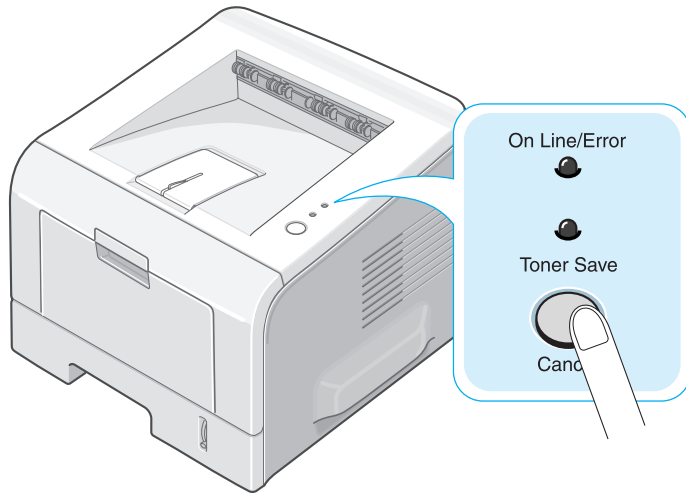


Cancelling a Print Job

There are two ways to cancel a print job.

To stop a print job from the control panel:

Press the **Cancel** button on the control panel.

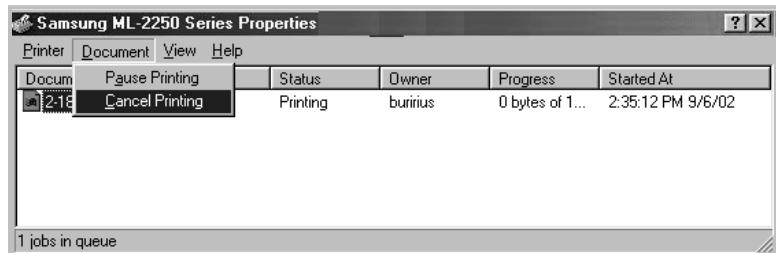


4

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

To stop a print job from the Printers folder:

- 1 From the Windows **Start** menu, select **Settings**.
- 2 Select **Printers** to open the Printers window, and double-click the **Samsung ML-2250 Series** icon.
- 3 From the **Document** menu, select **Cancel Printing** (Windows 9x/Me) or **Cancel** (Windows NT 4.0/2000/XP).



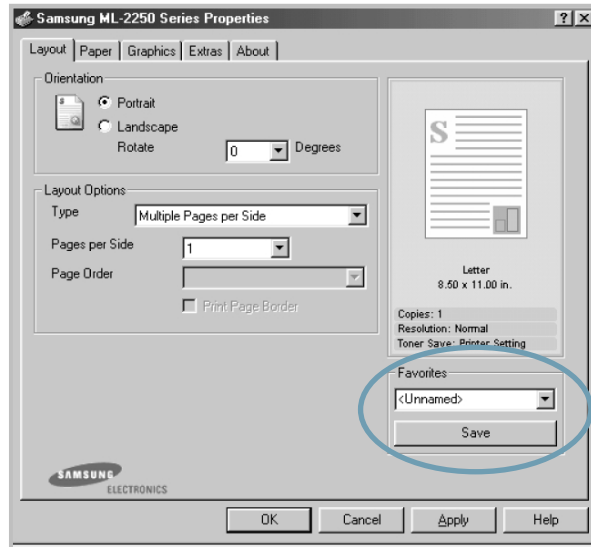
▲ Windows 98

Using a Favorite Setting

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

To save a Favorites item:

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



- 3 Click **Save**.

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

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

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

Using Help

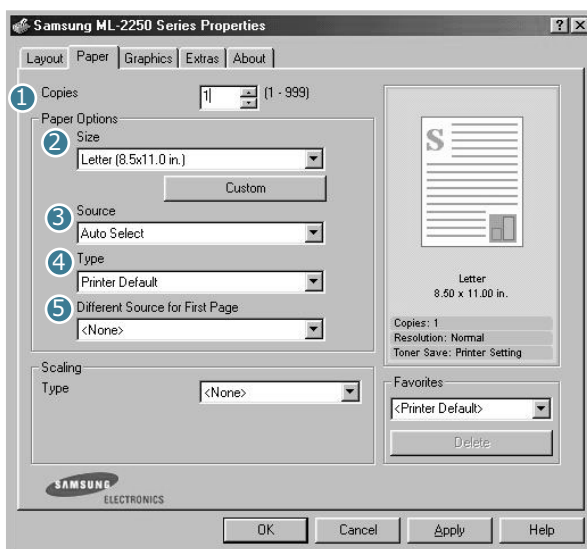
Your printer has a help screen that can be activated by the **Help** button in the printer's properties window. These help screens give detailed information about the printer features provided by the printer driver.

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

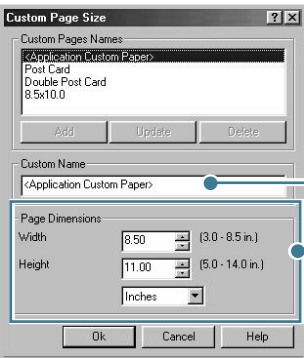
Setting Paper Properties

Use the following options to set the basic paper handling needs when you access the printer properties. See page 4.2 for more information about accessing printer properties.

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



4

Property	Description
1 Copies	Copies allows you to choose the number of copies to be printed. You can enter up to 999.
2 Size	The Size option allows you to choose the size of paper 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 and click Ok. The size setting appears in the Size list so that you can select it.  Enter the custom name you want to use. Enter the paper size.

Property	Description
③ Source	Make sure that Source is set to the corresponding paper tray. The Manual Feed source is used when printing to special materials. You have to load one sheet at a time into the Multi-Purpose Tray. See page 3.12. If the paper source is set to Auto Select, the printer automatically picks up print materials according to the following order: Multi-Purpose Tray, Tray1, Optional Tray2.
④ Type	Make sure that Type is set to Printer Default. If you load a different type of print materials, select the corresponding paper type. For more information on print materials, refer to Chapter 3, "Using Print Materials." If you use cotton paper, set the paper type to Thick for the best printing. To use recycled paper, which weighs from 20lb to 24lb, or other colored paper, select Color paper.
⑤ Different Source for First Page	This property allows you to print the first page using a different paper type from the rest of the document. You can select the paper source for the first page. For example, load thick stock for the first page into the Multi-Purpose Tray, and plain paper into the Tray1. Then, select Tray1 in the Source option and Multi-Purpose Tray in the Different Source for First Page option.

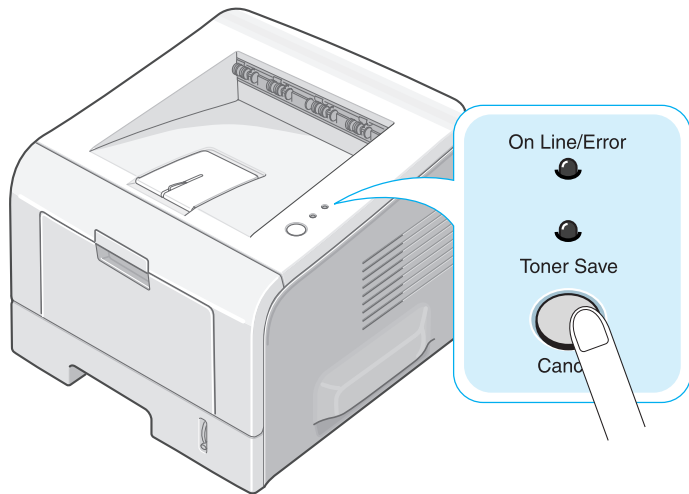
Using the Toner Save Mode

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

There are two ways to enable the Toner Save mode:

From the Control Panel

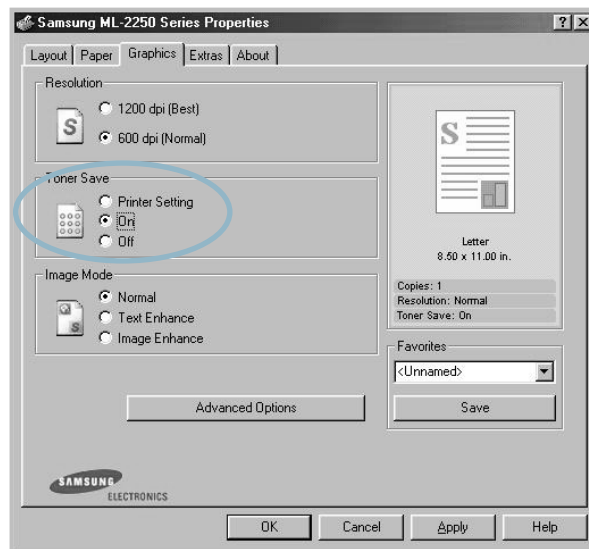
Press the **Cancel** button on the control panel. The printer must be in Ready mode (**On Line/Error** green LED is on).



- 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 software application

- 1 When you change the print settings from your software application, access the printer properties. See page 4.2.
- 2 Click the **Graphics** tab, and select the **Toner Save** option. You can select from:
 - **Printer Setting**: If you select this option, the Toner Save feature is determined by the setting you've made on the control panel of the printer.
 - **On**: Select this option to allow the printer to use less toner on each page.
 - **Off**: If you don't need to save toner to print a document, select this option.

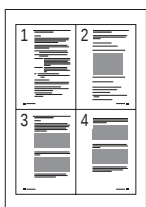


- 3 Click **OK**.



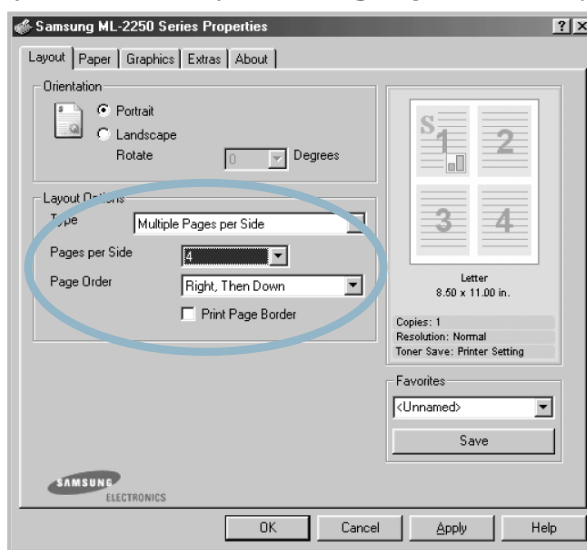
NOTE: The setting in the software application overrides that on the control panel.

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

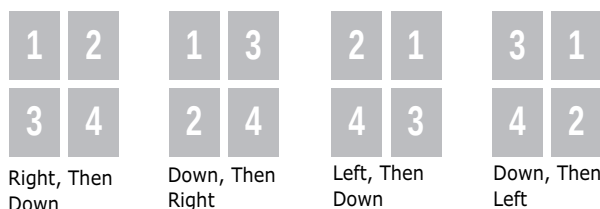


You can select the number of pages to print on a single sheet of paper. To print more than one page per sheet, the pages will appear decreased in size and arranged on the sheet. You can print up to 16 pages on one sheet.

- 1 To change the print settings from your software application, access the printer properties. See page 4.2.
- 2 From the **Layout** tab, choose **Multiple Pages per Side** in the **Type** drop-down list.
- 3 Select the number of pages you want to print per sheet (1, 2, 4, 9 or 16) in the **Pages per Side** drop-down list.



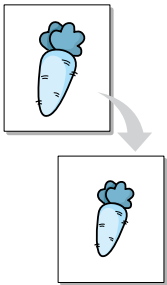
- 4 Select the page order in the **Page Order** drop-down list, if necessary.



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

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

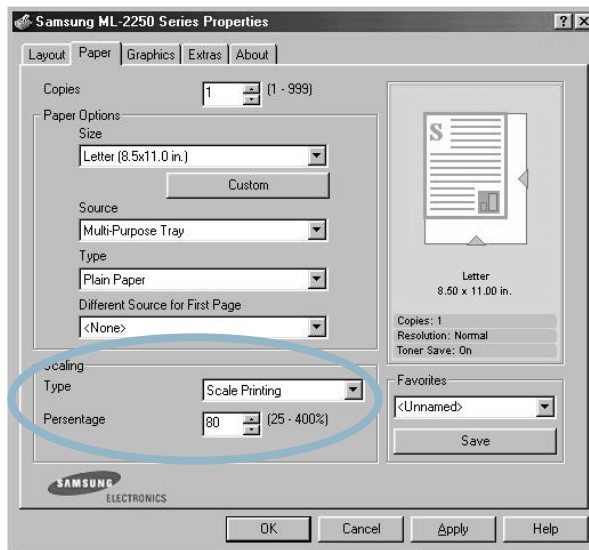
Printing a Reduced or Enlarged Document



You can scale your print job on a page.

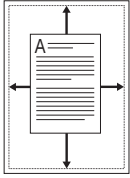
- 1 When you change the print settings from your software application, access the printer properties. See page 4.2.
- 2 From the **Paper** tab, select **Scale Printing** in the **Type** drop-down list.
- 3 Enter the desired scaling rate in the **Percentage** input box.

You can also click the ▲ or ▼ button.



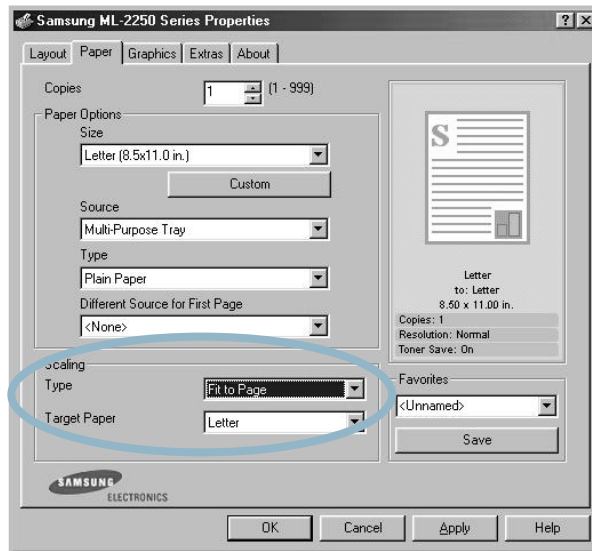
- 4 Select the paper source, size, and type.
- 5 Click **OK** and print the document.

Fitting Your Document to a Selected Paper Size



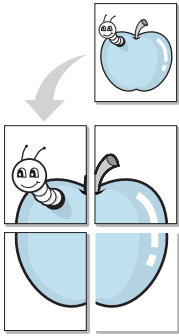
This printer feature allows you to scale your print job to any selected paper size regardless of the digital document size. This can be useful when you want to check fine details on a small document.

- 1 To change the print settings from your software application, access the printer properties. See page 4.2.
- 2 From the **Paper** tab, select **Fit to Page** in the **Type** drop-down list.
- 3 Select the correct size from the **Target Paper** drop-down list.



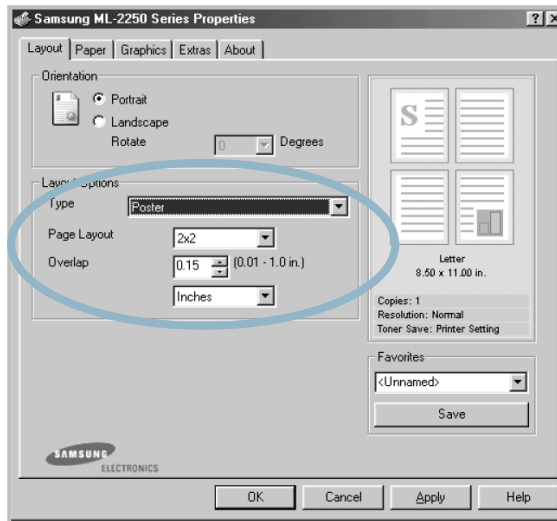
- 4 Select the paper source, size and type.
- 5 Click **OK** and print the document.

Printing Posters



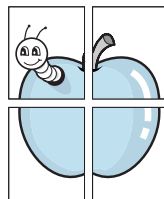
This feature allows you to print a single-page document onto 4, 9 or 16 sheets of paper, for the purpose of pasting the sheets together to form one poster-size document.

- 1 To change the print settings from your software application, access the printer properties. See page 4.2.
- 2 From the **Layout** tab, select **Poster** in the **Type** drop-down list.

