HP 9133D/9134D Disc Drives
Operator's Manual

HEWLETT PACKARD

Manual Part No.
09133-90040

Printed in U.S.A.
August 1, 1984

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Federal Communications Commission
Radio Frequency Interference Statement
USA Only

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 measures.

- reorient the receiving antenna
- relocate the computer with respect to the receiver
- move the computer away from the receiver
- plug the computer into a different outlet so that computer and receiver are on different branch circuits

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems".

This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

Chapter 1

ESSENTIALS

About This Manual

This manual has two parts. Chapter 1 covers essentials, and Chapters 2 through 5 provide reference material. Chapter 1 is presented in five languages, and uses a step-by-step approach to take you from learning about your disc drive through using your disc drive. We use the following steps:

Step 1: Checking Your Disc Drive
Step 2: A Look at Your Disc Drive
Step 3: Setting Up Your Disc Drive
Step 4: Try It!
Step 5: Using Flexible Discs

Chapters 2 through 5 provide information you might want to read at a later date, including caring for your disc drive and using your disc drive with your computer. This reference section also includes advice on what to do if something goes wrong. This material is presented in English.

The pages of this manual are perforated between the binding and the three-hole punch, so that you can easily remove and discard the portions of the manual that you do not need. If you wish, you may also remove the portions of the manual that you wish to keep and insert those pages into a three-hole binder, such as your computer manual binder. You can easily remove the perforated pages by first folding the pages along the perforation. Then start your tear at the top or bottom, and remove the pages by tearing in a smooth, easy motion.

STEP 1: Checking Your Disc Drive

CAUTION

The disc drive is a precision instrument. The shock which occurs as a result of the disc drive being dropped as little as one inch may misalign the read/write heads and/or damage the Winchester disc and other internal parts. Damage may occur whether the disc drive is operating or not. Use care when picking up and setting down the disc drive.

- Hewlett-Packard supplies a power cord and this operator's manual with your HP 9133D and HP 9134D.
- Carefully remove your disc drive from the box.
- Inspect your disc drive for any physical damage that may have occurred during shipment.
- If you find any damage, notify your dealer or Hewlett-Packard sales office. Also, file a claim with the carrier.
- If you plan to move the disc drive in the future, save the shipping carton. When the time for the move arrives, seal the disc drive in a plastic bag and repack it in the shipping carton. Because the Winchester disc requires careful handling, we recommend that you repack your disc drive in the shipping carton for all moves, including short moves within the same building.

STEP 2: A Look at Your Disc Drive

- Look at the parts of your disc drive illustrated in Figure 1.
- The disc drive is on when the power button is in, and off when the button is out.
- Note the cooling air exhaust on the rear panel. When positioning your disc drive, ensure that this exhaust is not blocked.
- The disc access light is illuminated whenever your computer is storing data on the disc or retrieving data from the disc. The disc access light is also lit when the disc drive is first turned on.

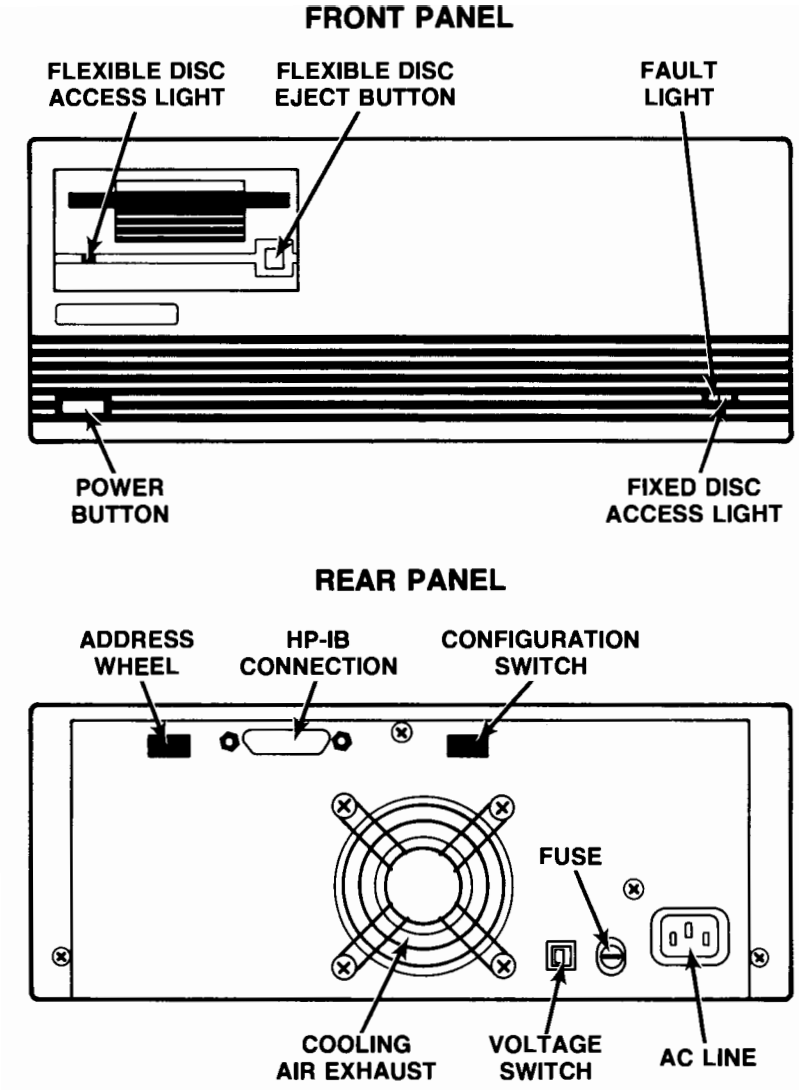


Figure 1: HP 9133D

CAUTION

The disc access light on the front of each drive indicates usage of that drive. Do not depress the disc eject button when the flexible disc access light is on. Also, do not turn off the disc drive when either disc access light is on.

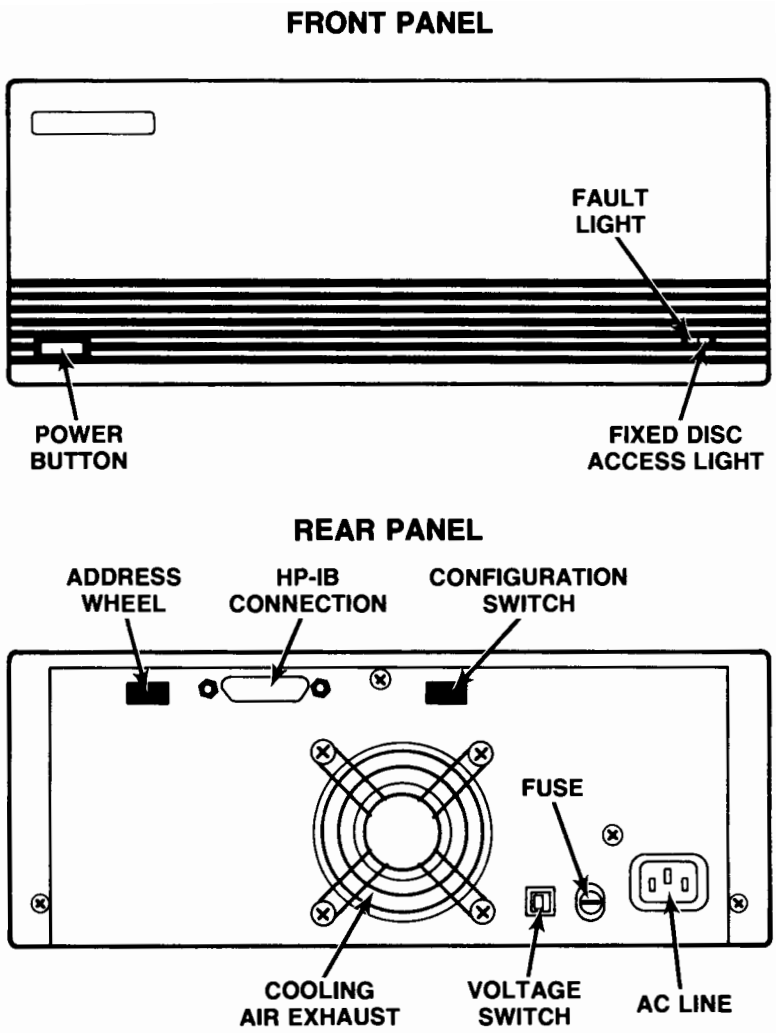


Figure 2: HP 9134D

STEP 3: Setting Up Your Disc Drive

The five steps involved in setting up a disc drive include:

1) setting the voltage,
2) installing the fuse,
3) setting the address and the configuration switches,
4) connecting the HP-IB cable, and
5) connecting the power cord.

During the manufacturing process, Hewlett-Packard completes the first two steps for you. Therefore, at this time, you **MAY** not need to install the fuse or reset the voltage. However, you should check to make sure that the factory completed the first two steps properly. Also, you must complete steps three, four and five.

