7 MAINTENANCE

This chapter provides information for maintaining your machine and the toner cartridge.

This chapter includes:

- **Printing the System Data List**
- **Clearing the Memory**
- **Cleaning Your Machine**
- **Maintaining the Toner Cartridge**
- **Consumables and Replacement Parts**

Printing the System Data List

Your machine can print the system data report shows the status of the user-selectable options. You may print this list to confirm your changes after changing any settings.

To print the stystem data list:

1. Press **Menu/Exit** until "Reports" appears on the top line of the display.

   "System Data" appears on the bottom line.

2. Press **Start/Copy**.

   The system data list prints out.

Clearing the Memory

You can selectively clear information stored in your machine's memory.

1. Press **Menu/Exit** on the control panel until "Maintenance" appears on the top line of the display.
2. Press the scroll button (◂ or ▸) until you see "Clear Settings" on the bottom line and press **Start/Copy**.

   The first available menu item, "Paper Setting" displays on the bottom line.
3. Press the scroll button (◂ or ▸) until you see the item you want to clear.
   - Paper Setting: Restores all of the Paper Setting options to the factory default.
   - Copy Setup: Restores all of the Copy Setup options to the factory default.
   - All Settings: Resets all of your settings to the factory default.
   - Machine Setup: Resets all of the system settings, such as the display language and save modes, to the factory default.
4. Press **Start/Copy**. The selected memory is cleared and the display asks you to continue clearing the next item.
5. To clear another item, press **Start/Copy** and repeat steps 3 and 4. Or, to return to Standby mode, press **Stop/Clear**.

Cleaning Your Machine

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

NOTES:

- While cleaning the inside of the machine, be careful not to touch the transfer roller, located underneath the toner cartridge. Oil from your fingers can cause print quality problems.
- Cleaning the cabinet of your machine with products containing large amounts of alcohol, solvent, or other strong substances can discolor or crack the cabinet.

Cleaning the Outside

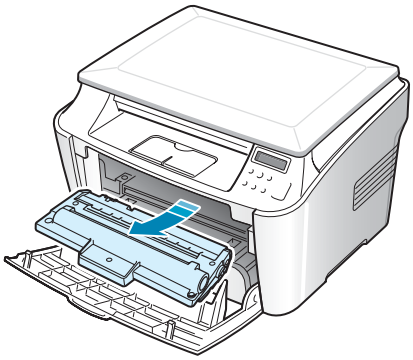
Clean the cabinet of the machine with a soft lint-free cloth. You can dampen the cloth slightly with water, but be careful not to let any water drip onto or inside the machine.

Cleaning the Inside

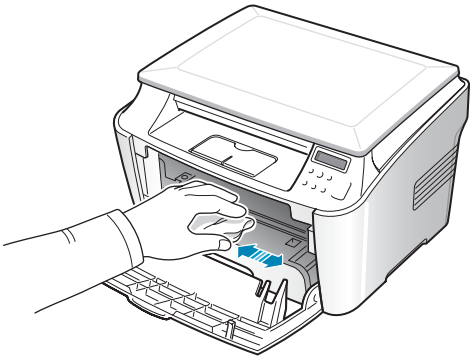
During the printing process, paper, toner and dust particles can accumulate inside the machine. This buildup can cause print quality problems, such as toner specks or smearing. Cleaning the inside of the machine clears or reduces these problems.

1. Turn the machine off and unplug the power cord. Wait for the machine to cool down.

2. Open the front cover and pull the toner cartridge out, lightly pushing it down.



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



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

4 Reinsert the toner cartridge and close the cover.

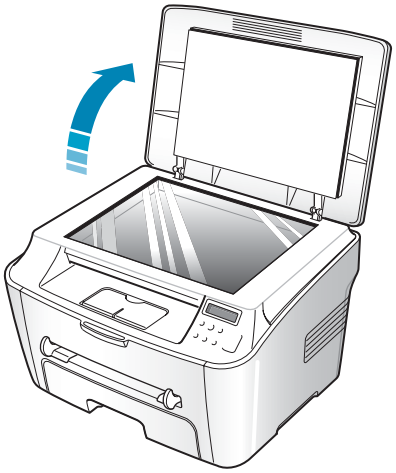
5 Plug in the power cord and turn the machine on.

Cleaning the Document Glass

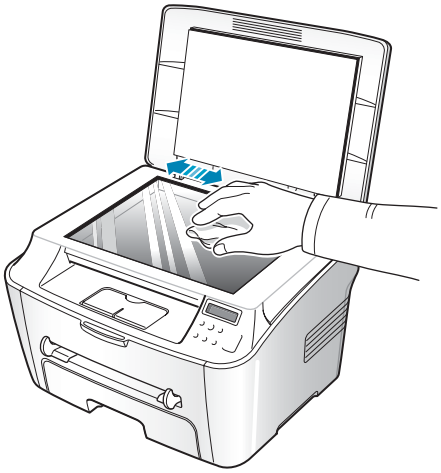
Keeping the document glass clean helps ensure the best possible copies. We suggest that you clean the document glass at the start of each day and during the day, as needed.

1 Slightly dampen a soft lint-free cloth or paper towel with water.

2 Lift the document glass.



3 Wipe the surface of the document glass until it is clean and dry.



4 Wipe the underside of the white document cover until it is clean and dry.

5 Close the document cover.

Maintaining the Toner Cartridge

Toner Cartridge Storage

To get the most 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 machine warranty does not cover damage caused by using a refilled cartridge.**
- Store toner cartridges in the same environment as your machine.
- To prevent damage to the toner cartridge, do not expose it to light for more than a few minutes.

Saving Toner

To save toner, use the Toner Save feature; see page 1.27. Using this feature extends the life of the toner cartridge and reduces your cost per page, but it also reduces the print quality.

