

DEClaser 2100 Printer Installation Guide

EK-D2100-IN-001

**Digital Equipment Corporation
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FCC NOTICE: This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause 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 methods.

- Reorient the receiving antenna.
- Relocate the computer or peripheral with respect to the receiver.
- Move the computer or peripheral away from the receiver.
- Plug the computer or peripheral into a different outlet so that they are on different branch circuits than the receiver.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the booklet *How to Identify and Resolve Radio/TV Interference Problems*, prepared by the Federal Communications Commission helpful. This booklet is available from the U.S. Government Printing Office, Washington DC, 20402, Stock No. 004-000-00345-4.

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

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Preface

The DEClaser 2100 printer is a nonimpact, desktop, page printer. This guide covers the installation of the DEClaser 2100 printer up to the point where it is certified to be operating properly.

Intended Audience

This guide is written for installers of the DEClaser 2100 printer.

Document Structure

This guide has seven chapters and one appendix.

Chapter 1, *Preparing Your Site*, discusses site preparation items, such as power requirements, operating location, and environmental conditions.

Chapter 2, *Unpacking Your Printer*, describes how to unpack the printer and identifies its parts.

Chapter 3, *Cleaning the Fixing Assembly Roller*, shows how to do an initial cleaning of the fixing assembly roller.

Chapter 4, *Installing the EP-S Cartridge*, describes how to install the electrophotographic supplies (EP-S) cartridge.

Chapter 5, *Loading Paper*, explains how to load paper.

Chapter 6, *Connecting the Printer*, shows how to connect the printer to your computer system or video terminal.

Chapter 7, *Verifying the Installation*, explains how to run the self-test.

Appendix A, *Cabling Information*, explains how to cable your printer to different systems, such as workstations and PCs.

NOTE: *It is recommended to perform all procedures in the order given.*

Ordering Additional Copies of This Documentation Set

You can order additional copies of this documentation set from DECdirect as described in the ordering information section following Appendix D of the *DEClaser 2100 Printer Operator's Guide*. The ordering number for the documentation is EK-D2100-DK.

The documentation set consists of:

- One *DEClaser 2100 Printer Installation Guide*
- One *DEClaser 2100 Printer Operator's Guide*
- One spine insert for the binder
- One 3-ring binder

NOTE: *You cannot order the installation or operator's guide individually. You can order only the documentation set.*

Associated Documents

DEClaser 2100 Printer Operator's Guide (EK-D2100-OP)

Digital ANSI-Compliant Printing Protocol Level 3 Programming Reference Manual (AA-PBWGA-TE)

Digital ANSI-Compliant Printing Protocol Level 3 Programming Supplement (AA-PBWHA-TE)

Terms and Conventions

The following terms and conventions are used in this guide:

Term/Convention	Meaning
NOTE	Provides general information about the current topic.
CAUTION	Provides information to prevent damage to equipment.
WARNING	Provides information for preventing personal injury.
On Line	A key name is shown enclosed to indicate that you press that key on the operator panel. For example: 1. Press On Line to place the printer on line.
Dash (—)	A statement beginning with a dash (—) describes the result of a step. For example: 1. Press On Line to place the printer on line. — The On Line indicator lights.

Term/Convention	Meaning
Check Mark (✓)	A statement marked by a check mark (✓) indicates a special instruction. For example: 1. Remove the fixing assembly roller cleaner from the EP-S cartridge box. ✓ Identify the felt pad on one end of the fixing assembly roller cleaner.

Laser Safety

The DEClaser 2100 printer complies with laser product performance standards set by government agencies as a Class 1 Laser Product. The DEClaser 2100 printer does not emit hazardous light, since the beam is totally enclosed during all modes of customer operation and maintenance.

Ozone Safety

The DEClaser 2100 printer uses an ozone filter to remove the ozone generated by the printer. The ozone filter should be replaced at the 100,000 page count. Refer to the *DEClaser 2100 Printer Operator's Guide* for instructions on replacing the ozone filter.