Setting the Voltage

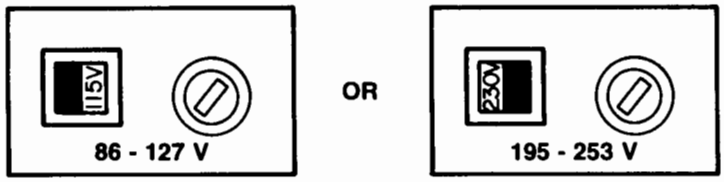


Figure 3: Voltage Switch Settings

CAUTION

Always turn off the disc drive before changing the voltage setting in order to avoid damage to the disc drive.

- Find the voltage switch on the rear panel of your disc drive.
- Make sure the voltage switch is set correctly for your local power.
- If necessary, use a screwdriver to push the voltage switch sideways until the switch displays the proper setting.

Changing the Fuse

WARNING

BECAUSE OF A POTENTIAL SHOCK HAZARD, ALWAYS UNPLUG THE POWER CORD IF YOU NEED TO CHANGE A FUSE. Place the fuse into the fuse-holder and then into the unit.

For continued protection against fire hazard, replace fuses only with the same type and rating 3AF fuses.

Voltage Setting	Voltage Range	Required Fuse	HP Part No.
115V	86-127 VAC	3.0 AF 250V	2110-0003
230V	195-253 VAC	3.0 AF 250V	2110-0003

Figure 4: Fuses

- The required fuse worldwide is a 3.0 AF 250 VAC fuse.
- If you need to change a fuse, use a screwdriver to turn the fuse-holder in a counter-clockwise direction while pushing gently. When you have loosened the fuse-holder, pull it out with your fingers. Remove the old fuse. Put the new fuse into the fuse-holder, and then insert the fuse-holder into the unit. Do not hold the metal portion of the fuse while inserting the fuse into the unit.

Setting the Address

You have a telephone number that is different from your neighbor's telephone number. Your telephone number allows others to call you when they have a message for you or when they need information from you. Similarly, each peripheral device on a computer needs a unique "telephone" number so that the computer can "call" the peripheral to get or give information. This unique number is called an address.

- Each peripheral device must have a unique address.
- Hewlett-Packard sets your disc drive address at 9.
- **If you connect your disc drive to an HP Touchscreen PC computer** and this is the first time the disc drive is being used, make sure the address wheel is set at 9. For subsequent use of your disc drive, please see the supplement that comes with this manual.

- **If you connect your disc drive to a Series 200 computer,** reset your address wheel to a setting of 0.
- If you need to change the address setting:
  - Turn off the disc drive.
  - Turn the thumb wheel to the desired address.

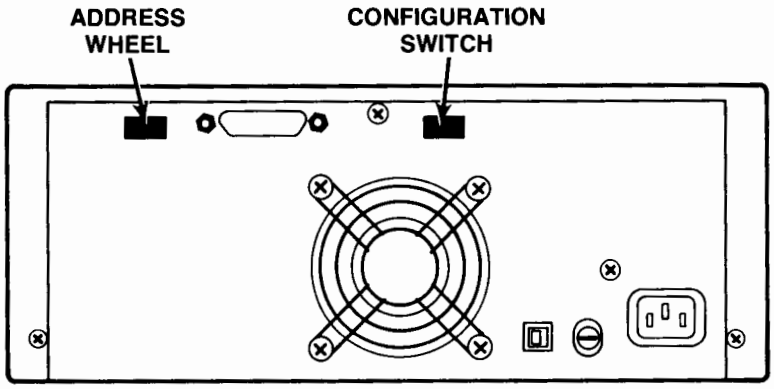


Figure 5: Position of the address wheel and configuration switch.

Setting the Configuration Switch

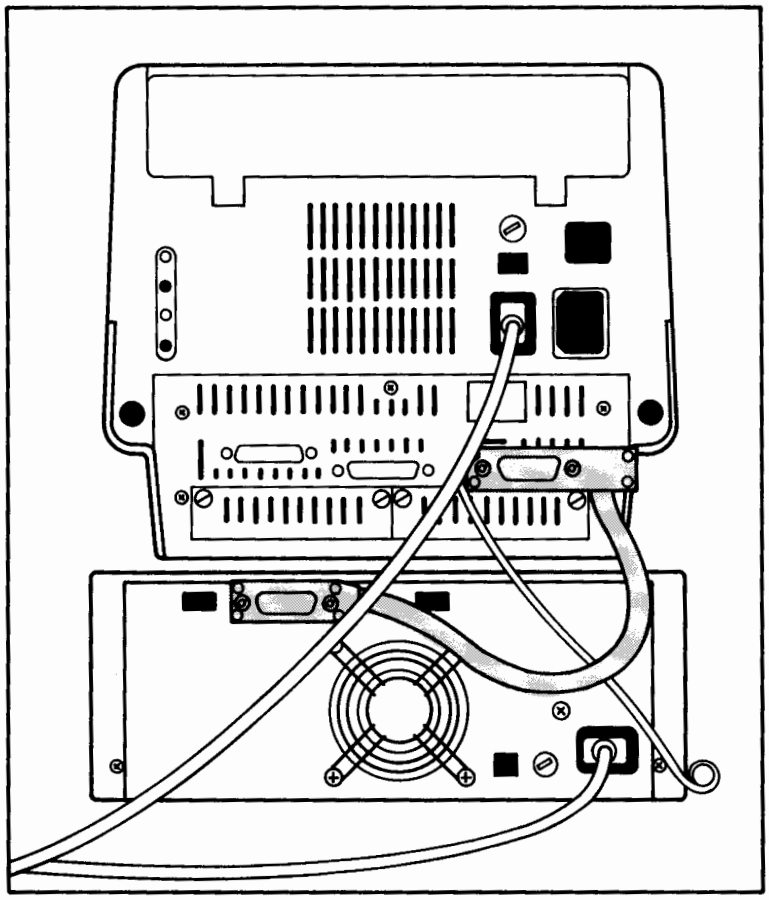
The configuration switch allows you to partition your fixed disc into multiple volumes for use with Series 200 computers.

- **If you connect your disc drive to an HP Touchscreen PC computer,** make sure the configuration switch is set at 0.
- **If you connect your disc drive to a Hewlett-Packard Series 200 computer,** please see Chapter 4 for information on the configuration selections available with your computer.

CAUTION

The configuration switch changes disc formatting. Improper switch setting can result in loss of data.

Connecting the HP-IB Cable



This figure illustrates the proper connection of the HP-IB cable from your disc drive to an HP Touchscreen PC. If you have another computer, the HP-IB connection on your computer may be in a different position.

Figure 6: HP-IB

- Turn off your disc drive and computer.
- Attach one end of the HP-IB cable onto the HP-IB connector of your disc drive, and tighten the screws on the HP-IB cable with your fingers.
- Attach the other end of the HP-IB cable onto the HP-IB connector of your computer, and tighten the screws on the HP-IB cable with your fingers.

Connecting the Power Cord

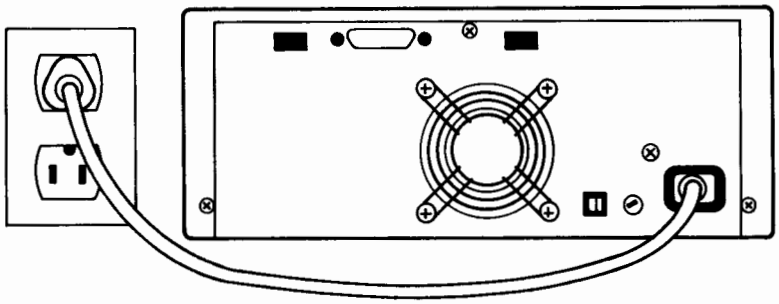


Figure 7: Power Cord Connection

- Turn off your disc drive.
- Connect the power cord to the socket labeled "AC line" on the rear panel of your disc drive.
- Plug the power cord into the wall socket.
- Do not use the interconnect power cord with the HP Touchscreen PC.

STEP 4: Try It!

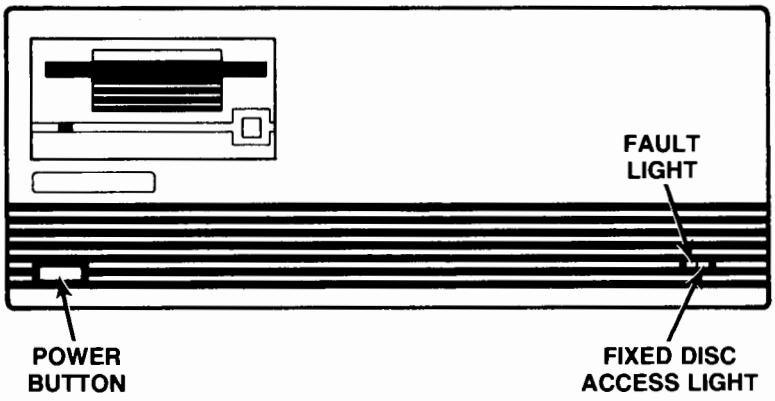


Figure 8: Position of the power button, fault light and disc access lights.

