SAMSUNG

Color Laser Printer User's Guide

CLP-350 Series

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THAILAND	1800-29-3232 02-689-3232	www.samsung.com/th
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About this user's guide

This user's guide provides information about basic understanding of the machine as well as detailed explanation on each step during the actual usage. Both novice users and professional users can refer to this guide for installing and using the machine.

This explanation is mainly based on the Microsoft Windows operating system.

Some terms in this guide are used interchangeably, as below.

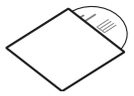
- Document is synonymous with original.
- Paper is synonymous with media, or print media.
- The model name such as CLP-3xx Series is synonymous with the machine.

The following table offers the conventions of this guide.

Convention	Description	Example
Bold	Used for texts on the display or actual prints on the machine.	**Start**
Note	Used to provide additional information or detailed specification of the machine function and feature.	**Note** The date format may differ from country to country.
Caution	Used to give users information to protect the machine from possible mechanical damage or malfunction.	**Caution** Do not touch the green underside of the toner cartridge.
Footnote	Used to provide more detailed information on certain words or a phrase.	a. pages per minute
(See page 1.1 for more information)	Used to guide users to the reference page for the additional detailed information.	(See page 1.1 for more information)

Finding more information

You can find information for setting up and using your machine from the following resources, either as a print-out or onscreen.

Quick Install Guide 	Provides information on setting up your machine and this requires that you follow the instructions in the guide to prepare the machine.
Online User's Guide 	Provides you with step-by-step instructions for using your machine's full features, and contains information for maintaining your machine, troubleshooting, and installing accessories. This user's guide also contains Software section to provide you with information on how to print documents with your machine in various operating systems, and how to use the included software utilities. **Note** You can access the user's guide in other languages from the Manual folder on the printer software CD.
Network Printer User's Guide 	Contained on the Network Utilities CD, this guide provides you with information on setting up and connecting your machine to a network.
Printer Driver Help 	Provides you with help information on printer driver properties and instructions for setting up the properties for printing. To access a printer driver help screen, click **Help** from the printer properties dialog box.
Samsung website	If you have Internet access, you can get help, support, printer drivers, manuals, and order information from the Samsung website, www.samsungprinter.com.

Safety and Regulatory Information

Important Precautions and Safety Information

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

1 Read and understand all instructions.

2 Use common sense whenever operating electrical appliances.

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

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

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

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

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

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

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

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

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

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

13 Unplug the machine from the PC and AC wall outlet, and refer servicing to qualified service personnel under the following conditions:
- When any part of the power cord, plug, or connecting cable is damaged or frayed.
- If liquid has been spilled into the machine.
- If the machine has been exposed to rain or water.
- If the machine does not operate properly after instructions have been followed.
- If the machine has been dropped, or the cabinet appears damaged.
- If the machine exhibits a sudden and distinct change in performance.

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

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

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

17 The Power cord supplied with your machine should be used for safe operation. If you are using a cord which is longer than 2 m with 110 V machine, then it should be 16 AWG[1] or bigger.

18 SAVE THESE INSTRUCTIONS.

Environmental and Safety Consideration

Laser Safety Statement

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

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

Warning

Never operate or service the printer with the protective cover removed from Laser/Scanner assembly. The reflected beam, although invisible, can damage your eyes.

1 AWG: American Wire Gauge

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

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

DANGER - LASER RADIATION AVOID DIRECT EXPOSURE TO BEAM.

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

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

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

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

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

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

ADVARSEL - USYNLIG LASERSTRÅLNING VED ÅBNING. UNDGÅ UDSAETTELSE FOR STRÅLNING.

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

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

VAROITUS - NÄKYMÄTÖNTÄ LASERSÄTEILYÄ AVATTAESSA. VARO SUORAA ALTISTUMISTA SÄTEELLE.

注 意 - 严禁揭开此盖, 以免激光泄露灼伤

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

Ozone Safety

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

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

Power Saver

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

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

ENERGY STAR and the ENERGY STAR mark are registered U.S. marks.

For more information on the ENERGY STAR program see http://www.energystar.gov

Recycling

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

Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)

This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

Radio Frequency Emissions

FCC Regulations

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

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

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

Caution:

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

Canadian Radio Interference Regulations

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

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

Declaration of Conformity (European Countries)

Approvals and Certifications

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

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

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

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

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

Replacing the Fitted Plug (for UK Only)

Important

The mains lead for this machine is fitted with a standard (BS 1363) 13 amp plug and has a 13 amp fuse. When you change or examine the fuse, you must re-fit the correct 13 amp fuse. You then need to replace the fuse cover. If you have lost the fuse cover, do not use the plug until you have another fuse cover.

Please contact the people from you purchased the machine.

The 13 amp plug is the most widely used type in the UK and should be suitable. However, some buildings (mainly old ones) do not have normal 13 amp plug sockets. You need to buy a suitable plug adaptor. Do not remove the moulded plug.

Warning

If you cut off the moulded plug, get rid of it straight away.

You cannot rewire the plug and you may receive an electric shock if you plug it into a socket.

Important warning: You must earth this machine.

The wires in the mains lead have the following color code:

- Green and Yellow: Earth
- Blue: Neutral
- Brown: Live

If the wires in the mains lead do not match the colors marked in your plug, do the following:

You must connect the green and yellow wire to the pin marked by the letter “E” or by the safety ‘Earth symbol’ or colored green and yellow or green.

You must connect the blue wire to the pin which is marked with the letter “N” or colored black.

You must connect the brown wire to the pin which is marked with the letter “L” or colored red.

You must have a 13 amp fuse in the plug, adaptor, or at the distribution board.

EU Declaration of Conformity (LVD,EMC)

For the following product:

Color Laser Beam Printer
(Product name)

Manufactured at:

1.Samsung Electronics Co.,Ltd. #259, Gongdan-Dong, Gumi-City, Gyeongsangbuk Do, 730-030 KOREA 2.Samsung Electronics(Shandong) Digital Printing Co., Ltd. #264209, Samsung Road, Weihai Hi Tech IDZ Shandong Province, CHINA
(factory name, address)

We hereby declare, that all major safety requirements, concerning to CE Marking Directive[93/68/EEC] and Low Voltage Directive [2006/95/EC], ElectroMagnetic Compatibility [89/336/EEC], amendments [92/31/EEC] are fulfilled, as laid out in the guideline set down by the member states of the EEC Commission.

This declaration is valid for all samples that are part of this declaration, which are manufactured according to the production charts appendix.

The standards relevant for the evaluation of safety & EMC requirements are as follows :

LVD : EN60950 1:2001+A11:2004
EMC :EN55022:1998+A1:2000+A2:2003, EN61000-3-2:2000, EN61000-3-3:1995+A1:2001, EN55024:1998+A1:2001+A2:2003

1. Certificate of conformity / Test report issued by :

LVD : TUV
EMC : CS Management Center, Samsung Electronics Co., Ltd.

2. Technical documentation kept at :

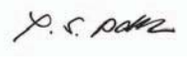
Samsung Electronics Co.,Ltd.

which will be made available upon request.

(Manufacturer)

Samsung Electronics co.,Ltd 416 Maetan 3Dong, Paldal Gu Suwon City, Korea, 442 372 2007 07 02	 Whan-Soon Yim / Senior Manager
(place and date of issue)	(name and signature of authorized person)

(Representative in the EU)

Samsung Electronics Euro QA Lab. Blackbushe Business Park, Saxony Way Yateley, Hampshire, GU46 6GG, UK 2007 07 02	 Yong-Sang Park / Manager
(place and date of issue)	(name and signature of authorized person)

1 Introduction

Congratulations on the purchase of your printer.

This chapter includes:

- **Special features**
- **Machine overview**
- **Control panel overview**
- **Understanding the Control Panel**

Note

Some features are optional. Please check the specifications sections. (See "Specifications" on page 10.1.)

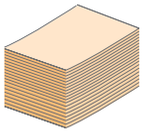
Special features

Your new machine is equipped with special features.

Print with excellent quality and speed

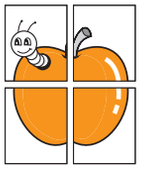
- You can print in a full range of colors using cyan, magenta, yellow, and black.
- You can print with a resolution of up to **2400 x 600 dpi**. See Software section.
- Your machine prints A4-sized paper at up to 19 ppm[a] in black and white mode and 5 ppm in color mode.
- The machine checks your continent and sets the color or tints of sky and grass automatically according to your continental color preference. See Software section for detailed information.

Handle different paper options with flexibility



- The Standard 150-sheet tray supports A4/letter-sized paper and special materials like letterhead, envelopes, lables, custom-sized materials, postcards, transparency, and heavy paper.
- The **150-sheet tray 1** and **250-sheet optional tray 2** support plain paper in various sizes.

Create professional documents

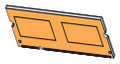


- Print **Watermarks**. You can customize your documents with words, such as “Confidential”. See Software section.
- Print **Posters**. The text and pictures of each page of your document are magnified and printed across the sheet of paper and can then be taped together to form a poster. See Software section.
- Print **Booklets**. This feature enables you to easily print a document to creat a book. Once printed, all you have to do is fold and staple the pages. See Software section.

Save time and money

- To save paper, you can print multiple pages on one single sheet of paper.
- This machine automatically **conserves electricity** by substantially reducing power consumption when not in use.
- You can manually print on both sides of the paper **(Manual double-sided printing)** in Windows and macintosh. See Software section.

Expand your machine’s capacity



- Your machine has an extra memory slot to expand their memory. (Page 8.1)
- Zoran IPS Emulation* compatible with **PostScript 3 Emulation*** (PS) enables PS printing.

* Zoran IPS Emulation compatible with PostScript 3

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* 136 PS3 fonts
Contains UFST and MicroType from Monotype Imaging Inc.

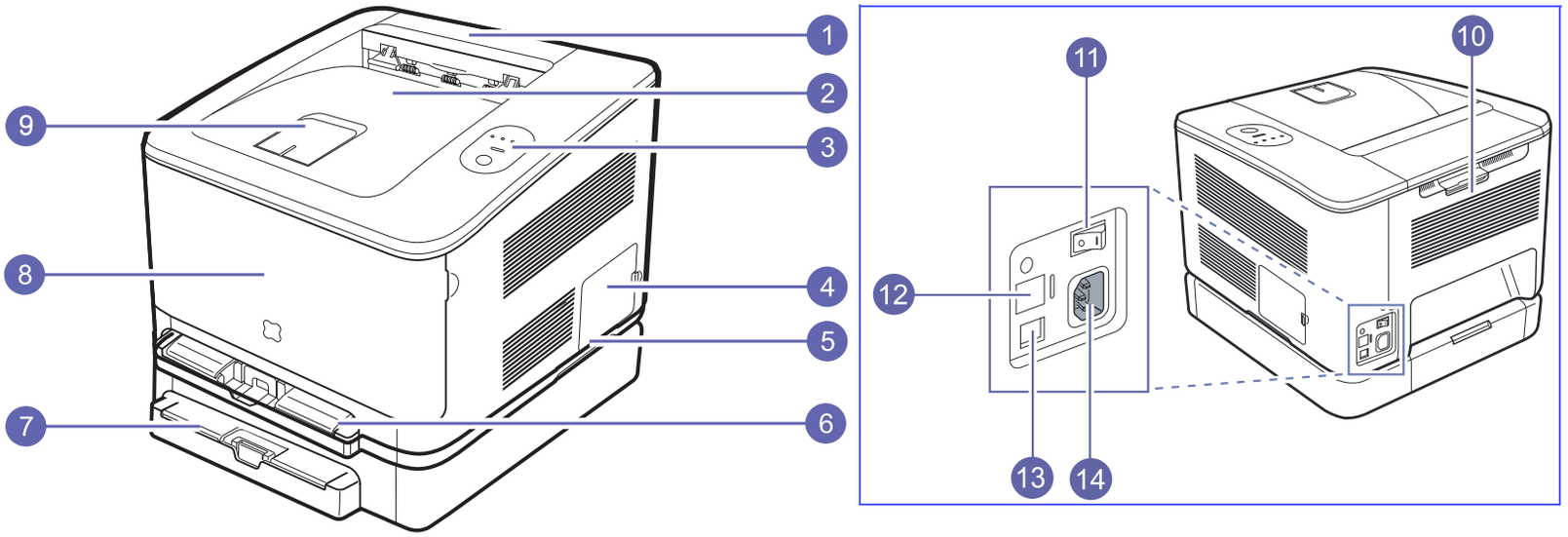
Print in various environments

- You can print with **Windows 2000** and **Windows XP/ 2003/Vista** as well as **Linux** and **Macintosh** systems.
- Your machine is equipped with a **USB** interface and a **network** interface.

a. pages per minute
b. images per minute

Machine overview

These are the main components of your machine.



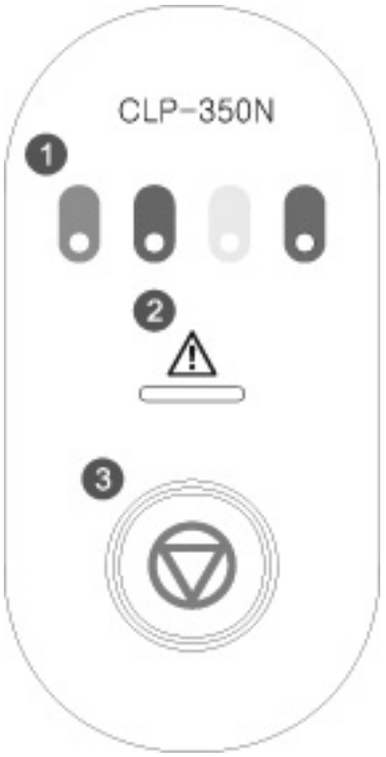
- The figure above shows your machine with the available accessories. (See page 8.1 for more information)
- The symbol * denotes an optional device.