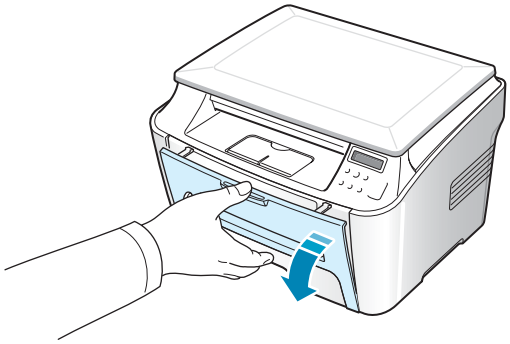
Expected Cartridge Life

The life of the toner cartridge depends on the amount of toner that print jobs require. When printing text at IDC 5% coverage, a new toner cartridge lasts an average of 3,000 pages. The original toner cartridge supplied with the machine lasts an average of 1,000 pages. The actual number may be different depending on the print density of the page you print. If you print a lot of graphics, you may need to change the cartridge more often.

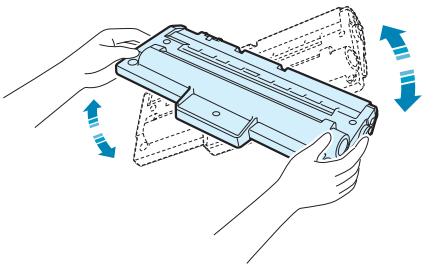
Redistributing Toner

When the toner cartridge is near the end of its life, white streaks or light print occurs. You can temporarily reestablish the print quality by redistributing the remaining toner in the cartridge.

1 Open the front cover.



2 Pull the toner cartridge out and gently roll the cartridge 5 or 6 times to distribute the toner evenly inside the cartridge.



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

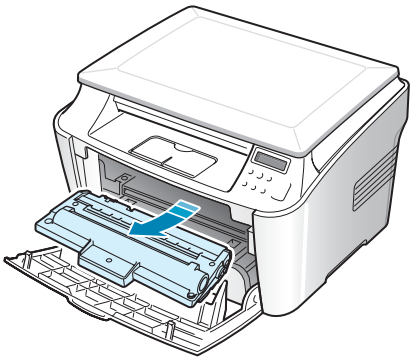
3 Reinstall the cartridge and close the front cover.

Replacing the Toner Cartridge

When the toner eventually runs out, only blank pages print when a print job is sent. At this stage, the toner cartridge needs to be replaced. The machine stops printing.

1 Open the front cover.

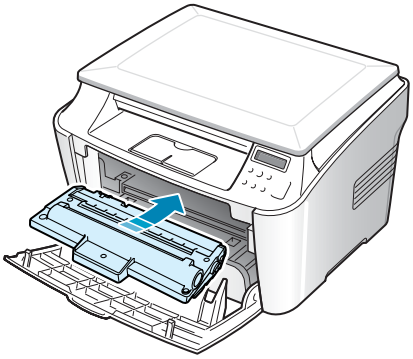
2 Lightly pushing the used cartridge down, pull it out.



3 Unpack the new toner cartridge and gently roll it horizontally four or five times to distribute the toner evenly inside the cartridge.

Save the box and the Plastic bag for shipping.

4 Slide the new toner cartridge in until it locks into place.



5 Close the front cover.

Cleaning the Drum

If there are streaks or spots on your print, the OPC drum of the cartridge may require cleaning.

1. Before setting the cleaning procedure, make sure that paper is loaded in the machine.

2. Press **Menu/Exit** on the control panel until "Maintenance" appears on the top line of the display.

   The first available menu item, "Clean Drum", displays on the bottom line.

3. Press **Start/Copy**.

4. When the display asks you to confirm your selection, press **Start/Copy**.

   The machine prints a cleaning page. Toner particles on the drum surface are affixed to the paper.

5. If the problem remains, repeat steps 1 through 4.

Consumables and Replacement Parts

From time to time, you needs to replace the toner cartridge, roller, and fuser unit to maintain top performance and to 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:

Items	Yield (Average)
Paper feeding roller	60,000
Transfer roller	60,000
Fuser unit	60,000

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

8 TROUBLESHOOTING

This chapter gives helpful information for what to do if you encounter an error.

This chapter includes:

- **Clearing Paper Jams**
- **Clearing LCD Error Messages**
- **Solving Problems**

Clearing Paper Jams

When a paper jam occurs, "Paper Jam" appears on the display. Refer to the table below to locate and clear the paper jam.

Message	Location of Jam	Go to
PAPER JAM 0 OPEN/CLOSE DOOR	In the paper tray	page 8.2
PAPER JAM 1 OPEN/CLOSE DOOR	In the paper exit area	page 8.4
PAPER JAM 2 CHECK INSIDE	In the fuser area or around the toner cartridge	page 8.3
BYPASS JAM	In the manual feeder	page 8.5

To avoid tearing the paper, pull the jammed paper out gently and slowly. Follow the steps on the next pages to clear the jam.

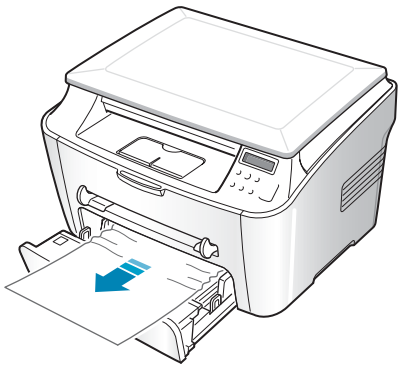
In the Paper Tray

1. Open and close the front cover. The jammed paper automatically exits the machine.

   If the paper does not exit, continue to step 2.

2. Pull the paper tray open.

3. Remove the jammed paper by gently pulling it straight out.



If there is any resistance and the paper does not move when you pull or if you cannot see the paper in this area, skip to the fuser area around the toner cartridge. See page 8.4.

4 Insert the paper tray into the machine until it snaps into place.

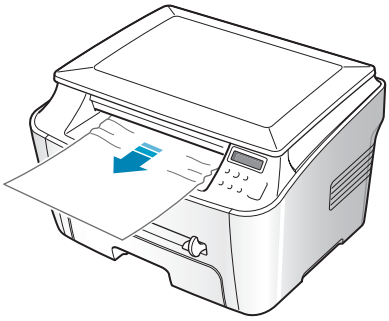
5 Open and close the front cover to resume printing.

In the Paper Exit Area

1 Open and close the front cover. The jammed paper automatically exits the machine.

If the paper does not exit, continue to step 2.