You are now ready to turn on your disc drive. Locate the power button on the front panel of your disc drive. The disc drive is on when the button is in, and off when the button is out.

When you turn on your disc drive, a selftest is performed on the flexible and Winchester disc drives. The selftest takes about 40 seconds, and during this time the yellow fault light on the front panel of your disc drive is lit. Because the flexible and Winchester disc drives are tested during the selftest, the flexible and fixed disc access lights are lit periodically during this test also. After about 40 seconds, the yellow fault light should go out, indicating that your disc drive has passed the selftest. If the fault light remains on, turn off the disc drive. Turn the disc drive on again to repeat the selftest. If the fault light is still lit after this repetition of the selftest, contact your dealer or the nearest Hewlett-Packard sales office.

Using Your Disc Drive

- You are now ready to use your disc drive.
- For information on using your disc drive with your computer, refer to the disc drive or mass storage section of your computer manual.
- For your convenience, some information on using your disc drive with certain Hewlett-Packard computers may also be found in Chapter 4 of this manual.

NOTE

The fixed disc must be formatted before it can be used. Formatting of the fixed disc takes approximately 2 minutes/Mbyte. The time required for formatting is an excellent investment, because formatting thoroughly checks the fixed disc for defects.

If you are using an HP 9134D disc drive, you do not need to read the rest of this chapter. The remainder of this part of the manual discusses flexible disc handling and usage. You may begin using your disc drive or continue reading the information contained in Chapters 2 through 5.

STEP 5: Using Flexible Discs

The Media Monitor

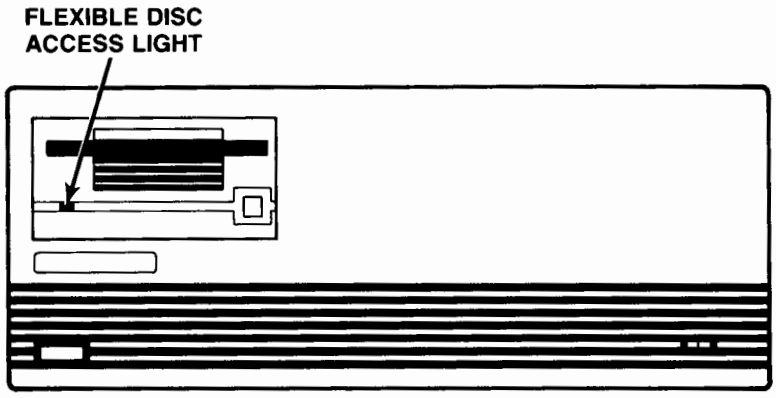
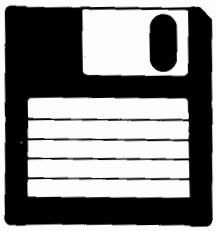


Figure 9: Position of the flexible disc access light

- Through a feature called the Media Monitor, your disc drive automatically monitors the cumulative use of each flexible disc.
- When usage is approaching a level at which there is any risk of loss of data through normal disc wear, the flexible disc access light blinks and a clicking sound is heard when the computer is NOT using the disc.
- At your earliest convenience, copy the disc you are using and begin using the copy. Discard the original disc.
- For more information on the Media Monitor, see Chapter 3.

Handling the Flexible Disc

Because of the plastic case, metal shutter, and Media Monitor, Hewlett-Packard's 3 1/2-inch flexible disc is more reliable than comparable 5 1/4-inch products. However, your discs contain valuable data and programs, and a good rule of thumb is to treat your discs as you would treat valuable record albums. The following guidelines have been developed to help you prolong the life of both your flexible discs and your disc drive.



DO Make sure the shutter is closed when the disc is not in use.

WHY? Protects the disc from dust, fingerprints, and scratches which can cause data loss.

DO Use the disc in a clean environment.

WHY? Minimizes the risk of dust or dirt particles scratching the disc and causing loss of data.

DO Keep discs stored in a cool, dry place.

WHY? Prevents moisture and heat damage.

DO Avoid magnetic fields, such as appliances with motors.

WHY? Prevents magnetically erasing the data on your discs.

DON'T Touch the surface of the disc.

WHY? Particle contamination can scratch the disc or cause the disc to wear out sooner than normal, and will probably result in loss of data.

DON'T Try to clean the disc.

WHY? The plastic jacket contains a mechanism for cleaning the disc surface. Other cleaning methods may damage the disc.

Single-Sided versus Double-Sided Discs

The use of the terms double-sided and single-sided can be confusing because these terms are used in so many ways. Following is a glossary to help you understand the ways in which the terms double-sided and single-sided are used.

Single-Sided Disc Drive:	Has only one read-write head. Records data on only one side of a disc.
Double-Sided Disc Drive:	Has two read-write heads. Records data on both sides of a disc.
Single-Sided Disc:	Data can be recorded on only one side of this disc. Hewlett-Packard single-sided discs are blue and are labeled "single-sided."
Double-Sided Disc:	Data may be recorded on both sides of this disc. Hewlett-Packard double-sided discs are gray and are labeled "double-sided."
Single-Sided Formatting:	Prepares a disc for one-sided recording of data. You may format "single-sided" on either single-sided or double-sided discs.
Double-Sided Formatting:	Prepares a disc for two-sided recording of data. You can format "double-sided" ONLY on double-sided discs in a double-sided disc drive.

The HP 9133D records data on both sides of a flexible disc. **For daily use, we recommend gray double-sided Hewlett-Packard discs with an HP 9133D**. Table 1 elaborates on the recommended usage of single-sided and double-sided discs with your HP 9133D. Words used in the table are defined as follows:

- "Exchange only" means that the media should be used only for exchanging data and programs with single-sided disc drives, and should not be used on a daily basis.
- "OK" means that the media may be used on a daily basis.

	If you have an HP 9133D*
Single-sided HP media	exchange only
Double-sided HP media in single-sided format	OK
Double-sided HP media in double-sided format	OK
HP software (single-sided or double-sided media) **	OK

* You can only use discs with auto-shutters in the HP 9133D.

** Software provided by Hewlett-Packard has been tailored for the computer/disc system on which the software will be used.

Table 1: Recommended usage of single-sided versus double-sided discs.

Write Protect Tab

- Write protecting ensures that the disc drive cannot write over or delete information on the disc.
- Write-protect discs that contain valuable programs and data.

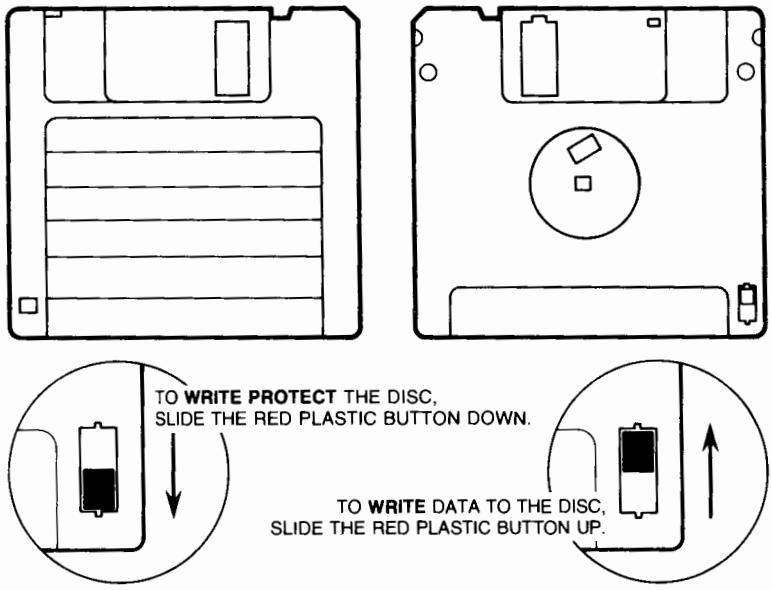


Figure 10: Write-Protect Tab for Doouble-Sided Discs

If you want to write-protect a double-sided disc for the HP 9133D:

- Place the tip of a pen in the small hole at the top of the write-protect tab.
- Slide the tab downward until it locks into place.
- If you no longer wish to write-protect the disc, slide the tab up.
- If you have a disc with the write-protect tab missing, the disc is write protected. If you want to override the write protection, you can place tape over the tab opening in order to allow you to write data on the disc.

Ordering Flexible Discs

A package of ten flexible discs may be ordered. If you have an HP 9133D, you need gray Hewlett-Packard double-sided discs. Order Hewlett-Packard part number 92192A.

CAUTION

Disc drive performance and reliability are dependent on the type of media used. Disc drive specifications can be assured only when using HP media. The use of improper media can result in premature disc failure or damage to the disc drive.