1	top cover	8	front cover
2	output tray(face down)	9	output support
3	control panel	10	rear cover
4	control board cover	11	power switch
5	handle	12	network port
6	tray 1	13	usb port
7	optional tray*	14	power receptacle

Note

- All illustrations on this user's guide may differ from your machine depending on its options or models.
- The surface of the output tray may become hot if you print a large number of pages at once. Please make sure that you try not to touch the surface, and do not allow children near it.

Control panel overview



1	**toner colors**: Show the status of each toner cartridge. See Status LED with the toner cartridge messages on page 1.4.
2	**Status**: Shows the status of your machine. (See "Understanding the Control Panel" on page 1.4 for more information.)
3	**Stop**: Stops an operation at any time and there are more functions. (See "Understanding the Control Panel" on page 1.4 for more information.)

Understanding the Control Panel

LEDs

The color of the **Status** and toner colors LED indicates the machine's current status.

Status LED	toner colors LED	Description
lights green	All LEDs off	The machine is ready to print.
slowly blinks green	All LEDs off	The machine is receiving data from the computer.
fast blinks green	All LEDs off	The machine is printing data.
lights red	All LEDs off	• The machine is experiencing an error, such as jammed paper, open cover, empty paper, not installed waste toner container, or full waste toner container. • The machine is experiencing a service required error, such as LSU error, fuser error, or ITB error, Contact your sales or service representative.
lights green	each LED blinks red	Each toner cartridge is near the end of its life.
blinks red	each LED lights red	Each toner cartridge is almost empty. You can print, but the quality is not reliable.
lights red	each LED lights red	• Each toner cartridge is totally exhausted. You can not print. • Each toner cartridge is wrong.
lights green	each LED blinks red in a repeated order	The machine is warming up.

Note
All printing errors will be appear in the **Smart Panel** program window.

Stop button

Status LED	Description
Printing demo page	In Ready mode, press and hold this button for about 2 seconds until the **Status** LED blinks slowly, and release.
Printing configuration sheets	In Ready mode, press and hold this button for about 5 seconds until the **Status** LED blinks fast, and release.
Canceling print job	Press this button during printing. The red LED blinks while the print job is cleared from both the machine and the computer, and then the machine returns to Ready mode. This may take some time depending on the size of the print job.

2 Software overview

This chapter gives you an overview of the software that comes with your machine. Further details on how to use the software are explained in the Software section.

This chapter includes:

- **Supplied software**
- **Printer driver features**
- **System requirements**

Supplied software

You must install the machine software using the supplied CDs after you have set up your machine and connected it to your computer.

Each CD provides you with the following software:

CD	Contents	
Printer software CD	Windows	• **Printer driver**: Use this driver to take full advantage of your machine's features. • **PostScript Printer Description (PPD) file**: Use the PostScript driver to print documents with complex fonts and graphics in the PS language. • **Smart Panel**: This program allows you to monitor the machine's status and alerts you when an error occurs during printing. • User's Guide in PDF
	Linux	• **PostScript Printer Description (PPD) file**: Use this driver to run your machine from a Linux computer and print documents. • **Smart Panel**: This program allows you to monitor the machine's status and alerts you when an error occurs during printing.
	Macintosh	• **Postscript Printer Description (PPD) file**: Use this file to run your machine from a Macintosh computer and print documents. • **Smart Panel**: This program allows you to monitor the machine's status and alerts you when an error occurs during printing.
Network Utilities CD	Windows	• **SyncThru™ Web Admin Service**: Use this web-based program to remotely manage, monitor, and troubleshoot network machines. • **SetIP**: Use this program to set your machine's TCP/IP addresses. • Network Printer User's Guide in PDF

Printer driver features

Your printer drivers support the following standard features:

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

In addition, you can use various special printing features. The following table shows a general overview of features supported by your printer drivers:

Printer driver

Feature	Windows	Linux	Macintosh
Color mode	O	O	O
Machine quality option	O	O	O
Poster printing	O	X	X
Manual double-sided printing	O	X	X
Multiple pages per sheet (N-up)	O	O (2, 4)	O (2, 4, 6, 9, 16)
Fit to page printing	O	X	X
Scale printing	O	X	O
Booklet printing	O	X	X
Watermark	O	X	X
Overlay	O	X	X

PostScript driver

Feature	Windows	Linux	Macintosh
Color mode	O	O	O
Machine quality option	O	O	O
Poster printing	X	X	X
Multiple pages per sheet (N-up)	O	O (2, 4)	O (2, 4, 6, 9, 16)
Fit to page printing	O	X	X
Scale printing	O	X	O
Watermark	X	X	X
Overlay	X	X	X

System requirements

Before you begin, ensure that your system meets the following requirements:

Windows

Your machine supports the following Windows operating systems.

OS	Requirement (recommended)		
	CPU	RAM	free HDD space
Windows 2000	Pentium II 400 MHz (Pentium III 933 MHz)	64 MB (128 MB)	300 MB
Windows XP	Pentium III 933 MHz (Pentium IV 1 GHz)	128 MB (256 MB)	1.5 GB
Windows 2003 Server	Pentium III 933 MHz (Pentium IV 1 GHz)	128 MB (512 MB)	1.25 GB to 2 GB
Windows Vista	Pentium IV 3 GHz	512 MB (1024 MB)	15 GB

Note

- Internet Explorer 5.0 or higher is the minimum requirement for all Windows operating systems.
- For Windows 2000/XP/2003/Vista, users who have an administrator right can install the software.

Linux

Item	Requirements
Operating system	• Red Hat 8 ~ 9 • Fedora Core 1 ~ 4 • Mandrake 9.2 ~ 10.1 • SuSE 8.2 ~ 9.2
CPU	Pentium IV 1 GHz or higher
RAM	256 MB or higher
Free disk space	1 GB or higher
Software	• Linux Kernel 2.4 or higher • Glibc 2.2 or higher • CUPS

Macintosh

Item	Requirements
Operating system	Macintosh 10.3 ~ 10.4
CPU	Intel processor PowerPC G4 /G5
RAM	512 MB for an Intel-based Mac, 128 MB for a Power-PC based Mac
HDD	1 GB
Connection	USB interface or Network interface

3 Getting Started

This chapter gives you step-by-step instructions for setting up the machine.

This chapter includes:

- **Setting up the hardware**
- **Setting up the network**
- **Installing the software**
- **Altitude adjustment**

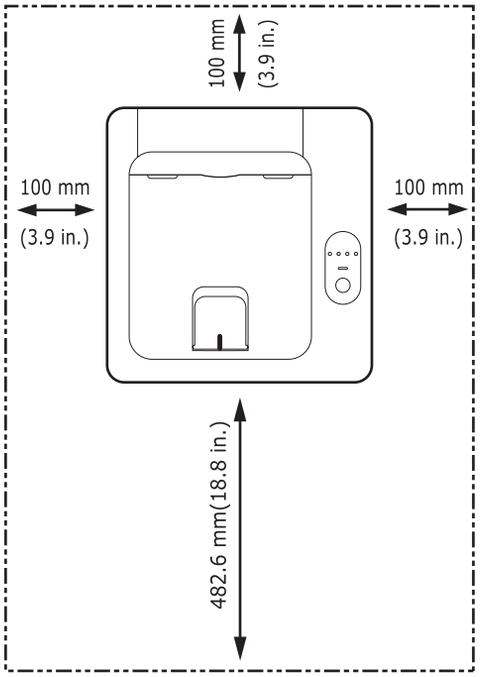
Setting up the hardware

This section shows the steps to set up the hardware which is explained in the Quick Install Guide. Make sure you read Quick Install Guide and complete following steps.

1 Select a stable location.

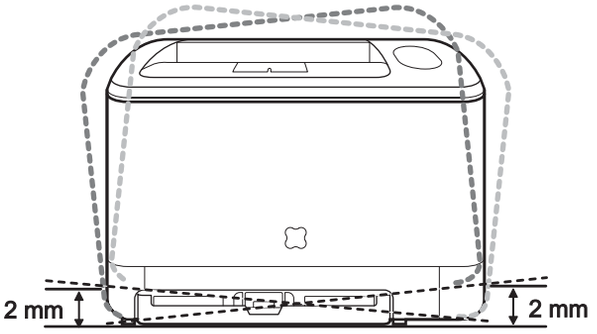
Select a level, stable place with adequate space for air circulation. Allow extra space to open covers and trays.

The area should be well-ventilated and away from direct sunlight or sources of heat, cold, and humidity. Do not set the machine close to the edge of your desk or table.



Printing is suitable for altitudes under 1,000 m (3,281 ft). Refer to the altitude setting to optimize your printing. See page 3.4 for more information.

Place the machine on a flat and stable surface for not letting it tilt more than 2 mm (0.08 inches). Otherwise, it may affect the printing quality.



2 Unpack the machine and check all the enclosed items.

3 Remove the tape holding the machine tightly.

4 Install both the toner cartridge.

5 Load paper. (See "Loading paper" on page 4.4.)

6 Make sure that all the cables are connected to the machine.

7 Turn the machine on.

Caution

When you move the machine, do not tilt or turn it upside down. Otherwise, the inside of the machine may be contaminated by toner, which can cause damage to the machine or bad printing quality.

Setting up the network

You need to set up the network protocols on the machine to use it as your network printer. You can set up the basic network settings with the machine's touch screen.

Note

- If you want to use the USB cable, connect the cable between a computer and you machine. Then, refer to the software installation in Software section.
- For detailed information on network settings, please, refer to the Network Printer Quick Guide, or the on-line user's guide on the Network Utilities CD.

Supported operating systems

The following table shows the network environments supported by the machine:

Item	Requirements
Network interface	10/100 Base-TX
Network operating system	Windows 2000/XP/Vista Various Linux OS Macintosh 10.3 ~ 10.5 (CLP-610 series)
Network protocols	TCP/IP, DLC/LLC, IPP, SNMP
Dynamic addressing server	DHCP, BOOTP

Note

You can also set up the network settings through the network administration programs. Refer to the user's guide on the Network Utilities CD that came with your machine.

- **SyncThru™ Web Admin Service**: Web-based printer management solution for network administrators. **SyncThru™ Web Admin Service** provides you with an efficient way of managing network devices and lets you remotely monitor and troubleshoot network machines from any site with corporate internet access.
- **SyncThru™ Web Service**: Web server embedded on your network print server, which allows you to:
  - Configure the network parameters necessary for the machine to connect to various network environments.
  - Customize machine settings.
- **SetIP**: Utility program allowing you to select a network interface and manually configure the IP addresses for use with the TCP/IP protocol.

Installing the software

You have to install the machine software for printing. The software includes drivers, applications, and other user friendly programs.

Note

- The following procedure is for when you use the machine as a network machine. If you want to connect a machine with a USB cable, refer to the Software section.
- The following procedure is based on the Windows XP operating system. The procedure and popup window which appears during the installation may differ depending on the operating system, the printer feature, or the interface in use. (See Software section.)

1 Make sure that the network setup for your machine is completed. (See "Setting up the network" on page 3.1.) All applications should be closed on your computer before beginning installation.

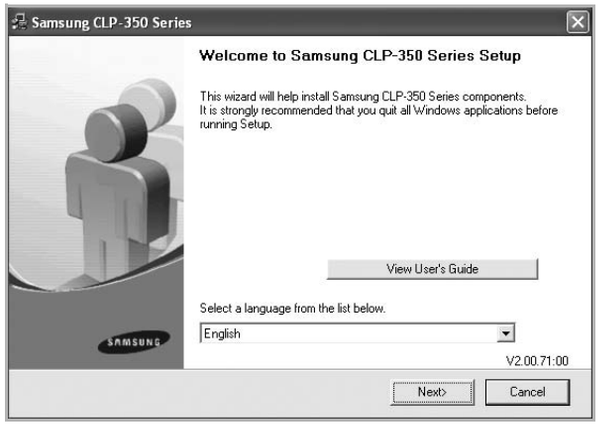
2 Insert the Printer Software CD-ROM into your CD-ROM drive.

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

3 Click **Next**.

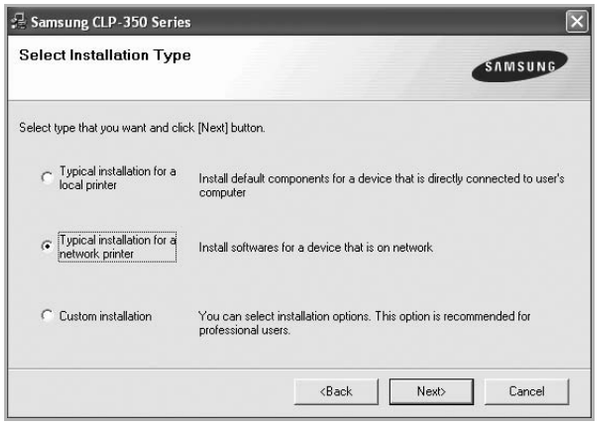
If the installation window does not appear, click **Start** > **Run**. Type X:**Setup.exe**, replacing "X" with the letter which represents your drive and click **OK**.

If you use Windows Vista, click **Start** > **All Programs** > **Accessories** > **Run**, and type X:**Setup.exe**.

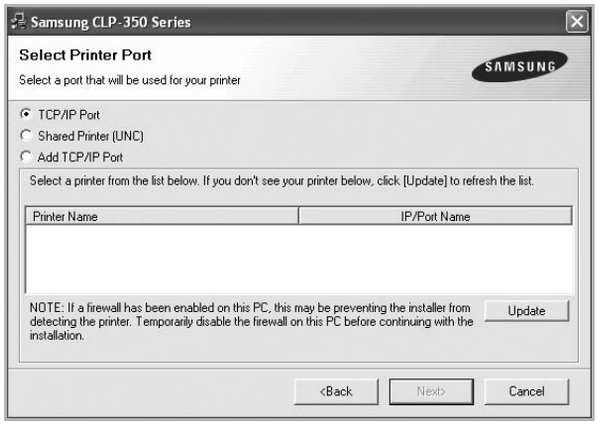


- The window above may slightly differ, if you are reinstalling the driver.
- **View User's Guide**: Allows you to view the User's Guide. If your computer does not have Adobe Acrobat, click on this option and it will automatically install Adobe Acrobat Reader for you, and then open the User's Guide.

