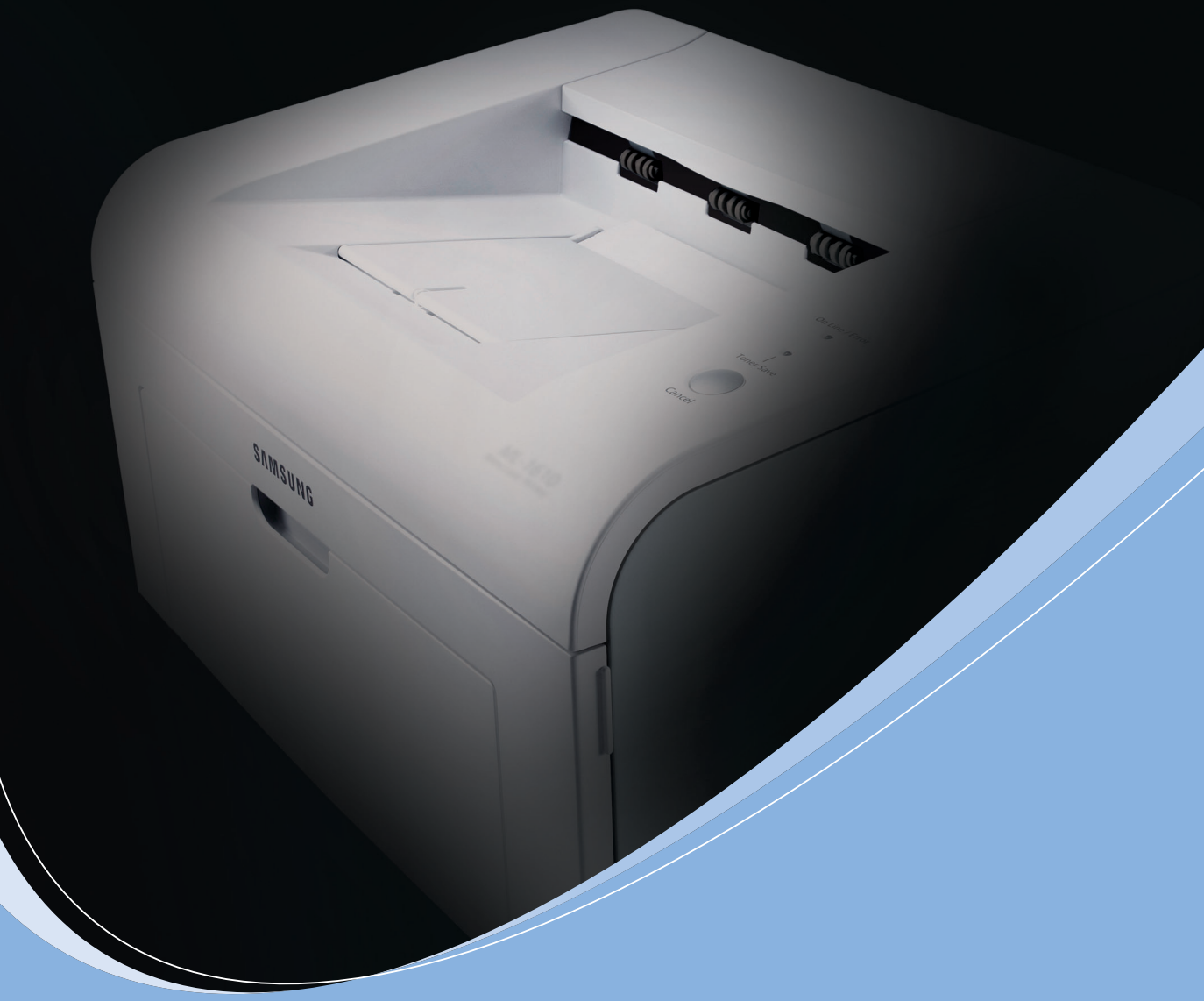
SAMSUNG



SAMSUNG Laser Printer User's Guide

ML-1610 Series

For UK customers:
To reorder your consumables
Call 0800 3164060
For Technical Assistance
Call 0870 2420303

About the User's Guide

This **User's Guide** provides information you need for setting up your printer.
It also provides all of the detailed instructions for using your printer and information for maintaining and troubleshooting the printer.

The **Software User's Guide** which is the second section of this guide provides information you need for installing the supplied software and using its features.

This manual is provided for information purposes only. All information included herein is subject to change without notice. Samsung Electronics is not responsible for any damages, direct or indirect, arising from or related to use of this manual.

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Important Precautions and Safety Information

When using this machine, these basic safety precautions should always be followed to reduce risk of fire, electric shock, and injury to people:

1. Read and understand all instructions.

2. Use common sense whenever operating electrical appliances.

3. Follow all warnings and instructions marked on the machine and in the literature accompanying the machine.

4. If an operating instruction appears to conflict with safety information, heed the safety information. You may have misunderstood the operating instruction. If you cannot resolve the conflict, contact your sales or service representative for assistance.

5. Unplug the machine from the AC wall socket before cleaning. Do not use liquid or aerosol cleaners. Use only a damp cloth for cleaning.

6. Do not place the machine on an unstable cart, stand or table. It may fall, causing serious damage.

7. Your machine should never be placed on, near or over a radiator, heater, air conditioner or ventilation duct.

8. Do not allow anything to rest on the power cable. Do not locate your machine where the cords will be abused by persons walking on them.

9. Do not overload wall outlets and extension cords. This can diminish performance, and may result in the risk of fire or electric shock.

10. Do not allow pets to chew on the AC power or PC interface cords.

11. Never push objects of any kind into the machine through case or cabinet openings. They may touch dangerous voltage points, creating a risk of fire or shock. Never spill liquid of any kind onto or into the machine.

12. To reduce the risk of electric shock, do not disassemble the machine. Take it to a qualified service technician when repair work is required. Opening or removing covers may expose you to dangerous voltages or other risks. Incorrect reassembly could cause electric shock when the unit is subsequently used.

13 Unplug the machine from the PC and AC wall outlet, and refer servicing to qualified service personnel under the following conditions:

- When any part of the power cord, plug, or connecting cable is damaged or frayed.
- If liquid has been spilled into the machine.
- If the machine has been exposed to rain or water.
- If the machine does not operate properly after instructions have been followed.
- If the machine has been dropped, or the cabinet appears damaged.
- If the machine exhibits a sudden and distinct change in performance.

14 Adjust only those controls covered by the operating instructions. Improper adjustment of other controls may result in damage, and may require extensive work by a qualified service technician to restore the machine to normal operation.

15 Avoid using this machine during a lightning storm. There may be a remote risk of electric shock from lightning. If possible, unplug the AC power for the duration of the lightning storm.

16 If you continuously print multiple pages, the surface of the output tray may become hot. Be careful not to touch the surface, and keep children away from the surface.

17 SAVE THESE INSTRUCTIONS.

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 - CLASS 3B LASER RADIATION WHEN OPEN AVOID EXPOSURE TO THE BEAM.

DANGER - LASER RADIATION AVOID DIRECT EXPOSURE TO BEAM.

DANGER - RADIATIONS INVISIBLES DU LASER EN CAS D'OUVERTURE. EVITER TOUTE EXPOSITION DIRECTE AU FAISCEAU.

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

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. UNDGÅ UDSAETTELSE FOR STRÅLNING.

ADVARSEL. - USYNLIG LASERSTRÅLNING NÅR DEKSEL ÅPNES. UNNGÅ EKSPONERING FOR STRÅLEN.

VARNING - OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPEN. STRÅLEN ÄR FARLIG.

VAROITUS - NÄKYMÄTÖNTÄ LASERSÄTEILYÄ AVATTAESSA. VARO SUORAA ALTISTUMISTA SÄTEELLE.

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

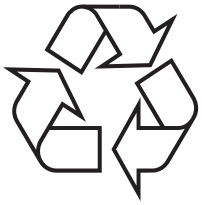
This printer contains advanced energy conservation technology that reduces power consumption when it is not in active use.

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 copmlies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

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.

Declaration of Conformity (European Countries)

Approvals and Certifications

The CE marking applied to this product symbolizes 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.

EU Declaration of Conformity (LVD, EMC)

For the following product :

Laser Beam Printer

(Product name)

ML-1610, Phaser 3117, Dell Laser Printer 1100

(Model Number)

Samsung Electronics Co., Ltd. 259, Gongdan-Dong, Gumi-City, Gyeongsangbuk-Do, 730-030 Korea
Shin Heung Precision Co., Ltd. 1000-30, Daegwan-Dong, Gimcheon-Si, Gyeongsangbuk-Do, 740-170, R.O.Korea.
Shandong Samsung Telecommunications Co., Ltd. 264209, Samsugn (Sanxing) Road, Weihai Hi-Tech. IDZ, Shandong Province, P.R.China
Weihai Shin Heung Digital Electronics Co., Ltd. 98, Samsung Road, Weihai Hi-Tech, IDZ Shandong Province, P.R.CHINA
Samsung Electronics Slovakia s.r.o.Hviezdoslavova 807, 924 27 Galanta, SLOVAKIA

Manufactured at :

We hereby declare, that all major safety requirements, concerning to CE Marking Directive[93/68/EEC] and Low Voltage Directive [73/23/EEC], ElectroMagnetic Compatibility [89/336/EEC], amendments [92/31/EEC] are fulfilled, as laid out in the guideline set down by the member states of the EEC Commission.
This declaration is valid for all samples that are part of this declaration, which are manufactured according to the production charts appendix. The standards relevant for the evaluation of safety & EMC requirements are as follows :

LVD : EN 60950-1:2001

EMC : EN 55022:1998+A1:2000+A2:2003, EN 55024:1998+A1:2001+A2:2003,
EN61000-3-2:2000, EN61000-3-3:1995+A1:2001

1. ***Certificate of conformity / Test report issued by :***
2. ***Technical documentation kept at :***

LVD : SEMKO

EMC : SAMSUNG Electronics EURO QA Lab. in U.K.

which will be made available upon request.
(Manufacturer)

Samsung Electronics Co., Ltd.

Samsung Electronics Co., Ltd.
#259, Gongdan-Dong, Gumi-City,
GyeongBuk, Korea. 730-030

2005-02-04

Whan-Soon Yim / Senior Manager

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Blackbushe Business Park, Saxony Way,
Yateley, Hampshire, GU46 6GG, UK

2005-02-04

Yong-Sang Park / Manager

(place and date of issue) (name and signature of authorized person)

(Representative in the EU)

1 Introduction

Congratulations on the purchase of your Printer!

This chapter includes:

- **Special Features**
- **Printer Driver Features**
- **Printer Components**
- **Understanding the Control Panel**

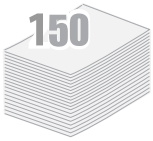
Special Features

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 **600 dots per inch** (dpi).
- Up to **16 ppm in A4** (**17 ppm in Letter**).

Handle paper flexibly



- **Standard 150-sheet tray** supports various sizes and types of paper.
- 50-sheet output tray supports convenient access.

Create professional documents

- You can customize your documents using **Watermarks**, such as "Confidential." For details, See **Software User's Guide**.
- 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. For details, see **Software User's Guide**.

Save your time and money

- Allows you to use the **Toner Save** mode to save toner. For details, see **Software User's Guide** and page 4.5.
- Allows you to print multiple pages on one single sheet of paper to save paper (**N-Up printing**). For details, see **Software User's Guide**.
- You can use preprinted forms and letterhead on plain paper. For details, see **Software User's Guide**.
- This printer meets **Energy Star** guidelines for energy efficiency.

Print in various environments

- You can print in **Windows 98/Me/2000/XP**.
- Your printer is compatible with various **Linux OS**.
- Your printer comes with the **USB** interface.

Printer Driver Features

Your printer drivers will support the following standard features:

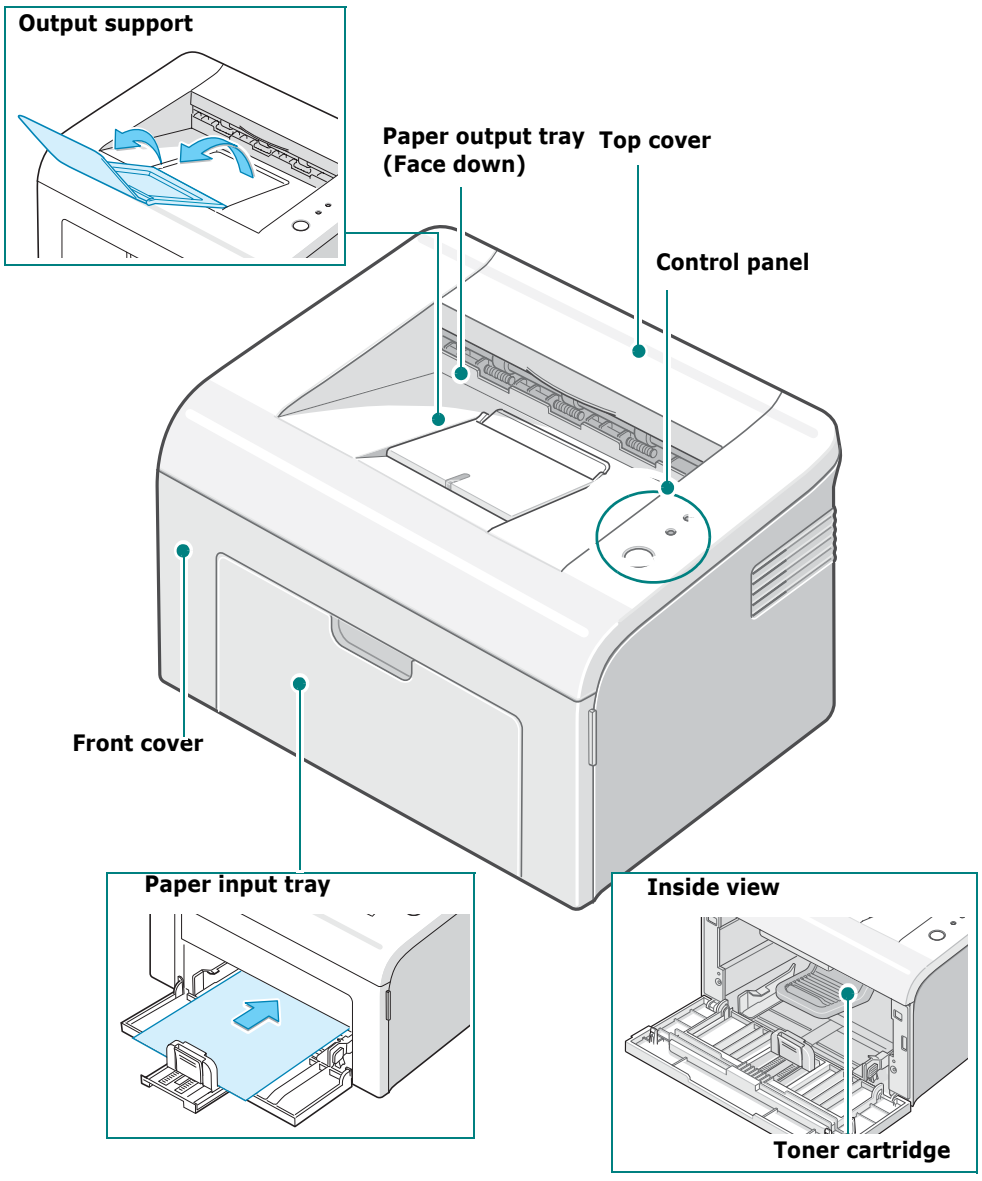
- Paper source selection
- Paper size, orientation and media type
- number of copies

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

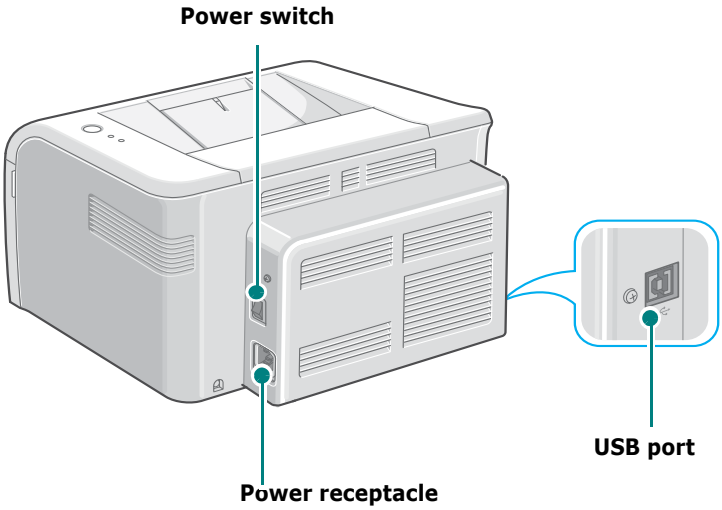
Feature	Printer Driver
	Win98/Me/2000/XP
Toner Save	Y
Print quality option	Y
Poster printing	Y
Multiple pages per sheet (N-up)	Y
Fit to page printing	Y
Scale printing	Y
Watermark	Y
Overlay	Y

Printer Components

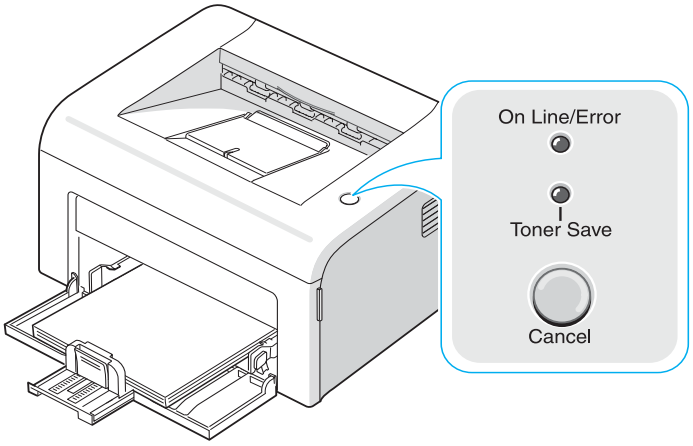
Front View



Rear View

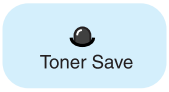
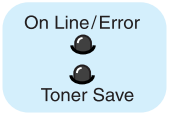


Understanding the Control Panel



On Line/Error and Toner Save LEDs

LED	Description
On Line/Error	If the **On Line/Error** lights green, the printer is ready to print.
	If the **On Line/Error** lights red, the printer is experiencing an error, such as jammed paper, no paper, the open top or front cover, or the empty toner cartridge. See "Troubleshooting Error Messages" on page 5.16.
	If you press the **Cancel** button while the printer is receiving data, the **On Line/Error** LED blinks red to cancel printing.
	In Manual Feed mode, if there is no paper in the tray, the **On Line/Error** LED blinks red. Load paper into the tray and the LED stops blinking.
	If the printer is receiving data, the **On Line/Error** LED slowly blinks green. If the printer is printing the received data, the **On Line/Error** LED blinks green fast.