On some disc products, HP may qualify other non-HP media. When tested, this media met HP specifications. However, HP does not warrant or support this media and cannot control changes in its specifications or quality. The selection and use of such products is the customer's responsibility. HP reserves the right to exclude from warranty and maintenance agreement coverage any repairs which HP reasonably determines or believes were caused by the use of media not provided by HP. HP will, upon request, provide such repairs on a time and material basis.

You are now ready to begin using your disc drive and flexible discs. If you want additional information on flexible discs and on the use of your disc drive, please refer to subsequent chapters of this manual.

Chapter 2

WHAT IS AN HP 9133D/9134D DISC DRIVE?

The HP 9133D disc drive contains a 3 1/2-inch double-sided flexible disc drive and a 5 1/4-inch Winchester fixed disc drive. The HP 9133D uses gray Hewlett-Packard double-sided flexible discs. A box of ten discs may be ordered using Hewlett-Packard part number 92192A. The HP 9134D disc drive contains a 5 1/4-inch Winchester fixed disc drive.

A disc drive is a device that allows a computer to read data that is stored on a disc or write data to a disc. A disc is similar to a phonograph record that stores programs and data instead of music. Data may be stored on only one side of the disc (single-sided) or on both sides of the disc (double-sided). A disc may be flexible or fixed.

A flexible disc can be removed from the disc drive. The discs are called "flexible" because they are made from flexible pieces of polyester.

A fixed disc is called "fixed," because the disc cannot be removed from the disc drive. The disc is also referred to as "hard," because it is made from rigid aluminum. Additionally, you hear the fixed disc referred to as a "Winchester" disc.

Chapter 3

USING YOUR FLEXIBLE DISC

What is a Flexible Disc?

The flexible disc is made from a flexible polyester sheet coated with a thin layer of magnetic oxide. This polyester sheet is enclosed in a protective plastic jacket designed to keep the recording surface clean. The plastic jacket also helps keep the disc flat when the disc is rotating in your drive.

A Look at the Flexible Disc

Figure 3-1 illustrates the parts of the flexible disc. As you read the following description, please note the described features on your disc.

Window and Auto Shutter

The disc drive reads data from the disc and writes data on the disc in the space under the window. The window is covered by a metal shutter. The shutter helps protect the disc surface from particles and accidental fingerprints.

The flexible disc is equipped with an auto shutter. This means that when the disc is placed in the drive, the shutter is automatically opened to expose the disc surface. You do not need to manually open the shutter before inserting the disc in the drive.

NOTE

Original 3 1/2-inch flexible discs did not have the auto shutter feature. Only flexible discs that have auto shutters work with your HP 9133D.

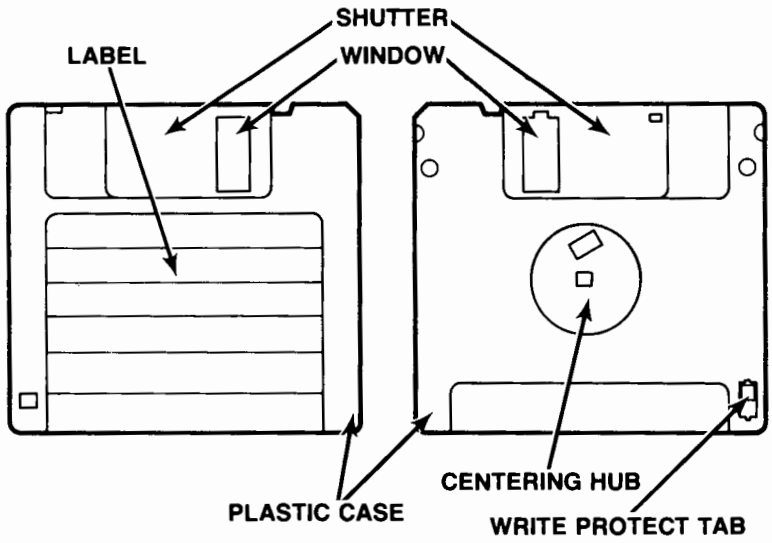


Figure 3-1: Parts of the Flexible Disc

Centering Hub

On the back of the plastic jacket is a round metal center, called the centering hub. The centering hub ensures accurate positioning when the disc is inserted in the drive.

Loading the Flexible Disc

To insert and remove flexible discs, perform these steps.

1. Hold the disc with the label on the top and the shutter pointing at the slot in the disc drive. Slide the disc into the drive until you feel the disc drop into the slot. Do not force the disc.
2. Remove the disc by pressing the disc eject button. Pull the disc straight out.

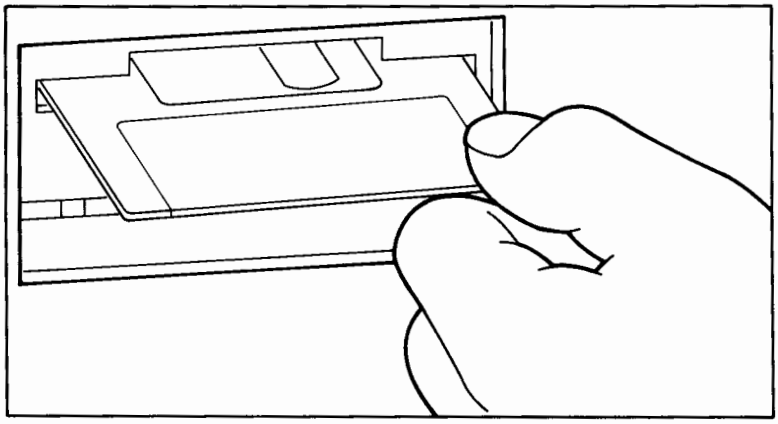


Figure 3-2: Proper loading of the flexible disc

Labeling the Flexible Disc

When you order boxes of flexible discs, you receive a packet of labels with the discs. Note that the labels come in a variety of colors. Position the label on the disc so that the colored portion of the label is folded over the lower edge of the disc. Write the name of the disc immediately beneath the colored edge of your disc, as shown in Figure 3-3.

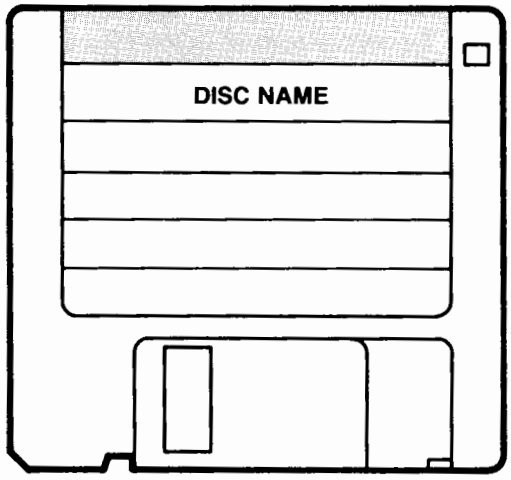


Figure 3-3: Usual positioning of the disc label

You can establish a color-coded system for cataloging your discs. For example, discs containing memos may be labeled in red while discs containing personnel files may have blue labels. Store your discs upright in a container so that the colored edge of the labels are visible. You may use the colors to select the category of discs you desire, and then read the labels to select the specific disc needed.

The Media Monitor

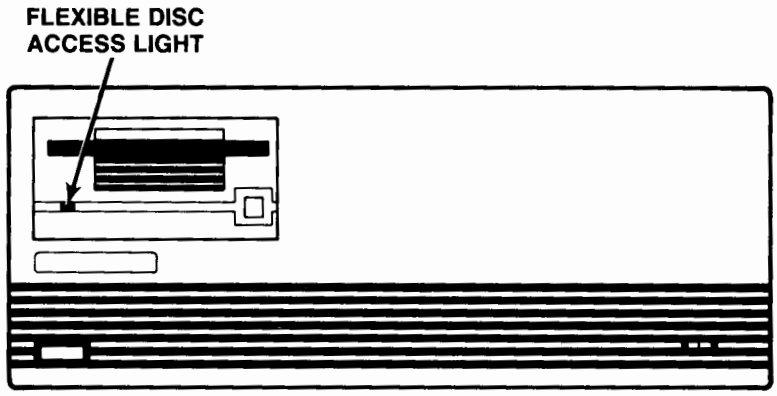


Figure 3-4: Position of the flexible disc access light

Because the read/write heads touch the disc surface, the flexible discs do wear out. Through a feature called Media Monitor, your disc drive automatically monitors the cumulative use of each individual disc. When the usage of a disc is approaching a level at which there is any risk of loss of data through normal disc wear, the disc access light on the front panel blinks, and a clicking sound is heard when the computer is not using the disc. The disc drive still accepts and performs commands from the computer. However, after a command has been performed, the disc drive immediately resumes the warning indication.

When the Media Monitor warning occurs, copy the disc you are using at your earliest convenience. Begin using the copy, and discard the original disc. If you continue to use the original disc, the disc drive eventually automatically write protects the disc. After that time, you will only be able to read data from the disc or copy the disc.