4 Select **Typical installation for a network printer**, and then click **Next**.



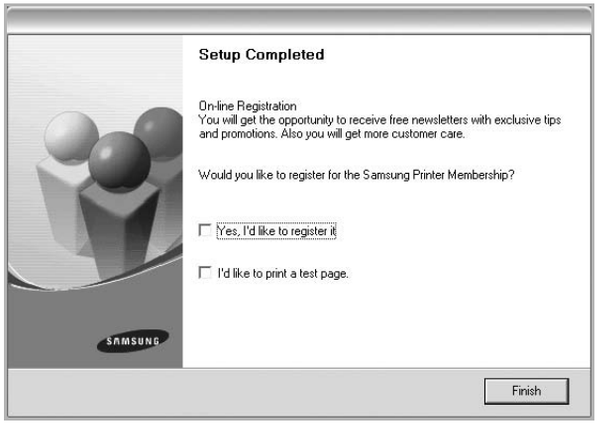
5 The list of machines available on the network appears. Select the printer you want to install from the list and then click **Next**.



- If you do not see your machine on the list, click **Update** to refresh the list, or select **Add TCP/IP Port** to add your machine to the network. To add the machine to the network, enter the port name and the IP address for the machine.
  To verify your machine's IP address or the MAC address, print a Network Configuration page. (See "Printing a machine configuration report" on page 6.1.)
- To find a shared network printer (UNC Path), select **Shared Printer [UNC]** and enter the shared name manually or find a shared printer by clicking the **Browse** button.

Note
If you are not sure of the IP address, contact your network administrator or print network information. (See "Printing a machine configuration report" on page 6.1.)

6 After the installation is finished, a window appears asking you to print a test page and to register yourself as a user of Samsung machines in order to receive information from Samsung. If you so desire, select the corresponding checkbox(es) and click **Finish**.

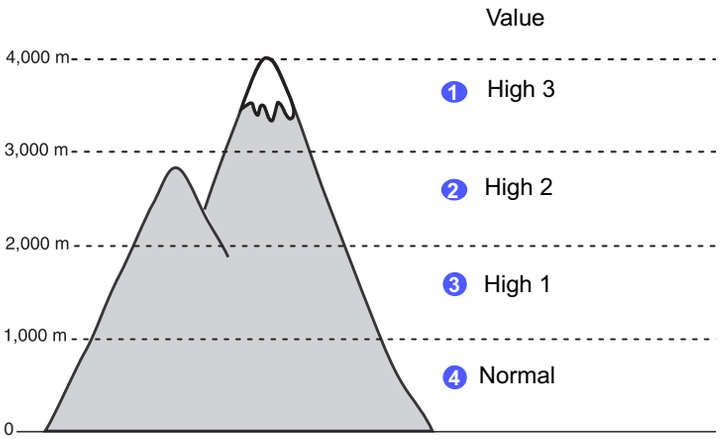


Note
If your machine does not work properly after the installation, try to reinstall the printer driver. See Software section.

Altitude adjustment

The print quality is affected by atmospheric pressure, which is determined by the height of the machine above sea level. The following information will guide you on how to set your machine to the best print quality or best quality of print.

Before you set the altitude value, find the altitude where you are using the machine.



1. Ensure that you have installed the printer driver with the provided Printer Software CD.
2. Double-click the **Smart Panel** icon on the Windows task bar (or Notification Area in Linux).
   You can also click **Smart Panel** on the status bar in Mac OS X.
3. Click **Printer Setting**.
4. Click **Setting** > **Altitude Adjustment**. Select the appropriate value from the dropdown list, and then click **Apply**.

Note

If your machine is connected to a network, **SyncThru Web Service** screen appears automatically. Click **Machine Settings** > **Setup** (or **Machine Setup**) > **Altitude Adj**. Select the appropriate altitude value, and then click **Apply**.

4 Selecting and loading print media

This chapter introduces you how select and load print media for your machine.

This chapter includes:

- **Selecting print media**
- **Verifying the output location**
- **Loading paper**
- **Printing on special print materials**
- **Setting the paper size and type**

Selecting print media

You can print on a variety of print media, such as plain paper, envelopes, and labels. Always use print media that meet the guidelines for use with your machine. Print media that does not meet the guidelines outlined in this user's guide may cause the following problems:

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

Properties, such as weight, composition, grain, and moisture content, are important factors that affect the machine's performance and the output quality. When you choose print materials, consider the following:

- The type, size and weight of the print media for your machine are described later in this section.
- Desired outcome: The print media you choose should be appropriate for your project.
- Brightness: Some print media are whiter than others and produce sharper, more vibrant images.
- Surface smoothness: The smoothness of the print media affects how crisp the printing looks on the paper.

Note

- Some print media may meet all of the guidelines in this section 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 print media, ensure that it meets the requirements specified in this user's guide.

Caution

Using print media that does not meet these specifications may cause problems, requiring repairs. Such repairs are not covered by Samsung's warranty or service agreements.

Guidelines for selecting and storing print media

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

- Always use print media that conform with the specifications listed on page 4.2.
- Attempting to print on damp, curled, wrinkled, or torn paper can cause paper jams and poor print quality.
- For the best print quality, use only high quality copier grade paper specifically recommended for use in laser machines.
- Avoid using the following media types:
  - Paper with embossed lettering, perforations, or a texture that is too smooth or too rough
  - Erasable bond paper
  - Multi-paged paper
  - Synthetic paper and thermally reactive paper
  - Carbonless paper and Tracing paper.

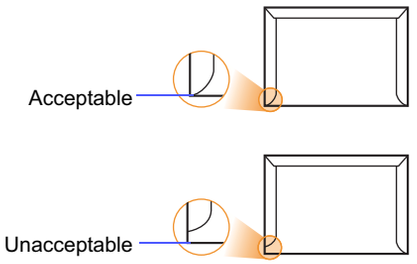
  Use of these types of paper could result in paper jams, chemical smells, and damage to your machine.
- Store print media in its ream wrapper until you are ready to use it. Place cartons on pallets or shelves, not on the floor. Do not place heavy objects on top of the paper, whether it is packaged or unpackaged. Keep it away from moisture or other conditions that can cause it to wrinkle or curl.
- Store unused print media at temperatures between 15 °C and 30 °C. The relative humidity should be between 10% and 70%.
- Store unused print media in a moisture-proof wrap, such as a plastic container or bag, to prevent dust and moisture from contaminating your paper.
- Load special media types one sheet at a time through the multi-purpose tray to avoid paper jams.
- To prevent print media, such as label sheets, from sticking together, remove them as they print out.

Specifications on print media

Type[a]	Size	Dimensions	Weight	Capacity[b]
Plain paper	Letter	216 x 279 mm (8.5 x 11 inches)	• 60 to 90 g/m^2 (16 to 24 lb bond) for the tray 1 • 60 to 105 g/m^2 (16 to 28 lb bond) for manual feeding in the tray 1	• 150 sheets of 75 g/m^2 (20 lb bond) paper for the tray 1 • 1 sheet for manual feeding in the tray 1 • 250 sheets of 75 g/m^2 (20 lb bond) paper for optional tray
	Legal	216 x 356 mm (8.5 x 14 inches)		
	Folio	216 x 330 mm (8.5 x 13 inches)		
	A4	210 x 297 mm (8.26 x 11.69 inches)		
	Oficio	216 x 343 mm (8.5 x 13.5 inches)		
	JIS B5	182 x 257 mm (7.16 x 10.11 inches)		
	Executive	184 x 267 mm (7.25 x 10.5 inches)		
	Statement	140 x 216 mm (5.50 x 8.50 inches)		
	A5	148 x 210 mm (5.82 x 8.26 inches)		
	A6	105 x 148 mm (4.13 x 5.82 inches)		
Envelope	Monarch	98 x 191 mm (3.87 x 7.5 inches)	75 to 90 g/m^2 (20 to 24 lb bond)	1 sheet for manual feeding in the tray 1
	No. 10	105 x 241 mm (4.12 x 9.5 inches)		
	DL	110 x 220 mm (4.33 x 8.66 inches)		
	C5	162 x 229 mm (6.37 x 9.01 inches)		
	C6	114 x 162 mm (4.48 x 6.38 inches)		
	No.9	98 x 225 mm (3.87 x 8.87 inches)		
	6 3/4	92 x 165 mm (3.62 x 6.5 inches)		
Thick paper	Refer to the Plain paper section	Refer to the Plain paper section	90 to 105 g/m^2 (24 to 28 lb bond)	1 sheet for manual feeding in the tray 1
Thin paper	Refer to the Plain paper section	Refer to the Plain paper section	60 to 70 g/m^2 (16 to 19 lb bond)	1 sheet for manual feeding in the tray 1
Labels[c]	Letter, A4	Refer to the Plain paper section	120 to 150 g/m^2 (32 to 40 lb bond)	1 sheet for manual feeding in the tray 1
Transparency[d]	Letter, A4	Refer to the Plain paper section	138 to 146 g/m^2 (37 to 39 lb bond)	
Card stock	Post card	101.6 x 152.4 mm (4 x 6 inches)	105 to 163 g/m^2 (28 to 43 lb bond)	
Photo paper	Letter, A4	Refer to the Plain paper section	120 to 220 g/m^2 (32 to 58.6 lb bond)	
Minimum size (custom)		76 x 127 mm (3 x 5 inches)	60 to 163 g/m^2 (16 to43 lb bond)	
Maximum size (custom)		216 x 356 mm (8.5 x 14 inches)		

a. The printer supports a wide range of media sizes.
b. Maximum capacity may differ depending on media weight, thickness, and environmental conditions.
c. Smoothness: 100 to 250 (sheffield)
d. Recommended media: Transparency for a color laser printer by 3M such as PP2500.

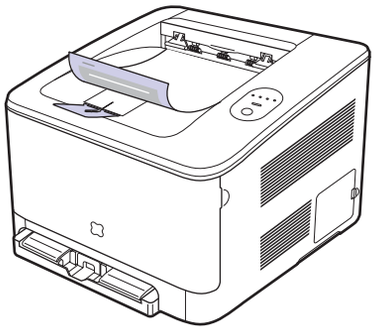
Guidelines for special print media

Media type	Guidelines
Envelopes	• Successful printing on envelopes depends upon the quality of the envelopes. When selecting envelopes, consider the following factors: - Weight: The weight of the envelope paper should not exceed 90 g/m^2 or jamming may occur. - Construction: Prior to printing, envelopes should lie flat with less than 6 mm 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 during operation. • Use only well-constructed envelopes with sharp and well creased folds. • Do not use stamped envelopes. • Do not use envelopes with clasps, snaps, windows, coated lining, self-adhesive seals, or other synthetic materials. • Do not use damaged or poorly made envelopes. • Be sure the seam at both ends of the envelope extends all the way to the corner of the envelope. 
	• Envelopes with a peel-off adhesive strip or with more than one flap that folds over to seal must use adhesives compatible with the machine's fusing temperature for 0.1 second. Check your machine's specification to view the fusing temperature, see page 10.1. The extra flaps and strips might cause wrinkling, creasing, or jams, and may even damage the fuser. • For the best print quality, position margins no closer than 15 mm from the edges of the envelope. • Avoid printing over the area where the envelope's seams meet.

Media type	Guidelines
Labels	• To avoid damaging the machine, use only labels designed for use in laser machines. • When selecting labels, consider the following factors: - Adhesives: The adhesive material should be stable at your machine's fusing temperature. Check your machine's specification to view the fusing temperature, see page 10.1. - Arrangement: Only use labels with no exposed backing between them. Labels can peel off sheets that have spaces between the labels, causing serious jams. - Curl: Prior to printing, labels must lie flat with no more than 13 mm of curl in any direction. - Condition: Do not use labels with wrinkles, bubbles, or other indications of separation. • Make sure that there is no exposed adhesive material between labels. Exposed areas can cause labels to peel off during printing, which can cause paper jams. Exposed adhesive can also cause damage to machine components. • Do not run a sheet of labels through the machine more than once. The adhesive backing is designed for only a single pass through the machine. • Do not use labels that are separating from the backing sheet or are wrinkled, bubbled, or otherwise damaged.
Card stock or custom-sized materials	• Do not print on media smaller than 98 mm wide or 148 mm long. • In the software application, set margins at least 6.4 mm away from the edges of the material.
Preprinted paper	• Letterhead must be printed with heat-resistant ink that will not melt, vaporize, or release hazardous emissions when subjected to the printer's fusing temperature for 0.1 second. Check your machine's specification to view the fusing temperature, see page 10.1. • Letterhead ink must be non-flammable and should not adversely affect printer rollers. • Forms and letterhead should be sealed in a moisture-proof wrapping to prevent changes during storage. • Before you load preprinted paper, such as forms and letterhead, verify that the ink on the paper is dry. During the fusing process, wet ink can come off preprinted paper, reducing print quality.

Verifying the output location

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



Note

- If you continuously print many pages, the surface of the output tray may become hot. Be careful not to touch the surface, and especially keep children away from the surface.
- The output tray can hold up to 100 sheets of paper. Remove the pages so that the tray is not overloaded.

Loading paper

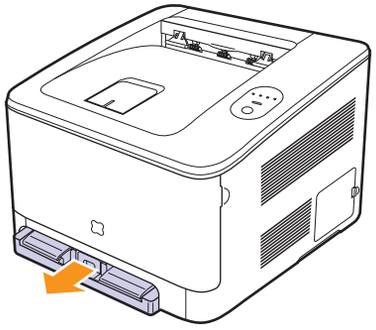
In the tray

Load the print media you use for the majority of your print jobs in the tray 1. The tray 1 can hold a maximum of 150 sheets of 75 g/m^2 (20 lb bond) plain paper.