WARNING: *Do not operate the printer without the ozone filter installed. The filter removes ozone, which could be hazardous to your health.*

Chapter 1

Preparing Your Site

The performance of the DEClaser 2100 printer can be affected by electrical and environmental conditions surrounding its work location. This chapter lists the requirements for installing the DEClaser printer in a location where it performs best.

1.1 Power Requirements

The wall outlet you use should meet the following requirements:

Area	Voltage	Frequency	Amperage
North America	120 Volts	50–60 Hz	8 Amp circuit
All others	220–240 Volts	50 Hz	5 Amp circuit

NOTE: *Do not plug any other equipment into the same power supply line.*

1.2 Operating Location Requirements

The DEClaser 2100 printer should be installed 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 all sides of the printer for servicing.

The following figure illustrates the space requirements for the printer.

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1.3 Environmental Conditions

For the proper operation of the printer, be certain the following environmental requirements are met:

- Maintain the site within a temperature range of 10°C to 32.5°C (50°F to 91°F).
- Maintain a humidity range of 20% to 80% (noncondensing). This ensures consistent image quality and prevents paper jams.
- Install the printer in a well-ventilated area to avoid heat buildup in the unit.
- Avoid installing the printer in a dusty area to protect moving parts from unnecessary wear.
- To prevent excessive ozone levels, avoid running many printers in the same area without adequate ventilation.
- To prevent condensation, avoid installing the printer in an area where it is:
 - Subjected 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.

Chapter 2

Unpacking Your Printer

This chapter describes the parts and the steps necessary to unpack the DEClaser 2100 printer.

CAUTION: *Damage will occur if the packing and spacers are not removed before turning on the printer.*

2.1 Printer Inventory

Your DEClaser 2100 printer and accessories come packed in two boxes. The following lists identify what items are in each box.

The larger box contains:

- One DEClaser 2100 printer
- One power cord
- One serial interface cable (BC16E–10)
- One serial interface adapter (H8571–E) for coupling RS232 to RS423 connectors
- One 8½"-x-11" paper cassette for North American applications or one 210-mm-x-297-mm paper cassette for European or other applications
- One documentation binder

The smaller box contains:

- One EP-S cartridge (in silver bag)
- One fixing assembly roller cleaner
- One cotton swab (Refer to the *DEClaser 2100 Printer Operator's Guide* for instructions on when to use the swab.)
- One installation manual

NOTE: *Save the shipping cartons and the packing material. They are useful for transporting the printer.*

2.2 DEClaser 2100 Printer

The following illustration shows the front and rear views of the printer with the principal areas indicated.

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2.3 Unpacking the Printer

The instructions in this chapter begin at the point where the printer has been removed from the shipping box.

1. Remove the printer from the plastic bag.
2. Remove the packing tape and the packing cardboard from the paper cassette slot.

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3. Press the release button on the top of the printer and raise the printer cover to its most upright position.

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4. Remove the packing foam inside the printer.

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5. Remove the two fixing assembly spacers.

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6. Remove the top cover packing spacer.

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Chapter 3

Cleaning the Fixing Assembly Roller

This chapter describes how to perform an initial cleaning of the fixing assembly roller. This initial cleaning removes any shipping dust and contaminants that may have settled on the roller.

You replace the fixing assembly roller cleaner each time you replace the EP-S cartridge. A cleaner comes with each EP-S cartridge kit. Refer to the *DEClaser 2100 Printer Operator's Guide* for instructions on how to replace the EP-S cartridge and the fixing assembly roller cleaner.

1. Remove the fixing assembly roller cleaner from the EP-S cartridge box.
 - ✓ Remove the fixing assembly roller cleaner from its packaging.
 - ✓ Identify the felt pad on one end of the fixing assembly roller cleaner.

The felt pad contains lubricating oil that stays on the roller as you clean it.

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2. Open the green fixing assembly cover.

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3. Wipe the fixing roller with the felt pad on the end of the cleaner.

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4. Peel off the felt pad and discard it.

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5. Insert the cleaner into the fixing assembly.

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6. Close the fixing assembly cover.

NOTE: *The fixing assembly cover does not close tightly.*

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Chapter 4

Installing the EP-S Cartridge

This chapter describes how to install the electrophotographic supplies (EP-S) cartridge.

