DEClaser 1152 Printer

User's Guide

S1866

This document was prepared using VAX DOCUMENT, Version 2.1.

FCC NOTICE:

115 Volt model only

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

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced radio/TV technician for help.

To meet FCC requirements a properly shielded parallel cable is required to connect the device to a personal computer or other Class B device.

This document was prepared using VAX DOCUMENT, Version 2.1.

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Preface

Who Should Read This Guide

This guide is helpful to every user, from the novice to the system manager.

How to Read This Guide

This guide is divided into two sections:

- **Part 1 — Basic Operations**

  This section helps you set up your DEClaser 1152 on your PC, Apple Macintosh, ULTRIX, or VMS system, and start printing right away. This section assumes that the printer is set to the factory default settings. The best way to use this section is to read the chapters that apply to your operating system. It is not necessary to read the entire book sequentially.

- **Part 2 — Advanced Operations**

  This section explains how to take advantage of the features of the PostScript Level 2 DEClaser 1152 printer. This section covers these topics:

  - Using multiple communications channels

  - Accessing and using fonts

  - Using DECimage for picture enhancement

  This guide does not cover all the features of the DEClaser 1152 printer or your operating system. For more information about your printer, see the *DEClaser 1152 Printer Installation/Operator's Guide*. For more information about your operating system commands and features, refer to your host documentation.

PostScript Level 2 Features

The DEClaser 1152 is an Adobe PostScript Level 2 printer. A Level 2 PostScript printer includes all of the Level 1 operators with the additional Level 2 operators. Although most Level 1 drivers will properly control the DEClaser 1152, you will require a Level 2 driver to take advantage of the benefits of PostScript Level 2. PostScript Level 2 drivers are available from your vendors.

Some of the benefits of PostScript Level 2 are:

- Better performance for some compute-intensive jobs

- Better memory management for processing complex jobs

- Multiple-host capabilities

- Better control of some graphics capabilities

- Built-in file compression/decompression utilities

- Backward compatibility with Level 1 applications

This guide does not attempt to describe the language in detail, but will show you how to set-up and use some of your DEClaser 1152's Level 2 features. For a complete description of the PostScript Level 2 language, refer to the *PostScript Language Reference Manual, Second Edition.*

Software Requirements

When you print to the DEClaser 1152 printer, you may use any commands your operating system supports. To use the commands listed in the following chapters, this guide assumes that your operating system has the following software installed:

Operating System	Required Software
MS–DOS	MS–DOS, Version 4.01 or higher
Microsoft Windows	Microsoft Windows, Version 3.0 or higher
Apple Macintosh	Apple Macintosh, System 6, System 7
ULTRIX	ULTRIX, Version 4.0
VMS	DECprint Supervisor for OpenVMS, Version 1.0

PostScript and PCL4 Files

The DEClaser 1152 printer primarily a PostScript printer. For applications
that do not have a PostScript printer driver, the DEClaser 1152 printer
provides Hewlett-Packard PCL4 emulation as an alternate language interface.
These two language interfaces are quite different in nature. This section
describes the differences between the two languages.

PostScript is a programming language designed to efficiently create what is
known as a "Page Description." PostScript is a Page Description Language
(PDL). While PostScript is composed of only the printable ASCII characters,
it is not necessarily these characters that get printed on your printer. When
the DEClaser 1152 printer receives a PostScript file, the built-in PostScript
interpreter parses the file for instructions on how to create and lay out the
images and text to be placed on the paper.

The emulation of Hewlett_Packard's PCL4 language is created from within
the PostScript interpreter. PCL4 is a Printer Control Language composed of
ASCII text embedded with special sequences of printer control instructions
that are preceded with the ASCII decimal 27 character, more commonly known
as the Escape character. The collection of printer control instructions is known
as escape sequences. With very few exceptions, the PCL4 emulator produces
output equivalent to the Hewlett-Packard LaserJet IIP printer.

When configuring the printer drivers in the following sections, keep in mind
that the DEClaser 1152's communication channels are ready to interpret the
incoming data as a PostScript Language program.

Conventions

The following terms and conventions are used in this guide.

Term/Convention	Meaning
Note	Provides additional information.
Caution	Provides information for preventing equipment or software damage.
Warning	Provides information for preventing personal injury.
Bullet (•)	A bulleted statement in a procedure describes a result after performing a step.
Bold type	Text in boldface designates messages that appear on the control panel and menu options in DECwindows.

Term/Convention	Meaning
`filename`	Represents a generic file name. Replace it with the name and extension of your file, using your operating system's syntax.
`queuename`	Represents a generic queue name. In commands, replace it with the name of a real queue.
ENTER	Represents the key to press on the control panel.

