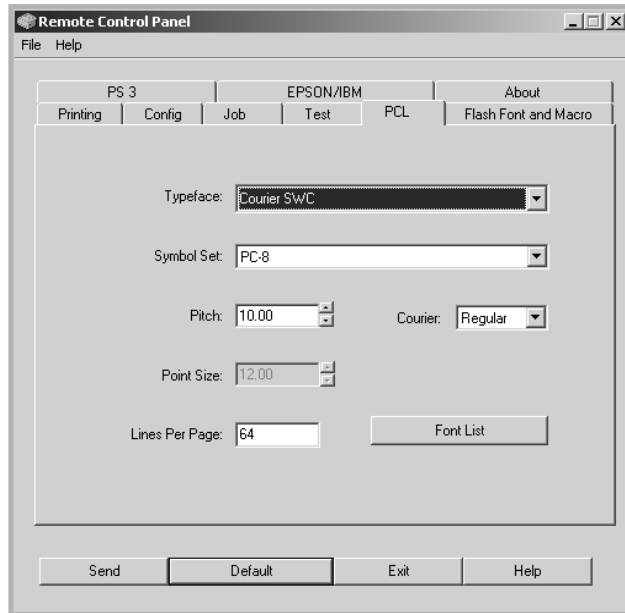
This tab allows you to print a resident page to test your printer's performance.



- **Self Test** prints a configuration sheet. A list of the user default settings and the amount of printer memory available prints.
- **Demo Page** prints a demonstration page. It shows the printer features and specifications.

PCL Tab

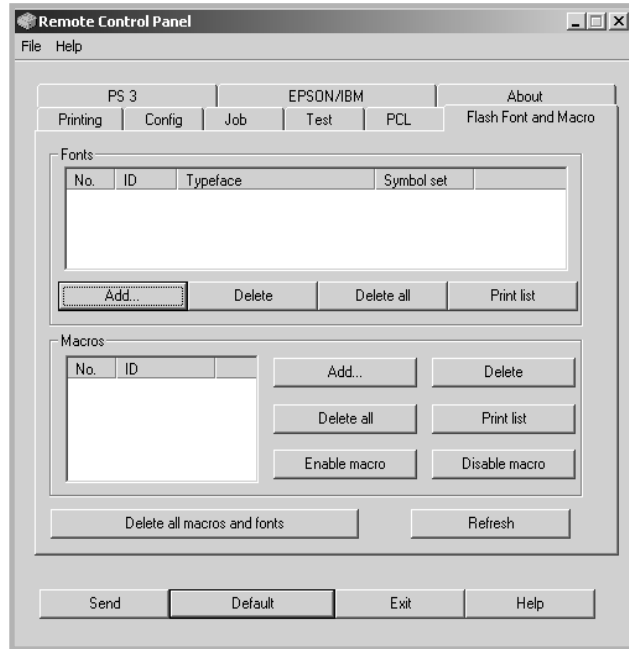
In this tab, you can configure various settings for PCL emulation.



- **Typeface** allows you to select the desired typeface. This setting is ignored when the software application specifies a font.
- **Symbol Set** determines the symbol set. A symbol set is a set of alphabetic and numeric characters, punctuation, and special symbols used when printing with a selected font.
- **Pitch** sets the font pitch (only if you have selected a scalable monospaced font). Pitch refers to the number of fixed-space characters in one horizontal inch of type.
- **Point Size** sets the font point size (only if you have selected a scalable typographic font). Point size refers to the height of the characters in the font. One point equals approximately 1/72 of an inch. You can select point sizes from 4.0 to 999.75 in increments of 0.25 points.
- **Lines Per Page** sets the number of lines that print on each page. The setting can range from 5 to 128 lines per page.
- **Courier** determines the courier font type; **Regular** or **Dark**.
- **Font List** prints a font list showing all the fonts available for PCL emulation.

Flash Font and Macro Tab

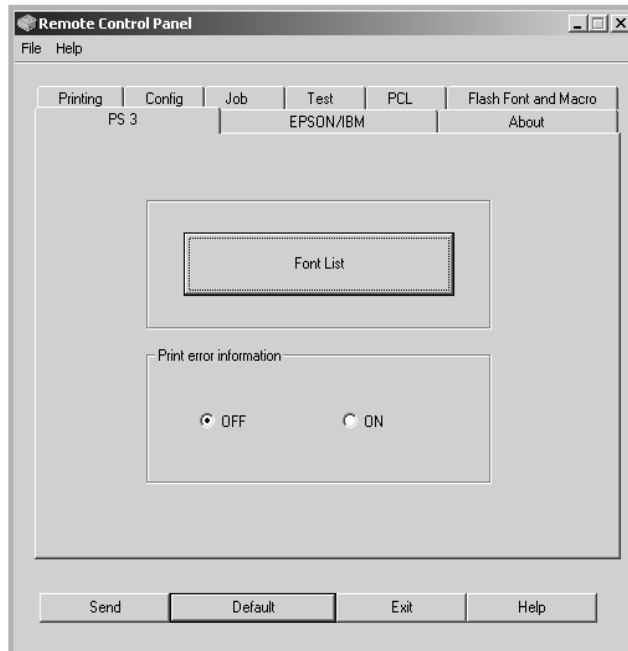
This tab allows you to add fonts and macros to the Flash memory of the printer.



- **Fonts** adds or deletes fonts. You can also print the font sample list.
- **Macros** adds or deletes macros. You can also activate (**Enable macro**) or deactivate (**Disable macro**) them.
- **Delete all macros and fonts** deletes all macros and fonts in the flash memory.
- **Refresh** updates information about fonts and macros in the flash memory.

PS 3 Tab

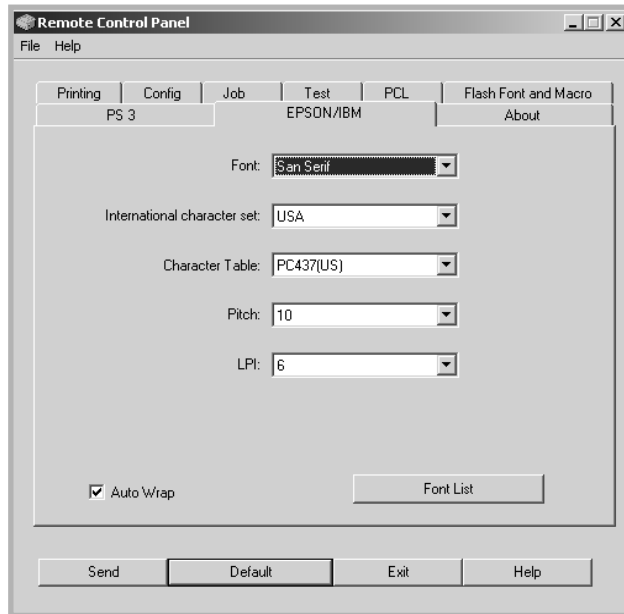
You can configure various settings for PostScript 3 emulation.



