

DEClaser 5100 Printer

User's Guide

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- 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.

Any changes or modifications made to this equipment not expressly approved by the manufacturer could void the user's authority to operate this equipment.

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220 Volt model only

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German Acoustic Notice:

Acoustics—Declared values per ISO 9296 and ISO 7779:

	LwAd, B	LpAm, dBA (bystander positions)
Idle	4.6 bels	31 dBA
Operating	6.3 bels	48 dBA

Note

Current values for specific configurations are available from Digital representatives. 1 bel = 10 dBA.

Schallemissionswerte—Vorläufige Werteangaben nach ISO 9296 und ISO 7779/DIN EN27779:

	Schalleistungspegel	Schalldruckpegel
	LwAd, B	LpAm, dBA (Zuschauerpositionen)
Leerlauf	4,6 bels	31 dBA
Betrieb	6,3 bels	48 dBA

Hinweis

Aktuelle Werte für spezielle Ausrüstungsstufen sind über die Digital Equipment Vertretungen erhältlich. 1 bel = 10 dBA.

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Preface

The DEClaser 5100 printer is a desktop printer that produces exceptionally high-quality text and graphics. The DEClaser 5100 printer is designed to be used in a shared networking environment by a small group of users.

While this guide focuses mainly on printer operation, you may have the need to refer to other related publications when using the DEClaser 5100 printer. The following is a list of documents associated with the DEClaser 5100 printer and their respective Digital order numbers where applicable. To order documentation, contact your Digital Customer Representative. In the United States, call 1-800-DIGITAL.

Document Title	Order Number
DEClaser 5100 Printer Documentation Kit¹	EK-D5100-DK
<i>DEClaser 5100 Printer Installation and Setup Guide</i>	EK-DL510-IN
<i>DEClaser 5100 Printer User's Guide</i>	EK-DL510-UG
<i>DEClaser 5100 Printer Menu Quick Reference Card</i>	EK-D5100-RC
<i>Adobe Printer Driver User Guide—Windows Version</i>	
<i>Adobe Printer Driver User Guide—Macintosh Version</i>	
DECprint Supervisor for OpenVMS Software Documentation Kit	QA-09NAA-GZ
<i>DECprint Supervisor for OpenVMS Software Installation Guide</i>	AA-PSVDA-TE
<i>DECprint Supervisor for OpenVMS User's Guide</i>	AA-PSVFA-TE
<i>DECprint Supervisor for OpenVMS System Manager's Guide</i>	AA-PSVEA-TE

¹Included with the printer.

Document Title	Order Number
PostScript Programming Documentation	
<i>PostScript Printers Programmer's Supplement</i>	AA-HL84F-TE
<i>PostScript Language Reference Manual</i>	AA-HL86A-TE
<i>PostScript Language Tutorial and Cookbook</i>	AA-HL87A-TE

PC users may want to refer to the *MS-DOS User's Guide and Reference* and *Microsoft Windows User's Guide* for additional information, while Macintosh users should refer to their *Macintosh User's Guide*.

Conventions

The following terms and conventions are used in this guide:

Term or Convention	Meaning
NOTE	Notes provide important additional information.
CAUTION	Cautions provide information required to prevent damage to equipment.
WARNING	Warnings provide information to prevent personal injury.
Dash (—)	A statement preceded by a dash describes the result of a step.
Check Mark (✓)	A statement marked by a check mark indicates a special instruction related to a step.
Key	A key name enclosed in a box indicates that key on the operator panel.
Bold	Information shown on the message display and PostScript terms are shown in bold type.
User Input	Monospaced type indicates user input.

NOTE

Keep this guide with the printer so it is available to anyone who is operating or maintaining the printer.

Printer Safety

Be sure to observe the following safety precautions when operating and servicing the DEClaser 5100 printer:

WARNING

- This printer weighs 17.0 kg (37.4 lbs). To prevent personal injury, have someone help you move the printer.
 - Power off and unplug the printer before performing the cleaning or maintenance procedures.
 - Do not modify the ac power cord. A protective earth wire has been incorporated into this printer to protect against the risk of electrical shock. This printer must be connected to a three-wire wall receptacle that has its protective earth terminal reliably connected to the building's protective earth connection.
 - The fusing unit in the printer may be HOT. Use caution when maintaining or clearing paper jams from the fusing unit.
-

Laser Safety

The DEClaser 5100 printer complies with laser product performance standards by government agencies as a Class 1 Laser Product. The DEClaser 5100 printer does not emit hazardous light, since the beam is enclosed during all modes of customer operation and maintenance.

Moving or Shipping the Printer

It is advisable to save the printer box and packing material in case you need to ship the printer to another location.

If you need to return the printer to Digital for service, remove the toner cartridge before sending the printer.

CAUTION

To prevent toner from leaking during shipping, do NOT ship the toner cartridge with the printer...ship only the printer.

1

Introducing the DEClaser 5100 Printer

Welcome to the world of laser printing. With a resolution of 600 x 600 dots-per-inch (dpi), the DEClaser 5100 printer produces exceptionally high-quality text and graphics. It combines state-of-the-art printing features with unsurpassed reliability to provide you with years of trouble-free printing.

This chapter describes the printer features and available options that can help make your printing tasks easier. There is also a section describing the major parts of the printer to help you get acquainted with the terminology used throughout this manual.

1.1 A Quick Look at Your Printer

The DEClaser 5100 printer is quiet, easy to use, and powerful. Here's an overview of some of its key features:

- **Fast printing speed:** A powerful RISC processor and graphical co-processor with a high speed clock enable the DEClaser 5100 printer to print up to 8 pages per minute with a resolution of 600 dpi.
- **Supports Adobe PostScript Level 2 and Enhanced PCL5 emulation:** Adobe PostScript is supported with 73 resident Type 1 fonts. HP-PCL compatibility is supported with a TrueType rasterizer and 47 PCL resident fonts.
- **Automatic language sensing:** Examines incoming data and automatically determines the appropriate interpreter (PostScript or PCL5E).
- **OPENcomm architecture:** Simultaneous support for serial, parallel, and LocalTalk interfaces, allowing you to connect up to three systems to the printer. Now Macintosh, PC, and serial host users can all share the same printer (without a network). This is accomplished without the need to swap cables or change modes from the control panel.
- **Flexible communication options for the latest communication interfaces:** In addition to standard parallel and EIA-232 serial communication, the DEClaser 5100 printer also supports IEEE 1284 bidirectional parallel signaling and EIA-422 serial communication.
- **Meets EPA Energy Star low power specifications:** Automatically reduces power to less than 30 watts if the printer is idle for more than a preselected time. The DEClaser 5100 printer is efficient, and saves you money.
- **Friendly to the environment:** The DEClaser 5100 printer does not produce ozone and it can use recycled paper. Digital also provides a toner cartridge recycling program for your empty toner cartridges.

- **Digital's SmartPage processing:** The combination of a powerful banding co-processor and memory management enables the DEClaser 5100 printer to generate graphics and text with less than a full bitmap of memory.
- **DECimage Plus:** This built-in image enhancement technology can be used to improve the appearance of PostScript images at any resolution setting. DECimage Plus can be accessed using PostScript operators or from the printer menu, making it very easy to use.
- **Resolution/Graphics Enhancement Option:** Effectively increases resolution up to 1200 x 1200 dpi for typeset quality printing.
- **Prints on paper, envelopes, labels, and transparencies:** The flexibility of the DEClaser 5100 printer lets you print on all kinds of media so now your overheads can look as good as your reports. An optional envelope feeder and large capacity input tray (LCIT) give you even more flexibility.
- **Convenient, easy-to-perform user maintenance:** Designed to operate with a minimal amount of maintenance, the DEClaser 5100 printer is simple to maintain. Most of the critical components that affect print quality are part of the toner cartridge, which takes only seconds to replace.
- **Font Expansion:** two Type 2 PCMCIA slots support optional font cards for PCL and PostScript, and special needs applications such as signature fonts. An optional internal disk drive lets you store a large number of additional PostScript and PCL fonts to eliminate download time.
- **Network card expansion:** An optional Ethernet card is available that supports LAT, TCP/IP, Novell SPX/IPX, and EtherTalk. Call DECdirect for additional information about these network cards.

1.2 A Look at the Important Parts of Your Printer

There are only a few parts you need to be familiar with in order to operate and maintain the DEClaser 5100 printer. This section shows you where the parts are located and briefly describes each part.

Figure 1-1 identifies the major parts on the front and top of the printer.

Figure 1-1 Front and Top of the Printer

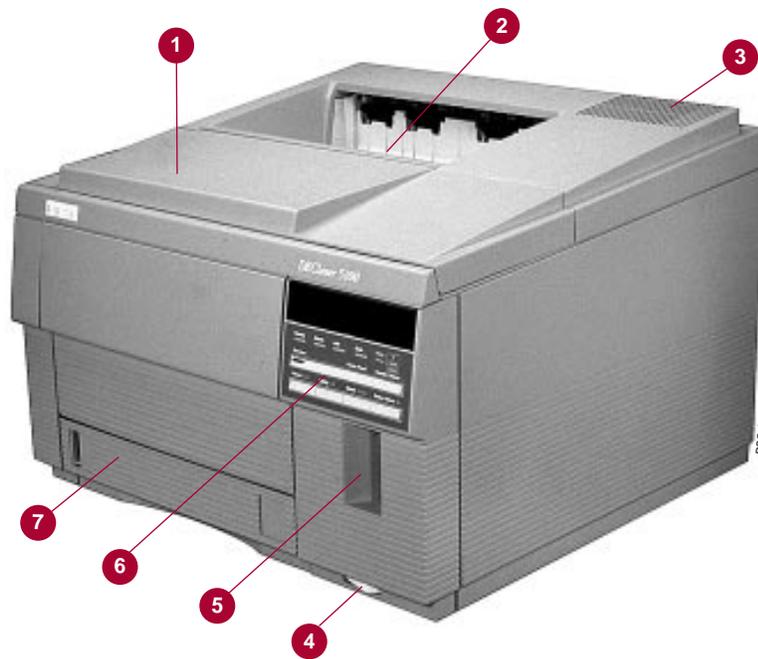


Table 1–1 Parts at the Front and Top of the Printer

Part	Purpose
❶ Top cover	Lifts open so you can replace the toner cartridge or clear a paper jam.
❷ Output tray	This is where the printed pages are stacked. The output tray can hold up to 250 sheets.
❸ Air vent	The printer fan exhausts warm air from the printer through this vent. It is important to keep this vent open to prevent the printer from overheating.
❹ Power switch	turns the printer on; ○ turns the printer off.
❺ Font cartridge slots	Two slots are for optional font cartridges.
❻ Control panel	This panel consists of a keypad and an easy-to-read message display. It displays messages and can be used to configure printer features, select input trays, print test pages, and so on.
❼ Internal tray	This tray holds the main supply of paper (250 sheets). The tray slides out of the printer so you can easily load it with paper.

Figure 1-2 identifies the main parts inside the printer (top cover shown open).

Figure 1-2 Inside the Printer

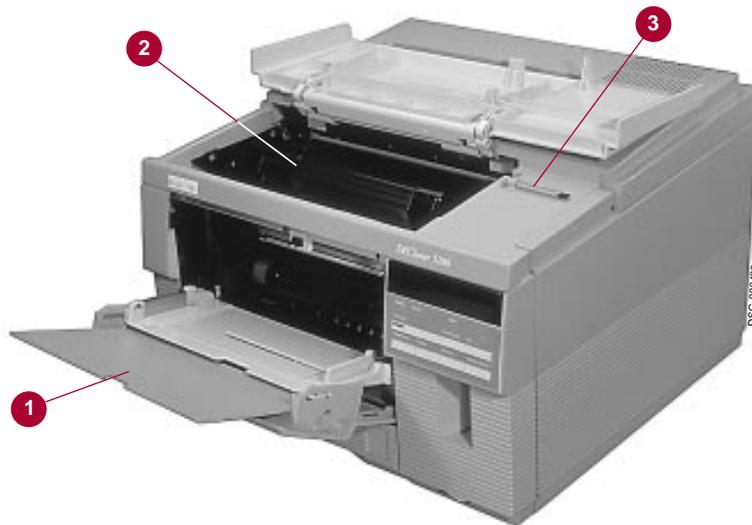


Table 1–2 Parts on the Inside of the Printer

Part	Purpose
❶ Front tray	A multi-purpose input tray used to feed paper, envelopes, labels, and transparencies. The front tray can be closed when it is not in use.
❷ Toner cartridge	The main component in the cartridge is the black toner (sometimes referred to as dry ink) used to make the text or graphic image on the paper. The toner cartridge also contains other parts used in the printing process. This greatly simplifies maintenance because the cartridge can be replaced in a matter of seconds.
❸ Cleaning brush	Used to clean certain parts of the printer each time you replace the toner cartridge.

Figure 1-3 shows the parts at the back of the printer (rear cover shown open).

Figure 1-3 Back of Printer

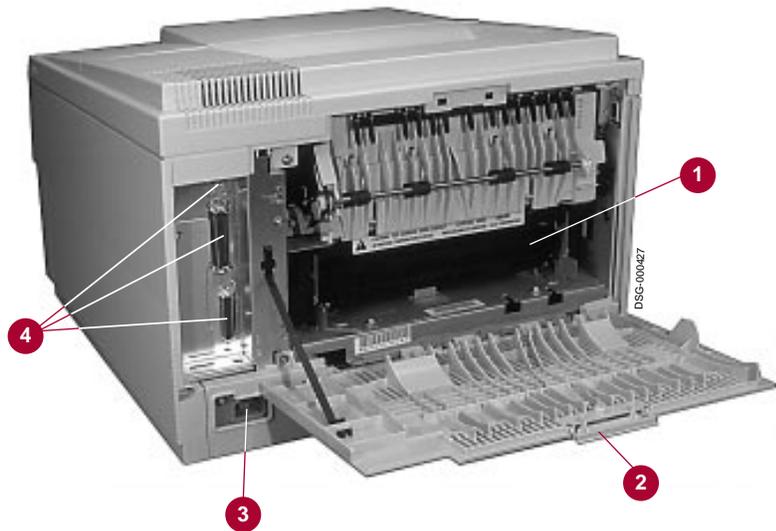


Table 1–3 Parts at the Back of the Printer

Part	Purpose
❶ Fusing unit	Bonds toner to the paper before the page is ejected to the output tray. Be careful when you access the fusing unit, as it may be HOT!
❷ Rear cover	Opens for clearing paper jams from the fusing unit and paper exit areas.
❸ Power cord receptacle	Where the power cord is connected.
❹ Interface cable connectors	This is where you connect the interface cable from your computer to the printer. There are three types of connectors: LocalTalk (top), parallel (middle), and serial (bottom). You can find information about interface cables and connectors in the <i>DEClaser 5100 Printer Installation and Setup Guide</i> which comes with your printer.

2

Using the Control Panel

The control panel shows the status of the printer and it allows you to configure the printer and perform various printer functions using the keypad.

This chapter explains how to:

- Use the control panel (Section 2.1)
- Pause the printer during printing (Section 2.2)
- Use printer menus (Section 2.3)
- Use the Test/Fonts menu to print out font lists and test pages (Section 2.4)
- Use the Reset menu to reset the printer to power-up or factory defaults (Section 2.5)
- Use the Set-Up menu to configure the printer (Section 2.6)
- Use the Feeder Select menu to quickly change paper trays (Section 2.7)

2.1 How to Use the Control Panel

During normal operation, the message display on the control panel shows status information or error messages to inform you of the current state of the printer.

While your host computer typically provides most of the communication to the printer, you can use the control panel to perform some printer functions, such as configuring printer settings or printing a listing of available fonts. You use the keypad on the control panel to perform these tasks (see Section 2.3).

Printer status is shown during “Operating mode” while input to the printer (such as configuring features or printing test pages) takes place in “Menu mode.” Let’s take a minute to see what the difference is between these two modes.

Operating Mode

The printer is in Operating mode during normal operation. In Operating mode the printer can be online or paused, printing or idle (waiting for a print job), or in power saving mode. Symbols and text in white indicate the key function when the printer is in Operating mode.

Menu Mode

The printer is in Menu mode when you enter a menu and the display shows the menu name, feature or value (see How to Enter a Printer Menu for information about entering menus). Symbols and text in black indicate the key function when the printer is in Menu mode.

The printer menus are:

- Test/Fonts
- Reset
- Set-Up
- Feeder Select

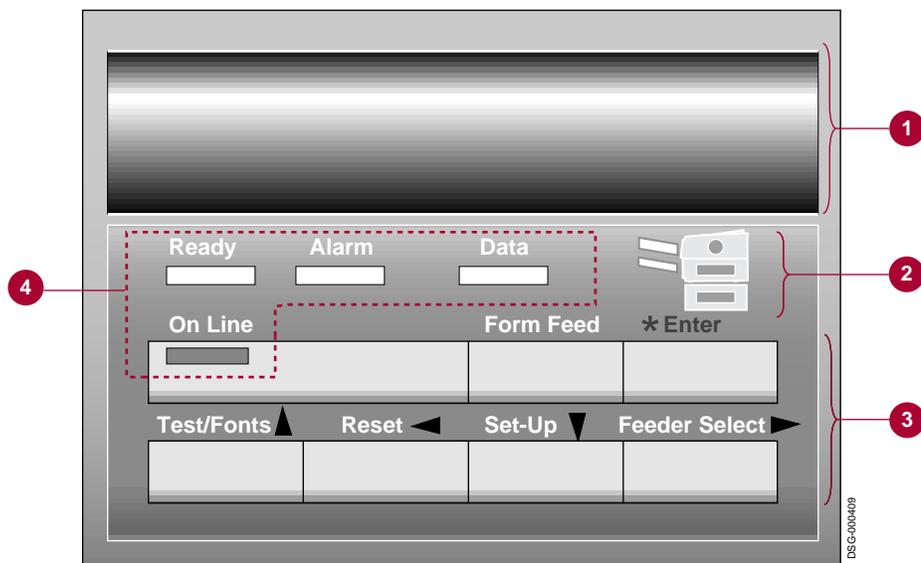
2.1.1 Parts and Features of the Control Panel

There are four basic parts to the control panel:

- ❶ Message display
- ❷ Graphic display
- ❸ Keypad
- ❹ Indicator lights

These parts work together providing you with information about the printer.

Figure 2–1 DEClaser 5100 Printer Control Panel



2.1.2 Message Display

The message display shows different types of information about the printer. Some typical messages you might see during printer operation are:

- **READY/IDLE**
- **PAUSED**
- **Paper jam**

When the printer is in Menu mode, the message display shows menu options, such as:

- **Communications**
- **COMM: Serial**
- **STOP BITS=1**

2.1.3 Indicator Lights

The indicators on the control panel provide a quick way to visually determine printer status.

Table 2-1 Control Panel Indicators

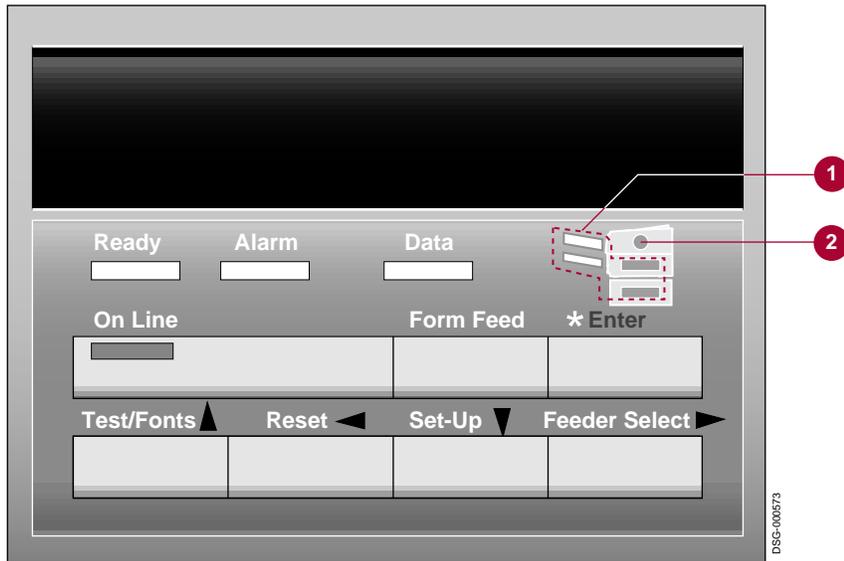
Indicator	Meaning
On Line	ON: the printer is online. OFF: the printer is paused.
Ready	ON: the printer is powered on. OFF: the printer is powered off.
Alarm	ON: there is a problem that prevents the printer from operating, such as a paper jam. This is called a “fault” condition (see Chapter 10). Flashing: indicates a manual feed request (see Section 3.5).
Data	ON: there is data from a PCL print job remaining in the print buffer. Press Form Feed to print the data. OFF: the printer does not have data to process. Flashing: the printer is processing data.

2.1.4 The Graphic Display

The graphic display shows which input paper tray is selected and indicates *Alert* conditions.

Alert conditions are low-priority situations that do not require your immediate attention. Alert conditions do not stop the printer. An example of an Alert condition message would be **Toner low**. See Section 10.1.1 for additional Alert messages.

Figure 2–2 Graphic Display Indicators



Indicator	What It Means
❶ Input trays (green)	Indicates the selected input tray.
❷ Alert (amber)	This indicator alerts you to a low priority Alert condition. An asterisk (*) is also shown as the last character on the message display when an Alert condition exists. Pressing <input type="button" value="*"/> displays the Alert condition.

2.1.5 The Keypad

The keypad allows you to perform some printer functions using the control panel, such as:

- Pause the printer during printing.
- Print a list of resident fonts.
- Print a test page containing information about the printer.
- Reset the printer to the factory default settings.
- Change the input paper tray.
- Reconfigure printer settings such as baud rate, resolution, and display language.

Only the **On Line** and ***** keys function when the printer is online. All the keys function according to the white text and symbol when the printer is in the Paused state. Symbols and text in black indicate the function of the key when the printer is in Menu mode.

Table 2-2 describes how to use the control panel keys. Generally, if you press a key that has no function, the beeper sounds.

Table 2–2 Control Panel Key Functions

Pressing this key...	Makes this happen...
When the printer is online:	
<input type="button" value="On Line"/>	Pauses the printer.
<input type="button" value="*"/>	Displays a service message when * is shown on the message display.
All other keys	The beeper sounds.
When the printer is paused:	
<input type="button" value="On Line"/>	Returns the printer online.
<input type="button" value="Form Feed"/>	Prints remaining data in the print buffer (PCL mode only).
<input type="button" value="*"/>	Displays a service message when * is shown on the message display. Pressing <input type="button" value="*"/> also confirms operations, such as Job Reset, when a corresponding message is present on the message display.
<input type="button" value="Test/Fonts"/>	Enters the Test/Fonts menu (Section 2.4).
<input type="button" value="Reset"/>	Enters the Reset menu (Section 2.5).
<input type="button" value="Set-up"/>	Enters the Set-Up menu (Section 2.6).
<input type="button" value="Feeder Select"/>	Enters the Feeder Select menu (Section 2.7).
When the printer is in Menu mode:	
<input type="button" value="On Line"/>	Exits Menu mode and returns the printer online.
<input type="button" value="Enter"/>	Selects the value as the new default for the feature.
<input type="button" value="↑"/> <input type="button" value="←"/> <input type="button" value="↓"/> <input type="button" value="→"/>	Used to navigate within a menu. Pressing <input type="button" value="↑"/> at the top-level of a menu returns the printer to the paused state.

2.2 Pausing the Printer During Printing

You may need to pause the printer during a print job, for example, if you sent the wrong job to be printed. How you pause the printer depends on whether it is printing a PCL or PostScript job.

You can pause while printing PCL jobs, then resume them. You cannot pause and then resume PostScript print jobs, but you can configure the printer so that it pauses after completing the current print job or aborts the print job from the control panel.

Pausing a PCL Print Job

To interrupt and pause a PCL print job, press . One or two pages may finish printing before the printer is completely paused.

To resume printing, press again.

You may enter one of the printer menus from the paused state. However, if you change any menu values and then try to resume the print job, the message **Press * to reset** appears.

NOTE

If you press the printer is reset and the remainder of the current job is aborted, along with any other information that was downloaded.

If you press any other key, your print job resumes and any changes you made to menu values apply to subsequent print jobs.

Pausing a PostScript Print Job

Interrupting (aborting) a PostScript job from the front panel requires that the **PS: Allow reset** feature in the PostScript Sub-menu be set to **RESET=enabled** (which is the factory default). You may want to consider using your printer driver or host software to pause the printer; this action will not affect other users. Refer to your driver or host software documentation for additional information.

1. Press
 - **Press * to reset** appears on the display.
2. Press
 - **Resetting job** appears on the display.
 - The printer enters the Paused state and aborts the rest of the job (this may take a few minutes).
 - ✓ If you press any other key, the message **Wait for idle** appears (momentarily) and the printer operates as if the reset feature were not enabled.
3. Press to return the printer online.

Pressing when **RESET=disabled**, causes **Wait for idle** to appear (momentarily) on the display and the On Line indicator flashes. When the print job completes the printer enters the Paused state and the On Line indicator shuts off.

See Section A.5.2 for additional information about the **PS: Allow reset** feature.

2.3 Using Printer Menus

The printer menus let you obtain information about the printer, change printer settings, or perform other printing tasks, such as changing the input paper tray. Section 2.4 through Section 2.7 describe the four printer menus and their use.

How to Enter a Printer Menu

To enter any of the printer menus:

1. Press **On Line** to pause the printer.
 - The On Line indicator goes off and **PAUSED** is shown on the display.
2. Press **Test/Fonts**, **Reset**, **Set-Up** or **Feeder Select** to enter the desired menu.
 - The name of the menu appears momentarily and the first feature is shown on the display.
 - The printer is now in Menu mode and the symbols and text in the black color indicate the key function.

2.4 Using the Test/Fonts Menu

The Test/Fonts menu gives you information on the current menu settings and resident fonts, and is also used to print a demonstration page. As a result of selecting a feature in this menu, information is either printed or appears on the message display.

Table 2–3 Features of the Test/Fonts Menu

Select this feature...	If you want to...
Show page count	Pressing Enter displays the number of pages that have been printed. This feature is useful to track printer usage.
Print menu guide	Prints a chart of features available in the printer menus. You can also use the <i>DEClaser 5100 Quick Reference Card</i> to look at all the values associated with the menu features.
Print PS menus or Print PCL menus	Prints a page listing the current menu settings so you can check your configuration without having to go into each menu. Once your configuration is set up correctly, it is a good idea to print and save these lists in case you need to restore the printer to the same configuration (see Section 2.4.1 and Section 2.4.2).
Print test page	Prints a test page listing information about printer settings such as the selected interpreter and any options that may be installed on the printer (see Section 2.4.3).
Print PS fonts or Print PCL fonts	Prints a list of the available fonts you can use (see Section 2.4.4 and Section 2.4.5).
Print demo page	Prints a page that demonstrates certain printer features. This page also contains images showing DECimage Plus enabled and disabled. The images are shown at different settings, allowing you to make a comparison to see the effect the settings have on an image (see Section 2.4.6).

2.4.1 PostScript Menu Settings Page

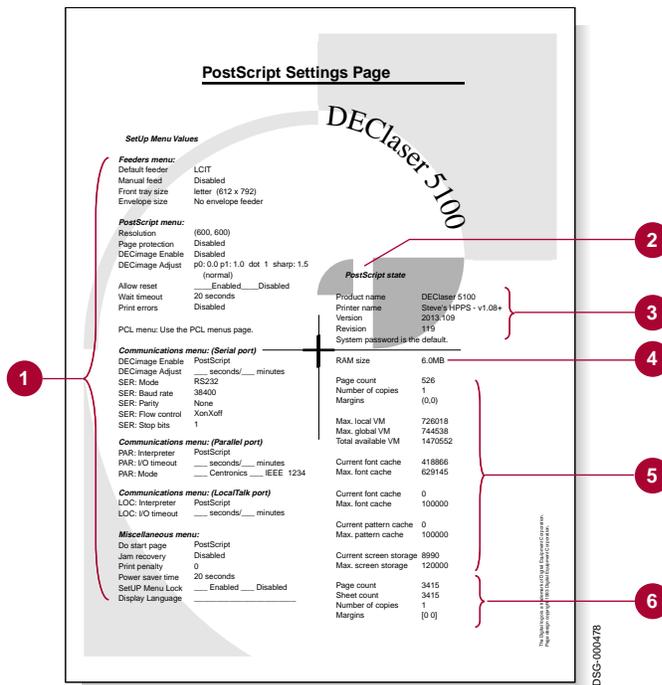
The PostScript Menu Settings Page lists all the Set-Up menu information and other specific PostScript settings.

To Print the PostScript Menu Settings Page

1. Press to pause the printer.
 - The On Line indicator goes off and **PAUSED** is shown on the display.
2. Press to enter the menu.
 - The name of the menu appears momentarily and the first feature is shown on the display.
 - The printer is now in Menu mode and the legends in the black color indicate the key function.
3. Press or until **Print PS menus** appears on the display.
4. Press to print the page.
 - **Printing...** appears on the display while the page prints.
5. Press to return the printer online.

Figure 2-3 shows the major areas of information on the page.