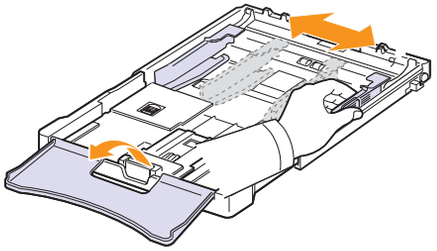
You can purchase an optional tray and attach it below the standard tray to load an additional 250 sheets of paper. (See "Accessories" on page 8.1.)

Loading paper in the tray 1 or optional tray

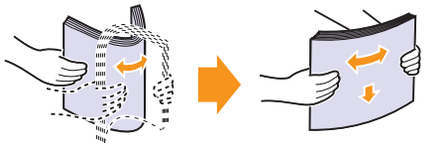
1 Pull the tray out of the machine.



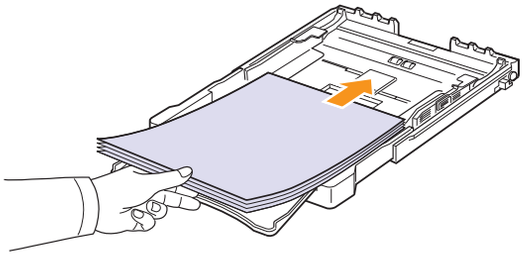
2 Open the paper cover, and enlarge the tray by adjusting the paper width guide.



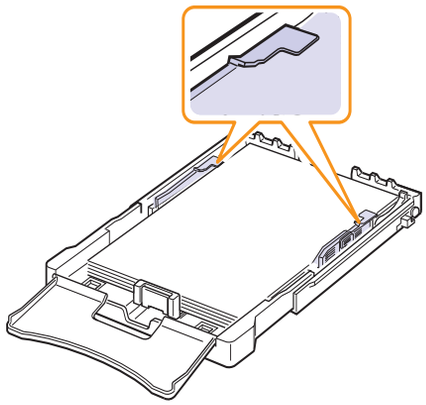
3 Flex the paper sheets back and forth to separate the pages and then dan them while holding one edge. Tap the edges of the stack on a flat surface to even it up.



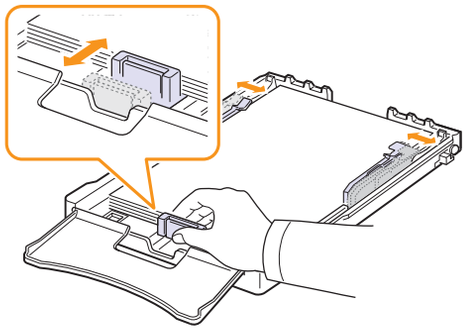
4 Load paper **with the print side up.**



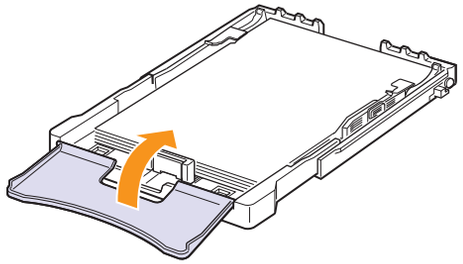
Make sure not to overfill the tray and that all four corners are flat in the tray and under the brackets, as shown below. Overfilling the tray may cause a paper jam.



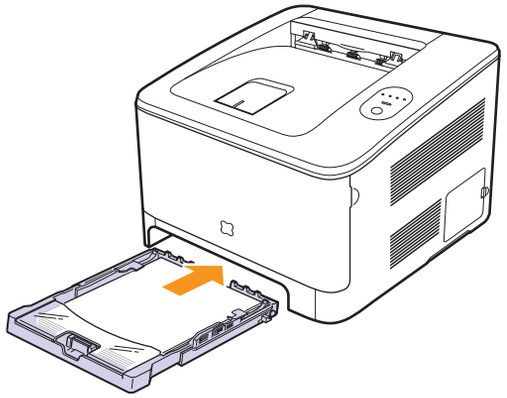
5 Squeeze the paper length guide and slide in it until it lightly touches the end of the paper stack.



6 Close the paper cover.



7 Slide the tray back into the machine.



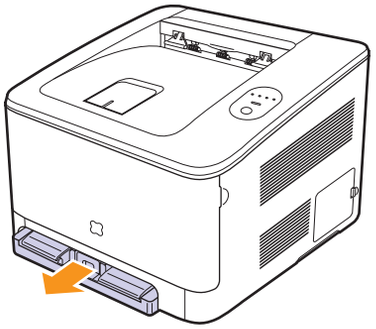
Note

After you load paper, you need to set up your machine for the paper type, size, and source you loaded. See Software section.

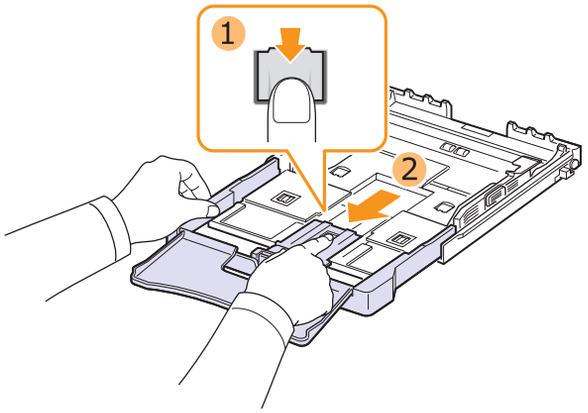
Changing the size of the paper in the paper tray

To change the tray size to other size, you must adjust the paper length guide properly.

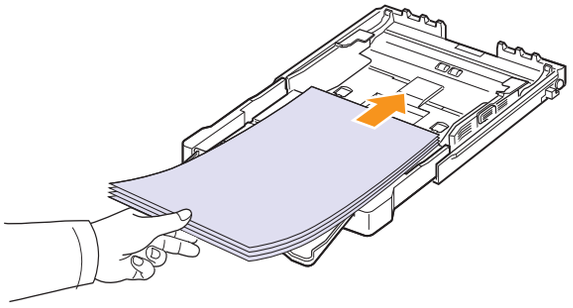
1 Pull the tray out of the machine. Open the paper cover and remove paper from the tray if necessary.



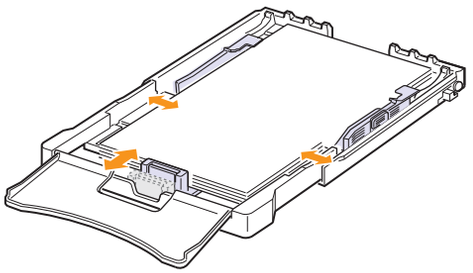
2 Pressing and unlatching the guide lock in the top of the tray, pull the tray out manually.



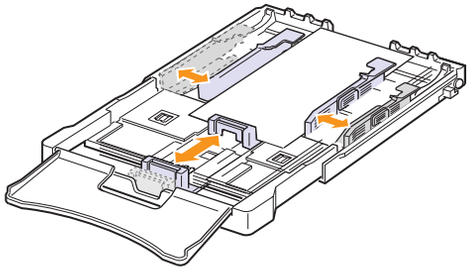
3 Load paper into the tray.



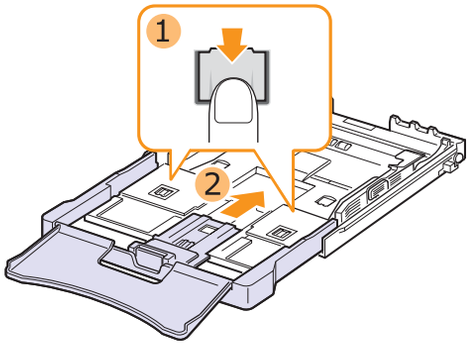
4 Slide the paper length guide until it lightly touches the end of the paper stack. Squeeze the paper width guide and slide it to the edge of the paper stack without causing it to bend.

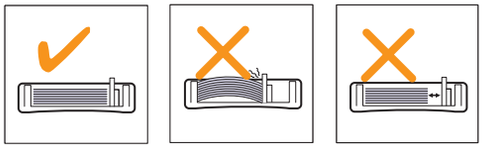


For paper smaller than Letter-sized, return the paper guides to their original positions and adjust the paper length guide and paper width guide.



If the paper that you need to print is shorter than length 222 mm (8.74 inches), press and unlatch the guide lock in the tray, push the tray in manually. Adjust the paper length guide and paper width guide.

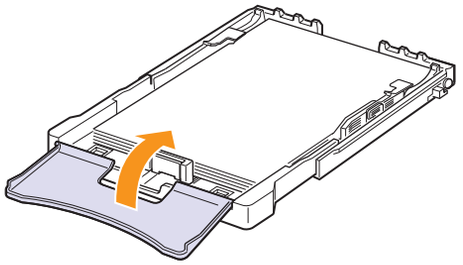




Note

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

5 Close the paper cover.



6 Slide the tray back into the machine until it clicks.

Note

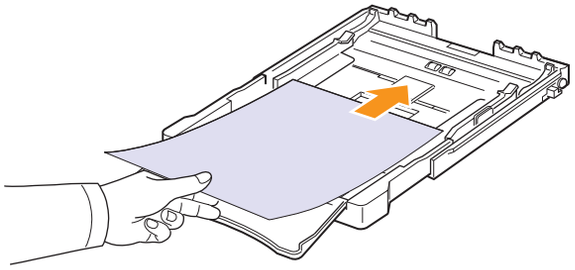
If you adjusted the tray itself to use paper shorter than 222mm (8.74 inches), you may not see the tray from outside of the machine, double-check the tray is installed.

Using manual feed mode

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

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

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



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

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

4 Press the **Stop** button on the machine to start feeding.

Note

If you do not press the button after a pause, the paper will be automatically fed into the machine.

5 Printing is started.

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

7 Repeat this step for every page to be printed.

Printing on special print materials

Printing on envelopes

- Only use envelopes recommended for your machine. Before loading envelopes in the tray, make sure that they are undamaged and are not stuck together.
- Do not feed stamped envelopes.
- Never use envelopes with clasps, snaps, windows, coated linings, or self-stick adhesives.

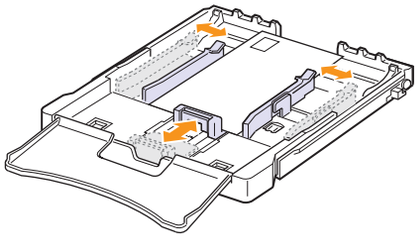
To print on envelope:

1 Squeeze the paper length guide and slide it out to its full length.

2 Load a sheet of envelope in the tray, **with the flap side down**. The end of the envelope with the stamp area enters the machine first.

3 Slide in the paper length guide until it lightly touches the end of the paper stack.

4 Slide the paper width guide to the edge of the envelope without causing it to bend.



Caution

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

5 When you print, set the paper source to **Manual Feeder** and the paper type to **envelope**, and select the appropriate size in the software application. See Software section.

6 Press the **Stop** button on the machine to start feeding.

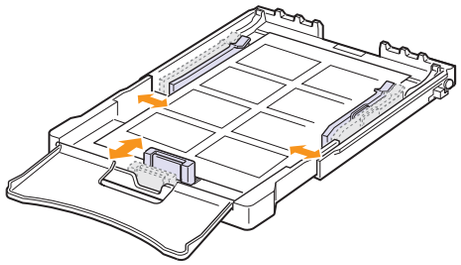
Printing on labels

- Only use labels recommended for your machine.
- Verify that the labels' adhesive material can tolerate a fusing temperature of 180 °C (356 °F) for 0.1 seconds.
- Make sure that there is no exposed adhesive material between the labels. Exposed areas can cause labels to peel off during printing, which can cause paper jams. Exposed adhesive can also cause damage to machine components.
- Never print on the same sheet of labels more than once, or print on a partial sheet of labels.
- Do not use labels that are separating from the backing sheet or are wrinkled or damaged in any way.
- To prevent labels from sticking together, do not let the printed label sheets stack up as they are printed out.

To print on label:

1 Squeeze the paper length guide and slide it out to its full length.

2 Load a sheet of label in the tray, **with the print side up and the top, short edge in first**. Adjust the guides to fit the length and width of the label.



3 When you print, set the paper source to **Manual Feeder** and the paper type to **labels**, and select the appropriate size in the software application. See Software section.

4 Press the **Stop** button on the machine to start feeding.

Printing on transparencies

- Place them on a flat surface after removing them from the machine.
- Do not leave them in the tray for long periods of time. Dust and dirt may accumulate on them resulting in spotty printing.
- To avoid smudging caused by fingerprints, handle them and coated paper carefully.
- To avoid fading, do not expose the printed transparencies to prolonged sunlight.

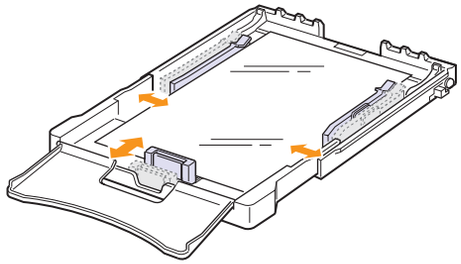
Caution

It is not recommended to use paperbacked transparencies such as Xerox 3R91334, which can cause a jam or be scratched.

To print on transparency:

1 Squeeze the paper length guide and slide it out to its full length.

2 Load a sheet of transparency in the tray, **with the print side up and the top, short edge in first**. Adjust the guides to fit the length and width of the transparency.



3 When you print, set the paper source to **Manual Feeder** and the paper type to **transparency**, and select the appropriate size in the software application. See Software section.

