

User Guide

Hard Disk Option

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How This Guide is Organized

Chapter 1 - Installing the Hard Disk Option in 21 Page-Per-Minute Printers

This chapter explains the procedure for installing the Hard Disk Option in 21 page-per-minute laser printers.

Chapter 2 - Installing the Hard Disk Option in 28 Page-Per-Minute Printers

This chapter explains the procedure for installing the Hard Disk Option in 28 page-per-minute laser printers.

Chapter 3 - Installing the Hard Disk Option in 32 and 40 Page-Per-Minute Printers

This chapter explains the procedure for installing the Hard Disk Option in 32 and 40 page-per-minute laser printers.

Chapter 4 - Using the Hard Disk Option

This chapter discusses the available control panel menus when the Hard Disk option is installed. Power-on files and the storage of files on the Hard Disk option are also discussed.

Chapter 5 - Troubleshooting

This chapter discusses troubleshooting error messages appearing on the printer's control panel. Sources of help, information and technical support are also discussed.

Features of the Hard Disk Option

The Hard Disk Option for your printer provides the following:

- Quick and easy installation requiring no tools
- 2.1 GB capacity
- Storage of PostScript files and/or storage of PCL power-on files
- Control panel menus enable fast and easy file manipulation.

Safety Precautions



CAUTION: Handling ESD-Sensitive Parts

Many electronic parts use parts that are known to be sensitive to electrostatic discharge (ESD). To prevent damage to ESD-sensitive parts, follow the instructions below in addition to all the usual precautions, such as turning off power before removing logic boards:

- Keep the ESD-sensitive part in its original shipping container (a special “ESD bag”) until you are ready to install the part into the machine.
 - Make the least-possible movements with your body to prevent an increase of static electricity from clothing fibers, carpets, and furniture.
 - Use an ESD wrist strap on your wrist if available. Connect the wrist band to the system ground point. This discharges any static electricity in your body to the machine.
 - Hold the ESD-sensitive part by its edge connector cover; do not touch its pins. If you are removing a pluggable module, use the correct tool.
 - Do not place the ESD-sensitive part on any metal surface; if you need to put down the ESD-sensitive part for any reason, first put it into its special bag.
 - Metal surfaces are electrical grounds. They increase the risk of damage because they make a discharge path from your body through the ESD-sensitive part. (Large metal objects can be discharged paths without being grounded.)
 - Prevent ESD-sensitive parts from being accidentally touched by other personnel.
 - Take extra care working with ESD-sensitive parts when cold weather heating is used because low humidity increases static electricity.
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WARNING: To prevent the danger of electric shock, before installing any options be sure to turn the power switch of the printer to the off [O] position and disconnect the power cord from the wall outlet.

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Chapter 1

Installing the Hard Disk in 21 Page-Per-Minute Printers

In this Chapter . . .

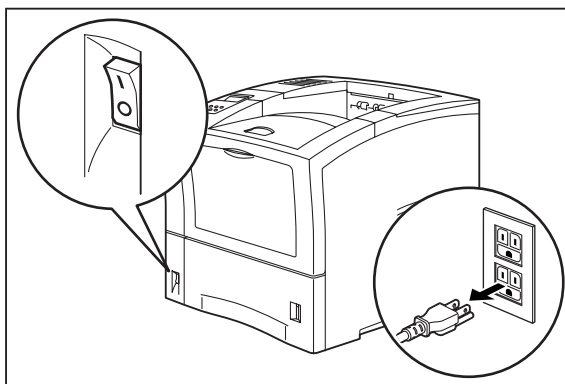
- [“About this Chapter” on page 1-2](#)
- [“Installing the Hard Disk Option in 21 Page-Per-Minute Laser Printers” on page 1-2](#)

About this Chapter

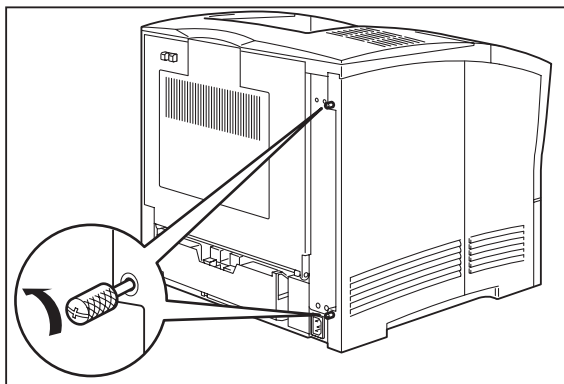
This chapter explains the procedure for installation of the Hard Disk option in 21 page-per-minute laser printers.