It is important to handle the EP-S cartridge properly. Be aware of these cautions when handling the EP-S cartridge.

CAUTIONS: *Do not slide the cartridge cover open.*

Do not stand the cartridge on end or place it upside down.

Do not shake the cartridge vigorously.

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1. Lower the top cover to its halfway position.

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2. Remove the EP-S cartridge from its protective bag.

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3. Rock the EP-S cartridge five or six times as shown to distribute the toner evenly.

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4. Install the EP-S cartridge.

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5. Snap the tab off the left side of the EP-S cartridge by moving it up and down.

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6. Grasp the tab and pull the sealing tape completely out of the cartridge.
✓ Discard the sealing tape.

NOTE: *The sealing tape is about 55 cm (22") long and may have toner on it. If you get toner on your hands or clothing, wash with cold water and soap.*

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7. Close the top cover by pushing down on the hand grip until the cover snaps into place.

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Chapter 5

Loading Paper

This chapter describes how to unpack the paper cassette and how to load paper into the DEClaser 2100 printer. The paper cassette holds about 200 sheets of 80 g/m² (21 lb) paper. For further information about the kind of paper to use, refer to the *DEClaser 2100 Printer Operator's Guide*.

The following instructions demonstrate how to unpack the paper cassette and how to load paper into the paper tray.

1. Remove the paper cassette from its shipping bag.

NOTE: *The paper cassette consists of a cover and a tray.*

2. Separate the cassette cover from the tray and remove all packing material from the tray.

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3. Insert paper into the left side of the cassette being sure it is inserted below the paper guide and the maximum height guard.
 - ✓ To prevent paper jams, do not place an excessive amount of paper into the tray. There should be a small amount of space between the paper and the maximum height guard.
 - ✓ Make sure the paper lies perfectly flat in the tray.

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4. Replace the cassette cover on the paper tray.

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5. Insert the paper cassette into the printer.

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Chapter 6

Connecting the Printer

This chapter describes how to connect your printer to the host device and to a power source.

6.1 Connecting to the Host Device

Your printer is equipped with both a serial interface connector and a parallel interface connector.

See your system manager or computer operator to determine what interface connection to use.

NOTE: *Refer to Appendix A for detailed information on connecting your DEClaser printer to different host devices.*

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6.1.1 Serial Interface Connection

Follow these directions for the serial interface connection:

1. Plug one end of the BC16E cable into the host device with an adapter, if necessary. Appendix A lists all the necessary adapters.
2. Attach the H8571-E adapter, which came with your printer, to the serial port on the back of the printer.
 - ✓ Use a flathead screwdriver or your fingers to secure the adapter to the printer.

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3. Plug the remaining end of the BC16E cable into the H8571-E adapter.

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NOTE: *Refer to Appendix A for information on host devices that do not accept the BC16E cable.*

6.1.2 Parallel Interface Connection

The parallel interface cable (BC19M-10) is not included with your printer. To purchase it, call DECdirect at 1-800-DIGITAL.

Follow these directions for the parallel interface connection:

CAUTION: *Before connecting the parallel interface cable, be sure the host device you are connecting to is turned off.*

1. Plug the end of the BC19M-10 cable with the two screws attached to it firmly into the host device.
2. Tighten the two screws.
3. Plug the other end of the BC19M-10 cable into the printer.
4. Secure the cable by pressing the clips over the sides of the connector.

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6.2 Connecting to a Power Source

CAUTION: *Be sure to check that the wall outlet voltage matches the voltage of your printer. Your electrician can make this determination for you if you do not know.*

The power cord receptacle and power switch are located at the rear of the printer.

1. Make sure the printer is in the OFF (O) position.

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2. Plug the power cord into the power cord receptacle just below the power switch.

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3. Insert the other end of the power cord into a power outlet.

WARNING: *Do not use an adapter plug on the power cord.*

Chapter 7

Verifying the Installation

This chapter describes how to check the printer mechanism and how to print a test page.

7.1 Checking the Printer Mechanism

This section describes how to determine if the printer is running properly.