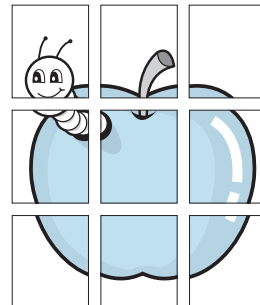


- 3 Configure the poster option:

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

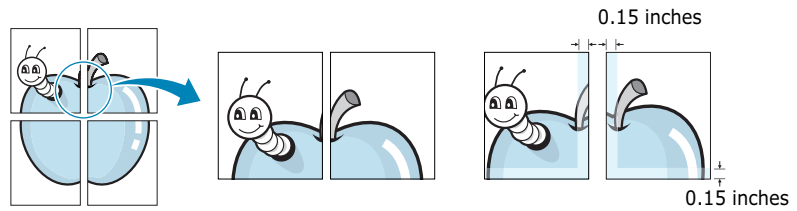


▲ 2 x 2



▲ 3 x 3

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



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

Using Watermarks

4



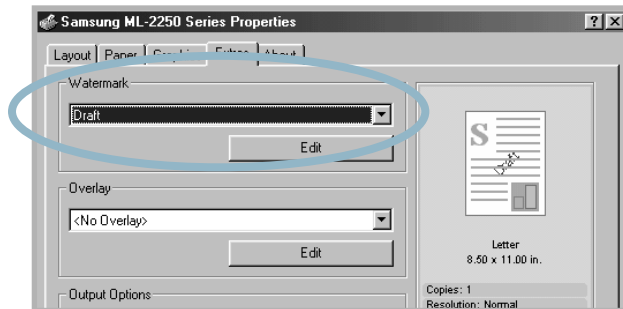
The Watermark option allows you to print text over an existing document. For example, you may want to have large gray letters reading "DRAFT" or "CONFIDENTIAL" printed diagonally across the first page or all pages of a document.

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

Using an Existing Watermark

- 1 To change the print settings from your software application, access the printer properties. See page 4.2.

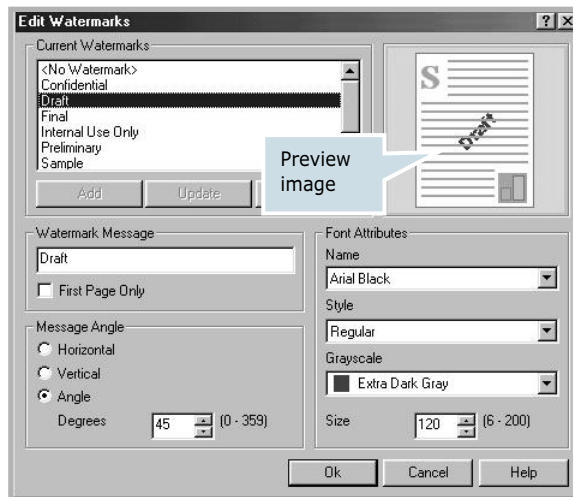
- 2 Click the **Extras** tab, and select the desired watermark in the **Watermark** drop-down list. You will see the selected watermark in the preview image.



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

Creating a Watermark

- 1 To change the print settings from your software application, access the printer properties. See page 4.2.
- 2 Click the **Extras** tab, and click the **Edit** button in the **Watermark** section. The Edit Watermarks window appears.



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

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

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

- 4 Select the desired watermark options.

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

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

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

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

Editing a Watermark

- 1 To change the print settings from your software application, access the printer properties. See page 4.2.
- 2 Click the **Extras** tab, and click the **Edit** button in the **Watermark** section. The Edit Watermarks window appears.
- 3 Select the watermark you want to edit in the **Current Watermarks** list, and change the watermark message and the options. Refer to "Creating a Watermark" on page 4.16.
- 4 Click **Update** to save the changes.
- 5 Click **Ok**.

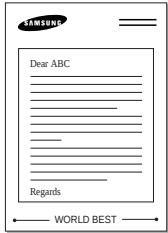
4

Deleting a Watermark

- 1 To change the print settings from your software application, access the printer properties. See page 4.2.
- 2 From the **Extras** tab, click the **Edit** button in the **Watermark** section. The Edit Watermarks window appears.
- 3 Select the watermark you want to delete in the **Current Watermarks** list and click **Delete**.
- 4 Click **Ok**.

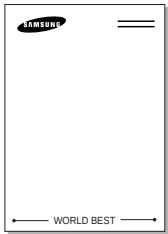
Using Overlays

What is an Overlay?



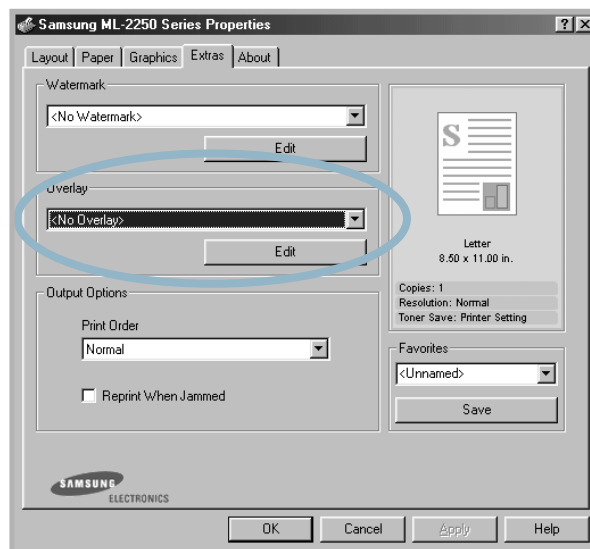
An overlay is text and/or images stored in the computer hard disk drive (HDD) as a special file format that can be printed on any document. Overlays are often used to take the place of preprinted forms and letterhead paper. Rather than using preprinted letterhead, you can create an overlay containing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

Creating a New Page Overlay

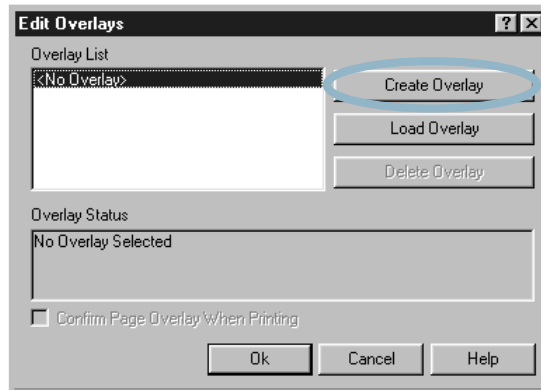


To use a page overlay, you must create a new page overlay containing your logo or image.

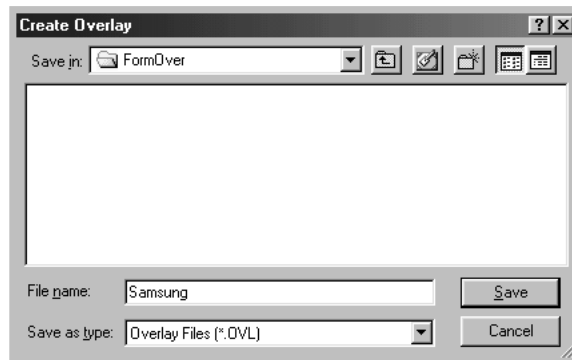
- 1 Create or open a document containing text or an image for use in a new page overlay. Position the items exactly as you wish them to appear when printed as an overlay. If needed, save the file for later use.
- 2 To change the print settings from your software application, access the printer properties. See page 4.2.
- 3 Click the **Extras** tab, and click **Edit** button in the **Overlay** section.



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



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



4

- 6 Click **Save**. You will see the name in **Overlay List**.
- 7 Click **OK** or **Yes** until you complete creating.

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

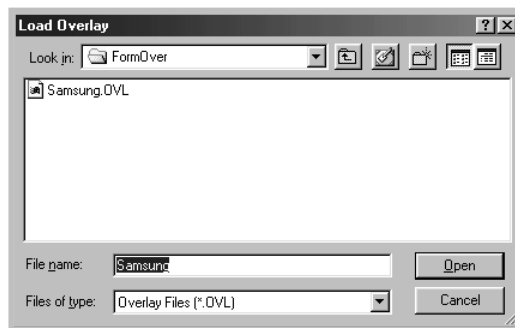


NOTE: The overlay document size must be the same as documents you will print with the overlay. Do not create an overlay with a watermark.

Using a Page Overlay

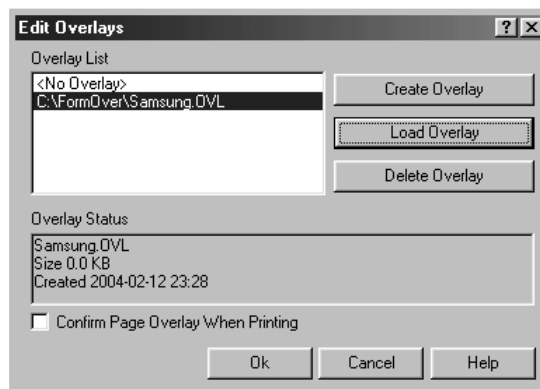
After an overlay has been created, it is ready to be printed with your document. To print an overlay with a document:

- 1 Create or open the document you want to print.
- 2 To change the print settings from your software application, access the printer properties. See page 4.2.
- 3 Click the **Extras** tab.
- 4 Select the desired overlay from the **Overlay** drop-down list box.
- 5 If the desired overlay file does not appear in the **Overlay** list, click the **Edit** button and **Load Overlay**, and select the overlay file.



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

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



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

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

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

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

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



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

Deleting a Page Overlay

You can delete page overlays that are no longer used.

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

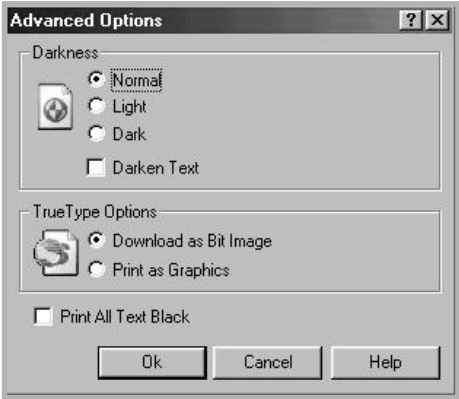
Setting Graphic Properties

Use the following graphic options to adjust the print quality for your specific printing needs. See page 4.2 for more information about accessing printer properties.

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



Property	Description
1 Resolution	You can select the printing resolution by choosing from 1200 dpi (Best) or 600 dpi (Normal) . The higher the setting, the sharper the clarity of printed characters and graphics. Higher settings may increase the time it takes to print a document.
2 Toner Save	Selecting this option will extend the life of your toner cartridge and reduce your cost per page without a significant reduction in the print quality. For detailed information about this mode, see page 4.9.

Property	Description
3 Image Mode	Some printed characters or images appear to have jagged or uneven edges. Set this Image Mode option to improve the print quality of your text and image, and make the characters and images appear smoother. The Image Mode option is only available when you select 600 dpi (Normal) in the Resolution option. • Normal: This setting prints images in the normal mode. • Text Enhance: This setting refines the print quality of characters by smoothing out jagged edges that can occur on the angles and curves of each character. • Image Enhance: This setting refines the print quality of photo images.
4 Advanced Options	You can set advanced settings by clicking the Advanced Options button.  Darkness Use this option to lighten or darken the image appearance in your print. • 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. When the Darken Text option is checked, all text in your document is allowed to print darker than a normal document.

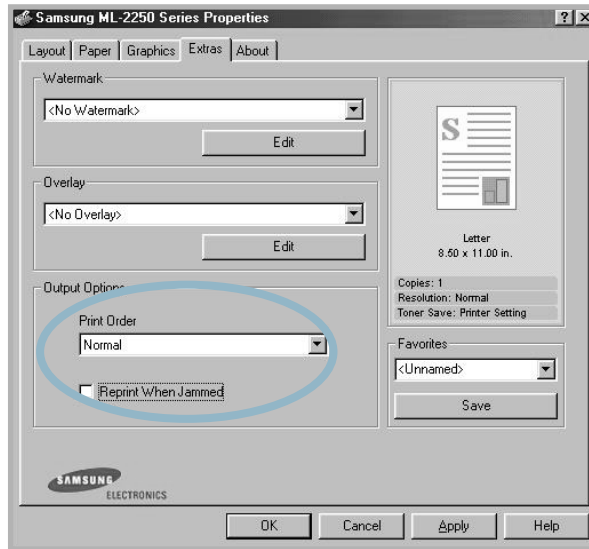
Property	Description
④ Advanced Options (continued)	True-Type Options This option determines what the driver tells the printer about how to image the text in your document. Select the appropriate setting according to the status of your document. • Download as Bit Image: When this option is selected, 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 is allowed to print solid black, regardless of the colour it appears on the screen. When it is not checked, coloured text is allowed to print in shades of gray.

Using Output Options

You can select options for output of your document.

See page 4.2 for more information about accessing printer properties.

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



4

Option	Description
Print Order	You can set in what sequence the pages will be printed. Select the required print order from the drop-down list. • Normal:Your printer prints in normal order. • Reverse All Pages:Your printer prints all pages in reversed order. This setting is helpful when you are using the rear output tray. • Print Odd Pages:Your printer prints only the odd pages of the document. • Print Even Pages:Your printer prints only the even pages of the document.
Reprint When Jammed	When this option is checked, the printer keeps the image for a printed page until the printer signals that the page has successfully exited the printer. When a paper jam occurs, the printer reprints the last page after you clear the jam.

Using the 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 the printer to your computer with the USB cable, or on the network.
- You can use the Status Monitor in Windows 98/Me/NT 4.0/2000/XP.

Installing Status Monitor

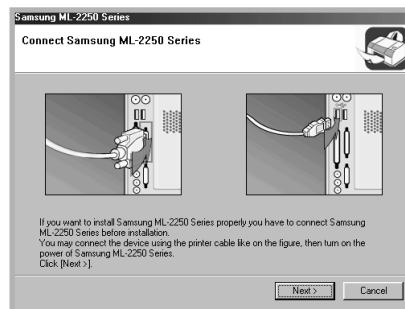
- 1 Insert the supplied CD-ROM into your CD-ROM drive.

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

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



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



- After connecting the machine, click **Next**.
- If you want to skip the connection status, click **Next**, and **No** to the following screen.

- 2 Click **Custom**.

If you have been installed the print driver before, click **Repair**.

- 3 Click **Status Monitor** and then click **Next**.

- 4 When the installation is completed, click **Finish**.

Reinstalling Status Monitor

- 1 From the **Start** menu, select **Programs**.
- 2 Select **Samsung ML-2250 Series**, and then **Maintenance**.
- 3 Click **Repair**.
- 4 Click **Status Monitor** and then click **Next**.
- 5 When reinstallation is done, click **Finish**.

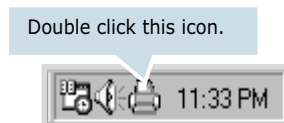
Removing Status Monitor

- 1 From the **Start** menu, select **Programs**.
- 2 Select **Samsung ML-2250 Series**, and then **Maintenance**.
- 3 Check **Remove**.
- 4 Click **Status Monitor** and then click **Next**.
- 5 When removing is completed, click **Finish**.

4

Opening the Troubleshooting Guide

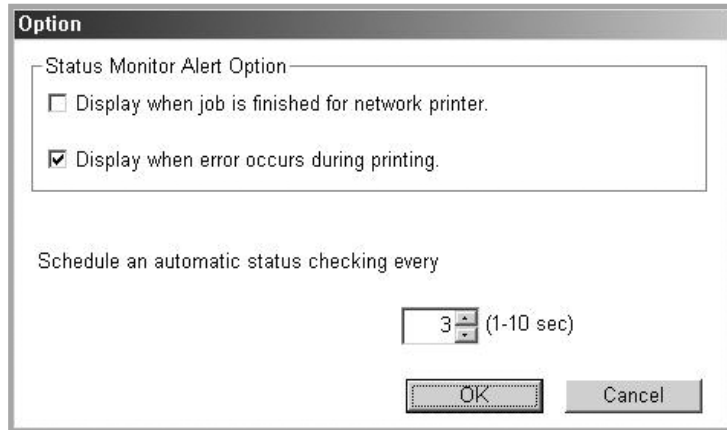
Double click the Status monitor icon on the Windows task bar.



Or, from **Programs** from **Start**, **Samsung ML-2250 Series**, and **Troubleshooting Guide**.

Changing the Status Monitor Program Setting

The following window opens when you click the Status monitor icon on the Windows task bar and select **Option**.



- **Display when job is finished for network printer** shows the Status monitor balloon when your job is complete.
- **Display when error occurs during printing** the Status monitor balloon appears when an error occurs while printing.
- **Schedule an automatic status checking** 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 see the corresponding solution. If you select **Cancel Printing**, turn the printer off and then click **OK**. It may take several minutes. Note that this will lose data which is being sent to the printer via network.

About Sharing the Printer on a Network

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

Locally-Shared Printer

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

Network-connected Printer

ML-2251N and ML-2252W printers have a built-in network interface.

To use an ML-2250 printer as a network printer, you need to install an optional network interface card in your printer. For an ML-2251N printer, you can replace the network interface card to one supporting the wireless LAN interface. See page D.7 for information about installing the card.

Supported Operating Systems

Item	Requirements
Network Interface	10/100 Base-TX (standard for ML-2251N and ML-2252W) or 802.11b Wireless LAN (standard for ML-2252W)
Network Operating System	• Novell NetWare 3.x, 4.x, 5.x • Windows 95/98/Me/NT 4.0/2000/XP • Unix AT&T, BSD4.3, HP-UX, SUN OS, SOLARIS, SCO • Various Linux OS
Network Protocols	• Netware IPX/SPX • TCP/IP, DLC/LLC on Windows • Port9100 on Unix, Linux • Apple EtherTalk (802.3)
Dynamic Addressing Server	• DHCP, BOOTP

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

Printing Across a Network

Whether the printer is locally connected or network-connected, you need to install the ML-2250 series printer software on each computer that will print documents to the printer.