Chapter 4

USING YOUR DISC DRIVE

Introduction

For comprehensive information on using your disc drive with your computer, please refer to the disc drive or mass storage section of your computer manual. For your convenience, this chapter includes information on the configuration switch for Series 200 users. Additionally, the supplement to this manual, "Using Your Disc Drive with Your Computer," contains information available to date on using your disc drive. As further system information becomes available, we will update the supplement. You may order the latest revision of the supplement using Hewlett-Packard part number 09133-90041.

HP Touchscreen PC

For information on using your disc drive with your HP Touchscreen PC computer, please consult your HP Touchscreen PC Personal Computer Owner's Guide. Make sure that your configuration switch is set at 0.

Series 200

Use of the Configuration Switch

CAUTION

If you change the configuration switch after you have formatted the fixed disc, data may be lost. You should change the configuration switch only when you are formatting the fixed disc.

The configuration switch allows you to partition your fixed disc into multiple volumes for use with Series 200 computers. To set the switch, complete the following steps:

1) Turn off your disc drive.
2) Insert a small screwdriver into the slot on the configuration switch.
3) Rotate the switch to the desired setting.
4) Turn on your disc drive.

The configuration switch has possible settings from 0 through 9.

Configuration Setting	Number of Volumes	Size of Volumes	
		256 bytes/sector	1024 bytes/sector (Option 001)
0	One	14.84 Mbyte/volume	16.64 Mbyte/volume
1	One	14.84 Mbyte/volume	16.64 Mbyte/volume
2	Two	7.37 Mbyte/volume	8.23 Mbyte/volume
3	Three	4.91 Mbyte/volume	5.47 Mbyte/volume
4	Four	3.64 Mbyte/volume	4.03 Mbyte/volume
5	One	12.29 Mbyte/volume	13.76 Mbyte/volume
	One	2.51 Mbyte/volume	2.76 Mbyte/volume
6	Six	2.41 Mbyte/volume	3.65 Mbyte/volume
7	One	9.83 Mbyte/volume	11.00 Mbyte/volume
	Two	2.46 Mbyte/volume	2.70 Mbyte/volume
8	Eight	1.77 Mbyte/volume	1.93 Mbyte/volume
9	One	7.32 Mbyte/volume	8.18 Mbyte/volume
	Three	2.46 Mbyte/volume	2.70 Mbyte/volume

System Operation Information

For information on using your disc drive with your Series 200 computer, please consult your Series 200 Operating Manual. You may also consult either the BASIC or Pascal manuals that you received with your computer.

For Other Computers

For information on using your disc drive with any other computer, please consult the operator's manual that you received with your computer.

Chapter 5

CARING FOR YOUR DISC DRIVE

Caring for the Case

The disc drive case has been painted with a long lasting, non-toxic, water-based paint. This paint preserves the appearance of the unit for many years. If the case finish becomes damaged, contact your nearest Hewlett-Packard Sales Office for touchup paints.

CAUTION

Chemical spray-on cleaners used for appliances and other household and industrial applications may damage the case finish. Do not use cleaners that contain ammonia, benzenes, chlorides, or abrasives.

Before cleaning the case, disconnect the power cord and HP-IB cables. Make sure that all discs are removed from the drives. Dampen a clean, soft, lint-free cloth in a solution of clean water and mild soap. Wipe the soiled areas of the case, making sure that no cleaning solution gets inside the case. For cleaning more heavily soiled areas, a solution of 80% clean water and 20% isopropyl alcohol may be used. Wipe the areas that had cleaning solution applied with another clean, soft, lint-free cloth. A non-abrasive eraser may be used to remove pen and pencil marks.

Warranty

A warranty summary for the U.S. and Canada is included in the front of this manual. If you have questions concerning the warranty, please contact your dealer or the nearest Hewlett-Packard Sales Office. In countries other than the U.S. and Canada, contact your dealer or the nearest Hewlett-Packard Sales Office to determine warranty terms. On-site warranty may apply to this product if it is purchased with other Hewlett-Packard products or if a Service Agreement is purchased.

Maintenance

Your disc drive does not require regular maintenance. However, the performance and life of the disc drive and the flexible discs depend on how carefully they are handled. Be sure to follow the disc care and handling guidelines presented in Chapter 1 and the environmental restrictions presented in the Specifications Table in Appendix A.

What If Something Goes Wrong?

1. *What if the flexible disc access light begins blinking and the disc drive makes a clicking noise?*

   The blinking of the flexible disc access light and the clicking noise are a feature of your disc drive, called the Media Monitor. This warning indicates that the disc currently in use in the blinking and clicking drive should be replaced. Immediately copy the worn disc and discard it. For further information about the Media Monitor, please see the "Media Monitor" section of Chapter 3.

2. *What if my disc drive does not pass the selftest?*

   If your disc drive does not pass the selftest, take the following actions:

   A) Turn off your disc drive. Then turn the disc drive back on and wait for the drive to repeat the selftest.

   B) If the disc drive still fails the selftest, repeat the selftest two to three more times.

   C) If your disc drive still fails the selftest, contact your dealer or the nearest HP sales office.

3. *When I try to initialize my flexible disc, I get an error stating that the disc is write protected. What should I do?*

   First, check to make sure that you are not using a disc that you have write protected or that has been automatically write protected by the Media Monitor.

   When a disc is inserted to be initialized, the disc drive performs a motor speed check. If the motor speed is out of specification, a Write Protect Error is generated and the disc is not initialized. This indicates a defective disc. Discard the disc.

   Please note that if you receive a Write Protect Error on several discs in a row, your disc drive may not be operating properly. Contact your dealer or the nearest HP sales office.

4. *When I try to store information on a flexible disc, I get an error stating that the disc is write protected. What should I do?*

   You are trying to store information on a disc that you have write protected. If you wish to write information on this disc, reverse the write protect tab on the disc (see Chapter 1). If you wish to keep this disc write protected, insert another disc.

   Also, the disc may have been automatically write protected by the Media Monitor. If the Media Monitor warning is on, copy the information to a new disc and discard the old disc.

5. *What should I do if I get a message that says, "Disc Not Present" or "No Discs Were Found"?*

   A) Be sure the disc drive is turned on.

   B) Check your cables to make sure they are secure.

   C) Be sure that you have a disc in the flexible disc drive.

   D) Be sure that the disc has been initialized.

   E) Check your disc drive to make sure it is addressed correctly.

   F) If all this fails, you may have a bad flexible disc. Try another flexible disc. If this fails, contact your dealer or HP sales office.

6. *What if I get an error message saying, "Disc Error Reading Drive ?"*

   Your flexible disc is probably worn or damaged. Try using other flexible discs to see if you get the same message. If you receive the message on only one flexible disc, copy the disc immediately and discard it. (Please note that if the disc is worn or damaged, the copy may not work.) If you receive the same message on several flexible discs, contact your dealer or HP sales office.

If the error message refers to the Winchester drive:

A) Copy the files from your Winchester disc to flexible discs.

B) Format the Winchester disc.

C) Reinstall your operating system, software and files from the flexible discs.

D) If you cannot format the Winchester disc or if you still receive an error message, contact your dealer or Hewlett-Packard sales office.

7. *What should I do if I get a message that says, "Disc drive is empty, off, or undefined"?*

A) Be sure the disc drive is turned on.

B) Be sure that you have a disc in your flexible disc drive.

C) Check your disc drive to make sure it is addressed correctly.

D) If all this fails, you may have a bad flexible disc. Try another disc. If this also fails, contact your dealer or Hewlett-Packard sales office.

Your disc drive can be repaired only by a trained service person. If you suspect that your disc drive is malfunctioning, contact your dealer or the nearest HP Sales Office.

How to Order Supplies

DESCRIPTION	HP PART NUMBER
Gray Double-Sided Micro Flexible Discs (10 discs/box)	92192A
Fuse, 3.0 AF 250 VAC	2110-0003
Power Cord*	See footnote
HP-IB Cable, 1 metre length	10833A
HP-IB Cable, 2 metre length	10833B
HP-IB Cable, 4 metre length	10833C
HP-IB Cable, 0.5 metre length	10833D
HP 9133/9134D Operator's Manual	09133-90040

* Power cords are dependent on delivered location. Please consult your dealer or nearest HP sales office if you need to order a power cord.

Order supplies for your disc drive by contacting your dealer or the nearest HP sales office. You may also contact the Hewlett-Packard Computer Supplies Operation at the following address:

Computer Supplies Operation
1320 Kifer Road
Sunnyvale, California 94086

Telephone: (800) 538-8787 toll free in the United States
(406) 738-8858

Appendix I

TECHNICAL REFERENCE

HP-IB Interface Restrictions

The total length of cable permitted in one bus system must be less than or equal to two metres times the number of devices connected together (your computer counts as one device). However, the total length of cable must not exceed 20 metres.

For example, a system containing six devices can be connected together with cables that have a total length less than or equal to 12 metres (six devices x 2m/device = 12 metres). The individual lengths of cable may be distributed in any manner desired as long as the total length does not exceed the allowed maximum. If more than ten devices are to be connected together, cables shorter than two metres must be used between some of the devices to keep the total cable length less than 20 metres.