Installing the Hard Disk Option in 21 Page-Per-Minute Laser Printers

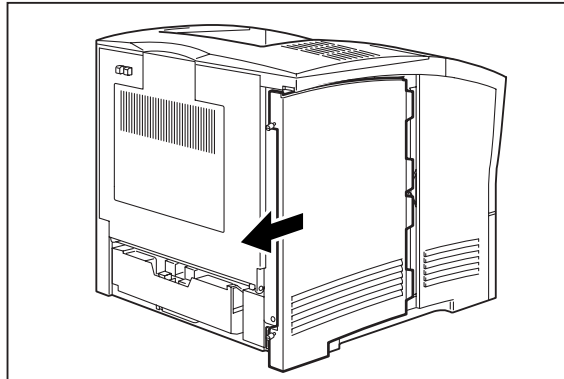
1. Carefully review the safety precautions in the front of this guide before starting this installation procedure.
2. Ensure that the printer power switch is set to the OFF [O] position and unplug the power cord from the AC outlet.



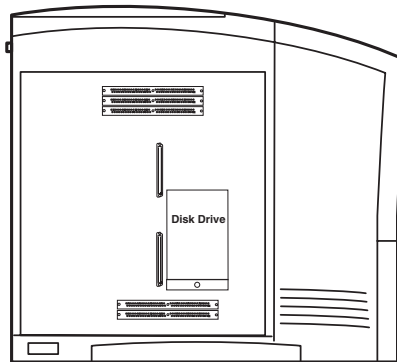
3. Loosen the thumbscrews at the top and bottom of the left side cover by turning them in a counter-clockwise direction.



4. Slide the cover towards the rear of the printer and then downwards to remove it.



5. Locate the area of the controller identified as “Hard Disk”

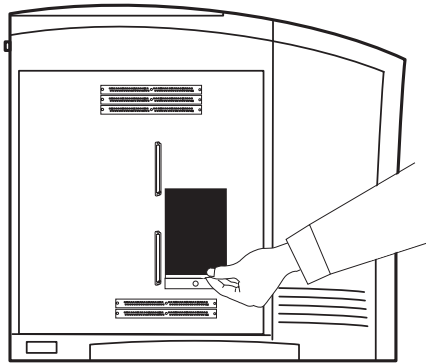


6. Remove the plastic rivet connecting the hard disk to the circuit board assembly.

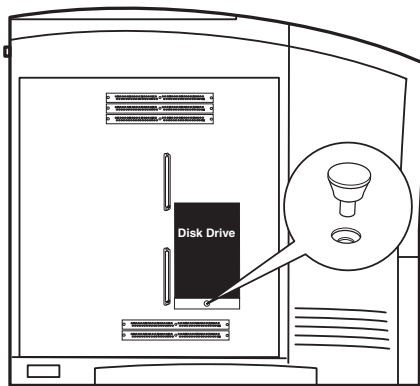
NOTE: Do not discard the plastic rivot. It is required for hard disk installation.

NOTE: The circuit board assembly with connected ribbon cable and four plastic standoffs are not required for hard disk installation in your printer.

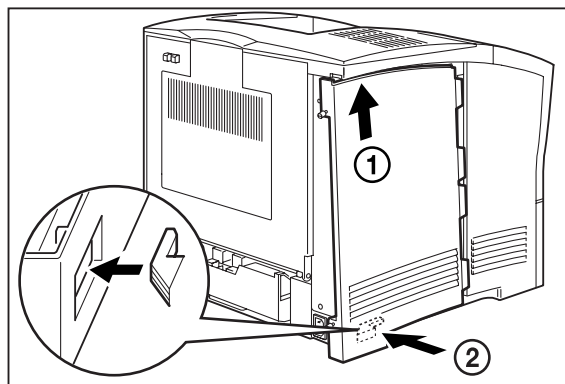
7. Align the hard disk within the designated area and gently move up to ensure the 50-pin male connector of the hard disk is connected to the 50-pin female connector on the controller assembly.