Setting Up a Locally Shared Printer

In Windows 9x/Me

Setting Up the Host Computer

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

Setting Up the Client Computer

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

- 6 Double-click your printer icon.
- 7 From the **Printer** menu, select **Properties**.
- 8 From the **Details** tab, select the printer port and click **OK**.

In Windows NT 4.0/2000/XP

Setting Up the Host Computer

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

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

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

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

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

Setting Up the Client Computer

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

For Windows XP, select **Printers and Faxes** from the **Start** menu.

- 5 Double-click your printer icon.
- 6 From the **Printer** menu, select **Properties**.
- 7 From the **Ports** tab, click **Add Port**.
- 8 Select **Local port** and click **New Port**.
- 9 Fill in the **Enter a port name** field, enter the shared name.
- 10 Click **OK** and click **Close**.
- 11 For Windows NT 4.0, click **OK**.
For Windows 2000/XP, click **Apply** and click **OK**.



5

MAINTAINING YOUR PRINTER

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

This chapter includes:

- **Maintaining the Toner Cartridge**
- **Cleaning the Printer**
- **Printing Configuration Pages**
- **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 a few minutes.

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 5,000 pages. (The original toner cartridge supplied with the printer lasts an average of 3,000 pages.)

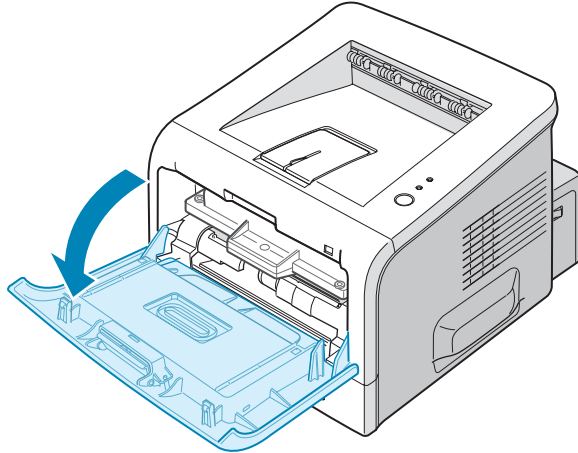
Saving toner

To save toner, press the **Cancel** button on the printer control panel. The button will be lit. You can also enable the Toner Save in the printer properties. Refer to "Using the Toner Save Mode" on page 4.9. Selecting this option will extend the life of the toner cartridge and reduce your cost per page, but will reduce the print quality.

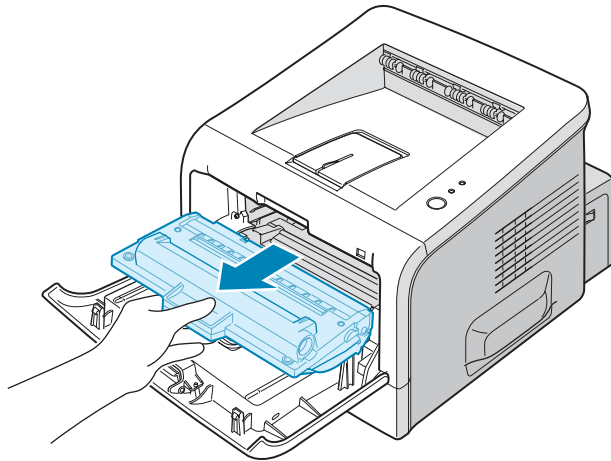
Redistributing Toner

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



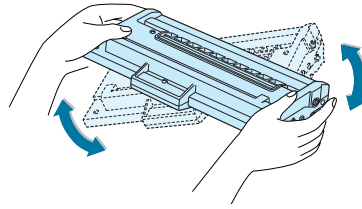
- 2 Pull the toner cartridge and remove it from the printer.



CAUTIONS:

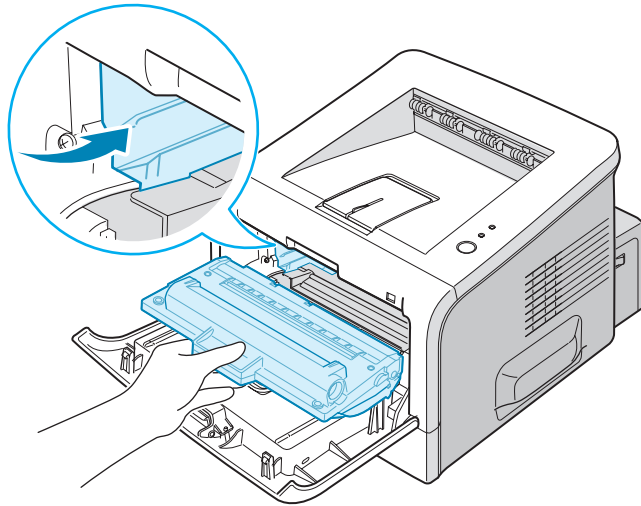
- Avoid reaching too far into the printer. The fusing area may be hot.
- To prevent damage to the toner cartridge, do not expose it to light for more than a few minutes. Cover it with a piece of paper, if left exposed for more than a few minutes and keep it in a flat and clean place.

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

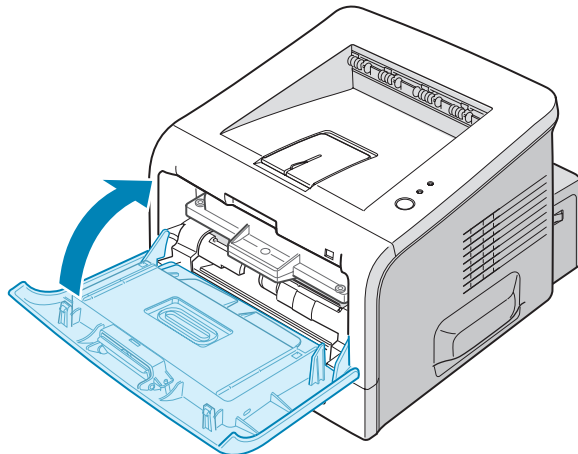


NOTE: If toner gets on your clothing, wipe it off with a dry cloth and wash clothing in cold water. Hot water sets toner into fabric.

- 4 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 the toner (see page 5.3), replace the toner cartridge.

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

Cleaning the Printer

To maintain 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.

5

Cleaning the Outside

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

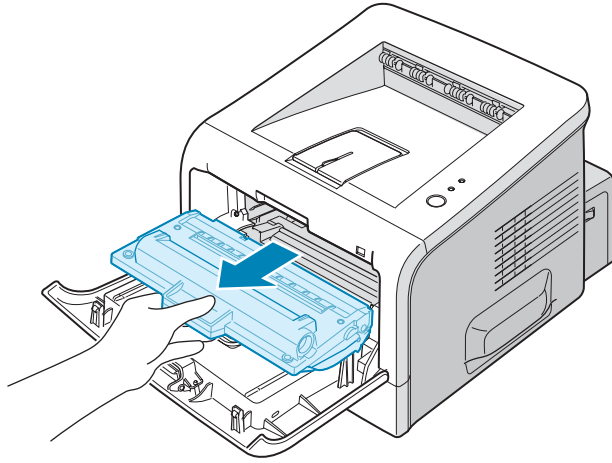
Cleaning the Inside

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

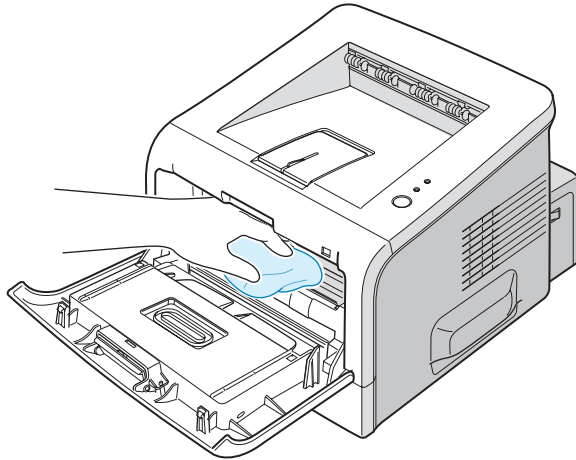
Cleaning inside the printer

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

- 2 Open the front cover. Pull the toner cartridge and remove it from the printer.

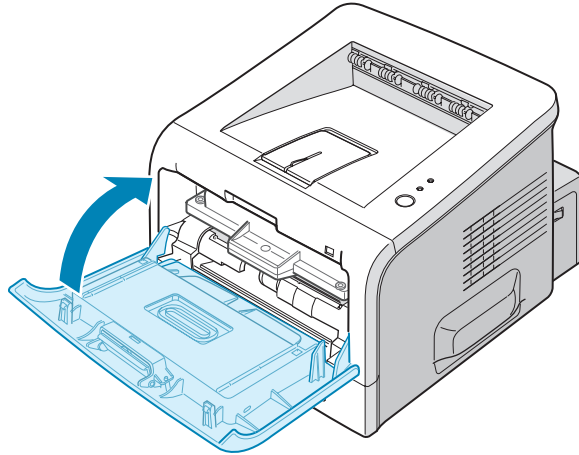


- 3 With a dry, lint-free cloth, wipe away any dust and spilled toner from the toner cartridge area and the toner cartridge cavity.



NOTE: To prevent damage to the toner cartridge, do not expose it to light for more than a few minutes. Cover it with a piece of paper, if necessary and keep it in a flat and clean place. Also, do not touch the black transfer roller inside the printer.

- 4 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.



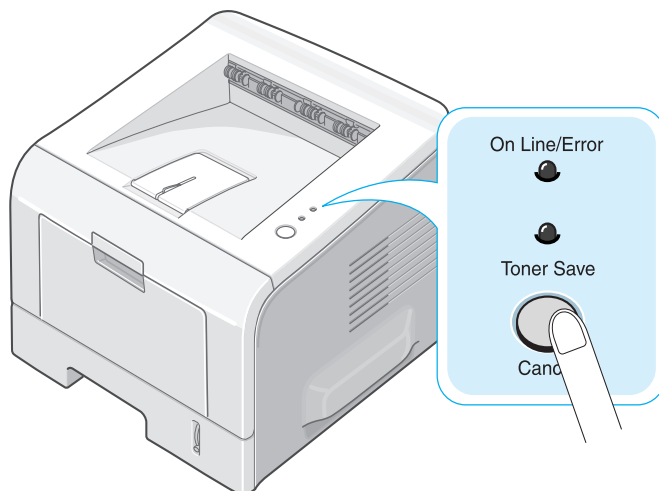
- 5 Plug in the power cord, and turn the printer on.

Printing a cleaning sheet

If you are experiencing blurred, faded, or smeared printouts, printing a cleaning sheet will clean the drum inside the toner cartridge. This process will produce a page with toner debris, which should be discarded.

5

- 1 Ensure that the printer is turned on and in the Ready mode with paper loaded in the tray.
- 2 Press and hold down the **Cancel** button on the control panel for about 10 seconds.



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



NOTE: The cartridge cleaning process takes some time. To stop the process, turn the power off.

Printing Configuration Pages

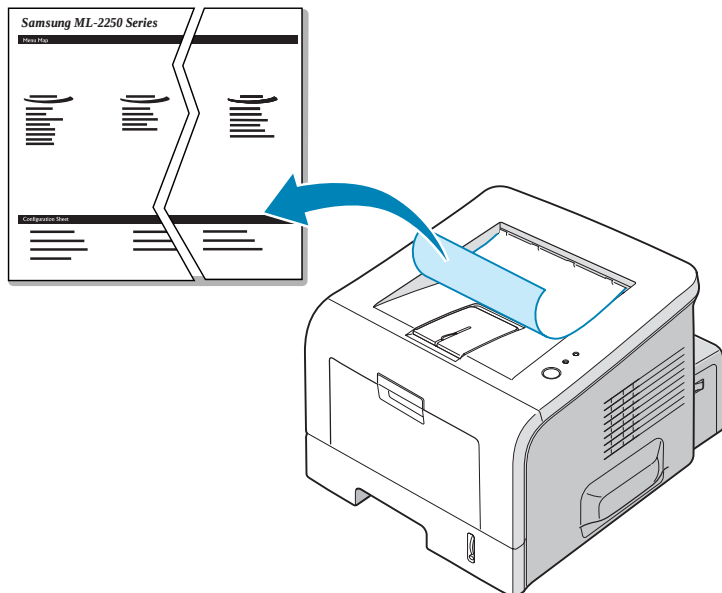
From the printer's control panel, you can print a Configuration page. Use the configuration page to view current printer settings, to help troubleshoot printer problems, or to verify installation of optional accessories, such as memory, optional tray, and printer languages.

If your printer has a network card, the network configuration sheet prints out with a printer configuration sheet.

To print configuration pages:

- 1 Ensure that the printer is turned on and in the Ready mode with paper loaded in the tray.
- 2 Press and hold down the **Cancel** button on the control panel for about 6 seconds.

Configuration pages print out.



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. 60,000 pages
Fuser Unit	Approx. 80,000 pages

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

MEMO



5.10 MAINTAINING YOUR PRINTER

6

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, perform the series of checks in the list below. If the printer fails to adequately pass a checklist item, follow the corresponding troubleshooting suggestions.

Check	Solution
Print a demo page to verify that the printer is feeding paper correctly. See page 2.16.	• If a demo page does not print, check the paper supply in the paper tray. • If the paper jams in the printer, go to "Clearing Paper Jams" on page 6.7.
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 6.15.
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 that you are using the proper printer driver and communication port. If the page is interrupted during printing, go to "Solving General Printing Problems" on page 6.3.
If completing the checklist does not resolve the printer problem, check the following troubleshooting sections.	• "Solving General Printing Problems" on page 6.3. • "Troubleshooting Error Messages" on page 6.20. • "Common Windows Problems" on page 6.21.. • "Common Linux Problems" on page 6.22.

Solving General Printing Problems

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

Problem	Possible Cause	Solution
The printer does not print.	The printer is not receiving power.	Check the power cord connections. Check the power switch and the power source.
	The printer is not selected as the default printer.	Select Samsung ML-2250 Series or Samsung ML-2250 Series PS 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. If a printer system error occurs, contact your service representative.
	The printer may be in manual feed mode and out of paper.	Add paper to the Multi-Purpose Tray, and press the Cancel button on the printer's control panel.
	The connection cable between the computer and the printer is not connected properly.	Disconnect the printer cable and reconnect it.
	The connection cable between the computer and the printer is defective.	If possible test the cable by attaching it to another computer that is working properly and attempt to print a job. You can also try using a different printer cable and attempt to print a job.
	The port setting is incorrect.	Check the Windows printer setting to make sure that the print job is sent to the correct port, for example, LPT1. If the computer has more than one port, make sure that the printer is attached to the correct one.
	The printer may be configured incorrectly.	Check the printer properties to ensure that all of the print settings are correct.

Problem	Possible Cause	Solution
The printer does not print. (continued)	The printer driver may be incorrectly installed.	Reinstall the printer driver; see page 2.22. Try printing a demo page.
	The printer is malfunctioning.	Check the display message on the control panel to determine if the printer is indicating a system error.
Printer selects print materials from the wrong paper source.	The paper source selection in the printer properties may be incorrect.	For many software applications, the paper source selection is found under the Paper tab within the printer properties. Select the correct paper source. See page 4.7.
Paper does not feed into the printer.	Paper has not been loaded correctly.	Remove paper from the tray and reload it correctly.
	There is too much paper in the paper tray.	Remove excess paper from the tray.
	The paper is too thick.	Use only paper that meets the specifications required by the printer. See page E.3.
Print job is extremely slow.	The job may be very complex.	Reduce the complexity of the page or try adjusting the print quality settings. The maximum print speed of your printer is 20 PPM (pages per minute) for A4-sized paper or 22 PPM for Letter-sized paper.
	If using Windows 9x/Me, the Spooling Setting may be set incorrectly.	From the Start menu, choose Settings and Printers . Right-click the Samsung ML-2250 Series printer icon, choose Properties , click the Details tab, and then choose the Spool Settings button. Select the desired spool setting.
	The computer may have insufficient random-access memory (RAM).	Install more memory in your printer. See "Installing Memory and PostScript DIMMs" on page D.3.
Half the page is blank.	The page layout is too complex.	Simplify the page layout and remove any unnecessary graphics from the document. Install more memory in your printer. See "Installing Memory and PostScript DIMMs" on page D.3.
	The page orientation setting may be incorrect.	Change the page orientation in your application. See page 4.3.
	The paper size and the paper size settings do not match.	Ensure that the paper size in the printer driver settings matches the paper in the tray.

Problem	Possible Cause	Solution
The paper keeps jamming.	There is too much paper in the paper tray.	Remove excess paper from the tray. If printing on special materials, use the Multi-Purpose Tray.
	An incorrect type of paper is being used.	Use only paper that meets the specifications required by the printer. See page E.3.
	An incorrect output method is being used.	Special print materials, such as thick paper, should not be printed using the top output tray (face-down). Use the rear output tray (face-up) instead.
	There may be debris inside the machine.	Open the top cover and remove the debris.
The printer prints, but the text is wrong, garbled, or incomplete.	The printer cable is loose or defective.	Disconnect the printer cable and reconnect. Try a print job that you have already printed successfully. If possible test the cable by attaching it to another computer that is working properly and attempt to print a job. You can also try using a different printer cable and attempt to print a job.
	The wrong printer driver was selected.	Check the application's printer selection menu to ensure that your printer is selected.
	The software application is malfunctioning.	Try printing a job from another application.
	The operating system is malfunctioning.	If printing from Windows (any version), exit to a DOS prompt and verify functionality with the following command: At a C:\ prompt, type Dir LPT1 , and press Enter . (This assumes you are connected to LPT1.) Exit Windows and reboot the computer. Turn the printer off and then back on again.
Pages print, but are blank.	The toner cartridge is defective or out of toner.	Redistribute the toner, if necessary. See page 5.3. If necessary, replace the toner cartridge.
	The file may have blank pages.	Check the file to ensure that it does not contain blank pages.
	Some parts, such as the controller or the board, may be defective.	Contact a service representative.