- **Font List** allows you to print the PS font sample list.
- **Print error information** determines whether or not the printer prints the error information page when an error occurs during processing the job. Select **ON** to print the page, otherwise select **OFF**.

EPSON/IBM Tab

You can configure various settings for EPSON/IBM emulation.



- **Font** allows you to select the desired font.
- **International character set** allows you to select a character set of the desired language.
- **Character Table** selects the character sets.
- **Pitch** sets the font pitch. Pitch refers to the number of fixed-space characters in a horizontal inch of type.
- **LPI** sets the number of lines printed a vertical inch. You can select 6 or 8 lines.
- **Auto Wrap** determines whether or not the printer automatically performs line feed when the data overflows the printable area of the print material.
- **Font List** prints a font list showing all the fonts available for EPSON emulation.





USING YOUR PRINTER ON A NETWORK

If you work in a networked environment, the printer can be shared by other users on the network. ML-2151N and ML-2152W printers are network printers and can be connected to the network via direct attachment to an external print server.

This chapter includes:

- **About Sharing the Printer on a Network**
- **Setting Up a Locally Shared Printer**
- **Setting Up a Network-Connected Printer**

NOTE: If you are a ML-2150 user, you need to install an optional network interface card. For more information, see Appendix F, "Programme Installing Printer Options."

About Sharing the Printer on a Network

If you work in a networked environment, you can connect your printer to the network.

Locally-Shared Printer

You can connect the printer directly to a selected computer, which is called the "host computer" on the network. The printer can then be shared by other users on the network through a Windows 9x/Me/XP/NT 4.0/2000 network printer connection.

Network-connected Printer

ML-2151N and ML-2152W printers have the built-in network interface. For more information about connecting your printer to the network, see page 2.12.

To use a ML-2150 printer as a network printer, you need to install an optional network interface card in your printer. For a ML-2151N printer, you can replace the network interface card to one supporting the wireless LAN interface. See page F.6 for information about installing the card.

Printing Across a Network

Whether the printer is locally connected or network-connected, you need to install the ML-2150 series printer software on each computer that will print documents to the printer.

Setting Up a Locally Shared Printer

In Windows 9x/Me

Setting Up the Host Computer

- 1 Start Windows.
- 2 From the Start menu, select **Control Panel**, and double-click on the **Network** icon.
- 3 Check the **File and Print Sharing** box, and click **OK**. Close the window.
- 4 From the **Start** menu, select **Printers** from **Settings** and double-click your printer name.
- 5 Select **Properties** in the **Printer** menu.
- 6 Click the **Sharing** tab and check the **Shared As** box. Fill in the **Shared Name** field and click **OK**.

Setting Up the Client Computer

- 1 Right-click the Windows **Start** button and select **Explorer**.
- 2 Open your network folder in the left column.
- 3 Right-click the shared name and select **Capture Printer Port**.
- 4 Select the port you want, check the **Reconnect at log on box**, and click **OK**.
- 5 From the Start menu, select **Settings** and then **Printers**.
- 6 Double-click your printer icon.
- 7 From the **Printer** menu, select **Properties**.
- 8 From the **Details** tab, select the printer port and click **OK**.

In Windows NT 4.0/2000/XP

Setting Up the Host Computer

- 1 Start Windows.
- 2 For Windows NT 4.0/2000, select **Settings**, and **Printers** from the Start menu.

For Windows XP, select **Printers and Faxes** from the Start menu.
- 3 Double-click your printer icon.
- 4 From the **Printer** menu, select **Sharing**.
- 5 For Windows NT 4.0, check the **Shared** box.

For Windows 2000, check the **Shared As** box.

For Windows XP, check the **Share this printer** box.
- 6 For Windows NT 4.0, fill in the **Share Name** field and click **OK**.

For Windows 2000/XP, fill in the **Shared Name** field and click **OK**.

Setting Up the Client Computer

- 1 Right-click the Windows **Start** button and select **Explorer**.
- 2 Open your network folder in the left column.
- 3 Click the shared name.
- 4 For Windows NT 4.0/2000, select **Settings** and **Printers** from the **Start** menu.

For Windows XP, select **Printers and Faxes** from the **Start** menu.
- 5 Double-click your printer icon.
- 6 From the **Printer** menu, select **Properties**.
- 7 From the **Ports** tab, click **Add Port**.

- 8 Select **Local port** and click **New Port**.
- 9 Fill in the **Enter a port name** field, enter the shared name.
- 10 Click **OK** and click **Close**.
- 11 For Windows NT 4.0, click **OK**.
For Windows 2000/XP, click **Apply** and click **OK**.

Setting Up a Network-Connected Printer

To use as your network printer, you have to set up the desired network protocols on the printer. Setting protocols can be accomplished by using the supplied network program. Please refer to SyncThru User's Guide.

You can configure the basic network parameters through the printer's control panel. Use the printer control panel to do the following:

- Print a Network Configuration Page
- Enable or disable network protocols (AppleTalk, IPX/SPX)
- Configure TCP/IP
- Configure IPX frame types

Configuring Network Parameters on the Control Panel

Supported Operating Systems

Item	Requirements
Network Interface	10/100 Base-TX (standard for ML-2151N and ML-2152W) or 802.11b Wireless LAN (standard for ML-2152W)
Network Operating System	<ul style="list-style-type: none">• Novell NetWare 3.x, 4.x, 5.x• Windows 95/98/Me, NT 4.0/2000• Unix AT&T, BSD4.3, HP-UX, SUN OS, SOLARIS, SCO• Linux RedHat 6.0• Macintosh OS 7.0 or higher
Network Protocols	<ul style="list-style-type: none">• Netware IPX/SPX• TCP/IP, DLC/LLC on Windows• Port9100 on Windows NT, Unix, Linux• Apple EtherTalk (802.3)
Dynamic Addressing Server	<ul style="list-style-type: none">• DHCP, BOOTP

- IPX/SPX: Internet Packet exchange/Sequenced Packet eXchange
- TCP/IP: Transmission Control Protocol/Internet Protocol
- DLC/LLC: Data Link Control/Logical Link Control
- DHCP: Dynamic Host Configuration Protocol
- BOOTP: Bootstrap Protocol

Printing a Network Configuration Page

The Network Configuration page shows how the network interface card on your printer is configured. The default settings enabled all parts which are suitable for most applications.