Figure 2-3 DEClaser 5100 PostScript Menu Settings Page



The PostScript Menu Settings Page shows:

- ❶ The Set-Up menu values stored in memory. If there is an underline next to the value, it means the printer could not supply that information. Fill in the value you have selected and save the page for future reference. Refer to Appendix A for additional information about menu values.
- ❷ Information about the state of the PostScript interpreter. Many of these settings can be modified using a PostScript program.
- ❸ Specific information about your printer.
- ❹ The amount of memory (RAM) installed in the printer.
- ❺ Memory configuration information defining how the PostScript interpreter uses memory.
- ❻ Page count and paper configuration information.

2.4.2 PCL Menu Settings Page

The PCL Menu Settings Page shows various types of information including menu settings, printer specific information, and several test fonts and charts that you can use to check print quality.

To Print the PCL Menu Settings Page

1. Press to pause the printer.
 - The On Line indicator goes off and **PAUSED** is shown on the display.
2. Press to enter the menu.
 - The name of the menu appears momentarily and the first feature is shown on the display.
 - The printer is now in Menu mode and the symbols and text in black indicate the key function.
3. Press or until **Print PCL menus** appears on the display.
4. Press to print the page.
 - **Printing...** appears on the display while the page prints.
5. Press to return the printer online.

Figure 2-4 shows the major areas of information on the page.

2.4.3 Test Page

A start-up Test Page is printed each time the printer is powered on (unless the **Do start page** feature is disabled). This page lists various types of information about the printer such as communication settings and any installed options.

To print this page without powering the printer off and on, you can use the Test/Fonts menu.

NOTE

The start-up test page is called the “Test page” in the Test/Fonts menu.

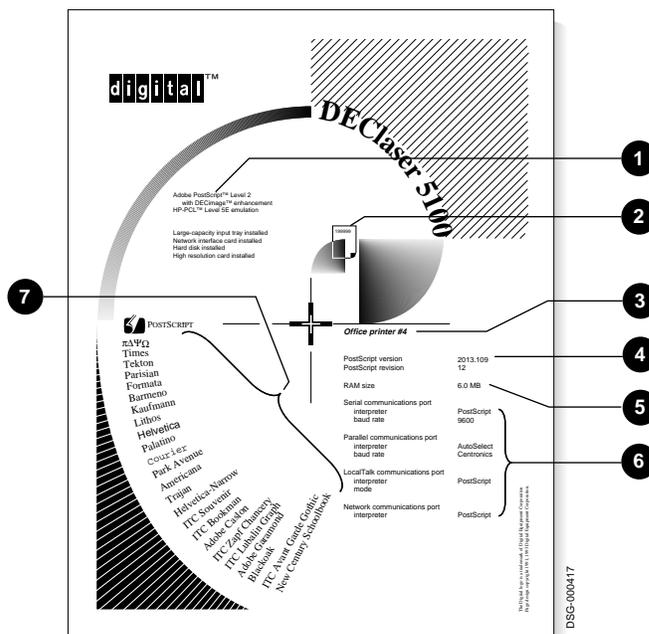
This section describes the information available on the test page the DEClaser 5100 printer generates from the Test/Fonts menu.

To Print the Test Page

1. Press to pause the printer.
 - The On Line indicator goes off and **PAUSED** is shown on the display.
2. Press to enter the menu.
 - The name of the menu appears momentarily and the first feature is shown on the display.
 - The printer is now in Menu mode and the symbols and text in the black color indicate the key function.
3. Press or until **Print test page** appears on the display.
4. Press to print the page.
 - **Printing...** appears on the display while the page prints.
5. Press to return the printer online.

Figure 2-5 shows the major areas of information on the Test Page.

Figure 2-5 DEClaser 5100 Test Page



The Test Page shows:

- ❶ Main features and list of installed options
- ❷ Page count
- ❸ Printer name
- ❹ PostScript version and revision level
- ❺ Amount of RAM installed in the printer
- ❻ Interpreter selected for each port
- ❼ List of built-in PostScript font families

2.4.4 PostScript Font List

The PostScript Font List contains a list of all the PostScript fonts available for use and a sample of their appearance.

To Print the PostScript Font List

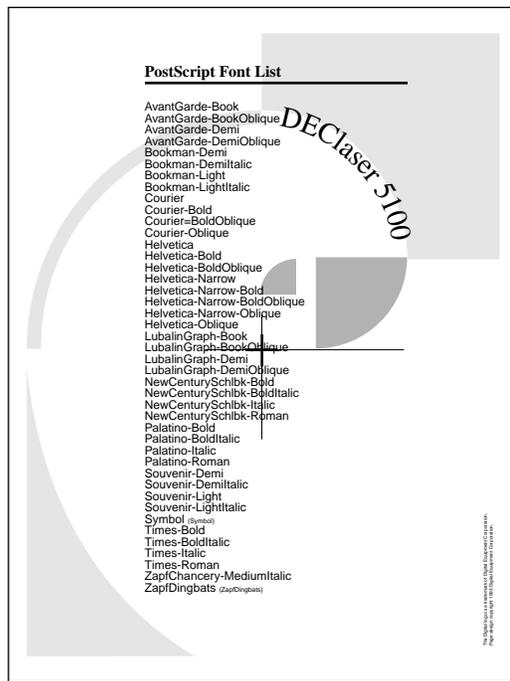
1. Press to pause the printer.
 - The On Line indicator goes off and **PAUSED** is shown on the display.
2. Press to enter the menu.
 - The name of the menu appears momentarily and the first feature is shown on the display.
 - The printer is now in Menu mode and the text and symbols in black indicate the key function.
3. Press or until **Print PS fonts** appears on the display.
4. Press to print the page.
 - **Printing...** appears on the display while the page prints.
5. Press to return the printer online.

Figure 2–6 shows a sample of the PostScript Font List.

NOTE

At least two pages are printed; because so many fonts appear on each page, it may take up to 90 seconds for the first page to print.

Figure 2-6 DEClaser 5100 PostScript Font List



DSG-000475

2.4.5 PCL Font List

The PCL Font List contains a list of all the PCL fonts available for use and a sample of their appearance. PCL fonts are normally chosen from your application program, but you can also select them from the control panel. See the **Font number** and **Symbol set** features in Chapter 5 for additional information about selecting fonts using the control panel.

To Print the PCL Fonts Page

1. Press to pause the printer.
 - The On Line indicator goes off and **PAUSED** is shown on the display.
2. Press to enter the menu.
 - The name of the menu appears momentarily and the first feature is shown on the display.
 - The printer is now in Menu mode and the legends in black indicate the key function.
3. Press or until **Print PCL fonts** is shown on the display.
4. Press to print the page.
 - **Printing...** appears on the display while the page prints.
5. Press to return the printer online.

NOTE

At least four pages are printed; because so many fonts appear on each page, it may take up to 90 seconds for the first page to print.

Figure 2-7 shows a sample of the PCL Font List.

Figure 2-7 DEClaser 5100 PCL Font List

Font #	Font ID	Symbol Set	Fix /PS	Pitch (cpi)	Point Size	Style	Stroke Weight	Name or Typeface	Default Orient	Print Sample & Escape Sequence
1000	Font	Roman-8	F	18.00	6.0	Upright	Medium	Courier	Port	ABCDEFGHIj kAA°ÇÑi j f \$ <esc>(8U<esc>(s0p10.ooH1...

Font #	Font ID	Symbol Set	Fix /PS	Pitch (cpi)	Point Size	Style	Stroke Weight	Name or Typeface	Default Orient	Print Sample & Escape Sequence
PERMANENT SOFT FONTS										
LEFT FONT CARTRIDGE										
RIGHT FONT CARTRIDGE										
DISK FONTS										
INTERNAL FONTS										
1000	Font	Roman-8	F	18.00	6.0	Upright	Medium	Courier	Port	ABCDEFGHIj kAA°ÇÑi j f \$ <esc>(8U<esc>(s0p10.ooH1...
1000	Font	Roman-8	F	18.00	6.0	Upright	Medium	Courier	Port	ABCDEFGHIj kAA°ÇÑi j f \$ <esc>(8U<esc>(s0p10.ooH1...
1000	Font	Roman-8	F	18.00	6.0	Upright	Medium	Courier	Port	ABCDEFGHIj kAA°ÇÑi j f \$ <esc>(8U<esc>(s0p10.ooH1...
1000	Font	Roman-8	F	18.00	6.0	Upright	Medium	Courier	Port	ABCDEFGHIj kAA°ÇÑi j f \$ <esc>(8U<esc>(s0p10.ooH1...
1000	Font	Roman-8	F	18.00	6.0	Upright	Medium	Courier	Port	ABCDEFGHIj kAA°ÇÑi j f \$ <esc>(8U<esc>(s0p10.ooH1...
1000	Font	Roman-8	F	18.00	6.0	Upright	Medium	Courier	Port	ABCDEFGHIj kAA°ÇÑi j f \$ <esc>(8U<esc>(s0p10.ooH1...
1000	Font	Roman-8	F	18.00	6.0	Upright	Medium	Courier	Port	ABCDEFGHIj kAA°ÇÑi j f \$ <esc>(8U<esc>(s0p10.ooH1...
1000	Font	Roman-8	F	18.00	6.0	Upright	Medium	Courier	Port	ABCDEFGHIj kAA°ÇÑi j f \$ <esc>(8U<esc>(s0p10.ooH1...
1000	Font	Roman-8	F	18.00	6.0	Upright	Medium	Courier	Port	ABCDEFGHIj kAA°ÇÑi j f \$ <esc>(8U<esc>(s0p10.ooH1...
1000	Font	Roman-8	F	18.00	6.0	Upright	Medium	Courier	Port	ABCDEFGHIj kAA°ÇÑi j f \$ <esc>(8U<esc>(s0p10.ooH1...
1000	Font	Roman-8	F	18.00	6.0	Upright	Medium	Courier	Port	ABCDEFGHIj kAA°ÇÑi j f \$ <esc>(8U<esc>(s0p10.ooH1...

The PCL Fonts List shows:

- ❶ Font number
- ❷ Font sample
- ❸ Symbol set
- ❹ PCL command to invoke the font from software
- ❺ Font name and characteristics
- ❻ Disk fonts, downloaded permanent soft fonts, and font cartridge fonts appear here when present.

2.4.6 Demonstration Page

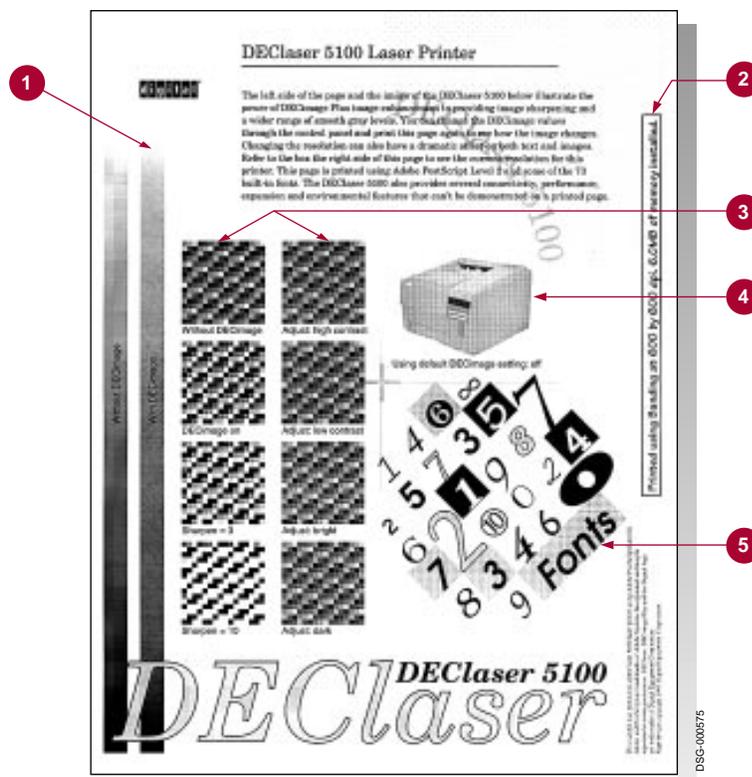
The Demonstration Page contains sample images that show the effects of DECimage Plus at different settings. These samples allow you to compare images when adjusting the DECimage Plus enhancement features. See Chapter 6 and Appendix F for additional information about DECimage Plus.

To Print the Demonstration Page

1. Press to pause the printer.
 - The On Line indicator goes off and **PAUSED** is shown on the display.
2. Press to enter the menu.
 - The name of the menu appears momentarily and the first feature is shown on the display.
 - The printer is now in Menu mode and the symbols and text in black indicate the key function.
3. Press or until **Print demo page** appears on the display.
4. Press to print the page.
 - **Printing...** appears on the display while the page prints.
5. Press to return the printer online.

Figure 2-8 shows a sample of the Demonstration Page.

Figure 2-8 DEClaser 5100 Demonstration Page



The Demonstration Page shows:

- ❶ DECimage Plus grayscale sample
- ❷ Information about the resolution and and memory configuration.
- ❸ DECimage Plus adjustment samples
- ❹ DECimage Plus image sample
- ❺ Font samples

2.5 Using the Reset Menu

The Reset menu allows you to change the current state of the printer and communication settings to either:

- The power-up configuration that you have stored in memory or
- The original factory default settings

Table 2–4 Features of the Reset Menu

Select this feature...	If you want to...
Reset printer	<p>Reset the printer to its power-up configuration.</p> <p>This feature is useful if you have changed a number of feature settings since you powered the printer on and now want to revert back to the settings you normally use.</p>
Factory defs Ltr or Factory defs A4	<p>Reset the printer to the factory default settings. This feature restores the factory default values for all features in the Set-Up and Feeder Select menus in non-volatile memory. These settings then become the printer defaults. Depending on the feature you select, the Front tray size and PCL:Paper size feature is set to Letter (for North America) or A4 (for the rest of the world).</p> <p>This feature is useful if you want to reset your printer to its original settings from the factory or if someone incorrectly changed the printer settings.</p>

2.6 Using the Set-Up Menu

The Set-Up menu is the largest printer menu and contains a group of sub-menus that enable you to change and configure the features of the DEClaser 5100 printer for your printing environment or personal preference.

Most configuration changes can be made using your host software or printer driver, making it unnecessary to change settings from the control panel. If your host software does not allow you to change a particular setting, for example communication settings, you can change it using the control panel.

NOTE

Software can override many of the Set-Up features and, in some instances, change default values. If your changes were not saved, your software may be the cause.

The printer recognizes the last change made. Configuration changes made through your software take precedence over control panel settings *if they were made last*.

Changes to the Set-Up menu are stored in non-volatile RAM so they are available each time you power on the printer. Table 2-5 describes some of the tasks you can perform using the Set-Up menu.

Table 2-5 Features of the Set-Up Menu

Select this sub-menu...	If you want to...
Feeders	Select paper trays
PostScript	Change PostScript settings
PCL	Change PCL settings
Communications	Configure a communications interface (serial, parallel, and so on)
Communications	Change the printer interpreter
Miscellaneous	Change print density and power saver settings, or to perform other miscellaneous tasks

2.6.1 Sharing the DEClaser 5100 Printer

If the printer is on a network or is being shared by several people it is important to keep in mind that not everyone will be using the same printer settings for their applications. The **Set-Up Menu lock** feature can be used by a system manager to prevent anyone from changing the printer settings in the Reset and Set-Up menus from the control panel.

Because not everyone may be using the same configuration, some basic settings that apply to all users, such as the default paper tray and print density, should be coordinated with your system manager before they are selected using the control panel.

For more information about the Set-Up Menu lock feature, see Section A.5.6.

2.6.2 Set-Up Menu Organization

The Set-up menu features are grouped into several categories (sub-menus) of related features.

- **Feeders Sub-menu:** Contains all of the features that relate to printer trays. These features apply to both PostScript and PCL interpreters.
- **PostScript Sub-menu:** Contains features that only apply to the PostScript Level 2 interpreter.
- **PCL Sub-menu:** Contains features that only apply to the PCL interpreter.
- **Communications Sub-menu:** Contains features that apply to communication interfaces (serial, parallel, LocalTalk, and networks), including the selection of printer interpreters.
- **Miscellaneous Sub-menu:** Contains features that do not fall within other sub-menus or cannot be configured by host software commands, for example, **Do jam recovery**.

For a complete list of the features in the Set-Up menu, refer to Section A.5 in Appendix A.

2.7 Using the Feeder Select Menu

The Feeder Select menu provides a quick way to change the default input paper tray. You can use the Feeder Select menu even when the Set-Up Menu is locked (see Section A.5.6).

To Enter the Feeder Select Menu

1. Press **On Line** to pause the printer.
 - The On Line indicator goes off and **PAUSED** is shown on the display.
2. Press **Feeder Select** to enter the menu.
 - The name of the menu appears momentarily and the first feature is shown on the display.
 - The printer is now in Menu mode and the legends in the black color indicate the key function.
3. Press **←** or **⇒** until the desired input tray appears on the display.
 - The lights on the graphic display change as you scroll through the choices indicating the input tray.
4. Press **Enter** to select the tray.
5. Press **On Line** to return the printer online.

For additional information about using the Feeder Select menu, see Section 3.4. For a complete list of the features in the Feeder Select menu, refer to Section A.4.

3

Loading Paper

This chapter explains:

- What kind of paper to use (Section 3.1)
- How to load the internal paper tray (Section 3.2)
- How to load different types of media in the front tray (Section 3.3)
- How to select the input tray (Section 3.4)
- How to feed paper manually (Section 3.5)

See Appendix C for in-depth information about paper specifications. See Appendix E for information about optional paper handling devices, such as the large capacity input tray or envelope feeder.

3.1 Choosing Paper

The kind of paper you use affects print quality and paper jams. You can expect higher print quality and fewer paper jams if you use a good grade of office paper, similar to the type of paper used in copy machines.

Buy a small amount of the paper you plan to use to be sure it works well in the printer and meets your expectations. Refer to Appendix C for a complete description of paper specifications and storage requirements. Appendix D lists various types of paper recommended for the DEClaser 5100 printer available from Digital.

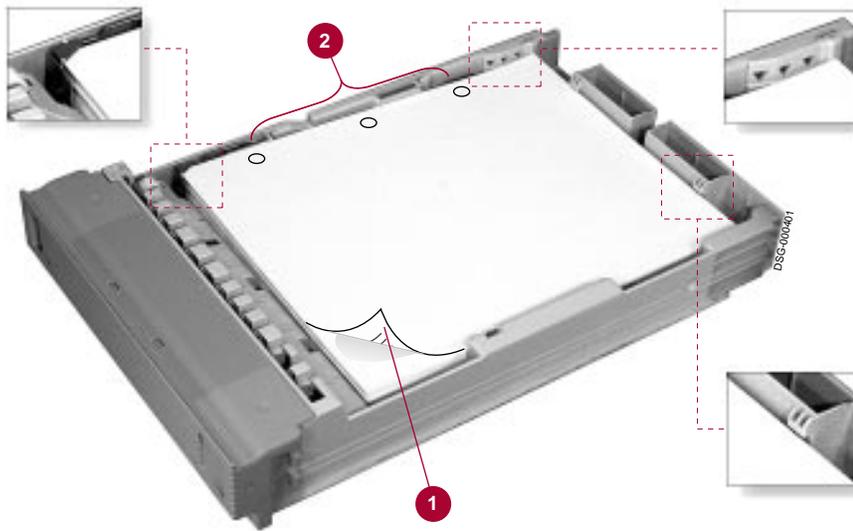
3.2 Loading the Internal Tray

The internal tray is the default input tray and can hold up to 250 sheets of paper. The internal tray is *used only for paper*. Use the front tray if you are printing on transparencies, labels, or envelopes (see Section 3.3).

1. Pull the internal tray straight out of the printer.



2. Place a stack of paper in the tray ensuring that it lies flat and is below the paper retainers and maximum height arrows.
 - ✓ Insert letterhead paper face down with the letterhead **1** toward the front of the tray.
 - ✓ Insert prepunched paper with the holes **2** on the left side.



3. Slide the internal tray back into the printer.

3.3 Loading Media in the Front Tray

The front tray is a multipurpose tray that feeds various sizes and types of print media. The front tray can also be used to feed media manually one sheet at a time. See Section 3.5 for manual feeding information.

Table 3–1 lists the different capacities for the front tray.

Table 3–1 Front Tray Paper Capacities

Media	Sizes	Capacity
Paper	Letter Legal Executive (7.25 in x 10.5 in) A4 Halfletter 2/3 A4 7 in x 9 in	100 sheets (maximum)
Transparencies ¹	Letter, A4	50 sheets (maximum)
Labels	Letter, A4	40 sheets (maximum)
Envelopes	#10 (4.125 in x 9.5 in) A5, C5, DL 3.875 in x 7.5 in	10 (maximum)

¹As each transparency is printed, it is a good idea to remove it from the output tray to prevent them from sticking together.

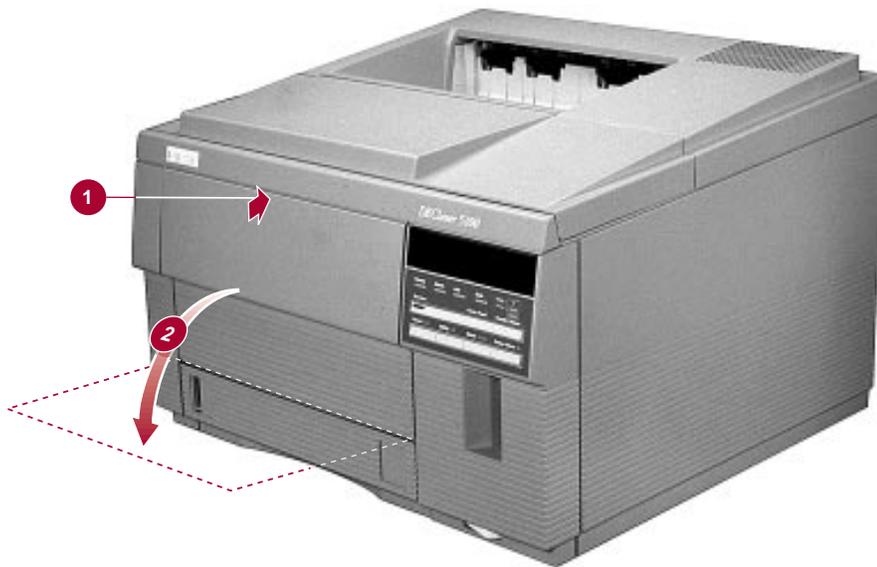
Remember that all types of media must be able to withstand the heat and pressure of the fusing unit. Refer to Appendix C for specifications for paper, labels, envelopes, and transparencies.

The following procedure describes how to load media in the front tray and uses envelopes as an example. Except for the capacities, the procedure for loading media in the front tray is the same for paper, labels, transparencies, and envelopes.

NOTE

The factory default paper size for the front tray is Letter (in North America and Japan) or A4 (everywhere else). If the media size you are using is different than the default size, you must choose the correct size through your host software or in the Feeders Sub-menu before you begin printing. See the **Front tray size** feature in Section A.5.1 for additional information about choosing media sizes.

1. Press the top of the tray **1** to release the catch and gently lower the tray **2**.



2. Pull out the extension tray and place the media face up in the tray aligning it against the left paper guide.
 - ✓ Insert letterhead paper face up with the letterhead toward the printer.
 - ✓ Insert prepunched paper with the holes on the left side of the tray.
 - ✓ Load envelopes address side up.
3. Slide the right paper guide over so that it just touches the edge of the stack.
 - ✓ Do not slide the paper guide so far that it constricts the media.



3.4 Choosing the Input Tray

The DEClaser 5100 printer has two input trays: an internal tray and a front tray. Other optional input trays you may have are the large capacity input tray (LCIT) or the envelope feeder. Normally, you change the default input tray through your software application or printer driver, but you can also change it from the control panel. You can use either the Feeder Select menu or the Set-Up menu to change the tray.

Software can override any input tray selection for the current job and, in some instances, change the default tray. If your changes to the input tray were not saved, your software may be the cause.

Using the Feeder Select Menu

Use the Feeder Select menu to quickly change trays or if the Set-Up menu is locked.

1. Press **On Line** to pause the printer.
2. Press **Feeder Select** to enter the Feeder Select menu.
3. Toggle through the input tray selections using the left or right arrow keys.
4. Press **Enter** to select the tray shown on the display.
5. Press **On Line** to return the printer on line.

Using the Set-Up Menu

Use the Set-Up menu to select the input tray that you normally use as the default tray.

1. Press **On Line** to pause the printer.
2. Press **Set-Up** to enter the Set-Up menu.
3. Choose the **Feeders** Sub-menu.
4. Choose the **Default feeder** feature and toggle through the tray selections, using the left or right arrow keys.
5. Press **Enter** to select the tray shown on the display.
6. Press **On Line** to return the printer online.

3.5 Using the Front Tray for Manual Feeding

During manual feed operation, you load print media one sheet at a time. The procedures in this section describe how to use the manual feed feature using your application software (Section 3.5.1) or control panel (Section 3.5.2). You will normally want to use manual feed when printing a special job on different media such as labels or transparencies. If you want to use the front tray exclusively for manual feeding, you must set manual feed as the default in the Feeders Sub-menu. See the **Manual feed** feature in Section A.5.1 for additional information.

NOTE

Requests for manually fed media are also treated as fault messages causing the Alarm indicator to flash. If no action is taken, the printer will timeout the request according to the **Manual timeout** feature setting and then feeds a sheet of paper from the highest priority tray (according to the **Default feeder** feature).

When should you use manual feed?

Print media can be fed from the front tray automatically (multiple sheets loaded in the tray) or manually (one sheet at a time). You typically use the front tray to print on a different type of media than you normally use, for example, labels. If you are the only user connected to the printer this poses no problem; you can choose automatic or manual feeding (automatic feeding would certainly be more convenient).

If there are several users connected to the printer, you need to prevent someone else's job from printing on the labels. In this case, you should choose manual feed.

How do you specify the media size you are using?

Default paper sizes are Letter (for North America and Japan) and A4 (everywhere else). If you are feeding media from the front tray and need to specify a different media size, you can do so using your application program or the Set-Up menu. To select the media size from the Set-Up menu:

1. Press **[On Line]** to pause the printer.
2. Press **[Set-Up]** to enter the Set-Up menu.
3. Select the **Feeders** sub-menu.
4. Select the **Front tray size** and toggle through the size selections, using the left or right arrow keys.
5. Press **[Enter]** to choose the size you want.
6. Press **[On Line]** to return the printer on line.

3.5.1 Manual Feeding Using Your Application Program

Use this procedure if your application allows you to select manual feed operation.

1. Select the manual feed feature in your application program.
2. Remove any media that may be in the tray.
3. Load one sheet of media when prompted by the message display, (for example **Manual Feed Ltr**) into the front tray.
4. Press **[*]** to print the page.
 - ✓ Repeat steps 3 and 4 if additional manual feed requests appear on the display.

3.5.2 Manual Feeding Using the Control Panel

Use this procedure to perform manual feeding, using the control panel.

1. Press to pause the printer.
2. Press to enter the Set-Up menu.
3. Choose the **Feeders** sub-menu.
4. Choose the **Default feeder** feature.
5. Choose the **Manual feed** feature.
6. Choose **Manual=Front** and press to select the value.
7. Choose the **Default feeder** feature.
8. Choose **Feed=Front** and press to select the value.
9. Press to return the printer online.
10. Issue the print command to send your print job and load one sheet of media as indicated on the message display (for example **Manual Feed Ltr**, into the front tray.)
11. Press to print the page.
 - ✓ Continue loading media and pressing if you have more than one page to be manually fed to the printer.
 - ✓ Go to the next step if you are finished printing.

NOTE

If no action is taken, or if you press with no paper in the front tray, the printer will timeout the request (according to the **Manual timeout** feature) and feeds a sheet of paper from the highest priority tray (according to the current setting of the **Default feeder** feature). If **Manual timeout=infinite**, no action is taken.

The printer prints according to the size selected by the **Front tray size** feature, even if the wrong size media is loaded in the front tray. See Section A.5.1 for more information about selecting the media size.

12. Press to pause the printer.
13. Press to enter the Set-Up menu.
14. Choose the **Feeders** sub-menu.
15. Choose the **Default feeder** feature.
16. Choose **Feed=Front**.
17. Press until the default input tray you want appears on the display (for example **Feed=Internal**) and press to select the value.
18. Press to return the printer online.

4

Printing Documents

This chapter describes how to print documents from various host systems and operating environments. It also contains examples of everyday printing tasks. This chapter covers printing tasks from the following operating systems:

- Microsoft Windows (Section 4.1).
- MS-DOS (Section 4.2).
- Macintosh systems (Section 4.3)
- OpenVMS (Section 4.4)
- ULTRIX (Section 4.5)

4.1 Printing From Microsoft Windows

Normally you print from your application program, but you can also print from the File Manager. Although the menus among applications may vary, the procedure for printing files is similar. This section describes several ways you can print files on the DEClaser 5100 printer.

Choosing a Printer Driver

If you are a PostScript user, you should use the PostScript driver supplied with your printer to take full advantage of all the features and performance of the DEClaser 5100 printer. Refer to the instructions that come with the driver to install it on your system.

Although a PCL printer driver is not included with the DEClaser 5100 printer, you may use other printer drivers to operate the printer. These drivers will let you use your printer but may not support all of its features. PCL users can use any of the following drivers:

- HP LaserJet 4 (first choice if available)
- HP LaserJet III, IIIP, and IIP (available with Windows 3.1)

Refer to your Windows documentation for information about installing and selecting printer drivers.

NOTE

The automatic language sensing capability of the DEClaser 5100 printer allows you to send files with different data formats (PostScript or PCL) for printing. You might want to set the **Interpreter** feature in the Communications menu to Automatic (**INT=Automatic** for the port you are using), especially if you switch between drivers or languages on the same system. See Section A.5.4 for additional information about the **Interpreter** feature.