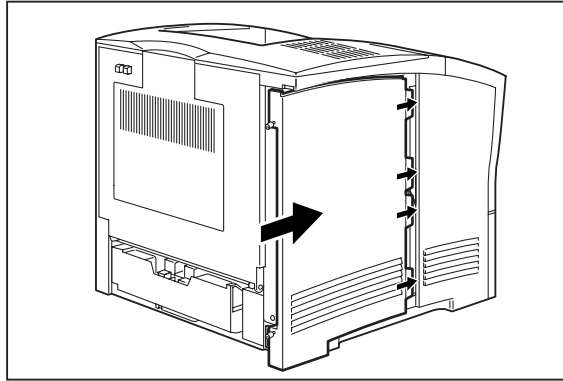
8. The hole in the hard disk supporting bracket should be aligned with the hole in the controller. Insert the plastic rivot through the aligned holes.



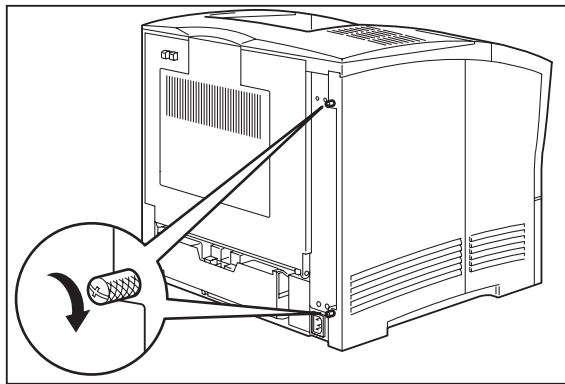
9. Insert the top part of the left side cover into the printer. Ensure the locking tab aligns with the hole in the printer's side.



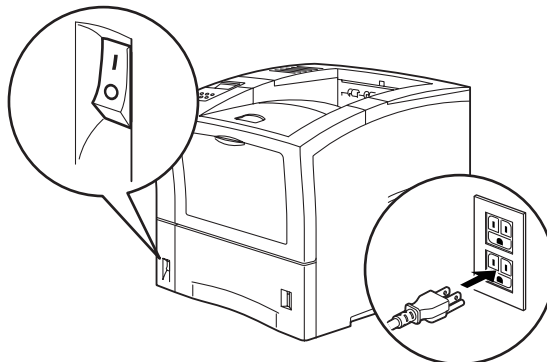
10. Slide the side cover towards the front of the printer to install it..



11. Tighten both thumbscrews in a clockwise direction.



12. First, connect the power cord to the wall outlet, and then turn the printer power switch to the ON [I] position.



The installation of your Hard Disk option in your 21 page-per-minute printer is now complete. Proceed to
“[Using the Hard Disk Option](#)” on page 4-1

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Chapter 2

Installing the Hard Disk Option in 28 Page-Per-Minute Printers

In this Chapter . . .

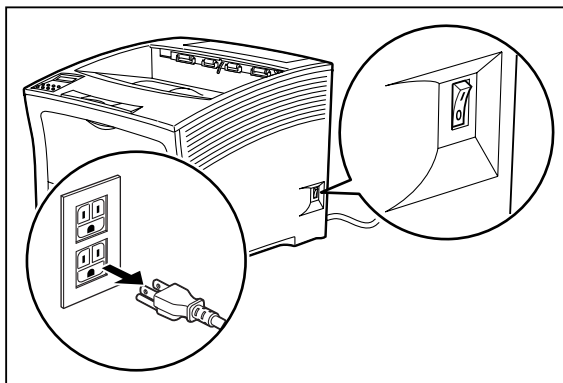
- [“About this Chapter” on page 2-2](#)
- [“Installing the Hard Disk Option in 28 Page-Per-Minute Laser Printers” on page 2-2](#)