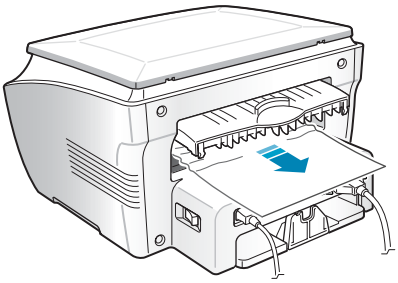
2 Gently pull the paper out of the front output tray. Skip to step 6.



If there is any resistance and the paper does not move when you pull or if you cannot see the paper in the front output tray, continue to step 3.

3 Open the rear cover.

4 Remove the jammed paper by gently pulling it straight out.



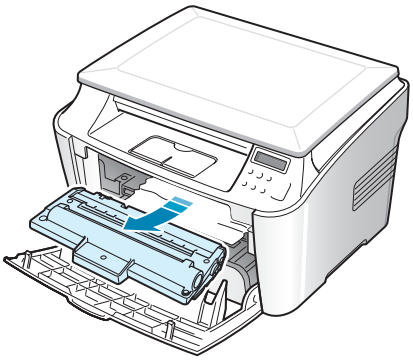
5 Close the rear cover.

6 Open and close the front cover to resume printing.

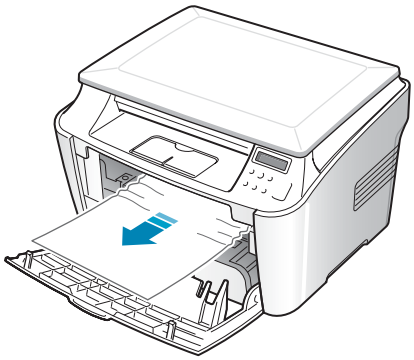
In the Fuser Area or Around the Toner Cartridge

NOTE: The fuser area is hot. Take care when removing paper from the machine.

1 Open the front cover and pull the toner cartridge out, lightly pushing it down.



2 Remove the jammed paper by gently pulling it straight out.

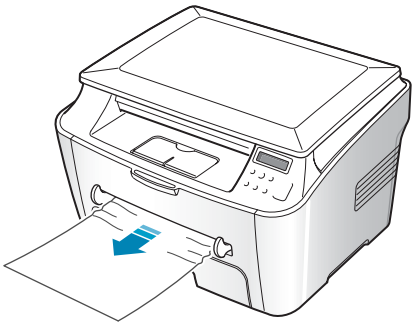


3 Replace the toner cartridge and close the front cover. Printing automatically resumes.

In the Manual Feeder

“Bypass Jam” appears on the display when you try to print using the manual feeder and the machine does not detect paper, due to no paper or improper paper loading.

The error message may also occur when the paper is not properly fed into the machine through the manual feeder. In that case, pull the paper out of the machine.



Tips for Avoiding Paper Jams

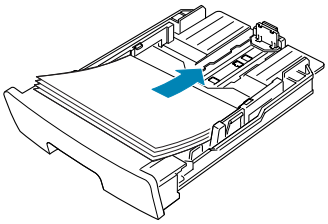
By selecting the correct paper types, most paper jams can be avoided. When a paper jam occurs, follow the steps outlined in page 8.2.

- Follow the procedures on page 1.8 when you load paper. Ensure that the adjustable guides are positioned correctly.
- Do not overload the paper tray. Ensure that the paper is below the paper capacity mark on the inside wall of the paper tray.
- Do not remove the paper from the tray while your machine is 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 paper tray.
- Use only recommended print materials. See “Paper Specifications” on page A.5.

- Ensure that the print side of print materials is facing down in the paper tray and facing up in the manual feeder.

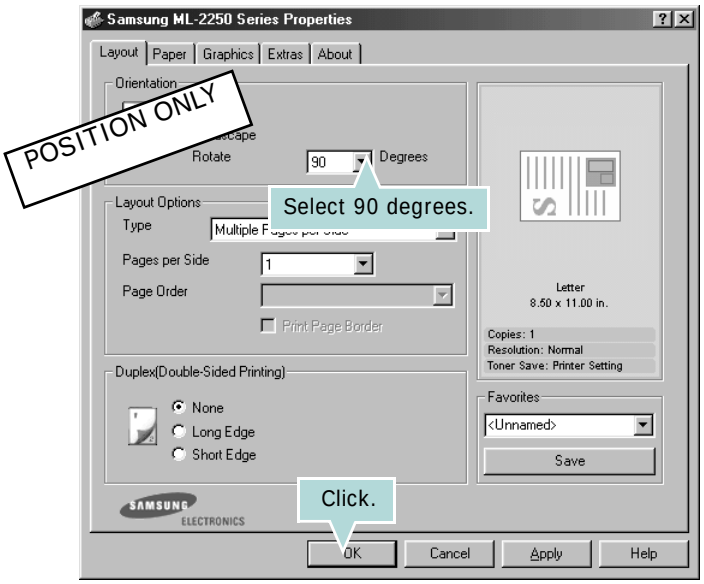
- If paper jams frequently occur when you print on the A5-sized paper:

  - Load the paper into the tray as shown below.



  - Open the Samsung SCX-4100 Series Properties window, set the paper size to **A5(5.8x8.3 in.)** from the **Paper** tab.

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



Clearing LCD Error Messages

Messages appears on the display to indicate the control panel to indicate the machine's status or errors. Refer to the following table to understand the message's meaning and correct the problem, if necessary. Messages and their meanings are listed in alphabetical order.

Display	Meaning	Suggested solutions
BYPASS JAM	A paper jam has occurred in the manual feeder or the machine detects non-feeding from the manual feeder.	Load paper in the Manual feeder. Clear the jam. See page 8.5.
CANCEL ? 1:YES 2:NO	Your machine's memory has become full while documents were being loaded into memory.	To cancel the job, press the No **1** button "Yes." If you want to send the pages already stored, press the No **2** button "No." You should send the remaining pages later when the memory is available.
COMM. ERROR	The machine has a communication problem.	Ask the sender to try again.
DOOR OPEN	The front or rear cover is not securely latched.	Close the cover until it locks into place.
DRUM EMPTY	The drum cartridge is empty.	Replace the drum cartridge.
DRUM WARNING	The drum cartridge is near the end of its life.	You should have a replacement cartridge in stock.
FUSER ERROR 1.123457E+15	There is a problem in the fuser unit.	Unplug the power cord and plug it back in. If the problem persists, please call for service.
LSU ERROR	A problem has occurred in the LSU (Laser Scanning Unit).	Unplug the power cord and plug it back in. If the problem persists, please call for service.