Part 1:

Basic Operations

The following chapters describe how to send a print job to the DEClaser 1152 printer from different platforms using the factory default settings of the printer. The following DEClaser 1152 factory default settings satisfy the requirements for most single-host configurations:

- Three enabled communications channels:

  1. Parallel (Centronics)

  2. Serial (Either EIA-232 or DEC423, not both)

  3. LocalTalk

- All communications channels interpret the incoming data as PostScript.

- The serial communications settings are:

  9600 Baud
  8 Data Bits
  1 Stop Bit
  No Parity
  XON/XOFF flow control

To change the default settings of the printer, see the *DEClaser 1152 Printer Installation/Operator's Guide*, which lists other settings that may also be selected. See Chapter 4 to use this printer in a multihost configuration.

1

Installing and Using the DEClaser 1152 Printer with a PC

This chapter explains how to set up the DEClaser 1152 printer to print from your PC running MS-Windows, Version 3.1 or MS–DOS, Version 5.0.

1.1 Connecting the DEClaser 1152 Printer to the PC

The DEClaser 1152 printer supports the following cables for PCs:

Cable	Order Number
Parallel	BC19M–10
DEC423 Serial	BC16E–10 cable (included)
EIA-232 Serial	H8571–E or H8571–J adaptor (See the DECdirect catalog for more information.)

Most installations use the parallel cable for faster data transfer. We recommend using the BC19M-10 or an equivalent parallel printer cable (not included) to connect your printer to the PC.

To connect the printer to your PC, use the following procedure:

1. Turn off the printer.

2. Plug the parallel cable from the PC into its connector on the printer.

Parallel
Communications
Port
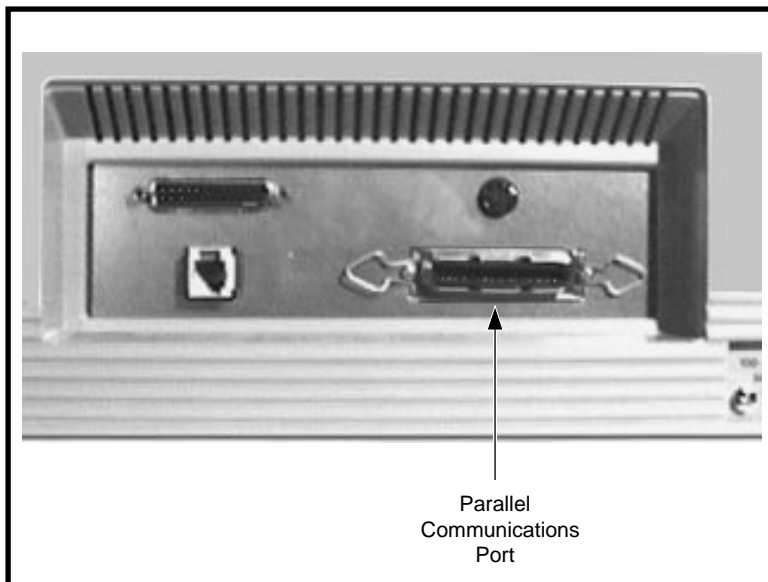
MLO-009496C

3. Turn on the printer.

1.2 Adding the DEClaser 1152 Printer to the MS-Windows Printers Menu

<hr>

Note

If you want to print from the MS–DOS command line, skip to Section 1.4.

<hr>

To print PostScript files from your MS-Windows applications, you must add the DEClaser 1152 printer to the **Printers** menu.

1. From the **Main** menu, select the **Control Panel** icon.

2. From the **Control Panel**, select the **Printers** icon.
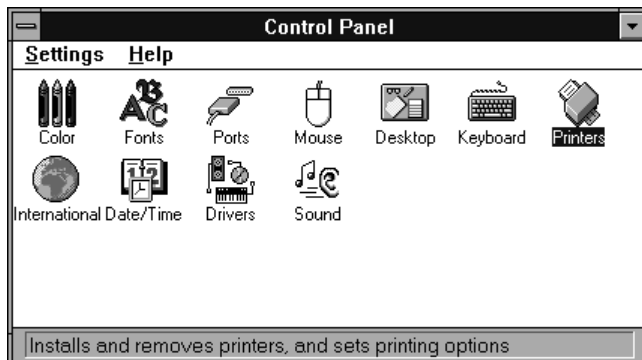
The **Printers** menu appears.