The maximum number of devices that may be connected together in one bus system is 15. Up to eight of these devices may be disc drives, set at addresses 0 through 7. There are no restrictions to the way cables may be connected together. However, it is recommended that no more than four piggyback connectors be stacked together on one device. The resulting structure could exert enough force on the connector mounting to damage it.

Technical Specifications

Listed below are the performance characteristics, environmental ranges, physical characteristics and power requirements for the HP 9133D and HP 9134D.

Performance Characteristics

	Double-Sided 3 1/2" Flexible Disc	15 Mbyte Winchester Disc
Maximum Formatted Capacity:		
HP 150		
Bytes per Unit	710 Kbytes	14.8M
Bytes per Sector	512	256
Sectors per Track	9	32
Series 200 (BASIC and Pascal)		
Bytes Per Unit	630 Kbytes	14.8M
Bytes per Sector	256	256
Sectors per Track	16	32
Series 200 (HPUX 2.1 or later)		
Bytes Per Unit	630 Kbytes	16.6M
Bytes per Sector	256	1024
Sectors per Track	16	9
Tracks per Surface	80	303
Surfaces per disc	2	2 (3 platters)
Tracks per Inch	135	345
Recording Format	MFM/Double density	MFM
Max Sustained Transfer Rate*	17 Kbytes/sec	145 Kbytes/sec
Average Access Time	497 msec	85 msec
Maximum Access Time	1.742 secs	205 msecs
Rotational Speed	600 rpm	3600 rpm

* Mainframe dependent.

Environmental Ranges

	9133D	9134D
Temperature		
Operating	10 to 40 degrees C (50 to 104 degrees F)	10 to 40 degrees C (50 to 104 degrees F)
Non-Operating	-40 to 60 degrees C (-40 to 140 degrees F)	-40 to 60 degrees C (-40 to 140 degrees F)
Humidity		
Operating (non-condensing) 26 degrees C max wet bulb temperature	20% to 80%	8% to 80%
Non-Operating (non-condensing)	5% to 95%	5% to 95%
Altitude		
Operating	0 to 4572m (0 to 15000 ft)	0 to 4572m (0 to 15000 ft)
Non-Operating	-304 to 1524m (-1000 to 50000 ft)	-304 to 1524m (-1000 to 50000 ft)

Physical Characteristics

	9133D	9134D
Size		
Height	125 mm (4.9 in)	125 mm (4.9 in)
Width	325 mm (12.8 in)	325 mm (12.8 in)
Depth	285 mm (11.2 in)	285 mm (11.2 in)
Weight		
Net	10 kg (22.0 lbs)	8.64 kg (19 lbs)
Shipping	16.8 kg (37.0 lbs)	15.5 kg (34 lbs)

Power Requirements

	9133D	9134D
Voltage (selectd by rear panel switch)	86-127 VAC 195-253 VAC	86-127 VAC 195-253 VAC
Frequency	48-66 Hz	48-66 Hz
Current	125W	125W

NOTE

The flexible disc drive in the HP 9133D is designed for operation in a typical office environment. Use of the equipment in an environment containing dust, dirt, or corrosive substances will cause the flexible disc drive and media life to be drastically reduced.

For HP-IB Programmers

The HP 9133D/9134D do not support the following HP-IB commands:

Selected Device Clear
Serial Poll
Parallel Poll Configure
Parallel Poll Unconfigure

NOTE

Parallel Poll response occurs according to the HP-IB address to which the rear panel address wheel has been set.

For example:	HP-IB Address	Poll Line
	0	D7
	1	D6
	2	D5
	3	D4
	4	D3
	5	D2
	6	D1
	7	D0

Appendix II

GLOSSARY

ADDRESS	A number that identifies the exact location to which your computer can send data or from which your computer receives data. Just as you have a unique home address, your disc drive, plotter and printer must each have a unique address.
BACKUP	A backup is a duplicate copy of a disc made in case the original disc is lost or damaged.
BOOTING	Booting up your computer puts it in a ready-to-run condition. The computer literally "pulls itself up by it's bootstraps" and gets ready to go. (Booting loads the operating system and utilities.)
BUS	A bus is a bundle of wires over which computer devices can communicate. The bus is similar to a telephone line shared by several telephones.
BYTE	A byte is used to represent one character, such as a single letter, number, or other symbol.
CABLE	Cables provide the connection between computers and peripherals (printers, plotters, and disc drives). The cable used in this manual is the HP-IB (Hewlett-Packard Interface Bus).
CRT	Acronym for cathode ray tube. The CRT is the video screen of the computer.

DIRECTORY	The table of contents for the files stored on a disc.
DISC	A circular plate of magnetically coated material used to store computer information. The disc is similar to a phonograph record that stores programs and data instead of music. HP's 3 1/2-inch flexible disc is enclosed in a plastic jacket. A disc may be flexible or hard. The flexible disc may also be single-sided or double-sided.
DISC DRIVE	A device that allows a computer to read data that is stored on a disc or write data on a disc.
FIXED DISC	A fixed disc is a disc that cannot be removed from your disc drive.
FLEXIBLE DISC	A flexible disc can be removed from your disc drive. The disc is called flexible because it is made from a flexible piece of polyester.
FORMATTING	The process by which a disc is prepared to receive and store data. Also known as "initializing." If you think of your disc as being like a filing cabinet, formatting is equivalent to getting an empty file cabinet and preparing the cabinet for use. First, you check the cabinet for any damage. Similarly, the disc drive checks the disc for any damaged areas in which data cannot be stored. Second, you place hanging folders and dividers in your file cabinet. Likewise, the disc drive sets up storage areas on the disc. Finally, you label your filing cabinet so that you know what is in each drawer. Similarly, the disc drive sets up a directory on your disc.
HARD DISC	A hard disc is called hard because it is made from rigid aluminum.
HARDWARE	The physical parts of the computer system; the computer and the peripheral devices.
HEAD	The part of the disc drive that reads data from your disc and writes data onto your disc.

HP-IB	Stands for Hewlett-Packard Interface Bus. The HP-IB is a bundle of wires that allows the computer and the peripherals to communicate.
INITIALIZING	The process by which a disc is prepared to receive and store data. Also known as "formatting."
INTERFACE	The interface makes communication possible between the computer and its peripherals.
INTERLEAVE	Interleaving a disc is a method of alternately numbering sectors on the disc to improve data acquisition efficiency. See the interleave section of your computer programming manual for additional information.
KBYTES	A unit of measurement for memory storage, also called "K" or "kilobyte." One Kbyte is technically equal to 1,024 bytes. However, we use Kbyte to mean 1,000 bytes.
LOAD	To read programs into a computer.
MBYTES	A megabyte is one million bytes.
MEMORY	The size of the computer's brain. Memory is the combination of hardware and/or discs on which data is stored.
MFM	Modified frequency modulation (MFM) is a method for storing data on discs.
PERIPHERALS	Devices that are external to and controlled by the computer. Peripherals are so called because they are not part of the computer (e.g. tape drives, disc drives, printers, and plotters).
PIGGYBACKING	Hooking one HP-IB cable into the back of another HP-IB cable. Piggybacking is one way to connect more peripheral devices to your computer system.
PROGRAM	A set of instructions or steps telling the computer how to handle a problem or task.
READ/WRITE HEAD	The part of the disc drive that reads data from your disc and writes data onto your disc.
SOFTWARE	A computer program or set of programs.

UTILITY	A utility is a program that performs a task required by most users. For example, most users need to make copies of discs. Therefore, the copy utility is a program that tells the computer how to copy discs.
WINCHESTER DISC	This is another name for the fixed disc. The original model of the fixed disc had two pieces of media that held 30 megabytes of data each. As the story goes, the inventors appropriately named this 30-30 disc after the famous western 30-30 rifle, the "Winchester."
WRITE PROTECT	A method of protecting disc information from being erased or overwritten.

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Worldwide Sales Offices

Hewlett-Packard products are sold and supported worldwide through Hewlett-Packard Sales and Service Offices and through dealers.

- *To contact Hewlett-Packard*: There are more than 240 Hewlett-Packard Sales and Service Offices worldwide. To locate the one nearest you, your telephone directory or contact one of the major Hewlett-Packard offices listed.
- *To contact a dealer*: Call 800/FOR-HPPC in the U.S. or call your local Hewlett-Packard Sales and Service Office. Ask for "Personal Computer Dealer Sales."