- 1** Press the **Menu** button (⌘) until you see "Network" on the bottom line of the display.
- 2** Press the **Enter** button (⌘) to access the menu.
- 3** Press the scroll button (⏪ or ⏩) until "Print Net CFG" displays on the bottom line.
- 4** Press the **Enter** button (⌘).

The Network Configuration page prints out.

Setting Network Protocols

When you first install the printer, all supported network protocols are enabled when you turn the printer on. If a network protocol is enabled, the printer may actively transmit on the network even when the protocol is not in use. This may increase network traffic slightly. To eliminate unnecessary traffic, you can disable unused protocols.

- 1 Press the **Menu** button (⏏) until you see "Network" on the bottom line of the display.
- 2 Press the **Enter** button (⌘) to access the menu.
- 3 Press the scroll button (⏪ or ⏩) until "Config Network" displays on the bottom line. Press the **Enter** button (⌘).
- 4 Press the scroll button (⏪ or ⏩) to display "Yes" and press the **Enter** button (⌘). Then press the **Upper Level** button (⏴).
- 5 Press the scroll button (⏪ or ⏩) until you see the desired protocol on the bottom line.

You can choose AppleTalk or Netware.

- 6 Press the **Enter** button (⌘).
- 7 Press the scroll button (⏪ or ⏩) to change the setting to "On" (enable) or "Off" (disable).
- 8 Press the **Enter** button (⌘) to save the selection.

Configuring TCP/IP

Your printer can be set up on a variety of TCP/IP networks. There are several ways in which your printer can be assigned a TCP/IP address, depending on your network.

- **Static Addressing:** TCP/IP address is assigned manually by the network administrator.
- **Dynamic Addressing BOOTP/DHCP(default):** TCP/IP address is assigned automatically by the server.

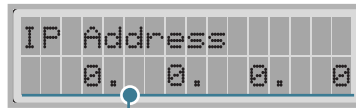
Static Addressing

To enter the TCP/IP address from your printer's control panel, take the following steps:

- 1** Press the **Menu** button (⌂) until you see "Network" on the bottom line of the display. Press the **Enter** button (⌘) to access the menu.
- 2** Press the **Enter** button (⌘) when "Config Network" displays on the bottom line.
- 3** Press the scroll button (◀ or ▶) to display "Yes" and press the **Enter** button (⌘).
- 4** Press the **Upper Level** button (↶), then use the scroll button (▶).
- 5** Press the **Enter** button (⌘) when "Config TCP" displays.
- 6** Press the scroll button (◀ or ▶) to display "Yes" and press the **Enter** button (⌘).
- 7** Press the **Upper Level** button (↶), then use the scroll button (▶).
- 8** Press the **Enter** button (⌘) when "IP Get Method" displays.
- 9** Press the scroll button (◀ or ▶) to display "Static" and press the **Enter** button (⌘).
- 10** Press the **Upper Level** button (↶), then use the scroll button (▶).

- 11 Press the **Enter** button (⌘) to access the IP Address menu.

IP address consists of 4 bytes.



Enter a number between 0 and 255 for each byte.

- 12 Press the scroll button (◀ or ▶) to enter a number between 0 and 255 and press the **Enter** button (⌘).
- 13 Repeat Step 12 to complete the address from the 1st byte to the 4th byte.
- 14 To select other parameters, such as Subnet Mask or Gateway, press the **Upper Level** button (⌂), then use the scroll button (◀ or ▶). Press the **Enter** button (⌘).
- 15 Repeat steps 12 and 13 to configure the other TCP/IP parameters.

Dynamic Addressing (BOOTP/DHCP)

To assign the TCP/IP address automatically by the server, take the following steps:

- 1 Press the **Menu** button (☰) until you see "Network" on the bottom line of the display. Press the **Enter** button (⌘) to access the menu.
- 2 Press the **Enter** button (⌘) when "Config Network" displays on the bottom line.
- 3 Press the scroll button (◀ or ▶) to display "Yes" and press the **Enter** button (⌘).
- 4 press the **Upper Level** button (⌂), then use the scroll button (▶).
- 5 Press the **Enter** button (⌘) when "Config TCP" displays.
- 6 Press the scroll button (◀ or ▶) to display "Yes" and press the **Enter** button (⌘).

E

- 7 Press the **Upper Level** button (⊕), then use the scroll button (▶).
- 8 Press the scroll button (◀ or ▶) to display "DHCP" and press the **Enter** button (*).
- 9 To assign the address from the BOOTP server, press the **Enter** button (*) when "BOOTP" displays.

Configuring IPX Frame Types

On IPX/SPX protocol networks (for example, Novell NetWare), the format of network communication frames must be specified on the printer. In most cases, you can keep the default setting "AUTO". However, you can manually set the frame type format, if required.

- **AUTO** (default): Automatically senses and limits the frame type to the first one detected.
- **EN_8023**: Limits the frame type to IPX over IEEE 802.3 frames. All others will be counted and discarded.
- **EN_II**: Limits the frame type to IPX over Ethernet Frames. All others will be counted and discarded.
- **EN_8022**: Limits the frame type to IPX over IEEE 802.2 with IEEE 802.3 frames. All others will be counted and discarded.
- **EN_SNAP**: Limits the frame type to IPX over SNAP with IEEE 802.3 frames. All others will be counted and discarded.

Note that the IPX/SPX protocol must be enabled in the **Netware** menu before you can configure frame types. See "Setting Network Protocols" on page E.7.

Take the following steps to change the frame type format:

- 1 Press the **Menu** button (⊞) until you see "Network" on the bottom line of the display. Press the **Enter** button (*) to access the menu.
- 2 Press the **Enter** button (*) when "Config Network" displays on the bottom line.