4 Press the **Stop** button on the machine to start feeding.

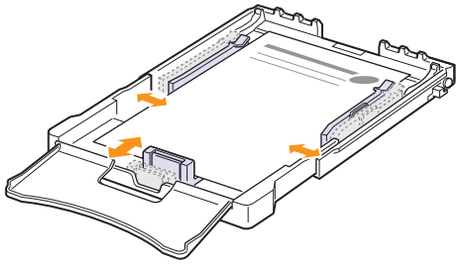
Printing on preprinted paper

- Preprinted paper is paper that has some type of printing on it before it is sent through the machine (paper that has a preprinted logo at the top of the page, for example).
- Letterhead must be printed with heat-resistant ink that will not melt, vaporize, or release hazardous emissions when subjected to the machine's fusing temperature of 180 °C (356 °F) for 0.1 seconds.
- Ink on letterhead must be non-flammable and should not adversely affect machine rollers.
- Forms and letterhead should be sealed in moisture-proof wrapping to prevent changes during storage.
- Before you load preprinted paper, such as forms and letterhead, verify that the ink on the paper is dry. During the fusing process, wet ink can come off of preprinted paper, reducing the print quality.

To print on preprinted paper:

1 Squeeze the paper length guide and slide it out to its full length.

2 Load letterhead in the tray, **with the print side up and the top and short edge first**. Adjust the guides to fit the edge of the paper stack.



3 When you print, set the paper source to **Manual Feeder** and the paper type to **preprinted**, and select the appropriate paper size in the software application. See Software section.

4 Press the **Stop** button on the machine to start feeding.

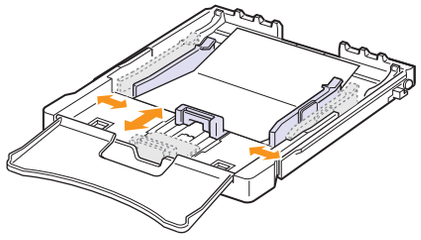
Printing on card stock or custom-sized materials

- Postcards, 3in by 5in (index) cards, and other custom-sized materials can be printed with your machine. The minimum size is 3in by 5in (76mm by 127mm) and the maximum size is 8.5in by 14in (216mm by 356mm).
- Always insert the short edge into the tray first. If you want to print in landscape mode, make this selection using your software. Inserting these materials long edge first may cause a paper jam.
- Do not print on material smaller than 3in (76mm) wide or 5in (127mm) long.
- In the software application, set margins at least 4mm away from the edges of the material.

To print on card stock:

1 Squeeze the paper length guide and slide it out to its full length.

2 Load print material in the tray, **with the print side up and the short edge first**. Adjust the guides to fit the length and width of the material.



Note

If you do not press the button after a pause, the paper will be automatically fed into the machine.

3 When you print, set the paper source to **Manual Feeder** and select the appropriate size and type in the software application. See Software section.
If the size of your print material is not listed in the **size** box in the **paper** tab, click the **custom** button and set the size manually.

4 Press the **Stop** button on the machine to start feeding.

Setting the paper size and type

The settings you change remain in effect only while you are using the current program. To make your changes permanent, make them in the machines folder.

Note
The following procedure is for Windows XP. For other Windows OS, refer to the corresponding Windows User's Guide or online help.

1 Click the **Start** button on the computer screen.

2 Select **Printers and Other Hardwares**.

3 Select **Printers and Faxes**.

4 Right-click on the printer driver icon and select **Printing Preferences**.

5 Click the **Paper** tab, and change the settings on **Paper Options**.

6 Click **OK**.

5 Basic printing

This chapter explains common printing tasks.

- **Printing a document**
- **Canceling a print job**

Printing a document

Your machine allows you to print from various Windows, Macintosh, or Linux applications. The exact steps for printing a document may vary depending on the application you use.

1 Open the document you want to print.

2 Select **Print** from the **File** menu. The Print window is displayed. It may look slightly different depending on your application.

3 Select **your printer driver** from the **Selet Printer** drop-down list.

4 To start the print job, click **OK** or **Print** in the **Print** window.

For details about printing, see Software section.

Canceling a print job

If the print job is waiting in a print queue or print spooler, such as the printer group in Windows, delete the job as follows:

1 Click the Windows **Start** menu.

2 For Windows 2000, select **Settings** and then **Printers**.

For Windows XP/2003, select **Printers and Faxes**.

For Windows Vista, select **Control Panel** → **Hardware and Sound** → **Printers**.

3 Double-click the **Samsung CLP-350 Series** icon. (Or **Samsung CLP-350 Series PS**)

4 From the **Document** menu, select **Cancel**.

Note
You can also access this window by simply double-clicking the printer icon at the bottom right corner of the Windows desktop.

You can also cancel the current job by pressing **Stop** on the control panel.

6 Maintenance

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

This chapter includes:

- **Printing a machine configuration report**
- **Cleaning your machine**
- **Maintaining the cartridge**
- **Redistributing toner**
- **Replacing the toner cartridge**
- **Replacing the Imaging Unit**
- **Replacing the Waste Toner Container**
- **Maintenance Parts**
- **Managing your machine from the website**

Printing a machine configuration report

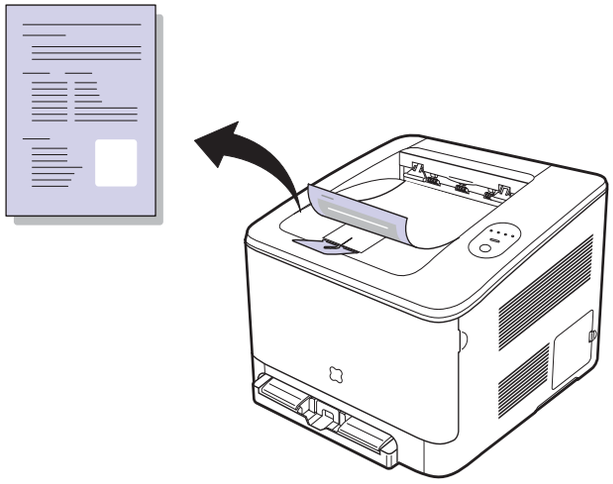
You can print the machine's information and job report.

You can print a configuration report from the machine's control panel. Use the configuration page to view the current settings, to help troubleshoot problems.

To print a configuration page:

In Ready mode, press and hold the **Stop** button on the control panel for about 5 seconds.

A configuration page prints out.



Cleaning your machine

During the printing process, particles of paper, toner, and dust can accumulate inside the machine. Over time, this build-up can cause print quality problems such as toner specks or smearing. Your machine has a cleaning mode that can correct and prevent these types of problems.

Cleaning the outside

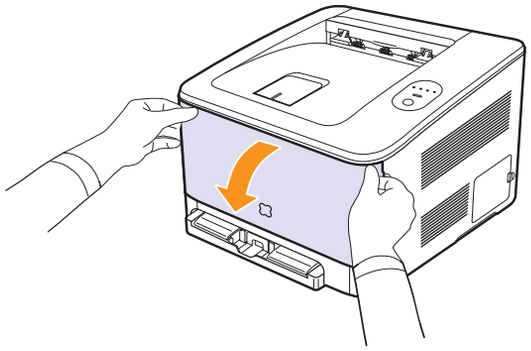
Clean the machine cabinet with a soft, lint-free cloth. You can dampen the cloth slightly with water, but be careful not to let any water drip onto or into the machine.

Caution
Cleaning the machine cabinet with cleaning materials that contain large amounts of alcohol, solvent, or other strong substances can discolor or damage the cabinet.

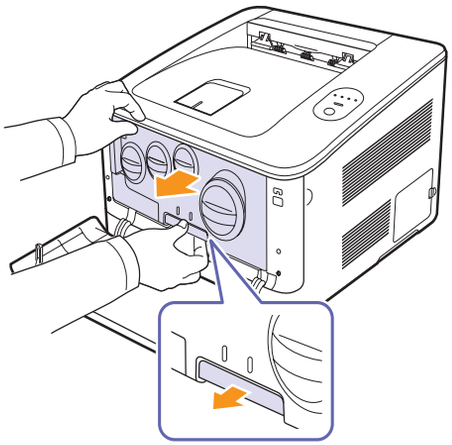
Cleaning the inside

1 Turn the machine off and unplug the power cord, then wait a few minutes for the machine to cool.

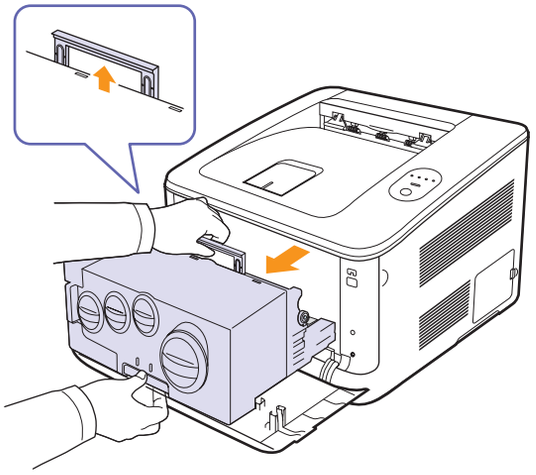
2 Open the front cover.



3 Pull the imaging unit out of the machine using the handle on its bottom.



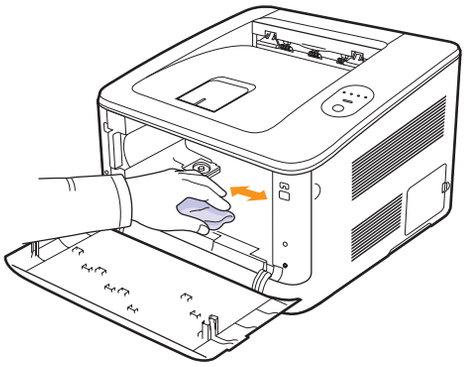
4 Extend the top handle on the imaging unit and then use it to pull the imaging unit out of the machine completely.



Caution

- Do not touch the green surface on the imaging unit with your hands or any other material. Use the handle on it in order to avoid touching this area.
- Be careful not to scratch the surface of the imaging unit.
- To prevent damage, do not expose the imaging unit to light for more than a few minutes. Cover it with a piece of paper to protect it if necessary.

5 Look inside the machine. Remove any dust, paper particles, and spilled toner with a damp, soft lint-free cloth.



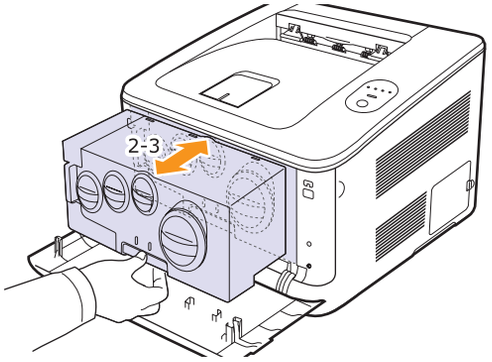
Note

After cleaning, let the machine to dry completely.

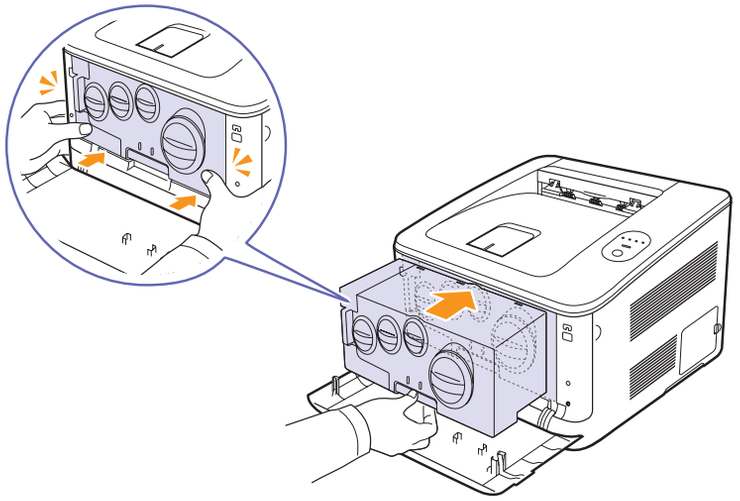
Caution

If your machine or its surrounding is contaminated with toner, we recommend you to use a cloth or tissue dampened with water to clean it. If you use a vacum cleaner, toner blows into the air then might be harmful to you.

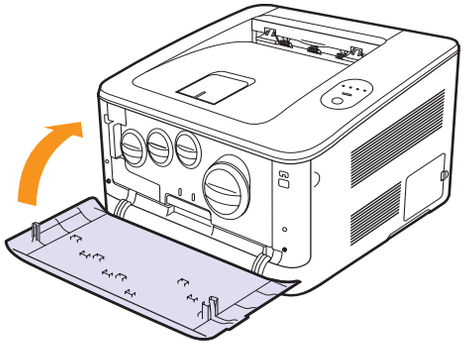
6 Pull the imaging unit about half and push it until it sounds 'click'. Repeat this action two or three times.



7 Push the imaging unit until it sounds 'click' in to the machine.



8 Close the front cover firmly.



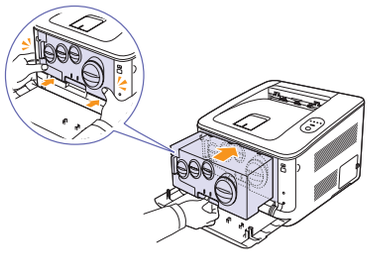
Caution

If the front cover is not completely closed, the macnine will not operate. Please make sure all toner cartridges are installed properly. If any toner cartridge is installed improperly, the front cover do not close.

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

Caution

If there is a cracking sound, re-install the imaging unit. The imaging unit is not properly installed.



Maintaining the 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.

Expected cartridge life

The life of a toner cartridge depends on the amount of toner that your print jobs require. When printing text at 5% coverage, the toner cartridges last an average of 4,000 pages for black and white printing and 2,000 pages for each color printing.