LED	Description
	If you press the **Cancel** button in Ready mode, this LED is on and the Toner Save mode is enabled. If you press this button once again, this LED is off and the Toner Save mode is disabled.
	If the **On Line/Error** and **Toner Save** LEDs blink, your system has some problems. To solve the problem, see "Troubleshooting Error Messages" on page 5.16

Cancel button

Function	Description
Printing demo page	In Ready mode, press and hold this button for about 2 seconds until all LEDs blink slowly, and release.
Manual feeding	Press this button each time you load a sheet of paper in the tray, when you select **Manual Feed** for **Source** from your software application. For detailed information, see "Using Manual Feed Mode" on page 3.7.
Canceling print job	Press this button during printing. The **On Line/Error** LED blinks while the print job is cleared from both the printer and the computer, and then return to Ready mode. This may take some time depending on the size of the print job. In Manual Feed mode, you can't cancel the print job by pressing this button. For detailed information, see "Using Manual Feed Mode" on page 3.7.
Toner Save mode on/off	In Ready mode, press this button to turn the Toner Save mode on or off. For detailed information, see **Software User's Guide** and page 4.5.

2 Setting Up Your Printer

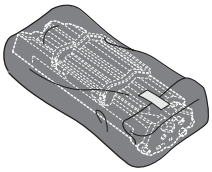
This chapter provides step by step information on setting up your printer.

This chapter includes:

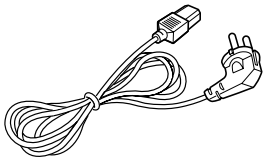
- **Unpacking**
- **Installing the Toner Cartridge**
- **Loading Paper**
- **Connecting a Printer Cable**
- **Turning the Printer on**
- **Printing a Demo Page**
- **Installing Printer Software**

Unpacking

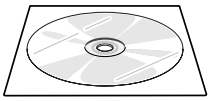
1 Remove the printer and all accessories from the packing carton. Make sure that the printer has been packed with the following items:



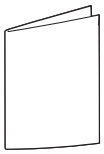
Toner Cartridge



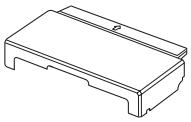
Power Cord



CD-ROM



Quick Install Guide



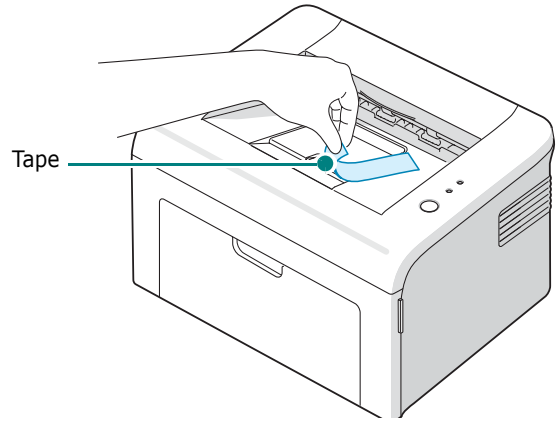
Paper Cover [a]

a. The paper cover is to prevent dust and moisture from contaminating your paper loaded in the tray. When you need to open the machine (for example, cleaning inside of the machine, removing the jammed paper or installing the toner cartridge), remove the paper cover from your machine.

Notes:

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

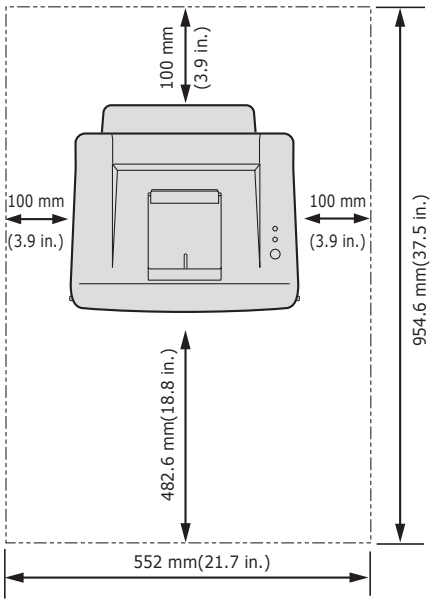
2 Carefully remove all of packing tape from the printer.



Selecting a Location

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

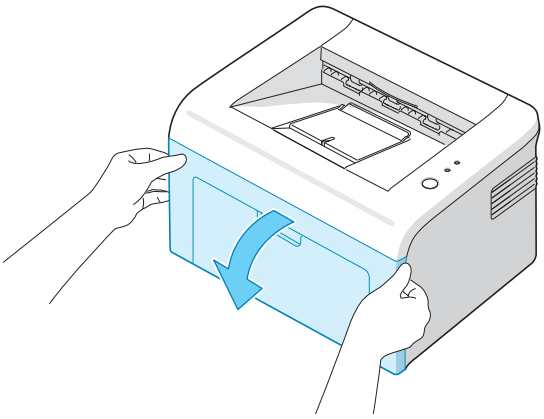
Clearance Space



- **Front**: 482.6 mm (enough space to allow opening of the paper input tray)
- **Back**: 100 mm (enough space for ventilation)
- **Right**: 100 mm (enough space for ventilation)
- **Left**: 100 mm (enough space for ventilation)

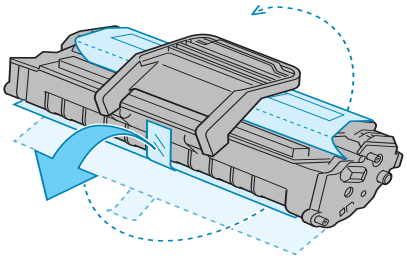
Installing the Toner Cartridge

1 Grasp the front cover and pull it toward you to open.

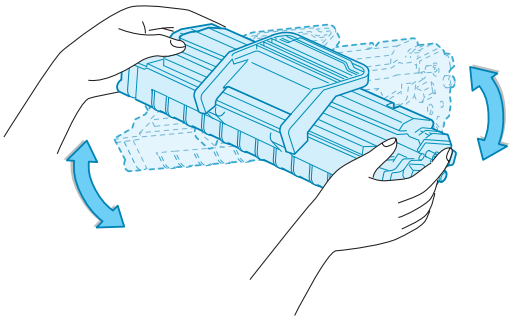


Note: Because the printer is very light, it may be moved when you use it; for example, when opening/closing the tray or installing/removing the toner cartridge. Be careful not to move the printer.

2 Remove the toner cartridge from its bag and remove the paper protecting the cartridge by pulling the packing tape.



3 Gently roll the cartridge 5 or 6 times to distribute the toner.



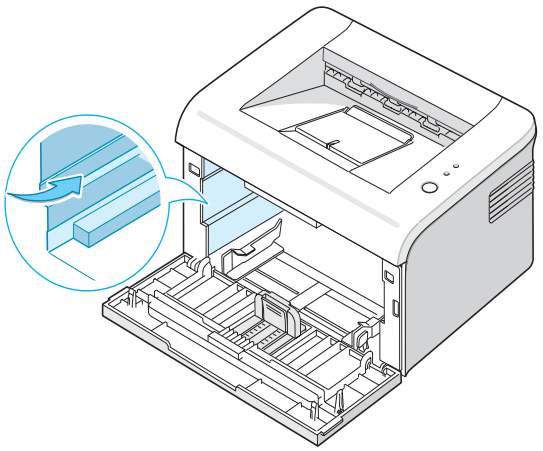
Thoroughly rolling the cartridge will assure maximum copies per cartridge.

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.

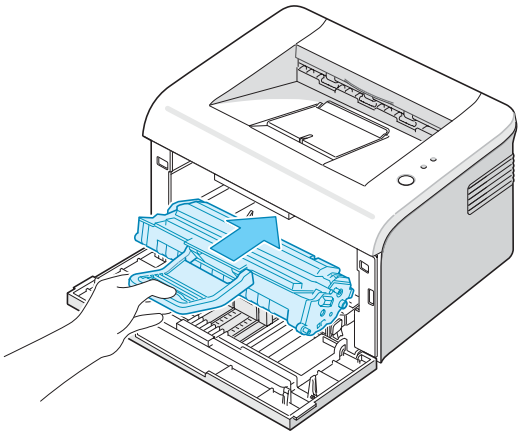
Cautions:

- To prevent damage, do not expose the toner cartridge to light for more than few minutes. Cover it with a piece of paper, if left exposed for more than a few minutes.
- Do not touch the green underside of the toner cartridge. Use the handle on the cartridge to avoid touching this area.

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

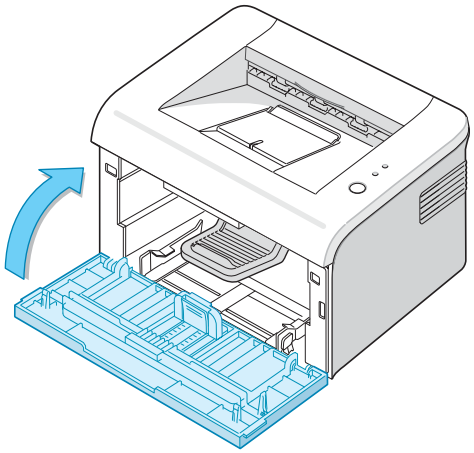


5 Unfold the toner cartridge handle and grasp it. Insert the cartridge in the printer until it snaps into place.



Note: Carefully insert or pull out the toner cartridge not to scratch against the printer.

6 Close the front cover. Make sure that the cover is securely closed. If the cover is not firmly closed, printing errors may occur when you print.

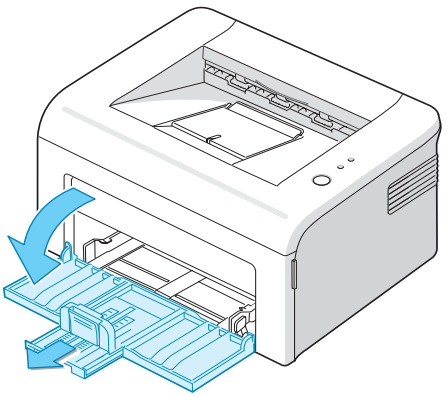


Note: When printing text at 5% coverage, you can expect a toner cartridge life of approximately 2,000 pages (1,000 pages for the toner cartridge that is shipped with the printer).

Loading Paper

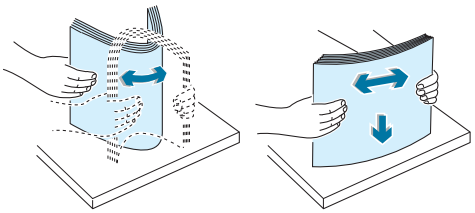
You can load approximately 150 sheets of paper in the tray.

1 Grasp the paper input tray and pull it toward you to open. Pinch the rear guide and pull it out to extend the tray.

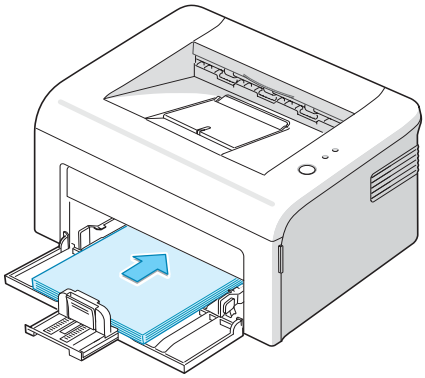


Note: Because the printer is very light, it may be moved when you use it; for example, when opening/closing the tray or installing/removing the toner cartridge. Be careful not to move the printer.

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



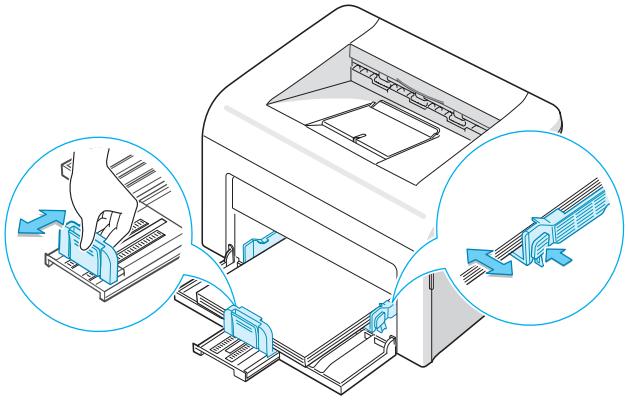
3 Load paper **with the print side facing up**.



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

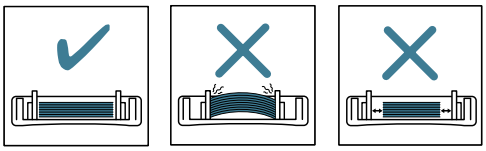
4 Pay attention not to overload paper. Paper overloading may cause paper jams.

5 Pinch the rear guide to adjust for the paper length and pinch the side guide and slide it to the left flush against the paper.

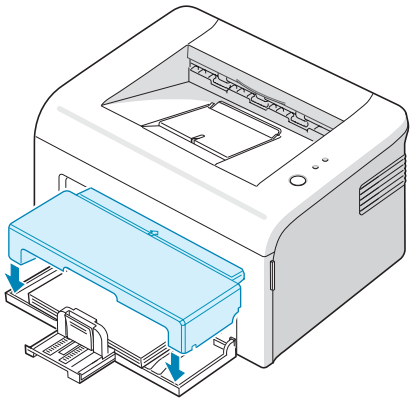


Notes:

- 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 jam.



6 If necessary, close the paper cover to keep the paper loaded in the tray from dust.



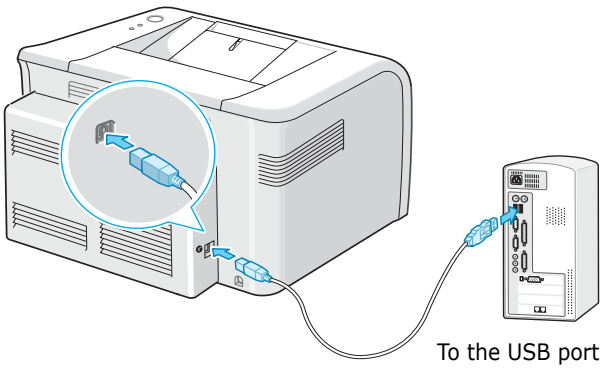
Connecting a Printer Cable

To print from your computer, you need to connect your printer to your computer with a Universal Serial Bus (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 1.1 compliant cable that is within 3m 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

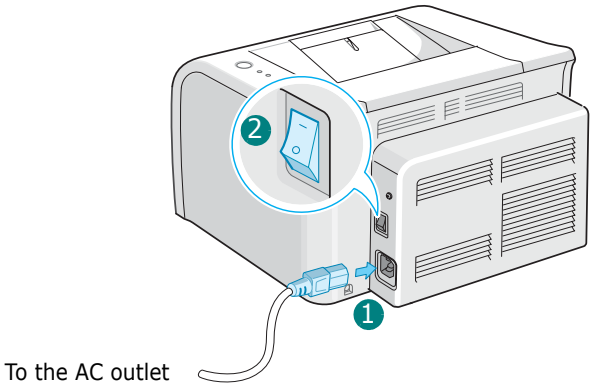
3 Connect the other end of the cable to the USB port on your computer.