Problem	Possible Cause	Solution
The illustrations print incorrectly in Adobe Illustrator.	The setting in the software application is wrong.	Print the document with selecting Download as Bit Image in the Advanced Options window of the graphic properties.

ATTENTION: If you have any printing problem after your printer prints about 60,000 pages, you must contact the customer service to replace the transfer roller.

Clearing Paper Jams

Occasionally, paper can jam during a print job. Some causes include:

- The tray is loaded improperly or overfilled.
- The tray has been pulled out during a print job.
- 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 E.3.
- Paper that is outside of the supported size range has been used. See "Paper Specifications" on page E.3.

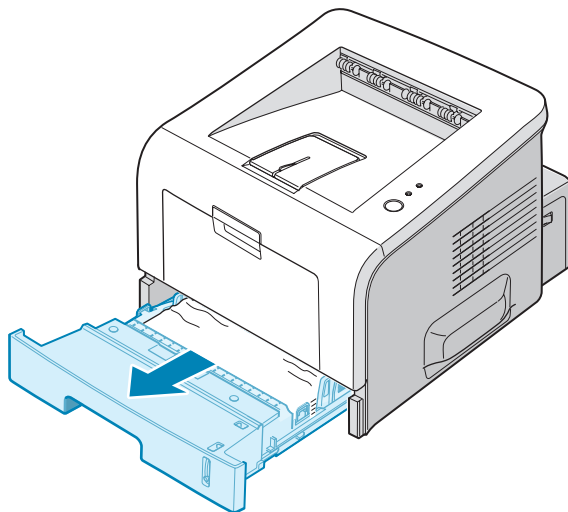
If a paper jam occurs, the **On Line/Error** LED on the control panel lights red. Find and remove the jammed paper. If you can't see it, look inside the printer.



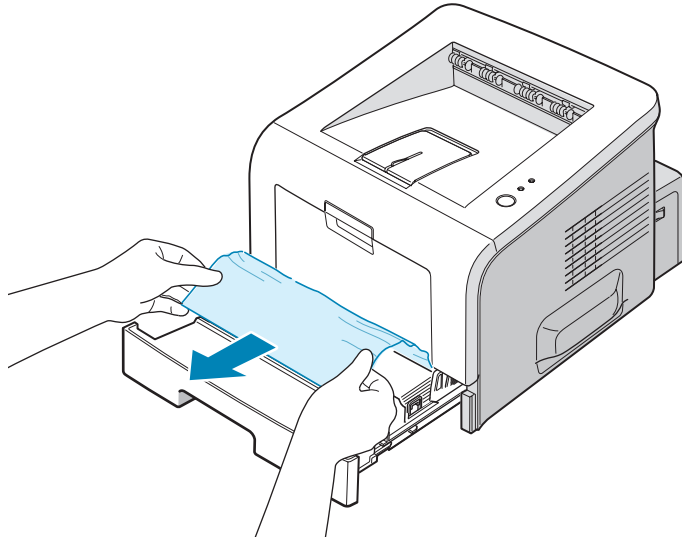
NOTE: Do not use tweezers or metal objects with sharp ends when you remove paper jams. If you do this, it may damage the metal parts inside of your machine and cause a short circuit.

In the Paper Feed Area

- 1 Slide out Tray1 to expose the jammed paper.

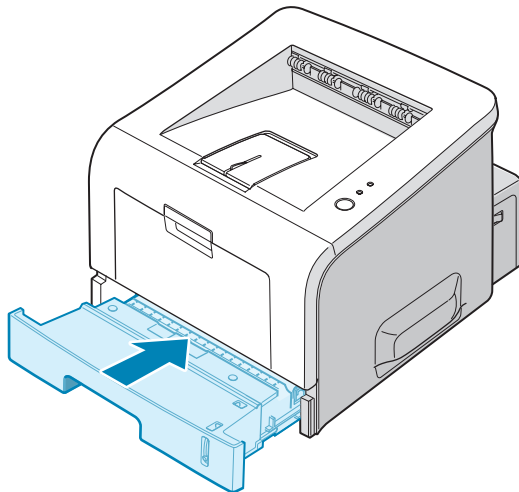


- 2 Remove any misfed paper by pulling it out by the visible edge. Make sure that all of the paper is properly aligned in the tray.



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

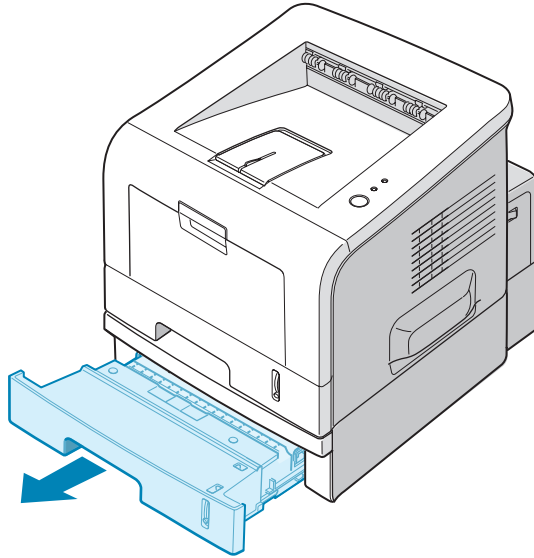
- 3 Slide the tray back into the printer.



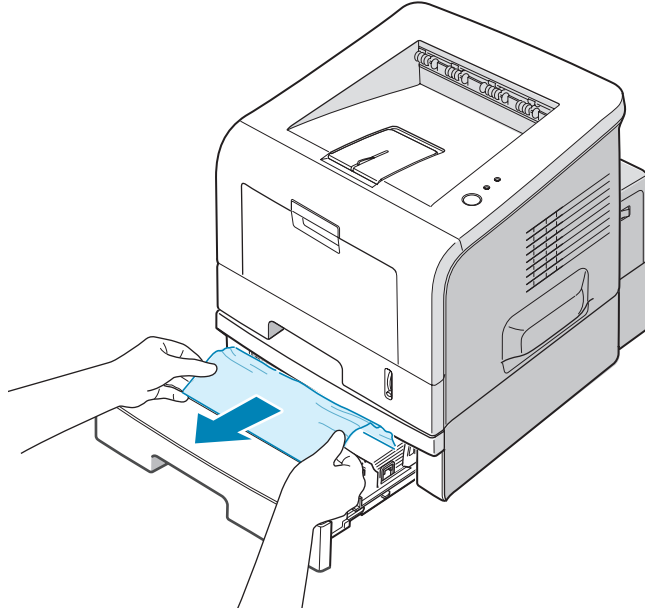
- 4 Open and close the top cover to resume printing.

In the Optional Tray2

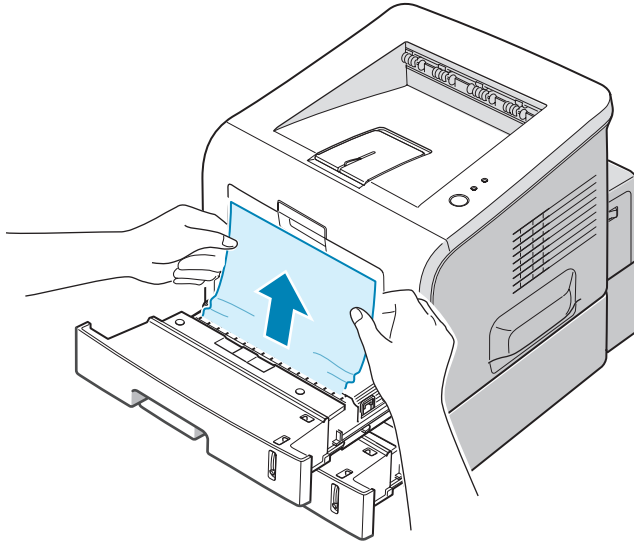
- 1 Pull the optional Tray2 out of the printer.



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



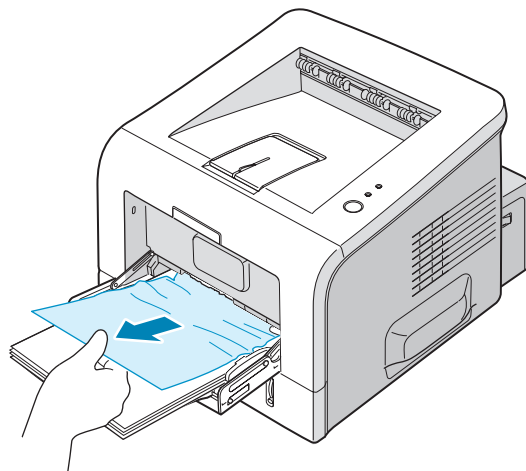
- 3 If you cannot find the jammed paper in Tray2, pull Tray1 half way out of the printer, and remove the paper.



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

In the Multi-Purpose Tray

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



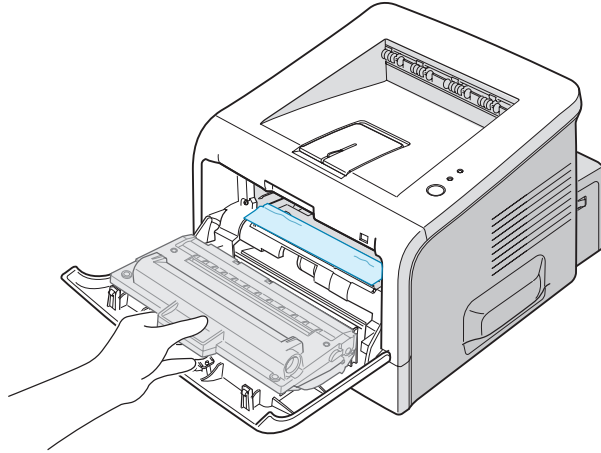
- 3 Open and close the top cover. Printing can now be resumed.

Around the Toner Cartridge

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

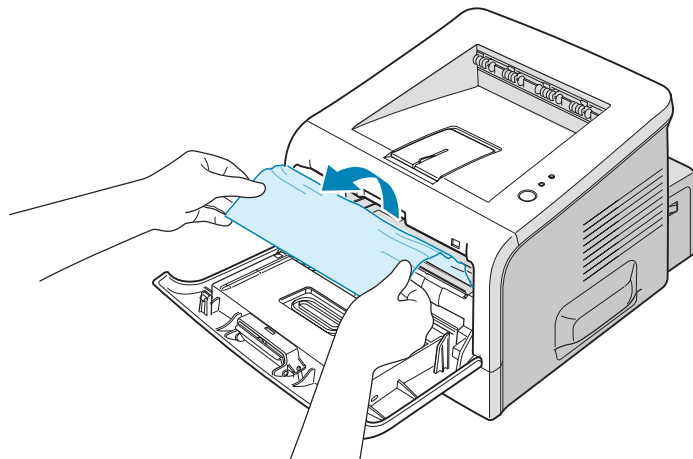
If not, continue to Step 2.

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



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

- 3 Gently pull the jammed paper toward you to remove it from the printer.

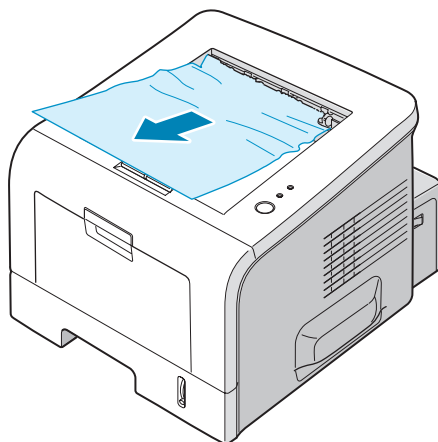


If the jammed paper is not visible or there is resistance when you pull the paper, go to "In the Paper Exit Area" on page 6.12.

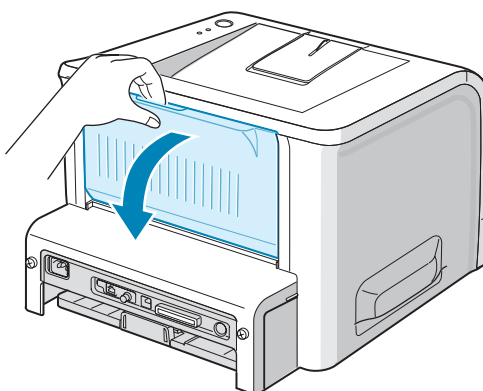
- 4 Check that there is no other paper in the printer.
- 5 Reinstall the toner cartridge, and then close the front cover. Printing can now be resumed.

In the Paper Exit Area

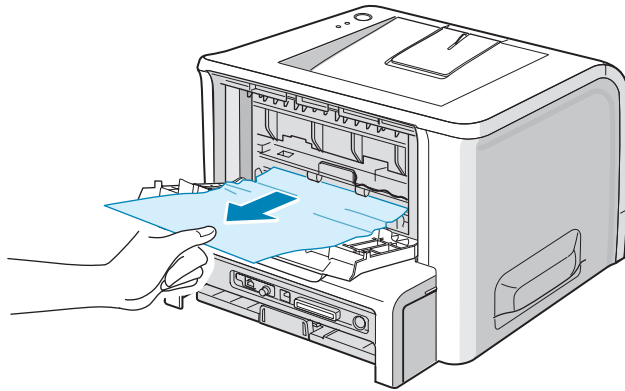
- 1 If a long portion of the paper is visible, pull it straight out. If not, continue to Step 2.



- 2 Open the rear output tray.



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

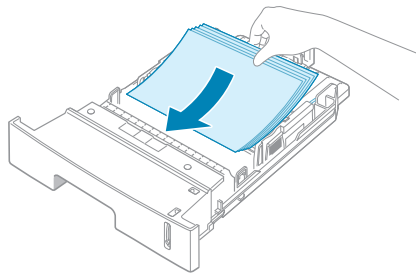


- 4 Close the rear output tray.
- 5 Open and close the top cover. Printing can now be resumed.

Tips for Avoiding Paper Jams When Printing on the A5-sized Paper

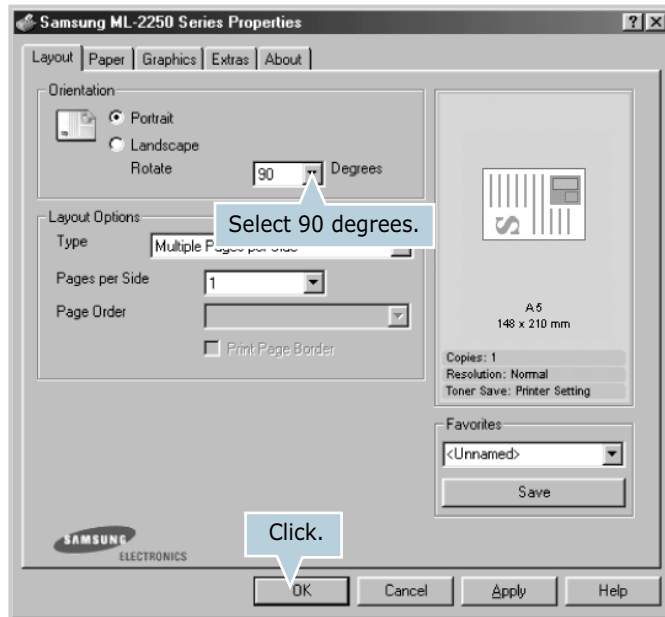
If paper jams frequently occur when you print on the A5-sized paper:

- 1 Open the input tray and load paper into the tray as shown below.



- 2 Open the Samsung ML-2250 Series Properties window, set the paper size to **A5(5.8x8.3 in.)** from the **Paper** tab.

- 3 From the **Orientation** option of the **Layout** tab, set the **Rotate** option to **90°**.



- 4 Click **OK** to start printing.

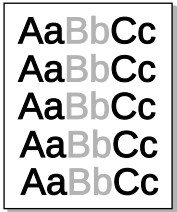
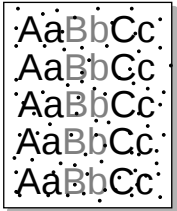
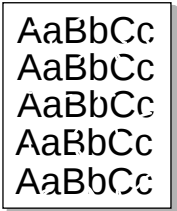
Tips for Avoiding Paper Jams

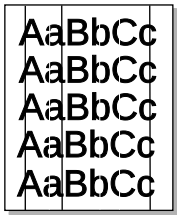
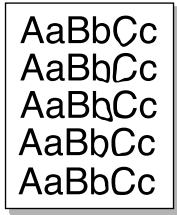
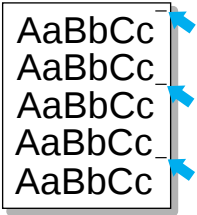
By selecting the correct paper types, most paper jams can be avoided. If a paper jam occurs, follow the steps outlined in “Clearing Paper Jams” on page 6.7.