- 3 Press the scroll button (◀ or ▶) to display "Yes" on the bottom line. Press the **Enter** button (*).
- 4 Press the **Upper Level** button (↶).
- 5 Press the scroll button (◀ or ▶) until "Netware" displays on bottom line. Press the **Enter** button (*).
- 6 Press the **Enter** button (*) when "On" displays.
- 7 press the **Upper Level** button (↶), then use the scroll button (▶).
- 8 Press the **Enter** button (*) when "Config Netware" displays.
- 9 Press the scroll button (◀ or ▶) to display "Yes" on the bottom line. Press the **Enter** button (*), and then press the **Upper Level** button (↶).
- 10 Press the **Upper Level** button (↶), then use the scroll button (▶).
- 11 Press the **Enter** button (*) when "IPX Frame Type" displays.
- 12 Press the scroll button (▶) until you see the desired frame type and press the **Enter** button (*).
- 13 Press the scroll button (◀ or ▶) to change the setting and then press the **Enter** button (*).
- 14 Repeat steps 12 and 13 to configure another frame type, if necessary.

Restoring the Network Configuration

You can return the network configuration to its default settings.

- 1 Press the **Menu** button (Ⓜ) until you see "Network" on the bottom line of the display.
- 2 Press the **Enter** button (Ⓜ) to access the menu.
- 3 Press scroll button (◀ or ▶) until "Default Set" displays on the bottom line.
- 4 Press the **Enter** button (Ⓜ) to confirm the selection.





F

PROGRAMME INSTALLING PRINTER OPTIONS

Your printer is a full-featured laser printer that has been optimised to meet most of your printing needs. Recognizing that each user may have different requirements, however, Samsung makes several options available to enhance the printer's capabilities.

This chapter includes:

- **Precautions When Installing Printer Options**
- **Installing Memory and PostScript DIMMs**
- **Installing a Network or Serial Interface Card**
- **Installing an Optional Paper Tray**

Precautions When Installing Printer Options

DISCONNECT THE POWER CORD:

Never remove the printer control board while the printer is plugged in.

To avoid the possibility of an electrical shock, always disconnect the power cord when installing or removing ANY internal or external printer option.

DISCHARGE STATIC ELECTRICITY:

The control board and internal printer options (Memory and PS DIMMs, Network and Serial interface cards) are sensitive to static electricity. Before installing or removing an internal option, discharge static electricity from your body by touching something metal, such as the metal back plate on any device plugged into a grounded power source. If you walk round before finishing installation, discharge any static electricity once again.

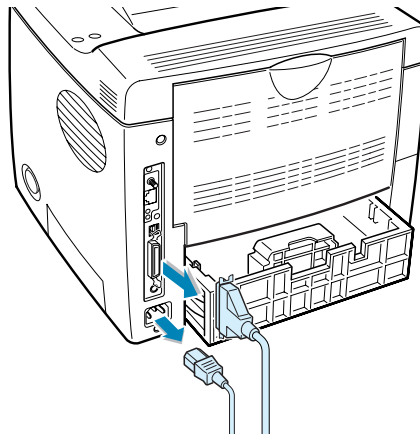
Installing Memory and PostScript DIMMs

Additional printer memory and the PostScript option are provided on DIMMs (Dual In-line Memory Modules). This procedure is applicable to either option.

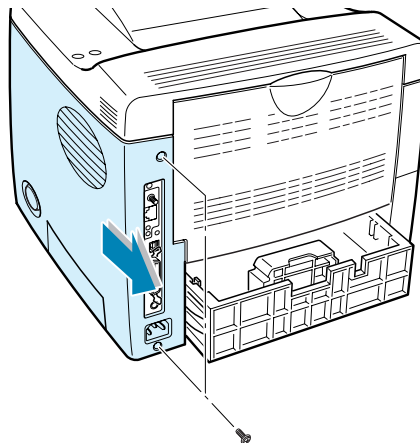


NOTE: For using the ML-2150 printer with the PostScript driver, you need to install an optional PS DIMM.

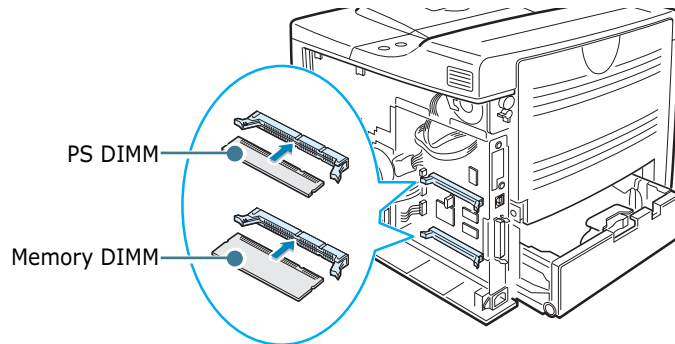
- 1 Turn the printer power off and unplug all cables from the printer.



- 2 Remove the two screws on the rear of the printer, then remove the control board cover.



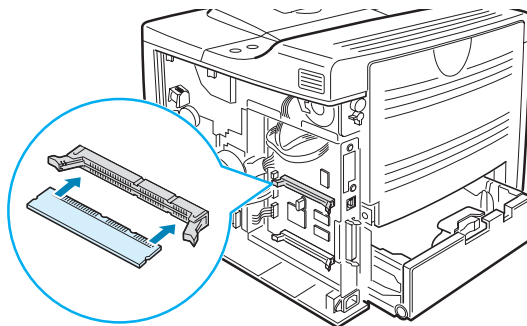
- 3** Locate the PS DIMM slot (the upper slot) and the memory DIMM slot (the lower slot) on the control board. They are not interchangeable.



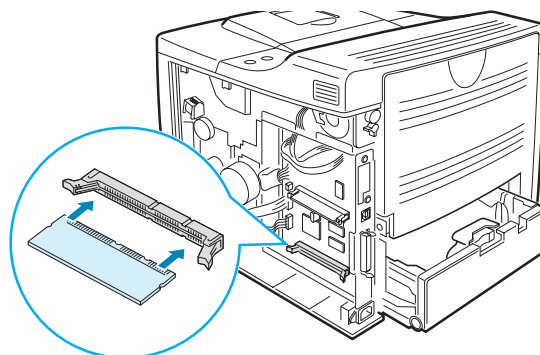
To install the PS DIMM, continue with Step 4.

To install the memory DIMM, go to Step 5.