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

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.



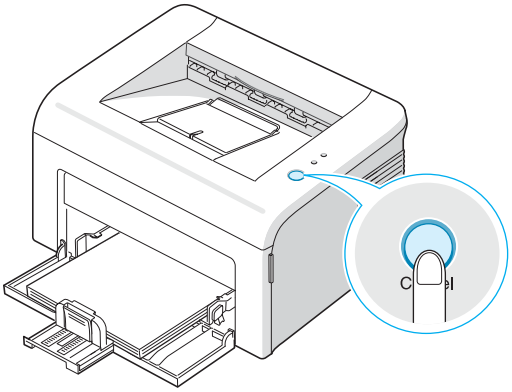
Cautions:

- 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.

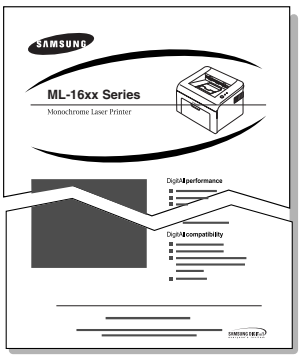
Printing a Demo Page

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

1 Press and hold down the **Cancel** button on the control panel for about 2 seconds to print a demo page.



2 The Demo page shows the printer's current configuration.



Installing Printer Software

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

If you are printing from Windows

You can install the following printer software using the CD-ROM.

- **Printer driver** for Windows. Use this driver to take full advantage of your printer's features. For details, see **Software User's Guide**.
- **Status Monitor** allows you to see the printing status of the printer. For details, see **Software User's Guide**.

If you are printing in Linux

Go to **Software User's Guide** for information about installing the Linux driver.

System Requirements

Your machine supports following operating system.

- Windows 98/Me/2000/XP - The following table shows Windows requirements.

Item	Requirements	
Operating System	Windows 98/Me/2000/XP	
CPU	Windows 98/Me/2000	Pentium II 400 or higher
	Windows XP	Pentium II 933 Ghz or higher
RAM	Windows 98/Me/2000	64 MB or higher
	Windows XP	128 MB or higher
Free Disk Space	Windows 98/Me/2000	300 MB or higher
	Windows XP	1 GB or higher
Internet Explorer	5.0 or higher	

NOTE: For Windows 2000/XP, the system administrator should install the software.

- Various Linux - See **Software User's Guide**.

NOTE:

3 Using Print Materials

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

This chapter includes:

- **Choosing Paper and Other Materials**
- **Verifying the Output Location**
- **Loading Paper**
- **Printing on Special Materials**
- **Canceling a Print Job**

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 6.3. To get the best possible print quality, use only high-quality copier-grade paper.

When you choose print materials, consider the followings:

• **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 feeder.

• **Weight**: Your printer supports paper weight as follows:

- 16~24 lbs (60~90 g/m^2) bond for the tray
- 16~43 lbs (60~163 g/m^2) bond for the manual feed

• **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.

Type, Input Sources and Capacities

Paper Type	Input Source/Capacity[a]	
	Paper Tray	Manual Feed
Plain paper	150	1
Envelopes	-	1
Labels[b]	-	1
Transparency films[b]	-	1
Card stocks[b]	-	1

a. Maximum capacity may be reduced depending on the paper thickness.
b. If you load more than one sheet, paper jams will occur. You must load only one sheet at a time in the tray.

Guidelines for Paper and Special Materials

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

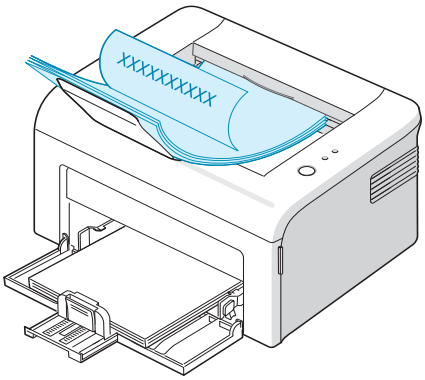
- Attempting to print on damp, curled, wrinkled, or torn paper can cause paper jams and the poor print quality.
- Use only high quality copier grade paper for the best print quality.
- Avoid paper with embossed lettering, perforations, or a texture that is too smooth or too rough. Paper jams may occur.
- Store paper in its ream wrapper until you are 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 it away from moisture, or other conditions that can cause it to wrinkle or curl.
- Store unused materials at temperatures between 15 °C and 30 °C (59 °F to 86 °F). The relative humidity should be between 10 % and 70 %.
- During storage, you should use moisture-proof wrap, such as any plastic container or bag, to prevent dust and moisture from contaminating your paper.
- Load special paper types one sheet at a time.
- Only use materials specifically recommended for use in laser printers.
- To prevent special materials, such as transparencies and label sheets from sticking together, remove them as they prints out.

- For envelopes:
  - Use only well-constructed envelopes with sharp, well creased folds.
  - Do not use envelopes with clasps and snaps.
  - Do not use envelopes with windows, coated lining, self-adhesive seals, or other synthetic materials.
  - Do not use damaged or poorly made envelopes.
  - Only use envelopes recommended for laser printers. Before loading envelopes in the tray, make sure that they are undamaged and are not stuck together.
  - Do not feed stamped envelopes.
- For transparencies:
  - Place them on a flat surface after removing them from the printer.
  - Do not leave them in the paper tray for long periods of time. Dust and dirt may accumulate on them resulting in spotty printing.
  - To avoid smudging caused by fingerprints, handle them and coated paper carefully.
  - To avoid fading, do not expose the printed transparencies to prolonged sunlight.
  - Only use transparencies recommended for use in laser printers.
  - Ensure that transparencies are not wrinkled, curled, or have any torn edges.
- For labels:
  - Verify that their adhesive material can tolerate fusing temperature of 180 °C (356° F) for 0.1 second.
  - Make sure that there is no exposed adhesive material between them. Exposed areas can cause labels to peel off during printing, which can cause paper jams. Exposed adhesive can also cause damage to machine components.
  - Do not load a sheet of them through the printer more than once. The adhesive backing is designed for one pass through the machine.
  - Do not use labels that are separating from the backing sheet or are wrinkled, bubbled, or otherwise damaged.
  - Only use labels recommended for laser printers.

- For Card Stock or Custom-sized materials:
  - Postcards, 3.5 by 5.83 in.(index) cards and other custom-sized materials can be printed with this printer. The minimum size is 76 by 127mm(3.0 by 5.0 in.) and the maximum size is 216 by 356mm(8.5 by 14 in.)
  - Always insert the short-edge into the Manual Feed 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 print on media smaller than 76mm (3.0 in.) wide or 127mm(5.0 in.) long.
- For preprinted paper:
  - 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 205 °C (400 °F) 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.
- Do not use **Carbonless** paper and **Tracing** paper. Use of these types of paper could result in chemical smells and could damage your printer.

Verifying the Output Location

The printer has the paper output tray that collects paper face-down, in correct order.



Notes:

- If you continuously print many pages, the surface of the output tray may become hot. Be careful not to touch the surface, and especially keep children away from the surface.
- The front output tray can hold up to 50 sheets of paper. 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 in the tray while a job is printing. Doing so may cause a paper jam. See "Type, Input Sources and Capacities" on page 3.3 for acceptable paper size and capacity for the tray.

Using the Tray

The tray holds 150 sheets of paper. See "Type, Input Sources and Capacities" on page 3.3 for acceptable paper size and capacity of the tray.

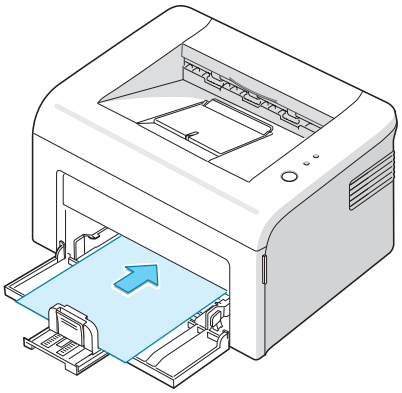
Load a stack of paper into the tray and print. For details about loading paper in the tray, see "Loading Paper" on page 2.7.

Using Manual Feed Mode

If you select **Manual Feed** in the **Source** option, you can manually load paper in the tray. Manually loading paper can be helpful when you want to check the print quality after each page is printed.

If you experience a paper jam from the tray, load one sheet of paper at a time into the tray.

1 Load the print material in the tray **with the print side up**.



Adjust the paper guide against the print material without bending the paper.

2 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. For details, see **Software User's Guide**.

3 Press the **Cancel** button on the printer to start feeding.

Note: If you don't press the button after a pause, the paper will be automatically fed into the printer.

4 Printing is started.

5 If you are printing multiple pages, load the next sheet after the first page prints out, and press the **Cancel** button.

Repeat this step for every page to be printed.

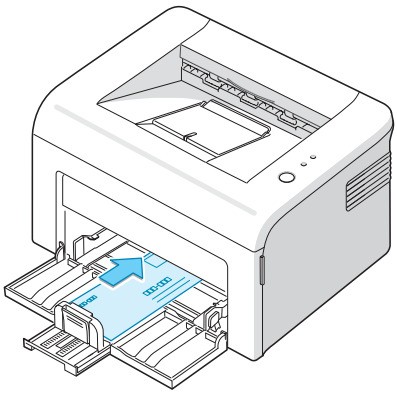
Printing on Special Materials

1 Open the paper input tray.

2 Load the print material in the paper input tray. Do not mix types. See the following directions to load each type of print material.

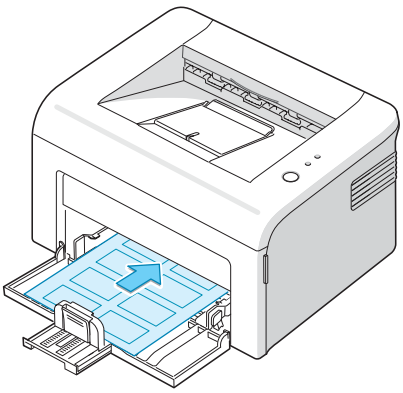
•Load the envelopes in the tray **with the flap side down**.

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



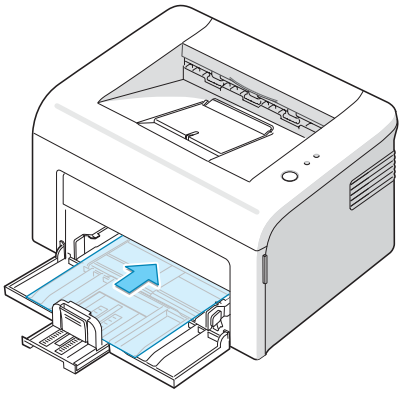
Cautions: If you print 20 envelopes in succession, the surface of the top cover may become hot. Please exercise caution.

•Load labels in the tray **with print side up**.



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

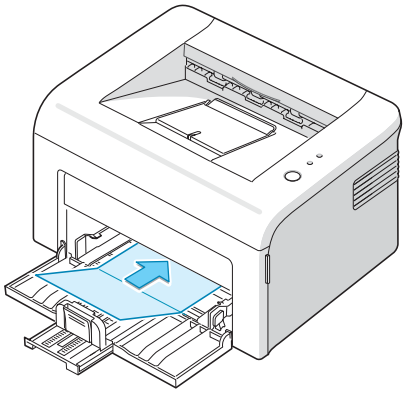
•Load transparencies in the tray **with print side up**, and the **top with the adhesive strip going first**.



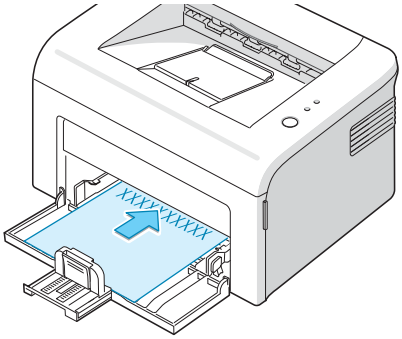
Notes:

- To prevent transparencies from sticking to each other, 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.
- Do not use transparencies that are separating from the backing sheet.

•Load card stock **with print side up**, short edge first and center of the tray.



•Load letterheads in the tray **with the design face up**, **top edge towards the printer**.



3 Adjust the side guide to the edge of the material.

4 When you print on special material, you must select **Manual Feed** for **Source** from the software application, and then select the correct paper size and type. For details, see **Software User's Guide**.

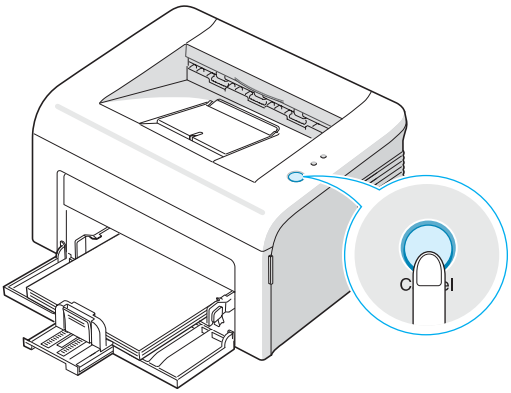
5 Press the **Cancel** button to start feeding.

Canceling 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 on the control panel.



The printer will finish printing the page that is moving through the printer and delete the rest of the print job. Pressing the **Cancel** button cancels only the current job in the printer. If more than one print job is in the printer memory, the **Cancel** 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 **your printer** icon.

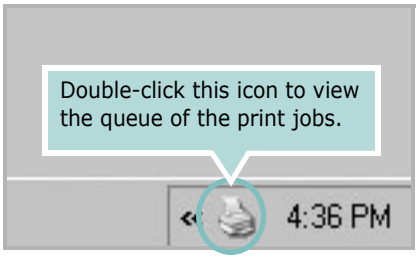
3 From the **Document** menu, select **Cancel Printing** (Windows 98/Me) or **Cancel** (Windows 2000/XP).

In Manual Feed mode, you can't cancel a print job by pressing the **Cancel** button.

To cancel a print job in Manual Feed mode:

1. Turn the printer off.

2. Double-click the icon at right bottom of the window.



3. Select a job you want to cancel.

4. For Windows 98/Me, select **Cancel Printing** from **Document** menu.
   For Windows 2000/XP, select **Cancel** from **Document** menu.

5. When the jobs are removed from the list, turn the printer on.

4 Maintaining Your Printer

This chapter provides suggestions for maintaining the toner cartridge and the printer.

This chapter includes:

- **Maintaining the Toner Cartridge**
- **Using the Toner Save Mode**
- **Cleaning the Printer**
- **Consumables and Replacement Parts**

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 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 2,000 pages. (The original toner cartridge supplied with the printer lasts an average of 1,000 pages.)

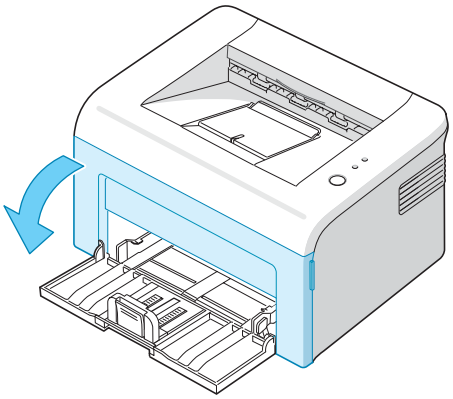
Saving toner

To save toner, press the **Cancel** button on the printer control panel. The **Toner Save** LED will be lit. You can also enable the Toner Save mode in the printer properties. For details, see **Software User's Guide**. Selecting this option will extend the life of the toner cartridge and reduce your cost per page, but will reduce the print quality.

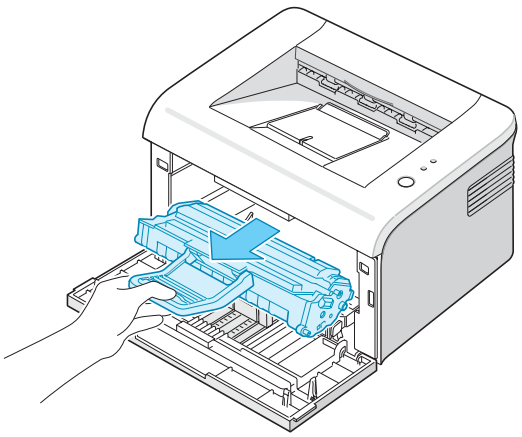
Redistributing Toner

When toner is low, faded or light areas may appear on a printed page. You may be able to temporarily improve the print quality by redistributing the toner. The following procedures may allow you to finish the current print job before replacing the toner cartridge.

1 Open the front door.



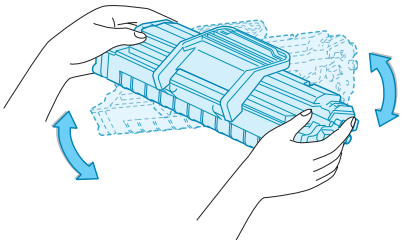
2 Pull the toner cartridge out and remove it from the printer.