4.1.1 Printing From a Windows Application

Once you have selected the driver using the Print Manager, it is easy to print a file in Windows. To print from a Windows application such as Microsoft Word, you can either click on the printer icon button on the tool bar or use the File Menu as follows:

1. Pull down the **File** menu and select **Print...** to open the print dialog box.
2. After the print dialog box opens, you can change printing parameters or you can just click on **OK** to print the file.

4.1.2 Printing From the File Manager

There are several ways to print a file from the File Manager. The first method uses the File Menu and is similar to printing from your application. The second method uses the mouse to “drag and drop” the file over to the Print Manager.

Using the File Menu

To print from the File Menu:

1. Open the File Manager in the Main Group.
2. Select the file you want to print by clicking on it.
3. Pull down the **File** menu and select **Print...** to open the print dialog box.
4. Once the print dialog box opens you can change printing parameters or you can just click on **OK** to print the file.

Dragging and Dropping

To print a file by dragging it to the Print Manager:

1. Open the Print Manager from the Main Group and reduce it to an icon on the desktop.
2. Open the File Manager.
3. Select and drag a file icon to the Print Manager icon.

For more information about printing options in the Windows printing environment, refer to the following sources:

- *Microsoft Windows User's Guide*
- Microsoft Windows Online Help

4.2 Printing From MS-DOS

To print PostScript files from MS-DOS, you normally use the **PRINT** feature of an MS-DOS application. Consult your application's documentation for more specific information about using its particular print feature.

You can also print PostScript or PCL files from the MS-DOS command line, using either COPY or PRINT commands.

NOTE

The automatic language sensing capability of the DEClaser 5100 printer allows you to send files with different data formats (PostScript or PCL) for printing. You might want to set the **Interpreter** feature in the Communications menu to Automatic (**INT=Automatic** for the port you are using), especially if you switch between drivers or languages on the same system. See Section A.5.4 for additional information about the **Interpreter** feature.

Using the COPY Command to Print

Enter the COPY command in the following format:

```
COPY filename.ext LPTx:
```

Where .ext is the file extension and LPTx is the port your printer is attached to.

Using the PRINT Command to Print

Enter the PRINT command in the following format:

```
PRINT filename.ext
```

If the system prompts you for the name of the port, enter:

```
Name of list device [PRN]:
```

You can press **Return** without supplying any additional information if your printer is connected to LPT1:. Otherwise, enter the name of the port your printer is attached to and then press **Return**.

For more information about printing options in the MS-DOS printing environment, refer to the following sources:

- *MS-DOS User's Guide and Reference*
- The commands **HELP MODE** and **HELP PRINT** in MS-DOS (Version 5.0).

4.3 Printing From Macintosh Computers

The procedure used to print from Macintosh computers is similar whether you are in an application program or printing a file that you have selected on the Desktop.

Choosing a Printer Driver

Use the Adobe PostScript printer driver (PSprinter) and PPD file that comes with the printer to take full advantage of all the features and performance of the DEClaser 5100 printer. Refer to the instructions that come with the driver to install it on your system.

NOTE

Make sure the **Interpreter** feature in the Communications menu is NOT set to Automatic for the LocalTalk port. You must choose **INT=PostScript** to print from the Macintosh. See Section A.5.4 for additional information about the **Interpreter** feature.

To print from an application:

1. Select from the Chooser PSprinter and then DEClaser 5100.
 - ✓ If you have renamed your printer, the new name appears in the Chooser list.
2. Pull down the **File** menu and select **Print...** to open the print dialog box.
3. Once the print dialog box opens, you can change printing parameters or you can just click on **PRINT** to print the file.

This same procedure can be used from the Desktop by selecting the file on the Desktop you want to print (click once on the file to highlight it) before pulling down the File Menu.

4.4 Printing Files from OpenVMS

This section assumes that the latest version of DECprint Supervisor for OpenVMS (Version 1.1 or higher) has been properly installed on your system.

NOTE

Make sure the **Interpreter** feature in the Communications menu is NOT set to Automatic for the serial port if you use DCPS. You must choose **INT=PostScript** to print from DCPS. See Section A.5.4 for additional information about the **Interpreter** feature.

The simplicity of OpenVMS systems allow you to just say “PRINT” to print a file. The printer recognizes the data format by the filename extension, for example, .PS or .PCL. DCPS assumes you are printing PostScript files, but you can print other data formats, such as PCL, because they will be converted to PostScript files before being sent to the printer.

To print files, use the following command format:

```
PRINT/QUEUE=queuefilename filename
```

Example 1: PRINT/QUEUE=DECLASER_5100 DOCUMENT1.PS

Example 2: PRINT/QUEUE=DECLASER_5100 DOCUMENT1.PCL

For more information about printing options in the OpenVMS printing environment, see the following sources:

- *DECprint Supervisor for OpenVMS System Manager's Guide*
AA-PSVEA-TE
- *DECprint Supervisor for OpenVMS Software Installation Guide*
AA-PSVDA-TE
- *DECprint Supervisor for OpenVMS User's Guide*
AA-PSVFA-TE
- The OpenVMS command **HELP PRINT_PARAMETERS**

4.5 Printing PostScript Files From ULTRIX Systems

The ULTRIX print client checks the first two characters of the file to interpret the file type. If the file begins with %!, it is interpreted as a PostScript file. (PostScript files generated by applications should begin with the characters %!.) Otherwise it is interpreted as an ASCII file and is automatically converted to PostScript before being sent to the printer.

NOTE

Make sure the **Interpreter** feature in the Communications menu is NOT set to PCL for the port you are using if you use lpr. You must choose either **INT=PostScript** or **INT=Automatic** to print from lpr. See Section A.5.4 for additional information about the **Interpreter** feature.

For more information about printing options in the ULTRIX printing environment, refer to the following ULTRIX commands:

man lpr (which lists related documentation)

man lpq (for online help)

PostScript File Print Command

To print PostScript files, use the following command format:

```
lpr -PqueueName filename
```

Example: lpr -Pdeclaser document1.ps

5

Fonts

Your DEClaser 5100 laser printer comes with a large number of built-in fonts and several options for extending the complement. This chapter discusses the following topics relating to selecting and using fonts:

- Common terms associated with selecting and using fonts (Section 5.1).
- How to use fonts efficiently in your printer and effectively in your documents (Section 5.2).
- How fonts affect printing performance (Section 5.3).
- Using the DEClaser 5100 printer built-in fonts; how to print a font list to determine the complement of PostScript and PCL fonts in your printer, and how to select fonts (Section 5.4).
- Options to extend your printer's font complement (Section 5.5).

5.1 Font Terminology

A font is a collection of letters, numbers, and other symbols which is consistently represented in a particular design, style, and method. The design of the characters and symbols is often called a typeface, and related collections of these are generally called type families or font families.

The DEClaser 5100 provides a wide range of typeface designs for both the PostScript and PCL interpreters. Terms that are often used to categorized designs include:

- **Serifed** - Serifed fonts are like the one used in the text you are reading: there are short stems at the ends of the lines in each character. Examples of these are Americana, Garamond, Times Roman, and Palatino.
- **Sans serif** - Sans serif fonts do not have additional lines or stems on the ends. The title of this section is printed with a sans serif font. Examples of these are Avant Garde, Barmeno, Helvetica, and Swiss.
- **Script** - Script fonts are those which imitate handwriting and can be simple or decorative. Examples of these are Kaufmann, Park Avenue, Ribbon, and Tekton.
- **Display** - Serif, sans serif, and script fonts are generally used for alphanumeric text. Display fonts are speciality fonts used to add dramatic impact to your documents and are typically used as headlines. Examples of these are Blackoak, Clarendon, Parisian, and Trajan.
- **Symbol** - Symbol fonts contain characters that are unique to that particular font and are used to enhance text or provide symbolic meaning. Examples of these are Carta, a collection of cartographic symbols; Symbol, which contains characters used in mathematical expressions; and Zapf Dingbats, which provides a number of desktop publishing symbols.

Font families are groups of related fonts that have the same general design but whose appearance differs in several characteristics. The primary differences are:

- **Pitch** - The characters of fixed-pitch fonts all have the same width. The pitch is a measure of the number of characters per inch (cpi) that the font is printed with.

The widths of characters in proportional fonts vary according to a more natural width of the character. For example, the letter “I” has a narrower width than the letter “W.”

- **Stroke weight** - The stroke weight determines the thickness of a character. Fonts can be thin (light), normal, bold (heavy), or extra bold.
- **Style** - Characters can be obliqued and shaped within a design in several ways. Fonts can be upright, slanted (oblique), italicized, condensed (narrow), or expanded (wide).

Another way to classify fonts is the method by which they have been created or encoded. There are several different kinds of fonts supported by the DEClaser 5100:

- **Bitmap** - Fonts that are defined by patterns of dots and may only be available in a fixed size. Bitmap fonts are more typically used in video screen displays but are still found in laser printing. In the DEClaser 5100, the PCL Line Printer font is the only built-in, fixed-size bitmap font but others may be downloaded in either PCL or PostScript.
- **Scalable** - A scalable typeface consists of a rich mathematical description of the shapes of characters, which allows the DEClaser 5100 printer to make a font in virtually any size. Scalable typefaces are more common today in laser printing and are generally found in two formats: Type 1 and TrueType.

The Type 1 font format, developed by Adobe Systems, Inc., is supported through the PostScript interpreter. TrueType fonts, developed by Microsoft and Apple Computer, are supported in both PostScript and PCL mode.

5.2 Using Fonts Effectively

Fonts are used to convey different types of information. Most text fonts are so readable that they do not draw the reader's attention. Display fonts are designed to draw attention. Either kind of font can be used to convey a mood or effect. One font may evoke a business-like, even stiff, impression, while another may seem more casual, friendlier, or modern. The shapes and weight of the characters, how close they are set to each other, the relative heights of the upper and lowercase letters, even the shape of the lower case "g" all contribute to the characteristic feel of a font.

You will find that one or two "classic" type families, such as Helvetica, Palatino or Times Roman, will be useful for most of your documents. These fonts are typically available on laser printers and through your application software because they are versatile enough for a variety of purposes. Using your application software, you can select different styles such as bold or italics when necessary for emphasis or titling.

The large font repertoire of the DEClaser 5100 provides you with many other alternatives or "moods" to use in your documents. You can also use a display font to add emphasis to the title or headline of your document. A script font can be used to add a classic or formal touch. Using a heavier typeface can convey importance or emphasis to a certain piece of information. Adding a few symbols to a document can help convey meaning or organize information.

The PCL and PostScript interpreters both provide powerful font manipulation tools that your application software may be able to take advantage of to create unusual effects. With the right software commands, your DEClaser 5100 can print text at any angle, or along an arbitrary path. Characters can be printed in white on a dark background, or have a number of special effects such as shadowing or patterning applied to them. Your application software documentation can tell what type effects are available to you.

When selecting an appropriate font, it is important to understand the type of information and the emphasis you want to convey. A business letter would call for a more formal typeface than a group newsletter. An advertisement might call for a eye-catching display headline. Be careful not to go too far: a common temptation is the desire to use a large number of fonts or several different effects on one page, which could make your document look like a nineteenth century circus poster.

The PCL and PostScript Font Lists (Section 2.4.4 and Section 2.4.5) can be used to print samples of the typefaces so that you can select the ones that will be right for your documents. The DEClaser 5100 also supports downloadable soft fonts in industry-standard formats, which allow you to gain access to the literally thousands of fonts available from Digital or other manufacturers.

5.3 Fonts and Printing Performance

In general, a simpler document will print faster. The more changes to selected items, whether fonts, character sets, or sizes, the greater the complexity of the output and the more time required to print it. For typical business documents, these changes are minimal and you will see no delay in printing. However, using a large number of fonts can slow the printing of your documents and, in extreme cases, exceed the printer's available memory.

If you are using downloaded soft fonts, additional time will be needed before printing begins, depending on the communications port you are using, to download the font information. Generally, the network port is faster than the parallel port, which is faster than the serial port. Your printer driver software may allow you to download a soft font "permanently" or "persistently", which will speed up performance. Fonts downloaded this way take less time to use but take up memory space inside the printer and they are always deleted when you turn off the power.

If you find yourself constantly downloading fonts or needing one or more font families that are not provided by the DEClaser 5100, you can improve performance by downloading these fonts to the optional 120 MB hard disk drive. Your printer driver software may allow you to download soft fonts to the hard disk, making them available for use at all times, even after the power has been turned off. See Section 5.5.2 for information about using the optional hard disk drive. See Appendix D for ordering information.

5.4 DEClaser 5100 Built-in Fonts

The DEClaser 5100 printer contains 120 built-in fonts: 73 fonts for use with PostScript documents and 47 PCL fonts for use with PCL documents. This selection of fonts will meet a wide variety of needs. If you need additional fonts, they can easily be downloaded into printer memory, to an optional hard disk, or accessed from available font cartridges.

This section describes how to print the PostScript and PCL font pages using the Test/Fonts Menu. These pages will give you a good idea of the number and variety of fonts that are available for your documents. This section also discusses how to select fonts from your application or from the printer control panel.

NOTE

The Macintosh and PCL printer drivers shipped with your printer allow you to print a "Font Catalog" that contains information similar to the built-in font pages. See the printer driver documentation for information about using this feature.

5.4.1 Printing the PostScript Font List

The PostScript Font List contains all of the PostScript fonts available for use and a sample of their appearance. Use the following procedure to print a list of downloaded, cartridge, and built-in fonts available to the PostScript interpreter.

NOTE

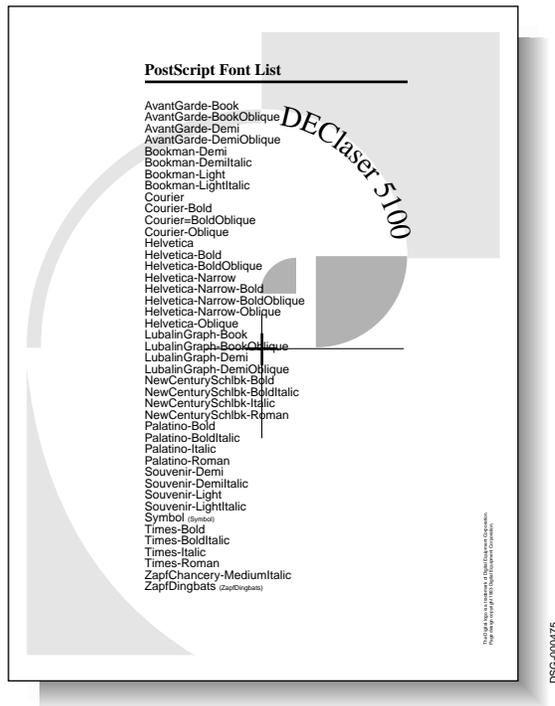
There will be at least two pages printed. Because of the large number of fonts printed, it may take up to 90 seconds for the first page to print.

1. Press **[On Line]** to pause the printer.
 - The On Line indicator goes off and **PAUSED** is shown on the display.
2. Press **[Test/Fonts]** to enter the menu.
 - The name of the menu appears momentarily and the first feature is shown on the display (**Show page count**).
 - The printer is now in Menu mode and the text and symbols in black indicate the key function.

3. Press **←** or **→** until **Print PS fonts** appears on the display.
4. Press **Enter** to print the page.
 - **Printing...** is shown on the display as the pages are printed.
 - **Print PS fonts** is shown on the display when the printing stops.
5. Press **On Line** to return the printer online.

Figure 5–1 shows a sample of the PostScript Font List.

Figure 5–1 DEClaser 5100 PostScript Font List



5.4.2 Selecting PostScript Fonts

PostScript fonts are normally chosen from your application program. If you write PostScript programs, you would use the **findfont** PostScript operator to select a font.

Table 5–1 lists the resident PostScript fonts and the name to use with the **findfont** operator.

Table 5–1 Resident PostScript Fonts

Font Name	findfont Command Name
Courier	Courier
Courier Oblique	Courier-Oblique
Courier Bold	Courier-Bold
Courier Bold Oblique	Courier-BoldOblique
Helvetica	Helvetica
Helvetica Bold	Helvetica-Bold
Helvetica Oblique	Helvetica-Oblique
Helvetica Bold Oblique	Helvetica-BoldOblique
Helvetica Narrow	Helvetica-Narrow
Helvetica Narrow Bold	Helvetica-Narrow-Bold
Helvetica Narrow Oblique	Helvetica-Narrow-Oblique
Helvetica Narrow Bold Oblique	Helvetica-Narrow-BoldOblique
Times Roman	Times-Roman
Times Bold	Times-Bold
Times Italic	Times-Italic
Times Bold Italic	Times-BoldItalic
Symbol	Symbol
ITC Avant Garde Book	AvantGarde-Book
ITC Avant Garde Demi	AvantGarde-Demi
ITC Avant Garde Book Oblique	AvantGarde-BookOblique
ITC Avant Garde Demi Oblique	AvantGarde-DemiOblique
ITC Bookman Light	Bookman-Light

(continued on next page)

Table 5–1 (Cont.) Resident PostScript Fonts

Font Name	findfont Command Name
ITC Bookman Demi	Bookman-Demi
ITC Bookman Light Italic	Bookman-LightItalic
ITC Bookman Demi Italic	Bookman-DemiItalic
ITC LubalinGraph Book	LubalinGraph-Book
ITC LubalinGraph Demi	LubalinGraph-Demi
ITC LubalinGraph Book Oblique	LubalinGraph-BookOblique
ITC LubalinGraph Demi Oblique	LubalinGraph-DemiOblique
New Century Schoolbook Roman	NewCenturySchlbk-Roman
New Century Schoolbook Italic	NewCenturySchlbk-Italic
New Century Schoolbook Bold	NewCenturySchlbk-Bold
New Century Schoolbook Bold Italic	NewCenturySchlbk-BoldItalic
Palatino Roman	Palatino-Roman
Palatino Italic	Palatino-Italic
Palatino Bold	Palatino-Bold
Palatino Bold Italic	Palatino-BoldItalic
ITC Souvenir Light	Souvenir-Light
ITC Souvenir Light Italic	Souvenir-LightItalic
ITC Souvenir Demi	Souvenir-Demi
ITC Souvenir Demi Italic	Souvenir-DemiItalic
ITC Zapf Chancery Medium Italic	ZapfChancery-MediumItalic
ITC Zapf Dingbats	ZapfDingbats
Adobe Caslon Regular	ACaslon-Regular
Adobe Caslon Italic	ACaslon-Italic
Adobe Caslon Semibold	ACaslon-Semibold
Adobe Caslon Semibold Italic	ACaslon-SemiboldItalic
Adobe Garamond Regular	AGaramond-Regular
Adobe Garamond Italic	AGaramond-Italic
Adobe Garamond Bold	AGaramond-Bold
Adobe Garamond Bold Italic	AGaramond-BoldItalic

(continued on next page)

Table 5–1 (Cont.) Resident PostScript Fonts

Font Name	findfont Command Name
Americana	Americana
Americana ExtraBold	Americana-ExtraBold
Barmeno Regular	Barmeno-Regular
Barmeno Medium	Barmeno-Medium
Barmeno Bold	Barmeno-Bold
Barmeno ExtraBold	Barmeno-ExtraBold
Formata Regular	Formata-Regular
Formata Italic	Formata-Italic
Formata Medium	Formata-Medium
Formata Medium Italic	Formata-MediumItalic
Tekton	Tekton
Tekton Bold	Tekton-Bold
Kaufmann	Kaufmann
ParkAvenue	ParkAvenue
Blackoak	Blackoak
Lithos Regular	Lithos-Regular
Lithos Black	Lithos-Black
Parisian	Parisian
Trajan Bold	Trajan-Bold
Carta	Carta
Poetica Supplement Ornaments	Poetica-SuppOrnaments
Adobe Wood Type Ornaments Two	WoodtypeOrnaments-Two

5.4.3 PostScript Screen Fonts

If you use your DEClaser 5100 with a personal computer, you can obtain a screen font package from Digital that will enable your application programs to take advantage of the PostScript fonts in your printer. The package contains font definitions and Adobe Type Manager software that will allow your computer system to create high quality screen fonts to match your printer's complement.

To receive this package, fill out the order card that came with your printer and indicate whether you need a Macintosh or IBM compatible PC package.

5.4.4 Printing the PCL Font List

The PCL Font List contains all of the PCL fonts available for use and a sample of their appearance. Use the following procedure to print a list of downloaded, cartridge, and built-in fonts available to the PCL interpreter.

NOTE

There will be at least four pages printed. Because of the large number of fonts printed, it may take up to 90 seconds for the first page to print.

1. Press **[On Line]** to pause the printer.
 - The On Line indicator goes off and **PAUSED** is displayed.
2. Press **[Test/Fonts]** to enter the menu.
 - The name of the menu appears momentarily and the first feature is shown on the display (**Show page count**).
 - The printer is now in Menu mode and the text and symbols in black indicate the key function.
3. Press **[←]** or **[→]** until **Print PCL fonts** appears on the display.
4. Press **[Enter]** to print the pages.
 - **Printing...** is shown on the display as the pages are printed.
 - **Print PCL fonts** is shown on the display when the printing stops.
5. Press **[On Line]** to return the printer online.

Figure 5-2 shows a sample of the PCL Font List.

Figure 5-2 DEClaser 5100 PCL Font List

The diagram illustrates the DEClaser 5100 PCL Font List interface. A callout box highlights a single font entry with numbered annotations 1 through 5. The main window shows a 'Font List' with various font categories and a table of font entries. Annotation 6 points to the font categories.

Font #	Font ID	Symbol Set	Fix /PS	Pitch (cpi)	Point Size	Style	Stroke Weight	Name or Typeface	Default Orient	Print Sample & Escape Sequence
1000	Font	Roman-8	F	18.00	6.0	Upright	Medium	Courier	Port	ABCDEFghijjAA°ÇÑi¿£\$ <esc>(8U<esc>(s0p10.ooH1...

Font List

Font #	Font ID	Symbol Set	Fix /PS	Pitch (cpi)	Point Size	Style	Stroke Weight	Name or Typeface	Default Orient	Print Sample & Escape Sequence
PERMANENT SOFT FONTS										
LEFT FONT CARTRIDGE										
RIGHT FONT CARTRIDGE										
DISK FONTS										
INTERNAL FONTS										
1000	Font	Roman-8	F	18.00	6.0	Upright	Medium	Courier	Port	ABCDEFghijjAA°ÇÑi¿£\$ <esc>(8U<esc>(s0p10.ooH1...
1000	Font	Roman-8	F	18.00	6.0	Upright	Medium	Courier	Port	ABCDEFghijjAA°ÇÑi¿£\$ <esc>(8U<esc>(s0p10.ooH1...
1000	Font	Roman-8	F	18.00	6.0	Upright	Medium	Courier	Port	ABCDEFghijjAA°ÇÑi¿£\$ <esc>(8U<esc>(s0p10.ooH1...
1000	Font	Roman-8	F	18.00	6.0	Upright	Medium	Courier	Port	ABCDEFghijjAA°ÇÑi¿£\$ <esc>(8U<esc>(s0p10.ooH1...
1000	Font	Roman-8	F	18.00	6.0	Upright	Medium	Courier	Port	ABCDEFghijjAA°ÇÑi¿£\$ <esc>(8U<esc>(s0p10.ooH1...
1000	Font	Roman-8	F	18.00	6.0	Upright	Medium	Courier	Port	ABCDEFghijjAA°ÇÑi¿£\$ <esc>(8U<esc>(s0p10.ooH1...
1000	Font	Roman-8	F	18.00	6.0	Upright	Medium	Courier	Port	ABCDEFghijjAA°ÇÑi¿£\$ <esc>(8U<esc>(s0p10.ooH1...
1000	Font	Roman-8	F	18.00	6.0	Upright	Medium	Courier	Port	ABCDEFghijjAA°ÇÑi¿£\$ <esc>(8U<esc>(s0p10.ooH1...
1000	Font	Roman-8	F	18.00	6.0	Upright	Medium	Courier	Port	ABCDEFghijjAA°ÇÑi¿£\$ <esc>(8U<esc>(s0p10.ooH1...
1000	Font	Roman-8	F	18.00	6.0	Upright	Medium	Courier	Port	ABCDEFghijjAA°ÇÑi¿£\$ <esc>(8U<esc>(s0p10.ooH1...

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- ❶ Font number and source (selectable from the control panel)
- ❷ Symbol set (selectable from the control panel)
- ❸ Font name and characteristics
- ❹ Font sample
- ❺ PCL command to invoke the font from software
- ❻ Downloaded permanent soft fonts, optional font cartridge fonts and hard disk drive fonts appear here when present.

5.4.5 Selecting PCL Fonts

PCL fonts are generally selected through your application program. If your program requires it, or you are writing PCL programs, you can use PCL commands to select a particular font. The PCL Font List provides the PCL commands needed to select each of the built-in fonts.

You can also select a default PCL font from the control panel. Use the following procedure to select a default PCL font from the control panel.

NOTE

The PCL Font list contains the font numbers used to select PCL fonts from the control panel. Print a PCL font list to use as a reference before performing this procedure (see Section 5.4.4).

The font you select will be used for all PCL documents unless it is changed by your application program, or another selection from the control panel.

1. Press to pause the printer.
 - The On Line indicator goes off and **PAUSED** is displayed.
2. Press to enter the menu.
 - The name of the menu appears momentarily and the first feature is shown on the display (**Feeders**).
 - The printer is now in Menu mode and the text and symbols in black indicate the key function.
3. Press or until **PCL** appears on the display.
4. Press to enter the PCL sub-menu.
5. Press or until **PCL: Font number** appears on the display.
6. Press to show the feature (**Number=xxxx**).
7. Press or until the desired font number appears on the display.
 - ✓ Use the PCL font list to reference the font numbers.
8. Press to select and save the font number.
 - **PCL: Font number** is shown on the display.
9. Press to return the printer online.

Table 5–2 lists the DEClaser 5100 PCL font complement. The name shown in the “Name or Typeface” column of the PCL Font List, the font identifier for use in PCL commands, and a more common name for the typeface are given.

Table 5–2 Resident PCL Fonts

Typeface name	Font List name	PCL Font ID	Common name
Aldine 430 Original Garamond ¹	OrigGaramond SW	4197	Garamond
Clarendon 701 Condensed Bold	Clarendon SWC	4140	Clarendon
Courier ¹	Courier SWC	3 or 4099	Courier
Dutch Roman ¹	Dutch SWM	16901	Times New Roman
Dutch 801 Roman ¹	Dutch 801 SWC	4101	CG Times
Flaereserif 821 Medium ²	Flaereserif821SW	4362	Albertus
Incised 901 Medium ³	Incised901 SWC	4168	Antique Olive
ITC Zapf Dingbats	ZapfDingbats SW	4141	ITC Zapf Dingbats
Letter Gothic Medium ³	Letter Gothic	4102	Letter Gothic
Line Printer Medium	Line Printer	0	Line Printer
MoreWingbats	MoreWingbatsSWC	31402	Wingdings
Ribbon 131 Medium Italic	Ribbon 131 SWC	4116	Coronet
Swiss Medium ¹	Swiss SWM	16602	Arial
Swiss 742 Medium ¹	Swiss742 SWC	4148	Univers
Swiss 742 Condensed Medium ¹	Swiss742 Cn SWC	4148	Univers Condensed
Symbol	Symbol Set SWA	16686	Symbol
Victoria Rose	Audrey Two SWC	4297	Marigold
Zapf Humanist 601 Medium ¹	ZapfHumst Dm SW	4113	CG Omega

¹Bold, Italic, and Bold Italic treatments are also resident.

²Extra Bold treatment is also resident.

³Bold and Italic treatments are also resident.

5.4.6 Selecting PCL Symbol Sets

In addition to selecting a default PCL font, you can also select a default PCL symbol set. This is useful when your host system uses a different default character set. You use the **Symbol set** feature to select a default PCL symbol set.

Table 5–3 lists the names of the symbol sets supported by the PCL interpreter, the symbol set identifier for use in PCL commands, and the name shown on the control panel to select a symbol set with the **Symbol set** feature.

Table 5–3 PCL Character Sets

Symbol Set Name	PCL Symbol Set ID	Front Panel Display
Roman-8	8U	Roman-8
ISO Latin-1 (ISO 8859-1)	0N	ISO Latin-1
Windows 3.1 Latin 1	19U	Win Latin-1
ISO Latin-2 (ISO 8859-2)	2N	ISO Latin-2
Windows 3.1 Latin 2	9E	Win Latin-2
ISO Latin-5 (ISO 8859-9)	5N	ISO Latin-5
PC-8 (IBM Code Page 437)	10U	PC-8
PC-850 Multilingual	12U	PC-850
Microsoft Publishing	6J	MS Publish
Math-8	8M	Math-8
Ventura Math	6M	Ven Math
Pi	15U	Pi Font
Symbol	19M	N/A ¹
Wingdings	579L	N/A ¹
Ventura Zapf Dingbats	9L	Ven Dingbat
PS Zapf Dingbats	10L	PS Dingbat ²
Zapf Dingbats Series 100	11L	Dingbat 100 ²
Zapf Dingbats Series 200	12L	Dingbat 200 ²
Zapf Dingbats Series 300	13L	Dingbat 300 ²

¹This symbol set cannot be selected from the front panel.

²Selecting this symbol set also implies selecting the unique typeface associated with the set.