3. Click on **Add**>>.
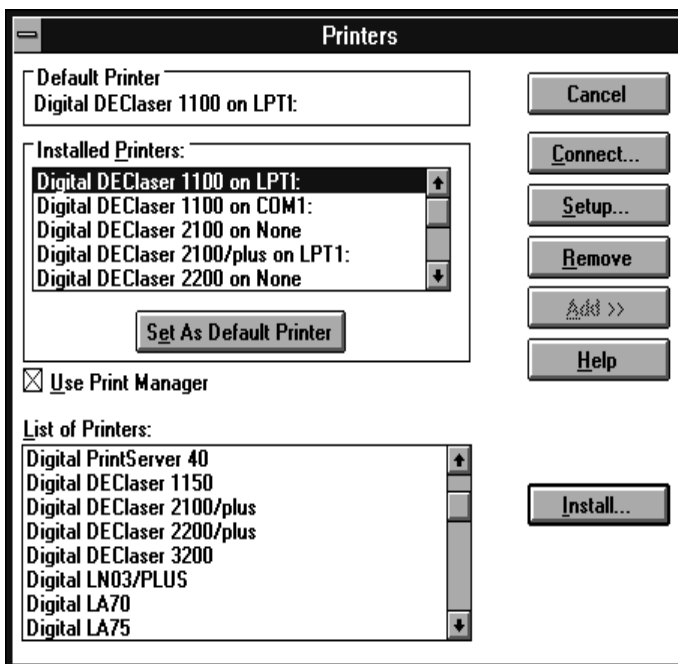
The **List of Printers** menu expands to display the list of supported printers.

4. Select **Digital DEClaser 1150**.

_____ **Note** _____

If you are using Microsoft Windows, Version 3.0, select **PostScript**.

---

5. Click on **Install...**.

   You can install the printer in two ways:

   • If the printer driver file is not already installed, install it and click on **OK**.

   • If you know the disk where the file is located, enter the drive name and directory where the file is located and click on **OK**.

   Windows copies the file to the resident disk drive. The **Printers** menu now lists the DEClaser 1150 on LPT1: under **Installed Printers**. If the Digital DEClaser 1150 does not appears as your default printer, click on **Set As Default Printer**.

6. Click on **Close...**.

1.3 Printing a File from MS-Windows

To print PostScript files from MS-Windows, you will usually use the **Print** feature of an MS-Windows application. Although the menus among applications may vary, the procedure for printing files is similar.

For example, to print from an application, such as MS-Paint, pull down the **File** menu and select **Print**.

1.4 Printing a File from the MS–DOS Command Line

To print PostScript files from MS–DOS, you will usually use the **Print** feature of an MS–DOS application. Consult your application's documentation for more specific information.

To print PostScript files from the MS–DOS command line, you can use the COPY command or the PRINT command.

_____ **Note** _____

To print text files, change the interpreter mode to PCL.

- Issue the COPY command in the following format:

  ```
  COPY filename.ps LPTx:
  ```

  LPT*x* is the port where your printer is attached.

- Issue the PRINT command in the following format:

  ```
  PRINT filename.ps
  ```

  The system may prompt you for the name of the port:

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

  If your printer is connected to LPT1:, you can press ENTER without supplying any additional information. Otherwise, enter the port where your printer is attached.

  ———————————— **Note** ————————————

  The PRINT command may send extraneous characters to the printer, preventing your first print job from completing sucessfully. However, this should only happen the first time after the PC has been power cycled.

  ———————————————————————————————

1.5 If Your File Does Not Print

If your PostScript file does not print, print a test page. Press On Line, then Test/Font. In the **Communications Information** section, check that the parallel settings on the printer are:

```
Parallel
Interpreter: PostScript
Enabled: True
On: True
Protocol: Normal
OutputDevice:  None
```

If your settings are different, change the printer's settings, using Menu Mode. See the *DEClaser 1152 Printer Installation/Operator's Guide* for details on changing the settings.

1.6 Finding Help

For more information about the printer, printing options, and MS–DOS, see the following sources:

- *DEClaser 1152 Printer Installation/Operator's Guide*

- *Microsoft Windows User's Guide*

- *Microsoft Windows Help*

- *Microsoft MS–DOS User's Guide*

- The commands **HELP MODE** and **HELP PRINT** on MS–DOS, Version 5.0.

2

Installing and Using the DEClaser 1152 Printer with a Macintosh Computer

You can connect the DEClaser 1152 printer directly to a System 6 or System 7 Macintosh computer.