Display	Meaning	Suggested solutions
MEMORY FULL	The memory is full.	Delete unnecessary documents, retransmit after more memory becomes available or split the transmission into more than one operation.
NO PAPER [ADD PAPER]	The paper tray has run out of paper.	Load paper in the paper tray. See page 1.8.
PAPER JAM 0 OPEN/CLOSE DOOR	Paper has jammed in the feeding area of the paper tray.	Clear the jam. See page 8.2.
PAPER JAM 1 OPEN/CLOSE DOOR	Paper has jammed in the paper exit area.	Clear the jam. See page 8.3.
PAPER JAM 2 CHECK INSIDE	Paper has jammed in the fuser area.	Clear the jam. See page 8.4.
POWER FAILURE	Power has turned off then on and the machine's memory has not been saved.	You need to start again the job which you were trying to do before the power failure.

Solving Problems

The following chart lists some conditions that may occur and the recommended solutions. Follow the suggested solutions until the problem is corrected. If the problem persists, please call for service.

Paper Feeding Problems

Condition	Suggested solutions
Paper is jammed during printing.	Clear the paper jam. See page 8.2.
Paper sticks together.	• Ensure that there is not too much paper in the paper tray. The paper tray can hold up to 250 sheets of paper, depending on the thickness of your paper. • Make sure that you are using the correct type of paper. See “Paper Specifications” on page A.5. • Remove paper from the paper tray and flex or fan the paper. • Humid conditions may cause some paper to stick together.
Multiple sheets of paper do not feed.	• Different types of paper may be stacked in the paper tray. Load the paper of only one type, size and weight. • If multiple sheets have caused a paper jam, clear the paper jam. See page 8.2.
Paper does not feed into the machine.	• Remove any obstructions inside the machine. • 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 machine. See “Paper Specifications” on page A.5.
The paper keeps jamming.	• There is too much paper in the paper tray. Remove excess paper from the tray. • An incorrect type of paper is being used. Use only paper that meets the specifications required by the machine. See “Paper Specifications” on page A.5. If you are printing on special materials, use the manual feeder. • There may be debris inside the machine. Open the front cover and remove the debris.
Transparencies stick together in the paper exit.	Use only the transparencies specifically designed for a laser printer. Remove each transparency as it exits from the machine.
Envelopes skew or fail to feed correctly.	Ensure that the paper guides are against both sides of the envelopes.

Printing Problems

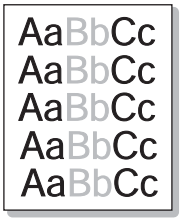
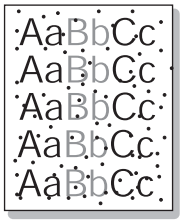
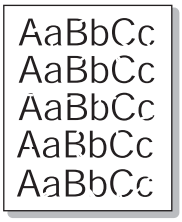
Condition	Possible cause	Suggested solutions
The machine does not print.	The machine is not receiving power.	Check the power cord connections. Check the power switch and the power source.
	The machine is not selected as the default printer.	Select **Samsung SCX-4100 Series** as your default printer in your Windows.
	Check the machine for the following: • The front or rear cover is not closed. • Paper is jammed. • No paper is loaded. • The toner cartridge is not installed.	After locating the problem, clear it. • Close the cover. • Clear the paper jam. See page 8.2. • Load paper. See page 1.8. • Install the toner cartridge. See page 1.6. If a printer system error occurs, contact your service representative.
	The connection cable between the computer and the machine is not connected properly.	Disconnect the printer cable and reconnect it.
	The connection cable between the computer and the machine is defective.	If possible, attach the cable to another computer that is working properly and print a document. You can also try using a different printer cable.
	The port setting is incorrect.	Check the Windows printer setting to make sure that the print job is sent to the correct port, for example, LPT1. If the computer has more than one port, make sure that the machine is attached to the correct one.
	The machine may be configured incorrectly.	Check the printer properties to ensure that all of the print settings are correct.
	The printer driver may be incorrectly installed.	Remove the printer driver and then reinstall it; see page 1.15 and page 1.15 respectively.
	The machine is malfunctioning.	Check the display message on the control panel to see if the machine is indicating a system error.
The machine 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 3.8.

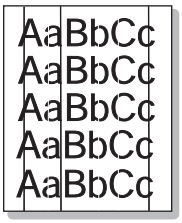
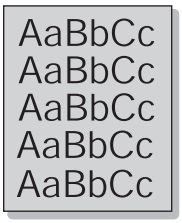
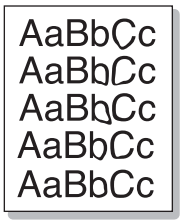
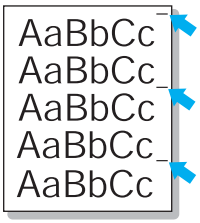
Condition	Possible cause	Suggested solutions
A print job is extremely slow.	The job may be very complex.	Reduce the complexity of the page or try adjusting the print quality settings. The maximum print speed of your machine is 17 PPM for Letter-sized paper 16 PPM for A4-sized paper.
	If you are using Windows 9x/Me, the Spooling Setting may be set incorrectly.	From the **Start** menu, choose **Settings** and **Printers**. Right-click the **Samsung SCX-4100 Series** printer icon, choose **Properties**, click the **Details** tab, and then choose the **Spool Settings** button. Select the spool setting you want.
Half the page is blank.	The page orientation setting may be incorrect.	Change the page orientation in your application. See page 3.3.
	The paper size and the paper size settings do not match.	Ensure that the paper size in the printer driver settings matches the paper in the tray.
The machine prints, but the text is wrong, garbled, or incomplete.	The printer cable is loose or defective.	Disconnect the printer cable and reconnect. Try a print job that you have already printed successfully. If possible, attach the cable and the machine to another computer and try a print job that you know works. Finally, try a new printer cable.
	The wrong printer driver was selected.	Check the application's printer selection menu to ensure that your machine is selected.
	The software application is malfunctioning.	Try printing a job from another application.
	The operating system is malfunctioning.	Exit Windows and reboot the computer. Turn the machine off and then back on again.