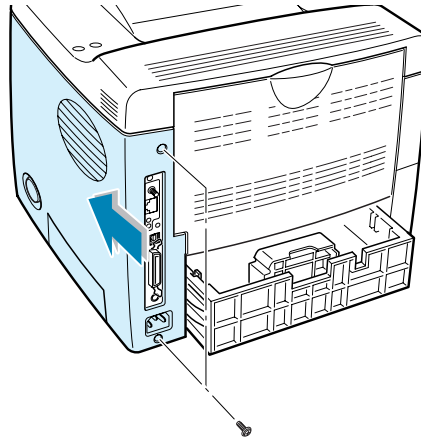
- 4** Hold the PS DIMM so that the notch and the connection point are aligned with the slot as shown, and insert it all the way into the upper slot labelled "ROM DIMM" at a 90 degrees angle.



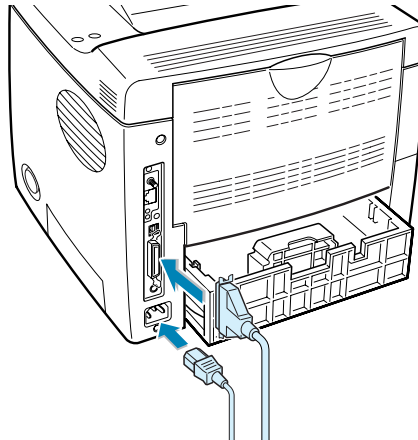
- 5** Hold the memory DIMM so that the notch and the connection point are aligned with the slot as shown, and insert it all the way into the lower slot labelled "RAM DIMM" at a 90 degrees angle.



- 6 Replace the control board cover and tighten the two screws.



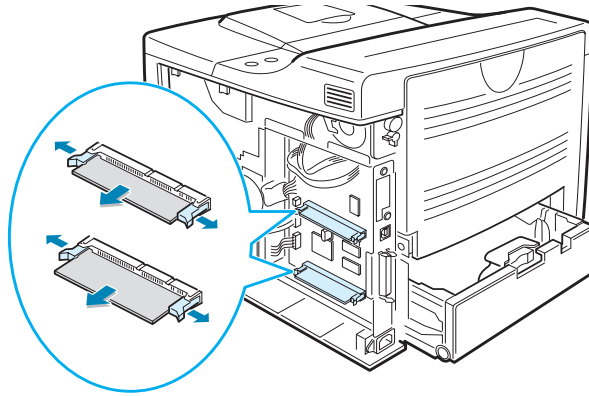
- 7 Reconnect the power cord and printer cable, and turn the printer on.



NOTES: For PostScript driver installation and usage information on a Macintosh system, refer to Appendix A, "Using Your Printer with a Macintosh." For PS printing on a Windows system, refer to Appendix B, "Using Windows PostScript Driver."

Removing the Memory or PS DIMM

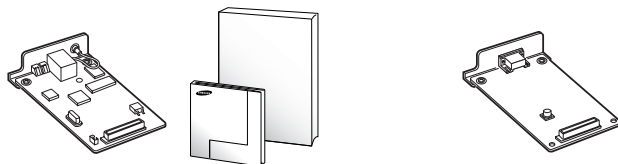
- 1 Follow steps 1 and 2 on page F.3 to access the control board.
- 2 Push the clips at each end of the connector slot away from the DIMM.



- 3 Place the DIMM in its original packaging or wrap it with paper and store it in a box.
- 4 Follow from Step 6 on page F.5.

Installing a Network or Serial Interface Card

Check if there is missing parts in your package of the optional interface card.

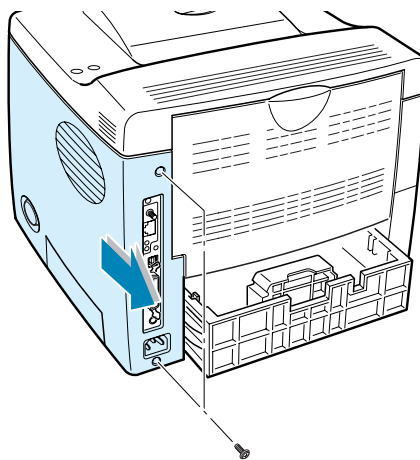


▲ Network Interface Card,
SyncThru CD-ROM and
Setup Guide

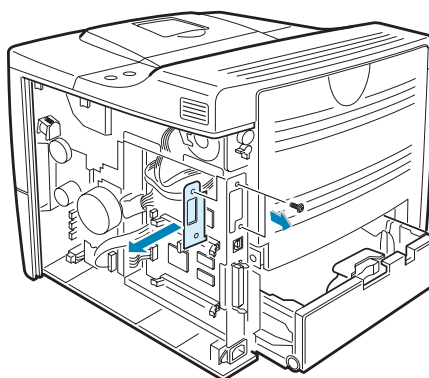
▲ Serial Interface Card

Review the precautions on page F.2 and then follow this procedure to install the network or serial interface card option in your printer.

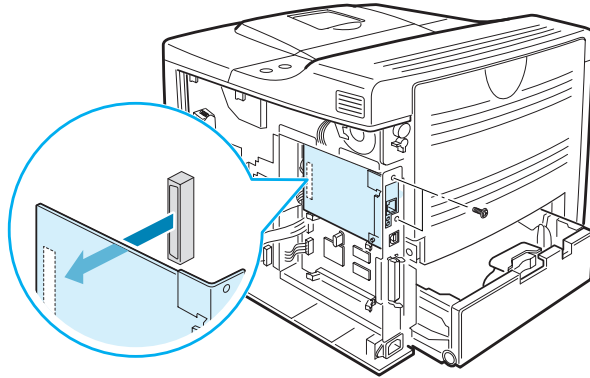
- 1** Unpack the network or serial printer card. Make sure that there is no missing or damaged part.
- 2** Turn the printer power off and unplug all cables from the printer.
- 3** Remove the two screws on the back of the printer, then remove the control board cover.



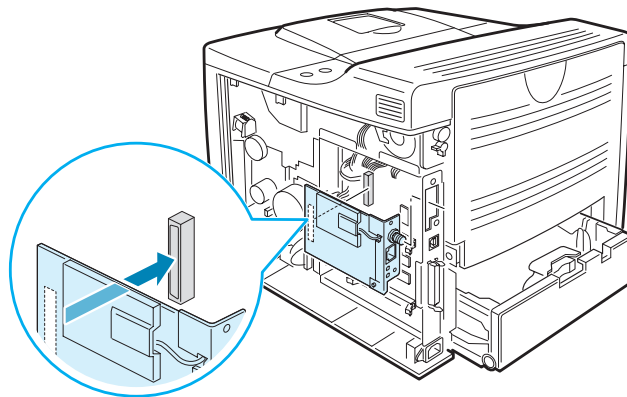
- 4** Remove the two screws and the bracket from the control board. You can discard the old bracket.