Redistributing toner

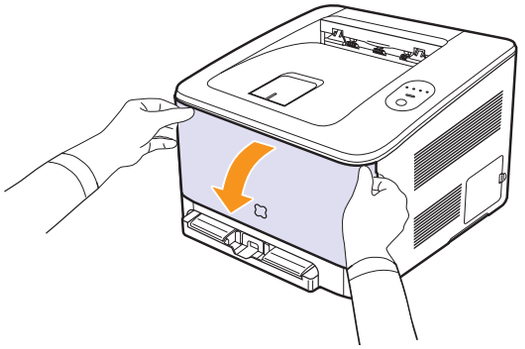
When a print cartridge is low on toner, faded or light areas may appear. It is also possible that colored images may be printed with incorrect colors due to flawed mixing of toner colors when one of the colored print cartridges is low on toner. The Smart Panel program window appears on the computer telling you which color cartridge is low on toner. Also, when the toner LED, on the control panel, indicating each individual print cartridge according to its color, blinks, the print cartridge is low.

The machine is able to continue to print using the current toner cartridge until the Smart Panel program window appears on the computer telling you to replace the cartridge.

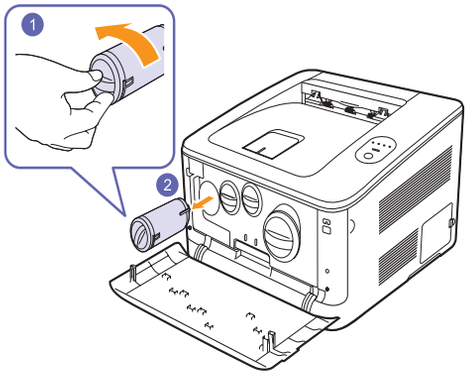
You may be able to temporarily improve print quality by redistributing the toner.

To redistribute the toner:

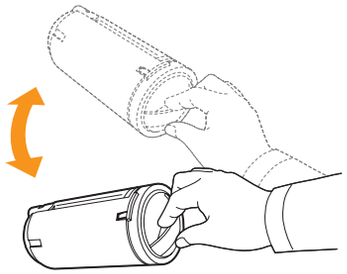
1 Open the front cover.



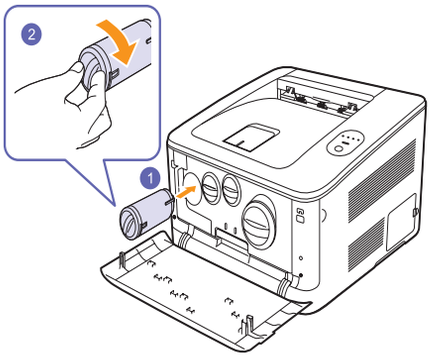
2 Holding the corresponding toner cartridge's handle, rotate it counter-clockwise, and pull it out to remove from the machine.



3 Holding the toner cartridge, shake thoroughly it from side to side to redistribute the toner.

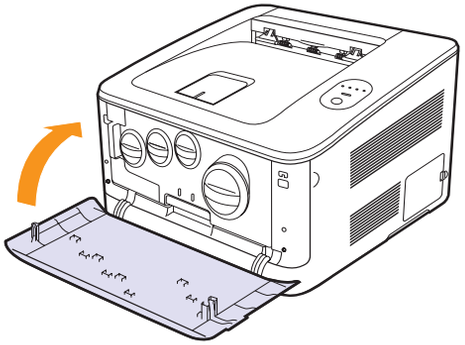


4 Grasp the toner cartridge and align it with the corresponding slot inside the machine. Insert it back into its slot until it clicks into place, and rotate the toner cartridge clockwise.



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

5 Close the front cover. Make sure that the cover is securely closed.



Replacing the toner cartridge

The machine uses four colors and has a different toner cartridge for each one: yellow (Y), magenta (M), cyan (C), and black (K).

When the toner colors LED, on the control panel, indicating each individual toner cartridge according to its color, lights, and the **Status** LED lights red, the machine cartridge is totally exhausted. Your machine stops printing.

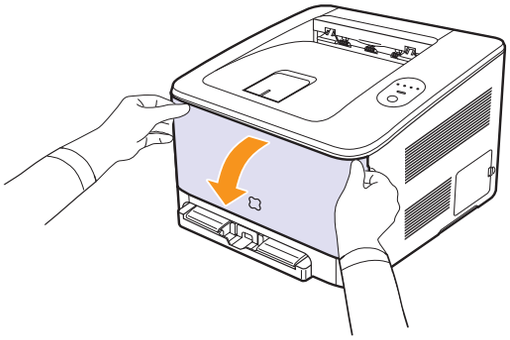
Also, the Smart Panel program window appears on the computer telling you to replace the cartridge.

At this stage, the toner cartridge needs to be replaced. Check the type of toner cartridge for your machine. (See "Supplies" on page 8.1.)

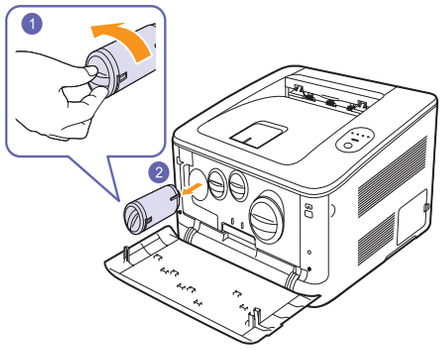
Note
The print quality may get poor if the refilled toner cartridge is installed, since its characteristics may significantly differ from the genuine.

1 Turn the machine off, then wait a few minutes for the machine to cool.

2 Open the front cover.

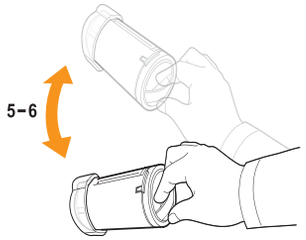


3 Holding the corresponding toner cartridge's handle, rotate it counter-clockwise, and pull it out to remove from the machine.

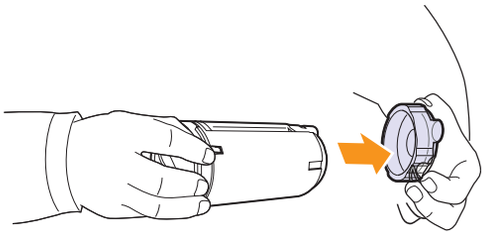


4 Take a new toner cartridge out of its package.

5 Holding the toner cartridge, shake thoroughly it from side to side to distribute the toner.



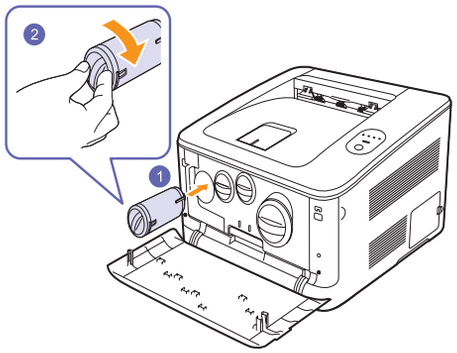
6 Remove the cartridge cap.



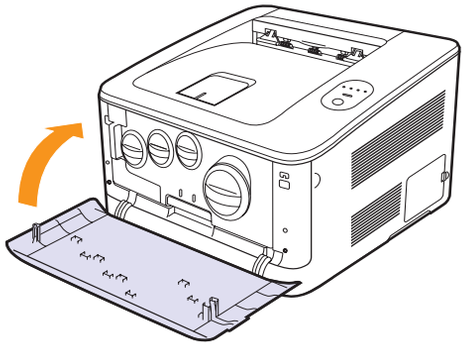
Note

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

7 Grasp the toner cartridge and align it with the corresponding slot inside the machine. Insert it back into its slot until it clicks into place, and rotate the toner cartridge clockwise.



8 Close the front cover. Make sure that the cover is securely latched, and then turn the machine on.



Caution

If the front cover is not completely closed, the macnine will not operate. Please make sure all toner cartridges are installed properly. If any toner cartridge is installed improperly, the front cover do not close.

Note

- Each LED blinks red in a repeated order. Wait for about 1.5 minutes for your machine to get ready.
- You can expect a toner cartridge life of about 4,000 pages for black and white printing and 2,000 pages for color printing.

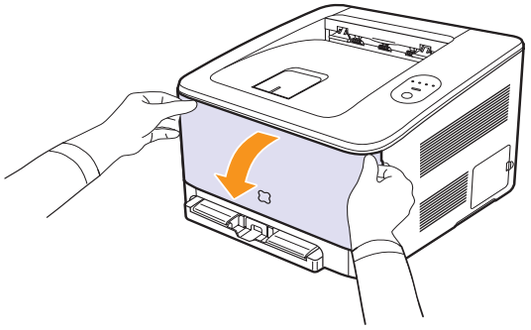
Replacing the Imaging Unit

The life of the imaging unit is approximately 20,000 pages for black or 50,000 images for printing. When the life span of the imaging unit has expired, the Smart Panel program window appears on the computer, indicating the imaging unit needs to be replaced. Otherwise your machine stops printing.

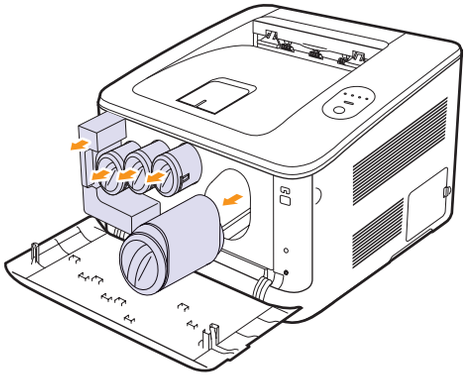
To replace the imaging unit:

1 Turn the machine off, then wait a few minutes for the machine to cool.

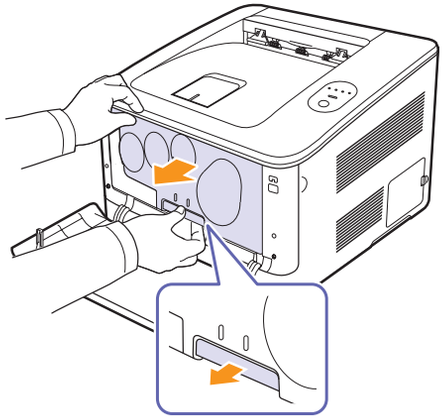
2 Open the front cover.



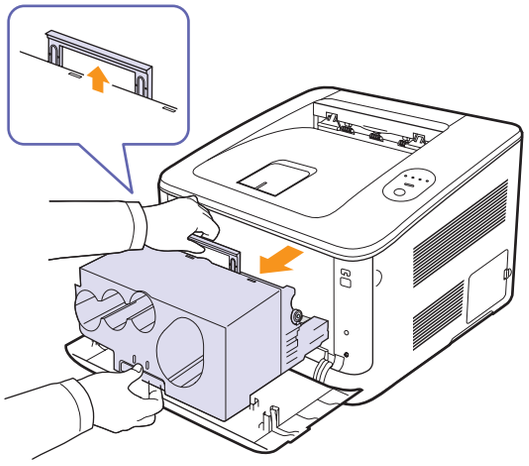
3 Rotate all toner cartridges counter-clockwise and pull them out. Remove waste toner container from the machine.



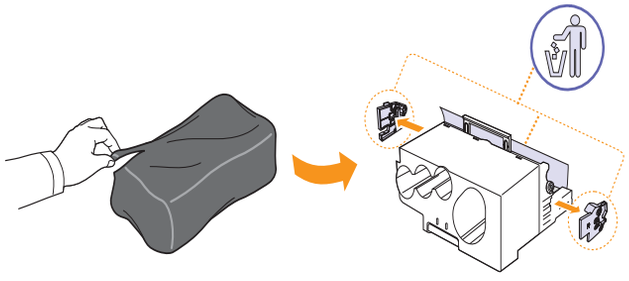
4 Pull the imaging unit out of the machine using the handle on its bottom.



5 Extend the top handle on the imaging unit and then use it to pull the imaging unit out of the machine completely.



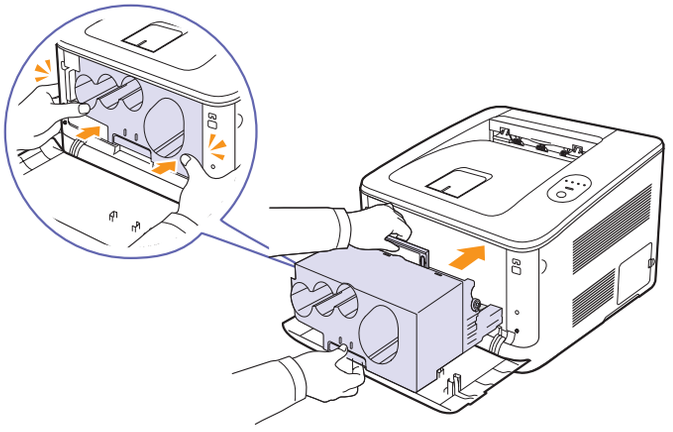
6 Take a new imaging unit out of its package. Remove the protective devices on both sides of the imaging unit and the paper protecting the surface of the imaging unit.



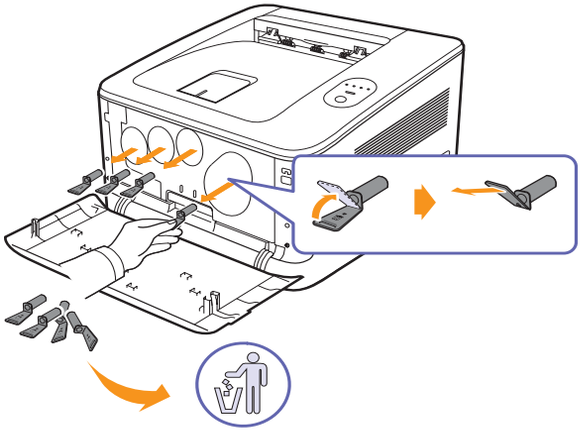
Caution

- Don't use sharp objects, such as a knife or scissors, to open the imaging unit package. You could damage the surface of the imaging unit.
- Be careful not to scratch the surface of the imaging unit.
- To prevent damage, do not expose the imaging unit to light for more than a few minutes. Cover it with a piece of paper to protect it if necessary.