About this Chapter

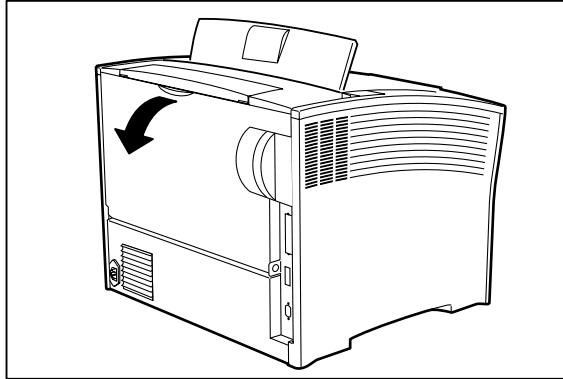
This chapter explains the procedure for installation of the Hard Disk option in 28 page-per-minute laser printers.

Installing the Hard Disk Option in 28 Page-Per-Minute Laser Printers

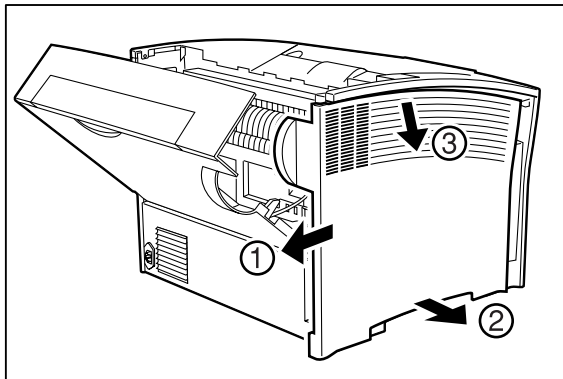
1. Carefully review the safety precautions in the front of this guide before starting this installation procedure.
2. Ensure that the printer power switch is set to the OFF [O] position and disconnect the power cord from the wall outlet.



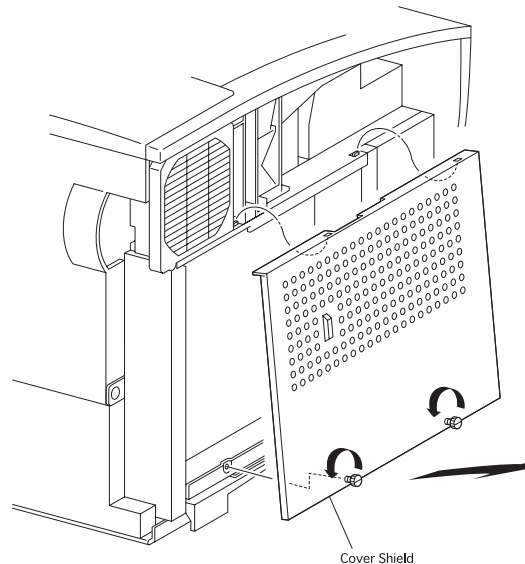
3. Locate the recessed area near the top of the rear of the printer and pull on the recessed area to open the rear cover.



4. Remove the cover on the left side of the printer by first sliding the cover toward the rear of the printer, then pulling the bottom of the cover toward you and then down.

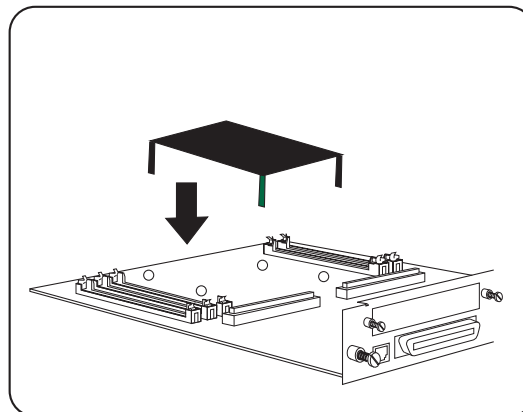


5. Remove the cover shield by first loosening the two thumbscrews in a counter-clockwise direction and then gently pulling towards you.