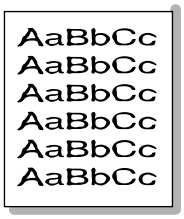
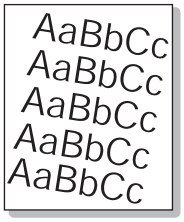
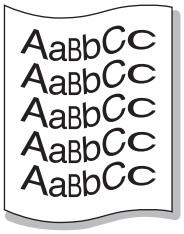
Condition	Possible cause	Suggested solutions
Pages print, but are blank.	The toner cartridge is defective or out of toner.	Redistribute the toner. if necessary. See page 7.7. If necessary, replace the toner cartridge.
	The file may have blank pages.	Check the file to ensure that it does not contain blank pages.
	Some parts, such as the controller or the board, may be defective.	Contact a service representative.
The illustrations print incorrectly in Adobe Illustrator.	The setting in the software application is wrong.	Select **Download as Bit Image** in the **Advanced Options** window of the Graphic properties and print the document.
An error occurs repeatedly when you are printing with the USB connection.	When the USB mode is set to “Fast,” some PC users may experience poor USB communication.	Change the USB mode to “Slow.” To do so, follow these steps: 1. Press **Menu/Exit** on the control panel until “Machine Setup” appears on the top line of the display. 2. Press the scroll button (◂ or ▸) until “USB Mode” appears on the bottom line, and press **Start/Enter**. 3. Press the scroll button (◂ or ▸) to select “Slow.” 4. Press **Start/Enter** to save the selection. 5. Press **Stop/Clear** to return to Standby Mode.

Printing Quality Problems

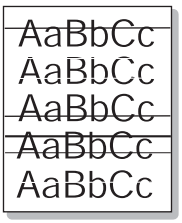
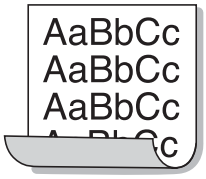
If the inside of the printer is dirty, or paper is improperly loaded, print quality maybe reduced. See the table below to clear the problem.

Condition	Suggested solutions
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 7.7. 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 A.5. • If the entire page is light, the print resolution setting is too low or Toner Save mode is on. Adjust the print resolution and turn Toner Save mode off. See page 3.8 and page 1.27 respectively. • A combination of faded or smeared defects may indicate that the toner cartridge needs cleaning. See “Cleaning the Drum” on page 7.9. • The surface of the document glass may be dirty. Clean the document glass. See page 7.5.
Toner specks  	• The paper may not meet specifications; for example, the paper is too moist or too rough. See “Paper Specifications” on page A.5. • The transfer roller or paper path may be dirty. Clean the inside of your machine and the drum. See page 7.3 and page 7.9.
Dropouts  	If generally rounded faded areas, 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 A.5. • The paper lot is bad. The manufacturing process can cause some areas to reject toner. Try a different kind or brand of paper. • The toner cartridge may be defective. Vertical repetitive defects on the next page. • If these steps do not correct the problems, contact a service representative.

Condition	Suggested solutions
Vertical lines 	If black vertical streaks appear on the page: • The drum inside the toner cartridge has probably been scratched. Remove the toner cartridge and install a new one. See “Replacing the Toner Cartridge” on page 7.8.
Gray background 	If the amount of background shading becomes unacceptable: • Change to a lighter weight pages. See “Paper Specifications” on page A.5. • Check the machine’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 “Replacing the Toner Cartridge” on page 7.8.
Toner smear 	• Clean the inside of the machine. See page 7.3. • Check the paper type and quality. See “Paper Specifications” on page A.5. • Remove the toner cartridge and install a new one. See “Replacing the Toner Cartridge” on page 7.8.
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 “Cleaning the Drum” on page 7.9. After the printout, if you still have the same problems, remove the toner cartridge and install a new one. See “Replacing the Toner Cartridge” on page 7.8. • Parts of the machine 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.

Condition	Suggested solutions
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 A.5. • If characters are improperly formed and producing a wavy effect, the scanner unit may need service. For service, contact a service representative.
Page skew 	• Ensure that the paper is loaded properly. • Check the paper type and quality. See “Paper Specifications” on page A.5. • 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 	• Ensure that the paper is loaded properly. • Check the paper type and quality. Both high temperature and humidity can cause paper curl. See “Paper Specifications” on page A.5. • Turn the stack of paper over in the paper tray. Also try rotating the paper 180° in the tray. • Try printing to the rear output slot.

Condition	Suggested solutions
Wrinkles or creases	• Ensure that the paper is loaded properly. • Check the paper type and quality. See “Paper Specifications” on page A.5. • Turn the stack of paper over in the paper tray. Also try rotating the paper 180° in the tray. • Try printing to the rear output slot.
Back of printouts are dirty	Check for leaking toner. Clean the inside of the machine. See page 7.3.
Black pages	• The toner cartridge may not be installed properly. Remove the cartridge and reinsert. • The toner cartridge may be defective and need replacing. Remove the toner cartridge and install a new one. See “Replacing the Toner Cartridge” on page 7.8. • The machine may require repair. Contact a service representative.
Loose toner	• Clean the inside of the machine. See page 7.3. • Check the paper type and quality. See “Paper Specifications” on page A.5. • Remove the toner cartridge and install a new one. See “Replacing the Toner Cartridge” on page 7.8. • If the problem persists, the machine may require repair. Contact a service representative.

Condition	Suggested solutions
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. Due to 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 A.5.
Horizontal stripes 	If horizontally aligned black streaks or smears appear: • The toner cartridge may be installed improperly. Remove and reinsert the cartridge. • The toner cartridge may be defective. Remove the toner cartridge and install a new one. See “Replacing the Toner Cartridge” on page 7.8. • If the problem persists, the machine may require repair. Contact a service representative.
Curl 	If the printed paper is curl or paper does not feed into the printer: • Turn the stack of paper over in the paper tray. Also try rotating the paper 180° in the paper tray. • Try printing to the rear output slot.