7 Holding the handles on the new imaging unit, push the imaging unit until it sounds 'click' in to the machine.



8 Remove four dummy caps which are on the toner cartridge entrances of the imaging unit. When you remove the dummy cap from the cartridge, lift the handle up and pull it out.



Caution

If you force too much to the dummy caps, it may cause problem.

9 Insert the toner cartridges and waste toner container back into their corresponding slots until they click into place. And rotate the toner cartridges clockwise.

10 Close the front cover firmly.

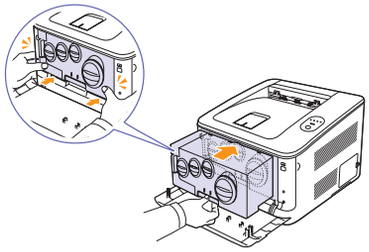
Caution

If the front cover is not completely closed, the macnine will not operate. Please make sure all toner cartridges are installed properly. If any toner cartridge is installed improperly, the front cover do not close.

11 Turn the machine on.

Caution

If there is a cracking sound, re-install the imaging unit. The imaging unit is not properly installed.



Note

Each LED blinks red in a repeated order. Wait for about 1.5 minutes for your machine to get ready.

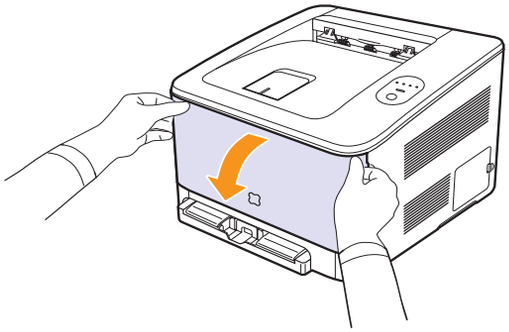
Replacing the Waste Toner Container

The life of the waste toner container unit is approximately 1,250 pages for full color 5% image or 5,000 image for black. When the life span of the waste toner container has expired, the Smart Panel program window appears on the computer, indicating the waste toner container needs to be replaced. Otherwise your machine stops printing.

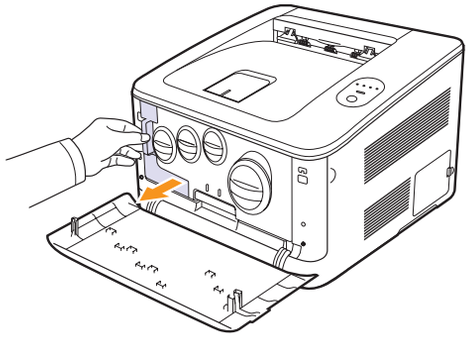
To replace the waste toner container:

1 Turn the machine off, then wait a few minutes for the machine to cool.

2 Open the front cover.



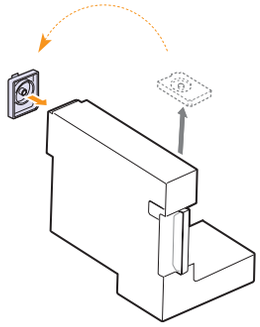
3 Pull the waste toner container out of the machine using its handle.



Note

Make sure that you lay the waste toner container on a flat surface so that the toner does not spill.

4 Remove the container's cap from the container as shown below, and use it to close the waste toner container opening.

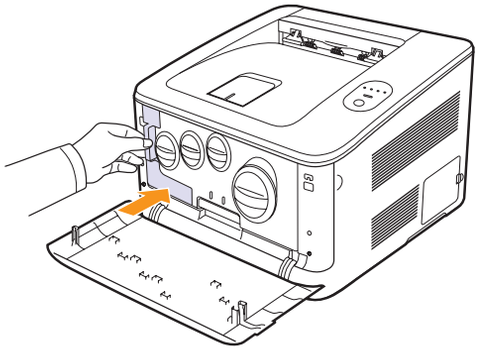


Caution

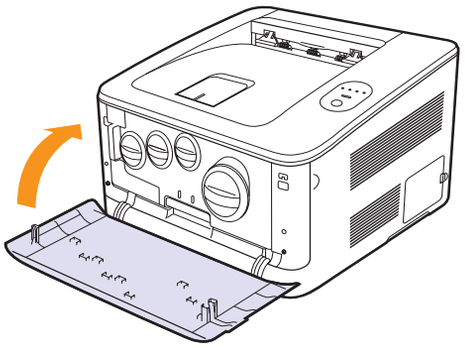
Do not tilt or turn over the container.

5 Take a new waste toner container out of its package.

6 Insert the new container into position and then push it to make sure that it is firmly seated in place.



7 Close the front cover firmly.



Caution

If the front cover is not completely closed, the macnine will not operate. Please make sure all toner cartridges are installed properly. If any toner cartridge is installed improperly, the front cover do not close.

8 Turn the machine on.

Maintenance Parts

To avoid print quality and paper feed problems resulting from worn parts, and to maintain your machine in top working condition, the following items will need to be replaced after the specified number of pages, or when the life span of each item has expired.

Items	Yield (Average)
Pick-up roller	Approx. 50,000 pages
Fuser unit	Approx. 100,000 black pages or 50,000 color pages
Transfer roller	Approx. 100,000 pages
Transfer belt (ITB)	Approx. 100,000 images

We highly recommend that this maintenance be performed by an authorized service provider, dealer or the retailer where you bought the machine. The warranty does not cover the replacement of the maintenance parts after their lifespan.

Managing your machine from the website

If you have connected your machine to a network and set up TCP/IP network parameters correctly, you can manage the machine via Samsung's **SyncThru™ Web Service**, an embedded web server. Use **SyncThru™ Web Service** to:

- View the device information and check its current status.
- Change TCP/IP parameters and set up other network parameters.
- Change the printer properties.
- Set the machine to send email notifications and update you on the machine's status.
- Get support for using the machine.

To access **SyncThru™ Web Service**:

1 Start a web browser, such as Internet Explorer, from Windows.

2 Enter the machine IP address (http://xxx.xxx.xxx.xxx) in the address field and press the **Enter** key or click **Go**.

Your machine's embedded website opens.

7 Troubleshooting

This chapter gives helpful information on what to do if you encounter a problem.

This chapter includes:**Machine Setup**

- **Tips for avoiding paper jams**
- **Clearing paper jams**
- **Solving other problems**

Tips for avoiding paper jams

By selecting the correct media types, most paper jams can be avoided. When a paper jam occurs, follow the steps outlined on page 7.1.

- Follow the procedures on page 4.4. Ensure that the adjustable guides are positioned correctly.
- Do not overload the tray.
- Do not remove paper from the tray while your machine is printing.
- Flex, fan, and straighten paper before loading.
- Do not use creased, damp, or highly curled paper.
- Do not mix paper types in a tray.
- Use only recommended print media. (See "Specifications on print media" on page 4.2.)
- Ensure that the recommended side of the print media is facing up in the tray.

Clearing paper jams

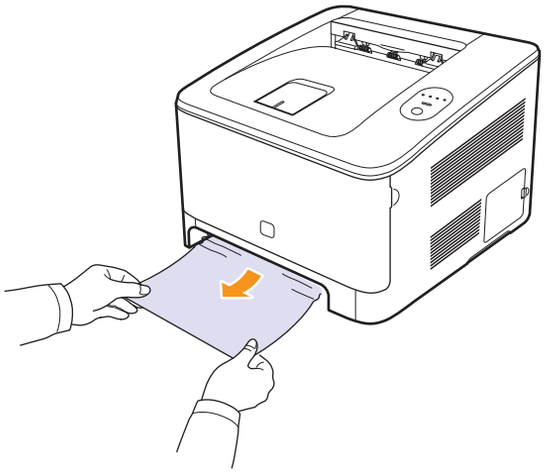
Note
When removing paper that is jammed in the printer, if possible always pull the paper in the direction that it normally moves so as not to damage internal components. Always pull firmly and evenly; do not jerk the paper. If the paper tears, ensure that all fragments of paper are removed; otherwise a jam will occur again.

If a paper jam occurs, the **Status** LED on the control panel lights red. Find and remove the jammed paper.

To resume printing after clearing paper jams, you must open and close the front cover or rear cover.

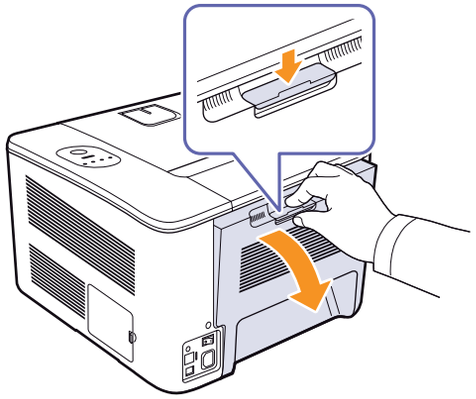
In the tray 1

1 Pull the tray out of the printer and remove the jammed paper.

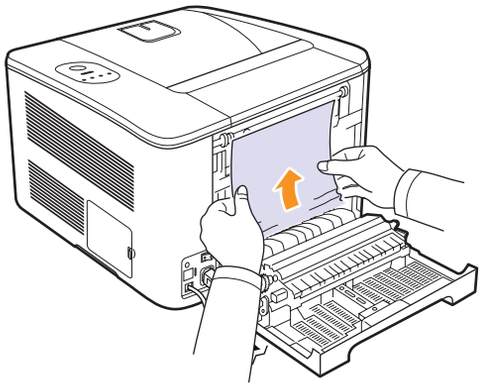


If you cannot find the jammed paper, go to the next step.

2 To remove the jammed paper, open the rear cover.



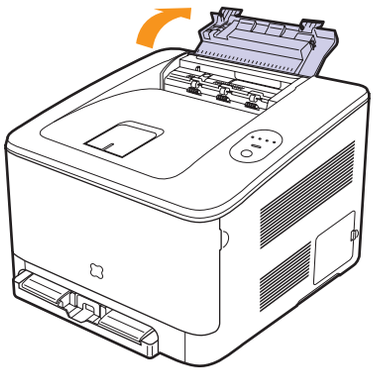
3 Carefully remove the paper by pulling in the direction as shown below. Most of the jammed paper can be removed in this step.



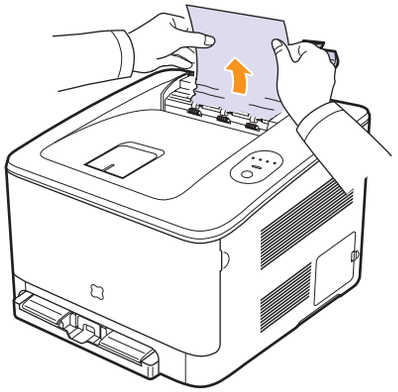
If you cannot find the jammed paper, or if there is any resistance removing the paper, stop pulling and go to the next step.

Note
If the paper tears, make sure that all of the paper fragments are removed from the printer.

4 Close the rear cover and then open the top cover.

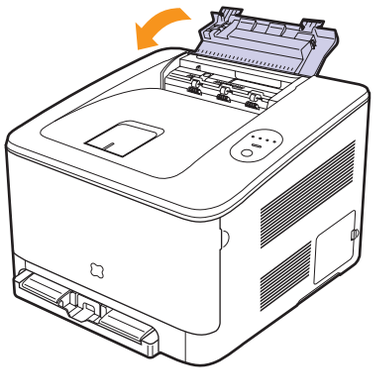


5 Holding the inner cover open, carefully take the jammed paper out of the printer. The inner cover will then close automatically.



Caution
Do not touch the fuser inside the inner cover. It is hot and could cause burns! The fuser's operating temperature is 180 °C (356 °F). Take care when removing paper from the printer.

6 Close the top cover. Make sure that it is securely closed.

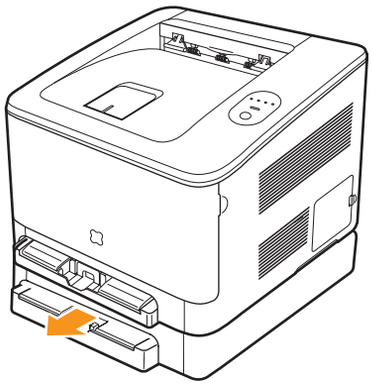


7 Open and then close the rear cover or front cover to resume printing.

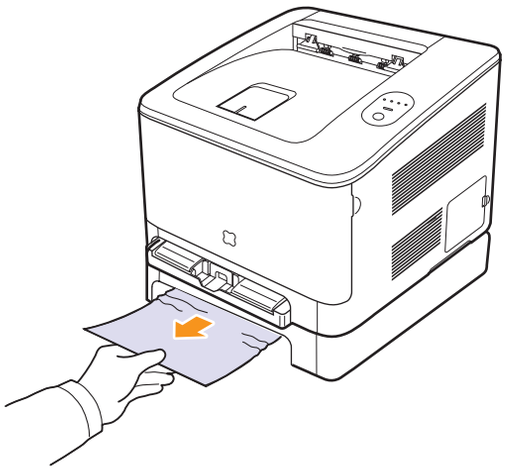
In the optional tray

If paper is jammed in the optional Tray, follow the next steps to release the jammed paper.

1 Pull the optional tray out of the machine.



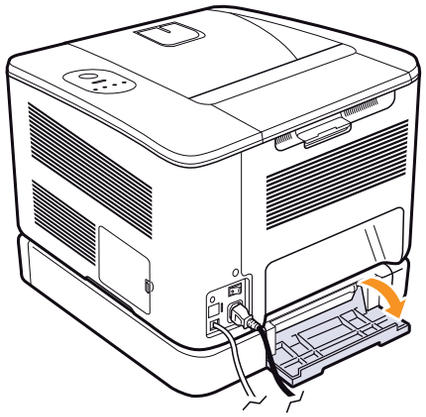
2 Remove the jammed paper from the machine.