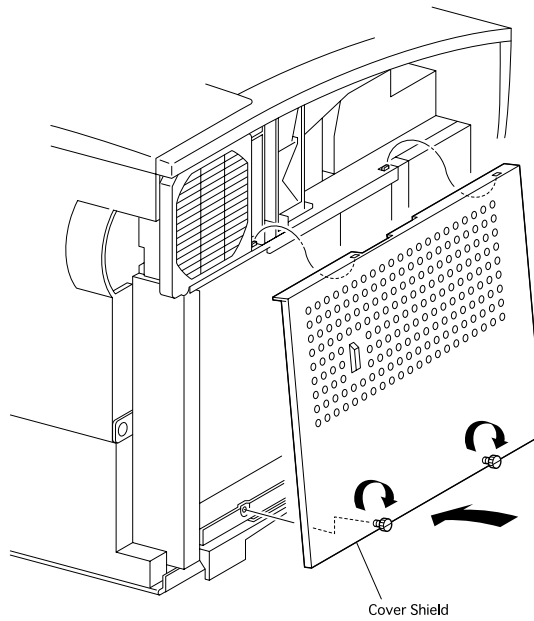
6. While holding the hard disk assembly with the ribbon cable facing down towards the floor, align the four plastic stand-off pins with the four mounting holes in the middle of the controller.

NOTE: For clarification, the following illustration depicts hard disk installation with the controller removed from the printer. It is NOT necessary to remove the controller from the printer to install the hard disk option.

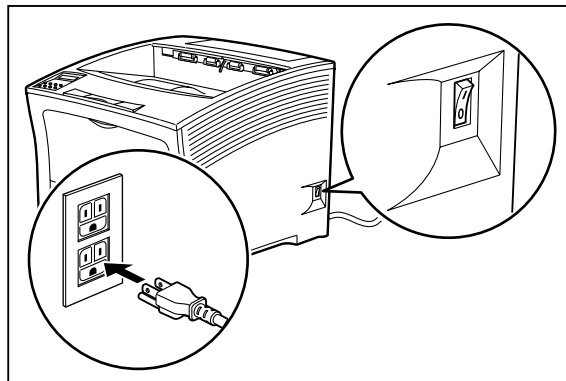


7. Attach the female connector on the hard disk ribbon cable to the male connector on the controller at location J8.

8. Replace the cover shield as shown and tighten the two thumbscrews.



9. First, connect the power cord to the wall outlet, and then turn the printer power switch to the ON [I] position.



The installation of your Hard Disk option in your 28 page-per-minute printer is now complete. Proceed to [“Using the Hard Disk Option” on page 4-1](#)

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Chapter 3

Installing the Hard Disk Option in 32 and 40 Page-Per-Minute Printers

In this Chapter . . .

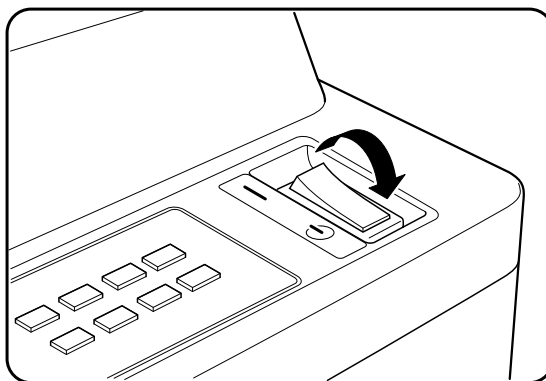
- “About this Chapter” on page 3-2
- “Installing the Hard Disk Option in 32 and 40 Page-Per-Minute Laser Printers” on page 3-2

About this Chapter

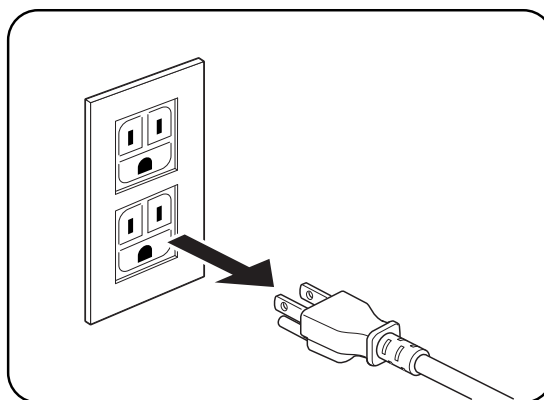
This chapter explains the procedure for installation of the Hard Disk option in 32 and 40 page-per-minute laser printers.