Copying Problems

Condition	Suggested solutions
Copies are too light or too dark.	Use the "Darkness" feature to darken or lighten the background of the copies.
Smears, lines, marks or spots appears on copies.	• If defects are on the original document, use the "Darkness" feature to lighten the background of your copies. • If no defects are on the original document, clean the document glass and underside of the document cover. See page 7.5.
Copy image is skewed.	• Ensure that the original document is positioned correctly on the document glass. • Check that the copy paper is loaded correctly.
Blank copies print out.	Ensure that the original document is face down on the document glass.
Image rubs off the copy easily.	• Replace the paper in the paper tray with paper from a new package. • In high humidity areas, do not leave paper in the machine for the extended periods of time.
Frequent copy paper jams occurs.	• Fan the stack of paper, then turn it over in the paper tray. Replace the paper in the tray with a fresh supply. Check/adjust the paper guides, if necessary. • Ensure that the paper is the proper paper weight. 75g/m^2 (20 lb) bond paper is recommended. • Check for copy paper or pieces of copy paper remaining in the machine after a paper jam has been cleared.
Fewer copies from the toner cartridge than expected prints out.	• Your original documents may contain pictures, solids or heavy lines. For example, they may be forms, newsletters, books or other documents that use more toner. • The machine may be turned frequently on and off. • The document cover may be left open while copies are being made.

Scanning Problems

Condition	Suggested solutions
The scanner does not work.	• Make sure that you place the document to be scanned face down on the document glass. • There may not be enough available memory to hold the document you want to scan. Try the Prescan function to see if that works. Try lowering the scan resolution rate. • Check that the USB or parallel cable is connected properly. • Make sure that the USB or parallel cable is not defective. Switch the cable with a known good cable. If necessary, replace the cable. • If you are using a parallel cable, ensure that it is compliant with the IEEE 1284 standard. • Check that the scanner is configured correctly. Check scan setting in the SmarThru Configuration or the application you want to use to make certain that the scanner job is being sent to the correct port, for example, LPT1.
The unit scans very slowly.	• Check if the machine is printing received data. Scan the document after the current job is completed. • Graphics are scanned more slowly than text. • Communication speed becomes slow in scan mode because of the large amount of memory required to analyze and reproduce the scanned image. Set your computer to the ECP printer mode through BIOS setting. It will help to increase the speed. For details about how to set BIOS, refer to your computer user's guide.
Message appears on your computer screen: • "Device can't be set to the H/W mode you want." • "Port is being used by another program." • "Port is Disabled." • "Scanner is busy receiving or printing data. When the current job is completed, try again." • "Invalid handle." • "Scanning has failed."	• There may be a copying or printing job in progress. When the current job is complete, try the job again. • The selected port is currently being used. Restart your computer and try again. • The printer cable may be improperly connected or the power may be off. You must use a USB 1.1 compliant cable or a parallel cable that supports IEEE-1284 bi-directional communications. • The scanner driver is not installed or an operating environment is not set up properly. • Ensure that port is properly connected and power is on, and then restart your computer. • Do not use the parallel and the USB cables at the same time.

Common Macintosh Problems

Problems in the Chooser

Problem	Possible Cause and Solution
The printer driver icon does not appear in Chooser.	• Software is not installed correctly. Reinstall the software; see page 6.2. • Make sure that you are using a high-quality cable.
The printer name does not appear in the **Connect to** box in Chooser.	• Make sure that the cables are connected correctly and the printer is turned on. • Check if “Ready” appears on the display of the control panel. If not, clear the problem depending on the error message; see page 8.7. • Make sure that the correct printer driver has been selected in Chooser.
You cannot use the computer while the printer is printing.	Background Printing has not been selected. • Select **Background** in the **Background Printing** tab of the Samsung SPL II Printer window. • In Mac OS 10.x, background printing is not supported.

Printer Errors

Problem	Possible Cause and Solution
You cannot use the computer while the printer is printing	Background Printing has not been selected. • Select Background in the printer’s properties. See page 6.11 (In Mac OS 10.X, background printing is not supported.)

Common Linux Problems

Problem	Possible Cause and Solution
The machine doesn't print	• Check if the printer driver is installed in your system. Open MFP configurator and switch to the Printers tab in Printers configuration window to look at the list of available printers. Make sure that your machine is displayed on the list. If not, please, invoke Add new printer wizard to set up your device. • Check if the printer is started. Open Printers configuration and select your machine on the printers list. Look at the description in the Selected printer pane. If its status contains "(stopped)" string, please, press the Start button. After that normal operation of the printer should be restored. The "stopped" status might be activated when some problems in printing occurred. For instance, this could be an attempt to print document when MFP port is claimed by a scanning application. • Check if the MFP port is not busy. Since functional components of MFP (printer and scanner) share the same I/O interface (MFP port), the situation of simultaneous access of different "consumer" application to the same MFP port is possible. To avoid possible conflicts, only one of them at a time is allowed to gain control over the device. The other "consumer" will encounter "device busy" response. You should open MFP ports configuration and select the port assigned to your printer. In the Selected port pane you can see if the port is occupied by some other application. If this is the case, you should wait for completion of the current job or should press Release port button, if you are sure that the present owner is not functioning properly. • Check if your application has special print option such as "-oraw". If "-oraw" is specified in the command line parameter then remove it to print properly. For Gimp front-end, select "print" -> "Setup printer" and edit command line parameter in the command item.
The machine does not appear on the scanners list	• Check if your machine is attached to your computer. Make sure that it is connected properly via the parallel or USB port and is turned on. • Check if the scanner driver for you machine is installed in your system. Open MFP Configurator, switch to Scanners configuration, then press **Drivers**. Make sure that driver with a name corresponding to your machine's name is listed in the window.