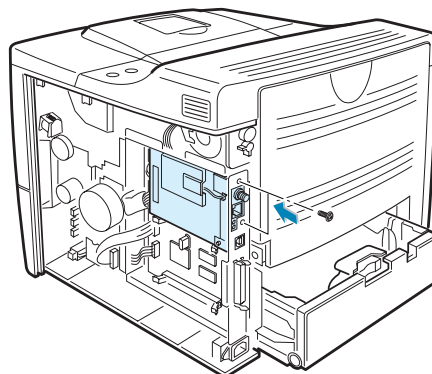
If you are replacing the network interface card with new one or the serial interface card, remove the two screws and the old card.



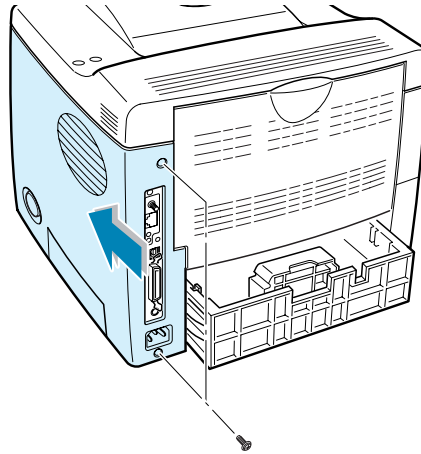
- 5 Align the connector on the network or serial interface card with the connector on the control board. Push the card firmly into the connector until it is completely inserted into place.



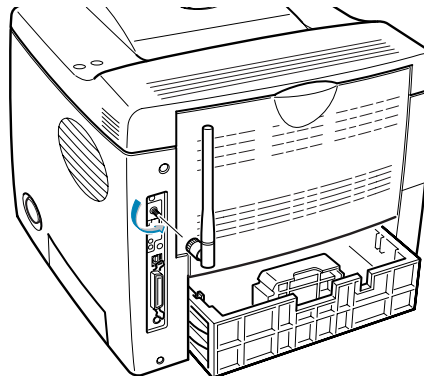
- 6 Tighten the two screws which you removed in Step 4.



- 7 Replace the control board cover and tighten the two screws.



- 8 If you purchase the network interface card supporting the wireless LAN interface, insert the antenna counterclockwise, as shown.



- 9 Connect the network or serial cable, reconnect the power cord and then turn the printer on.

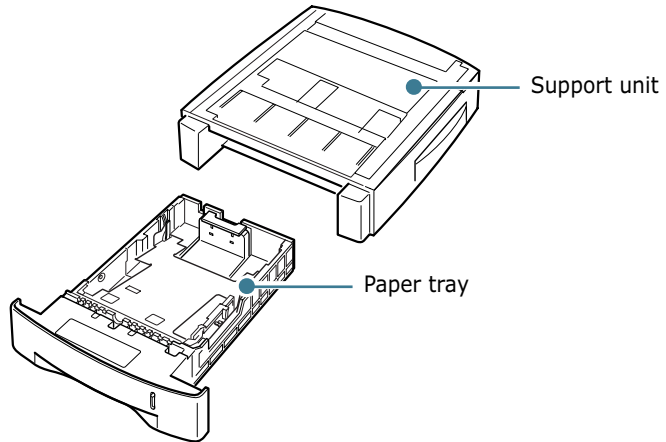


NOTES:

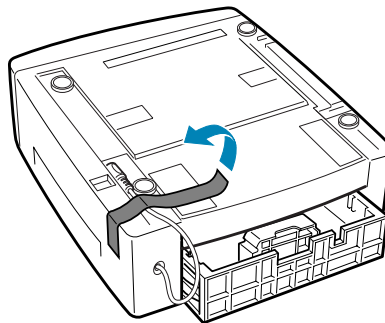
- For information about configuring and using the printer on a network environment, refer to the User's Guide provided with the network interface card. You can also configure the network parameters on the control panel; see page E.6.
- Because the network and the serial interface cards are inserted into the same connector on the control board, you cannot install both of them.

Installing an Optional Paper Tray

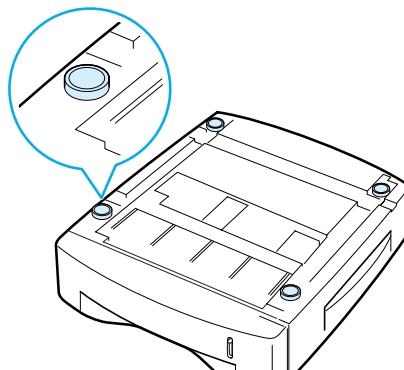
You can increase the paper handling capacity of your printer by installing an optional Tray2. The optional paper tray consists of two components; the support unit and paper tray.



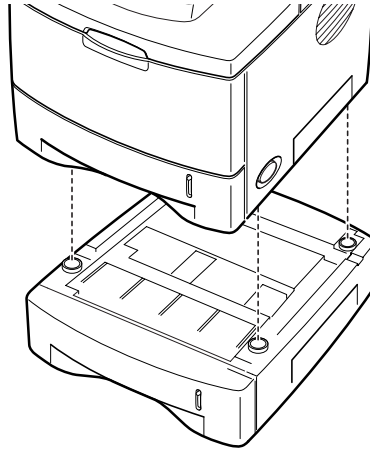
- 1** Turn off the printer and unplug all cables from the printer.
- 2** Remove the tape fastening the interface cable from the bottom of the support unit.



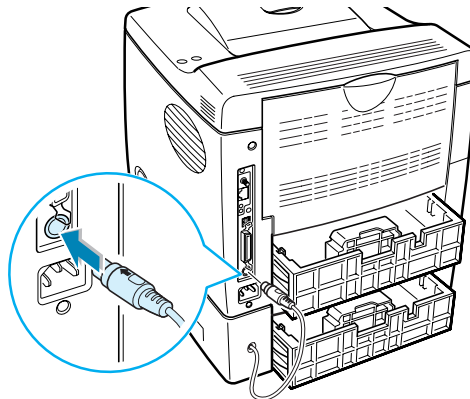
- 3** Observe the location of the support unit's tabs.



- 4 Align the printer with the support unit and lower it into place on the tabs.



- 5 Plug the cable into the connector on the back of the printer.



- 6 Load paper in the Tray2. For information about loading paper in the tray, see page 2.6.

- 7 Reconnect the power cord and cables and then turn the printer on.