Installing the Hard Disk Option in 32 and 40 Page-Per-Minute Laser Printers

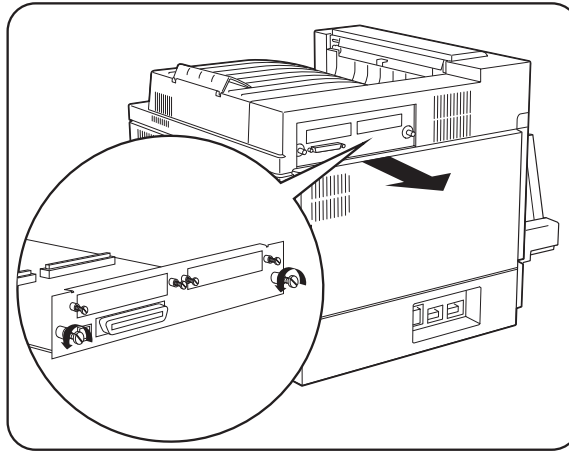
1. Carefully review the safety precautions in the front of this guide before starting this installation procedure.
2. Ensure that the printer power switch is set to the OFF [O] position.



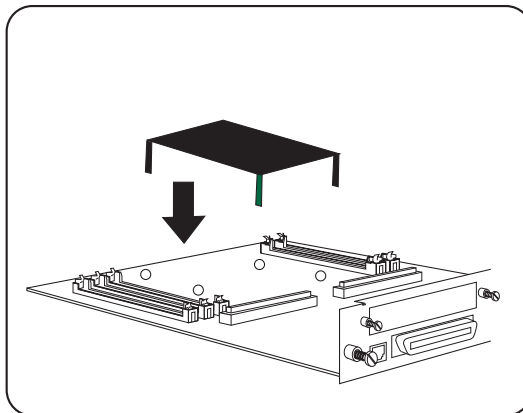
3. Disconnect the power cord from the wall outlet.



4. Turn thumbscrews on controller assembly counterclockwise until loose and gently pull controller assembly towards you to remove from printer.

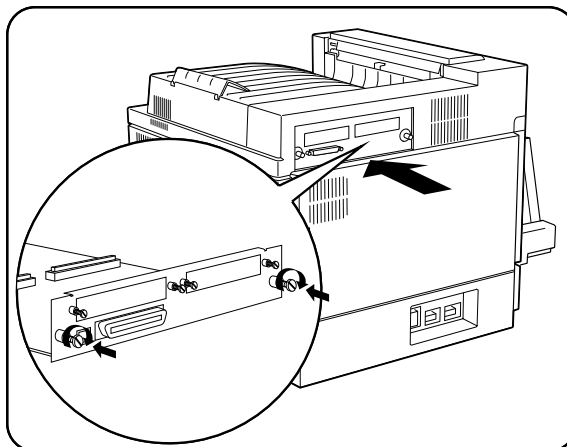


5. Carefully align and insert the Hard Disk Option stand-off pins into the stand-off mounting holes in the center of the controller.

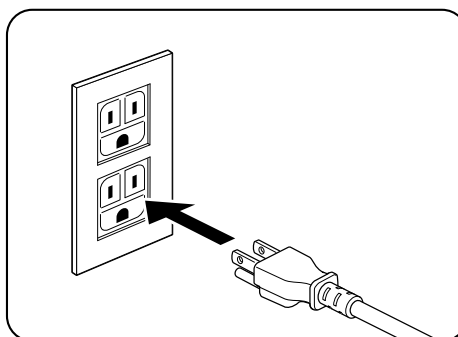


6. Plug the female connector of the flat ribbon cable attached to the hard disk into the male connector on the controller at location J8.