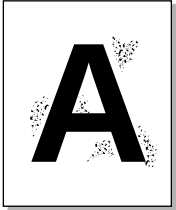
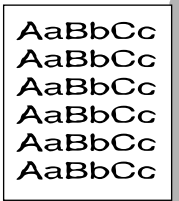
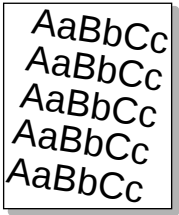
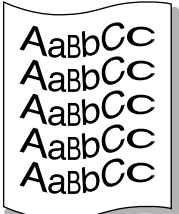
- Follow the procedures in “Loading Paper” on page 2.7. Ensure that the adjustable guides are positioned correctly.
- Do not overload the paper tray. Ensure that the paper is below the paper limit mark on the inside wall of the tray.
- Do not remove the paper from the tray while printing.
- Flex, fan, and straighten the paper before loading.
- Do not use creased, damp, or highly curled paper.
- Do not mix paper types in the tray.
- Use only recommended print materials. See “Paper Specifications” on page E.3.
- Ensure that the recommended print side is facing down when loading paper in the tray and facing up in the Multi-Purpose Tray.

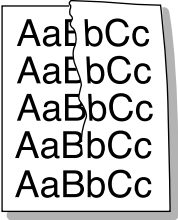
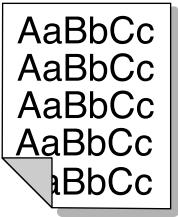
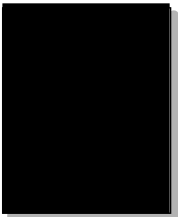
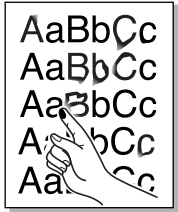
Solving Print Quality Problems

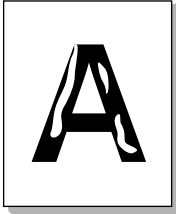
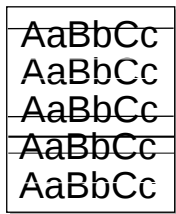
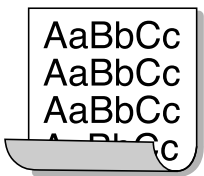
If the inside of the printer is dirty, or paper is improperly loaded, print quality maybe reduced. See the table below to troubleshoot the problem.

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 5.3. 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 E.3. • If the entire page is light, the print resolution setting is too light or Toner Save Mode is on. Adjust the print resolution and Toner Save Mode in the printer properties. See page 4.22 and page 4.9 respectively. • A combination of faded or smeared defects may indicate that the toner cartridge needs cleaning. See "Cleaning the Inside" on page 5.5. • The surface of the LSU may be dirty. Clean the LSU. See "Cleaning the Inside" on page 5.5.
Toner specs 	• The paper may not meet specifications (for example, the paper is too moist or too rough). See "Paper Specifications" on page E.3. • The transfer roller may be dirty. See "Cleaning the Inside" on page 5.5. • The paper path may need cleaning. See "Cleaning the Inside" on page 5.5.
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 E.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.
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 E.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 5.5. • Check the paper type and quality. See "Paper Specifications" on page E.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. If a repetitive mark occurs on the page, print a cleaning sheet several times to clean the cartridge; see page 5.7. After the printout, if you still have the same problems, install a new toner cartridge. See "Installing the Toner Cartridge" on page 2.4. • Parts of the printer may have toner on them. If the defects occur on the back of the page, the problem will likely correct itself after a few more pages. • The fusing assembly may be damaged. Contact a service representative.

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 E.3. • If characters are improperly formed and producing a wavy effect, the scanner unit may need service. Verify that it also occurs on a demo page (see page 2.16). For service, contact a service representative.
Page skew 	• Check the paper type and quality. See "Paper Specifications" on page E.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 E.3. • Turn over the stack of paper in the tray. Also try rotating the paper 180° in the tray. • Try printing to the face up output slot.

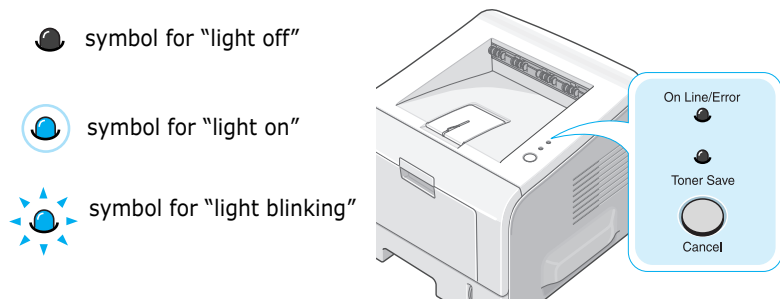
Problem	Solution
Wrinkles or creases 	Ensure that the paper is loaded properly. • Check the paper type and quality. See "Paper Specifications" on page E.3. • Open the rear cover and try printing to the rear output tray (face-up). • Turn over the stack of paper in the paper tray. Also try rotating the paper 180° in the tray.
Back of printouts are dirty 	• The transfer roller may be dirty. "Cleaning the Inside" on page 5.5. • 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 E.3. • Install a new toner cartridge. See "Installing the Toner Cartridge" on page 2.4. • If the problem persists, the printer may require repair. Contact a service representative.

Problem	Solution
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 side of the paper. Remove the paper and turn it around. • The paper may not meet paper specifications. See "Paper Specifications" on page E.3.
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.

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



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	• A paper jam has occurred. To solve the problem, see "Clearing Paper Jams" on page 6.7. • Paper Tray is empty. Load the paper in the Tray. • The front cover is open. Close the front cover. • The toner cartridge is empty. 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 was receiving data. • In Manual Feed mode, there is no paper in the Multi-purpose Tray. Load paper into the Multi-purpose 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.

Common Windows Problems

Problem	Possible Cause and Solution
"File in Use" message appears during installation.	Exit all software applications. Remove all software from the StartUp Group, then restart Windows. Reinstall the printer driver.
"Error Writing to LPTx" message appears.	• Ensure that the cables are connected correctly, and the printer is on. • If bi-directional communication is not turned on in the driver, it will also cause this message.
"General Protection Fault", "Exception OE", "Spool32", or "Illegal Operation" messages appear.	Close all other applications, reboot Windows, and try printing again.



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

Common 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, it is not possible for the Linux 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, 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.
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 Structuting Conventions. Problems may arise when using N-up and other features relying on post-processing if the document being printed isn't compliant.

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

Problem	Possible Cause and Solution
I have CUPS and some options (such as N-up) seem to be always enabled even though I don't pick them in LLPR.	There may be some local options defined in your ~/.lpoptions file, which is manipulated by the lpoptions command. These options will always be used if not overridden by LLPR settings. To get rid of all options for a printer, run the following command, replacing "printer" with the name of the queue: <code>lpoptions -x printer</code>
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 SPL (or PCL) 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 (<code>gv</code> or <code>ghostview</code> will allow you to do so interactively) and see if you get error messages. However, since the application is probably at fault, contact your software vendor to inform them of the issue.





USING WINDOWS POSTSCRIPT DRIVER

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

This chapter includes:

- **Installing PS Drivers**
- **Using PS Printer Driver Features**

NOTE: You need to install an optional PS DIMM for using the PostScript driver. For more information, see Appendix D, "Installing Printer Options."

Installing PS Drivers

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

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

- connecting with the parallel interface, see page 2.11.
- connecting with the USB interface, see page 2.12. For Windows 98/Me, the USB driver must be installed.
- connecting with a network interface. For a ML-2250, you need to install an optional network interface card; see "Installing a Network Card" on page D.7.

Installing PS Drivers

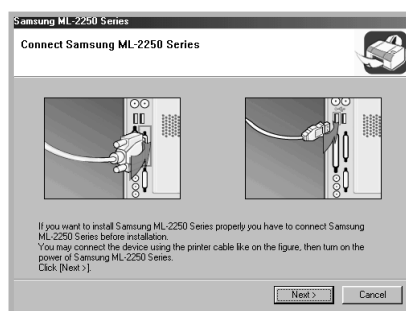
- 1 Insert the supplied CD-ROM into your CD-ROM drive.

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

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



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



- After connecting the machine, click **Next**.
 - If you want to skip the connection status, click **Next**, and **No** to the following screen.
-

- 2** Click **Custom**.
If you have been installed the print driver before, click **Repair**.
- 3** Click **Printer(PostScript)** and then click **Next**.
- 4** When the installation is complete, click **Finish**.

Reinstalling PS Drivers

- 1** From the **Start** menu, select **Programs**.
- 2** Select **Samsung ML-2250 Series**, and then **Maintenance**.
- 3** Click **Repair**.
- 4** Click **Printer(PostScript)** and then click **Next**.
- 5** When reinstallation is done, click **Finish**.

Removing PS Drivers

- 1** From the **Start** menu, select **Programs**.
- 2** Select **Samsung ML-2250 Series**, and then **Maintenance**.
- 3** Check **Remove**.
- 4** Click **Printer(PostScript)** and then click **Next**.
- 5** When removal is complete, click **Finish**.

Using PS Printer Driver Features

Certain printer features are not available in this PS driver. For details about the features, refer to Chapter 4, "Printing Tasks"

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

Accessing Printer Properties

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

To open the properties window from the Printer folder:

- 1 Click the Windows **Start** button.
- 2 Select **Settings** then **Printers** to open the Printers window.
- 3 Select **Samsung ML-2250 Series PS**.
- 4 Click the right mouse button on the printer icon and:
 - In Windows 95/98/Me, select **Properties**.
 - In Windows 2000/XP, select **Printing Preferences**.
 - In Windows NT 4.0, select **Document Default**.

To open the properties window from an application:

- 1 From the **File** menu, select **Print** to open the Print window.
- 2 Make sure that **Samsung ML-2250 Series PS** is selected in the **Name** drop-down list.
- 3 Click **Properties** to open the properties window.





USING YOUR PRINTER IN LINUX

You can use your printer in a Linux environment.

This chapter includes:

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

Installing the Printer Driver

System Requirements

Supported OS

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

Recommended Requirements

- Pentium II 133 MHz or higher
- RAM 64 MB or higher
- HDD 300 MB or higher

Softwares

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

Installing the Printer Driver

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



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

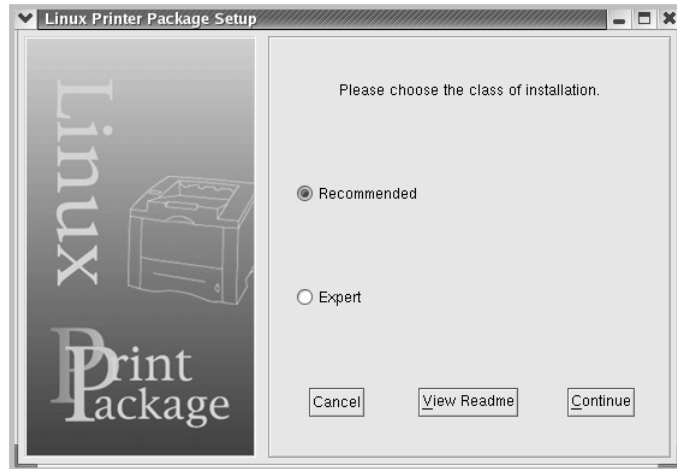
- 3 Insert the printer software CD-ROM. The CD-ROM automatically runs.