(continued on next page)

Table 5–3 (Cont.) PCL Character Sets

Symbol Set Name	PCL Symbol Set ID	Front Panel Display
PC-8 Danish/Norwegian	11U	PC-8 D/N
ISO 21 German	1G	ISO 21
ISO 17 Spanish	2S	ISO 17
ISO 85 Spanish	2S	ISO 85
ISO 25 French	0F	ISO 25
ISO 69 French	1F	ISO 69
ISO 15 Italian	0I	ISO 15
ISO 60 Norwegian v1	0D	ISO 60
ISO 61 Norwegian v2	1D	ISO 61
ISO 4 United Kingdom	1E	ISO 4
ISO 10 Swedish/Finnish	3S	ISO 10
ISO 11 Swedish: names	0S	ISO 11
ISO 57 Chinese	2K	ISO 57
ISO 2 IRV	2U	ISO 2
ISO 14 JIS ASCII	0K	ISO 14
ISO 16 Portuguese	4S	ISO 16
ISO 84 Portuguese	5S	ISO 84
HP German	0G	HP German
HP Spanish	1S	HP Spanish
Legal	1U	HP Legal
Desktop	7J	HP Desktop
Ventura US	14J	Ventura US
Ventura International	13J	Ventura Int
PS Text	10J	PS Text
PS Math	5M	PS Math
PC-852	17U	PC-852
PC-Turkish	9T	PC-Turk
MC Text	12J	N/A ¹

¹This symbol set cannot be selected from the front panel.

(continued on next page)

Table 5–3 (Cont.) PCL Character Sets

Symbol Set Name	PCL Symbol Set ID	Front Panel Display
Windows 3.0 Latin 1	9U	Win 3.0

5.5 Extending Your Font Complement

The DEClaser 5100 provides a large font complement for your PostScript and PCL documents. However, you may wish to use a speciality font or a corporate standard font or logo for your business. You can extend the number of fonts in your printer by adding font cartridges, using downloaded fonts, or downloading fonts to the optional hard disk drive.

5.5.1 Downloading Fonts

The DEClaser 5100 allows you to download Type 1 or TrueType fonts from your computer to the printer's memory. (Type 1 fonts are only supported for PostScript jobs.) How you download fonts to your printer depends on the computer system you are using and the capabilities of your printer driver software. Some software applications include soft fonts needed for the document at the time of the print job. You can also "permanently" download fonts into your printer. Permanently downloaded fonts will remain in your printer's memory until you power off the printer, or change protocols.

- Microsoft Windows systems: Use the Font Downloader dialog box in Printer Setup to download soft fonts to your printer. Refer to your printer driver documentation for more information.
- Macintosh systems: Use the LaserWriter Utility, or an equivalent utility, that is installed on your Macintosh system. Refer to your *Macintosh User's Guide* for information on using the LaserWriter Utility to download soft fonts.
- OpenVMS systems: Refer to the *DECprint Supervisor for OpenVMS System Manager's Guide* for information on how to use downloaded fonts with your print jobs.

When using downloaded fonts, keep the following points in mind:

- If you share your printer among several users, be careful in adding or deleting soft fonts because you may affect their print jobs.
- Powering off the printer causes all of the downloaded fonts to be deleted.
- Switching between the PCL and PostScript interpreters will cause downloaded fonts to be deleted as well.
- Downloading multiple soft fonts uses up printer memory that cannot be used for other purposes by the printer. If you use many soft fonts, you may want to consider upgrading your printer's memory or purchasing the optional hard disk.

5.5.2 Using the Optional Hard Disk

The optional DEClaser 5100 hard disk drive allows you to download PostScript fonts into non-volatile storage. Fonts downloaded to the hard disk drive are not deleted when you turn the power off, making this method a flexible and non-volatile method to extend your printer's font complement.

The printer utility software for Macintosh and Microsoft Windows systems can also be used to download soft fonts to a hard disk. For OpenVMS systems, a disk utility, FONT_DOWNLOADER.COM, is provided in the DCPS subdirectory under SYS\$EXAMPLES when you install DECprint Supervisor for OpenVMS, Version 1.1.

NOTE

Only PostScript fonts can be downloaded to the optional hard disk.

5.5.3 Using Font Cartridges

The DEClaser 5100 provides two font cartridge slots. When a font cartridge is installed, the fonts appear on the PostScript and PCL Font Lists and can be accessed by your application software as quickly as the built-in fonts.

Install font cartridges using the following procedure:

1. Make sure the printer is not printing.
2. Remove the font cartridge from its packaging.

3. Insert the font cartridge into the left or right cartridge slot notched side up **1**.

Note

Both font cartridge slots can have font cartridges installed at the same time. Do not remove a font cartridge while a job is printing or the print job will abort.



4. Print the appropriate font list (Section 2.4.4 and Section 2.4.5) to see the fonts that are available on the cartridge.

6

Enhancing the Appearance of Your Documents

The DEClaser 5100 printer provides several ways to adjust the appearance of your documents. You can improve the appearance of your documents by:

- Printing at the highest built-in resolution of 600 x 600 dpi, for crisp text and graphics (Section 6.1).
- Using the built-in DECimage Plus image enhancement technology, you can improve the appearance of PostScript grayscale images at any resolution setting (Section 6.2).
- Installing the Resolution/Graphics Enhancement Option provides even sharper output and edge enhancement for text and graphics. This option gives you a resolution of 1200 x 1200 dpi (Section 6.3).
- Adjusting the amount of toner (print density) that is placed on the page (Section 6.4).

6.1 Using High Resolution

The high-quality output achieved by the DEClaser 5100 printer is due in part to its ability to place a fine grid of dots on the page. The density of this grid is referred to as the printer's resolution expressed in dots-per-inch (dpi).

Typical laser printers print at 300 dpi. The DEClaser 5100 printer can print at either 300 or 600 dpi. The higher resolution gives you crisper text, finer lines, and greatly improved grayscale images. A resolution of 600 dpi means that within a one inch grid square, the printer can print up to 600 dots horizontally by 600 dots vertically, or up to 360,000 dots per square inch.

Note that if you are printing complex images and have the **Page protection** feature enabled, selecting a higher resolution may require additional memory (RAM). See Chapter 7 for more information about how memory affects printing.

You can select a different resolution for your PostScript and PCL documents. The PostScript and PCL sub-menus both contain a **Resolution** feature that allows you to select between **300 x 300**, **600 x 300**, and **600 x 600**. You can also use PostScript or PCL commands from your host application or printer driver to modify the print resolution. See the **Resolution** feature in Section A.5.2 (for PostScript) or Section A.5.3 (for PCL) for additional information about **Page protection** and **Resolution** settings.

6.2 Using DECimage Plus

DECimage Plus image enhancement is a new improved version of DECimage that gives your graphics more clarity, smoothness, sharpness, and better quality. DECimage Plus is best applied to continuous grayscale images, but it may be applied to synthetic images created with a graphics application.

NOTE

DECimage Plus only works with PostScript documents.

6.2.1 Benefits of Using DECimage Plus

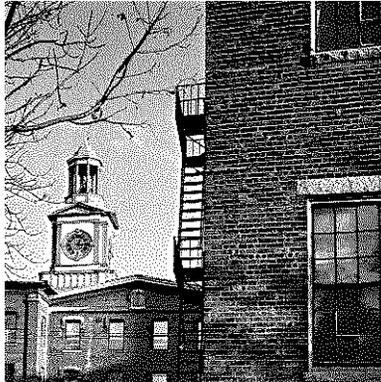
DECimage Plus makes full use of the available printer resolution by distributing a different number of device resolution dots over a unit area to make the gray tones. A darker gray has more dots per unit area than light gray. This technique provides a naturally sharper looking image. You can also use DECimage Plus to increase or decrease the contrast, brighten or darken the image, or to make the image sharper or softer.

Figure 6–1 Pictures With and Without DECimage Plus

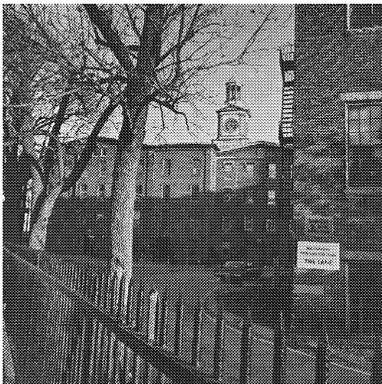
With DECimage
100% scale (300 dpi)



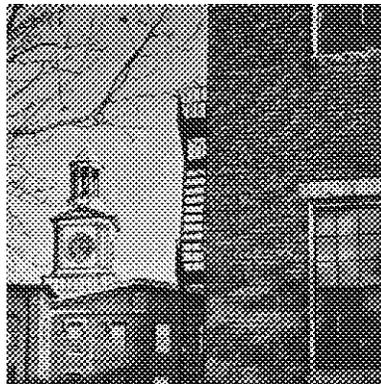
2X magnification



Without DECimage
100% scale (300 dpi)



2X magnification



6.2.2 Selecting DECimage Plus

You can select DECimage Plus from the control panel, from your printer driver software, or by using PostScript commands. Section 6.2.6 describes how to activate and make limited adjustments to the DECimage Plus parameters using the control panel.

You can also use a PostScript program to set the DECimage Plus parameters to values other than those available through the control panel, then enable DECimage Plus persistently to force those parameters to be used for all subsequent PostScript jobs. See Appendix F for information about invoking DECimage Plus using PostScript code.

The *DEC Laser 5100 Printer PostScript Level 2 Programmer's Supplement* is the authoritative reference for the complete set of DECimage Plus control parameters and provides more details on the PostScript operators that allow you to make parameter adjustments over a wider or more detailed range.

6.2.3 Invoking DECimage Plus From Windows or a Macintosh Computer

You can activate DECimage Plus from Windows or Macintosh systems through your application or printer driver when you install the DEClaser 5100 PPD that comes on your printer driver diskettes. DECimage Plus appears as a "Print Option" which allows you to activate DECimage for the current print job.

You can make DECimage parameter selections for Punch0, Punch1, and Sharpness, in discrete values that address the useable ranges of those parameters: Punch parameters have a range of plus or minus 20% from the default value and Sharpness values range from -1.0 to 4.0. Refer to your printer driver documentation for more information.

NOTE

Some applications may attempt to send their own particular halftones to the printer or set a particular transfer function. DECimage Plus may be cancelled out by these print options. If you want DECimage Plus to be applied to your image, make sure all such options are set to allow the printer to use its own halftone screens.

6.2.4 Invoking DECimage Plus on OpenVMS VAX Platforms

There are many ways to use the DECimage Plus form. The following example uses a previously set up PostScript queue:

```
PRINT/QUEUE=LPS_PS/FORM=DECIMAGE DOC_WITH_PICTURES.PS
```

Other ways of using the DECimage Plus form and setup module include associating the form with a queue and associating the setup module with an individual file (see Section F.3). For details, refer to VMS HELP or the following manuals:

- *DECprint Supervisor for OpenVMS VAX Systems System Manager's Guide*
- *DECprint Supervisor Software Installation Guide*
- *DECprint Supervisor User's Guide*

6.2.5 Using DECimage Plus on Other Platforms

If you are using a system other than VMS, you can invoke DECimage Plus by sending the PostScript code to the printer in either of two ways:

- The preferred method is to include code at the beginning of your PostScript file to invoke DECimage Plus for that print job only (see Section F.3.1).
- If including code at the beginning of the PostScript job is not possible, you can set the DECimage Plus facility on persistently from the control panel (see Section 6.2.6) or through a PostScript program (see Section F.3.2). The persistent method keeps DECimage Plus invoked across power cycles.

6.2.6 Invoking DECimage Plus from the Control Panel

DECimage Plus can be invoked and adjusted from the control panel. Table 6–1 shows the DECimage Plus features contained in the PostScript sub-menu.

Table 6–1 DECimage Plus Settings

Feature	Values	Secondary Values
PS: DECimage	DECimage: Enable	<u>ENA=off</u> ENA=on
	DECimage: Adjust	<u>ADJ=normal</u> ADJ=brighter ADJ=darker ADJ=hi contrast ADJ=lo contrast ADJ=set by host ¹

¹This message appears when the value currently saved in non-volatile memory for the associated feature is not one of the discrete values provided in the menu.

The first feature, **DECimage: Enable**, determines whether DECimage Plus is enabled.

ENA=off: turns off DECimage so that it is not applied to print jobs.

ENA=on: turns on DECimage persistently.

Although these settings can be changed from the control panel, they remain under host control.

NOTE

The printer recognizes the last change made. Configuration changes made through your software take precedence over control panel settings *if they were made last*.

The second feature, **DECimage: Adjust**, allows you to adjust the DECimage Plus image settings stored in non-volatile RAM (NVRAM). These are general settings to increase or decrease the brightness and contrast.

To invoke DECimage Plus from the control panel:

1. Press to pause the printer.
2. Press to enter the Set-Up Menu.
3. Choose the **PostScript** sub-menu.
4. Choose the **PS: DECimage** feature.
5. Choose **DECimage: Enable**
6. Choose **ENA=on**
7. Press to select and save the new setting.
8. Press to return the printer online.

Refer to Section 6.4 for additional information about the effects of the **DECimage:Adjust** feature.

6.3 Using the Resolution/Graphics Enhancement Option

The Resolution/Graphics Enhancement Option is a resolution enhancement technology that enhances the appearance of text and graphics at any resolution for both PostScript and PCL documents. The Resolution/Graphics Enhancement Option also provides two high-resolution settings that improve your document's appearance: 1200 x 600 and 1200 x 1200 dpi.

The Resolution/Graphics Enhancement Option enhances the control of your printer in several ways: edge detection algorithms remove the jagged edges on text, and it provides a superfine halftone rendition for images. There are no adjustments required to use this option, and once installed it is enabled at all times.

Refer to the Resolution/Graphics Enhancement Option documentation for more information about image enhancement technology.

6.4 Adjusting the Print Density

The relative lightness or darkness of text and graphics is called the *print density*. You can adjust the print density to suit your printing needs. If you use your DEClaser 5100 printer to prepare original documents for reproduction, you may find this feature useful to lighten or darken the images. You could also lower the print density setting to consume less toner while printing draft documents.

The print density adjustment interacts with the higher resolution settings and with the Resolution/Graphics Enhancement Option. Adjusting the print density may result in depositing too much or too little toner along curved lines or in halftone images. If you use these features, you may want to experiment with different settings. You can see the effects of any changes you make by printing the demo page (see Section 2.4).

The print density adjustment also interacts with DECimage Plus. Because of the way that dots are distributed over an area when DECimage Plus is enabled, changes to the print density will have an amplified effect on images when compared to normal text. Use the DECimage punch parameters to affect the darkness of an image when using DECimage Plus (see Appendix F for more information about setting the punch parameters).

When you select a darker print density, text and graphics appear darker because more toner is placed on the paper. Selecting a lighter print density will cause text to appear lighter and solid areas in graphics and images may be less uniform. Remember that your printer will use more or less toner for each document when you adjust the print density.

The print density setting is changed through the **Print density** feature in the Miscellaneous Set-Up menu (Section A.5.5). The default value for this feature, **7**, should produce an acceptable image for most documents. You can select a value from **0** (lightest) to **15** (darkest).

NOTE

Darker print density settings result in using more toner. The life of the toner cartridge varies, depending on the print density setting.

Use the following procedure to adjust the print density:

1. Press **[On Line]** to pause the printer.
2. Press **[Set-Up]** to enter the Set-Up Menu.
3. Choose the **Miscellaneous** sub-menu.
4. Choose the **Print density** feature and use the left and right arrow keys to adjust the print density. The higher the number the darker the density.
5. Press **[Enter]** to select and save the new setting.
6. Press **[On Line]** to return the printer back on line.

7

Using Memory for Printing

Your DEClaser 5100 printer comes with 2 megabytes (MB) of RAM installed. This base configuration can be increased (with optional memory) to a maximum of 66 MB. The base configuration of 2 MB or a single addition of 4 MB (for a total of 6 MB) fits the needs of most users. This chapter describes how memory is used during the composition and printing of pages in your printer. This chapter also explains how selecting certain printer features consumes or requires additional memory.

7.1 SmartPage and Page Protection

The DEClaser 5100 printer's SmartPage technology uses special purpose hardware to assist the main processor in executing the commands that place text and graphics on your pages. Most PostScript and many PCL laser printers need to store a full bitmap representation of a page before printing it. This typically requires 6 MB of memory for a 600 x 600 dpi letter or A4 size page. SmartPage technology allows the DEClaser 5100 printer to print full pages without generating an intermediate full page image. The DEClaser 5100 printer's base configuration of only 2 MB of RAM can suffice to print most ordinary pages, even pages containing an area of scanned images, at 600 x 600 dpi.

Very complex pages, or pages that contain a large area (roughly, more than a quarter page) of scanned images, may exceed the capabilities of SmartPage to execute at 600 dpi in a printer with only 2 MB of memory. Documents that contain such pages will fail with several possible symptoms, including PostScript **limitcheck** error reports, the front panel messages **Print overrun** or **Memory overflow**, or incompletely printed pages.

The simplest recovery from such errors is to reprint the document with **Page protect** enabled.

The drivers for the MS Windows and Macintosh environments that were provided with your printer include entries in their dialog boxes to enable **Page protect**. The DECprint Supervisor for OpenVMS includes /SETUP modules to enable **Page protect**. When **Page protect** is selected using your driver software, the resolution will automatically be set to 300 x 300 dpi if necessary. If you are working in one of these environments, use those tools to enable **Page protect**.

However, if you are using other printing software you can still lower the resolution and enable **Page protect** using the control panel. Refer to Section 7.2 for instructions if you have to use the control panel to enable **Page protect**.

NOTE

Page protect can only be enabled at a resolution of 300 x 300 dpi in a printer that has only 2 MB of memory. If you desire 600 dpi or higher resolution and your pages need page protection to print correctly, you will need to install at least 4 MB of extra memory in your printer. Refer to Table 7-1 for minimum memory requirements.

7.2 How to Ensure the Printing of Complex Pages

When complex pages fail to print you should enable **Page protect** and/or lower the resolution to correct the problem. If you must use the higher resolutions (600 x 300 dpi or 600 x 600 dpi) and your documents require page protection, you will need to install additional RAM for your printer. Refer to Table 7-1 to determine the minimum memory required to satisfy page protection for the resolution setting you desire.

7.2.1 Enabling Page Protect from the Control Panel

You should enable **Page protect** through your software drivers (Windows and Macintosh users) or by using /SETUP modules (OpenVMS users) when possible. Use the following procedure to enable **Page protect** if you are using other printing software.

1. Press to pause the printer.
2. Press to enter the Set-Up Menu.
3. Choose the **PostScript** or **PCL** sub-menu depending on which interpreter your print job is using.
4. Choose the **Page protect** feature and set **Protect=** to **LTR/A4** or **Legal**.
 - ✓ If you are unable to select **Page protect** you need to lower the **Resolution** setting to 300 x 300 dpi first (see Section 7.2.2).
5. Press to select and save the new setting.
6. Press to return the printer back online.

7.2.2 Lowering the Default Printing Resolution from the Control Panel

In some cases, complex pages that fail to print at 600 dpi can be printed at 300 dpi without enabling **Page protect**. This has the advantage of preserving SmartPage's ability to conserve memory, which your documents may be using for font storage or other purposes.

Once again, it is more convenient to change the **Resolution** setting through your software drivers, but you can use the following procedure to change the setting using the control panel if necessary.

1. Press to pause the printer.
2. Press to enter the Set-Up Menu.
3. Choose the **PostScript** or **PCL** sub-menu depending on which interpreter your print job is using.
4. Select the **Resolution** feature and use the left or right arrow key to lower the resolution setting.
5. Press to select and save the new setting.
6. Press to return the printer back online.

Reprint your document. If lowering the resolution does not solve the problem, try enabling **Page protect** (Section 7.2.1).

7.3 Recovering From Jams

The printer normally tries to reprint any pages that did not print correctly due to a paper jam. However, sometimes a page cannot be recovered because its memory has already been released and is in use by a subsequent page. To ensure that page reprinting succeeds, you can enable the **Do jam recovery** feature in the Miscellaneous sub-menu (Section A.5.5). When jam recovery is enabled, memory resources in the printer remain committed to each page until that page has been successfully delivered to the output tray.

The default setting for the **Do jam recovery** feature is **Do jam recovery=no** because the DEClaser 5100 printer is very reliable and paper jams are minimal. This default setting fits the requirements of most users, but if you need to guarantee that jammed pages reprint you can enable **Do jam recovery**.

Using **Do jam recovery** has two effects:

- Large amounts of memory are reserved for pages in process, reducing the amount of memory available for other uses, such as font storage.
- Print speed is reduced, perhaps to well below the 8 page-per-minute rate the printer can normally sustain. This happens if there is only enough memory in the printer for one or two pages to be in process at once.

These effects are most evident when **Page protect** is enabled, since that mode overrides the memory conservation aspect of SmartPage technology.

7.4 Determining Memory Requirements

Table 7–1 shows the minimum memory required for the various paper sizes and printing modes. The memory amounts listed in the table reflect the minimum memory required for page protection and may not be available in exactly the increments shown. Memory beyond the amounts required for page protection is assigned to other uses in the printer such as font storage.

NOTE

The DEClaser 5100 printer has two open slots for optional SIMMs (see Appendix D for ordering information).

Table 7–1 Minimum Memory Requirements

Page Size	Resolution ¹	Page Protection Enabled ³	Jam Recovery Enabled ⁴
Letter or A4	300	2 MB	5 MB
Letter or A4	600	6 MB	14 MB
Letter or A4	1200	18 MB	50 MB
Legal ²	300	3 MB	7 MB
Legal	600	7 MB	17 MB
Legal	1200	22 MB	62 MB

¹ Resolutions shown are for both horizontal and vertical dimensions. Split resolutions (600 x 300, for example) are supported, and memory requirements for these sizes are intermediate to the related larger and smaller sizes.

² Legal size pages require about 25% more memory than that needed for Letter and A4 size pages.

³ Presumes Jam recovery disabled.

⁴ With **Page Protect** enabled, these memory capacities are needed to allow full engine speed to be maintained for most pages.

8

Maintenance

Maintenance on the DEClaser 5100 printer is automatically performed each time you replace the toner cartridge. Since the toner cartridge contains most of the key components that affect print quality, the only additional maintenance you need to perform is cleaning the printer.

This chapter covers:

- When to replace the toner cartridge (Section 8.1)
- Cleaning the printer (Section 8.2)

8.1 Replacing the Toner Cartridge

Replace the toner cartridge under the following conditions:

- When a print quality problem exists (see Chapter 10).
- When the Alert indicator lights and pressing  displays the **Toner low** message.

When the **Toner low** message first appears, the toner cartridge can still contain enough toner to print additional pages before you need to replace the cartridge. Perform the following steps before replacing the cartridge:

1. Open the top cover and remove the toner cartridge (see the diagram on the inside of the cover).



2. Gently rock the cartridge a few times to redistribute the remaining toner.



3. Reinstall the toner cartridge and print a file.
 - ✓ If the Alert indicator remains on or the print is too light, install a new toner cartridge (refer to instructions on the toner cartridge box).

NOTE

Empty toner cartridges should be disposed of properly to protect the environment. You can return used cartridges to Digital for proper disposal. Refer to the instruction sheet enclosed with the cartridge for information.

See Appendix D for information about ordering the toner cartridge.

8.2 Cleaning the Printer

To ensure the highest possible print quality, it is important that you clean the inside of the DEClaser 5100 printer periodically by wiping off excess toner and paper dust, and cleaning the anti-static teeth.

Timetables for cleaning the printer are:

- Each time you change the toner cartridge
- When print quality problems appear

CAUTION

Do not use cleaning solvents or detergents to clean the printer. Use a lint-free cloth slightly dampened only with water.

Clean the printer using the following procedure:

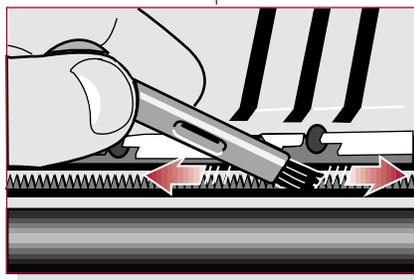
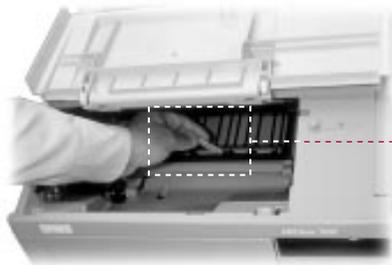
1. Power off the printer.
2. Open the top cover and remove the toner cartridge (see the diagram on the inside of the cover).



3. Clean the anti-static teeth using the green cleaning brush (stored in the printer).

CAUTION

Be careful not to touch (or clean) the black transfer charge roller which is very close to the anti-static teeth. Oil or contaminants from your fingers or scratches on the transfer charge roller will reduce print quality. You do not have to clean the transfer charge roller because it is cleaned automatically each time a page is printed.



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4. Clean the metal transfer guide with the cloth.



5. Reinstall the toner cartridge.
6. Close the top cover and power on the printer.

9

Clearing Paper Jams

This chapter explains what causes paper jams and how to clear them. The following information is covered in this chapter:

- What causes paper jams (Section 9.1)
- Paper feed jams (Section 9.2)
- Fusing unit jams (Section 9.4)
- Paper exit jams (Section 9.5)
- Envelope feeder jams (Section 9.6)

9.1 Causes of Paper Jams

Paper jams are typically caused when paper is:

- Torn or creased
- Improperly stored
- The wrong size or weight
- Not loaded flat or straight in the tray

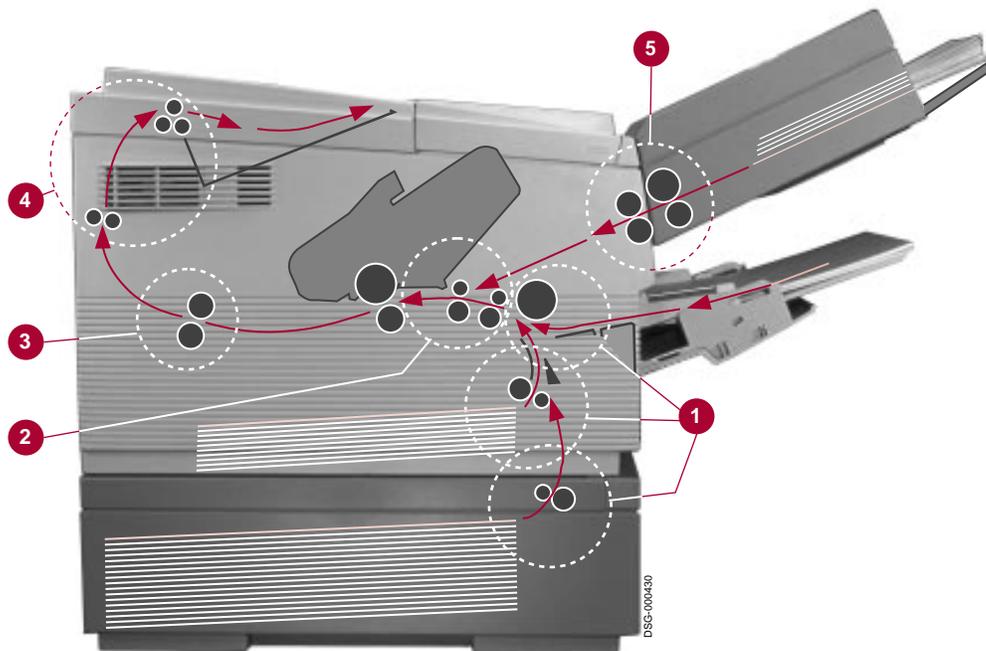
Most paper jams can be avoided by following the instructions and specifications outlined in Appendix C. Figure 9–1 shows the areas in the printer (including the optional LCIT and envelope feeders) where the majority of paper jams occur.

NOTE

Paper jams can occur in more than one area of the printer. When clearing paper jams, be sure to remove all pieces of paper from the printer including any small pieces that have been torn from the page.

Do not power off the printer or you'll lose all current data available for jam recovery and any print jobs queued in the printer.

Figure 9–1 Paper Jam Locations



- ❶** Paper feed jams (Section 9.2)
- ❷** Transfer area jams (Section 9.3)
- ❸** Fusing unit jams (Section 9.4)
- ❹** Paper exit jams (Section 9.5)
- ❺** Envelope feeder jams (Section 9.6)

9.2 Paper Feed Jams

Paper feed jams occur between the paper pick-up rollers (that take paper from the tray) and the transfer roller (that transfers an electrical charge to the paper as it passes through the printer). There are actually four areas where paper feed jams can occur:

1. From the optional LCIT (Section 9.2.1)
2. From the internal tray (Section 9.2.2)
3. From the front tray (Section 9.2.3)
4. In the paper transfer area (Section 9.3)

9.2.1 LCIT Area Jams

This section describes how to clear paper jams that occur in the LCIT. If you are encountering frequent paper jams in the LCIT you may have to reset the spring tension in the tray. See Section E.2 for additional information about this adjustment.

Remove paper jams from the LCIT as follows:

1. Pull the paper tray all the way out of the LCIT.



2. Remove jammed paper from the LCIT.



- ✓ If the jammed paper is not accessible from the LCIT, go to Section 9.3.
3. Reinstall the paper tray.

9.2.2 Internal Tray Jams

Remove paper jams from the internal tray area as follows:

1. Pull the tray all the way out of the printer.



2. Remove jammed paper from the feed rollers in the tray area.



- ✓ If the jammed paper is not accessible or easily removed from the area, go to Section 9.3.
3. Reinstall the internal tray.