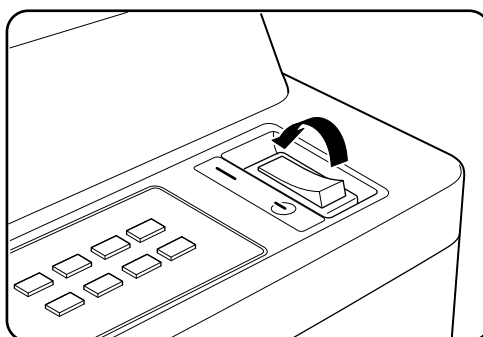
7. Reinstall the controller assembly. Once firmly in place, push and hand tighten the thumb-screws in a clockwise direction.



8. Connect the power cord to the wall outlet.



9. First, connect the power cord to the wall outlet, and then turn the printer power switch to the ON [I] position.



The installation of your Hard Disk option in your laser printer is now complete. Proceed to [“Using the Hard Disk Option”](#) on page 4-1

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Chapter 4

Using the Hard Disk Option

In this Chapter . . .

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- “Using the Disk Menu” on page 4-3
- “Using the PCL and PostScript Power-On Files Feature” on page 4-3
- “Using the FLASH SIMM or Hard Disk Option as a PostScript Device” on page 4-4

About this Chapter

This chapter discusses the available control panel menus when the Hard Disk option is installed. Power-on files and the storage of files on the Hard Disk option are also discussed.

Control Panel MENU Structure

When the Hard Disk option is installed, the printer control panel menu structure is enhanced as shown in the following table. The shaded areas denote additional features and settings relevant to the Hard Disk option.

Menu				
	Paper Menu			
	Interface Menu			
	PS Menu			
	PCL Menu			
	System Menu			
		Display Language		
		Alarm Control		
		Power Saver		
		Wait Timeout		
		Job Timeout		
		Jam Recovery		
		Hex Print		
		Toner Out		
		Power-On Files		
			Playback	FILE01.POR
				FILE02.POR
				FILE03.POR
				...
				...
			Delete	FILE01.POR
				FILE02.POR
				FILE03.POR
				...
				...
	Quality Menu			
	Functions			
	Disk Menu			
		Print		
		Delete		
		Format Disk		
		Disk Summary		

NOTE:

1. The Flash Menu and Disk Menu will only appear when the respective FLASH SIMM and/or HardDisk option is installed.
2. Power-On Files menu will only appear if either a FLASH SIMM or a Hard Disk option is installed and power-on files exist.

Using the Disk Menu

Manipulation of files stored on the hard disk option can be accomplished using the Disk Menu.

Disk Menu	
	Print
	Delete
	Format Disk
	Disk Summary

Print

This selection will read the selected file from the Hard Disk and print it as if it were being received from one of the input ports.

Delete

This selection will delete the selected disk file or directory from the hard drive. To delete an entire directory, you must first delete all the files within that directory.

Format Disk

This selection will reformat the hard drive.



All files on the hard drive will be deleted if this function is selected.

Disk Summary

This selection will print a page containing information about the hard disk drive including a list of all the current existing files and directories.

Using the PCL and PostScript Power-On Files Feature

Power-on Files Defined

If an optional FLASH SIMM or Hard Disk option is installed in your printer, your printer has the capability of storing additional power-on files which can be read and interpreted at power-on.

Power-on files can contain either PCL or PostScript language content. Examples of power-on files include soft fonts, and macro/overlay definitions. The FLASH SIMM can store approximately 8MB of file storage, the hard disk drive storage depends on the size of the drive that is installed in your printer.

NOTE: Power-on files are processed at power-on initialization only and not at the start of every print job.

Contact the technical support organization at your point of purchase for full details about the power-on files feature.

Using the FLASH SIMM or Hard Disk Option as a PostScript Device

In order to allow PostScript programs to access the FLASH simm and/or hard disk options, a full implementation of a PostScript storage device is provided. This section discusses an overview of the PostScript operators and parameter sets that are included in the support.