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
```

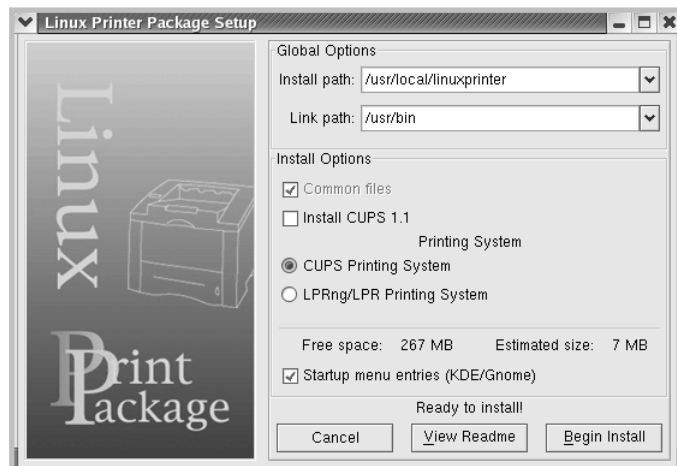
- 4 Select the installation type, either **Recommended** or **Expert**, and then click **Continue**.



Recommended is fully automated and no interaction is required. **Expert** installation allows you to select the installation path or printing system.

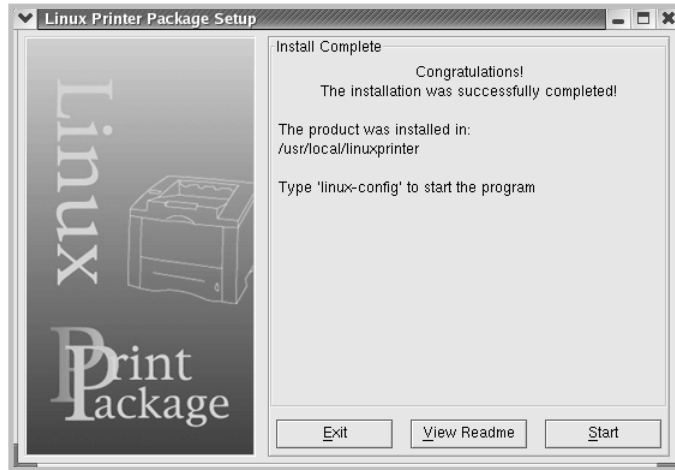
- 5 If you selected **Recommended**, go to Step 6.

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



B

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

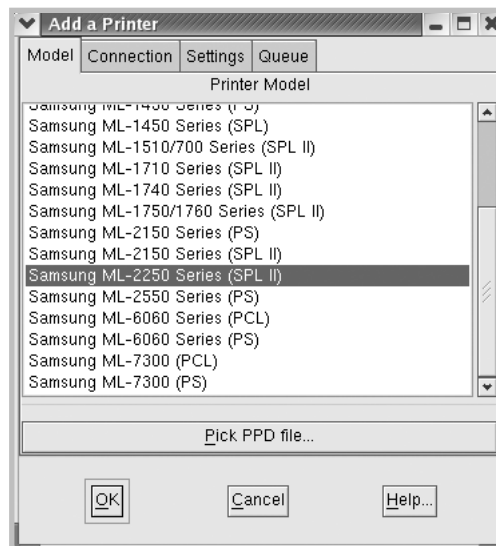


- 7 The Linux Printer Configuration window opens. Click the **Add Printer** icon on the tool bar at the top of the window.

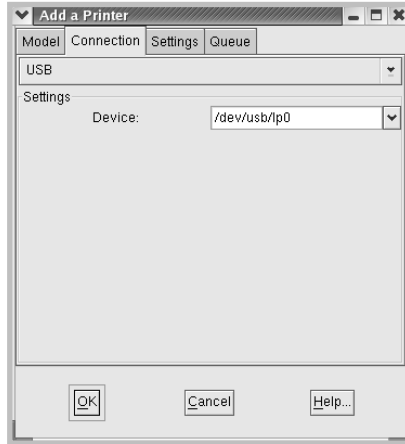


NOTE: Depending on the printing system in use, the Administrator Login window may appear. Type in "**root**" in the Login field and enter the system password.

- 8 You see the printers currently added to 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.



- 9 Click the **Connection** tab and ensure that the printer port is set properly. If 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.

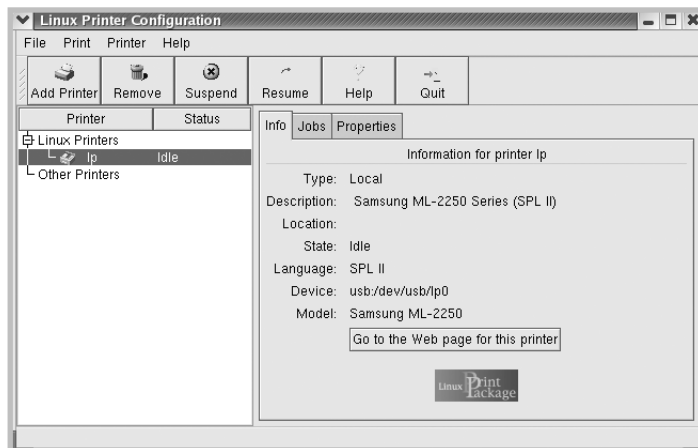


NOTE: The options may differ depending on the printer in use. The Description and the Location field in the Queue screen may not appear depending on the printing system in use.

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

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

- 13 The Linux Printer Configuration window reappears. You can view the information about your printer from the **Info** tab. If necessary, you can change the printer's configuration. For details about changing the printer's configuration, see "Using the Configuration Tool" on page B.8.



Changing the Printer Connection Method

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



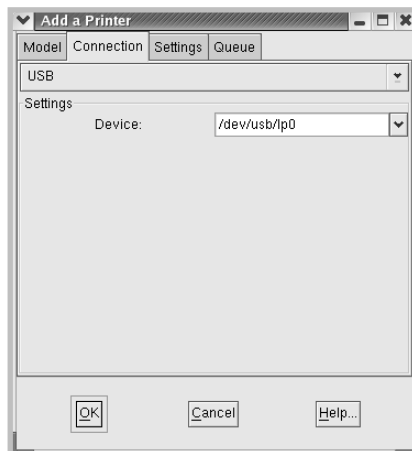
NOTE: You must log in as a super user (root) to install a new printer to the printing system. If you are not the super user, ask your system administrator.

- 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 "**linux-config**" in the Terminal screen.

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

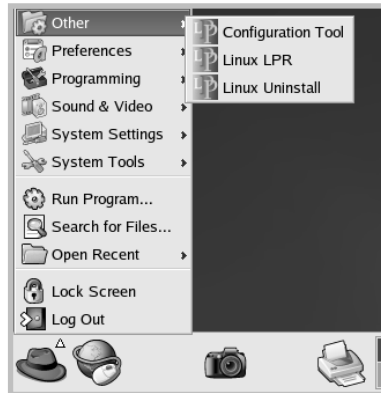
Ensure that the printer port is set properly. If not, change the device setting.



- 6 Click **OK**.

Uninstalling the Printer Driver

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



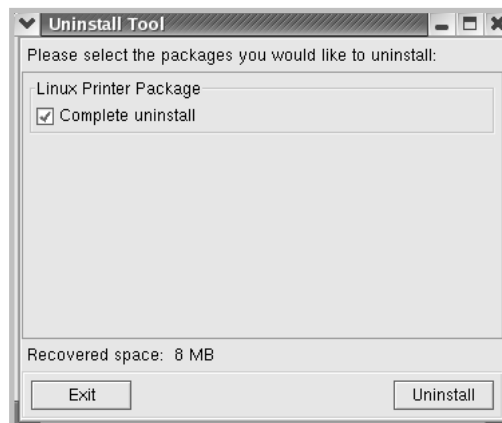
You can also access the Linux Printer Configuration window by typing "**linux-config**" in the Terminal screen.

- 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 the super user, ask your system administrator.

- 4 A message window appears asking you to confirm the uninstallation. Click **Yes**.
- 5 Select **Complete uninstall** and then click **Uninstall**.



B

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

Using the Configuration Tool

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

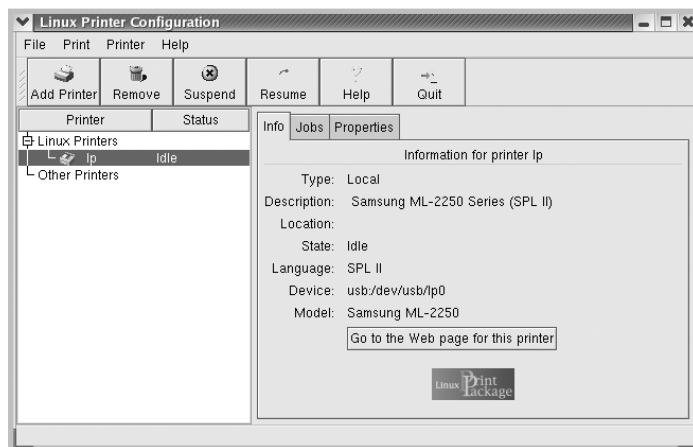
To access the Configuration Tool:

- 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, if not currently selected.

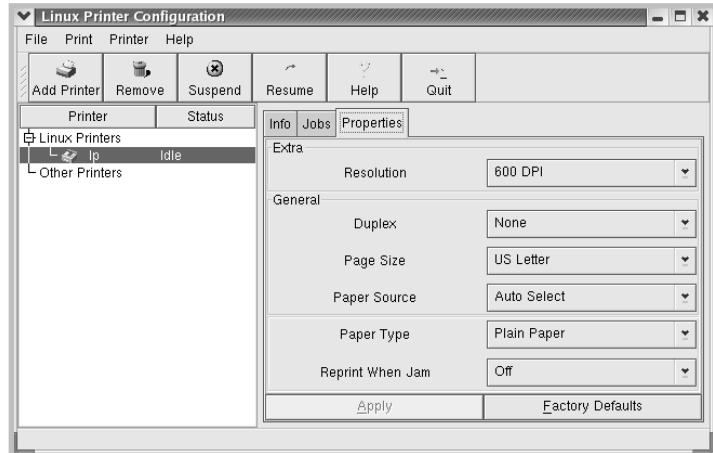


3 The **Info** tab shows general information about the printer.

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

Click the **Jobs** 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.



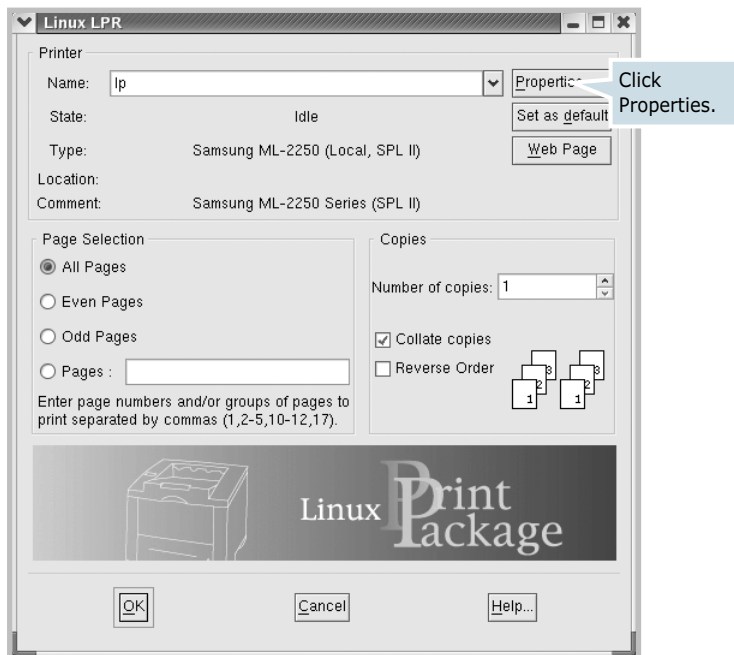
NOTE: Regular users are able to override the system-wide default settings defined by the administrator. When a regular user clicks **Apply**, these custom settings are saved in the user's profile and may be later used with LLPR. If the administrator is running the configuration tool, then the settings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

Changing LLPR Properties

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

To open the LLPR Properties window:

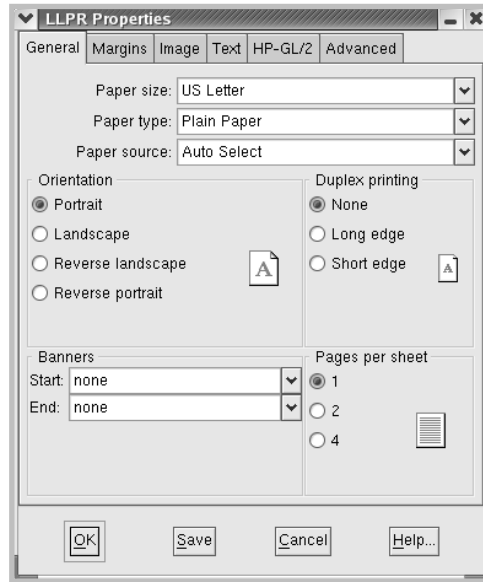
- 1 From the application you are using, select the **Print** command.
- 2 When the Linux LPR window opens, click **Properties**.



You can also open the LLPR window:

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

3 The LLPR Properties window opens.



The following six tabs are 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; enables the duplex feature, adds start and end banners, and changes the number of pages per sheet.
- **Margins** - allows you to specify the page margins. The graphics on the right shows the current settings. These margins do not apply when printing regular PostScript data.
- **Image** - allows you to set image options that are 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 density of the text and turn the syntax coloring on or off.
- **HP-GL/2** - allows you to set default options to print documents in the HP-GL/2 format, which is used by some plotters.
- **Advanced** - allows you to override the default settings for the printer.

If you click the **Save** button at the bottom of the window, the options are kept 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 are returned to the **Linux LPR** window. To start printing, click **OK**.

MEMO



B.12 USING YOUR PRINTER IN LINUX



PRINTING FROM DOS APPLICATIONS

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

This chapter includes:

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

About the Remote Control Panel

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



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

Installing the Remote Control Panel

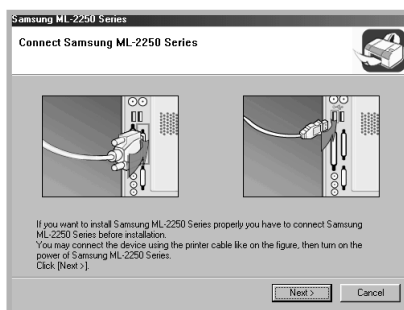
- 1 Insert the supplied CD-ROM into your CD-ROM drive.

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

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



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



- After connecting the machine, click **Next**.
 - If you want to skip the connection status, click **Next**, and **No** to the following screen.
-

- 2 Click **Custom**.
If you have been installed the print driver before, click **Repair**.
- 3 Click **Remote Control Panel** and then click **Next**.
- 4 When the installation is complete, click **Finish**.

Reinstalling Remote Control Panel

- 1 From the **Start** menu, select **Programs**.
- 2 Select **Samsung ML-2250 Series**, and then **Maintenance**.
- 3 Click **Repair**.
- 4 Click **Remote Control Panel** and then click **Next**.
- 5 When reinstallation is done, click **Finish**.

Removing Remote Control Panel

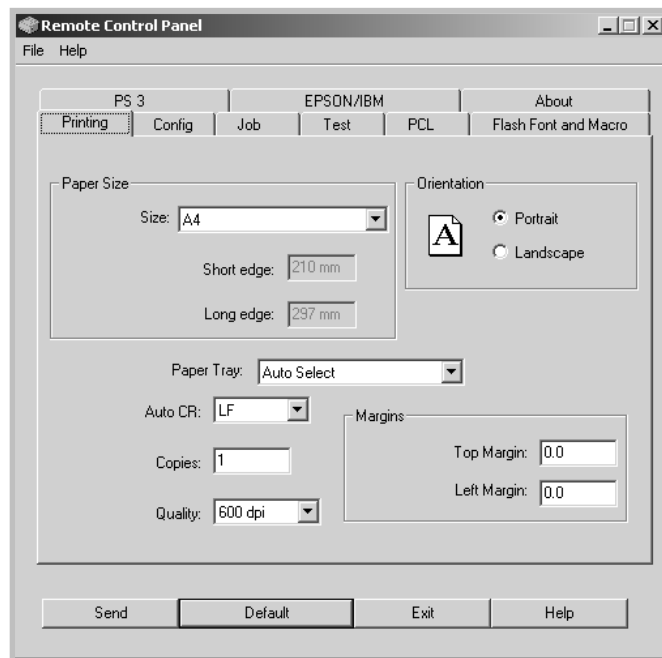
- 1 From the **Start** menu, select **Programs**.
- 2 Select **Samsung ML-2250 Series**, and then **Maintenance**.
- 3 Check **Remove**.
- 4 Click **Remote Control Panel** and then click **Next**.
- 5 When removing is completed, click **Finish**.

Selecting Print Settings

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

Starting the Remote Control Panel

- 1 From the **Start** menu, select **Programs**.
- 2 Select **Samsung ML-2250 Series** and then **Remote Control Panel**.
- 3 The Remote Control Panel window allows you to access all the information you need when using your printer. If necessary, click the other tabs on the top of the window to access other features.



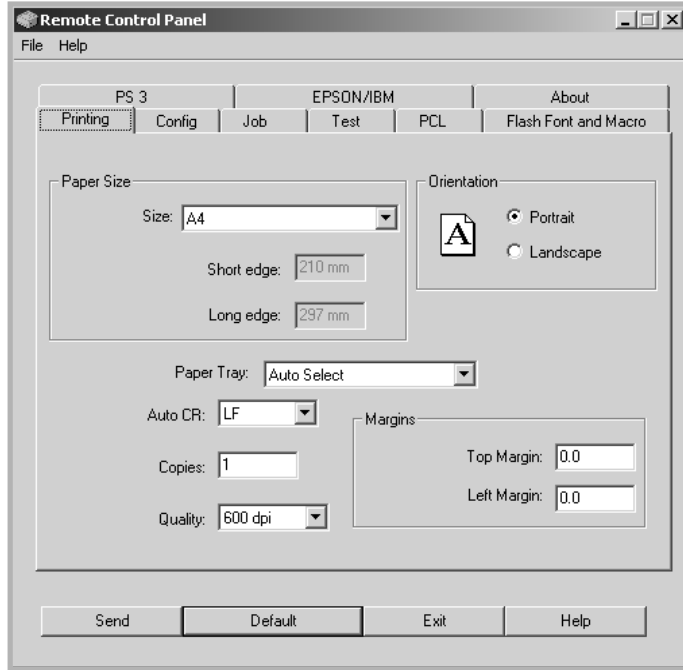
- 4 When you finish changing the settings, click **Send**.

Using the Remote Control Panel Tabs

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

Printing Tab

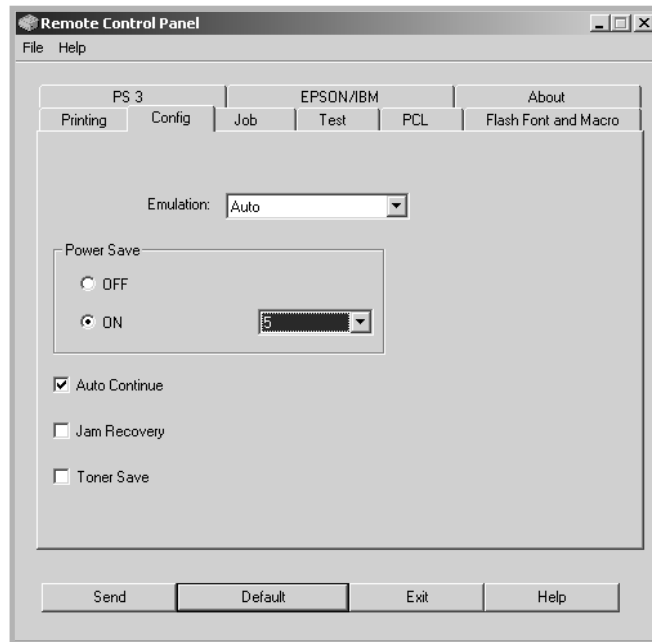
In this tab, you can configure general settings for printing.