NOTE: When you print a document, configure the printer driver from your application. To access the printer driver, see page 5.2.



CAUTIONS: Do not remove Tray 1 from the printer while you are printing using the optional Tray 2. If you do this, a paper jam may occur. Use the optional Tray 2 with Tray 1.

MEMO



F.12 PROGRAMME INSTALLING PRINTER OPTIONS



SPECIFICATIONS

This chapter includes:

- **Printer Specifications**
- **Paper Specifications**

Printer Specifications

Item	Specifications and Description
Print Speed	20 PPM (A4); 21 PPM (Letter)
Resolution	1200 dpi
First Printing Time	Less than 12 seconds
Warm-up Time	50 seconds
Power Rating	AC 100 ~ 127 V (USA, Canada) / 220 ~ 240 V (Others), 50 / 60 Hz
Power Consumption	400 W average during operation Less than 15 W in power-save mode
Acoustic Noise	Stand by: Less than 35 dB Operating: Less than 53 dB
Toner Supply	Single cartridge
Toner Cartridge Life	8,000 Pages (for starter, 4,000 Pages), IDC 5% coverage
Duty Cycle	Monthly: 100,000 pages maximum
Weight	Gross: 17.3 Kg (38.1 lb) / Net: 13.5 Kg (29.8 lb)
Package Weight	Paper: 1.83 Kg, Plastic: 0.33 Kg
External Dimensions (W x D x H)	386 (W) x 436 (D) x 326 (H) mm / 15.2 x 17.2 x 12.8 in. (without options)
Operating Environment	Temperature: 10 ~ 32 °C / 50 ~ 90 °F Humidity: 20 ~ 80 % RH
Emulation	PCL 6, PostScript 3 (option for ML-2150), IBM ProPrinter, EPSON
Random Access Memory (RAM)	Standard 16 MB Expandable to 144 MB: 100 pin, SDRAM, 3.3 V; 16 MB, 32 MB, 64 MB or 128 MB available
Fonts	1 bitmap, 45 scalable, 136 PS fonts (option for ML-2150)
Interface Switching	Automatic (Parallel, USB, Network)
Interface	<ul style="list-style-type: none"> • IEEE 1284 Bidirectional Parallel Standard <ul style="list-style-type: none"> - Modes supported: Compatible, Nibble, Byte, ECP • USB Interface Standard <ul style="list-style-type: none"> - USB 2.0 compliant - 480 Mbps 1 port • Network Interface <ul style="list-style-type: none"> - 10/100 Base TX (option for ML-2150) - 802.11b Wireless LAN (option for ML-2150, ML-2151N) • Serial Interface(option)

G.2 SPECIFICATIONS

Paper Specifications

Overview

Your printer accepts a variety of print materials, such as cut-sheet paper (including up to 100% recycled fiber content paper), envelopes, labels, transparencies and custom-size paper. Properties, such as weight, composition, grain and moisture content, are important factors affecting the printer's performance and the output quality. Paper that does not meet the guidelines outlined in this User's Guide can cause the following problems:

- Poor print quality
- Increased paper jams
- Premature wear on the printer.



NOTES:

- Some paper may meet all of the guidelines in this guide and still not produce satisfactory results. This may be the result of improper handling, unacceptable temperature and humidity levels, or other variables over which Samsung has no control.
- Before purchasing large quantities of paper, ensure that the paper meets the requirements specified in this User's Guide.



CAUTION: Using paper that does not meet these specifications may cause problems, requiring repairs. These repairs are not covered by the Samsung warranty or service agreements.

Supported Sizes of Paper

Tray1/ Tray2	Dimensions ^a	Weight	Capacity ^b
Letter	216 X 279 mm (8.5 X 11 in.)	60 to 105 g/m ² bond (16 to 28 lb)	500 sheets of 80 g/m ² bond paper
A4	8.3 X 11.7 in. (210 X 297 mm)		
Executive	191 X 267 mm (7.25 X 10.5 in.)		
Legal	216 X 356 mm (8.5 X 14 in.)		
B5 (JIS)	182 X 257 mm (7.2 X 10 in.)		
Folio	216 X 330 mm (8.5 X 13 in.)		

Multi- Purpose Tray	Dimensions ^a	Weight	Capacity ^b
Minimum Size (custom)	76 X 127 mm (3 X 5 in.)	60 to 163 g/m ² bond (16 to 43 lb)	100 sheets of 80 g/m ² bond paper
Maximum Size (custom)	216 X 356mm (8.5 X 14 in.)		
Transparency	Same minimum and maximum paper sizes as listed above.	Thickness: 0.10 X 0.14 mm (0.0039 X 0.0055 in.)	50 typical
Labels ^c		Thickness: 0.10 X 0.14 mm (0.0039 X 0.0055 in.)	25 typical
Envelopes		up to 90 g/m ² (16 to 24 lb)	up to 10

a. The printer supports a wide range of media sizes. See "Printing on Card Stock or Custom-sized Materials" on page 4.22.

b. Capacity may vary depending on media weight and thickness, and environmental conditions.

c. Smoothness: 100 to 250 (Sheffield)



NOTE: You may experience jams when using print materials with a length of less than 127 mm (5.0 in.). For optimum performance, ensure that you are storing and handling the paper correctly. Please refer to "Printer and Paper Storage Environment" on page G.7.

Guidelines for Using Paper

For the best result, use conventional 75 g/m² (20 lb) paper. Ensure that the paper is of good quality, and free of cuts, nicks, tears, spots, loose particles, dust, wrinkles, voids, and curled or bent edges.

If you are unsure of what type of paper you are loading, such as bond or recycled paper, check the label on the package.

The following problems may cause print quality deviations, jamming or even damage to the printer.

Symptom	Problem with Paper	Solution
Poor print quality or toner adhesion, problems with feeding	Too moist, too rough, too smooth or embossed; faulty paper lot	Try another kind of paper, between 100 ~ 250 Sheffield, 4 ~ 5 % moisture content.
Dropout, jamming, curl	Stored improperly	Store paper flat in its moisture-proof wrapping.
Increased gray background shading/printer wear	Too heavy	Use lighter paper, open the rear output tray.
Excessive curl problems with feeding	Too moist, wrong grain direction or short-grain construction	<ul style="list-style-type: none">• Open the rear output tray.• Use long-grain paper.
Jamming, damage to printer	Cutouts or perforations	Do not use paper with cutouts or perforations.
Problems with feeding	Ragged edges	Use good quality paper.