2.1 Connecting the DEClaser 1152 Printer to the Macintosh

To connect the printer to your Macintosh computer, use the following procedure:

1. Turn off the printer and the Macintosh.

2. Attach cables to the printer and the Macintosh.

   a. **To connect the printer directly to the Macintosh,** attach a Macintosh Plus to ImageWriter II cable (or equivalent) to the LocalTalk port of the printer and to the Macintosh.

   b. **To connect the printer to a LocalTalk network,** attach a LocalTalk connector box to the LocalTalk port of the printer. Then, connect a 2-meter LocalTalk cable from the LocalTalk connector box on the printer to the LocalTalk connector box on your Macintosh. (See the *LocalTalk Cable System Owner's Guide* included in the LocalTalk Locking Connector Kit Din-8 for detailed information.)

LocalTalk
Communications
Port
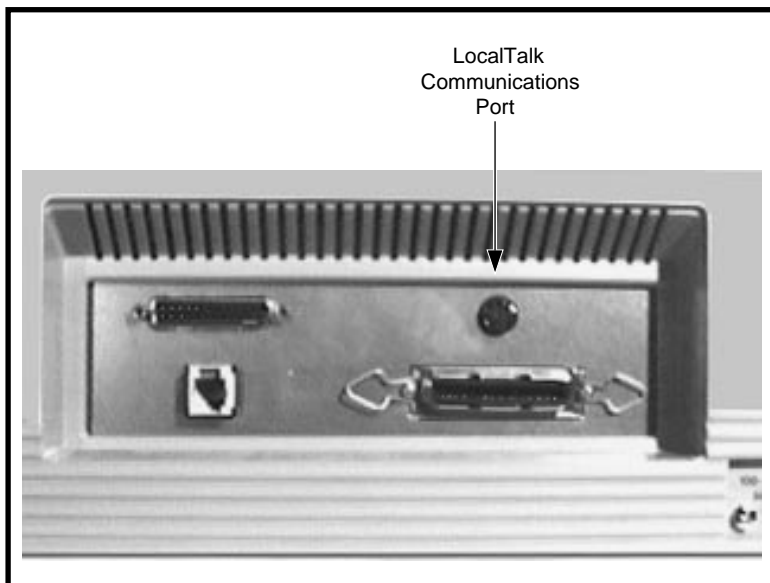
MLO-009495C

3. Turn on the Macintosh, then the printer.

2.2 Adding the DEClaser 1152 Printer to the Chooser Menu

To print PostScript files from your Macintosh applications, you must add the
DEClaser 1152 printer to the **Chooser** menu. The following steps show you
how:

1. Select **Chooser** from the Apple menu.

2. From the **Chooser** menu, click on **LaserWriter**.

   The **LaserWriter** icon is highlighted and the printer list displays
   DEClaser 1152.
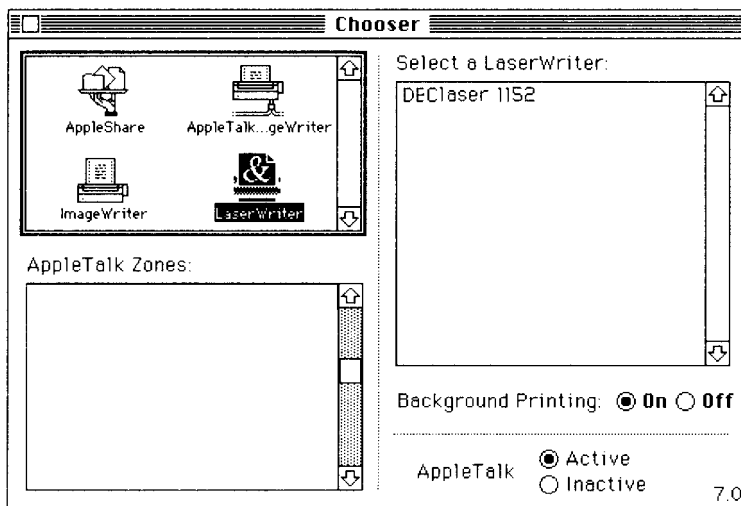
3. Click on **DEClaser 1152**.

4. Make sure the **Appletalk** button in the lower-right corner of the **Chooser** menu is set to **Active**.

5. Close the **Chooser**.

2.3 Printing a File

To print PostScript files from the Macintosh, you will usually use the **Print** option of an application. The menus among applications may vary, but the procedure for printing files is similar.

1. Print a file, using the **Print...** option in the **File** menu of your application.

   The top line of the dialog box displays **DEClaser 1152**.

   ─────────────────────────── **Note** ───────────────────────────

   Make sure **Font Substitution** is selected in the **Page Setup** menu.