Problem	Possible Cause and Solution
The machine does not appear on the scanners list (continued)	• Check if the MFP port is not busy. Since functional components of MFP (printer and scanner) share the same I/O interface (MFP port), the situation of simultaneous access of different "consumer" application to the same MFP port is possible. To avoid possible conflicts, only one of them at a time is allowed to gain control over the device. The other "consumer" will encounter "device busy" response. This can usually happen while starting scan procedure, and appropriate message box displays. To identify the source of the problem, you should open MFP ports configuration and select the port assigned to your scanner. MFP port's symbol /dev/mfp0 corresponds to LP:0 designation displayed in the scanners' options, /dev/mfp1 relates to LP:1 and so on. USB ports start at /dev/mfp4, so scanner on USB:0 relates to /dev/mfp4 respectively and so forth sequentially. In the Selected port pane you can see if the port is occupied by some other application. If this is the case, you should wait for completion of the current job or should press Release port button, if you are sure that the present port's owner is not functioning properly.
The machine doesn't scan	• Check if a document is loaded into the machine. • Check if your machine is connected to the computer. Make sure if it is connected properly if I/O error is reported while scanning. • Check if MFP port is not busy. Since functional components of MFP (printer and scanner) share the same I/O interface (MFP port), the situation of simultaneous access of different "consumer" application to the same MFP port is possible. To avoid possible conflicts, only one of them at a time is allowed to gain control over the device. The other "consumer" will encounter "device busy" response. This can usually happen while starting scan procedure, and appropriate message box will be displayed. To identify the source of the problem, you should open MFP ports configuration and select the port assigned to your scanner. MFP port's symbol /dev/mfp0 corresponds to LP:0 designation displayed in the scanners' options, /dev/mfp1 relates to LP:1 and so on. USB ports start at /dev/mfp4, so scanner on USB:0 relates to /dev/mfp4 respectively and so forth sequentially. In the Selected port pane you can see if the port is occupied by some other application. If this is the case, you should wait for completion of the current job or should press Release port button, if you are sure that the present port's owner is not functioning properly.

Problem	Possible Cause and Solution
I can't print when I installed both Linux Print Package (LPP) and MFP driver on the same machine simultaneously.	• Since both Linux Printer Package and MFP driver make a symbolic link to "lpr" printing command, which is commonly used on Unix clones, it is not recommended to use both package on the same machine. • If you still want to use both packages simultaneously, please install the LPP first. • If you want to uninstall only one of them, please uninstall both packages and install that one you want to use again. • If you don't want to uninstall MFP driver and install it again, you may make the necessary symbolic link yourself. Please, log in as root user and invoke the following command: ln -sf /usr/local/bin/samsung/slpr /usr/bin/lpr
Can't scan via Gimp Front-end.	• Check if Gimp Front-end has "Xsane:Device dialog.." on the "Acquire" menu. If not, you should install Xsane plug-in for Gimp on the your computer. You can find Xsane plug-in package for Gimp on Linux distribution CD or Gimp home page. For the detail information, refer to the Help for Linux distribution CD or Gimp Front-end application. If you wish to use other kind of scan application, refer to the Help for application.

MEMO

A SPECIFICATIONS

This chapter includes:

- **General Specifications**
- **Scanner and Copier Specifications**
- **Printer Specifications**
- **Paper Specifications**

General Specifications

Item	Description
Paper input capacity	Paper tray: 250 sheets (weight: 75 g/m^2, 20 lb) Manual feeder: 1 sheet (weight: 75 g/m^2, 20 lb)
Paper output capacity	Front output tray: 50 sheets (face down) Rear output slot: 1 sheet (face up)
Paper type	Paper tray: Plain paper (60 ~ 90 g/m^2, 16 ~ 24 lb) Manual feeder: Plain paper, Transparencies, Labels, Card stock, Thick, Thin, Bond, Preprinted, Colored, Envelopes (60 ~ 163 g/m^2, 16 ~ 43 lb)
Consumables	1-piece toner cartridge system
Power requirements	110 ~ 127 VAC, 50/60 Hz, 4.0 A 220 ~ 240 VAC, 50/60 Hz, 2.5 A
Power consumption	Sleep mode: 10W(110 ~ 127 VAC)/12W(220 ~ 240 VAC) Standby mode: 85W(110 ~ 127 VAC)/95W(220 ~ 240 VAC) Average: 350 W
Noise	Warm-up: 42 dB, Standby mode: 38 dB Scanning: 49 dB, Printing: 49 dB
Warm-up Time	42 seconds
Operating conditions	Temperature: 50 ^{o}F to 89 ^{o}F (10 ^{o}C to 32 ^{o}C) Humidity: 20 % to 80 % RH
LCD	16 characters x 2 lines
Duty Cycle	Monthly: 10,000 pages maximum (Print) Monthly: 2,000 pages maximum (Scan)
Toner cartridge life	3,000 pages (for starter, 1,000 pages) @ ISO 19752 5% coverage
SET dimension (W x D x H)	422 x 400 x 239 mm
Weight	Net: 8.7 kg (including consumables) Gross: 10.7Kg (including consumables, accessories and package)
Package Weight	Paper: 2.7 Kg Plastic: 0.7 Kg

Scanner and Copier Specifications

Item	Description
Compatibility	TWAIN standard
Scan method	CIS, Mono
Scan resolution	600 X 600 dpi (optical)
Scan length	Maximum: 11.7 inches (297 mm)
Scan width	Maximum: 8.5 inches (216 mm) Effective: 8.2 inches (208 mm)
Color bit depth	8 bit, 24 bit
Mono bit depth	1 bit for Text mode 8 bit for Gray mode
Scan speed	72 seconds (Linearuty, Gray Scale) 150 seconds (Color 300dpi)
Copy speed	Letter: 15 copies per minute A4: 14 copies per minute
Copy resolution	600 x 600 dpi
Zoom rate	50 ~ 200 %
Multiple copies	99 pages

Printer Specifications

Item	Description
Print method	Laser Beam Printing
Print speed	Letter: 15 pages per minute A4: 14 pages per minute
Paper size	Paper tray: Letter, A4, Legal, Folio, A5, A6, B5 Manual feeder: Letter, Legal, A4, Folio, Executive, A5, B5, A6 card, Post Card 4x6, Hagaki, Envelope 7-3/4, Envelope 10, Envelope DL, Envelope C5 * Min.: 76 x 127 mm (3 x 5 in.) Max.: 216 x 356 mm (8.5 x 14 in.)
Print resolution	600 x 600 dpi
Emulation	SPL (GDI)
PC Interface	Compatible with USB 1.1 Specifications and IEEE1284 Parallel
Compatibility	Windows 98/2000/NT 4.0/Me/XP Macintosh 8.6 or later Linux: • Redhat 7.1 and above • Linux Mandrake 8.0 and above • SuSE 7.1 and above • Caldera OpenLinux 3.1 and above • Turbo Linux 7.0 and above • Slackware 8.1 and above
Memory	8MB
First printing time	Standby mode: 12 seconds

Paper Specifications

Overview

Your machine 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 machine'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 machine.