9.2.3 Front Tray Paper Jams

Remove paper jams from the front tray area as follows:

1. Remove the jammed paper from the feed rollers in the front tray area.



- ✓ If the jammed paper is not accessible or easily removed from the front tray, go to Section 9.3.

9.3 Paper Transfer Area Jams

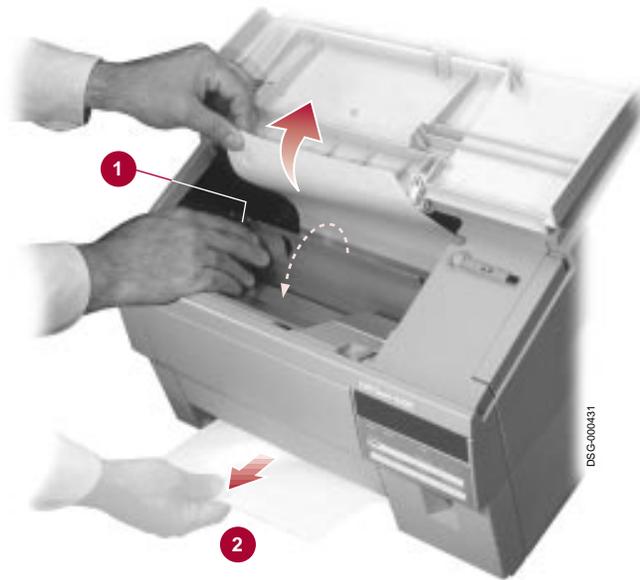
Remove paper jams from the transfer area as follows:

1. Open the top cover and remove the toner cartridge (see the diagram on the inside of the cover).



2. Lift the transfer guide up (using the green lever **1**) and remove the jammed paper from the transfer area (or from the tray area **2** if the paper is accessible).

✓ Lower the transfer guide back to its operating position.



3. Reinstall the toner cartridge and close the top cover.

9.4 Fusing Unit Jams

Fusing unit paper jams occur where the paper passes through the heat and pressure rollers of the fusing unit. There are two areas where this can happen:

1. Where the paper enters the fusing unit (Section 9.4.1)
2. Where the paper exits the fusing unit (Section 9.4.2)

9.4.1 Internal Fusing Unit Jam

Remove paper jams from the internal fusing unit area as follows:

1. Open the top cover and remove the toner cartridge (see the diagram on the inside of the cover).



2. Gently pull the jammed paper from the fusing unit.
 - ✓ If the jammed paper is not accessible or easily removed from this side of the fusing unit, go to Section 9.4.2.

WARNING

The fusing unit may be HOT. Use caution when clearing paper from this area.



3. Reinstall the toner cartridge and close the top cover.

9.4.2 External Fusing Unit Jams

Remove paper jams from the external fusing unit area of the printer as follows:

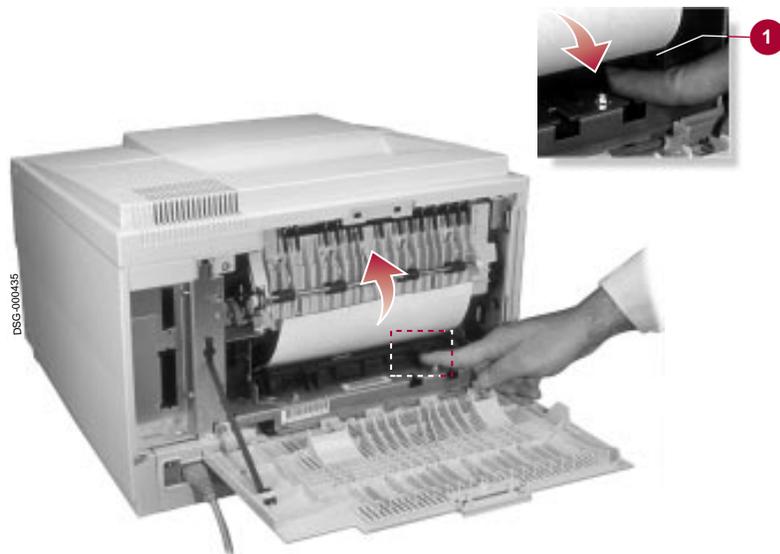
1. Open the rear door of the printer by pressing the latch and lowering the door.



2. Push down on the fusing unit cover ❶ and remove the jammed paper.

WARNING

The fusing unit may be HOT. Use caution when clearing paper from this area.



3. Close the rear door of the printer.

9.5 Paper Exit Jams

Exit area paper jams occur where the paper passes from the fusing unit to the paper ejection rollers. There are two areas where paper exit jams can occur:

1. In the paper eject area (Section 9.5.1)
2. In the fusing unit and paper eject area (Section 9.5.2)

This section describes how to clear paper jams in these areas.

9.5.1 Paper Eject Jam

Remove paper eject jams from the printer as follows:

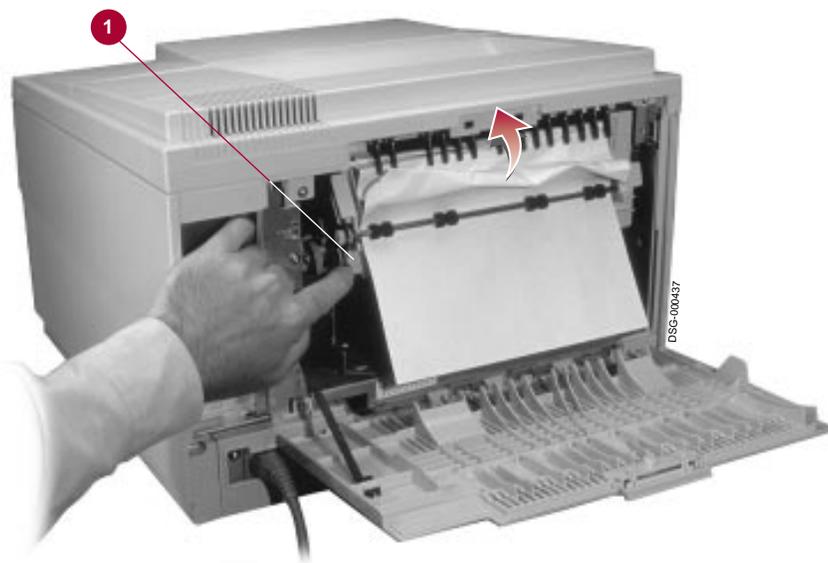
1. Open the rear door of the printer by pressing the latch and lowering the door.



2. Press the green lever ❶ to release the paper then remove the jammed paper from the printer.

WARNING

The fusing unit may be HOT. Use caution when clearing paper from this area.



3. Close the rear door of the printer.

9.5.2 Fusing Unit/Eject Area Jams

Remove paper jams from the fusing unit/eject area of the printer as follows:

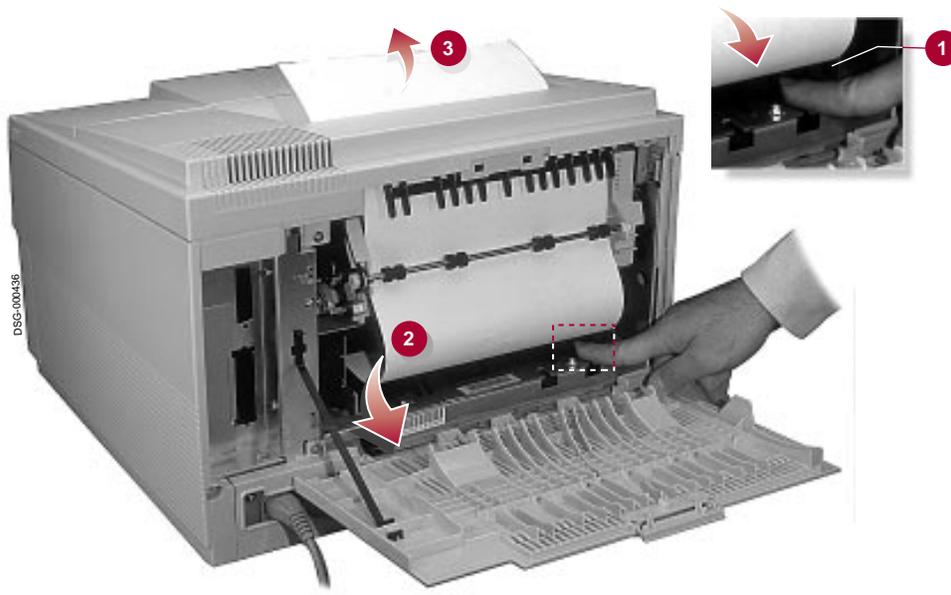
1. Open the rear door of the printer by pressing the latch and lowering the door.



-
2. Push down on the fusing unit cover ❶ and pull out that side of the jammed paper ❷.
3. Remove the jammed paper by pulling it out from the paper eject area ❸ of the output tray.

WARNING

The fusing unit may be HOT. Use caution when clearing paper from this area.

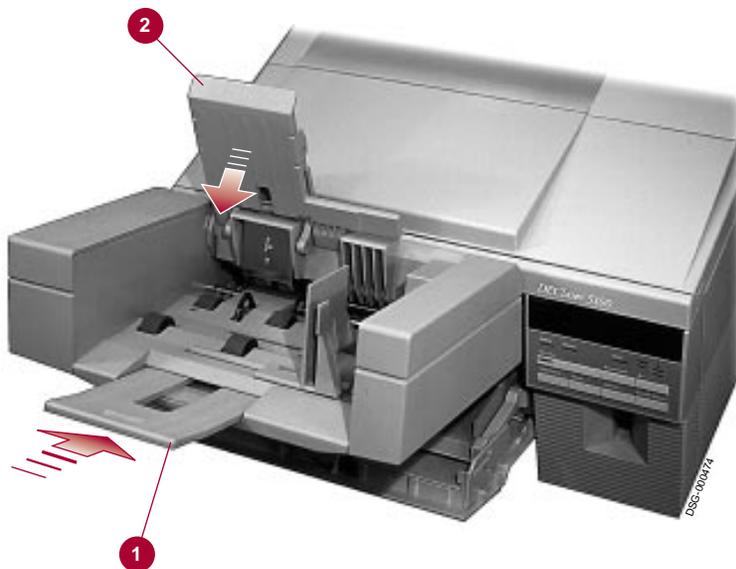


-
-
-
4. Close the rear door of the printer.

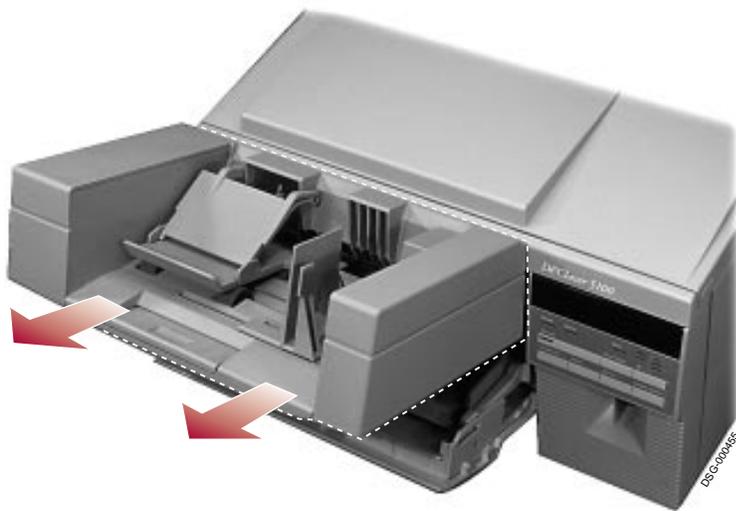
9.6 Envelope Feeder Jams

Envelope feeder jams occur where the paper passes from the envelope feeder to the paper feed rollers in the printer. Clear envelope feeder jams as follows:

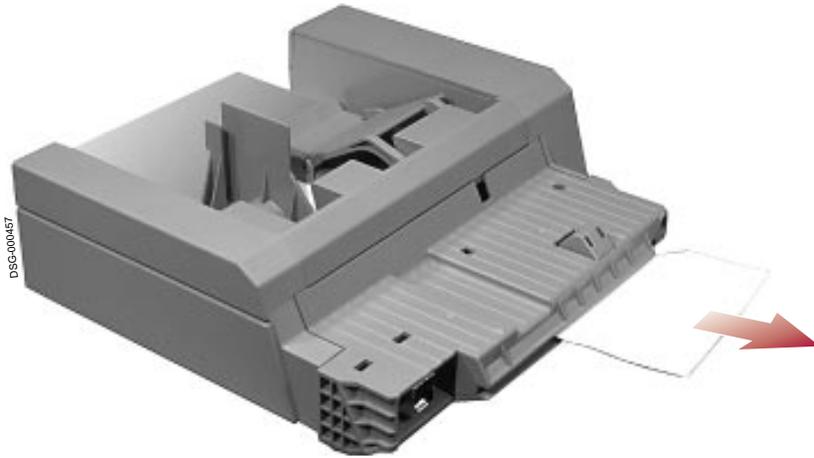
1. Remove any remaining envelopes from the feeder.
2. Push in the extension tray **1** and then lower the pressure plate **2**.



3. Remove the envelope feeder by lifting it up slightly and then out from the printer.



4. Remove the jammed envelope from the envelope feeder.
 - ✓ If the jammed envelope entered the printer, remove it from the feed area.



5. Reinstall the envelope feeder.
6. Load the feeder with envelopes.

10

Troubleshooting

This chapter contains troubleshooting information for the DEClaser 5100 printer. It is divided into the following sections:

- Error messages (Section 10.1)
- Optional disk drive messages (Section 10.2)
- PostScript Error Page information (Section 10.3)
- Common operating and print quality problems (Section 10.4)

10.1 Error Messages

The printer recognizes two categories of errors:

- *Alerts*: non-fatal conditions that do not prevent the printer from continuing to operate. These are low-priority errors.
- *Faults*: fatal conditions that make the printer unable to continue operating. These are high-priority errors.

Display messages for each of these conditions are described in Section 10.1.1 and Section 10.1.2.

10.1.1 Alert Conditions

When an Alert condition occurs, the amber indicator on the graphic display lights and an asterisk (*) appears at the the end of the message currently being displayed. When all error conditions are corrected, the * is removed from the message display.

If you press * when there is an error condition, one of the messages described in Table 10–1 appear on the display.

Table 10–1 Alert Messages

Message	Description	Corrective Action
Toner low	The toner cartridge may be running out of toner.	See Section 8.1 for instructions before replacing the toner cartridge.
Comm Error	The printer encountered a communications error on the active port.	Print out the PostScript or PCL Menu Settings page (Section 2.4.1 and Section 2.4.2) and verify that the printer and host communication settings match (Section A.5.4).
Memory overflow	This job is too complex for the memory configuration.	Reduce the resolution (see Chapter 7.) Enable Page protection and add more RAM if necessary (see Chapter 7).
Print overrun	Page is too complex for banding.	Enable Page protection and add more RAM if necessary (see Chapter 7).

10.1.2 Fault Conditions

When a Fault condition occurs, the amber Alarm indicator lights to indicate the error condition. The appropriate service message is shown and remains on the display until the fault is corrected.

When the condition is corrected, the printer returns to the Ready state and the appropriate messages are shown on the display.

NOTE

Requests for manually fed media are also treated as fault messages and the Alarm indicator will flash. If no action is taken, the printer times out the request according to the **Manual timeout** feature setting, and then feeds a sheet of paper from the highest priority tray (according to the **Default feeder** feature).

Table 10–2 Fault Messages

Message	Description	Corrective Action
Printer open	The top cover of the printer is open.	Close the top cover.
Paper jam	A paper jam has occurred or the back cover is open.	Clear the paper jam (Chapter 9) or close the back cover.
No toner cart	The toner cartridge is not installed or is improperly installed.	Install the toner cartridge.
Insert cartridge	An optional font cartridge was removed while the printer was processing or printing a job or in a Fault state.	Insert the font cartridge.
Remove cartridge	An optional cartridge was inserted while the printer was in a Fault state.	Pause the printer and remove the font cartridge. After the Fault condition clears, let the current job print completely before reinserting the font cartridge.

(continued on next page)

Table 10–2 (Cont.) Fault Messages

Message	Description	Corrective Action
Manual Feed xxxx¹	Request media to be fed manually.	Press <input type="checkbox"/> * to feed requested media from the front paper tray or the default tray.
Load Front xxxx¹	The paper size requested by the print job is not loaded in front paper tray or the tray is empty.	Load the requested paper size and select the paper size using the Front tray size feature of the Feeder Sub-menu (Section A.5.1) or press <input type="checkbox"/> * to let the printer use the paper currently loaded in the tray.
Load Inter xxxx¹	The paper size requested by the print job is not loaded in the internal paper tray or the tray is empty.	Load the requested paper size in the internal paper tray or press <input type="checkbox"/> * to let the printer use the paper currently loaded in the tray.
Load LCIT xxxx¹	The paper size requested by the print job is not loaded in the LCIT or the LCIT is empty.	Load the requested paper size and adjust the paper size selector on the LCIT or press <input type="checkbox"/> * to let the printer use the paper currently loaded in the LCIT.
Load Env xxxx¹	The envelope size requested by the print job is not loaded in the envelope feeder or the feeder is empty.	Load the requested envelope size and select the envelope size through the Envelope size feature of the Feeders Menu (Section A.5.1), or press <input type="checkbox"/> * to let the printer use the envelopes currently loaded in the envelope feeder.
Install Internal	The internal paper tray is not installed. The internal paper tray must be installed for the LCIT to operate properly.	Install the internal paper tray.
50 ERROR	Engine error: Possible fusing unit malfunction.	Power off the printer for at least 30 minutes and then power the printer on. If the problem persists, call Digital Customer Services (Chapter 11).

¹xxxx indicates the type of media requested.

(continued on next page)

Table 10–2 (Cont.) Fault Messages

Message	Description	Corrective Action
51 ERROR	Engine error: loss of beam detect.	Call Digital Customer Services (Chapter 11).
52 ERROR	Engine error: incorrect scanner speed.	Call Digital Customer Services (Chapter 11).
57 ERROR	Engine error: Main motor failure.	Call Digital Customer Services (Chapter 11).
58 ERROR	Engine error: fan failure.	Call Digital Customer Services (Chapter 11).
68 ERROR	Non-volatile RAM has an error.	Call Digital Customer Services (Chapter 11).
68 SERVICE	Non-volatile RAM is full.	Call Digital Customer Services (Chapter 11).

10.2 Optional Disk Drive Errors

This section lists the messages that affect the operation of the optional disk drive. Some of the messages are informational while others are error messages that may prevent operation of the disk drive. Disk drive errors do not prevent the printer from operating.

Table 10–3 Disk Drive Messages

Message	Description	Corrective Action
Disk removed *	Shown at power up if a disk drive has been removed from the printer.	Press <input type="text" value="*"/> .
Disk added *	Shown at first power up after a formatted disk drive has been installed in the printer.	Press <input type="text" value="*"/> .
* to format disk	Shown at power up if a disk drive has been installed in the printer but has not been formatted.	Press <input type="text" value="*"/> .
Formatting disk	Shown while the disk is being formatted (approximately 20 seconds).	None

(continued on next page)

Table 10–3 (Cont.) Disk Drive Messages

Message	Description	Corrective Action
Restart printer	Appears on the display after the disk has been formatted.	Power the printer off and then on.
Disk error	The disk cannot be formatted.	Call Digital Customer Services (Chapter 11).
Disk nn% full¹	Appears on the display for a few seconds to indicate when the disk is more than 70% full and a font download is about to occur.	Some fonts or files may need to be deleted.
Disk full	Appears on the display for a few seconds to indicate the disk is more than 95% full and another font download cannot occur.	Some fonts or files may need to be deleted.
Disk write error	A disk writing error has occurred.	Try resubmitting your job again. If the problem persists call Digital Customer Services (Chapter 11).
Disk read error	A disk reading error has occurred.	Try resubmitting your job again. If the problem persists call Digital Customer Services (Chapter 11).
Disk error nnnn²	A fatal disk error has occurred.	Call Digital Customer Services (Chapter 11).

¹Where nn is a number between 70 and 95.

²Where nnnn is the error code number.

10.3 PostScript Error Page Information

The DEClaser 5100 printer is configured to print an error page when a PostScript error occurs. This page is printed with the user's job (including the page on which the error occurred) to provide details about what caused the error. Although the error page is designed to report a level of detail more appropriate for PostScript programmers than to printer users, the information can also help non-programmers to identify and fix the error so the job can be printed successfully. See Section 10.3.1 for troubleshooting information relating to some common PostScript printing problems. Save the error pages in case you are unable to correct the error yourself...you can forward the error pages to your software support people to aid them in correcting the problem.

There are some situations in which the error page can fail to print in response to an error.

- If the PostScript file being printed includes a substitute error page (as is sometimes the case with the Microsoft PostScript printer driver, among others), the built-in error page might not be printed.
- Resource exhaustion errors, such as **VMerror** and **limitcheck**, can leave so few resources available that the error page itself may be incomplete or not printed at all.

The printer is configured to print the error page by default, but this setting can be turned off by disabling the **Print errors** feature in the PostScript sub-menu (Section A.5.2).

Table 10–4 describes the major types of information shown on the PostScript Error Page.

Table 10–4 PostScript Error Page

Category	Description
❶ Execution Stack	Contains the PostScript code awaiting execution at the time of the error. Normally, “–file–” indicates the point where internal printer PostScript begins; items higher on the execution stack are part of the failing program.
❷ Graphics State	Contains a snapshot of the current PostScript graphics state, including the current and default coordinate transformation matrix (CTM), selected font, and drawing and clipping paths. The current resolution setting can be inferred from the default CTM - values like “8.33” (plus or minus) indicate 600 dpi resolution is the current default, “4.17” indicates 300 dpi, and “16.67” indicates 1200 dpi (for printers with the resolution enhancement option installed).
❸ Operand Stack	Displays the top 20 or so entries, showing the type and value of simple objects (numbers, booleans, etc.) and strings, or the type of composite objects and their sizes.
❹ Dictionary Stack	Contains the top 12 or so currently active dictionaries. This list of dictionaries normally contains systemdict , shareddict , and userdict , unless these are too far down below those entries shown. The list also shows the names of other active dictionaries that have names, or <i>unnamed dict</i> for dictionaries without names (or those whose names cannot be determined).
❺ Printer Name	If your printer has been assigned a name that is different from the product name, it appears here; otherwise, this field is blank.
❻ Product Name	Always includes “DECLaser 5100”, and the version and revision numbers of the PostScript firmware.
❼ Job Name	If your print job had a PostScript JobName value set, that name appears here; otherwise the field is blank.
❽ PostScript Error Data	The error name is the PostScript error name, the command is the command that executed to generate the error or was executing when the error occurred. If this field is blank, it likely means that one or more unprintable characters were interpreted as a command. The “error info” field may contain supplementary information (one or two items) that elaborate on the details of certain errors, but normally this field contains the message <i>not displayable</i> .
❾ VM Status	A report of the state of PostScript VM and the save level. Small values of VM avail (available) may indicate the job that failed was stressing the resource limits of the printer.

Figure 10–1 PostScript Error Page

PostScript Error Report 3.13

Tom's office printer **DECLaser 5100** v2013.109-139

job name: example error job

<p>operand stack (2 elements)</p> <pre>dicttype, l=4/4 savetype ...bottom....</pre>	<p>dictionary stack (5 elements)</p> <pre>unnamed dict 162300 statusdict 69/80 userdict 23140 shreddict 0/20 systemdict 354360 ...bottom....</pre>	<p>error name: limitcheck</p> <p>command: stroke</p> <p>errorinfo: not displayable</p> <p>VM status: save level: 3 max VM: 170112 VM used: 112270 VM avail: 57842</p>
<p>graphics state</p> <pre>current CTM: [8.33 0 0 0 -8.33 -2565.0 3300.5] default CTM: [8.33 0 0 0 -8.33 -2565.0 3300.5] current font: NewCenturySchlb-italic current path: CP: [523 13 52.98] size: 144 elements bbox: [49.58 51.4 522.02 130.65] current clip path: size: 4 elements bbox: [36.38 36.38 579.22 755.74]</pre>	<p>execution stack (13 elements)</p> <pre>--file-- { disableinterrupt } @aborted { clearinterrupt disableinterrupt () exch 0 exch put clear } @aborted { --procedure (array or packedarray) with no read access-- } @aborted { --procedure (array or packedarray) with no read access-- } @loop { --procedure (array or packedarray) with no read access-- } @stoppped (handleerror) if stop @exec ...end...</pre>	

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10.3.1 Troubleshooting PostScript Errors

This section describes some of the more common errors that may appear on the PostScript Error Page.

- **interrupt:** Indicates that the job was aborted, either remotely through the driving software or from the front panel.
- **timeout:** Indicates that the job either exceeded some time limit in processing, or the communication path from the host stopped sending data before the job was finished. Check with your system manager to see if there is a problem with your communication links or if a job timeout limit (Section A.5.2) has been set for your printer. You may want to adjust the **I/O timeout** feature for the communications port.
- **ioerror:** Indicates that an error has occurred either on an external communication link or perhaps on an internal disk access (if your printer is so equipped). Your communication settings may need to be modified if this error persists. See Section A.5.4 or consult your system manager for assistance.
- **VMerror:** This is resource exhaustion error and normally means that the PostScript file you are running is trying to consume more memory than you have installed in your printer. Well-written PostScript files do not typically fail this way, but there are modes of printer use that can force such errors. If you are loading numerous fonts, especially persistently so all jobs can access them without reloading, you may be overfilling your printer's memory capacity. If your printer driver allows you to make an options choice like "clear memory per page" (as the Microsoft DOS and Windows drivers do), you should enable this setting to allow more efficient use of printer memory. Otherwise, installing more memory in your printer will help prevent a **VMerror**.
- **limitcheck:** This is also a resource exhaustion error but of a different type than **VMerror**. As is explained in Chapter 7, the SmartPage page composition technology allows for the printing of 600 dpi pages using much less memory than is normally required by PostScript laser printers of that resolution. However, unusually complex pages or pages that include large areas of image data can exceed the ability of the SmartPage technology to execute in reduced memory. These kinds of pages will generate **limitcheck** errors. In such cases, the "command" entry (right below the "error name" entry on the error page) will indicate some sort of a PostScript drawing command: **fill**, **stroke**, **image**, **show**, or the like. Refer to Chapter 7 for the corrective action for these errors.

10.4 Operating and Print Quality Problems

Table 10–5 lists common operating and print quality problems and their possible solutions. Follow all corrective actions in the order listed. Before calling for service, check Table 10–5 to solve printer problems.

NOTE

Since many problems with print quality could be caused by a faulty or empty toner cartridge, it is recommended that you keep a spare toner cartridge as a replacement. If you have a print quality problem that is not listed in Table 10–5, replace the toner cartridge to see if that solves the problem before calling for service.

Table 10–5 Common Operating Problems

Problem	Possible Cause	Corrective Action
No Power		
The printer does not turn on when you set the power switch to the (ON) position.	The power source is defective.	Verify that the power cord is plugged into the back of the printer and at the wall outlet. Check for power at the wall outlet by plugging in a lamp to see if it lights. If the lamp does not light, call your building maintenance services to check the circuit supplying power to that outlet.
	The power cord is not connected or is damaged.	Check the power cord for damage and secure connections at the printer and at the wall outlet.
	The printer's power supply needs servicing.	Call Digital Customer Services for service (Chapter 11).

(continued on next page)

Table 10–5 (Cont.) Common Operating Problems

Problem	Possible Cause	Corrective Action
No Printout		
Printing does not start.	The printer is in the paused state. (The message display shows PAUSED or the Online indicator is not on.)	Press On Line to return the printer online.
	The communications interface selections (baud rate, parity, and so on), do not match the host settings. (The message display shows READY/IDLE .)	See Section A.5.4 for information about these features.
	The interface cable is not connected properly.	Verify that the cable connections at the printer and at the host computer are connected correctly.
	Software or command problem.	Try printing a font list or test page from the Test /Fonts Menu (Section A.2). If the printer is able to print the page, the problem is in the user command or software (consult your application/software manuals).
	Job timeout too short for complex PostScript documents.	Increase the job timeout value.
Last page did not print.	Software problem or improper command. (The message display shows PS WAITING .)	Consult your application software manuals for the corrective action.
	Data is still in the print buffer and the I/O timeout has not expired. (The message display shows WAITING .)	Press Form Feed to print the remaining data (PCL only). If the problem persists, adjust the I/O timeout for that port (Table A–11).

(continued on next page)

Table 10–5 (Cont.) Common Operating Problems

Problem	Possible Cause	Corrective Action
Poor Printing		
Vertical/horizontal deletions or spots on the page.	Toner is not being dispersed evenly.	Remove the toner cartridge and gently rock it 3 or 4 times to distribute the toner evenly within the cartridge. Install a new toner cartridge.
	Dirty transfer roller.	Print additional pages until the excess toner is removed from the roller and then resend the print job.
	Paper is damp.	Replace with dry paper.
	Dirty antistatic teeth.	Clean the antistatic teeth (Section 8.2).
Printing is too light.	The print density setting is incorrect.	Adjust the print density setting (Section 6.4).
	Faulty photoreceptor.	Replace the toner cartridge.
	Dirty transfer roller.	Continue printing until the excess toner is removed from roller and then resend the print job.
Printing is too dark.	Faulty transfer roller.	Replace the transfer roller. Call Digital Customer Services (Chapter 11).
	Paper is damp.	Replace with dry paper.
	The print density setting is incorrect.	Adjust the print density setting (Section 6.4).
The page printed black.	Faulty charge roller.	Replace the toner cartridge.
The page printed blank.	Faulty power supply or controller board.	Call Digital Customer Services (Chapter 11).
	Empty toner cartridge.	Replace the toner cartridge.