   ──

2. Click on **OK** to send the file to the DEClaser 1152 printer.

2.4 Finding Help

For more information about the printer, printing options, and Macintosh, see the following sources:

- *DEClaser 1152 Printer Installation/Operator's Guide*
- Macintosh system documentation

3

Installing and Using the DEClaser 1152 Printer in VMS and ULTRIX Environments

To install the DEClaser 1152 printer in a VMS or ULTRIX environment, you will need the assistance of a system manager. Contact your system manager or refer to the software documentation provided.

3.1 Printing Files in VMS

This section assumes DECprint Supervisor for OpenVMS, Version 1.0 has been properly installed on your VMS system.

To print PostScript files, use the following command:

```
PRINT/QUEUE=queuename/PARAMETER=DATA_TYPE=POSTSCRIPT filename
```

3.2 Printing PostScript Files in ULTRIX

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. (Most PostScript files generated by applications begin with the characters %!.) If the file does not begin with %!, it is interpreted as an ASCII file and is automatically converted to PostScript before being sent to the printer.

```
lpr -Pqueuename filename
```

3.3 Finding Help

For more information about the printer, printing options, and options, see the following sources:

- *DEClaser 1152 Printer Installation/Operator's Guide*

- *DECprint Supervisor System Manager's Guide*

- *DECprint Supervisor Software Installation Guide*

- *DECprint Supervisor User's Guide*

- The VMS command **HELP PRINT_PARAMETERS**
- The ULTRIX commands **man lpr** (which lists related documentation) and **man lpq**

Part 2:
Advanced Operations

This section explains how to take advantage of the features of the PostScript Level 2 DEClaser 1152 printer. This section covers such topics as:

- Using multiple communications channels
- Accessing and using fonts
- Using DECimage for picture enhancement

4

Setting Up Multiple Communications Channels

The DEClaser 1152 printer can process print requests from multiple communications channels sequentially. Each channel may be directed to process the data as either PostScript data or Hewlett-Packard PCL4 data.

Figure 4–1 Communication Channels on the DEClaser 1152 Printer
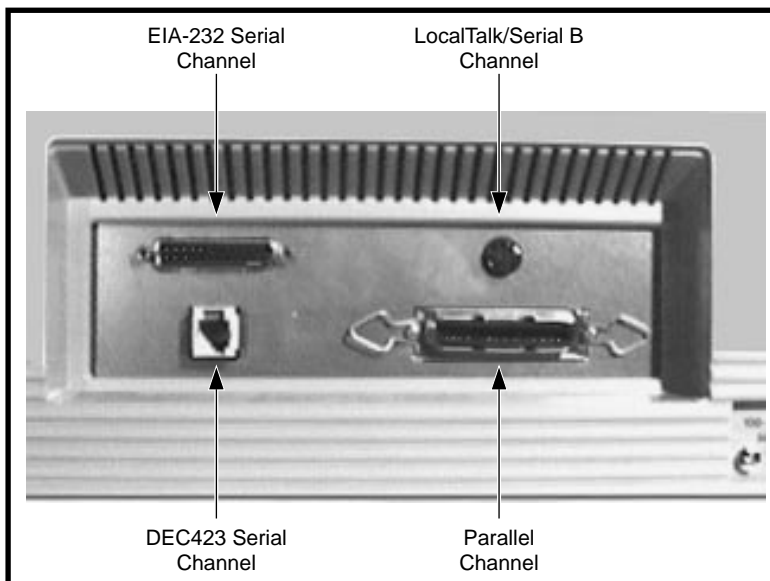
MLO-009497C

The Serial, LocalTalk, and Parallel communications channels are enabled at the factory. However, all three enabled communications channels should not be used simultaneously. Data integrity will be compromised if the LocalTalk and Serial are used simultaneously, and it is NOT a recommended configuration for a multiple-communications environment.

Because the LocalTalk and SerialB channels share the same connector, they cannot be used at the same time. The SerialB communication channel is disabled by default. Enabling LocalTalk or SerialB explicitly disables the other.

The following list shows the recommended multiple host configurations:

- Parallel + Serial (EIA-232 or DEC423 but not both)

- Parallel + SerialB

- Parallel + Serial (EIA-232 or DEC423 but not both) + SerialB

- Parallel + LocalTalk

_____ **Note** _____

DECprint Supervisor for OpenVMS does not support multiple port configurations. If you use DECprint Supervisor for OpenVMS, use the serial line.

_____

5

Fonts

The DEClaser 1152 printer has 17 built-in fonts, one of which is the Symbols Set. An optional font cartridge is available with 26 additional fonts.

PostScript Level 2 uses a mechanism slightly different from Level 1 to access the fonts in the font cartridge. If an application queries the printer to determine which fonts are available, it is likely that the application will find only the built-in fonts. However, both PostScript Level 1 and Level 2 applications can access the fonts in the cartridge and print successfully.