Cautions:

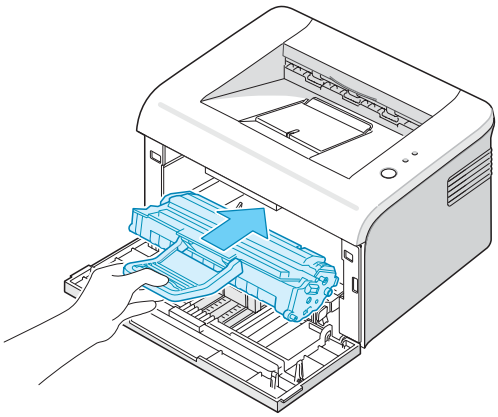
- Avoid reaching too far into the printer. The fusing area may be hot.
- To prevent damage to the toner cartridge, do not expose it to light for more than few minutes.

3 Gently shake the toner cartridge from side to side five or six times to redistribute the toner.

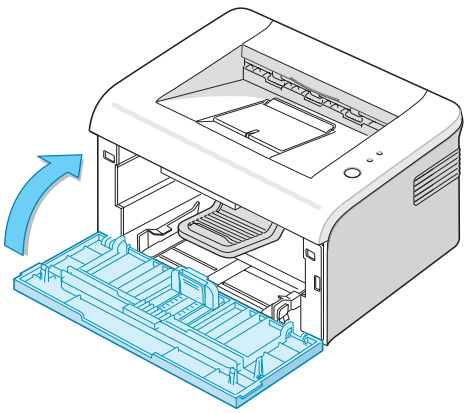


Note: If the toner gets on your clothing, wipe it off with a dry cloth and wash clothing in cold water. Hot water sets toner into fabric.

4 Reinsert the toner cartridge into the printer. Ensure that the toner cartridge snaps into place.



5 Close the front cover. Make sure that the cover is securely closed. If it is not firmly closed, printing errors may occur when you print.



Replacing the Toner Cartridge

If the print remains light after redistributing toner (see page 4.3), replace the toner cartridge.

Remove the old cartridge and install a new toner cartridge. See "Installing the Toner Cartridge" on page 2.4.

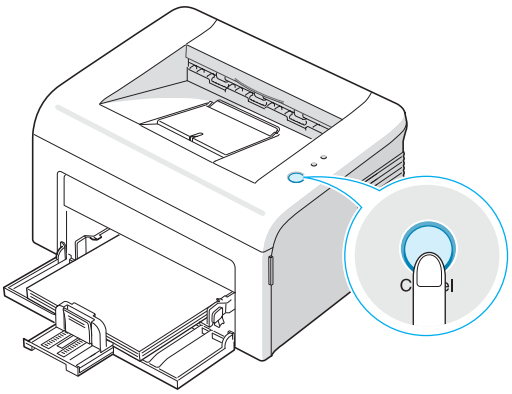
Using the Toner Save Mode

The Toner Save mode allows the printer to use less toner on each page. Selecting this option will extend the life of your toner cartridge and reduce your cost per page, but will reduce print quality.

There are two ways to enable the Toner Save mode:

From the Control Panel

Press the **Cancel** button on the control panel. The printer must be in Ready mode (**On Line/Error** green LED is on).



- If the **Toner Save** LED is on, the mode is enabled and the printer uses less toner to print a page.
- If the **Toner Save** LED is off, the mode is disabled and the printer prints in the normal mode.

From the Printer Properties

You can also enable the Toner Save mode in the **Graphic** tab of the printer properties. For details, see **Software User's Guide**.

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.

Note: 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.

Caution: 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

Wipe the outside surface of the printer with a soft, clean, 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.

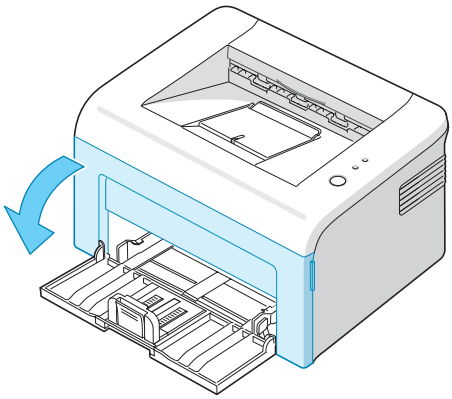
Cleaning the Inside

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

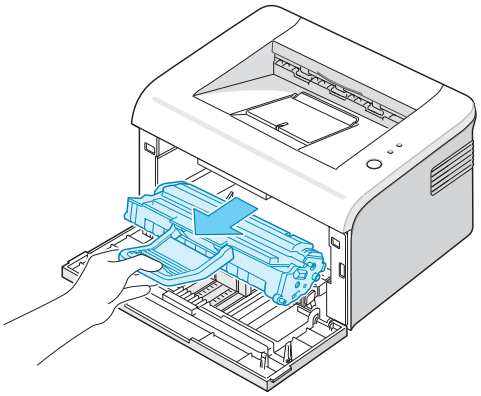
Cleaning inside the printer

1. Turn the printer off and unplug the power cord, then wait for the printer to cool.

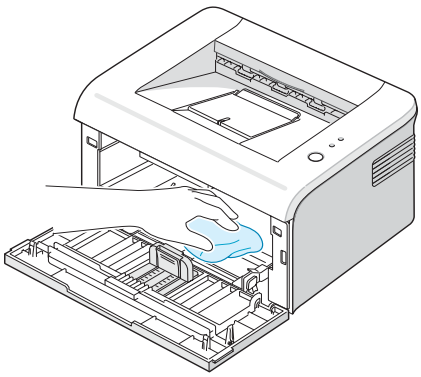
2. Open the front door.



3. Pull the toner cartridge out and remove it from the printer..

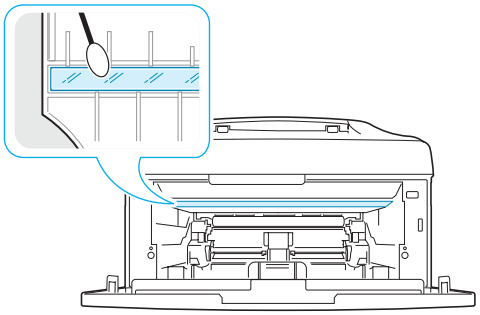


4. With a dry, lint-free cloth, wipe away any dust and spilled toner from the toner cartridge area and the toner cartridge cavity.

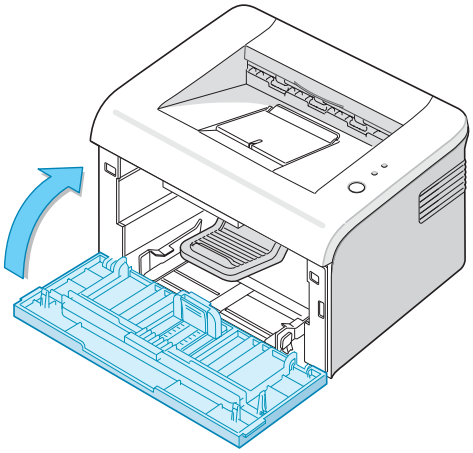


Note: To prevent damage to the toner cartridge, do not expose it to light for more than few minute. Cover it with a piece of paper, if necessary. Also, do not touch the black transfer roller inside the printer.

5 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.



6 Reinsert the toner cartridge and close the cover. Make sure that the cover is securely closed. If it is not firmly closed, printing errors may occur when you print.



7 Plug in the power cord, and turn the printer on.

Consumables and Replacement Parts

From time to time, you will need to replace the 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)
Transfer Roller	Approx. 50,000 pages
Pick-up Roller	Approx. 50,000 pages
Fuser Unit	Approx. 50,000 pages

To purchase the consumables and replacement parts, contact **Samsung** dealer or the place where you bought your product. We strongly recommend that items be installed by a trained service personnel.

5 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**
- **Troubleshooting Error Messages**
- **Common Windows Problems**
- **Common Linux Problems**

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
Check the power cord and the power switch.	Check the power source by plugging into another outlet.
Make sure that the **On Line/Error** LED is on.	In the Ready mode, the **On Line/Error** LED lights green. If the **On Line/Error** LED lights red or blinks, go to "Troubleshooting Error Messages" on page 5.16.
Press and hold the **Cancel** button to print a demo page.	• If a demo page does not print, check the paper supply in the input tray. • If the paper jams in the printer, go to "Clearing Paper Jams" on page 5.6.
Check the demo page to see if it is printed correctly.	If there is a print quality problem, go to "Solving Print Quality Problems" on page 5.10.
Print a short document from a software application to verify that the computer and printer are connected and are communicating correctly.	• 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 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 5.3.
If completing the checklist does not resolve the printer problem, check the following troubleshooting sections.	• "Solving General Printing Problems" on page 5.3. • "Troubleshooting Error Messages" on page 5.16. • "Common Windows Problems" on page 5.17 • "Common Linux Problems" on page 5.18

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 your printer in the printer folder in Windows as your default printer.
	Check the printer for the following: • The printer cover is not closed. • Paper is jammed. • No paper is loaded. • The toner cartridge is not installed. • The installed toner cartridge is the wrong toner cartridge.	After location the problem, clear it. • Close the door. • Clear the paper jam. See "Clearing Paper Jams" on page 5.6. • Load paper. See "Loading Paper" on page 2.7. • Install the toner cartridge. See "Installing the Toner Cartridge" on page 2.4. If the problem persists, contact your service representative.
	The printer may be in Manual Feed mode.	Add paper to the tray and press the **Cancel** button on the printer's control panel to begin printing.
	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. 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 print settings are correct.

Problem	Possible Cause	Solution
The printer does not print. (continued)	The printer driver may be incorrectly installed.	Reinstall the printer driver; see **Software User's Guide**. Try printing a demo page.
	The printer is malfunctioning.	Check the LEDs on the control panel to determine if the printer is indicating a system error.
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 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 the printer is 16(A4) or 17(Letter) pages per minute.
	If using Windows 98/ Me, the Spooling Setting may be set incorrectly.	From the **Start** menu, choose **Settings** and **Printers**. Right-click the your printer icon, choose **Properties**, click the **Details** tab, and then choose the **Spool Settings** button. Select the desired spool setting.
Half the page is blank.	The page layout is too complex.	Simplify the page layout and remove any unnecessary graphics from the document.
	The page orientation setting may be incorrect.	Change the page orientation in your application.
	The paper size and the paper size settings do not match.	Ensure that the paper size in the print 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 manual feed mode.
	An incorrect type of paper is being used.	Use only paper that meets the specifications required by the printer.
	There may be debris inside the machine.	Open the front cover and remove the debris.

Problem	Possible Cause	Solution
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.
Pages print, but are blank.	The toner cartridge is defective or out of toner.	Redistribute the toner, if necessary. See page 4.3. If necessary, replace the toner cartridge.
	The file may have blank pages.	Check the file to ensure it does not contain blank pages.
	Some parts, such as the controller or the board, may be defective.	Contact a service representative.
Internal error sheet prints.	Memory shortage occurs.	Simplify the page layout and remove unnecessary graphics from your job.

ATTENTION:
If you have any printing problem after your printer prints about 50,000 pages, you must contact the customer service to replace the transfer roller.

Clearing Paper Jams

Occasionally, paper can be jammed during a print job. Some of causes include:

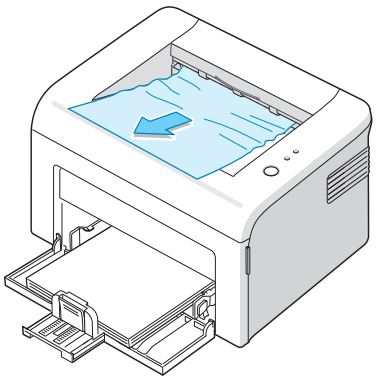
- The tray is overfilled.
- The front cover has been opened during a print job.
- Paper that does not meet paper specifications has been used. See "Paper Specifications" on page 6.3.
- Paper that is outside of the supported size range has been used. See "Paper Specifications" on page 6.3.

If a paper jam occurs, the **On Line/Error** LED on the control panel lights red. Find and remove the jammed paper. If it is invisible, look inside the printer.

In the Paper Exit Area

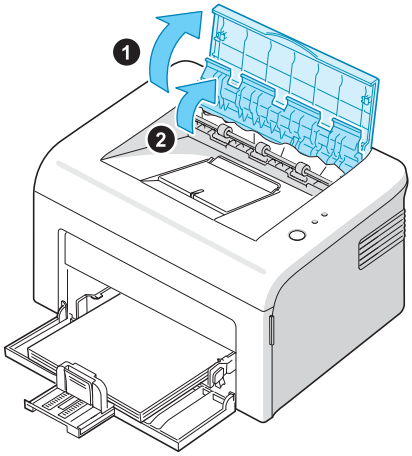
Note: Paper jams in this area may result in loose toner on the page. If you get any toner on your clothes, wash them in cold water as hot water will set the toner into the fabric.

1 If the paper jams as it exits to the output tray and a long portion of the paper is visible, pull the paper straight out.



When you pull the jammed paper, if there is resistance and the paper does not move immediately, stop pulling. Continue with the next step.

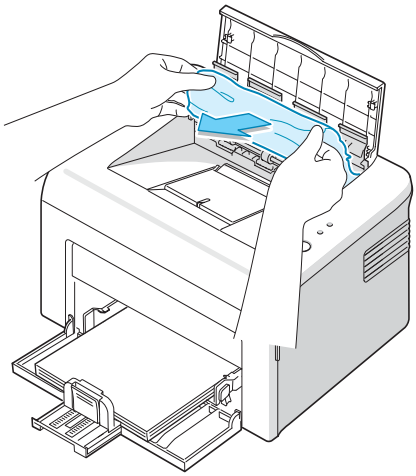
2 Open the top cover and the inner cover.



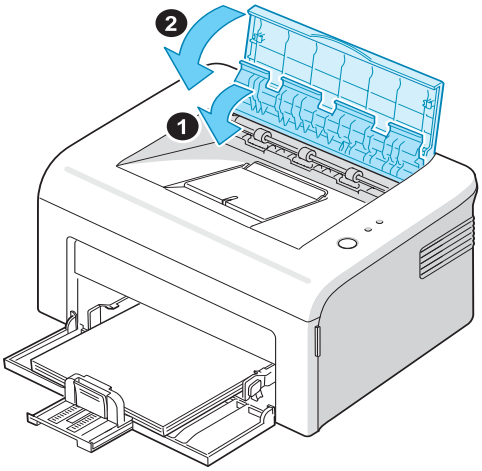
Cautions:

- When removing the jammed paper, be careful not to touch the heat roller (located underneath the inner cover). It is hot and could cause burns!
- The top and inner cover themselves may also be hot due to the heat roller. Allow the printer to cool before opening the covers.

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



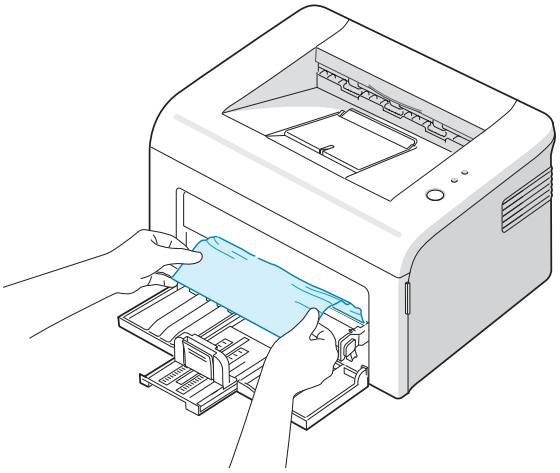
4 Close the inner cover and the top cover. Printing resumes automatically.



Note: Failed pages will not reprint. Try printing the pages.

In the Paper Feed Area

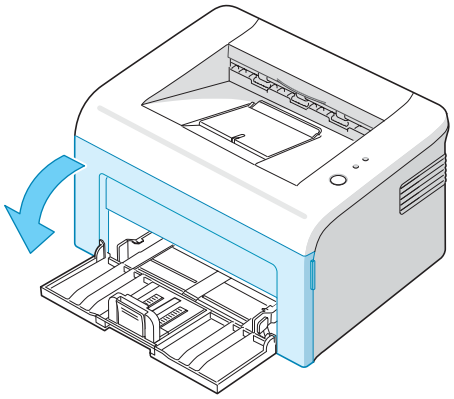
1 Remove any missfeed paper by pulling it out by the visible edge from the tray. Make sure that all of the paper is properly aligned in the tray.



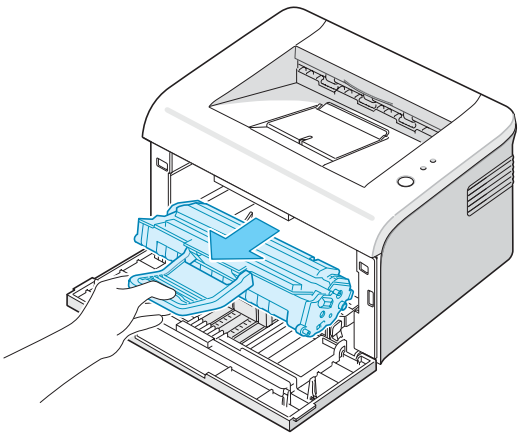
2 Open and close the front or top cover to resume printing the document from failed pages.