1. Press the power switch to the ON (|) position.

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- The Ready indicator on the operator panel flashes, the Alarm and the Data indicators light, and 02 WARMING UP appears on the liquid crystal display (LCD).

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When the printer warms up (about one minute), 00 READY DEC appears on the display, and the On Line and Ready indicators light.

You are now ready to print.

7.1.1 Testing the Printer

This section describes how to perform a printer self-test. The test page looks like the sample on the following page and only verifies that the printing mechanism is functioning properly.

1. Using a ballpoint pen or like instrument, press the self-test button located on the right side of the printer.

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- 15 ENGINE TEST appears on the LCD display, and a test image of vertical stripes prints.

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7.1.2 Producing a Test Print

The following test shows that the printer, with the exception of the interface unit, is working properly.

1. Press **On Line** to place the printer in the offline state.
2. Press **Test/Font** for 2 seconds.
 - 05 TEST PRINT A appears on the display, and the following test image prints.

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7.2 Conclusion

This concludes the installation of your DEClaser 2100 printer. Refer to your *DEClaser 2100 Printer Operator's Guide* for detailed instructions on features, maintenance, and troubleshooting.

Appendix A

Cabling Information

This appendix describes the different cable combinations to use for connecting your printer to a host device. It also explains serial flow control and parallel communication.

A.1 Cable Combinations

In the first column of Table A-1, the devices you can connect your printer to are grouped by the type of connector required. The second column lists the part numbers of the adapter and the cable required for each device. Determine what device you have and obtain the appropriate adapter. The third column describes how to connect the adapter and/or the cable to the printer.

NOTE: *For a complete list of accessories and supplies and instructions on how to order them, refer to the DEClaser 2100 Printer Operator's Guide.*

Table A-1: Cables and Adapters for Communication Connections

Connector Type	Adapter and Cable	Instruction
25-Pin Plug Devices		
VAXstation 3200/3500 VT100 Series DECserver 200/MC (DSRVB-AA) CPU RS232 Ports	H8571-A and H8571-E ¹ and BC16E ¹	Attach the H8571-A (25-pin-to-MMJ) adapter to these devices, then connect one end of the BC16E cable to the H8571-A. Attach the H8571-E adapter to the DEClaser printer, then connect the other end of the BC16E cable to the H8571-E.

¹H8571-E and BC16E (DECconnect cable) are included with the DEClaser 2100 printer.

Table A-1 (Cont.): Cables and Adapters for Communication Connections

Connector Type	Adapter and Cable	Instruction
9-Pin Plug Devices (DEC)		
VT200 Series DECmate PRO Series VAXstation 2000	H8571-B and H8571-E ¹ and BC16E ¹	Attach the H8571-B (9-pin-to-MMJ) adapter to these devices, then connect one end of the BC16E cable to the H8571-B. Attach the H8571-E adapter to the DEClaser printer, then connect the other end of the BC16E cable to the H8571-E.
DEC423 (MMJ) Serial Devices		
VAXmate MicroVAX 2000 DECserver 300 DECserver 200/DL (DSRVB-BA) VT300 Series CPU DEC423 Ports	H8571-E ¹ and BC16E ¹	Attach one end of the BC16E cable to one of these devices. Attach the H8571-E adapter to the DEClaser printer, then connect the other end of the BC16E cable to the H8571-E.
25-Pin Socket Devices		
Rainbow Digital Modems	H8571-D and H8571-E ¹ and BC16E ¹	Attach the H8571-D adapter to one of these devices, then connect one end of the BC16E cable to the H8571-D. Attach the H8571-E adapter to the DEClaser printer, then connect the other end of the BC16E cable to the H8571-E.

¹H8571-E and BC16E (DECconnect cable) are included with the DEClaser 2100 printer.