(continued on next page)

Table 10–5 (Cont.) Common Operating Problems

Problem	Possible Cause	Corrective Action
Poor Printing		
Stray toner is fused to the paper.	Dirty transfer roller.	Print additional pages until the excess toner is removed from roller and then resend the print job.
	A toner cartridge was just installed.	Print several pages to remove any residual toner and then resend the print job.
The overall print quality is poor.	Faulty photoreceptor.	Replace the toner cartridge.
	The print medium is not the recommended type.	See Appendix C for print media specifications and Appendix D for ordering information.
Miscellaneous		
Frequent paper jams and torn or damaged pages.	Paper does not meet specifications.	See Appendix C for print media specifications.
	Paper is damp.	Reload with dry paper.
	There is an obstruction in the paper path.	See Chapter 9 for instructions on clearing paper jams.
The print is skewed (not aligned with the top edge of the paper).	The paper is not loaded properly.	See Chapter 3 for information about loading paper in the tray.
	Paper does not meet specifications.	See Appendix C for paper specifications.
	Internal paper tray is not loaded properly.	Remove and reload paper (Section 3.2).
	Front tray paper guide is not positioned properly.	Align the paper guide (Section 3.3).

11

Calling for Service

If you cannot correct a problem with the DEClaser 5100 printer or the operator panel instructs you to call Customer Services, the printer requires servicing by a Customer Services engineer.

Digital has a service center in your area to help keep your system running properly. Refer to Table 11-1 before calling Customer Services.

Table 11-1 Questions to Consider Before You Call

<i>Is the call necessary?</i>	Before calling for service, refer to Chapter 10. Often you can solve the problem yourself.
<i>Who should call for service?</i>	If the printer is on a network, the system manager should place the call for service. Otherwise you should place the call.
<i>Where should I call?</i>	In the continental United States: If you purchased on-site warranty support at the time of sale, call Digital at 1-800-DEC-8000. If you do not have on-site warranty support and are returning the printer to Digital for service, call 1-800-225-5385. For per-call service information, call your local Digital sales office. In Alaska, Hawaii, Canada, or outside of the United States: Call your local Digital sales office for service.
<i>What does the service center need to know?</i>	Write down the serial and model numbers located on the label on the back of the printer.

(continued on next page)

Table 11–1 (Cont.) Questions to Consider Before You Call

How should you describe the problem?

Summarize the problem by:

- Noting what you were doing when the system failed.

What application were you using?

Was a PostScript error page printed?

Did the printer just stop in the middle of the print job?

Any other relevant information.

- Printing the PostScript or PCL test page if possible (Section 2.4).

These pages contain important information about the printer such as communication settings, the amount of printer memory, and so on, that may help Customer Services. If you cannot print the test pages, be prepared to answer questions about the system operating environment such as:

Are you using the PCL or PostScript interpreter?

Which printer driver you are using?

Are you connected to a PC, Macintosh, or the network?

Which interface port are you using?

Other questions about your printer configuration.

- Relaying any messages shown on the control panel.
- Describing any strange noises the printer might have made.

Stay by the printer/host system if possible; the service engineer may ask you to re-create the problem.

A

Printer Menus

This appendix describes the four menus provided by the DEClaser 5100 printer control panel: Test/Fonts, Reset, Set-Up, and Feeder Select. Each of the features provided by these menus are also described.

For information about general control panel operation, see Chapter 2. Refer to the *DEClaser 5100 Printer Menu Quick Reference Card* for a visual representation and quick reference chart of all the printer menu features and values.

A.1 Menu Mode Operation

Keys with symbols and text in black as shown in Figure A-1, operate according to those legends when the printer is in Menu mode. Table A-1 describes the function of these keys while in Menu mode.

Figure A-1 DEClaser 5100 Printer Control Panel

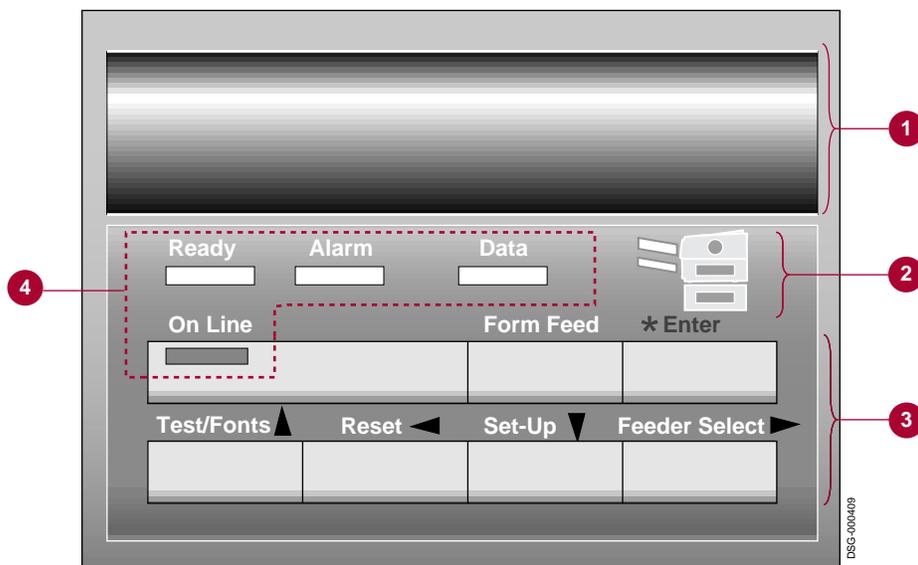


Table A-1 Key Functions in Menu Mode

Key	Action taken
<input type="button" value="On Line"/>	The printer returns to the Ready state.
<input type="button" value="Form Feed"/>	The beeper sounds.
<input type="button" value="Enter"/>	Selects the value shown on the display as the new default for this feature.
	Trying to select a feature (and not a value) sounds the beeper.
<input type="button" value="↑"/> <input type="button" value="←"/> <input type="button" value="↓"/> <input type="button" value="→"/>	These keys navigate within a menu.
	When <input type="button" value="↑"/> is pressed at the top-level of a menu, the printer returns to the Paused state.

A.2 Test/Fonts Menu

The Test/Fonts Menu provides various types of information such as PostScript menu settings, font lists, and demonstration pages. Section 2.4 describes additional information about using the Test/Fonts Menu.

Table A-2 describes the features in the Test/Fonts Menu.

Table A-2 Test/Fonts Menu Features

Top level	Description
Show page count	The total number of pages printed to date appears briefly on the message display.
Print menu guide	Prints a diagram showing all the features in the printer menus.
Print PS menus	Prints the current settings of the Set-Up menu, except for PCL settings. See Section 2.4.1 for information about printing this test page.
Print PCL menus	Prints a test page that includes the current settings of most PCL features. See Section 2.4.2 for information about printing this test page.
Print test page	Prints the start-up test page, providing summary information about the printer and a list of any installed options. See Section 2.4.3 for information about printing this test page.
Print PS fonts	Prints a list and samples of the downloaded, cartridge, and built-in fonts available to the PostScript interpreter. See Section 2.4.4 for information about printing this font list.
Print PCL fonts	Prints a list and samples of the downloaded, cartridge, and built-in fonts available to the PCL interpreter. See Section 2.4.5 for information about printing this font list.
Print demo page	Prints a page that shows the DECimage Plus and font capabilities of the printer. See Section 2.4.6 for information about printing this test page.

A.3 Reset Menu

The Reset Menu provides reset operations for the DEClaser 5100 printer. Selecting any feature from this menu resets the state of the printer and causes the following:

- The page buffer is cleared and the interpreters are reset, clearing downloaded information such as soft fonts.
- The input buffer for all the communication interfaces is cleared.

NOTE

When the **Set-Up Menu lock** feature is enabled, attempting to select this feature sounds the beeper and the message **Set-Up locked** is shown on the display (see Section A.5.6).

Table A–3 describes the entries in the Reset Menu.

Table A–3 Reset Menu Features

Top level	Description
Reset printer	Selecting this feature resets the printer to the values stored in non-volatile memory.
Factory defs Ltr	Writes the factory default values for all features in the Set-Up and Feeder Select Menus to non-volatile memory. These settings then become the printer defaults and the Front tray size feature is set to Letter .
Factory defs A4	Writes the factory default values for all features in the Set-Up and Feeder Select Menus to non-volatile memory. These settings then become the printer defaults and the Front tray size feature is set to A4 .

A.4 Feeder Select Menu

The Feeder Select menu lets you quickly and conveniently select the default input paper tray, even if the Set-Up Menu is locked (see Section A.5.6).

When you first enter the menu, the current default feeder is shown on the display. When using this menu, the indicators on the graphic display corresponding to each input tray light to show the tray selection. Changes to the input tray selection take effect immediately.

Table A-4 describes the selections in the Feeder Select Menu.

Table A-4 Feeder Select Menu Features

Value	Selects
FEED=Internal	Internal tray
FEED=LCIT¹	Optional LCIT (large capacity input tray)
FEED=Front	Front (fold-out) tray
FEED=Envelope²	Optional envelope feeder
FEED=Front & Int	Internal tray and front tray. This selection feeds paper from the front tray when the internal tray is empty.
FEED=Int & LCIT¹	Internal tray and optional LCIT. This selection feeds paper from the internal tray when the LCIT is empty.
FEED=All¹	Front tray, Internal tray, and optional LCIT. This selection feeds paper from the internal tray when the LCIT is empty, and from the front tray if the internal tray is empty. The optional envelope feeder is never part of automatic tray selection. It must be selected explicitly by the user or an application program.

¹Only if the optional LCIT is installed, otherwise the next option is selected.

²Only if the optional envelope feeder is installed, otherwise the next option is selected.

A.5 Set-up Menu

The Set-Up Menu enables you to change and configure the features of the DEClaser 5100 printer for your particular printing environment. This section first explains the organization of the several sub-menus in the Set-up Menu, then lists the features that can be configured through this menu.

NOTE

When the **Set-Up Menu lock** feature is enabled, attempting to select this feature sounds the beeper and the message **Set-Up locked** is displayed (see Section A.5.6).

Set-Up Menu Organization

The features that can be configured through the Set-up Menu are grouped into several categories of related features called *sub-menus*.

- **Feeders:** Contains all of the features that relate to printer feeders (paper trays). These features apply to both PostScript and PCL interpreters (Table A-6). Refer to Section A.5.1 if you need detailed information about the features in this sub-menu.
- **PostScript:** Contains features that only apply to the PostScript Level 2 interpreter (Table A-8). Refer to Section A.5.2 if you need detailed information about the features in this sub-menu.
- **PCL:** Contains features that only apply to the PCL interpreter (Table A-10). Refer to Section A.5.3 if you need detailed information about the features in this sub-menu.

- **Communications:** Contains features that apply to serial, parallel, LocalTalk, and network communication interfaces (Table A-12). Refer to Section A.5.4 if you need detailed information about the features in this sub-menu.
- **Miscellaneous:** Contains features that do not fall within other sub-menus and may not be configured by host software commands (Table A-14). Refer to Section A.5.5 if you need detailed information about the features in this sub-menu.

The tables in this section provide a quick reference to the sub-menus within the Set-up menu, with detailed information preceding each table. In some cases, not all of the selectable values are listed because of the numerous values associated with a particular feature. The factory default value for each menu feature is the first item listed in all of the quick reference tables and is also underlined.

A.5.1 Feeders Sub-menu

This section explains the features in the Feeders sub-menu and describes any interactions with other features in the printer. The values of these features is used by both PCL and PostScript interpreters.

Table A–5 Feeders Sub-menu

Feature	Description
Default feeder	Specifies the default input tray. This feature can also be modified by the Feeder Select Menu (Section A.4).
Manual feed	This feature determines whether the printer treats the front tray as an ordinary paper tray where paper is stacked and fed into the printer automatically (MANUAL=off); or only as a manual feed slot where paper is fed one sheet at a time (MANUAL=Front).
Manual timeout	This feature determines the amount of time you have to press <input type="checkbox"/> * to feed a sheet from the front tray. If no action is taken the printer will timeout the request and feed a sheet of paper from the highest priority tray (according to the current setting of the Default feeder feature). If Manual timeout=infinite no action is taken.
Front tray size¹	This feature specifies the size of the media fed through the front tray. The following sizes are supported: Letter (factory default: North America and Japan) A4 (factory default: rest of the world) Legal Executive (7¼"x10½") A5, B5 (JIS), C5, DL 4.125x9.5, 3.875x7.5 (Monarch) Halfletter 2/3 A4 7x9

¹Refer to Appendix C if you require additional information about media sizes.

(continued on next page)

Table A-5 (Cont.) Feeders Sub-menu

Feature	Description
Envelope size¹	Specifies the size of the envelopes fed through the optional Envelope feeder. This feature is only displayed if the option is installed. The following sizes are supported: #10 (4.125x9.5) (factory default) 3.875x7.5 (Monarch) A5, C5, DL

¹Refer to Appendix C if you require additional information about media sizes.

Table A-6 Feeders Sub-menu Quick Reference Table

Feature	Values
Default feeder	<u>FEED=Internal</u> FEED=LCIT¹ FEED=Front FEED=Envelope² FEED=Front&Int FEED=Int&LCIT¹ FEED=All¹
Manual feed	<u>MANUAL=off</u> MANUAL=Front
Manual timeout	<u>TIME=60 seconds</u> (factory default) TIME=20 seconds TIME=40 seconds TIME=infinite TIME=set by host
Front tray size	<u>FRONT=Letter³</u> FRONT=A4 FRONT=Legal ... ⁴
Envelope size²	<u>ENV=4.125X9.5</u> ... ⁴

¹This feature appears only when the LCIT option is installed.

²This feature is only available when the optional envelope feeder is installed.

³This value may not be the default depending on the factory default values operation selected from the Reset Menu (see Table A-3).

⁴Additional selections are described in Table A-5.

A.5.2 PostScript Sub-menu

This section explains the features in the PostScript sub-menu and describes any interactions with other features in the printer. The values of these features are only used by the PostScript interpreter.

Table A–7 PostScript Sub-menu

Feature	Description
Resolution	Specifies the printer resolution for PostScript print jobs. Higher resolution settings may require additional printer memory depending on how complex your printing needs are, and whether the features Do jam recovery and Page Protection are enabled. See Chapter 7 for information about how your resolution setting affects printer memory.
Page protect	Reserves bitmap memory to ensure the complex pages are printed when using the PostScript interpreter. NOTE: With the base configuration of 2 MB of RAM, Page protect can only be enabled at 300 dpi. If you have the resolution set at 600 dpi you cannot enable Page protect unless you have additional RAM installed (see Chapter 7).
DECimage	Controls the use and parameters of DECimage Plus image enhancement features (see Section 6.2.2). There are two sub-menus which control this feature: Enable and Adjust . DECimage: Enable determines whether DECimage Plus is enabled or not. ENA=off , turns off DECimage Plus processing so that it is not applied to print jobs, while ENA=on , turns on DECimage Plus processing persistently. Although these settings can be changed from the control panel, changes made from your host software have precedence. DECimage: Adjust provides a limited set of variations for the DECimage Plus parameters. The <i>Punch0</i> and <i>Punch1</i> DECimage Plus parameters are set according to the value selected for Adjust . When a value other than normal , bright , dark , hi contrast , or lo contrast is stored in non-volatile RAM by an application program, the current value reads set by host .
Allow reset	Controls whether PostScript jobs may be interrupted from the front panel. Refer to Section 2.2 for more information about interrupting print jobs.

(continued on next page)

Table A-7 (Cont.) PostScript Sub-menu

Feature	Description
Wait timeout	Specifies the wait timeout value for the PostScript interpreter. When a value other than these settings is stored in non-volatile RAM by an application program, the current value reads set by host . NOTE: Setting Wait timeout to a value greater than the port I/O timeout setting has no useful effect.
Print errors	When this feature is enabled, any PostScript job that terminates due to a PostScript error causes the PostScript Error Page to be printed. This built-in page includes the page contents at the time of the error, the PostScript error message, the operator that caused the error, and the PostScript stack information for debugging purposes.

Table A–8 PostScript Sub-menu Quick Reference Table

Feature	Values	Secondary Values	
PS: Resolution	<u>RES=600x600</u>		
	RES=300x300		
	RES=600x300		
	RES=1200x600¹		
	RES=1200x1200¹		
PS: Page protect	<u>PROTECT=off</u>		
	PROTECT=Ltr/A4		
	PROTECT=Legal		
PS: DECimage	DECimage:Enable	<u>ENA=off</u>	
		ENA=on	
	DECimage: Adjust		<u>ADJ=normal</u>
			ADJ=brighter
			ADJ=darker
			ADJ=hi contrast
			ADJ=lo contrast
	ADJ=set by host²		
PS: Allow reset	<u>RESET=enabled</u>		
	RESET=disabled		
PS: Wait timeout	<u>WAIT=infinite</u>		
	WAIT=20 seconds		
	WAIT=40 seconds		
	WAIT=60 seconds		
	WAIT=set by host²		
PS: Print errors	<u>PRINT=enabled</u>		
	PRINT=disabled		

¹This feature appears only when the Resolution/Graphics Enhancement option and adequate memory is installed.

²This message appears when the value currently saved in non-volatile memory for the associated feature is not one of the discrete values provided in the menu.

A.5.3 PCL Sub-menu

This section explains the features in the PCL sub-menu and describes any interactions with other features in the printer. The values of these features are only used by the PCL interpreter.

Table A–9 PCL Sub-menu Features

Feature	Description
Resolution	Specifies the printer resolution for PCL print jobs. Higher resolution settings may require additional printer memory depending on how complex your printing needs are, and whether features like Do jam recovery and Page Protection are enabled. See Chapter 7 for information about how your resolution setting affects printer memory.
Page protect	Reserves bitmap memory to ensure the printing of complex pages when using the PCL interpreter. NOTE: With the base configuration of 2 MB of RAM, Page protect can only be enabled at 300 dpi. If you have the resolution set at 600 dpi you cannot enable Page protect unless you have additional RAM installed (see Section 7.1).
Copies	Specifies the number of copies of each page of a PCL print job selectable from 1 to 999. Holding down the <input type="button" value="←"/> or <input type="button" value="→"/> keys causes the value to change by ±1 initially and then by ±10.
Page size	This feature specifies the default paper image size of the media fed from the internal tray. The following sizes are supported: Letter (factory default: North America and Japan) A4 (factory default: rest of the world) Legal Executive (7¼" x 10½") A5, B5 (JIS), C5, DL 4.125x9.5, 3.875x7.5 (Monarch)
Orientation	Specifies the default orientation for PCL print jobs.
Form length	Specifies the number of lines per page for the paper size in the paper tray specified by the Default Feeder feature in the Feeders sub-menu. The default value is FORM LENGTH=60 . Values from 5 through 128 are selectable. Holding down the <input type="button" value="←"/> or <input type="button" value="→"/> keys causes the value to change by 1.

(continued on next page)

Table A–9 (Cont.) PCL Sub-menu Features

Feature	Description
Font source	Determines the source of the default font used by the PCL interpreter. Fonts provided from optional SIMMs are listed as “PERMANENT” SOFT FONTS, PCMCIA cartridges are listed as LEFT and RIGHT cartridge fonts, disk fonts are listed as DISK FONTS, and built-in fonts are listed as INTERNAL FONTS.
Font number	<p>This feature, in combination with the Font source feature, determines the specific typeface used as the default by the PCL interpreter. The font numbers for built-in fonts, cartridge fonts, disk fonts, and down loaded soft fonts can be determined by printing the PCL font page (Section A.2).</p> <p>The default for this feature depends on the setting of the Font source feature. When the Font source feature is set to SOU=internal or SOU=cartridge L or SOU=cartridge R, the default font number is 0. When SOU=soft font is selected, the default font number is 1.</p> <p>Holding down the  or  keys causes the value to change by ±1 initially and then by ±10.</p>
Pitch	<p>This feature only appears when the combination of the Font source and Font number features indicates a monospaced typeface. Pitch determines the default character spacing for the typeface.</p> <p>Character spacing from .44 to 99.99 characters/inch are selectable. The default value is 10.00 pitch. Holding down the  or  keys causes the value to change by ±.01 initially, then by ±1.00 after about 2 seconds.</p>
Point size	<p>This feature only appears when the combination of the Font source and Font number features indicates a proportional typeface. Point size determines the default point size for the typeface.</p> <p>Point sizes from 4.0 to 999.75 are selectable. The default value is 12.00 point. Holding down the  or  keys causes the value to change by ±.25 initially, then by ±1.00 after about 2 seconds.</p>
Symbol set	Specifies the default symbol set for the PCL interpreter. See Section 5.4.6 for the complete list of PCL Symbol sets.

Table A-10 PCL Sub-menu Quick Reference Table

Feature	Values
PCL: Resolution	<u>RES=600x600</u> RES=300x300 RES=600x300 RES=1200x600¹ RES=1200x1200¹
PCL: Page protect	<u>PROTECT=off</u> PROTECT=Ltr/A4 PROTECT=Legal
PCL: Copies	<u>COPIES=1</u> ... ² COPIES=999
PCL: Page size	<u>SIZE=Letter</u> SIZE=A4 SIZE=Legal ... ²
PCL: Orientation	<u>ORIEN=portrait</u> ORIEN=landscape
PCL: Form length	<u>FORM LENGTH=60</u> ... ²
PCL: Font source	<u>SOU=internal</u> SOU=cartridge L SOU=cartridge R SOU=soft font
PCL: Font number	<u>NUMBER=0</u> ... ² NUMBER=999

¹This feature appears only when the Resolution/Graphics Enhancement option is installed.

²Additional selections are described in Table A-9.

(continued on next page)

Table A-10 (Cont.) PCL Sub-menu Quick Reference Table

Feature	Values
PCL: Pitch	<u>PITCH=10.00</u> ... ²
PCL: Point size	<u>SIZE=12.00</u> ... ²
PCL: Symbol set	<u>SET=ROMAN-8</u> ... ³

²Additional selections are described in Table A-9.

³Additional selections are described in Section 5.4.6.

A.5.4 Communications Sub-menu

This section explains the features in the Communications sub-menu and describes any interactions with other features in the printer. The values of these features are used by both PCL and PostScript interpreters.

Some of these features can be set for each port. For example, each communications port can have an interpreter associated with it.

Table A–11 Communications Sub-menu Features

Feature	Description
Interpreter ¹	This feature associates one of the two protocol interpreters with the communication port. If PostScript (the factory default for most ports) or PCL is selected, all jobs coming through that communication port go to the associated interpreter. Selecting Automatic feature means that jobs coming through that communication port go to the appropriate protocol interpreter (PCL or PostScript) for the job. Any one port can be used for both interpreters when Automatic is selected.
I/O timeout ¹	Specifies the amount of time the printer waits for further data from the active port before assuming that no more data will be transmitted from that host. When the timeout expires the job is ended and the printer searches all ports for new data. Any remaining PCL data is printed but any remaining PostScript data is lost.
SER: Mode ²	Specifies the protocol signaling standard used on the serial port. When MODE=EIA-232 is selected, the serial port uses EIA-232 signaling. When MODE=EIA-422 is selected, the serial port uses EIA-422 signaling.
PAR: Mode ³	Specifies the electrical signaling standard used on the parallel port. When MODE=Centronics is selected, the parallel port is configured as an industry-standard Centronics parallel port. When MODE=2-way 1284 is selected, the parallel port is configured to bidirectional operation (IEEE 1284 Nibble mode).
SER: Baud rate ²	Specifies the baud rate of the serial port. Supported values for this feature range from 300—57,600 .
SER: Parity ²	Controls the parity enforced over the serial interface.

¹Applies to all ports.

²Applies only to the serial port.

³Applies only to the parallel port.

(continued on next page)

Table A–11 (Cont.) Communications Sub-menu Features

Feature	Description
SER: Flow control ²	<p>Specifies which flow control mechanism is used on the serial port.</p> <p>When 1-way XOFF is selected, the printer sends XON/XOFF and treats all received serial information as data for flow control. When XON/XOFF is selected, the XON/XOFF protocol is obeyed on both the host-to-printer and printer-to-host channels when the active interpreter is PostScript.</p> <p>NOTE: When the PCL interpreter is active, the host-to-printer channel treats XON and XOFF characters as normal data, just as if 1-way XOFF were selected.</p> <p>When DTR/DSR is selected, the DSR and DTR signals are used for flow control. The ready state of the DTR signal is controlled by the DTR polarity feature. When any XON/XOFF feature is selected, the DTR signal is asserted as ready and held there, according to the DTR polarity feature.</p>
SER: Robust XON ²	<p>When ROBUST XON=on is selected, the printer sends an XON character every 10 seconds when the input buffer is empty.</p> <p>This feature appears only when an XON/XOFF flow control option is selected in the Flow control feature.</p>
SER:DTR polarity ²	<p>Specifies whether the printer uses a high or low signal on the DTR line as a ready-to-transmit indication.</p>
SER: Stop bits ²	<p>Specifies the number of stop bits per character over the serial interface.</p>
SER: Data bits ²	<p>Specifies the number of data bits per character over the serial interface.</p>

²Applies only to the serial port.

Table A-12 Communications Sub-menu Quick Reference Table

Feature	Values	Secondary Values	
COMM: Serial	SER: Interpreter	<u>INT=PostScript</u> INT=PCL INT=Automatic	
	SER: I/O timeout	<u>TIME=10 seconds</u> TIME=30 seconds TIME=60 seconds TIME=15 minutes	
	SER: Mode	<u>MODE=EIA-232</u> MODE=EIA-422	
	SER: Baud rate	<u>BAUD=9600</u> ... ¹	
	SER: Parity	<u>PARITY=none</u> PARITY=odd PARITY=even PARITY=space PARITY=mark	
	SER: Flow control	<u>FLOW=XON/XOFF</u> FLOW=1-way XON FLOW=DTR/DSR	
	SER: Robust XON	<u>ROBUST XON=off</u> ROBUST XON=on	
	SER: DTR polarity	<u>DTR=high</u> DTR=low	
	SER: Stop bits	<u>STOP BITS=1</u> STOP BITS=2	
	SER: Data bits	<u>DATA BITS=8</u> DATA BITS=7	
	COMM: Parallel	PAR: Interpreter	<u>INT=Automatic</u>

¹Additional selections are described in Table A-11.

(continued on next page)

Table A-12 (Cont.) Communications Sub-menu Quick Reference Table

Feature	Values	Secondary Values
		INT=PostScript
		INT=PCL
	PAR: I/O timeout	<u>TIME=10 seconds</u>
		TIME=30 seconds
		TIME=60 seconds
		TIME=15 minutes
	PAR: Mode	<u>MODE=Centronics</u>
		MODE=2-way 1284
COMM: LocalTalk	LOC: Interpreter	<u>INT=PostScript</u>
		INT=PCL
		INT=Automatic
	LOC: I/O timeout	<u>TIME=10 seconds</u>
		TIME=30 seconds
		TIME=60 seconds
		TIME=15 minutes
COMM: Network²	NET: Interpreter	<u>INT=PostScript</u>
		INT=PCL
		INT=Automatic
	NET: I/O timeout	<u>TIME=10 seconds</u>
		TIME=30 seconds
		TIME=60 seconds
		TIME=15 minutes

²This feature appears only when the optional network card is installed.

A.5.5 Miscellaneous Sub-menu

This section describes the features in the Miscellaneous sub-menu and their interactions with other printer features. The values of these features are used by both PCL and PostScript interpreters.

Table A–13 Miscellaneous Sub-menu Features

Feature	Description
Do start page	Specifies whether a start-up (test) page is printed when the printer is powered on.
Do jam recovery	Specifies whether the printer guarantees jam recovery. See Chapter 7 for information about memory requirements when Do jam recovery is selected.
Print density	Controls the relative darkness of the printed image. Settings are from 1 (light) to 15 (dark). The default value of 7 should produce a good quality image for most uses.
Power saver	Specifies the amount of time before power is reduced to the fuser and other electrical elements of the printer. Delay times range from 30 minutes to 4 hours. When the feature is disabled, full power is always supplied to the printer.
Set-Up Menu lock	Controls whether the Set-up and Reset menus are locked out (see Section A.5.6).
Display language	Specifies what language the printer control panel messages appear in. Nederlands , English , Français , Deutsch , Italiano , and Español are the language choices.

Table A-14 Miscellaneous Sub-menu Quick Reference Table

Feature	Values	Secondary Values
Do start page	<u>START PAGE=yes</u> START PAGE=no	
Do jam recovery	<u>RECOVER JAM=no</u> RECOVER JAM=yes	
Print density	<u>DENSITY=7</u> ... ¹	
Power saver	<u>SAVER=30 minutes</u> SAVER=2 hours SAVER=4 hours SAVER=off	
Set-Up Menu lock	<u>LOCK=disabled</u> LOCK=enabled	
Display language	<u>LANG=English</u> ... ¹	

¹Additional selections are described in Table A-13.

A.5.6 Locking the Set-Up Menu Configuration

The Set-Up Menu lock feature is designed to prevent casual or accidental modification to the state of the DEClaser 5100 printer. To prevent users from modifying the state of the printer, use the following procedure.