Around the Toner Cartridge

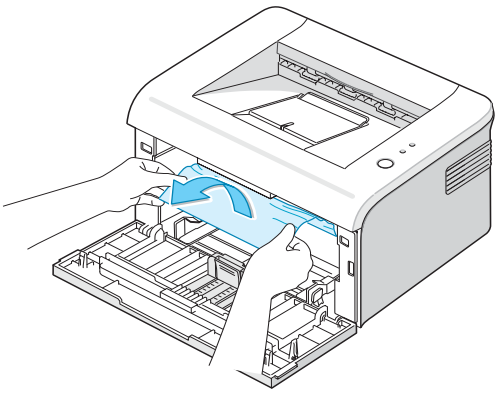
1 Open the front cover.



2 Pull the toner cartridge out and remove it from the printer.



3 Gently pull the paper toward you.



4 Check that there is no other paper in the printer.

5 Reinstall the toner cartridge and close the front cover. Your printer resumes printing the document from failed pages.

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 5.6.

- Follow the procedures in "Loading Paper" on page 2.7. Ensure that the adjustable guides are positioned correctly.
- Do not overload 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 input tray.
- Use only recommended print media. See "Paper Specifications" on page 6.3.
- Ensure that the recommended print side is facing up when loading paper into the input tray.

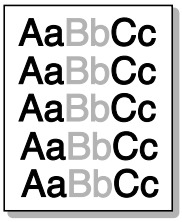
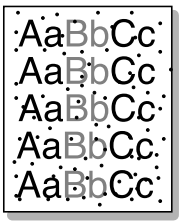
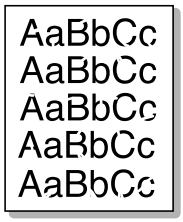
Solving Print Quality Problems

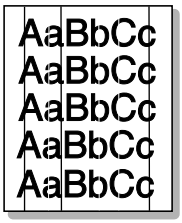
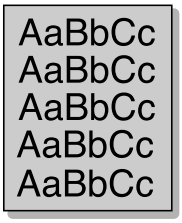
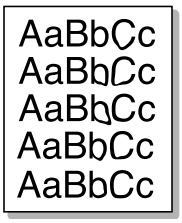
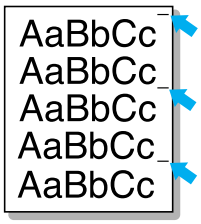
Print Quality Checklist

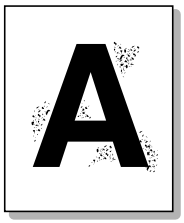
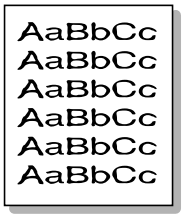
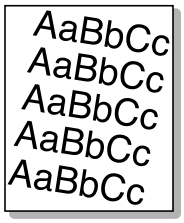
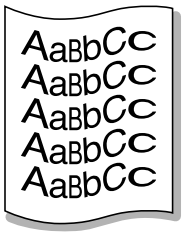
Print quality problems can be resolved by following the checklist below.

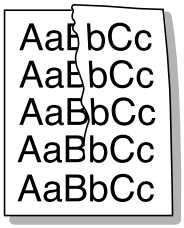
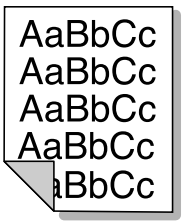
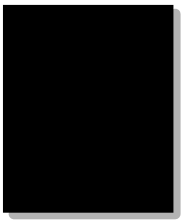
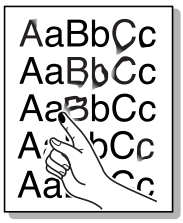
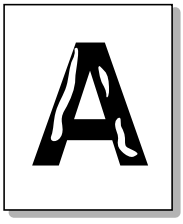
- Redistribute toner in the toner cartridge (see page 4.3).
- Clean the inside of the printer (see page 4.6).
- Adjust the print resolution from the printer properties (see **Software User's Guide**).
- Ensure that the Toner Save mode is off (see **Software User's Guide** and page 4.5).
- Clear general printing problems (see page 5.3).
- Install a new toner cartridge, and check the print quality (see page 2.4).

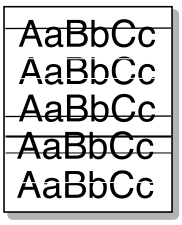
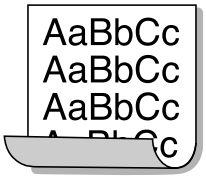
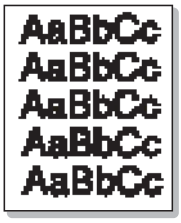
Solving Print Quality Problems

Problem	Solution
Light or faded print  	If a vertical white streak or faded area appears on the page: • The toner supply is low. You may be able to temporarily extend the toner cartridge life. See "Redistributing Toner" on page 4.3. 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 6.3. • If the entire page is light, the print resolution setting is too light or the Toner Save mode is on. Adjust the print resolution and the Toner Save mode in the printer properties. For details, see **Software User's Guide**. • A combination of faded or smeared defects may indicate that the toner cartridge needs cleaning. See "Cleaning the Inside" on page 4.6. • The surface of the LSU part inside the machine may be dirty. Clean the LSU. See "Cleaning the Inside" on page 4.6. Contact a service representative.
Toner specs  	• The paper may not meet specifications (for example, the paper is too moist or too rough). See "Paper Specifications" on page 6.3. • The transfer roller may be dirty. See "Cleaning the Inside" on page 4.6. • The paper path may need cleaning. See "Cleaning the Inside" on page 4.6.
Dropouts  	If faded areas, generally rounded, occur randomly on the page: • 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 6.3. • 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.

Problem	Solution
Vertical lines 	If black vertical streaks appear on the page: • The drum inside the toner cartridge has probably been scratched. Install a new toner cartridge. If white vertical streaks appear on the page: • The surface of the LSU part inside the machine may be dirty. Clean the LSU. See "Cleaning the Inside" on page 4.6. Contact your service representative.
Gray background 	If the amount of background shading becomes unacceptable, the procedures below may fix the problem. • Change to a lighter weight pages. See "Paper Specifications" on page 6.3. • 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.
Toner smear 	• Clean the inside of the printer. See "Cleaning the Inside" on page 4.6. • Check the paper type and quality. See "Paper Specifications" on page 6.3. • Remove the toner cartridge and install a new one. See "Installing the Toner Cartridge" on page 2.4.
Vertical repetitive defects 	If marks repeatedly appear on the printed side of the page at even intervals: • The toner cartridge may be damaged. Clean the inside of the printer. See "Cleaning the Inside" on page 4.6. After cleaning the inside of the printer, 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.

Problem	Solution
Background scatter 	Background scatter results from bits of toner distributed on the printed page. • 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.
Misformed characters 	• 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 6.3.
Page skew 	• Check the paper type and quality. See "Paper Specifications" on page 6.3. • Ensure that the paper or other material is loaded correctly and the guides are not too tight or too loose against the paper stack.
Curl or wave 	• Check the paper type and quality. Both high temperature and humidity can cause paper curl. See "Paper Specifications" on page 6.3. • Turn over the stack of paper in the input tray. Also try rotating the paper 180° in the input tray.

Problem	Solution
Wrinkles or creases 	• Ensure that the paper is loaded properly. • Check the paper type and quality. See "Paper Specifications" on page 6.3. • Turn over the stack of paper in the input tray. Also try rotating the paper 180° in the feeder.
Back of printouts are dirty 	• The transfer roller may be dirty. See "Cleaning the Inside" on page 4.6. • Check for leaking toner. Clean the inside of the printer.
Black pages 	• 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.
Loose toner 	• Clean the inside of the printer. • Check the paper type and quality. See "Paper Specifications" on page 6.3. • Install a new toner cartridge. • If the problem persists, the printer may require repair. Contact a service representative.
Character Voids 	Character voids are white areas within the parts of characters that should be solid black: • 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 6.3.

Problem	Solution
Horizontal stripes 	If horizontally aligned black streaks or smears appear: • 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.
Curl 	If the printed paper is curl or paper does not feed into the printer: • Turn over the stack of paper in the input tray. Also try rotating the paper 180° in the input tray.
Poor Image quality 	The printer does not have enough memory to print a job. Even if you select 600 dpi resolution, the printer automatically select 300 dpi. Simplify the page layout and remove unnecessary graphics from your job.

Troubleshooting Error Messages

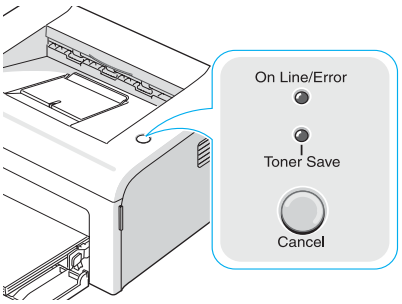
When the printer experiences an error, the control panel will indicate an error message with the indicator lights. Find the light pattern below that matches the printer light pattern and follow the solutions to clear the error.

LED status legend

symbol for "light off"

symbol for "light on"

symbol for "light blinking"



LED pattern	Possible Problems and Solutions
On Line/Error Toner Save	Your system has some problems. If this problem occurs, contact your service representative.
On Line/Error Toner Save On Line/Error LED lights red	• Paper jam occurs. To solve the problem, see "Clearing Paper Jams" on page 5.6. • The front cover is open. Close the front cover. • Paper tray is empty. Load the paper in the Tray. • The toner cartridge is out of toner. Remove the old toner cartridge and install a new one. See "Installing the Toner Cartridge" on page 2.4.
On Line/Error Toner Save	• You pressed the **Cancel** button while the printer is receiving data. • In Manual Feed mode, there is no paper in the tray. Load paper into the tray. • If the printer is receiving data, the **On Line/ Error** LED slowly blinks green. • If the printer is printing the received data, the **On Line/Error** LED blinks green fast. • If the printer does not have enough memory, the **On Line/Error** LED blinks red. In this case, output quality will be low, or an Internal error sheet will print. Simplify the page layout and remove unnecessary graphics from your job.

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 software.
"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 98, Me, 2000 or XP User's Guide that came with your PC for further information on Windows error messages.

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.	• 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. • 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 Samsung Printer Package to change the default when some queues have otherwise been defined using printtool. • 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.

Problem	Possible Cause and Solution
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 Structing Conventions. Problems may arise when using N-up and other features relying on post-processing if the document being printed isn't compliant.
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 programs 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.

Problem	Possible Cause and Solution
How do I specify the IP address of my SMB server?	It can be specified in the "Add Printer" dialog 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.
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.

6 Specifications

This chapter includes:

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

Printer Specifications

Item	Specifications and Description
Print Speed [a]	Up to 16 ppm in A4 (17 ppm in Letter)
Resolution	600 x 600 dpi
First Printing Time	10 seconds
Warmup Time	30 seconds
Power Rating	AC 110 - 127 V (USA, Canada) / 220 - 240 V (Others), 50 / 60 Hz
Power Consumption	300 W average during operation / Less than 6 W in sleep mode
Acoustic Noise [b]	Stand by: Less than 30 dB; Printing: Less than 50 dB Sleep mode: Background noise
Toner Supply	Single cartridge
Toner Cartridge Life [c]	2,000 pages at ISO 19752 5% coverage (Ships with 1,000 pages Starter Toner Cartridge)
Duty Cycle	Monthly: Up to 5,000 pages
Weight	5.5 Kg (including Toner Cartridge)
Package Weight	Paper: 1.2 kg Plastic: 0.2 kg
External Dimensions (W x D x H)	358 x 299 x 217 mm / 14.1 x 11.8 x 8.5 in.
Operating Environment	Temperature:10 ~ 32 °C / 50 ~ 90 °F; Humidity: 20 ~ 80 % RH
Emulation	SPL (Samsung Printer Language)
Random Access Memory (RAM)	2 MB (non expandable)
Fonts	Windows font
Interface	USB 1.1 (Compatible with USB 2.0)
OS Compatibility [d]	Windows 98/Me/2000/XP, Various Linux OS

a. Print speed will be affected by Operating system used, computing performance, application software, connecting method, media type, media size and job complexity.

b. Sound Pressure Level, ISO 7779.

c. The number of pages may be affected by operating environment, printing interval, media type, and media size.

d. Please visit www.samsungprinter.com to download the latest software version.

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 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

Size (mm/in.)[a]	Weight	Capacity[b]
Plain paper Letter (216 x 279/8.5 x 11) A4 (210 x 297/8.3 x 11.7) A5 (148 x 210/5.8 x 8.2) Executive (184 x 267/7.25 x 10.5) Legal (216 x 356/8.5 x 14) JIS B5 (182 x 257/7.2 x 10.1) ISO B5 (176 x 250/6.9 x 9.8) A6 (105 x 148/4.1 x 5.8) Oficio (216 x 343/8.5 x 13.5) Folio (216 x 330/8.5 x 13)	• 60 to 90 g/m^2 bond (16 to 24 lb) for the paper tray • 60 to 163 g/m^2 bond (16 to 43 lb) for the manual feed mode	• 150 sheets of 75 g/m^2 bond (20 lb) paper for the paper tray • 1 sheet of paper for the manual feed mode
Envelopes No.10 (105 x 241/4.1 x 9.5) DL (110 x 220/4.3 x 8.7) C5 (162 x 229/6.4 x 9) C6 (114 x 162/4.5 x 6.4) Monarch (98 x 191/3.9 x 7.5)	75 to 90 g/m^2	1 sheet of paper for the manual feed mode
Labels Letter (216 x 279/8.5 x 11) A4 (210 x 297/8.3 x 11.7)	120 to 150 g/m^2	1 sheet of paper for the manual feed mode
Transparency films Letter (216 x 279/8.5 x 11) A4 (210 x 297/8.3 x 11.7)	138 to 146 g/m^2	
Card stocks Post Card (101.6 x 152.4/4 x 6)	90 to 163 g/m^2	
Minimum size (custom, 76 x 127/3 x5)	60 to 120 g/m^2 bond (16 to 32 lb)	
Maximum size (Legal)		

a. The printer supports a wide range of media sizes.

b. Capacity may vary depending on print materials' weight and thickness, and environmental conditions.

Note: You may experience jams when using print materials with a length of less than 127 mm (5 in.). For optimum performance, ensure that you are storing and handling the paper correctly. Please refer to "Printer and Paper Storage Environment" on page 6.7.

Guidelines for Using Paper

For the best result, use conventional 75 g/m^2 (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), 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	• 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. Ensure that any colored paper or preprinted forms use inks that are compatible with this fusing temperature (180 °C or 372 °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 output tray	50 sheets of 75 g/m^2 bond (20 lb) 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.

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SAMSUNG

Samsung Printer

Software User's Guide

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1 Installing Printer Software in Windows

This chapter includes:

- **Installing Printer Software**
- **Changing the Software Language**
- **Reinstalling Printer Software**
- **Removing Printer Software**

Installing Printer Software

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

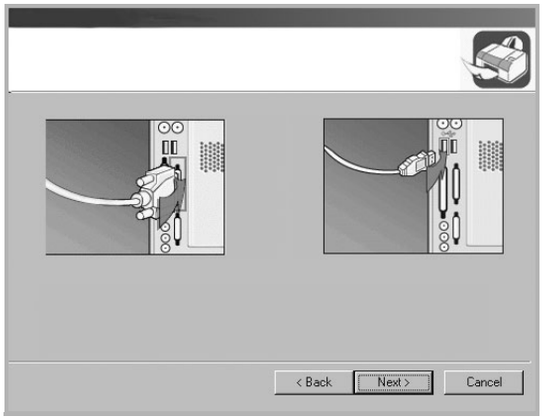
NOTE: If the "New Hardware Wizard" window appears during the installation procedure, click in the upper right corner of the box to close the window, or click **Cancel**.

1 Insert the supplied CD-ROM into your CD-ROM drive.

The CD-ROM should automatically run and an installation window appears.

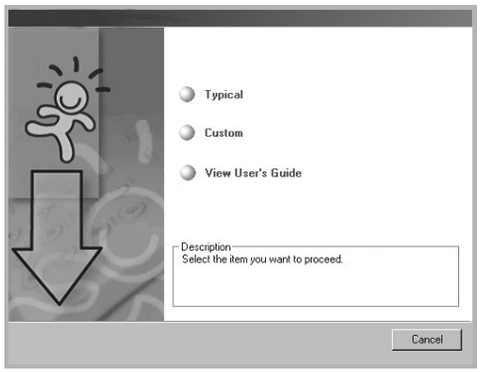
If the installation window does not appear, click **Start** and then **Run**. Type **X:\Setup.exe**, replacing "**X**" with the letter which represents your drive and click **OK**.

NOTE: If your printer is not already connected to the computer, the following window will appear.