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, insure the paper meets the requirements specified in this user's guide.

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

Supported Sizes of Paper

Size (mm/in.)	Weight	Capacity*
Plain paper Letter (215.9 x 279/8.5 x 11) A4 (210 x 297/8.27 x 11.69) Folio (215.9 x 330.2/8.5 x 13) Legal (215.9 x 355.6/8.5 x 14) Executive (184.2 x 266.7/7.25 x 10.5) B5(182 x 257/7.2 x 10) A5 (148 x 210/5.83 x 8.27) A6 (105 x 148/4.13 x 5.88)	• 60 to 90 g/m^2 bond (16 to 24 lb) for the paper tray • 60 to 163 g/m^2 bond (16 to 43 lb) for the manual feeder	• 250 sheets of 75 g/m^2 bond (20 lb) paper for the paper tray • 1 sheet of paper for the manual feeder
Envelopes No.10 (104.8 x 241.3/4.13 x 9.5) DL (110 x 220/4.33 x 8.66) C5 (162 x 229/6.38 x 9.02) C6 (114 x 162/4.49 x 6.38) B5 (176 x 250/6.93 x 9.84) No.7 3/4 (98.4 x 190.5/3.88 x 7.5)	75 to 90 g/m^2	1 sheet of paper for the manual feeder

Size (mm/in.)	Weight	Capacity*
Labels Letter (215.9 x 279/8.5 x 11) A4 (210 x 297/8.27 x 11.69)	120 to 150 g/m^2	1 sheet of paper for the manual feeder
Transparency films Letter (215.9 x 279/8.5 x 11) A4 (210 x 297/8.27 x 11.69)	138 to 146 g/m^2	
Card stocks A6 card (105 x 148/4.13 x 5.88) Post Card (101.6 x 152.4/4 x 6) Hagaki (100 x 148/3.94 x 5.83)	90 to 163 g/m^2	
Minimum size (custom)	60 to 120 g/m^2 bond (16 to 32 lb)	
Maximum size (Legal)		

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

NOTE: You may experience jams when using print materials with a length of less than 127 mm (5 in.). For optimum performance, ensure that you are storing and handling the paper correctly. Please refer to "Paper Storage Environment" on page A.8.

Guidelines for Using Paper

For the best result, use conventional 75 g/m^2 (20 lb) paper. Ensure that the paper is of good quality, and free of cuts, nicks, tears, spots, loose particles, dust, wrinkles, voids, and curled or bent edges.

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

The following problems may cause print quality deviations, jamming, or even damage to the machine:

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 ~ 400 Sheffied, 4 ~ 5 % moisture content.
Dropout, jamming, curl	Stored improperly	Store paper flat in its moisture-proof wrapping.
Increased gray background shading/machine wear	Too heavy	Use lighter paper, use the rear output slot.
Excessive curl problems with feeding	Too moist, wrong grain direction, or short-grain construction	• Use the rear output slot. • Use long-grain paper.

Symptom	Problem with Paper	Solution
Jamming, damage to machine	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 machine uses heat and pressure to fuse toner to the paper. Insure that any colored 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 pH or lower
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 ~ 400 Sheffied

Paper Output Capacity

Output Location	Capacity
Face-down output tray	50 sheets of 75 g/m^2 bond (20 lb) paper
Face-up output slot	1 sheet of 75 g/m^2 bond (20 lb) paper

Paper Storage Environment

Paper storage environment conditions directly affect the feed operation.

Ideally, the machine 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 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 machine 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 90g/m^2 (24lb) or jamming may occur.
- Construction: Prior to printing, envelopes should lie flat with less than 6mm (0.25in.) curl, and should not contain air.
- Condition: Envelopes should not be wrinkled, nicked or otherwise damaged.

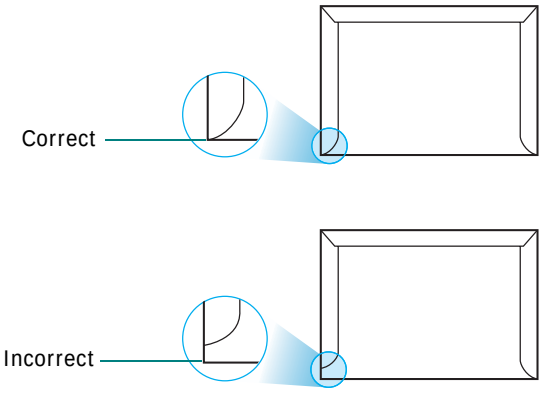
- Temperature: You should use envelopes that are compatible with the heat and pressure of the machine.
- Size: You should only use envelopes within the following size ranges

NOTES:

- Use only the manual feeder to print envelopes.
- You may experience some paper jams when using any media with a length less than 140 mm (5.5 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 “Paper Storage Environment” on page A.8.

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 machine. 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.)	90 mm (3.5 in.)

NOTES:

- For the 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.

Labels

CAUTIONS:

- To avoid damaging the machine, use only labels recommended for laser printers.
- To prevent serious jams, always use the manual feeder 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 180°C (356°F), the machine'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 13mm (5in.) of curl in any direction.
- Condition: Do not use labels with wrinkles, bubbles or other indications of separation.

Transparencies

Transparencies used in the machine must be able to withstand 180°C (356°F), the machine's fusing temperature.

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

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