Argentina

* Martinez
Phone: 798-6086

Australia

* North Ryde, N.S.W.
Phone: 02/887-1611
* Blackburn, Victoria
Phone: 03/890-6351

Austria

* Vienna
Phone: 222/3516210

Belgium

Supplies: 02/762-3200
* Brussels
Phone: 02/762-3200

Brazil

* Alphaville, Barueri
Phone: 011/421-1311

Canada

Software Assistance:
1-800/267-6115
(in English and French)
Supplies: 514/697-4232
* Edmonton, Alberta
Phone: 403/452-3670
* Richmond, British Columbia
Phone: 604/270-2277
* Mississauga, Ontario
Phone: 416/678-9430

Chile

HP Distributor:
Olympia (Chile)
Santiago
Phone: 2/25-5044

Denmark

* Birkeroed
Phone: 2/81-66-40

El Salvador

HP Distributor
IPESA
San Salvador
Phone: 503/26-6858

Finland

* Espoo
Phone: 90/455-0211
* Jyvaskyla
Phone: 41/216318
* Oulu
Phone: 81/338785

France

Supplies: 6/928-32-64
* Les Ulis
Phone: 1/9077825

Guatemala

HP Distributor:
IPESA
Guatemala City
Phone: 2/31667

Hong Kong

* Wanchai
Phone: 5/832-3211

Italy

* Cernusco Sul Naviglio
Phone: 2/903691

Japan

Yokogawa-Hewlett-Packard
* Osaka
Phone: 6/304-6021
* Sagamihara
Phone: 427/59-1311
* Tokyo
Phone: 3/331-6111

Malaysia

* Kuala Lumpur
Phone: 03/943-022

Mexico

* Xochimilco, Mexico City
Phone: 905/676-8895

The Netherlands

Supplies: 020/47-06-39
* Amstelveen
Phone: 020/472021

New Zealand

Pakuranga
Phone: 9/68-7159

Norway

* Oesteraas
Phone: 2/17-11-80

Puerto Rico

Carolina
Phone: 809/762-725

Saudi Arabia

* HP Distributor:
Modern Electronics
Riyadh
Phone: 01/4919715

Singapore

* Singapore
Phone: 631788

South Africa

Supplies: 802-5111
53-7954
28-4178
* Sandton, Transvaal
Phone: 11/802-511

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* Full Field Repair Center capabilities

Spain

* Mirasierra, Madrid
Phone: 91/734-1162

Sweden

* Spanga
Phone: 8/750-2000

Switzerland

Supplies: 057/31-22-54 or 31-22-59

* Widen
Phone: 57/31-21-11

Taiwan

* Taipei
Phone: 2/712-0404

United Kingdom

Supplies: 0734/79-2868 or 0734/79-2959

* Altrincham
Phone: 61/928-6422
* Winnersh, Wokingham
Phone: 734/784-774

United States

For assistance before your purchase, to locate an HP dealer, or to obtain your local Phone-In Software Assistance number: 800/FOR-HPPC

Hardware maintenance information or Dealer Repair Center locations: 800/835-HPHP

Computer Supplies:
–All states except California, Alaska, and Hawaii: 800/538-8787

–In California, Alaska, and Hawaii: 408/738-4133 (collect)

* Santa Clara, California
Phone: 408/988-7000
* Los Angeles, California
Phone: 213/970-7500
* Englewood, Colorado
Phone: 303/649-5000
* Atlanta, Georgia
Phone: 404/955-1500
* Rolling Meadows, Illinois
Phone: 312/255-9800
* Rockville, Maryland
Phone: 301/948-6370
* Andover, Massachusetts
Phone; 617/861-8960
* Novi, Michigan
Phone: 313/349-9200
* Paramus, New Jersey
Phone: 201/265-5000
* King of Prussia, Pennsylvania
Phone; 215/265-7000
* Richardson, Texas
Phone: 214/231-6101

Venezuela

* Caracas
Phone: 2/239-4133

West Germany

Supplies: 07031/142829 or 07031/223133

* Boeblingen
Phone: 7031/667750

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* Full Field Repair Center capabilities.

USING YOUR DISC DRIVE WITH YOUR COMPUTER

Supplement to manual P/N 09133-90040 dated August 1, 1984

Introduction

For your convenience, this supplement provides information to help you get started using your disc drive with your computer. Information available to date is included in this supplement. As further system information becomes available, we will update this supplement. Revisions of this document may be ordered using Hewlett-Packard part number 09133-90041.

This supplement helps you configure your disc drive, format discs, and make copies of your discs. Don't let the terminology scare you. Configuration is simply a way to let your computer know which disc drive it is talking to, where the disc drive is on the bus, and which drive you want the computer to use.

Formatting (or initializing) is the process that prepares your disc to receive and store data. The formatting process checks your disc for any damage that may have occurred during shipment and also creates a directory. The directory holds the name and location of each file on the disc, similar to the way your address book holds the names and addresses of your friends.

An important thing to remember about formatting is that it is system dependent. This means that if a disc is formatted on one computer system, the disc may not work on another computer system.

Printed in U.S.A. 8/1/84 **09133-90041**

NOTE

All discs, including fixed discs, must be formatted before they can be used. Formatting takes approximately 2-3 minutes per megabyte. Formatting is an excellent investment of time because it not only prepares your disk to receive and store data, but also checks the disc for any damage it might have sustained during shipment.

CAUTION

Formatting destroys any data already stored on the disc.

Copying means that you make a duplicate copy of a disc. Like phonograph records, flexible discs wear out. Also, flexible discs can be damaged by accidents or careless handling. Since your valuable data and programs can be lost when a disc wears out or is damaged, it is recommended that you make an extra copy of your important discs.

Read only the portion of this supplement that refers specifically to your computer.

HP Touchscreen PC

The following section describes the use of the HP 9133D with the HP Touchscreen PC. (The HP 9134D is not described. Due to the fact that the HP 9134D has no flexible drive, it is only supported as an add-on drive. This means that you can connect an HP 9134D to your HP Touchscreen PC only if you already have a flexible drive connected to your HP Touchscreen PC. Please consult the HP Touchscreen PC manual, "More About Connecting Printers, Plotters and Disc Drives," for information on installing an add-on drive.)

Configuration

Complete the configuration as follows:

1. Make sure the address wheel on the back of your disc drive is set at 9, and the configuration switch is set at 0. If you need help, please refer to Chapter 1 of the HP 9133D/9134D Operator's Manual.
2. Load P.A.M. (Personal Applications Manager) and the operating system, as follows:

A. Turn on your disc drive.

B. Insert the SYSTEM_MSTR disc into the flexible disc drive.

C. Turn on your HP Touchscreen PC.

3. A screen appears labeled, "Personal Applications Manager (P.A.M.)." When this screen appears, touch:

   EASY CONFIG
   SYS_MASTER-A

   This block should now be highlighted.

4. Next, touch **START APPLIC**.

5. A new screen appears with illustrations of computer products. The screen displays the message, *Select device to be configured and press NEXT STEP*. Touch the **DISC DRIVE** illustration so that this illustration is highlighted. Then touch **NEXT STEP**.

6. Another screen appears with illustrations of disc drives. Touch the illustration labeled 9133D. (Do not touch the illustration labeled 9133XV).

7. Make sure the picture labeled 9133D is highlighted.

8. Touch **MAIN SCREEN**.

9. Touch **EXIT**.

Formatting the Fixed Disc

Before the fixed disc can be used for the first time, it must be formatted.

The following steps format your fixed disc:

1. Make sure the SYSTEM_MSTR disc is write protected. Then, insert the disc in the flexible disc drive.

2. When P.A.M. appears on your screen, load the FORMAT utility by touching:

   FORMAT
   SYS_MASTER-A

3. Touch **START APPLIC**

4. Select the disc you wish to format. Since you wish to format the fixed disc, touch **DRIVE B**.

5. The screen displays, *Type the disc label (11 characters or less) and press Return*. If you wish to label your disc so that the computer can read the label, you may do so now by typing in the name

you wish to give the disc and pressing the Return key. If you do not wish to label the disc, touch **NO DISC LABEL**.

6. You want to copy the operating system (MS-DOS) and P.A.M. to the fixed disc at this time, so that you can begin booting from the fixed disc. Therefore, touch the **COPY SYSTEM** block. An asterisk (*) in the **COPY SYSTEM** block indicates that the operating system will be copied to the fixed disc during the formatting process.
7. Touch **START FORMAT**. When you touch **START FORMAT**, the screen may display the message, *"This disc has files. Do you want to destroy them? Type Y or N; press Return."* Remember that formatting destroys any data already stored on the disc. If you wish to destroy the data already contained on the disc, type Y and press Return. The formatting process begins. If you do NOT want to destroy the information already on the disc, type N and press return.

NOTE

After you type Y, indicating that you wish to begin formatting, a 20-second selftest is performed on your fixed disc drive. If you decide that you do not want to format the fixed disc, TURN OFF THE DISC DRIVE during the 20-second selftest. If you turn off the disc drive during the 20-second selftest, you will not lose any data already stored on your disc. If you turn off the disc drive after the 20-second selftest, you will lose data.

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8. If you are copying the operating system, the HP Touchscreen PC first reads all operating system files. When all the files have been read and are ready for transfer, a message appears on the screen, *"All system files have been read. Insert disc(s) to be formatted."* Since you are formatting the fixed disc, simply press Return.
9. The *"Formatting"* screen appears, and the disc that you selected for formatting is highlighted.