- After connecting the printer, click **Next**.
- If you don't want to connect the printer at this time, click **Next**, and **No** on the following screen. Then the installation will start and a test page will not be printed at the end of the installation.
- ***The installation window that appears in this User's Guide may differ depending on the printer and interface in use.***

2 Choose the type of installation.



- **Typical**: Installs the most common software for your printer. This is recommended for most users.
- **Custom**: Allows you to choose both the language of the software and the individual components you want to install. After selecting the language and the component(s), click **Next**.
- **View User's Guide**: Allows you to view the User's Guide. If your computer doesn't have Adobe Acrobat, click on this option and it will automatically install Adobe Acrobat Reader for you.

3 After the installation is finished, a window asking you to print a test page appears. If you choose to print a test page, select the checkbox and click **Next**.

Otherwise, just click **Next** and skip to step 5.

NOTE: If your printer is not connected to the computer, the window asking you to print a test page will not appear.

4 If the test page prints out correctly, click **Yes**.

If not, click **No** to reprint it.

5 To register yourself as a user of Samsung Printers in order to receive information from Samsung, select the checkbox and click **Finish**. You are now sent to the Samsung web site.

Otherwise, just click **Finish**.

NOTE: If your printer driver doesn't work properly, reinstall the printer driver. See "Reinstalling Printer Software" on page 5.

Changing the Software Language

After installation of the software, you can change the display language.

1 Click the Windows **Start** menu.

2 Select **Programs** or **All Programs** and then **your printer driver name**.

3 Select **Language Selection**.

4 Select the desired language from the language selection window, and click **OK**.

Reinstalling Printer Software

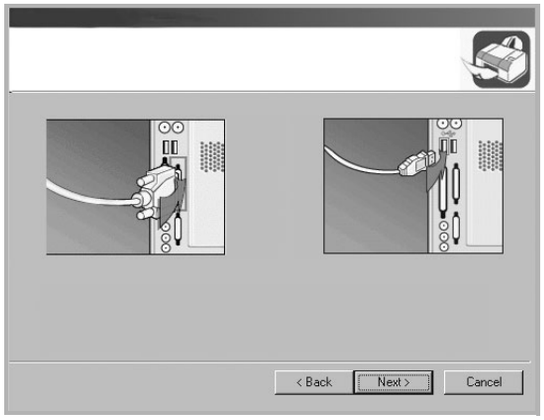
You can reinstall the software if installation fails.

1. Start Windows.
2. From the **Start** menu select **Programs** or **All Programs** → **your printer driver name** → **Maintenance**.

   Or place the CD-ROM into the CD-ROM drive.
3. Select **Repair**.

   You will see a component list so that you can reinstall any one item individually.

NOTE: If your printer is not already connected to the computer, the following window will appear.



- After connecting the printer, click **Next**.
- If you don't want to connect the printer at this time, click **Next**, and **No** on the following screen. Then the installation will start and a test page will not be printed at the end of the installation.
- ***The reinstallation window that appears in this User's Guide may differ depending on the printer and interface in use.***

4. Select the components you want to reinstall and click **Next**.

   If you select **Printer**, the window asking you to print a test page appears. Do as follows:

   a. To print a test page, select the check box and click **Next**.

   b. If the test page prints out correctly, click **Yes**.

   If it doesn't, click **No** to reprint it.
5. When the reinstallation is done, click **Finish**.

Removing Printer Software

1. Start Windows.
2. From the **Start** menu select **Programs** or **All Programs** → **your printer driver name** → **Maintenance**.

   Or place the CD-ROM into the CD-ROM drive.
3. Select **Remove**.

   You will see a component list so that you can remove any one item individually.
4. Select the components you want to remove and then click **Next**.
5. When your computer asks you to confirm your selection, click **Yes**.

   The selected driver and all of its components are removed from your computer.
6. After the software is removed, click **Finish**.

2 Basic Printing

This chapter explains the printing options and common printing tasks in Windows.

This chapter includes:

- **Printing a Document**
- **Printer Settings**
  - **- Layout Tab**
  - **- Paper Tab**
  - **- Graphics Tab**
  - **- Extras Tab**
  - **- About Tab**
  - **- Printer Tab**
  - **- Using a Favorite Setting**
  - **- Using Help**

Printing a Document

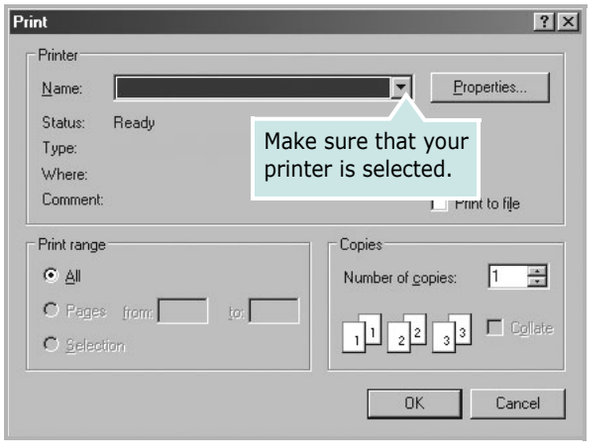
NOTE:

- Your printer driver Properties window that appears in this User's Guide may differ depending on the printer in use. However the composition of the printer properties window is similar.
- ***Check the Operating System(s) that are compatible with your printer. Please refer to the OS Compatibility section of Printer Specifications in your Printer User's Guide.***
- ***You can check your printer name in the supplied CD-ROM.***

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 program you are using. Refer to the User's Guide of your software application for the exact printing procedure.

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. Select **your printer driver** from the **Name** drop-down list.
4. To take advantage of the printer features provided by your printer driver, click **Properties** or **Preferences** in the application's Print window. For details, see "Printer Settings" on page 7.

   If you see **Setup**, **Printer**, or **Options** in your Print window, click it instead. Then click **Properties** on the next screen.
5. Click **OK** to close the printer properties window.
6. To start the print job, click **OK** or **Print** in the Print window.

Printer Settings

You can use the printer properties window, which allows you to access all of the printer options you need when using your printer. When the printer properties are displayed, you can review and change the settings needed for your print job.

Your printer properties window may differ, depending on your operating system. This Software User's Guide shows the Properties window for Windows 98.

Your printer driver Properties window that appears in this User's Guide may differ depending on the printer in use.

If you access printer properties through the Printers folder, you can view additional Windows-based tabs (refer to your Windows User's Guide) and the Printer tab (see "Printer Tab" on page 10).

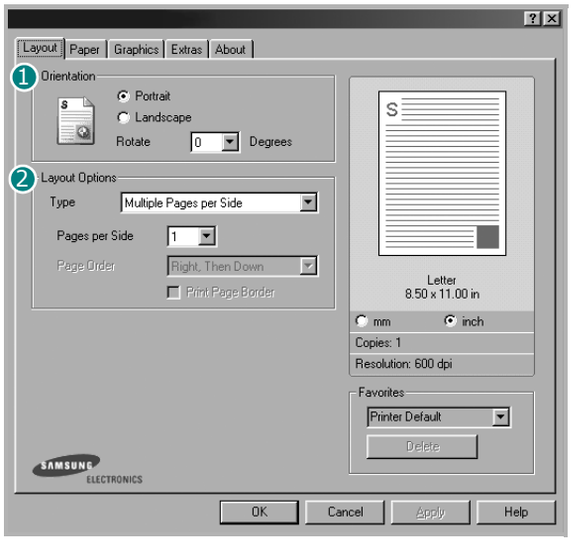
NOTES:

- 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 program. **To make your changes permanent**, make them in the Printers folder. Follows this procedure.
- Click the Windows **Start** button.
  1. For Windows 95/98/Me/NT 4.0/2000, select **Settings** and then **Printers**.

     For Windows XP/2003, select **Printers and Faxes**.
  2. Select **your printer driver icon**.
  3. Right-click on the printer driver icon and:
     - In Windows 95/98/Me, select **Properties**.
     - In Windows 2000/XP/2003, select **Printing Preferences**.
     - In Windows NT 4.0, select **Document Default**.
  4. Change the settings on each tab, and click **OK**.

Layout Tab

The **Layout** tab provides options to adjust how the document appears on the printed page. The **Layout Options** includes **Multiple Pages per Side** and **Poster**. See "Printing a Document" on page 6 for more information on accessing printer properties.



❶ Orientation

Orientation 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.
- **Rotate** allows you to rotate the page the selected degrees.

▲ Portrait

▲ Landscape

❷ Layout Options

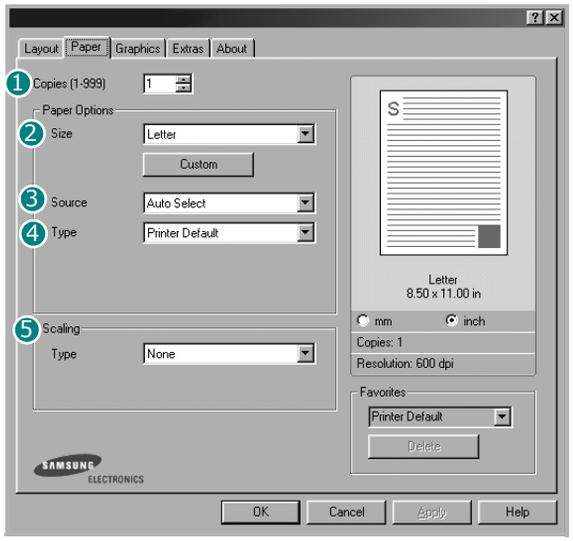
Layout Options allows you to select advanced printing options. You can choose **Multiple Pages per Side** and **Poster**.

- For details, see "Printing Multiple Pages on One Sheet of Paper (N-Up Printing)" on page 12.
- For details, see "Printing Posters" on page 13

Paper Tab

Use the following options to set the basic paper handling specifications when you access the printer properties. See "Printing a Document" on page 6 for more information on accessing printer properties.

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

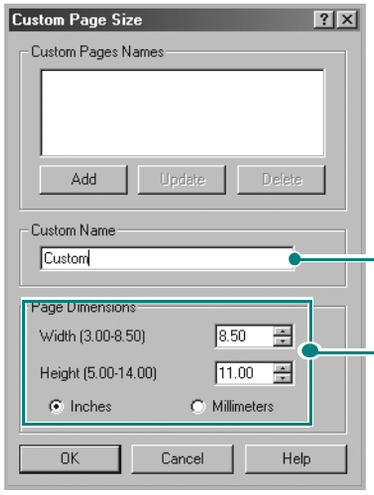


❶ Copies

Copies allows you to choose the number of copies to be printed. You can select 1 to 999 copies.

❷ Size

Size allows you to set the size of paper you loaded in the tray. If the required size is not listed in the **Size** box, click **Custom**. When the **Custom Page Size** window appears, set the paper size and click **OK**. The setting appears in the list so that you can select it.



Enter the custom name you want to use.

Enter the paper size.

❸ Source

Make sure that **Source** is set to the corresponding paper tray. **Manual Feed** is used when you print using special materials like envelopes and transparencies. You have to load one sheet at a time into the printer.

If the paper source is set to **Auto Select**, the printer automatically selects print material from the tray.

❹ Type

Make sure that **Type** is set to **Printer Default**. If you load a different type of print material, select the corresponding paper type. If you use cotton paper, set the paper type to **Thick** for best printing. To use recycled paper, with weighs from 20lb to 24lb (75~90g/m^2), or colored paper, select **Color Paper**.

❺ Scaling

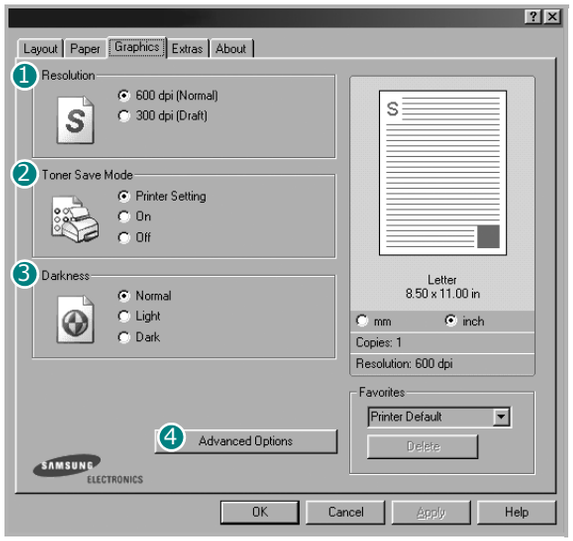
Scaling allows you to automatically or manually scale your print job on a page. You can choose from **None**, **Reduce/Enlarge**, and **Fit to Page**.

- For details, see "Printing a Reduced or Enlarged Document" on page 13.
- For details, see "Fitting Your Document to a Selected Paper Size" on page 14.

Graphics Tab

Use the following Graphic options to adjust the print quality for your specific printing needs. See "Printing a Document" on page 6 for more information on accessing printer properties.

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



❶ Resolution

You can select the printing resolution by choosing **600 dpi (Normal)** or **300 dpi (Draft)**. The higher the setting, the sharper the clarity of printed characters and graphics. The higher setting also may increase the time it takes to print a document.

❷ Toner Save Mode

Selecting this option extends the life of your toner cartridge and reduces your cost per page without a significant reduction in print quality.

- **Printer Setting**: If you select this option, this feature is determined by the setting you've made on the control panel of the printer. Some printers do not support this feature.
- **On**: Select this option to allow the printer to use less toner on each page.
- **Off**: If you don't need to save toner when printing a document, select this option.

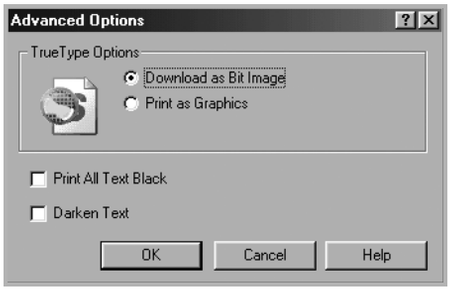
❸ Darkness

Use this option to lighten or darken your print job.

- **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.

❹ Advanced Options

You can set advanced settings by clicking the **Advanced Options** button.

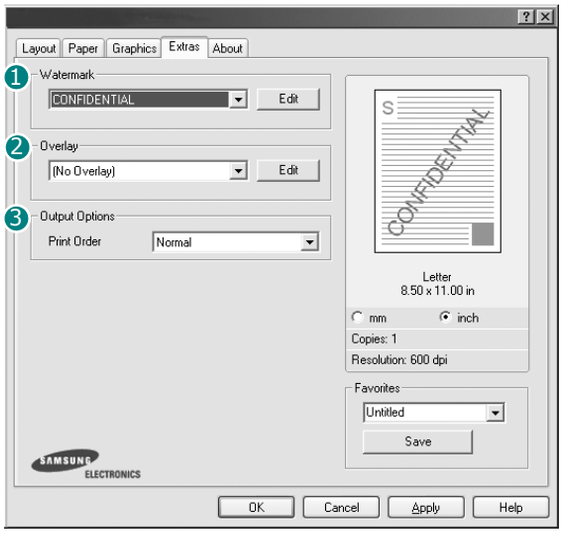


- **TrueType Options**: This option determines what the driver tells the printer about how to image the text in your document. Select the appropriate setting according to the status of your document. ***This option is available only when you use Windows 98.***
  - **Download as Bit Image**: When this option is selected, the driver will download the font data as bitmap images. Documents with complicated fonts, such as Korean or Chinese, or various other 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.
- **Print All Text Black**: When the **Print All Text Black** option is checked, all text in your document prints solid black, regardless of the color it appears on the screen. When not checked, colored text prints in shades of gray.
- **Darken Text**: When the **Darken Text** option is checked, all text in your document is allowed to print darker than on a normal document.

Extras Tab

You can select output options for your document. See "Printing a Document" on page 6 for more information about accessing the printer properties.

Click the **Extras** tab to access the following feature:



❶ Watermark

You can create a background text image to be printed on each page of your document. For details, see "Using Watermarks" on page 14.

❷ Overlay

Overlays are often used to take the place of preprinted forms and letterhead paper. For details, see "Using Overlays" on page 16.

❸ Output Options

- **Print Order**: You can set the sequence in which the pages print. Select the print order from the drop-down list.
  - **Normal**: Your printer prints all pages from the first page to the last page.
  - **Reverse All Pages**: Your printer prints all pages from the last page to the first page.
  - **Print Odd Pages**: Your printer prints only the odd numbered pages of the document.
  - **Print Even Pages**: Your printer prints only the even numbered pages of the document.
- **Reprint When Jammed**: When this option is checked, the printer retains the image of a printed page until the printer signals that the page has successfully exited the printer. If a paper jam occurs, the printer will reprint the last page sent from the computer after you have cleared the jam.

About Tab

Use the **About** tab to display the copyright notice and the version number of the driver. If you have an Internet browser, you can connect to the Internet by clicking on the web site icon. See "Printing a Document" on page 6 for more information about accessing printer properties.