The start-up page lists the names of the built-in fonts and the name of any font cartridge that is installed.

To list fonts in the font cartridge, select the **PS PCL SETUP** menu, then select **PCL: FONT PAGE** to generate a Font Page. (See *DEClaser 1152 Printer Installation/Operator's Guide.*)

6

Enhancing Picture Quality

DECimage is a tool that allows you to enhance the quality of pictures printed
on Digital's PostScript printers. The following sections explain:

- The benefits of using DECimage

- How the system manager can set up DECimage on a VMS system

- How a user can implement DECimage on a non-VMS system

6.1 Benefits of DECimage

DECimage allows you to do the following:

- Increase the perceived resolution to provide similar detail found on 800–
  1000-dot/inch printers. In graphic arts terms, the detail is equivalent to a
  150-line/inch halftone screen.

- Adjust sharpness of pictures to enhance edges or to soften an image for
  special effects.

- Increase the dot size (for a coarser image) to help make photocopies of
  pictures appear clearer.

- Fix pictures with poor contrast or exposure.

Figure 6–1 Pictures With and Without DECimage

With DECimage
100% scale (300 dpi)

2X magnification

Without DECimage
100% scale (300 dpi)

2X magnification
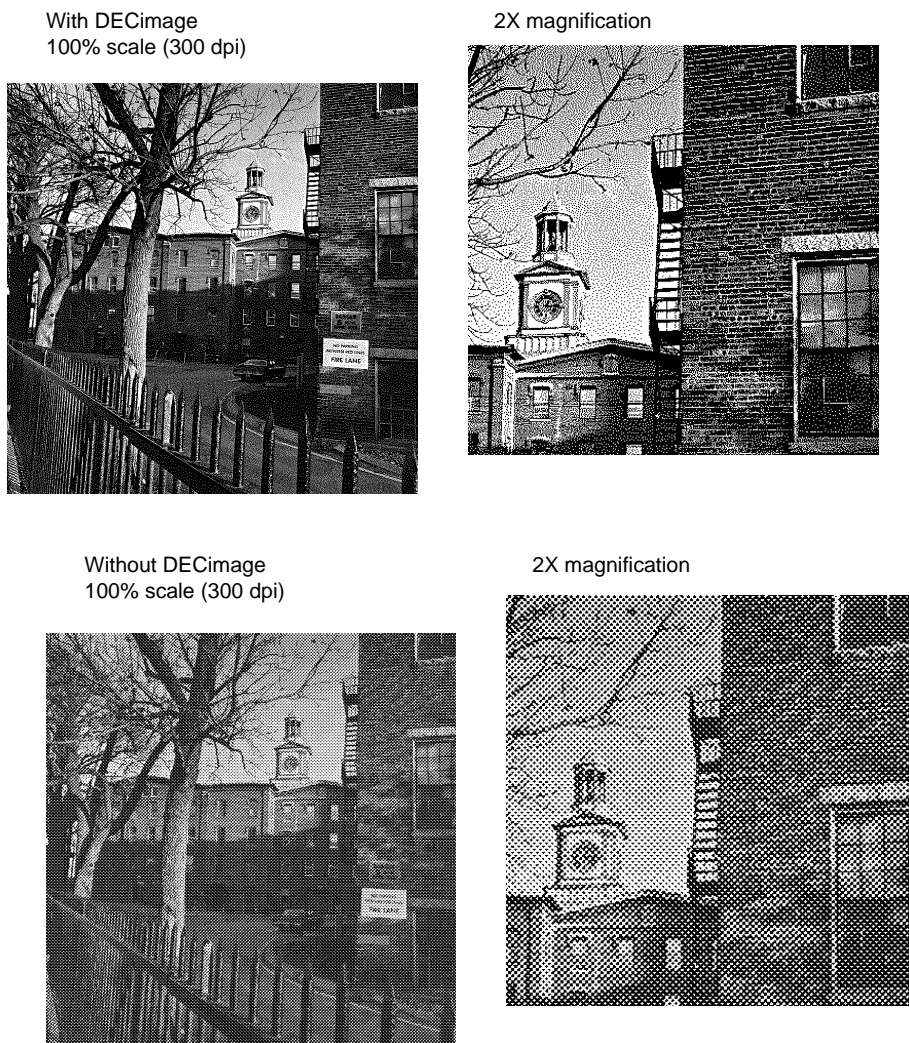
6.2 When to Use DECimage

Images processed using DECimage require more time to print than images printed without DECimage. On smaller images, the high-quality output using DECimage should outweigh the additional computation time required. However, on large, high-resolution, full-page images, the additional computation time is significant, and you have to decide whether or not to use DECimage. You may want to print your draft copies without DECimage, and only use it for your final printout.