NOTES:

- Do not use letterhead paper printed with low-temperature inks, such as those used in some types of thermography.
- Do not use raised or embossed letterhead.
- The printer uses heat and pressure to fuse toner to the paper. Insure that any coloured paper or preprinted forms use inks that are compatible with this fusing temperature (200 °C or 392 °F for 0.1 second).

Paper Specifications

Category	Specifications
Acid Content	5.5 ~ 8.0 pH
Caliper	0.094 ~ 0.18 mm (3.0 ~ 7.0 mils)
Curl in Ream	Flat within 5 mm (0.02 in.)
Cut Edge Conditions	Cut with sharp blades with no visible fray.
Fusing Compatibility	Must not scorch, melt, offset, or release hazardous emissions when heated to 200 °C (392 °F) for 0.1 second.
Grain	Long Grain
Moisture Content	4 % ~ 6 % by weight
Smoothness	100 ~ 250 Sheffield

Paper Output Capacity

Output Tray	Capacity
Face-down top output tray	250 sheets of 80 g/m ² bond paper
Face-up rear output tray	100 sheet of 80 g/m ² bond paper

Printer and Paper Storage Environment

Paper storage environmental conditions directly affect the feed operation.

Ideally, the printer and paper storage environment should be at or near room temperature, and not too dry or humid. Remember that paper is hygroscopic; it absorbs and loses moisture rapidly.

Heat works with humidity to damage paper. Heat causes the moisture in paper to evaporate, while cold causes it to condense on the sheets. Heating systems and air conditioners remove most of the humidity from a room. As paper is opened and used, it loses moisture, causing streaks and smudging. Humid weather or water coolers can cause the humidity to increase in a room. As paper is opened and used it absorbs any excess moisture, causing light print and dropouts. Also, as paper loses and gains moisture it can become distorted. This can cause paper jams.

Care should be taken not to purchase more paper than can be used in a short time (about 3 months). Paper stored for long periods may experience heat and moisture extremes, which can cause damage. Planning is important to prevent damage to large supplies of paper.

Unopened paper in sealed reams can remain stable for several months before use. Opened packages of paper have more potential for environment damage, especially if they are not wrapped with a moisture-proof barrier.

The paper storage environment should be properly maintained to ensure optimum printer performance. The required condition is 20° to 24°C (68° to 75°F), with a relative humidity of 45% to 55%. The following guidelines should be considered when evaluating the paper's storage environment:

- Paper should be stored at or near room temperature.
- The air should not be too dry or too humid.
- The best way to store an opened ream of paper is to rewrap it tightly in its moisture-proof wrapping. If the printer environment is subject to extremes, unwrap only the amount of paper to be used during the day's operation to prevent unwanted moisture changes.

Envelopes

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

- **Weight:** The weight of the envelope paper should not exceed 90 g/m² (24 lb) or jamming may occur.
- **Construction:** Prior to printing, envelopes should lie flat with less than 6 mm (0.25 in.) curl, and should not contain air.
- **Condition:** Envelopes should not be wrinkled, nicked, or otherwise damaged.
- **Temperature:** You should use envelopes that are compatible with the heat and pressure of the printer.
- **Size:** You should only use envelopes within the following size ranges.

	Minimum	Maximum
Multi-Purpose Tray	90 X 148 mm (3.5 X 5.83 in.)	216 X 356 mm (8.5 X 14 in.)

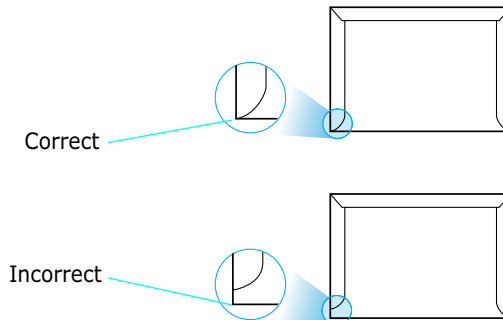


NOTES:

- Use only the Multi-Purpose Tray to print envelopes.
 - You may experience some paper jams when using any media with a length less than 127 mm (5.0 in.). This may be caused by paper that has been affected by environmental conditions. For optimum performance, make sure you are storing and handling the paper correctly. Please refer to "Printer and Paper Storage Environment" on page G.7.
-

Envelopes with Double Side Seams

Double side-seams construction has vertical seams at both ends of the envelope rather than diagonal seams. This style may be more likely to wrinkle. Be sure the seam extends all the way to the corner of the envelope as illustrated below.



Envelopes with Adhesive Strips or Flaps

Envelopes with a peel-off adhesive strip or with more than one flap that folds over to seal must use adhesives compatible with the heat and pressure in the printer. The extra flaps and strips might cause wrinkling, creasing, or even jams and may even damage the fuser.

Envelope Margins

The following gives typical address margins for a commercial #10 or DL envelope.

Type of Address	Minimum	Maximum
Return address	15 mm (0.6 in.)	51 mm (2 in.)
Delivery address	51 mm (2 in.)	89 mm (3.5 in.)



NOTES:

- For best print quality, position margins no closer than 15 mm (0.6 in.) from the edges of the envelope.
- Avoid printing over the area where the envelope's seams meet.

Envelope Storage

Proper storage of envelopes helps contribute to print quality. Envelopes should be stored flat. If air is trapped in an envelope, creating an air bubble, then the envelope may wrinkle during printing. See "Printing on Envelopes" on page 4.14.

Labels



CAUTIONS:

- To avoid damaging the printer, use only labels recommended for laser printers.
 - To prevent serious jams, always use the Multi-Purpose Tray to print labels and always use the rear output tray.
 - Never print on the same sheet of labels more than once and never print on a partial sheet of labels.
-

When selecting labels, consider the quality of each component:

- Adhesives: The adhesive material should be stable at 200 °C (392 °F), the printer's fusing temperature.
- Arrangement: Only use labels with no exposed backing between them. Labels can peel off sheets with spaces between the labels, causing serious jams.
- Curl: Prior to printing, labels must lie flat with no more than 13 mm (.5 in.) of curl in any direction.
- Condition: Do not use labels with wrinkles, bubbles, or other indications of separation.

See "Printing on Labels" on page 4.17.

Transparencies

Transparencies used in the printer must be able to withstand 200 °C (392 °F), the printer's fusing temperature.



CAUTION: To avoid damaging the printer, use only transparencies recommended for use in laser printers.

See "Printing on Transparencies" on page 4.19.



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