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

Config Tab

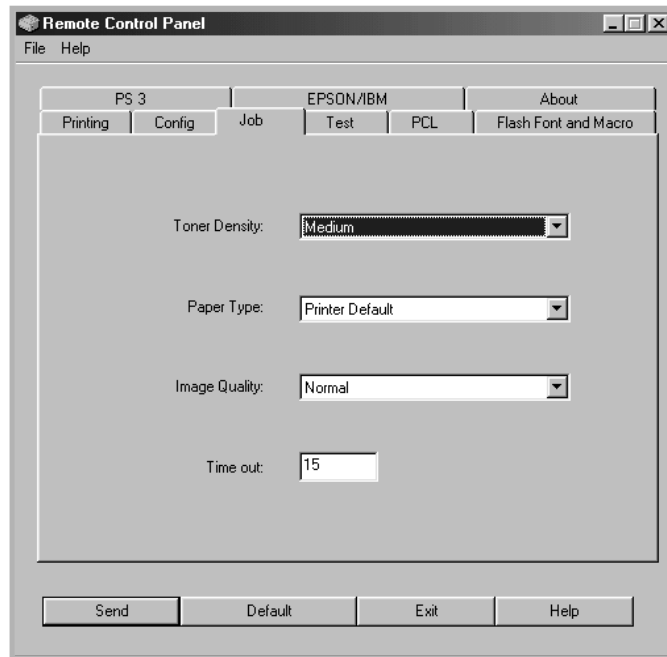
You can configure various printer features.



- **Emulation** selects the emulation for printing a document. The factory default is **Auto**.
- **Power Save** determines the length of time the printer waits after a job is printed before it goes to a reduced power state. If the printer is used frequently, select **OFF** which keeps the printer ready to print with the minimum warm-up time. This uses more power to keep the printer warm and ready to print.
- **Auto Continue** determines what action the printer should take if the Multi-Purpose Tray is empty when a manual feed print job is sent to the printer. If it is checked, the printer will pick up the paper from the tray 1 after fifteen seconds. Otherwise, the printer will wait for you to load paper in the Multi-Purpose Tray.
- **Jam Recovery** determines what action the printer should take when a paper jam occurs. If it is unchecked, the printer does not reprint a page that has jammed. If it is checked, the printer keeps the image in memory for a printed page until the printer signals that the page has successfully printed. The printer reprints all jammed pages.
- **Toner save** determines the toner quantity the printer should use when printing. If it is checked, the printer conserves toner when printing. The default value is unchecked, which provides 100% usage.

Job Tab

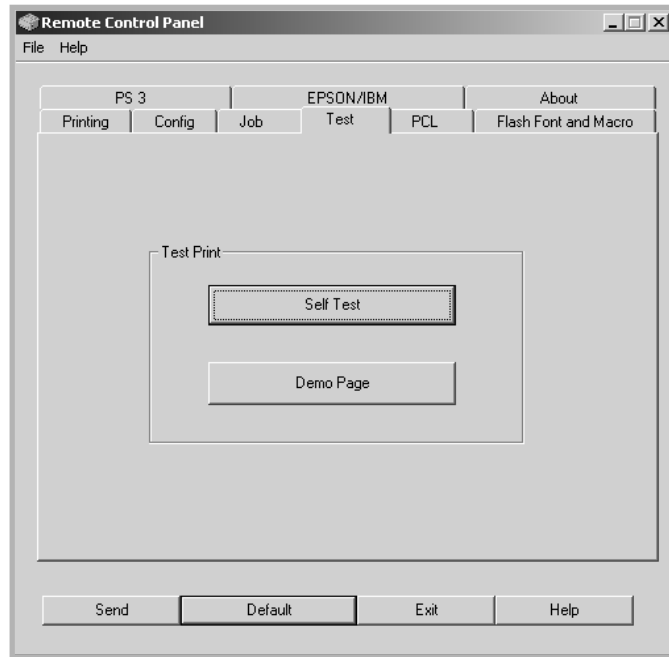
You can set options for improving the quality of your print job.



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

Test Tab

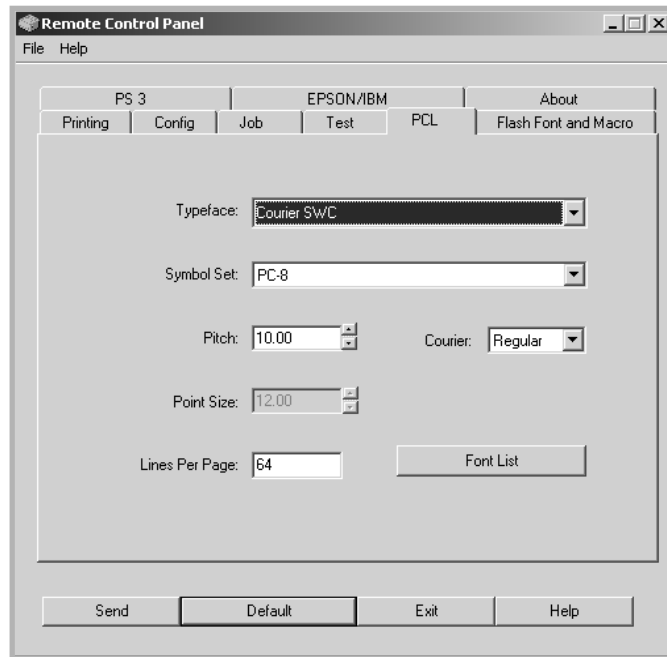
This tab allows you to print a resident page to test your printer's performance.



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

PCL Tab

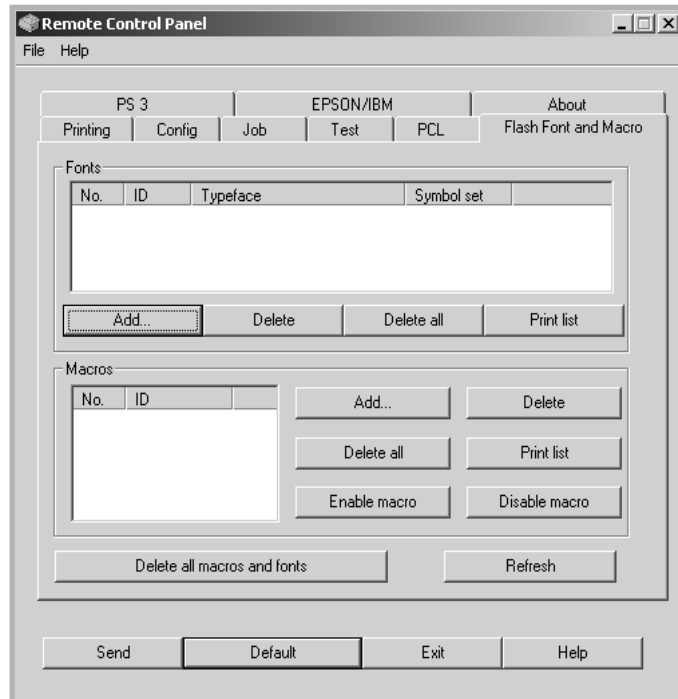
In this tab, you can configure various settings for PCL emulation.



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

Flash Font and Macro Tab

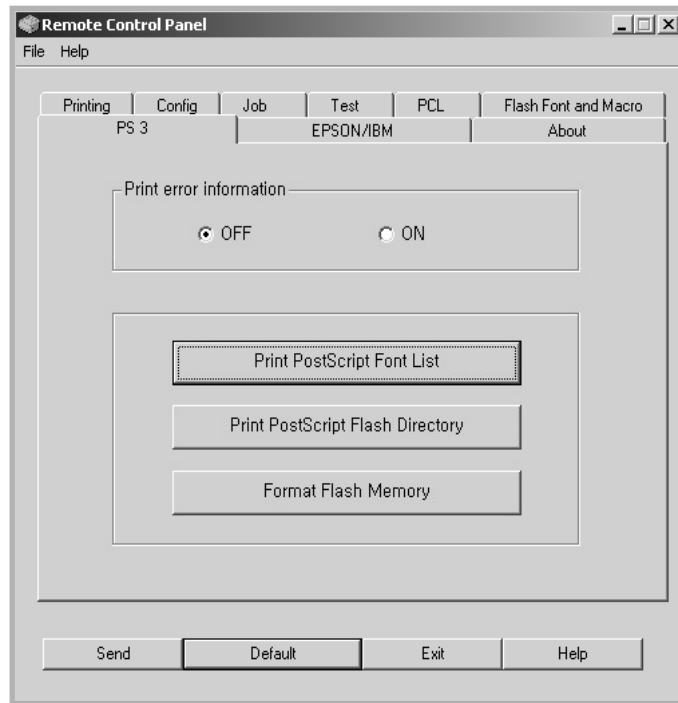
This tab allows you to add fonts and macros to the Flash memory of the printer.



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

PS 3 Tab

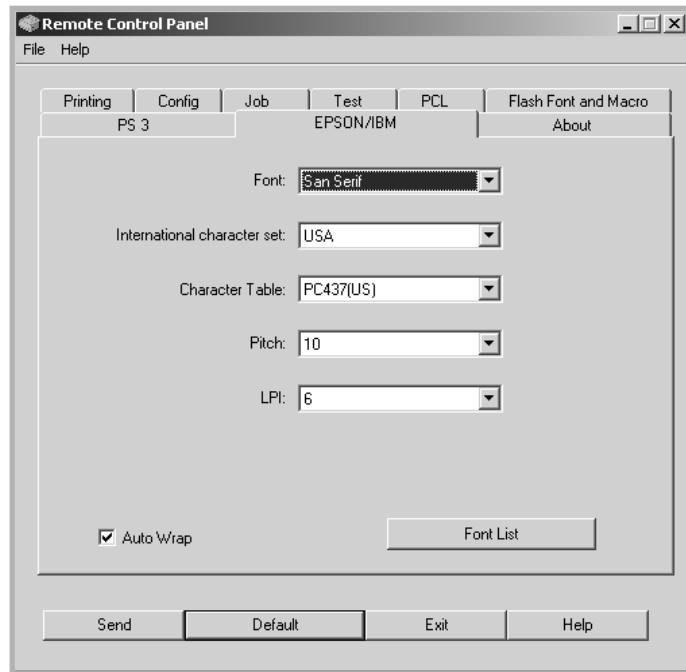
You can configure various settings for PostScript 3 emulation.



- **Print error information** determines whether or not the printer prints the error information page when an error occurs while processing a job. Select **ON** to print the page, otherwise select **OFF**.
- **Print PostScript Font List** allows you to print the PS font sample list.
- **Print PostScript Flash Directory** allows you to print the flash directory of the flash memory. If your printer is connected to a network, you can use this button in SyncThru.
- **Format Flash Memory** allows you to format the PostScript file system of the flash memory. If your printer is connected to a network, you can use this button in SyncThru.

EPSON/IBM Tab

You can configure various settings for EPSON/IBM emulation.



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





INSTALLING PRINTER OPTIONS

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

This chapter includes:

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

Precautions When Installing Printer Options

DISCONNECT THE POWER CORD:

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

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

DISCHARGE STATIC ELECTRICITY:

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

ORDER THE ITEMS:

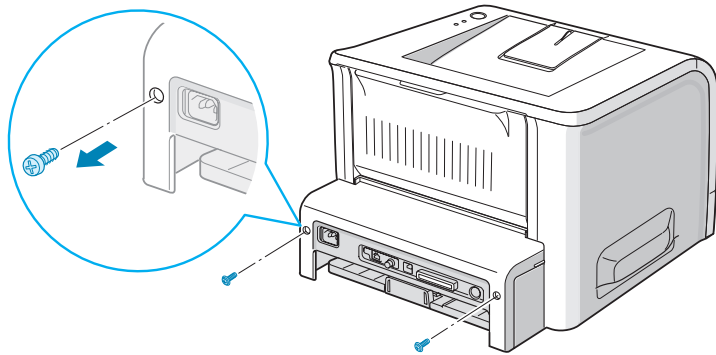
Check the order number of the items you want purchase. Refer to the table below.

Items	Order number
Memory DIMM	ML-00MA (16 MB) ML-00MB (32 MB) ML-00MC (64 MB) ML-00MD (128 MB)
PostScript DIMM	ML-00PA (4MB) ML-00PC (8MB)
Ethernet 10/100 Base TX (Internal)	ML-00NB
Ethernet 10/100 Base TX + 802.11b Wireless Lan (Internal)	ML-00LB
250-sheet Cassette Tray	ML-2250S3

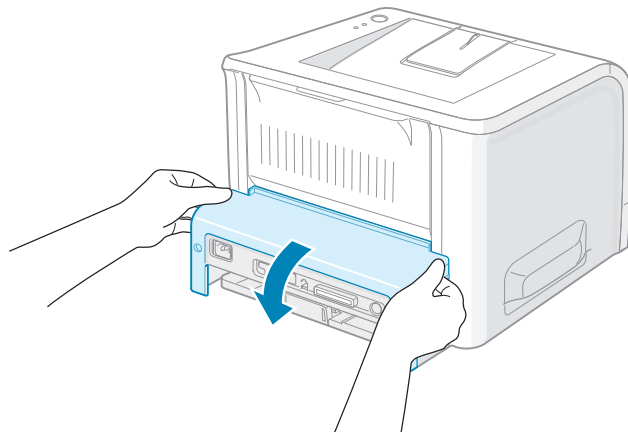
Installing Memory and PostScript DIMMs

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

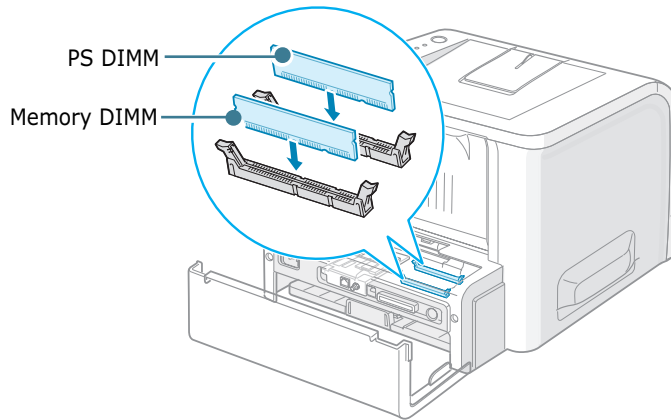
- 1 Turn the printer power off and unplug all cables from the printer.
- 2 Remove the two screws on the back of the printer.



- 3 Open the control board cover.



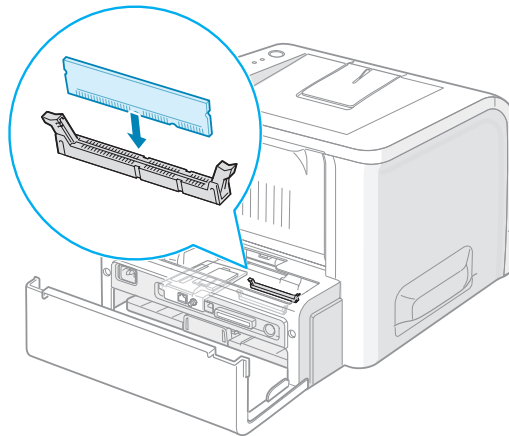
- 4** Locate the PS DIMM slot (the upper slot) and the memory DIMM slot (the lower slot) on the control board. They are not interchangeable.



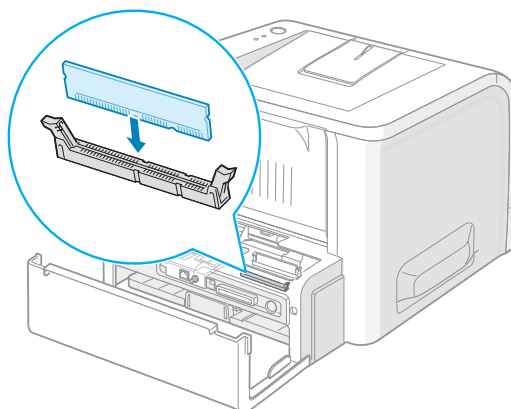
To install the PS DIMM, continue with Step 5.

To install the memory DIMM, go to Step 6.

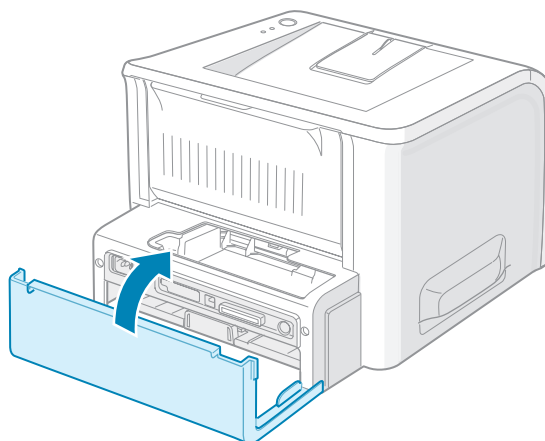
- 5** Hold the PS DIMM so that the notch and the connection point are aligned with the slot as shown, and insert it all the way into the upper slot.



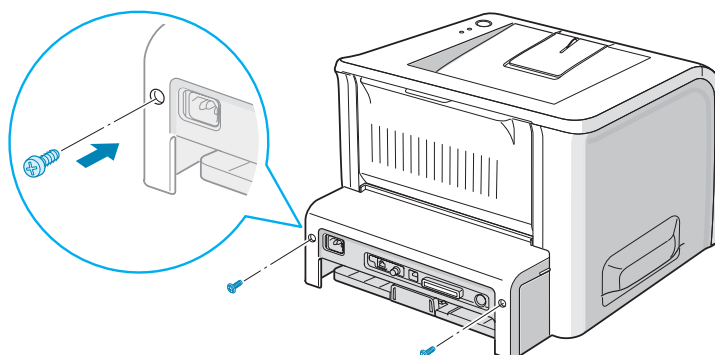
- 6** Hold the memory DIMM so that the notch and the connection point are aligned with the slot as shown, and insert it all the way into the lower slot.



- 7** Close the control board cover.



- 8** Tighten the two screws.



D

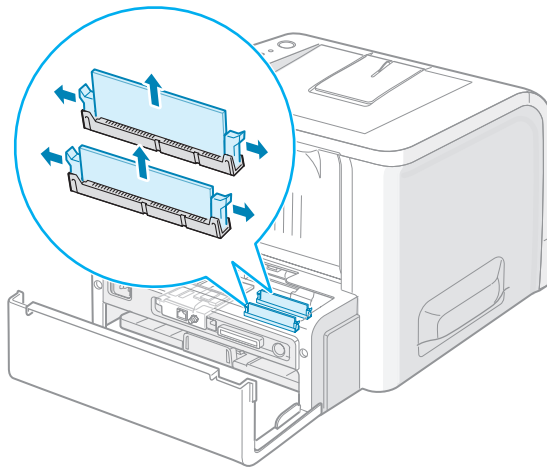
- 9 Reconnect the power cord and printer cable, and turn the printer on.



NOTE: For PS printing on a Windows system, refer to Appendix A, "Using Windows PostScript Driver."

Removing the Memory or PS DIMM

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



- 3 Place the DIMM in its original packaging or wrap it with paper and store it in a box.
- 4 Close the control board cover.
- 5 Tighten the two screws.
- 6 Reconnect the power cord and printer cable, and turn the printer on.

Installing a Network Card



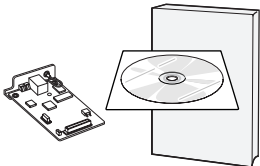
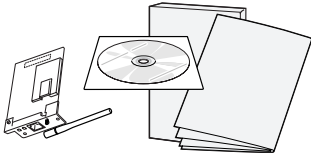
NOTE: When you purchase the wired/wireless network interface card, the antenna connected to the card is not separated from the card depending on your country.

To use your printer on a network, your printer must be equipped with a network interface card.

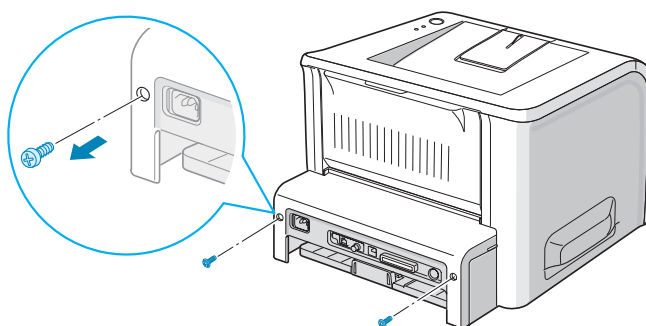
ML-2251N has a built-in network interface card. If you are an ML-2250 user, you need to install an optional network interface card.

If you want to use the printer in both wired and wireless network environments, you need to install an optional wired/wireless network interface card.

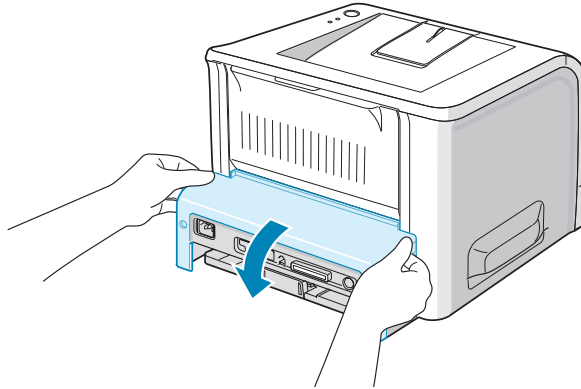
Check if there are missing parts in your optional interface card package.

ML-2250	ML-2250, ML-2251N
Ethernet 10/100 Base TX (Internal)	Ethernet 10/100 Base TX + 802.11b Wireless Lan (Internal)
Network interface Card, CD-ROM and Quick Guide 	Wireless Network interface Card, CD-ROM, Quick Guide and Wireless Quick Guide 

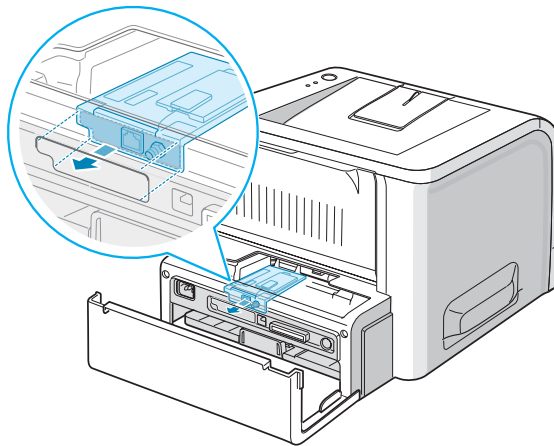
- 1 Turn the printer power off and unplug all cables from the printer.
- 2 Remove the two screws on the back of the printer.



- 3** Open the control board cover.

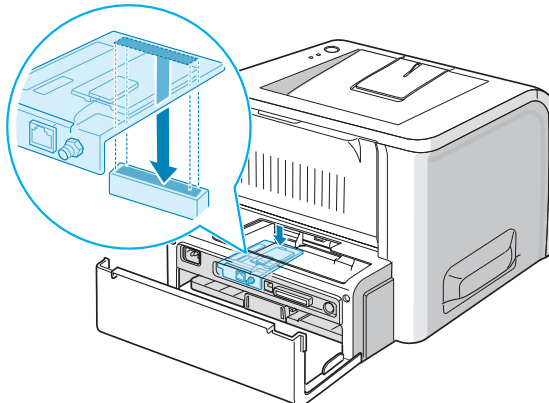


- 4** Insert the front of the network interface card to the corresponding slot of the machine.

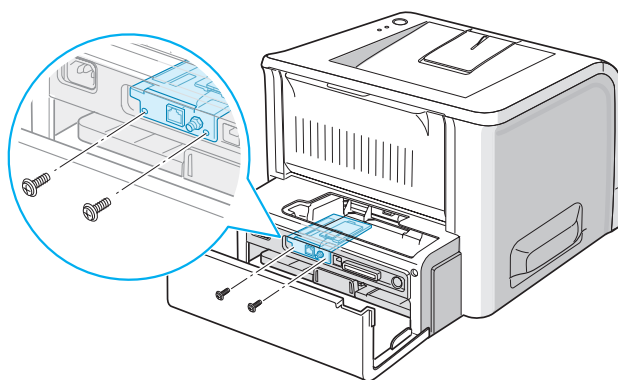


NOTE: If you are installing the wireless network interface card, unfasten the antenna.

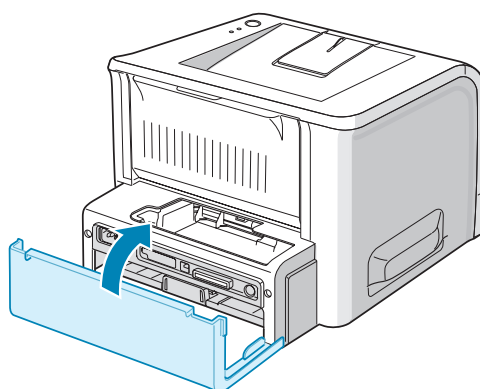
- 5** Make sure that the connector on the card is properly placed on the connector of the board. Push the card firmly.



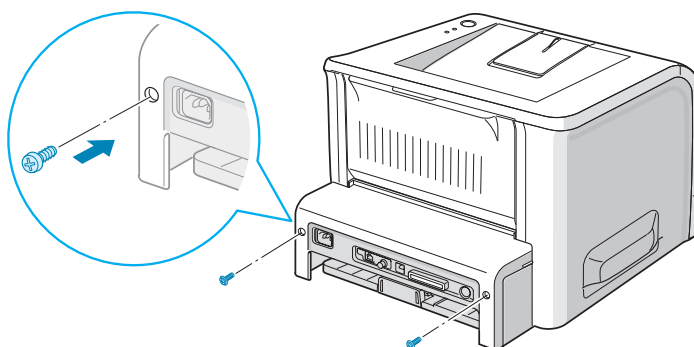
6 Fasten the two supplied screws.



7 Close the control board cover.

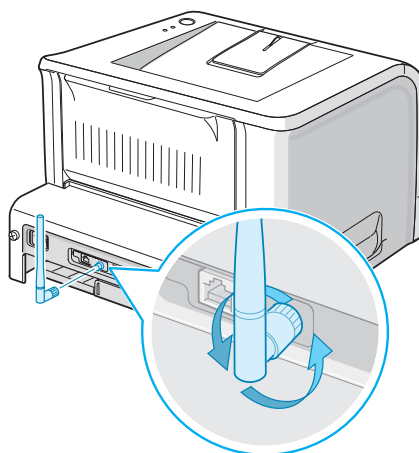


8 Tighten the two screws.

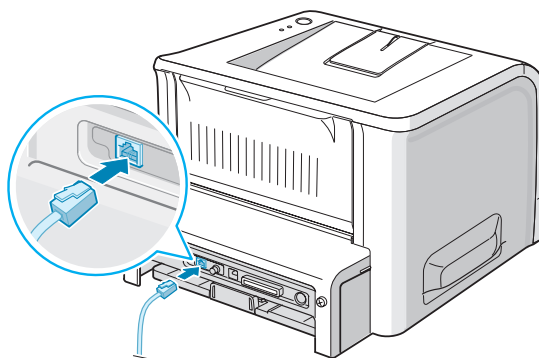


D

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