6.3 Setting Up DECimage on VMS Platforms

—————————————————— **Note** ——————————————————

You must have system privileges to perform these steps.

———————————————————————————————————————

Use the following procedure to set up DECimage on a system with DECprint Supervisor for OpenVMS, version 1.0:

1. Create the setup module DECIMAGE.TXT.

```
%!
$! This PostScript procedure invokes DECimage for the current job.
$!
systemdict /languagelevel known
 {languagelevel}
 {1} ifelse
2 ge
{
%!
%!decimage_level2
%!
statusdict dup /setDECimage known exch /setDECimageparams known and
{
        currentpagedevice /Install get
        statusdict begin /pagedevice_install exch def end
        1 dict dup /Install
        {
        statusdict begin
        pagedevice_install
        0      %Punch1
        1      %Punch2
        1.5    %Sharpness
        1      %Dotsize
        setDECimageparams
        true setDECimage
        end
        } put
```

```
        setpagedevice
} if
}
{ %!
  %! DECimage_level1
  %!
        statusdict dup /setDECimage known exch /setDECimageparams known and
        { statusdict begin
        0    %Punch1
        1    %Punch2
        1.5  %Sharpness
        1    %Dotsize
        setDECimageparams
        true setDECimage
        end
        } if
} ifelse
```

2. **Create a text library.**

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

3. **Insert DECIMAGE.TXT into the library.**

   ```
   LIB/REPLACE/TEXT SYS$LIBRARY:DECIMAGE 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, 1118.**

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

   ```
   DEFINE/FORM DECIMAGE 1118 -
           /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, DECIMAGE
   ```

8. Execute DCPS$STARTUP.COM.

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

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

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

6.4 Invoking DECimage on VMS Platforms

There are many ways to use the DECimage form. For example, you can use a previously set up PostScript queue:

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

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

- *DECprint Supervisor System Manager's Guide*
- *DECprint Supervisor Software Installation Guide*
- *DECprint Supervisor User's Guide*

6.5 Using DECimage on Non-VMS Platforms

A non-VMS user can invoke DECimage on the DEClaser 1152 printer by sending the PostScript Level 2 code to the printer in two ways:

1. The preferred method is to append code to the beginning of your PostScript file to invoke DECimage for that print job only.

2. If appending code to the beginning of the PostScript job is not possible, you can set the DECimage facility on persistently. The persistent method will keep DECimage invoked across power cycles.

_____ **Note** _____

The code in the following sections can be used on VMS systems as well.

_____

6.5.1 Invoking DECimage for the Current Print Job

To invoke DECimage for the current job only, append the following code to the top of your PostScript file:

```
% -------------- Beginning of DECimage Code ----------------------
% This code enables DECimage for the duration of the current
% job only. Insert this code at the top of the PostScript file.
statusdict dup /setDECimage known exch /setDECimageparams known and
{
    currentpagedevice /Install get
    statusdict begin /pagedevice_install exch def end
    <<
    /Install
    {
    statusdict begin
    pagedevice_install
    0       %Punch1
    1       %Punch2
    1.5     %Sharpness
    1       %Dotsize
    setDECimageparams
    true setDECimage
    end
    }
    >> setpagedevice
} if
%------------- End of DECimage Code ----------------------
```

The code uses PostScript Level 2 constructs with some PostScript Level 1 compatibility operators. In some cases, using the compatibility operators can reduce the amount of coding required. As a general guideline, use only Level 2 constructs with the DEClaser 1152 printer.

6.5.2 Invoking DECimage Persistently

If a platform or application does not allow you to append code to the beginning of the PostScript print job, you can invoke DECimage persistently across power cycles. This means DECimage will enhance every image it supports.

_____ **Note** _____

Because DECimage slows printing performance, you may want to disable DECimage for draft versions of your document.

_____

The following code uses Level 2 constructs to enable DECimage persistenly.
Level 1 methods of invoking DECimage are not recommended.