Printer Tab

If you access printer properties through the **Printers** folder, you can view the **Printer** tab. You can set the printer configuration.

1. Click the Windows **Start** menu.
2. For Windows 95/98/Me/NT 4.0/2000, select **Settings** and then **Printer**.

   For Windows XP, select **Printers and Faxes**.
3. Select **your printer driver** icon.
4. Right-click on the printer driver icon and select **Properties**.
5. Click the **Printer** tab and set the options.

High Altitude Correction

If your printer is going to be used at a high altitude, checking this option will optimize the print quality for those circumstances.

Power Save

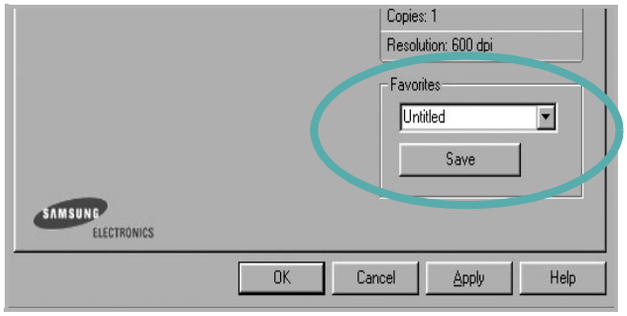
When this option is checked, the printer turns to the power save mode after the selected time.

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**.

   When you save **Favorites**, all current driver settings are saved.

To use a saved setting, select the item from the **Favorites** drop down list. The printer is now set to print according to the Favorites setting you selected.

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 clicking the **Help** button in the printer 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 corner of the window, and then click on any setting.

3 Advanced Printing

This chapter explains printing options and advanced printing tasks.

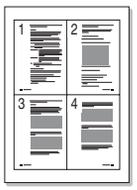
NOTE:

- Your printer driver **Properties** window that appears in this User's Guide may differ depending on the printer in use. However the composition of the printer properties window is similar.
- ***You can check your printer name in the supplied CD-ROM.***

This chapter includes:

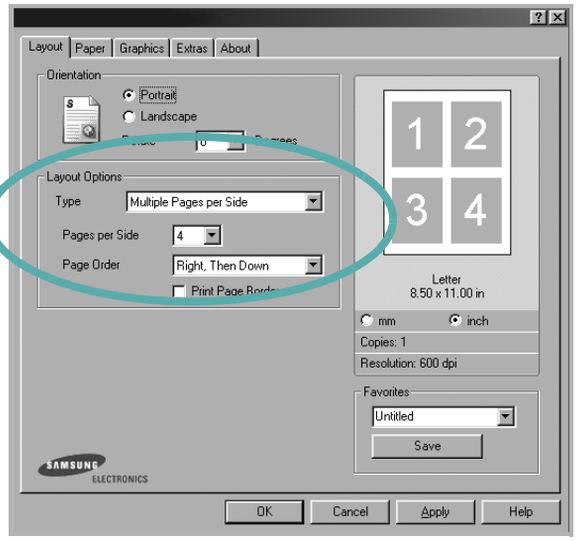
- **Printing Multiple Pages on One Sheet of Paper (N-Up Printing)**
- **Printing Posters**
- **Printing a Reduced or Enlarged Document**
- **Fitting Your Document to a Selected Paper Size**
- **Using Watermarks**
- **Using Overlays**

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 be reduced in size and arranged in the order you specify. You can print up to 16 pages on one sheet.

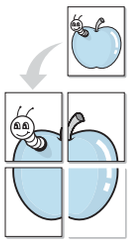
1. To change the print settings from your software application, access printer properties. See "Printing a Document" on page 6.
2. From the **Layout** tab, choose **Multiple Pages per Side** in the **Type** drop-down list.
3. Select the number of pages you want to print per sheet (1, 2, 4, 6, 9, or 16) in the **Pages per Side** drop-down list.



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

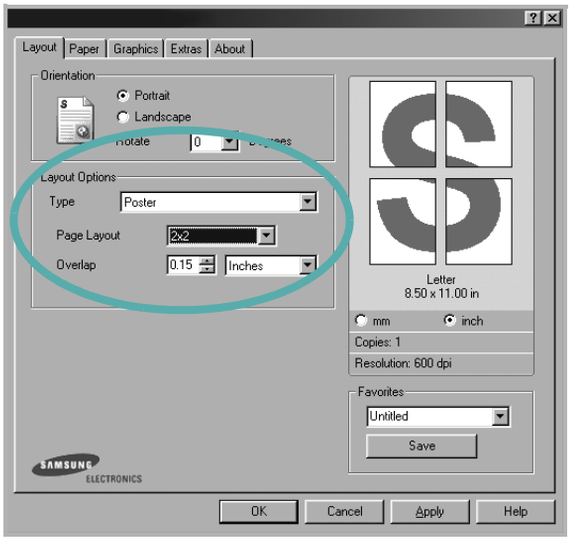
   Check **Print Page Border** to print a border around each page on the sheet.
5. Click the **Paper** tab, select the paper source, size, and type.
6. Click **OK** and print the document.

Printing Posters



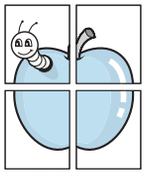
This feature allows you to print a single-page document onto 4, 9, or 16 sheets of paper, for the purpose of pasting the sheets together to form one poster-size document.

1. To change the print settings from your software application, access printer properties. See "Printing a Document" on page 6.
2. Click the **Layout** tab, select **Poster** in the **Type** drop-down list.

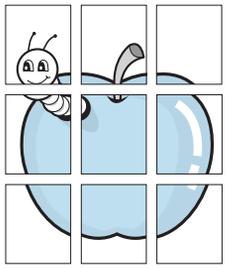


3. Configure the poster option:

   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.

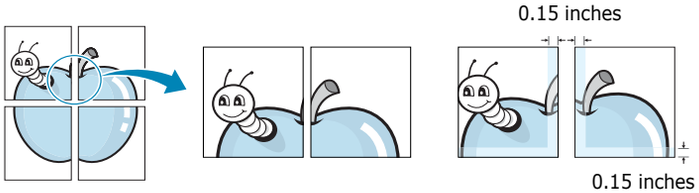


▲ 2x2



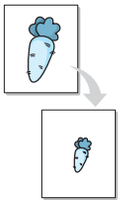
▲ 3x3

   Specify an overlap in millimeters or inches to make it easier to pasting the sheets together.



4. Click the **Paper** tab, select the paper source, size, and type.
5. Click **OK** and print the document. You can complete the poster by pasting the sheets together.

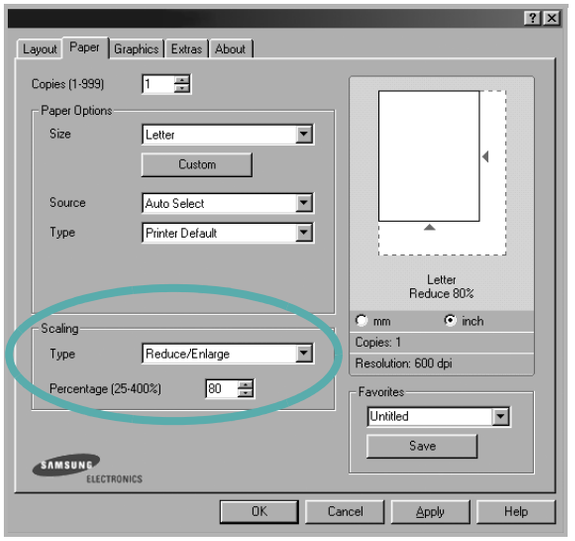
Printing a Reduced or Enlarged Document



You can change the size of a page's content to appear larger or smaller on the printed page.

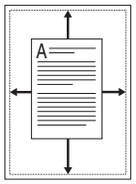
1. To change the print settings from your software application, access printer properties. See "Printing a Document" on page 6.
2. From the **Paper** tab, select **Reduce/Enlarge** in the **Type** drop-down list.
3. Enter the scaling rate in the **Percentage** input box.

   You can also click the ▼ or ▲ button.



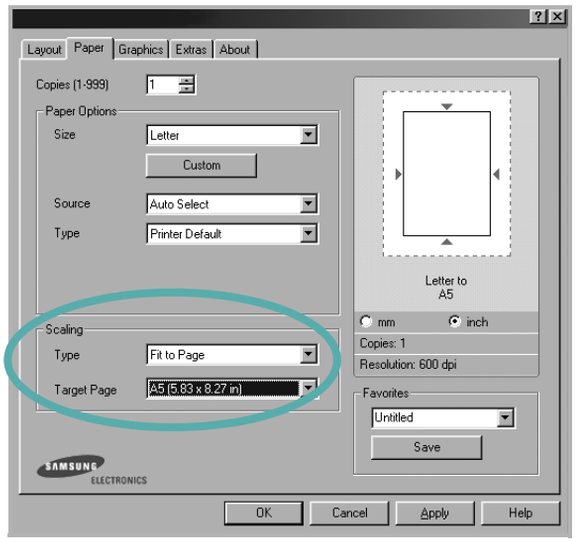
4. Select the paper source, size, and type in **Paper Options**.
5. Click **OK** and print the document.

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. To change the print settings from your software application, access printer properties. See "Printing a Document" on page 6.
2. From the **Paper** tab, select **Fit to Page** in the **Type** drop-down list.
3. Select the correct size from the **Target Page** drop-down list.



4. Select the paper source, size, and type in **Paper Options**.
5. Click **OK** and print the document.

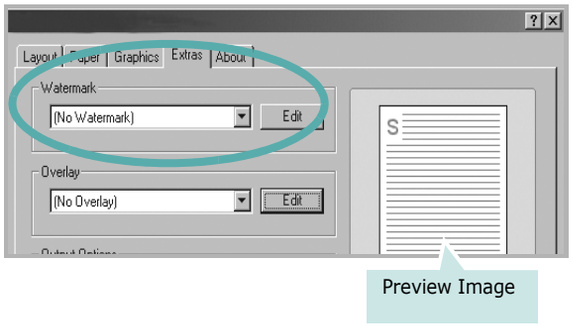
Using Watermarks

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 the printer, and they can be modified, or you can add new ones to the list.

Using an Existing Watermark

1. To change the print settings from your software application, access printer properties. See "Printing a Document" on page 6.
2. Click the **Extras** tab, and select the desired watermark from the **Watermark** drop-down list. You will see the selected watermark in the preview image.

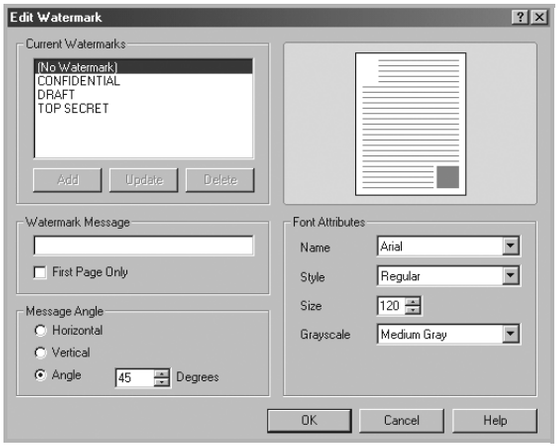


3. Click **OK** and start printing.

NOTE: The preview image shows how the page will look when it is printed.

Creating a Watermark

1. To change the print settings from your software application, access printer properties. See "Printing a Document" on page 6.
2. Click the **Extras** tab, and click the **Edit** button in the **Watermark** section. The **Edit Watermark** window appears.



3. Enter a text message in the **Watermark Message** box. You can enter up to 40 characters. The message displays in the preview window.

   When the **First Page Only** box is checked, the watermark prints on the first page only.
4. Select watermark options.

   You can select the font name, style, size, or 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 have finished editing, click **OK** and start printing.

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

Editing a Watermark

1. To change the print settings from your software application, access printer properties. See "Printing a Document" on page 6.
2. Click the **Extras** tab and click the **Edit** button in the **Watermark** section. The **Edit Watermark** window appears.
3. Select the watermark you want to edit from the **Current Watermarks** list and change the watermark message and options.
4. Click **Update** to save the changes.
5. Click **OK** until you exit the Print window.

Deleting a Watermark

1. To change the print settings from your software application, access printer properties. See "Printing a Document" on page 6.
2. From the **Extras** tab, click the **Edit** button in the Watermark section. The **Edit Watermark** window appears.
3. Select the watermark you want to delete from the **Current Watermarks** list and click **Delete**.
4. Click **OK** until you exit the Print window.

Using Overlays

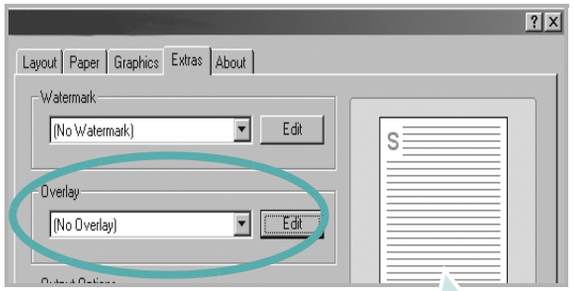
What is an Overlay?

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.

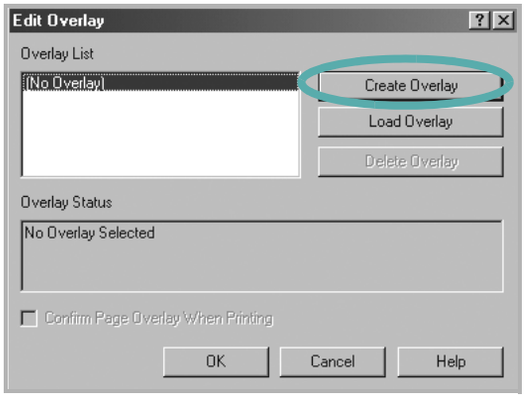
Creating a New Page Overlay

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.
2. To save the document as an overlay, access printer properties. See "Printing a Document" on page 6.
3. Click the **Extras** tab, and click **Edit** button in the **Overlay** section.



4. In the Edit Overlay 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**. The name appears on the **Overlay List** box.
7. Click **OK** or **Yes** to finish creating.

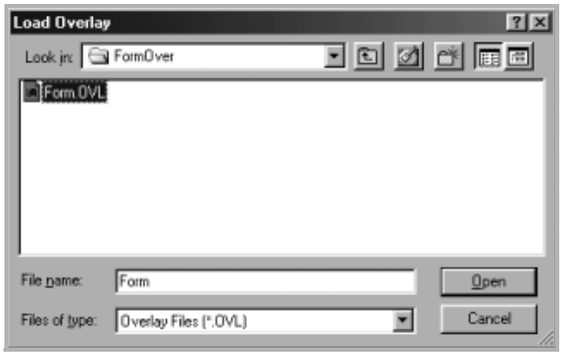
   The file is not printed. Instead it is stored on your computer hard disk drive.

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

Using a Page Overlay

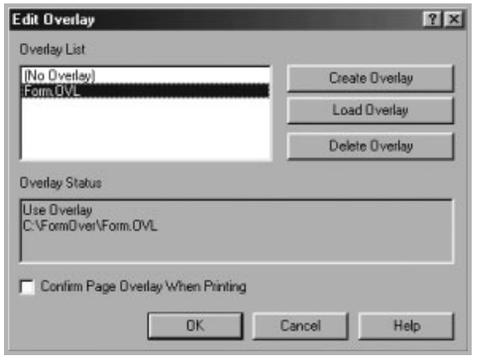
After an overlay has been created, it is ready to be printed with your document. To print an overlay with a document:

1. Create or open the document you want to print.
2. To change the print settings from your software application, access printer properties. See "Printing a Document" on page 6.
3. Click the **Extras** tab.
4. Select the desired overlay from the **Overlay** drop-down list box.
5. If the overlay file you want does not appear in the **Overlay** list, click **Edit** button and **Load Overlay**, and select the overlay file.



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

After you select the file, click **Open**. The file appears 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 appears each time you submit a document for printing, asking you to confirm your wish to print an overlay on your document.

   If this box is not checked and an overlay has been selected, the overlay automatically prints with your document.
7. Click **OK** or **Yes** until printing begins.

   The selected overlay downloads with your print job and prints 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 you no longer use.

1. In the printer properties window, click the **Extras** tab.
2. Click the **Edit** button in the **Overlay** section.
3. Select the overlay you want to delete from the **Overlay List** box.
4. Click **Delete Overlay**.
5. When a confirming message window appears, click **Yes**.
6. Click **OK** until you exit the Print window.

4 Sharing the Printer Locally

You can connect the printer directly to a selected computer, which is called "host computer," on the network.

The printer can be shared by other users on the network through a Windows 95 or higher network printer connection.

NOTE:

- ***Check the Operating System(s) that are compatible with your printer. Please refer to the OS Compatibility section of Printer Specifications in your Printer User's Guide.***
- ***You can check your printer name in the supplied CD-ROM.***

Windows 9x/Me

Setting Up a Host Computer

1. Start Windows.
2. From the **Start** menu, select **Control Panel** from **Settings**, 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 driver icon**.
5. Select **Properties** in the **Printer** menu.
6. Click the **Sharing** tab and check the **Shared As** box.
7. Fill in the **Shared Name** field and click **OK**.