- 10 Plug one end of the Ethernet cable into the Ethernet network port on the Printer and the other end of the cable into a network LAN connection.



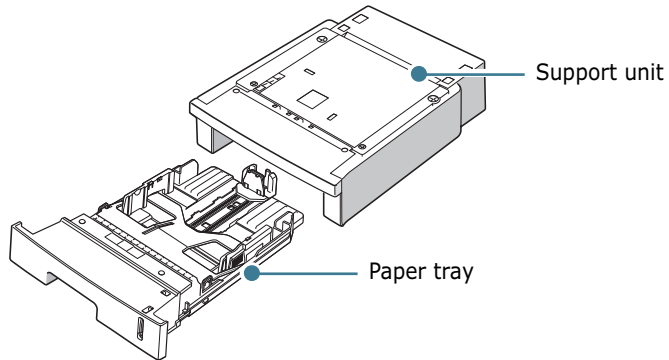
To the network LAN connection



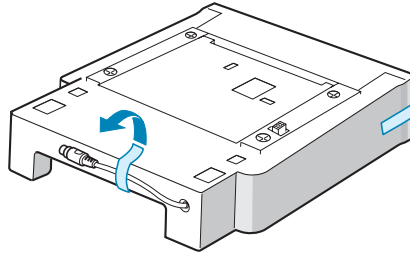
NOTE: For information about configuring and using the printer in a network environment, refer to the User's Guide provided with the network interface card.

Installing an Optional Paper Tray

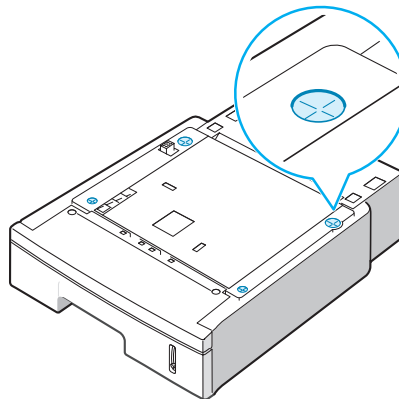
You can increase the paper handling capacity of your printer by installing an optional Tray2. The optional paper tray consists of two components; the support unit and the paper tray.



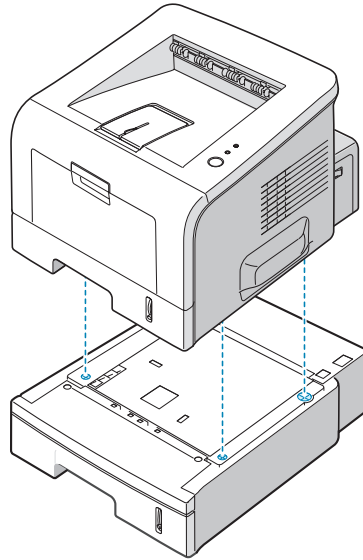
- 1 Turn off the printer and unplug all cables from the printer.
- 2 Remove the tape fastening the interface cable from the bottom of the support unit.



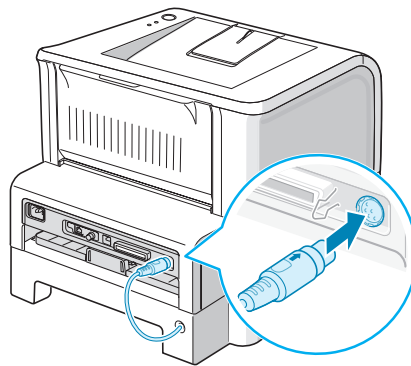
- 3 Observe the location of the support unit's tabs.



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



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



- 6 Load paper in Tray2. For information about loading paper in the tray, see page 2.7.

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



NOTE: When you print a document, configure the printer driver from your application. To access the printer driver, see page 4.2.



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





SPECIFICATIONS

.This chapter includes:

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

Printer Specifications

Item	Specifications and Description
Print Speed ^a	Up to 20 ppm in A4 (22 ppm in Letter)
Resolution	Up to 1200 x 1200 dpi effective output
First Printing Time	10 seconds
Warm-up Time	Less than 40 seconds
Power Rating	AC 120 V (USA, Canada) / 220 ~ 240 V (Others) 50 / 60 Hz
Power Consumption	350 W average during operation Less than 11 W in sleep mode
Noise Level ^b	Less than 39 dBA (Standby) Less than 51 dB (Printing)
Toner Supply	Single cartridge
Toner Cartridge Life ^c	5,000 pages at ISO 19752 5% Coverage (Ships with 3,000 pages starter Toner Cartridge) Order number: ML-2250D5
Duty Cycle, Monthly	Up to 30,000 pages
Weight	10 Kg (Including consumable)
Package Weight	Paper: 1.76 Kg Plastic: 0.2 Kg
External Dimensions (W x D x H)	358 x 452 x 278 mm (14.1" x 17.8" x 10.9")
Operating Environment	Temperature: 10 ~ 32 °C / 50 ~ 90 °F Humidity: 20 ~ 80 % RH
Emulation	PCL 6, SPL, IBM ProPrinter, EPSON, PostScript 3 (option)
Random Access Memory (RAM)	16 MB (Max. 144 MB) Optional memory available: 16 MB (ML-00MA), 32 MB (ML-00MB), 64 MB (ML-00MC) or 128 MB (ML-00MD)
Fonts	1 bitmap, 45 scalable, 136 PS fonts (option)
Interface	ML-2250 : USB 2.0, IEEE 1284 Parallel
	ML-2251N : USB 2.0, IEEE 1284 Parallel, Ethernet 10/100 Base TX
	ML-2252W : USB 2.0, IEEE 1284 Parallel, Ethernet 10/100 Base TX + 802.11b Wireless LAN

Item	Specifications and Description
OS Compatibility ^d	Windows 95/98/Me/NT 4.0/2000/XP, Various Linux OS including Red Hat, Caldera, Debian, Mandrake, Slackware, SuSE and Turbo Linux
Options	250-sheet Paper Cassette Tray
	ML-2250 : Ethernet 10/100 Base TX (Internal), Ethernet 10/100 Base TX + 802.11b Wireless LAN (Internal)
	ML-2251N : Ethernet 10/100 Base TX + 802.11b Wireless LAN (Internal)

- 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 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 that the paper meets the requirements specified in this User's Guide.



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

Supported Sizes of Paper

Tray1/ Tray2	Dimensions ^a	Weight	Capacity ^b
Letter	216 X 279 mm (8.5 X 11 in.)	60 to 90 g/m ² bond (16 to 24 lb)	250 sheets of 75 g/m ² bond paper
A4	210 X 297 mm (8.3 X 11.7 in.)		
A5	148 x 210 mm (5.8 x 8.2 in.)		
A6	105 x 148 mm (4.1 x 5.8 in.)		
Executive	184 X 267 mm (7.25 X 10.5 in.)		
Legal	216 X 356 mm (8.5 X 14 in.)		
B5 (JIS)	182 X 257 mm (7.2 X 10 in.)		
B5 (ISO)	176 x 250 mm (6.7 x 9.9 in.)		
Oficio	216 x 343 mm (8.5 x 13.5 in.)		
Folio	216 X 330 mm (8.5 X 13 in.)		

Multi-Purpose Tray	Dimensions ^a	Weight	Capacity ^b
Minimum Size (custom)	76 X 127 mm (3 X 5 in.)	60 to 163 g/m ² bond (16 to 43 lb)	50 sheets of 75 g/m ² bond paper
Maximum Size (custom)	216 X 356 mm (8.5 X 14 in.)		
Transparency	Same minimum and maximum paper sizes as listed above.	138 to 148 g/m ² bond (36.7 to 39.4 lb)	5 typical
Labels ^c		120 to 150 g/m ² bond (32 to 40 lb)	5 typical
Envelopes		up to 90 g/m ² (16 to 24 lb)	up to 5

^a The printer supports a wide range of media sizes. See "Printing on Card Stock or Custom-sized Materials" on page 3.21.

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

^c Smoothness: 100 to 250 (Sheffield)



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

Guidelines for Using Paper

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

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

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

Symptom	Problem with Paper	Solution
Poor print quality or toner adhesion, problems with feeding	Too moist, too rough, too smooth, or embossed; faulty paper lot	Try another kind of paper, between 100 ~ 250 Sheffield, 4 ~ 5 % moisture content.
Dropout, jamming, curl	Stored improperly	Store paper flat in its moisture-proof wrapping.
Increased gray background shading/printer wear	Too heavy	Use lighter paper, open the rear output tray.
Excessive curl problems with feeding	Too moist, wrong grain direction, or short-grain construction	• Open the rear output tray. • Use long-grain paper.
Jamming, damage to printer	Cutouts or perforations	Do not use paper with cutouts or perforations.
Problems with feeding	Ragged edges	Use good quality paper.



NOTES:

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

Paper Specifications

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

Paper Output Capacity

Output Tray	Capacity
Face-down top output tray	150 sheets of 75 g/m ² bond paper
Face-up rear output tray	a sheet of 75 g/m ² bond paper

Printer and Paper Storage Environment

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

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

Envelopes

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

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

	Minimum	Maximum
Multi-Purpose Tray	76 X 127 mm (3 X 5 in.)	216 X 356 mm (8.5 X 14 in.)

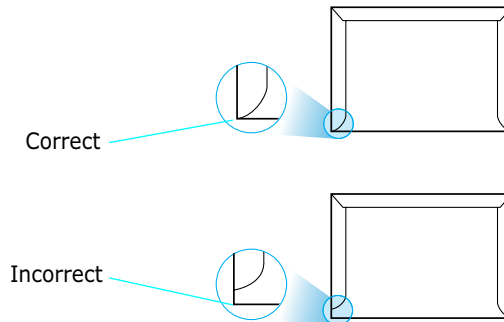


NOTES:

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

Envelopes with Double Side Seams

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



Envelopes with Adhesive Strips or Flaps

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

Envelope Margins

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

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



NOTES:

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

Envelope Storage

Proper storage of envelopes helps contribute to print quality. Envelopes should be stored flat. If air is trapped in an envelope, creating an air bubble, then the envelope may wrinkle during printing. See "Printing on Envelopes" on page 3.14.

Labels



CAUTIONS:

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

When selecting labels, consider the quality of each component:

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

See "Printing on Labels" on page 3.17.

Transparencies

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



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

See "Printing on Transparencies" on page 3.19.



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