```
% ------------------ Beginning of Persistent DECimage Enabled ----------
% This code enables DECimage until an additional job
% turns it off, or the printer is reset to its factory
% defaults. Resetting to factory defaults can be done from the front panel
% or through a PostScript job.
% Note that the default SystemParamsPassword for the DEClaser 1152 is its
% product name. If you have changed the SystemParamsPassword, you must
% use the new password as the value for /Password below.
<< /Password systemdict /product get
   /InstallSpecialImageActive true
>> setsystemparams
% ------------------ End of persistent DECimage Enabled -----------------
```

To turn DECimage off persistently across power cycles, send the following code:

```
% ----- Turns off persistent DECimage --------------
<< /Password systemdict /product get
   /InstallSpecialImageActive false
>> setsystemparams
% --------------------- End -----------------------
```

6.6 Setting Parameters

The following sections explain how the parameters for punch, sharpness, and
dotsize can affect picture quality.

In this section, the term *punch parameters* are values that increase or decrease
the contrast in highlights and shadows.

6.6.1 Setting the Punch Parameters

The parameters punch1 and punch2 control almost all practical changes in
DECimage tone scale by increasing or decreasing contrast in highlights and
shadows.

Pictures that appear flat or washed out 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 punch2
greater than 1.0 increases the density of the black pixels in the highlights.

If the dark values appear as full black, the black pixels are being printed
too large. You need to reduce contrast in the shadows. Setting punch1 to a
negative value reduces the density of the shadow pixels.

An example of increasing contrast would be setting punch1 to 0.2 and punch2 to 0.8. Input values between 0.0 and 0.2 are mapped to black (0.0) and input values between 0.8 and 1.0 are mapped to white (1.0).

Intermediate values between punch1 and punch2 are linearly mapped, or stretched, between 0.0 and 1.0.

An example of decreasing contrast would be setting punch1 to less than 0.0 and punch2 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 punch1 is greater than punch2, the tone-scale of the image is reversed. What was darker becomes lighter, and what was lighter becomes darker.

6.6.2 Setting the Sharpness

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

For	Set Sharpness to...	Notes
Architectural pictures, landscapes	2.0–4.0	Values below 2.0 may make pictures look dull and soft. Values above 4.0 may make pictures appear harsh and unnatural.
Portraits	1.0–2.5	Values above 3.0 may make pictures look grainy.
Images to process faster	0.0	The image does not undergo sharpness process, thus speeding up the processing time. 0.0 does not affect the image quality.

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 below -1 has no additional effect and should not be used.

6.6.3 Setting the Dotsize

The dotsize parameter is a positive integer that determines the size of the smallest output dot (in pixels) in rendered images.

A dotsize value of 1 or 2 produces the best rendered images. When the device can faithfully display isolated black and white dots, use a dotsize value of 1. When the device cannot faithfully display isolated black and white dots, use a dotsize value of 2.

A larger dotsize value increases the speed at which images are rendered, but it does so at the expense of image quality. A large dotsize value may be useful in draft mode. A quality draft is produced by a smaller dotsize at a slower speed.

6.7 Setting Up DECimage for Special Effects

You can create individual DECimage setup modules for special effects, such as:

- Contrast
- Sharpness
- Resolution

Table 6–1 provides the values to insert into your PostScript code.

Table 6–1 Setting Values to Change Picture Characteristics

To Change This...	Set Punch1 to...	Set Punch2 to...	Set Sharpness to..	Set Dotsize to...
To increase contrast	.1	.9	2	1
To sharpen an image	0	1	3	1
To soften an image	0	1	.7	1
To make an image coarse	0	1	2	2

6.7.1 DECimage for VMS Setup Modules

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

1. Create setup modules similar to the DECimage module created in Section 6.3. 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
Make an image more coarse	DECIMAGE_COARSEN.TXT

2. Edit each setup module, and change the values on the four lines identified as punch1, punch2, sharpness, and dotsize. See Table 6–1 to set the values.

3. Place the setup modules in the SYS$LIBRARY:DECIMAGE text library.

4. Create a form for each setup module. Each form should be identical in attributes. Change the setup module name in each form.

6.7.2 DECimage for Non-VMS Systems

You can set up DECimage for special effects for one job or persistently across power cycles.

- For one job, change the values on the four lines defined as Punch1, Punch2, Sharpness, and Dotsize in the PostScript code in Section 6.5.1.

- To change the values persistently, send the following code to the printer:

```
% --------  Beginning of code to persistently change DECimage parameters ---
<< /Password systemdict /product get
   /InstallPunch0 0.0
   /InstallPunch1 1.0
   /InstallSharp  1.5
   /InstallDotSize 1
>> setsystemparams
% ------------------ End code to persistently change DECimage parameters ---
```

A

Adobe PCL4 Emulation

The Adobe emulation of the Printer Control Language (PCL4) on the DEClaser 1152 printer differs from the Hewlett-Packard implementation, in the following ways:

- The Line Printer font does not exist, and uses the Courier font instead. Both fonts are fixed-pitch fonts and only minor differences will appear in the document.

- The printable area for some page sizes may be slightly larger or smaller than those on a HP LaserJet IIP printer.