1. Press **[OnLine]** to pause the printer.
2. Press **[Set-Up]** to enter the Set-up Menu.
3. Choose the the **Miscellaneous** sub-menu.
4. Choose the **Set-Up Menu lock** feature.
5. Choose **LOCK=enabled**.
6. Press **[Enter]** to select the value.
7. Press **[*]** to confirm and save the lock enable feature.
8. Press **[OnLine]** to return the printer online.

When the Set-Up Menu lock feature is enabled, attempting to enter the Set-up Menu by pressing **[Set-up]** or the Reset Menu by pressing **[Reset]** sounds the beeper and the message **Set-Up locked** appears for 2 seconds.

When the menu is locked, the Set-Up menu features can only be modified by using host commands. You can configure the **Default feeder** feature in the **Feeders** sub-menu from the Feeder Select Menu (Section A.4).

When the Set-Up Menu lock feature is enabled, you can access the Set-up Menu using the following procedure:

1. Press **[OnLine]** to pause the printer.
2. Press and hold **[*]**.
3. Press and release **[Set-Up]**.
4. Release **[*]**.

The message **Set-Up Menu** appears and the printer is now in the Menu state.

NOTE

If you exit this menu without disabling **Set-Up Menu lock (LOCK=disabled)**, the Set-Up Menu will remain locked.

B

Printer Specifications

This appendix contains the operating and interface specifications for the DEClaser 5100 printer.

Table B-1 Printer Specifications

Category	Specification
Type:	Desktop page printer
Printing Method:	Electrophotographic using laser beam scanning
Resolution:	300 x 300 dpi 600 x 300 dpi 600 x 600 dpi
Resolution/Graphics Enhancement Option:¹	1200 x 600 dpi 1200 x 1200 dpi
Hard Disk Drive:¹	120 MB disk drive
Font Card Slots:	2 slots are available to accept optional PCMCIA font cards for PCL and PostScript fonts.
Printing Speed:	8 pages/minute maximum using A4 or Letter-size paper from the internal tray
Warm-Up Time: 100V-115V	60 seconds or less at 20°C (68°F)
Warm-Up Time: 220V-240V	75 seconds or less at 20°C (68°F)
Internal Paper Tray:	250-sheet capacity Letter (8.5 in x 11 in) A4 (210 mm x 297 mm) Universal (Accommodates Executive, A4, Letter, and Legal-size paper)

¹Option

(continued on next page)

Table B-1 (Cont.) Printer Specifications

Category	Specification
Front Tray Feed:	100 sheet capacity. Refer to Table 3-1 for a list of media types and sizes.
Large Capacity Input Tray:¹	500 sheet capacity. Refer to Table E-2 for a list of paper sizes.
Envelope Feeder¹	75 envelope capacity. Refer to Table C-3 for a listing of envelope sizes.
Top Output Tray Capacity:	250 sheet capacity (facedown stacking)
Paper Weight Range Internal Tray Feed:	64 g/m ² to 90 g/m ² basis weight (17 lb to 24 lb)
Paper Weight Range Manual Feed:	64 g/m ² to 105 g/m ² basis weight (17 lb to 28 lb)
Resident Fonts:	The DEClaser 5100 printer has 120 resident fonts: 73 PostScript Level 2 fonts 47 HP-PCL5E emulation fonts
Built-in RAM:	2 MB, expandable to 66 MB with optional SIMMs
Communication Interfaces:	OPENcomm architecture provides simultaneous support for all available interfaces. Serial: EIA-232, EIA-422 (using the H8585-AD printer adapter), DEC-423 MMJ (using the H8575-E printer adapter) Parallel: Supports standard unidirectional Centronics and IEEE 1284 bidirectional (Nibble Mode) LocalTalk: AppleTalk network
Optional Interface:	DEClaser 5000 Series Ethernet Card
Acoustic Noise:	31dB(A) during standby 48dB(A) during printing
Operating Temperature:	10°C to 32.5°C (50°F to 90.5°F)
Operating Humidity:	20% to 80% relative humidity (noncondensing)
Storage Temperature:	0°C to 35°C (32°F to 95°F)

¹Option

(continued on next page)

Table B-1 (Cont.) Printer Specifications

Category	Specification
Storage Humidity:	10% to 80% relative humidity (noncondensing)
Power Requirements:	100-115 Vac, 50/60 Hz (North America and Japan) 220-240 Vac, 50 Hz (Rest of the world)
Power Consumption:	Maximum - 100-115 Vac: 530W 220-240 Vac: 520W Average - (@ 20 pages per hour) 100-115 Vac: 90W 220-240 Vac: 90W Power saving mode - 100-115 Vac: Less than 30W 220-240 Vac: Less than 30W EPA Energy Star Compliant
Shipping Weight:	Approximately 17.0 kg (37.4 lbs)
Dimensions:	Width: 416 mm (16.4 in) Depth: 403 mm (15.9 in) Height: 297 mm (11.7 in)

B.1 Operating Requirements

The performance of the DEClaser 5100 printer can be affected by electrical and environmental conditions surrounding its location. The following sections describe:

- Power requirements (Section B.1.1)
- Space requirements (Section B.1.2)
- Environmental requirements (Section B.1.3)

B.1.1 Power Requirements

When determining a proper work location, select a wall outlet with the correct voltage and adequate amperage to supply power to the printer. Table B-2 lists the power requirements for the DEClaser 5100 printer.

Table B-2 Power Requirements

Country	Voltage	Frequency	Amperage
North America	115-120 Volts	60 Hz	8 Amp circuit
Japan	100 Volts	50 Hz or 60 Hz	8 Amp circuit
All other	220 -240 Volts	50 Hz	5 Amp circuit

NOTE

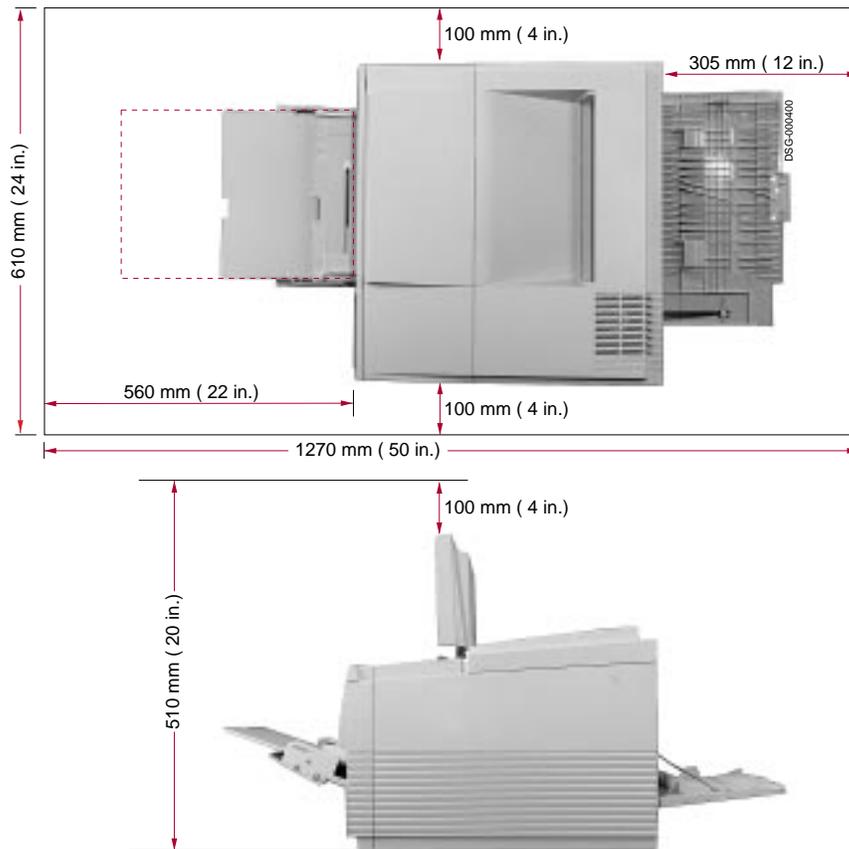
Do not connect other high current-drawing equipment such as coffee pots, office copiers or air conditioners, into the same power supply line as the printer. Exceeding the amperage rating causes the circuit breaker in the wall circuit to open.

B.1.2 Space Requirements

Install the DEClaser 5100 printer in an area that meets the following requirements:

- A flat, level surface free from vibrations
- Enough surrounding space to allow ventilation and easy access to the printer to perform daily operations (Figure B-1)

Figure B-1 Operating Space



B.1.3 Environmental Requirements

For the proper operation of the printer, be sure the following environmental conditions are met:

- Maintain a temperature range of 10°C to 32.5°C (50°F to 90.5°F).
- Maintain a relative humidity range of 20% to 80% (noncondensing). This ensures consistent image quality and helps prevent paper jams.
- Install the printer in a well ventilated area to avoid heat buildup.
- Place the printer in a dust-free area to protect moving parts from unnecessary wear.
- To prevent condensation, avoid installing the printer in an area where it is:
 - Subject to sudden changes in temperature or high humidity.
 - Exposed to a draft of hot or cold air from a heating system or an air conditioner or exposed to direct sunlight.

C

Print Media Specifications

This appendix describes the print media that are appropriate for the DEClaser 5100 printer. The types of print media described in this appendix are paper, labels, transparencies, and envelopes.

The DEClaser 5100 printer produces excellent print quality, using electro-photographic laser technology. The laser printing process differs greatly from that of a conventional impact printer, so paper selection is particularly important. The paper must be able to withstand high heat and pressure of the fusing unit. Photocopier paper is generally acceptable for the DEClaser 5100 printer.

CAUTION

Always select print media according to the instructions and specifications in this appendix. When selecting paper or other print media, print test samples on the media you want to use. Be sure to consider the heat limitations of transparencies and the glues used on envelopes and labels. The inks and pigments used on chemically treated or coated paper (such as preprinted forms or colored paper) must also be able to withstand the high heat and pressure of the fusing unit. Otherwise, damage to media and the printer may result.

Print quality can deteriorate if paper is not stored properly. Read Section C.5 for complete information about storing paper. For a complete listing of recommended print media and ordering information, see Appendix D.

C.1 Paper Specifications

This section contains information on the sizes and specifications of plain paper that can be used with the DEClaser 5100 printer. Single-size internal paper trays come in A4 or Letter sizes and have a capacity of up to 250 sheets. You can also order a universal paper tray that accommodates multiple sizes. See Appendix D for ordering information.

Table C-1 lists the front tray media sizes and capacities.

Table C-1 Front Tray Paper Capacities

Media	Sizes	Capacity
Paper	Letter Legal Executive (7.25 in x 10.5 in) A4, A5, B5, C5, DL 4.125 in x 9.5 in 3.875 in x 7.5 in Halfletter 2/3 A4 7 in x 9 in	Up to 100 sheets
Transparencies ¹	Letter, A4	50 sheets
Labels	Letter, A4	40 sheets
Envelopes	#10 (4.125 in x 9.5 in) A5, C5, DL 3.875 in x 7.5 in (Monarch)	10

¹As each transparency is printed, it is a good idea to remove it from the output tray to prevent them from sticking together.

Table C-2 lists paper specifications for the DEClaser 5100 printer.

Table C-2 Paper Specifications

Category	Specification
Paper weight: plain paper	64 g/m ² to 90 g/m ² basis weight (17 lb to 24 lb)
Paper weight: envelopes	60 g/m ² to 90 g/m ² basis weight (16 lb to 24 lb)
Acid content	pH 5.5 minimum (type 111 permanence)
Electrical resistivity	1 x 10 ¹⁰ to 1 x 10 ¹³ ohm-cm
Cutting accuracy	± 0.7 mm from nominal
Cutting angle	90° ± 0.2°
Coefficient of friction	0.4 to 0.7
Moisture content	4% to 6%
Thickness	0.086 mm to 0.107 mm
Smoothness	100–300 Sheffield
Brightness	84% minimum recommended
Cotton (rag) content	25% maximum
Opacity	85% opaque minimum

CAUTION

Because laser printers bond toner to the paper, observe the following requirements with certain types of papers:

- Do not use paper printed with Thermographic letterheads. The ink used on some preprinted papers, such as those with a company letterhead, can cause smearing and, in some cases, could damage the printer.
 - Do not use colored paper where the color is applied as a coating to the surface.
 - Do not use thermal paper.
 - Do not use carbon paper.
-

C.2 Envelope Specifications

The DEClaser 5100 printer accepts standard size envelopes and must meet the same specifications as paper (see Table C-2). Envelopes that fit within the following range can be fed through the front tray:

- Minimum: 90 mm x 160 mm (3.5 in x 6.3 in)
- Maximum: 176 mm x 250 mm (6.9 in x 9.8 in)

Table C-3 lists typical envelope types, sizes, and weights suitable for use with the optional envelope feeder. The envelope feeder has a maximum capacity of 75 envelopes.

Table C-3 Envelope Specifications

Type	Size	Weight
COM-10	4.125 in x 9.5 in (104.7 mm x 241.3 mm)	24 lb.
Monarch	3.875 in x 7.5 in (98.4 mm x 190.5 mm)	24 lb.
DL	110 mm x 220 mm	90 g/m ²
C5	162 mm x 229 mm	90 g/m ²
A5	148 mm x 210 mm	90 g/m ²

CAUTION

When printing on envelopes:

- Print envelopes only on the front (address) side.
 - Do not use envelopes made of materials other than paper, or those that have fasteners or windows.
 - The sealing flap on business envelopes should run along the length of the envelope, not at the leading and trailing edges.
 - The sealing flap should be folded properly, with none of the glue exposed.
 - The leading and trailing edges should not be more than two layers thick.
 - The envelope should be free of wrinkles or creases.
 - Do not stack envelopes more than 10 mm (3/8 in) high in the front tray.
 - Envelopes may be stacked to a height of 55 mm (2 in) with the optional envelope feeder.
-

C.3 Transparency Specifications

Table C-4 and Table C-5 contain information on the sizes and specifications of transparencies that can be used with the DEClaser 5100 printer.

See Appendix D for acceptable transparencies available from Digital.

Table C-4 Transparency Sizes

Transparency Size	Dimensions
A4	210 mm x 297 mm
Letter	8.5 in x 11 in

Table C-5 Transparency Specifications

Category	Specification
Transparency weight	142 ± 4 g/m ² basis weight (38 lbs)
Thickness	0.105 ± 0.005 mm
Material	Polyester (coated)
Curl	5.0 mm maximum
Cutting accuracy	± 0.7 mm from nominal
Cutting angle	90° ± 0.2°
Base heat stability	0.8 % maximum heat shrinkage at 195° C (385° F) for 15 minutes

CAUTION

When printing on transparencies:

- Feed transparencies from the front tray.
 - Remove transparencies from the output tray as each one is printed to prevent them from sticking to each other.
 - Always use transparencies designed for laser printers.
-

C.4 Label Specifications

A self-adhesive label consists of a face sheet with an adhesive backing layer and a carrier sheet. The carrier sheet and adhesive used for the labels must meet the heat tolerance specification of 195°C (385°F) for at least 0.1 second.

See Appendix D for acceptable labels available from Digital.

Table C–6 Label Sizes

Label Size	Dimensions
A4	210 mm x 297 mm
Letter	8.5 in x 11 in

Table C–7 lists the specifications for self-adhesive labels that can be used with the DEClaser 5100 printer.

Table C–7 Self-Adhesive Label Specifications

Category	Specification
Face Sheet	51±4 g/m ² basis weight
Backing Sheet	50±3 g/m ² basis weight
Face Sheet Adhesive Coating	15.5±2.5 g/m ² basis weight
Total Basis Weight	116.5±9.5 g/m ²
Total Thickness	0.125±0.010 mm
Moisture Content	4.5% to 7.0%

CAUTION

When printing on labels:

- Feed labels from the front tray label side up.
- Be sure the carrier sheet is not exposed.
- Be sure no adhesive is exposed. Exposed adhesive on labels can damage the printer. To test for adhesive that may be exposed, press a plain piece of paper on top of the sheet of labels. If the paper sticks to the labels, do not use those labels.

C.5 Paper Handling and Storage

Although you may be using paper that meets all specifications, improper handling and storage may affect the quality of the paper and the performance of the printer. This can cause paper jams, misfeeding, and other printer performance problems.

Follow the recommendations in this section to reduce the possibility of printer jams and misfeeds.

C.5.1 Paper Handling

Observe the following requirements when handling paper:

- Discard the top and bottom sheets when you unwrap a new package of paper, as those sheets absorb the most humidity. Always store unused paper in its original wrapping. The wrapping protects the paper against humidity.
- Sudden changes in temperature or humidity can cause paper curl, leading to misfeeds and paper jams. If you move paper from a storage location that differs greatly in temperature or humidity from the new location, leave the paper (unopened) for a day to allow it to adjust to the new environment.
- Check the paper for curl after printing a few pages. If an excessive amount of curl is present or multiple paper jams occur, try turning the stack of paper over in the paper tray.
- Follow the instructions in Section 3.2 to properly load paper in the internal paper tray.

C.5.2 Paper Storage

When storing paper:

- Do not store paper directly on the floor, as floors are generally humid.
- Store paper on a flat surface to prevent paper curl.

D

Accessories and Supplies

This appendix lists some of the accessories and supplies available for the DEClaser 5100 printer. Contact your Digital sales representative or refer to your latest Digital catalog for a complete list of products and the latest pricing information. See Section D.1 for additional ordering information.

Table D-1 DEClaser 5100 Printer Accessories and Supplies

Part Number	Description
Consumables	
LN0XX-AA	Toner cartridge (EP-ED)
LN01X-AB	Letter-size laser paper (8 ½ in x 11 in, 5,000 sheets per box)
LN01X-AC	Legal-size laser paper (8 ½ in x 14 in, 5,000 sheets per box)
E0LASER-A4	A4-size laser paper (210 mm x 297 mm, 2500 sheets per box)
LN03X-AJ	Letter-size laser transparencies (8 ½ in x 11 in, 50 sheets per box)
E0LN03X-AK	A4-size laser transparencies (210 mm x 297 mm, 50 sheets per box)
H9850-TA	Laser labels (30/sheet x 100 sheets per box)
H9850-TB	Laser labels (21/sheet x 100 sheets per box)
H9850-TC	#10 Business laser envelopes (500 per box)
H9850-TD	Executive-size laser envelopes (500 per box)

(continued on next page)

Table D–1 (Cont.) DEClaser 5100 Printer Accessories and Supplies

Part Number	Description
Feeders and Trays	
LN0XX–TB (Feeder and tray)	Large-capacity input tray. 500-sheet capacity for Legal, Letter, A4, and Executive paper sizes.
LN0XX–TC	Extra universal paper tray for use in the large capacity input tray. 500-sheet capacity for Legal, Letter, A4, and Executive paper sizes (tray only, requires LN0XX–TB).
LN0XX–EF	Automatic envelope feeder (75-envelope capacity)
LN0XX–TA	Universal paper tray. 250-sheet capacity for Legal, Letter, A4, and Executive paper sizes.
Memory Options	
LN09X–MA	4 MB SIMM upgrade
LN09X–ME	16 MB SIMM upgrade
LN09X–MF	32 MB SIMM upgrade
Miscellaneous	
LN09X–NW	DEClaser 5000 Series Ethernet Card
LN09X–HD	120 MB internal hard drive
LN09X–XL	Resolution/Graphics Enhancement Option

Table D–2 Serial Line Interface Cables and Adapters for Digital Computers

Part Number	Description
BN16E-xx ¹	EIA-232 interface cable
BN24H-xx ¹	EIA-422/423 interface cable
BN2X-xx ¹	EIA-422 interface cable
H8575-A	EIA-232 25-pin female-to-MMJ adapter
H8575-E	EIA-232 25-pin male-to-MMJ adapter
H8585-AD	EIA-422 xx-pin male-to-MMJ adapter
¹ Cable length	

Table D-3 PC and Macintosh Cables and Adapters

Host Connector Type	Cable	Length	PC Adapter	Printer Adapter
AppleTalk Cable				
DIN 8-pin Male	BCC46-06	1.8 m (6 feet)	N/A	None
Parallel Cables				
25-pin Centronics Parallel	BC19M-06	1.8 m (6 feet)	None	None
25-pin Centronics Parallel	BC19M-10	3.0 m (10 feet)	None	None
Serial Cables and Adapters				
EIA-232C Shielded Null Modem	BC22R-10	3.0 m (10 feet)	None	None
EIA-232C Shielded Null Modem	BC22R-25	7.6 m (25 feet)	None	None
EIA-232C Shielded Null Modem	BC22R-50	15.2 m (50 feet)	None	None
9-pin Serial PC/AT	BC16E-10	3.0 m (10 feet)	H8571-J	H8575-E

D.1 Ordering Information

Use the following mailing addresses and telephone numbers to order products for the DEClaser 5100 printer.

Table D-4 Ordering Within the U.S.A.

Mail	Digital Equipment Corporation PO Box CS2008 Nashua, NH 03061
Telephone	Order toll free 1-800-DIGITAL (800-344-4825) between the hours of 7:30 a.m. and 8:00 p.m. EST

Table D-5 Ordering Outside the U.S.A.

Mail	Digital Equipment Corporation Attention: Accessories & Supplies Business Manager c/o Local Subsidiary or Digital-Approved Distributor
Telephone	
In Canada	Order toll free 1-800-DIGITAL (800-344-4825)
In Australia	Order toll free: 008-221-393
In New Zealand	Order toll free: 0800-800-332

E

Options

This appendix contains information about the following options available for the DEClaser 5100 printer.

- Universal Paper Tray (Section E.1)
- Large Capacity Input Tray (Section E.2)
- Envelope Feeder (Section E.3)
- SIMM Upgrade (Section E.4)

Other options available for the printer come with their own documentation. See Chapter 1 and Appendix D for additional information about other options.

E.1 Loading Paper in the Universal Paper Tray

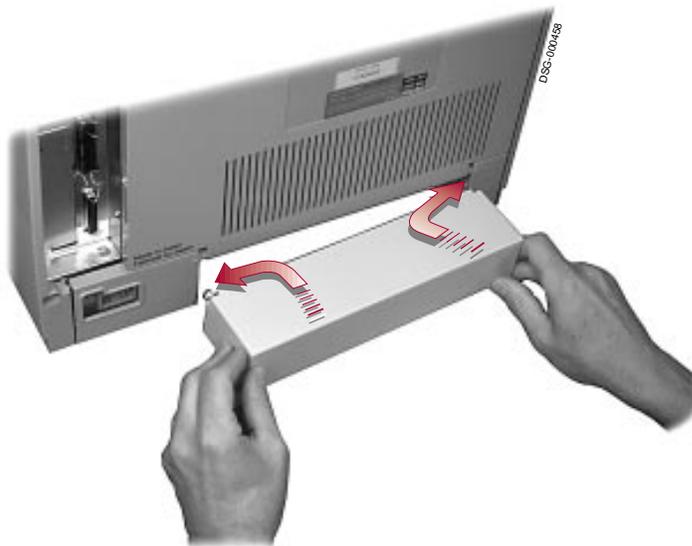
Table E-1 shows the paper sizes you can load into the paper tray. The tray has a maximum capacity of 250 sheets.

Table E-1 Paper Sizes

Type	Dimensions
A4	210 mm x 297 mm
Executive (EXEC)	7.25 in. x 10.5 in.
Legal (LGL)	8.5 in. x 14.0 in.
Letter (LTR)	8.5 in. x 11.0 in.

To load paper in the universal paper tray:

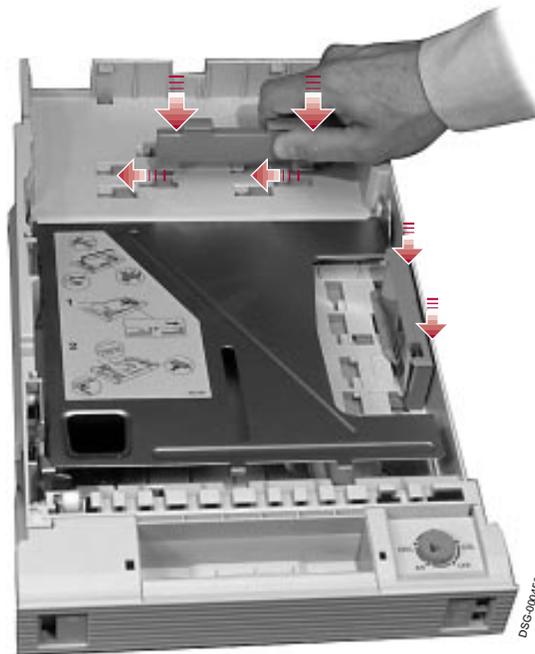
1. Attach the paper tray's rear cover to the back of the printer.



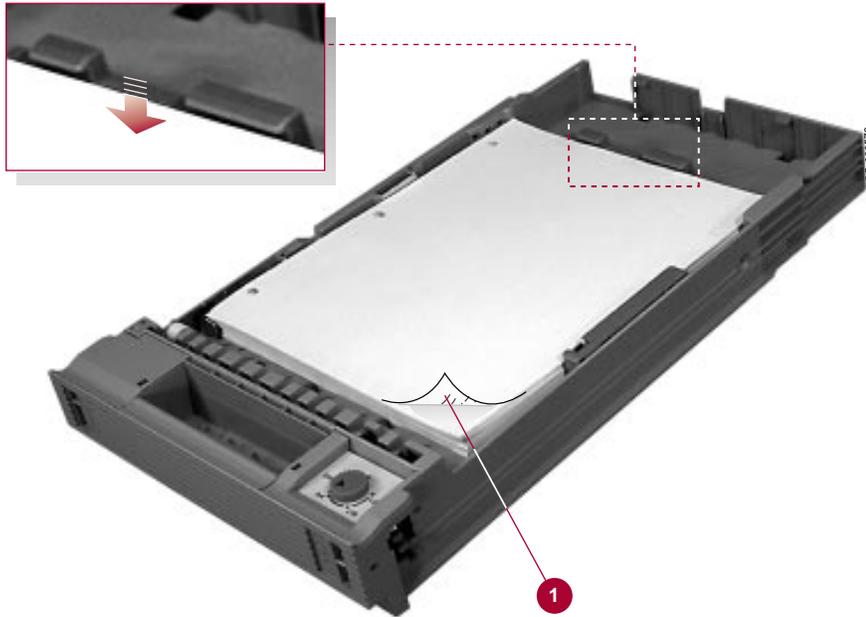
2. Insert the paper length stop and the paper width stop into the slots that represent the paper size you want to load.

NOTE

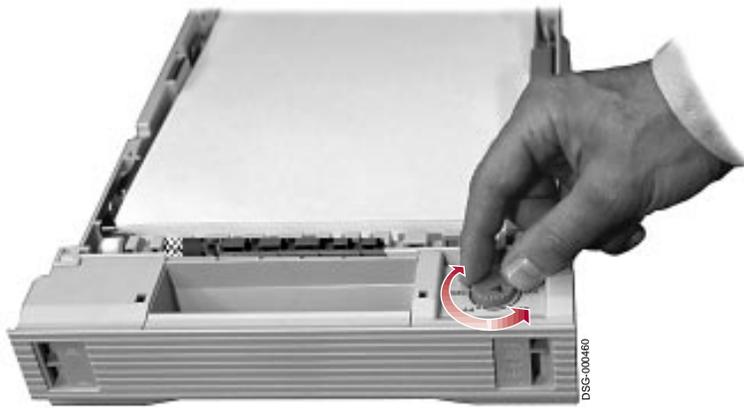
The paper length stop is NOT inserted when using Legal-size paper.



3. Place a stack of paper in the tray ensuring it lies flat and is below the paper retainers and maximum height arrows.
 - ✓ Insert letterhead paper face down with the letterhead toward the front of the tray.
 - ✓ Insert prepunched paper with the holes on the left side.



4. Turn the paper selection dial to the loaded paper size.
 - ✓ Make sure the indicator on the front of the tray shows the correct paper size.



5. Slide the tray back into the printer.

E.2 Loading Paper in the Large Capacity Input Tray

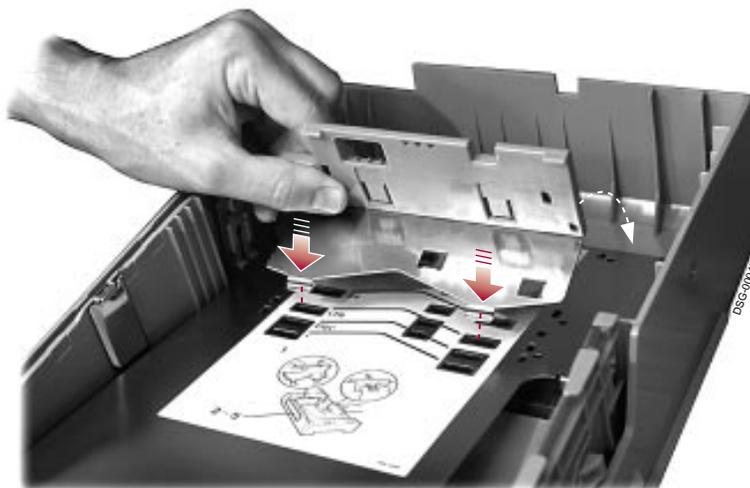
Table E-2 shows the type, size, and weight of paper suitable for use in the LCIT paper tray. The tray has a maximum capacity of 500 sheets.