Setting Up a 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 then click **OK**.
5. From the **Start** menu, select **Settings** and **Printers**.
6. Double-click **your printer driver icon**.
7. From the **Printer** menu, select **Properties**.
8. From the **Details** tab, select the printer port and click **OK**.

Windows NT 4.0 or higher

Setting Up a Host Computer

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

   For Windows XP or higher, from the **Start** menu select **Printers and Faxes**.
3. Double-click **your printer driver 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 or higher, check the **Share this printer** box.
6. For Windows NT 4.0, fill in the **Share Name** field, and then click **OK**.

   For Windows 2000 or higher, fill in the **Shared Name** field, and then click **OK**.

Setting Up a 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, from the **Start** menu select **Settings** and **Printers**.

   For Windows XP or higher, from the **Start** menu select **Printers and Faxes**.
5. Double-click **your printer driver 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 with the shared name.
10. Click **OK** and click **Close**.
11. For Windows NT 4.0, click **OK**.

    For Windows 2000 or higher, click **Apply** and click **OK**.

5 Using Status Monitor

If an error occurs while printing, the Status Monitor window appears, showing the error.

NOTES:

- The Status Monitor program can only be used if you connect your printer to your computer with the USB cable, or if the printer is networked.
- ***Some printer do not support a network interface. Make sure that your printer supports a network interface by referring to Printer Specifications in your Printer User's Guide.***
- ***You can use Status Monitor in Windows 98 or higher.***
- ***Windows NT 4.0 is only for network supported printers.***
- Check the Operating System(s) that are compatible with your printer. Please refer to the OS Compatibility section of Printer Specifications in your Printer User's Guide.
- You can check your printer name in the supplied CD-ROM.

Installing Status Monitor

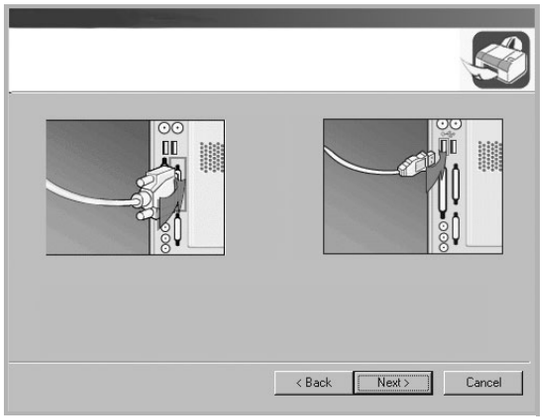
To install Status Monitor, select **Custom** and then **Status Monitor** while installing the software. For details, see "Installing Printer Software" on page 3.

If you selected **Typical** while installing the software, you can install Status Monitor as follows:

1. Start Windows.
2. From the **Start** menu, select **Programs** or **All Programs** → **your printer driver name** → **Maintenance**.

   Or insert the supplied CD-ROM into the CD-ROM drive.
3. Select **Repair**.

NOTE: If your printer is not already connected to the computer, the following window will appear.



- After connecting the printer, click **Next**.
- If you don't want to connect the printer at this time, click **Next** and **No** on the following screen.
- ***The Status Monitor window that appears in this User's Guide may differ depending on the printer and interface in use. However the composition of the Status Monitor window is similar.***

4. Select **Status Monitor** and then click **Next**.
5. When the installation is completed, click **Finish**.

NOTE: If you want to remove Status Monitor, For details, see "Removing Printer Software" on page 5.

Opening the Troubleshooting Guide

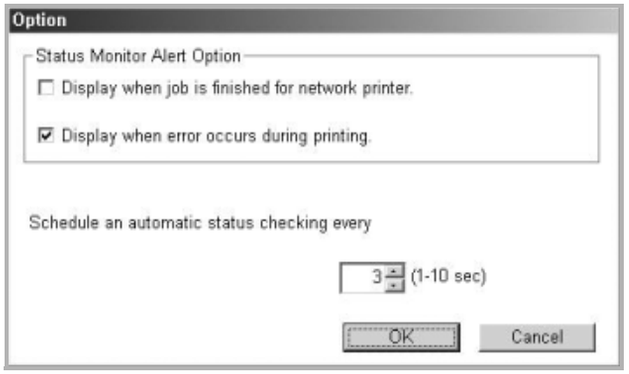
Double click the Status Monitor icon on the Windows task bar.

Or, from the **Start** menu, select **Programs** or **All Programs** → **your printer driver name** → **Troubleshooting Guide**.

Changing the Status Monitor Program Settings

Select the Status Monitor icon on the Windows task bar and right-click on the Status Monitor icon. Select **Option**.

The following window opens.



- **Display when job is finished for network printer** shows the Status Monitor balloon when your job is complete. ***(Only for a network supported printer.)***
- **Display when error occurs during printing** shows the Status Monitor balloon when an error occurs during printing.
- **Schedule an automatic status checking every** allows the computer to update the printer status regularly. Setting the value close to 1 second causes the computer to check the printer status more frequently, thereby allowing a faster response to any printer error.

NOTE: When the Status Monitor balloon appears to indicate an error, you can cancel the current print job or view the corresponding solution. If you select **Cancel Printing**, turn the printer off and then click **OK**. It may take several minutes. Note that data which is being sent to the printer via the network will be lost.

6 Using Your Printer in Linux

You can use your printer in a Linux environment.

This chapter includes:

- **System Requirements**
- **Installing the Printer Driver**
- **Changing the Printer Connection Method**
- **Uninstalling the Printer Driver**
- **Using the Configuration Tool**
- **Changing LLPR Properties**

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 Capacities

- Pentium IV 1 GHz or higher
- RAM 256 MB or higher
- HDD 1 GB or higher

Software

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

NOTES:

- The Linux printer's properties window that appears in this User's Guide may differ depending on the printer in use. However the composition of the properties is similar.
- ***You can check your printer name in the supplied CD-ROM.***

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 a super user, ask your system administrator.

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

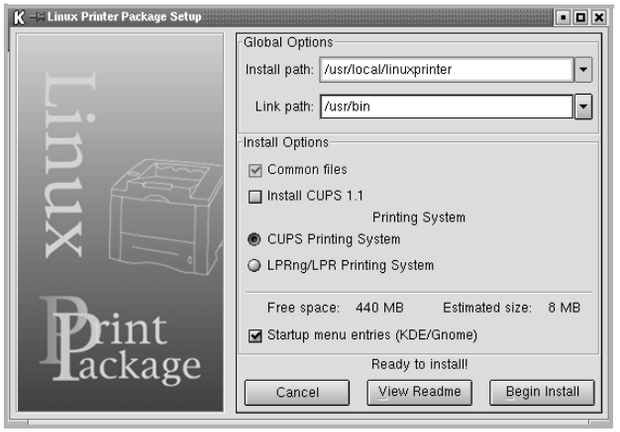
NOTE: If the CD-ROM does not automatically run, click the icon at the bottom of the window. When the Terminal screen appears, type in:
[root@local /root]# **cd /mnt/cdrom** (the CD-ROM directory)
[root@local cdrom]# **./setup.sh**

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

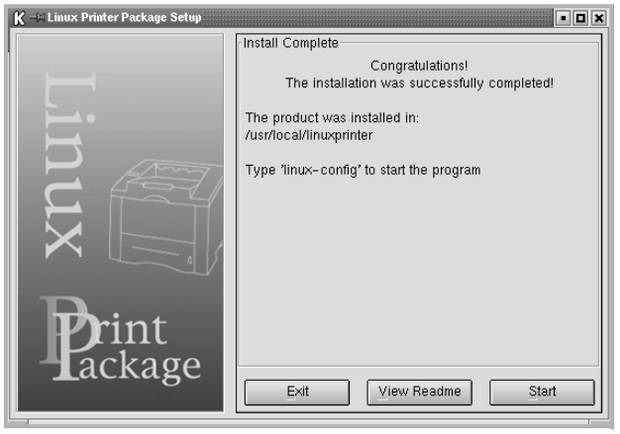
Recommended is fully automated and does not require any interaction. **Expert** installation allows you to select the install path or printing system.

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**.



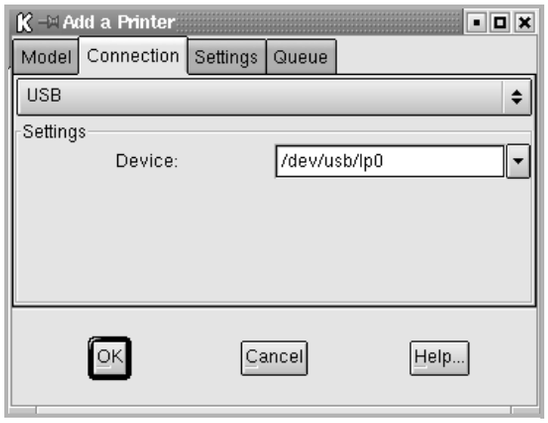
7 The Linux Printer Configuration window opens. Click the **Add Printer** icon on the toolbar at the top of the window.

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 installed in your system. Select the printer you want to 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 it is not, change the device setting.



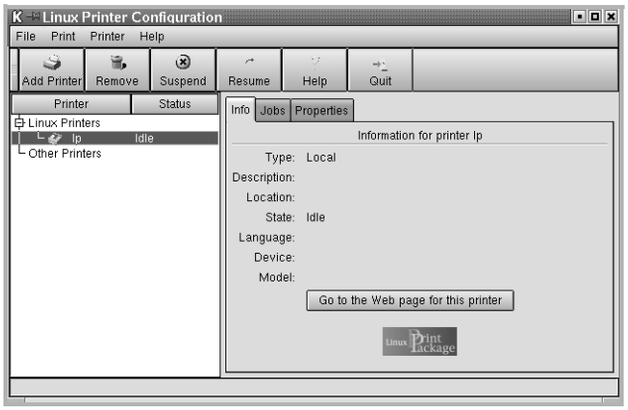
10 You can use the **Settings** tab and the **Queue** tab to view the printer's current settings. If necessary, you can change the settings.

NOTE: 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 indicates that the new printer is successfully configured, click **OK**.

13 The Linux Printer Configuration window reappears. From the **Info** tab, you can view information about your printer driver. If necessary, you can change the printer's configuration. For details about changing the printer's configuration, see "Using the Configuration Tool" on page 24.



Changing the Printer Connection Method

If you change the printer connection method from USB to parallel or vice versa while in use, you must reconfigure your Linux printer by adding the printer to 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 a super user, ask your system administrator.

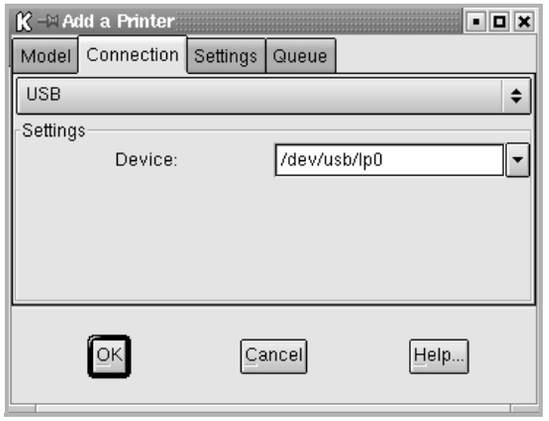
3 From the Startup Menu icon at the bottom of the desktop, select **Linux Printer** and then **Configuration Tool**.

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 toolbar at the top of the window.

5 Click the **Connection** tab at the top of the Add a Printer window.

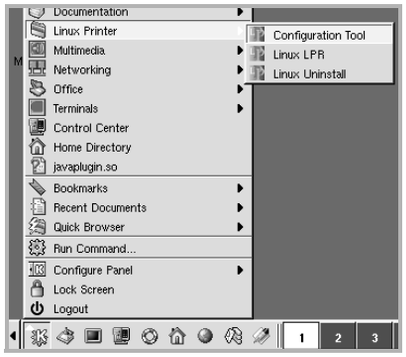
Ensure that the printer port is set properly. If it is not, change the device setting.



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.

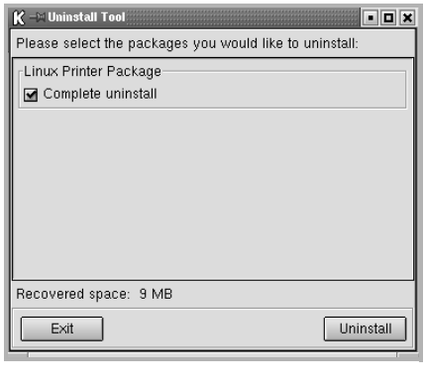
2 In the Linux Printer Configuration window, select the **Uninstall** command from the **File** menu.

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 a super user, ask your system administrator.

4 A message window asking for 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 accesses administrative tasks, including adding and removing new printers, and changing their global settings. Regular users can also run it to easily inspect job queues, examine printer properties and changing their local preferences.

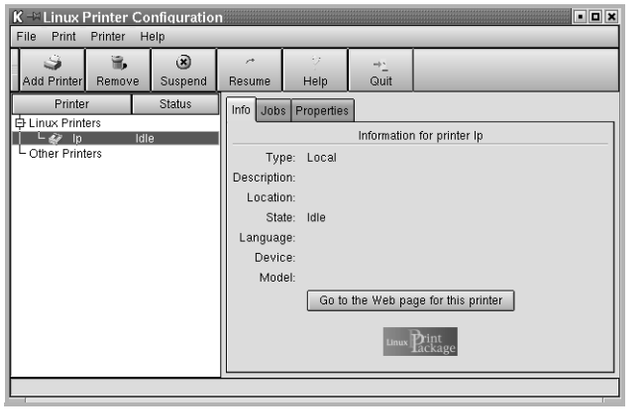
To access the Configuration Tool:

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 in the left pane. The right pane shows a number of tabs that display information regarding the currently selected printer.

Select your printer driver, if not currently selected.

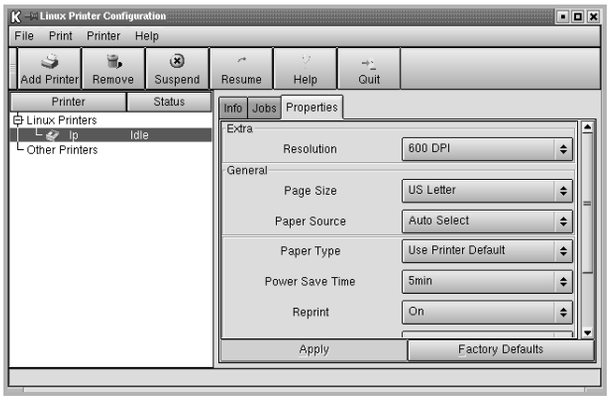


3 The **Info** tab shows general information about the printer.

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



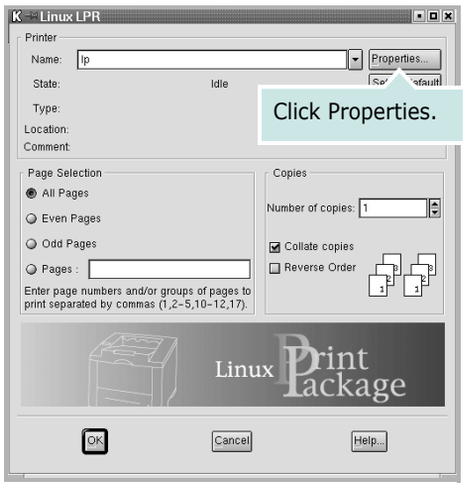
NOTE: Regular users are able to override the system-wide default settings defined by the administrator. When a regular user clicks **Apply**, these custom settings will be saved in the user's profile and may be used later with LLPR. If the administrator is running the configuration tool, then the settings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

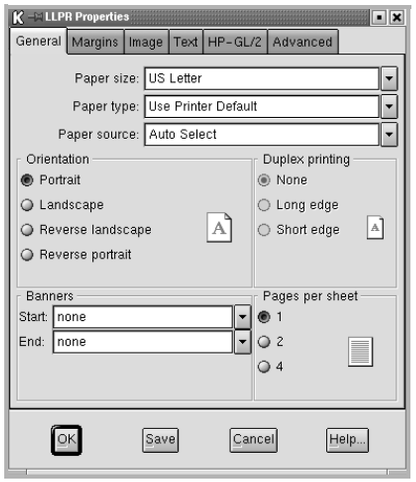
1. From the application you are using, select the **Print** command.
2. When the Linux LPR window opens, click **Properties**.



You can also open the LLPR Properties window in the following ways:

- From the Startup Menu icon at the bottom of the screen, 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 the 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 show 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 image files, i.e., when a non-PostScript document is passed to LLPR on the command line. Color settings will also take effect for postscript documents.
- **Text** - allows you to select the text density and turn the syntax coloring on or off.
- **HP-GL/2** - allows you to set default options to print HP-GL/2 format documents, 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 retained between LLPR sessions.

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**.

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