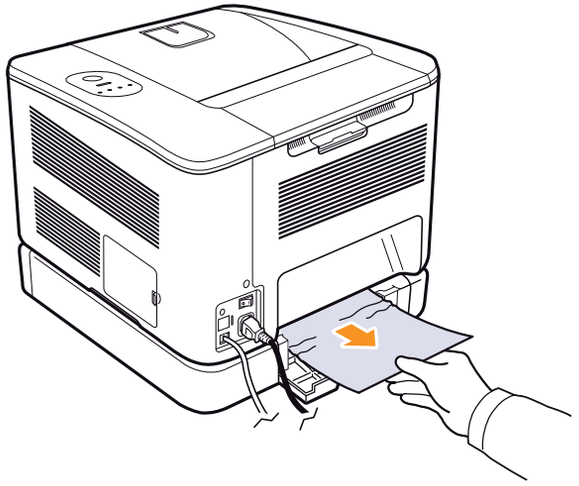
3 Insert the optional tray into the machine until it snaps into place. Printing automatically resumes.

If the paper does not move when you pull, or if you do not see the paper in this area, go to the next step.

4 Open the jam cover in the optional tray.



5 Pull the jammed paper out in the direction shown.



6 Close the jam cover. Printing automatically resumes.

Solving other 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 "Clearing paper jams" on page 7.1.)
Paper sticks together.	• Ensure that there is not too much paper in the tray. The tray can hold up to 150 sheets of paper, depending on the thickness of the paper. • Make sure that you are using the correct type of paper. (See "Specifications on print media" on page 4.2.) • Remove paper from the 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 tray. Load paper of only one type, size, and weight. • If multiple sheets have caused a paper jam, clear the paper jam. (See "Clearing paper jams" on page 7.1.)
Paper does not feed into the machine.	• Paper has not been loaded correctly. Remove paper from the tray and reload it correctly. Check that the paper guides are set correctly. • There is too much paper in the tray. Remove excess paper from the tray. • The paper is too thick. Use only paper that meets the specifications required by the machine. (See "Specifications on print media" on page 4.2.) • Remove any obstructions from inside the machine.
The paper keeps jamming.	• There is too much paper in the tray. Remove excess paper from the tray. Check that the paper guides are set correctly. • An incorrect type of paper is being used. Use only paper that meets the specifications required by the machine. (See "Specifications on print media" on page 4.2.) • There may be debris inside the machine. Open the front cover, remove the imaging unit and then remove the debris.

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 a machine name as your default printer in your Windows.
	Check the machine for the following: • The cover is not closed. Close the cover. • Paper is jammed. Clear the paper jam. (See "Clearing paper jams" on page 7.1.) • No paper is loaded. Load paper. (See "Loading paper" on page 4.4.) • The toner cartridge is not installed. Install the toner cartridge. If a 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 printer may be in manual feed mode and out of paper.	Check the message on the Smart Panel program window, add paper to the tray and press the **Stop** button on the control panel.
	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 job. You can also try using a different printer cable.
	The port setting is incorrect.	Check the Windows printer setting to make sure that the print job is sent to the correct port. If the computer has more than one port, make sure that the 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.

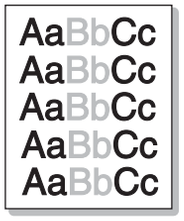
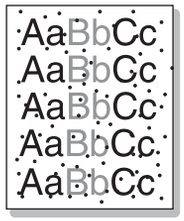
Condition	Possible cause	Suggested solutions
The machine does not print. (continued)	The printer driver may be incorrectly installed.	Repair the printer software. See Software section.
	The machine is malfunctioning.	Check the display message on the control panel to see if the machine is indicating a system error. Contact a service representative.
	The document size is so big that the hard disk space of the computer is not enough to access the print job.	Get more hard disk space and print the document again.
The machine selects print materials from the wrong paper source.	The paper option that was selected in the machine 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 the printer driver help screen.
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 such as adjusting the resolution.
	You may have printed a high density document which consumes a lot of toner.	It usually takes more time than usual to print this kind of job. Be patient and wait.
Half the page is blank.	The page orientation setting may be incorrect.	Change the page orientation in your application. See the printer driver help screen.
	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. Or, ensure that the paper size in the printer driver settings matches the paper selection in the software application settings you use.

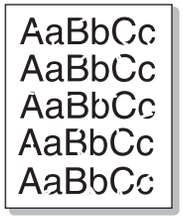
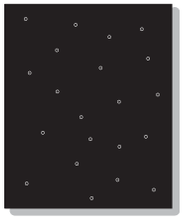
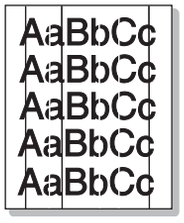
Condition	Possible cause	Suggested solutions
The machine prints, but the text is wrong, garbled, or incomplete.	The printer cable is loose or defective.	Disconnect the printer cable and reconnect. Try a print job that you have already printed successfully. If possible, attach the cable and the machine 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.
Pages print, but they are blank.	The toner cartridge is defective or out of toner.	Redistribute the toner, if necessary. 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.
PDF file does not print correctly-some parts are missing in the graphics, text or illustrations.	Incompatibility between the PDF file and the Acrobat products.	Printing the PDF file as an image may enable the file to print. Turn on **Print As Image** from the Acrobat printing options. **Note:** It will take longer to print when you print a PDF file as an image.
The print quality of photos is not good. Images are not clear.	The resolution is set to **Normal** or **Draft**.	Change the resolution to **Best** in the machine properties window and then try printing again.
	The resolution of the photo is very low.	Reduce the photo size. If you increase the photo size in the software application, the resolution will be reduced.

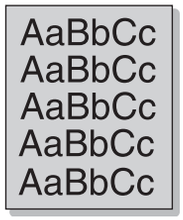
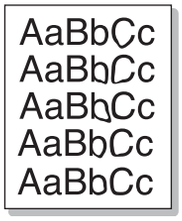
Condition	Possible cause	Suggested solutions
Your machine has an odd smell during initial use.	The oil used to protect the fuser is evaporating.	After printing about 100 color pages, there will be no more smell. It is a temporary issue.

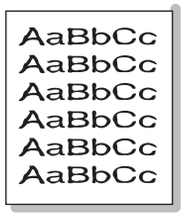
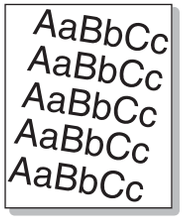
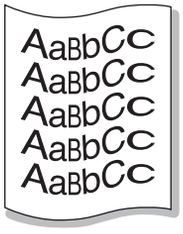
Printing quality problems

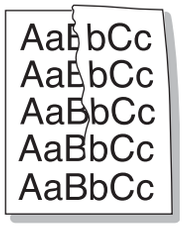
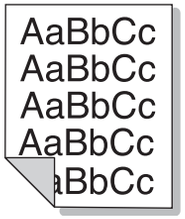
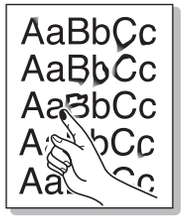
If the inside of the machine is dirty or paper has been loaded improperly, you may notice a reduction in print quality. See the table below to clear the problem.

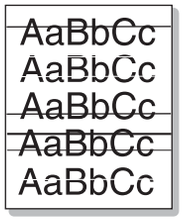
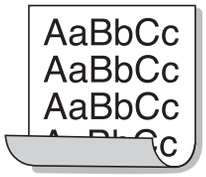
Condition	Suggested solutions
Light or faded print  AaBbCc AaBbCc AaBbCc AaBbCc AaBbCc	If a vertical white streak or faded area appears on the page: • The toner supply is low. You may be able to temporarily extend the toner cartridge life. If this does not improve the print quality, install a new toner cartridge. • The paper may not meet paper specifications; for example, the paper may be too moist or rough. (See "Specifications on print media" on page 4.2.) • If the entire page is light, the print resolution setting is too low or the toner save mode is on. Adjust the print resolution and turn the toner save mode off. See the help screen of the printer driver and refer to Software section, respectively. • A combination of faded or smeared defects may indicate that the toner cartridge needs cleaning. Contact a service representative. • The surface of the LSU part inside the machine may be dirty. Clean the LSU, contact a service representative.
Toner specks  AaBbCc AaBbCc AaBbCc AaBbCc AaBbCc	• The paper may not meet specifications; for example, the paper may be too moist or rough. (See "Specifications on print media" on page 4.2.) • The paper transfer belt may be dirty. Clean the inside of your machine. Contact a service representative. • The paper path may need cleaning. Contact a service representative.

Condition	Suggested solutions
Dropouts  AaBbCc AaBbCc AaBbCc AaBbCc AaBbCc	If faded areas, generally rounded, or broken texts or lines 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 "Specifications on print media" on page 4.2.) • The paper lot is bad. The manufacturing processes can cause some areas to reject toner. Try a different kind or brand of paper. • Change the printer option and try again. Go to printer properties, click **Paper** tab, and set paper type to **Thick**. Refer to the **Software Section** for details. • Increase the level of the contrast of each color. To adjust the color contrast, click **Start** > **Programs** or **All Programs** > your printer driver name > **Smart Panel** and select **Printer Setting** > **Graphic** > **Color** and then click the **Color Adjustment** button. After **Manual Color Adjustment** window opens, move the scroll bar to the right direction. When finished, click **Apply** and then exit **Smart Panel**. • If these steps do not correct the problem, contact a service representative.
White Spots 	White spots appear on the page: • The paper is too rough and a lot of dirt from the paper falls to the inner devices within the machine, which means the transfer belt may be dirty. Clean the inside of your machine. Contact a service representative. • The paper path may need cleaning. Contact a service representative.
Vertical lines  AaBbCc AaBbCc AaBbCc AaBbCc AaBbCc	If black vertical streaks appear on the page: • The toner cartridge has probably been scratched. Remove the toner cartridge and install a new one. If white vertical streaks appear on the page: • Clean the inside of the machine. Contact a service representative to clean the inside of the machine.

Condition	Suggested solutions
Color or Black background 	If the amount of background shading becomes unacceptable: • Change to a lighter weight paper. (See "Specifications on print media" on page 4.2.) • Check the environmental conditions: very dry conditions (low humidity) or a high level of humidity (higher than 80% RH) can increase the amount of background shading. • Remove the old toner cartridge, and then install a new one. (See "Replacing the toner cartridge" on page 6.4.)
Toner smear 	• Clean the inside of the machine. Contact a service representative to clean the inside of the machine. • Check the paper type and quality. (See "Specifications on print media" on page 4.2.) • Remove the paper transfer belt, and then install a new one. (See "Replacing the toner cartridge" on page 6.4.)
Vertical repetitive defects 	If marks repeatedly appear on the printed side of the page at even intervals: • Clean the inside of the machine. Contact a service representative to clean the inside of the machine. After cleaning the inside of the machine, if you still have the same problems, install a new toner cartridge of the problem color. See "Replacing the toner cartridge" on page 6.4. • 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 randomly 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 in printer properties.
Misformed characters 	• If characters are improperly formed and producing hollow images, the paper stock may be too slick. Try different paper. (See "Specifications on print media" on page 4.2.) • If characters are improperly formed and producing a wavy effect, the scanner unit may need service. Contact a service representative.
Page skew 	• Ensure that the paper is loaded properly. • Check the paper type and quality. (See "Specifications on print media" on page 4.2.) • 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 "Specifications on print media" on page 4.2.) • Turn the stack of paper over in the tray. Also try rotating the paper 180° in the tray.

Condition	Suggested solutions
Wrinkles or creases 	• Ensure that the paper is loaded properly. • Check the paper type and quality. (See "Specifications on print media" on page 4.2.) • Turn the stack of paper over in the tray. Also try rotating the paper 180° in the tray.
Back of printouts are dirty 	Check for leaking toner. Clean the inside of the machine. Contact a service representative.
Black pages 	• The toner cartridge may not be installed properly. Remove the cartridge and reinsert it. • 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 6.4.) • The machine may require repair. Contact a service representative.
Loose toner 	• Clean the inside of the machine. Contact a service representative to clean the inside of the machine. After cleaning the inside of the machine, if you still have the same problems, contact a service representative. • Check the paper type and quality. (See "Specifications on print media" on page 4.2.) • Remove the toner cartridge, and then install a new one. (See "Replacing the toner cartridge" on page 6.4.) • If the problem persists, the machine may require repair. Contact a service representative.

Condition	Suggested solutions
Character Voids 	Character voids are white areas within parts of characters that should be solid black: • You may be printing on the wrong surface of the paper. Remove the paper and turn it around. • The paper may not meet paper specifications. (See "Specifications on print media" on page 4.2.)
Horizontal stripes 	If horizontally aligned black streaks or smears appear: • The toner cartridge may be installed improperly. Remove the cartridge and reinsert it. • The toner cartridge may be defective. Remove the toner cartridge and install a new one. (See "Replacing the toner cartridge" on page 6.4.) • If the problem persists, the machine may require repair. Contact a service representative.
Curl 	If the printed paper is curled or paper does not feed into the machine: • Turn the stack of paper over in the tray. Also try rotating the paper 180° in the tray. • Change the printer option and try again. Go to printer properties, click **Paper** tab, and set paper type to **Thin**. Refer to the **Software Section** for details.
An unknown image repetitively appears on the next few sheets or loose toner, light print, or contamination occurs.	You machine is probably being used at an altitude of 1,000 m (3,281 ft) or above. The high altitude may affect the print quality from loose toner or light imaging. You can set this option through Printer Settings Utility or the **Printer** Tab in printer driver's properties. See "Altitude adjustment" on page 3.4.

Common Windows problems

Condition	Suggested solutions
"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 machine is on. • If bi-directional communication is not turned on in the driver, it will also cause this message.