For detailed information on using the operators/parameter sets, please refer to the following publications:

PostScript Language Reference Manual

Adobe PostScript 3 Version 3010 Product Supplement

Device Names and Priority

The device names assigned to the FLASH SIMM and hard disk options are as follows:

%flash%	device name for the FLASH SIMM
%disk0%	device name for the hard disk

If both devices are installed, both devices can be referenced uniquely by name. If no device name is specified in the PostScript operation, the *SearchOrder* parameter in the device parameter set establishes the priority for file operations. When both devices are installed, the *SearchOrder* value for the hard disk is set to 1, while the *SearchOrder* value for the FLASH SIMM is set to 2. This gives priority to the hard disk.

PostScript Operators

All of the standard file-object related operators (îfileî, îreadî, îwriteî, etc) are supported. In addition, following is a list of device-related PostScript Compatibility operators that are supported for use with the FLASH SIMM(%flash%) or hard disk (%disk0%) options:

- devdismount
- devforall
- devformat
- devmount
- devstatus
- diskonline
- diskstatus
- initializedisk
- dosysstart
- setdosysstart

Device Parameter Sets

When installed, a device parameter set will be supported for either or both FLASH SIMM and hard disk options. The parameter sets can be referenced using the device names %flash% or %disk0%. Each parameter set will include the following parameters:

- LogicalSize
- Writeable
- BlockSize
- Searchable
- SearchOrder
- Type
- Mounted
- HasNames
- PhysicalSize
- InitializeAction
- Free
- Removable

Warmstart.ps and Sys/Start Files

When either or both the FLASH SIMM or hard disk options are installed, there are two features which provide support for automatic execution of a PostScript program during power-on initialization.

The first feature is the *warmstart.ps* file. Each time the printer is powered on, either or both optional storage devices will be checked for a file named *warmstart.ps*. If this file is found, it will be read and parsed by the PostScript interpreter. It is up to the PostScript programmer to create the content of this file and get the file onto the storage device using the PostScript device and file operators.

The second feature is the *Sys/Start* file. If either or both of the optional storage devices are installed, an additional parameter will be supported in the System Parameter set. This parameter is an integer parameter called *StartupMode* and is set to 1 by default.

NOTE: This parameter can be read or written using the *dosysstart* and *setdosysstart* operators.

Each time the printer is powered on, if the *StartupMode* parameter is set to 1, either or both the optional storage devices will be searched for a file called *Sys/Start*, a file named *Start* in a path called *Sys*. If this file is found, it will be read and parsed by the PostScript interpreter. Again, it is up to the PostScript programmer to create the content of this file and get the file onto the storage device using the PostScript device and file operators.

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Chapter 5

Troubleshooting

In this Chapter . . .

- “About this Chapter” on page 5-2
- “Obtaining Help and Information” on page 5-2
- “Technical Support” on page 5-2

About this Chapter

This chapter discusses sources of help, information and technical support.

Obtaining Help and Information

Several sources of help and information are available, depending on the type of help you need:

Your Point of Purchase

Your local vendor from whom you purchased this printer may be best equipped to help you. Your vendor has specially trained service technicians available to answer questions and the equipment to analyze your printer problems.

Your Application Vendor

Often, “printing” problems have more to do with the application being used than with the printer. In this case, the application manufacture is the best source of help.

Technical Support

Technical Support is available world-wide. Please refer to your point of purchase for the appropriate contact in your area.

When calling for assistance, please have the following information readily available:

- Your phone number, fax number and shipping address.
- A description of the problem.
- The printer model.
- The type of host computer you are using.
- The type and version of operating system you are using.
- The application and version you are using.
- The interface you are using (e.g., network, parallel, serial).
- If using the network interface, the network protocol (TCP/IP, EtherTalk, IPX/SPX, NetBIOS/NetBEUI).
- The printer emulation you are using (e.g., PCL or PostScript).
- A printout of your printer's Configuration Summary. (Refer to your printer's *User* manual).
- If you have a printer hardware problem you cannot resolve, provide the error message displayed on the Control Panel. For a list of error messages, refer to your printer's *User* manual.

NOTE: To confirm that a problem is isolated to the Hard Disk option, you may want to remove the Hard Disk option from the printer and diagnose the printer using the User's Manual that came with your printer. If the condition persists, it can be assumed that the problem resides within the printer and not necessarily the Hard Disk option.

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