Table E-2 Paper Sizes

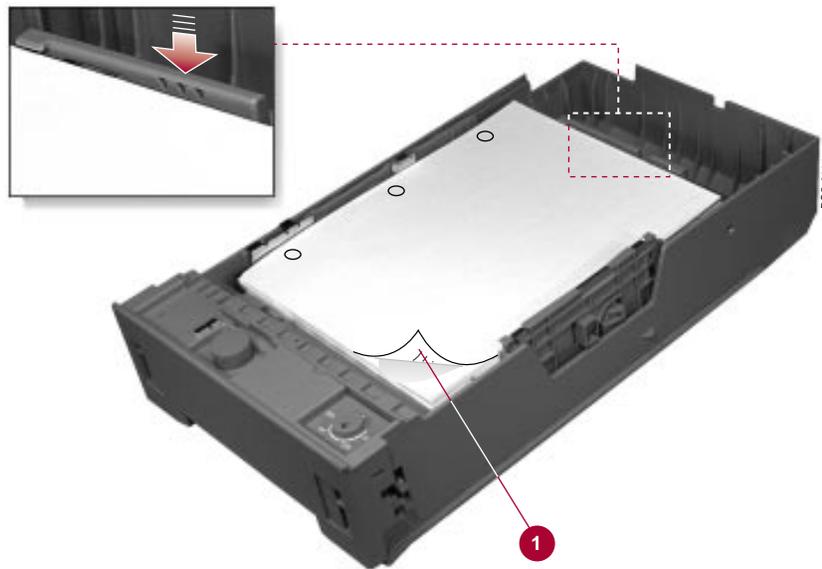
Type	Dimensions
A4	210 mm x 297 mm
Executive (EXEC)	7.25 in. x 10.5 in.
Legal (LGL)	8.5 in. x 14.0 in.
Letter (LTR)	8.5 in. x 11.0 in.

To load paper in the LCIT paper tray:

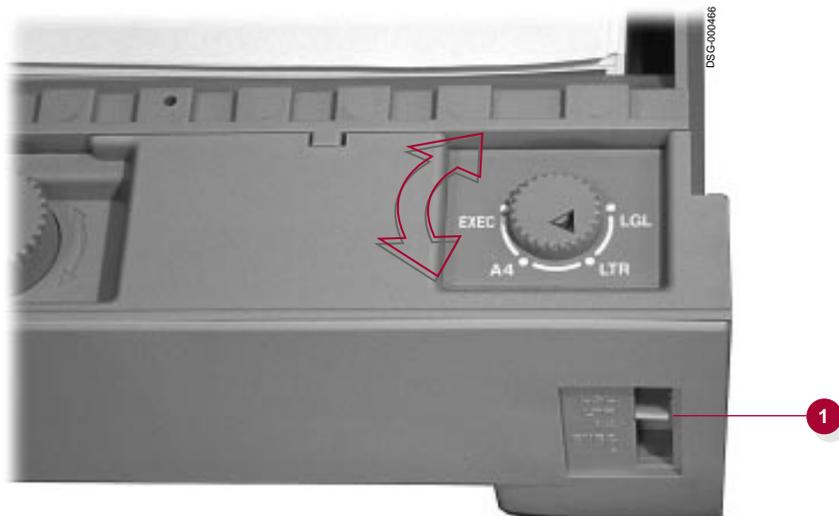
1. Place the paper length guide in the slot labelled for the paper size you want to use.
 - ✓ Remove the guide by angling it slightly forward then lifting it out.



2. Place a stack of paper in the tray ensuring it lies flat and is below the paper retainers and maximum height arrows.
 - ✓ Insert letterhead paper face down with the letterhead toward the front of the tray.
 - ✓ Insert prepunched paper with the holes on the left side.



3. Turn the paper selection dial to the loaded paper size.
 - ✓ Be sure the indicator ❶ on the front of the tray shows the correct paper size.

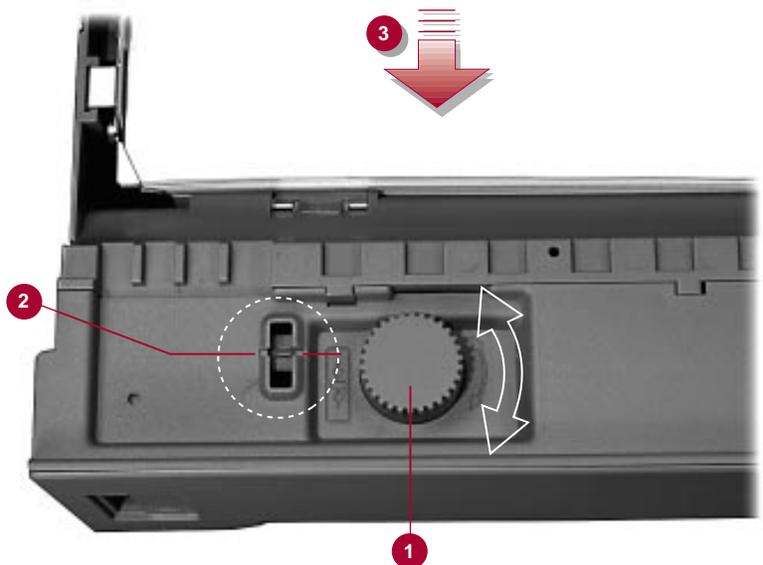


4. If you are loading paper for the first time, you must adjust the tray spring tension for optimum paper handling performance. If you do not adjust the spring tension, the paper may not feed correctly resulting in excessive paper jams. Always adjust the tray spring tension with the tray fully loaded (about 500 sheets).

Note

- After the spring tension is set, you do not have to readjust the setting as long as you use the same size and weight paper. If you load paper of a different size or weight, you must readjust the setting.
 - If you have frequent paper jams from the LCIT, readjust the spring tension.
-

5. Turn the spring tension knob **1** so the tension indicator **2** is at the mid-point mark.
 6. Tap the paper stack several times **3**, then verify that the indicator remains at the mid-point mark.
- ✓ If the indicator is not at the mid-point, readjust the tension by repeating steps 5 and 6.



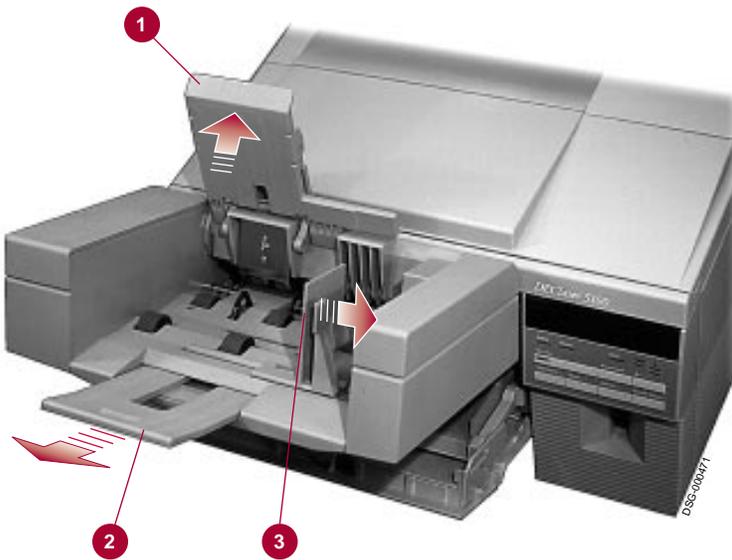
E.3 Loading the Envelope

This procedure describes how to load envelopes into the optional feeder, which has a maximum capacity of 75 envelopes.

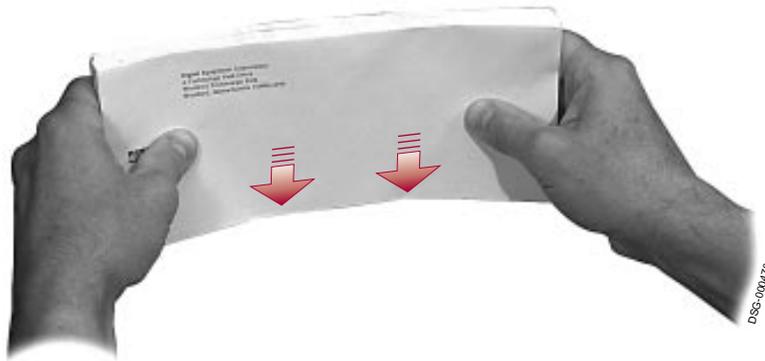
1. Place the envelopes on a flat surface and press down on the edges to flatten the stack.
 - ✓ If the stack is curled, remove the curling by bending the stack.



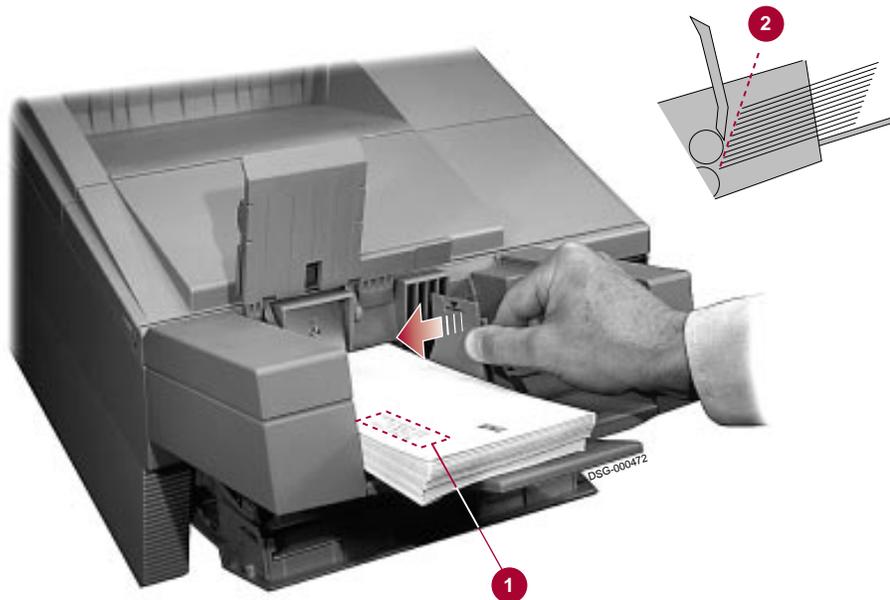
2. Lift the pressure plate up all the way ❶.
3. Pull out the extension tray until it latches ❷.
4. Slide the envelope guide all the way to the right ❸.



5. Flex and tap the stack to align the edges.



6. Load the stack into the feeder with the return address facing up **①**.
 - ✓ Be sure the stack angles slightly from the bottom to the top as shown **②**.
7. Adjust the side guide so that it just touches the right side of the stack and lower the pressure plate onto the stack.

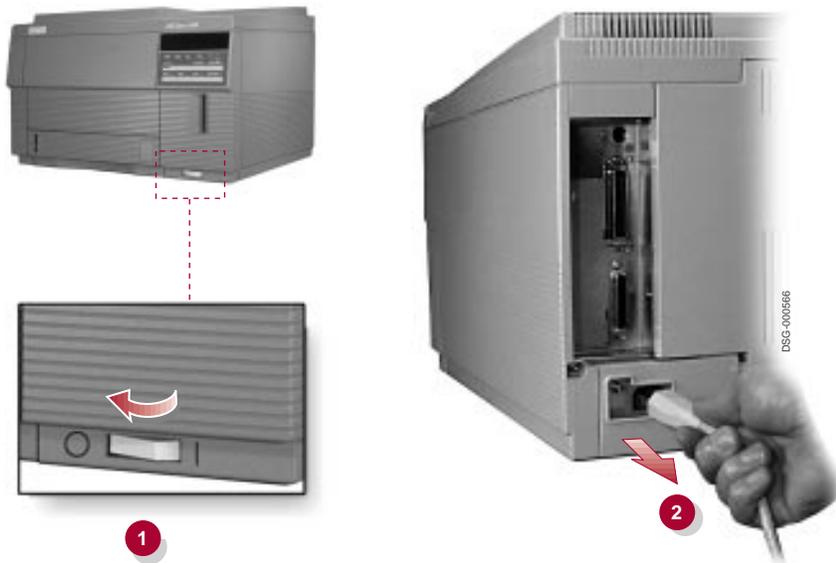


8. Select the envelope feeder option (**Default feeder**) and the correct envelope size (**Envelope size**) from the Feeder Select menu (see Section 3.4).

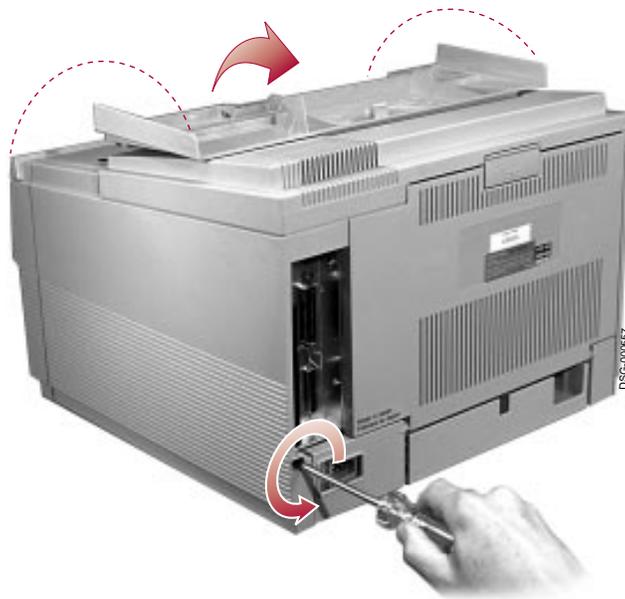
E.4 SIMM Upgrade

Use the following procedure to install an optional SIMM in the DEClaser 5100 printer.

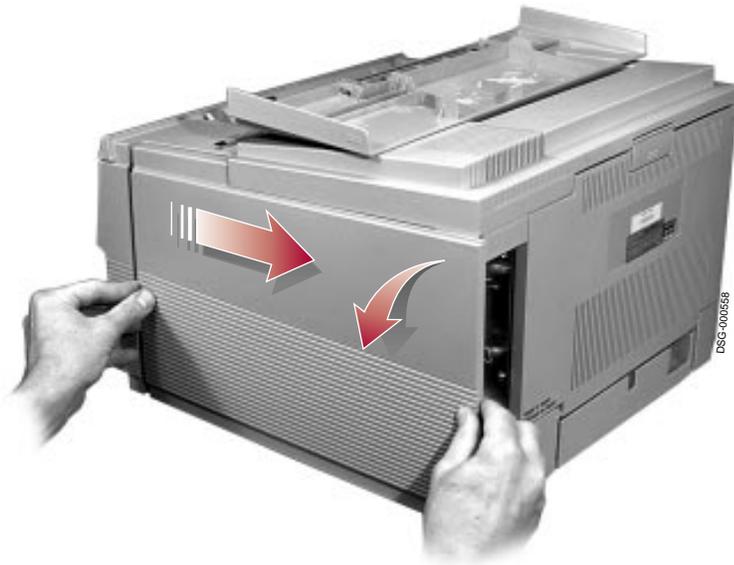
1. Power off the printer **1** and disconnect the power cord **2**.



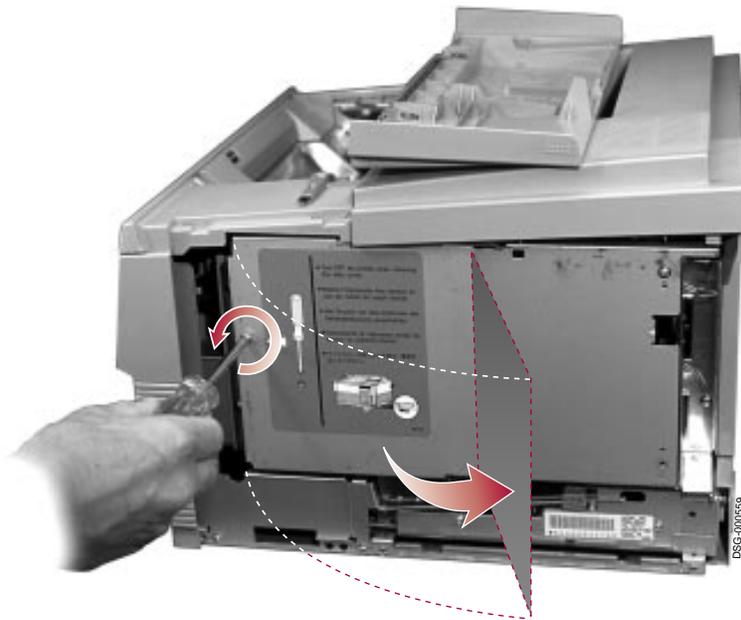
2. Open the top cover and then remove the screw securing the side cover to the printer.



3. Remove the side cover by sliding it toward the back of the printer and then tilting it out.



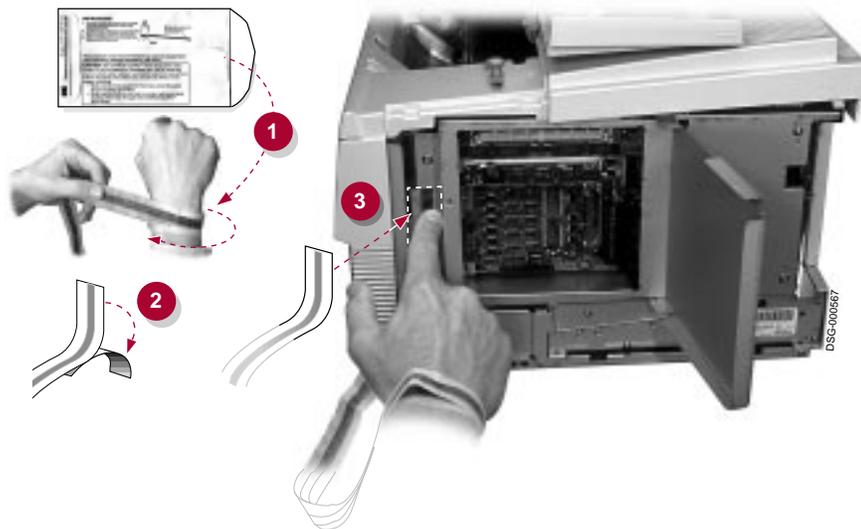
4. Remove the screw securing the protective metal door and open the door.



5. Attach the grounding strap to your wrist ❶ and remove the tape from the strap ❷ to attach it to the metal chassis of the printer ❸.

CAUTION

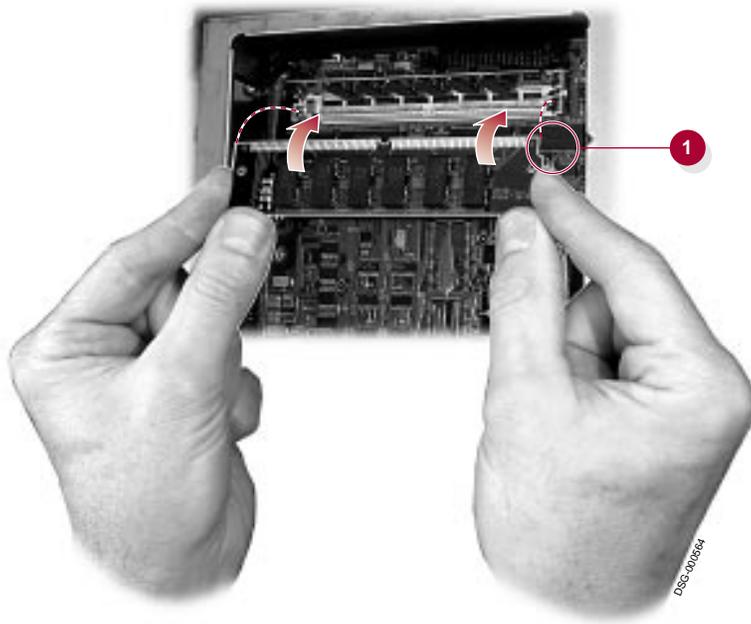
To prevent damage to the SIMM, always wear a correctly connected grounding strap when handling the SIMM.



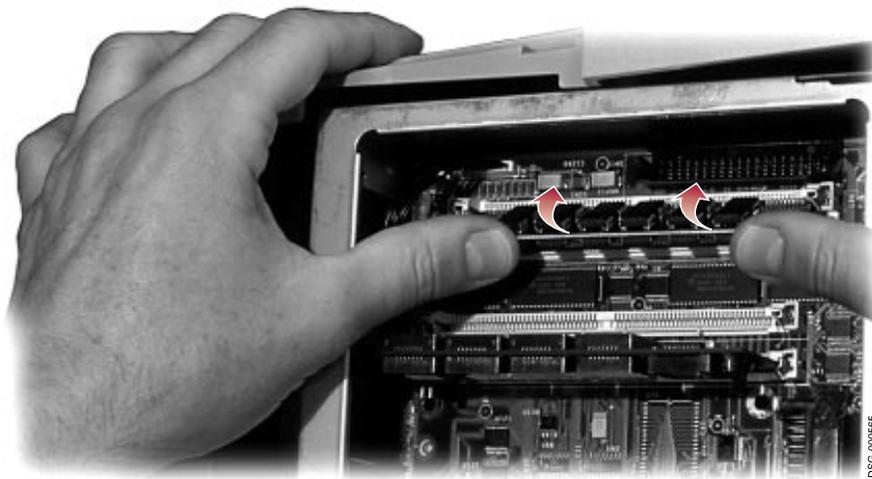
6. Remove the SIMM from its antistatic bag.



7. Insert the SIMM into the first available slot (from the top).
✓ Be sure the notch ❶ is positioned correctly.



8. Lift and tilt the SIMM upwards until it is firmly seated and locked in the slot.



9. Reverse steps 4, 3, 2, and 1.

F

Fine-Tuning DECimage Plus

Chapter 6 describes the basic features of DECimage Plus and how it interacts with other resolution enhancement options. This appendix describes how to change DECimage Plus features using PostScript.

NOTE

DECimage Plus only works with PostScript documents.

F.1 DECimage Plus Parameters

This section explains the meaning of the DECimage Plus parameters and provides sample values. The term *punch parameters* are values that increase or decrease the contrast in highlights and shadows.

F.1.1 Setting the Punch Parameters

The parameters `punch0` and `punch1` control almost all practical changes in the DECimage Plus tone scale by increasing or decreasing contrast in highlights and shadows.

Pictures that appear flat or washed out (too light) usually look better when at least one part of a dark area or shadow area is perfectly black and one part of a light or highlight area is perfectly white.

- If the light areas of the image appear washed out, isolated black dots are being omitted. You need to decrease contrast in the highlights. Setting `punch1` greater than 1.0 increases the density of the black pixels in the highlights.
- If the dark values appear as full black, too many pixels are being printed. You need to reduce contrast in the shadows. Setting `punch0` to a negative value reduces the density of the shadow pixels.

A `punch0` value of 0.2 causes all dark input values between 0.0 and .2 to be mapped to pure black (0.0). A `punch1` value of 0.8 causes all light input values between 0.8 and 1.0 to be mapped to pure white (1.0).

All intermediate input values between `punch0` and `punch1` become mapped or stretched linearly between pure black (0.0) and pure white (1.0).

An example of decreasing contrast would be setting `punch0` to less than 0.0 and `punch1` to more than 1.0. No shadow values are mapped to black (0.0), but to higher values and all highlight values are mapped to lower values; that is, values that are at least slightly gray.

Whenever `punch0` is greater than `punch1`, the tone-scale of the image is reversed. What was darker becomes lighter, and what was lighter becomes darker (similar to a negative).

F.1.2 Setting the Sharpness

The sharpness parameter controls the emphasis of the edge detail. The best value used depends on the quality of the image data in the source file and your preference.

For...	Set Sharpness to...	Notes
Architectural pictures, landscapes	2.0 - 4.0	Values less than 2.0 may make pictures look dull and soft. Values greater than 4.0 may make pictures appear harsh and unnatural.
Portraits	1.0 - 2.5	Values greater than 3.0 may make pictures look grainy.
Faster image processing	0.0	The image does not undergo the sharpness process, thus speeding up the processing time.

Set the value high enough to produce the same edge detail as in the original image, but low enough to prevent the exaggeration of imperfection and haloing around edges. A sharpness value between 0 and -1 causes blurring. A value less than -1 has no additional effect and should not be used.

F.1.3 Setting Up DECimage Plus for Special Effects

You can create individual DECimage Plus setup modules for special effects, by altering the settings for contrast, sharpness, and resolution.

Table F-1 provides the values to insert into your PostScript code.

Table F-1 Setting Values to Change Picture Characteristics

To...	Set Punch0 to...	Set Punch1 to...	Set Sharp to..
Increase contrast	.1	.9	2
Sharpen an image	0	1	3
Soften an image	0	1	-.7

F.2 Changing DECimage Plus Parameters from the Control Panel

As described in Chapter 6, the first feature, **DECimage: Enable**, determines whether DECimage is enabled. **ENA=off**, turns off DECimage so that it is not applied to print jobs. **ENA=on**, turns on DECimage persistently.

The second feature, **DECimage: Adjust**, allows you to set the Punch0 and Punch1 parameters to a limited set of values. This feature is useful when your application printer driver does not support the setting of DECimage Plus parameters. The sharpness parameter is always 1.5 (the default setting), when invoking DECimage Plus from the control panel.

NOTE

The printer recognizes the last change made. Configuration changes made through your software take precedence over control panel settings *if they were made last*.

Setting	Punch Values
normal	<i>punch0=0.0, punch1=1.0</i>
brighter	<i>punch0= -0.2, punch1=0.8</i>
darker	<i>punch0=0.2, punch1=1.2</i>
hi contrast	<i>punch0=0.2, punch1=0.8</i>
lo contrast	<i>punch0= -0.1, punch1=1.1</i>

F.3 Setting Up DECimage Plus on OpenVMS VAX Platforms

This section provides programming information for DCPS users on OpenVMS VAX platforms. Use the following procedure to set up a collection of DECimage Plus enhancement settings to particular queues. Be sure your system has DECprint Supervisor for OpenVMS (Version 1.1 or higher):

Note

You must have system privileges to implement this procedure.

1. Create the setup module DECIMAGE.TXT.

```
%!
%! This PostScript procedure invokes DECimage Plus and sets the DECimage
%! Plus parameters for the current job.
%!
statusdict dup /setDECimage known exch /setDECimageparams known and
  {statusdict begin
    0      % punch0
    1      % punch1
    1.5    % sharp
    1      % dotsize
    setDECimageparams
    true setDECimage
  end
} if
```

2. Create a text library.

```
LIB/CREATE/TEXT SYS$LIBRARY:DECIMAGELIB
```

3. Insert DECIMAGE.TXT into the library.

```
LIB/REPLACE/TEXT SYS$LIBRARY:DECIMAGELIB DECIMAGE
```

4. Determine an available form number.

```
SHOW QUEUE/FORM
```

Form name	Number	Description
-----	-----	-----
DCPS\$DEFAULT (stock=DEFAULT)	1114	DCPS default
DEFAULT	0	System-defined default

5. Pick a form number not already in use, for example, 1900.

6. Define a form, using the name DECimage and the chosen number:

```
DEFINE/FORM DECIMAGE 1900 -  
  /STOCK=DEFAULT -  
  /WIDTH=80 -  
  /MARGIN=(BOTTOM=0) -  
  /SETUP=DECIMAGE -  
  /DESCRIPTION="DECIMAGE PICTURE ENHANCEMENT"
```

7. Edit the file SYS\$STARTUP:DCPS\$STARTUP.COM.

Modify the line that defines the logical name DCPS_LIB to include DECimage in the list of library files. For example:

```
DEFINE /SYSTEM /EXEC /NOLOG DCPS_LIB DCPS$DEVCTL, DECIMAGELIB
```

8. Stop and restart all queues that will be using this library.

```
STOP/RESET/QUEUE queue_name
```

```
START/QUEUE queue_name
```

9. Execute DCP\$STARTUP.COM.

```
@ SYS$STARTUP:DCPS$STARTUP.COM
```

F.3.1 Invoking DECimage Plus for the Current Print Job

To invoke DECimage Plus for the current job only, include the following code at the top of your PostScript file:

```
statusdict begin true setDECimage end
```

F.3.2 Invoking DECimage Plus Persistently

If a platform or application does not allow you to include code to the beginning of the PostScript print job, you can invoke DECimage Plus persistently across power cycles. This means DECimage Plus will enhance every image it supports. The following code assumes the **SystemParamsPassword** is at the default.

```
%!  
%! This procedure enables DECimage Plus across power cycles. This uses the  
%! new PostScript level 2 method of exiting the serverloop to create  
%! unencapsulated jobs. Using the startjob operator you can attach a  
%! privileged job to a non-privileged job.  
%!  
true 0 startjob           % exits the serverloop  
statusdict begin         % opens statusdict  
true setdefaultDECimage  % enable DECimage persistently  
end                       % close statusdict  
false 0 startjob         % enter the serverloop
```

F.3.3 DECimage Plus for VMS Setup Modules

To create variations of the DECimage Plus setup modules, use the following procedure:

1. Create setup modules similar to the DECimage Plus module created in Section F.3. Name the setup modules according to their functions. For example:

If You Want a Setup Module To...	Name the Module...
Increase contrast	DECIMAGE_CONTRAST.TXT
Sharpen an image	DECIMAGE_SHARPEN.TXT
Soften an image	DECIMAGE_SOFTEN.TXT

2. Edit each setup module, and change the values on the three lines identified as punch0, punch1, and sharp. See Table F-1 to set the values.
3. Place the setup modules in the SYSS\$LIBRARY:DECIMAGELIB text library.
4. Create a form for each setup module.
 - ✓ Each form should be identical in attributes.
 - ✓ Change the setup module number, name, and description in each form.

F.4 Using DECimage Plus on PC and Macintosh Platforms

You can change DECimage Plus features on PC and Macintosh platforms by using the printer drivers that came with the DEClaser 5100 printer. Refer to the documentation that came with the drivers for information about changing DECimage Plus features.

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