Table A-1 (Cont.): Cables and Adapters for Communication Connections

Connector Type	Adapter and Cable	Instruction
9-Pin Plug Devices (IBM PC/AT Type)		
DECstation 210, 212 DECstation 316, 320 IBM PC/AT	H8571-J and H8571-E ¹ and BC16E ¹	Attach the H8571-J adapter to one of these devices, then connect one end of the BC16E cable to the H8571-J. Attach the H8571-E adapter to the DEClaser printer, then connect the other end of the BC16E cable to the H8571-E. Use data transmit ready (DTR) flow control. Refer to the <i>DEClaser 2100 Printer Operator's Guide</i> .
European DECstations Serial Port		
200 Series	12-27591-01 Extender and H8571-A and H8571-E ¹ and BC16E ¹	Connect the female end of the extender cable to the host device and the male end of the extender cable to the H8571-A. Attach the H8571-E adapter to the DEClaser printer, then connect one end of the BC16E to the H8571-A and the other end of the BC16E cable to the H8571-E.
300, 350 Series	H8571-A and H8571-E ¹ and BC16E ¹	Attach the H8571-A adapter to one of these devices, then connect one end of the BC16E cable to the H8571-A. Attach the H8571-E adapter to the DEClaser printer, then connect the other end of the BC16E cable to the H8571-E.
European DECstations Parallel Port		
200, 300, 350 Series	BC19M-10	Connect the BC19M-10 to the DEClaser printer and to the host device.

¹H8571-E and BC16E (DECconnect cable) are included with the DEClaser 2100 printer.

Table A-1 (Cont.): Cables and Adapters for Communication Connections

Connector Type	Adapter and Cable	Instruction
Existing Cable		
BC22D cable (already installed)	H8571-C and H8571-E ¹ and BC16E ¹	Connect the H8571-C adapter plug to the socket of your printer's BC22D cable. Connect one end of the BC16E cable to the H8571-C adapter. Attach the H8571-E adapter to the DEClaser printer, then connect the other end of the BC16E cable to the H8571-E. The combination of the H8571-C adapter, the BC16E cable, and the H8571-E acts as a straight-through cable.

¹H8571-E and BC16E (DECconnect cable) are included with the DEClaser 2100 printer.

A.2 Interface Programming Instructions

This section describes how to set up an IBM PC to interface with your printer.

A.2.1 Serial Flow Control

If you are using an IBM PC or compatible and you want to use the optional serial port on your PC, follow these steps:

1. Edit your AUTOEXEC.BAT file by adding the following two lines:

```
mode com1:4800,n,8,1,p
```

```
mode lpt1:=com1:
```

where:

```
mode com1:4800,n,8,1,p
```

specifies that the first serial port (COM1) is used by the printer, that 4800 baud is the communication speed, that no parity is selected, that 8 data bits are selected, that 1 stop bit is used, and that the printer continuously retries on time-out errors.

```
mode lpt1:=com1:
```

reassigns the printer output to COM1, the first serial port.

NOTE: *On IBM personal computers and compatibles, printer output is normally directed to LPT1, the first parallel port.*

2. Connect the H8571-A adapter as described in Table A-1.
3. Refer to the *DEClaser 2100 Printer Operator's Guide* for instructions on how to select DTR flow control.

If you are using a 25-pin PC/SA with XON/XOFF, follow these steps:

1. Edit your AUTOEXEC.BAT file to contain the following two lines:

```
mode com1:4800,n,8,1,-,n
```

```
mode lpt1:=com1:
```

where:

```
mode com1:4800,n,8,1,-,n
```

specifies that the first serial port (COM1) is used by the printer, that 4800 baud is the communication speed, that no parity is selected, that 8 data bits are selected, that 1 stop bit is used, that the printer tries only once to connect, then time-out, and that the type weight is normal.

```
mode lpt1:=com1:
```

reassigns the printer output to COM1, the first serial port.

NOTE: *On IBM personal computers and compatibles, printer output is normally directed to LPT1, the first parallel port.*

2. Connect the H8571-A adapter as described in Table A-1.
3. Refer to the *DEClaser 2100 Printer Operator's Guide* for instructions on how to select XON/XOFF.

A.2.2 Parallel Communication

If you are using an IBM PC, DECstation PC, or compatible and want to use the parallel port, follow these steps:

1. Refer to the *DEClaser 2100 Printer Operator's Guide* for instructions on how to select parallel operation.
2. Use Digital's BC19M-10 cable or the industry standard Centronics 25-pin D-shell cable to make the connection from the PC to the DEClaser 2100 printer.