NOTE

Formatting takes approximately 2-3 minutes per megabyte or approximately 30 minutes for the 15 megabyte fixed disc. Formatting is an excellent investment of time because it not only prepares your disc to receive and store data, but also checks the disc for any damage it might have sustained during shipment.

After your disc is formatted, the highlight is removed and the screen displays the message, *Press Start Over or Exit Format.*

10. Touch **EXIT FORMAT** on the screen to return to P.A.M.

Configuration for Normal Operation

Normally you will be operating off the fixed disc. This means that your computer boots from the fixed disc, and all your applications and files are stored on the fixed disc. Not only will the overall system performance be better, but it is also more convenient to have your operating system and all applications and files in one location.

When you set your address wheel at 9, you told your HP Touchscreen PC that you wanted to boot from the flexible disc. Since you have now copied your operating system and P.A.M. to the fixed disc, you want to begin booting and operating from the fixed disc.

In order to begin booting from the fixed disc, turn off your disc drive and your computer. Reset the address wheel to 0. The fixed disc now becomes your primary disc drive (drive A).

Turn on your disc drive and wait for the disc drive to complete the 30-second selftest. Turn on your computer. Your computer should now boot from the fixed disc. If the operating system does not boot from the fixed disc, repeat the directions under "Configuration" and "Disc Formatting". If you still cannot boot from the fixed disc, contact your dealer or Hewlett-Packard sales office.

Installing Applications

Hewlett-Packard distributes all APPLICATION programs on flexible discs labeled "MASTER." While you can use your MASTER discs just as they are, we strongly recommend that you install them onto a new working disc, such as the fixed disc. Store your MASTER discs in a safe location so that you can make new working discs if something happens to the current working discs.

APPLICATION programs are always installed from the MASTER disc via the INSTALL utility.

Use the following steps to install your APPLICATION programs:

1. Make sure the address wheel on the back of your disc drive is set at "0."
2. The INSTALL utility is on your APPLIC_MSTR disc. Therefore, insert the APPLLIC_MSTR disc in the flexible disc drive and touch:

   REREAD DISCS.
3. Touch **INSTALL**
4. Touch **START APPLIC**
5. After the program loads, touch **INSTALL APPLIC**
6. The screen prompt states, *"Select the correct discs below. Press show applics."* Since you are going to install applications from flexible discs (drive B) to the fixed disc (drive A), select a source disc of drive "B" and a destination disc of drive "A."
7. Remove the INSTALL utility disc from the flexible disc drive, and insert the MASTER disc you wish to copy.
8. Touch **SHOW APPLIC** in order to list the application programs available for copying. Touch each application program that you wish to copy.
9. When you have selected all the applications programs that you wish to copy, touch **START INSTALL.**
10. When the installation is complete, touch **EXIT SELECT.** Repeat directions 7, 8 and 9 for each application disc you want to install. Touch **EXIT INSTALL** in order to return to P.A.M.

Points to Remember When Copying Discs

1. APPLICATION programs are copied from their MASTER discs via the INSTALL utility.
2. Most other files that are not APPLICATION program files can be copied using the COPY/BACKUP utility.
3. Write protect all MASTER discs to guard against accidental erasure. See Chapter 1 for information on how to write protect flexible discs.

Series 200

First, make sure the address wheel on your HP 9133D is set at an address between 0 and 7. Also, set the configuration switch according to the following directions.

Use of the Configuration Switch

The configuration switch allows you to partition your fixed disc into more than one volume. Each volume must be initialized separately.

CAUTION

If you change the configuration switch after you have initialized the fixed disc, data may be lost. You should change the configuration switch only when you are initializing the fixed disc.

The configuration switch allows you to partition your fixed disc into multiple volumes for use with Series 200 computers. To set the switch, complete the following steps:

1) Turn off your disc drive.
2) Insert a small screwdriver into the slot on the configuration switch.
3) Rotate the switch to the desired setting.
4) Turn on your disc drive.

The configuration switch has possible settings from 0 through 9. The following chart details the meaning of each setting.

Configuration Setting	Number of Volumes	Size of Volumes	
		256 bytes/sector	1024 bytes/sector (Option 001)
0	One	14.84 Mbyte/volume	16.64 Mbyte/volume
1	One	14.84 Mbyte/volume	16.64 Mbyte/volume
2	Two	7.37 Mbyte/volume	8.23 Mbyte/volume
3	Three	4.91 Mbyte/volume	5.47 Mbyte/volume
4	Four	3.64 Mbyte/volume	4.03 Mbyte/volume
5	One	12.29 Mbyte/volume	13.76 Mbyte/volume
	One	2.51 Mbyte/volume	2.76 Mbyte/volume
6	Six	2.41 Mbyte/volume	3.65 Mbyte/volume
7	One	9.83 Mbyte/volume	11.00 Mbyte/volume
	Two	2.46 Mbyte/volume	2.70 Mbyte/volume
8	Eight	1.77 Mbyte/volume	1.93 Mbyte/volume
9	One	7.32 Mbyte/volume	8.18 Mbyte/volume
	Three	2.46 Mbyte/volume	2.70 Mbyte/volume

BASIC 3.0

The following section describes the most commonly used BASIC commands as they apply to the HP 9133D. If you connect an HP 9134D to your Series 200 computer, the same commands may be used. However, please note that you cannot boot from your HP 9134D until you have installed the BASIC operating system on the fixed disc of the HP 9134D.

Mass Storage Unit Specifier

Before you begin using BASIC 3.0 commands, you need to understand the Mass Storage Unit Specifier (MSUS). MSUS is what the computer uses to identify your disc drive. For example, the MSUS of an HP 9133D might appear as follows:

":HP9133,700,1"

Note that the MSUS is composed of three parts, separated by commas:

1) A device type :HP9133
2) A device selector 700
3) A unit number 1

The device type is simply the name of the disc drive you are using, such as the HP 9133. **The device type is optional with the BASIC 3.0 operating system**. For example, you may type your MSUS as ":,700,0", leaving out the HP 9133 device type.

The device selector refers to the address of your disc drive. The first number is 7 as long as you are using the internal HP-IB connection. The last two numbers are the address of your disc drive. These numbers may vary from 00 to 07, depending on the address setting. In this example, the disc drive address is 00, and the configuration switch is also set at 0.

The unit number refers to the drive you wish to access. In this example, the unit number of 1 means that you wish the computer to access the flexible disc drive of the HP 9133D. If you wish the computer to access the fixed disc drive of the HP 9133D, the unit number is 0.

Booting Your System

Boot your system using the following steps:

1. Be sure the address wheel on your HP 9133D is set at an address between 0 and 7.
2. Turn on your disc drive, but make sure your computer is not turned on.
3. Insert the BASIC 3.0 System disc in the flexible disc drive.
4. Turn on your computer. Your computer automatically loads the BASIC 3.0 operating system. When the prompt *"BASIC Ready 3.0"* appears on the screen, the operating system is loaded. Loading of the operating system takes approximately 50 seconds.
5. Remove the BASIC 3.0 System Disc and insert the BASIC 3.0 Driver's disc into the flexible disc drive.
6. Type **LOAD BIN "HPIB"** and press Enter.
7. When the prompt *"BASIC HPIB 3.0"* appears, type **LOAD BIN "CS80"** and press Enter.

   Loading time is approximately 20 seconds.
8. The system is now ready to use with BASIC 3.0.

Following are the disc drive commands most commonly used with BASIC 3.0. All commands have the same basic format. You type the command, followed by the MSUS of the disc drive to which the command should be directed.

Disc Initializing

If you are initializing a flexible disc, you have several formatting options from which to choose. Table 1 illustrates the choices.

Format Option	Bytes/ Sector	Double-Sided or Single-Sided Formatting	Kbytes of Storage
0	256	Double-Sided	630K
1	256	Double-Sided	630K
2*	512	Double-Sided	710K
3	1,024	Double-Sided	788K
4	256	Single-Sided	270K

*Note: This formatting option is not presently supported. Do NOT select a format option of 2.

Table 1: Flexible Disc Formatting Options

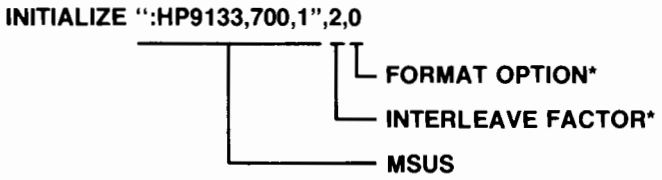
You must remember three important things when selecting a format option.

1. You can format double-sided ONLY on double-sided flexible discs in a double-sided disc drive (e.g., HP 9133D).
2. A flexible disc formatted double-sided can only be used in a double-sided disc drive (e.g., HP 9133D).
3. A flexible disc formatted single-sided can be used in both a single-sided and a double-sided disc drive.

Please see Chapter 1, Single-Sided Versus Double-Sided, for further information on this subject.

When you initialize a flexible disc, the default interleave factor is 2. For most flexible disc applications, we suggest an interleave factor of 2.

Initialize the flexible disc, using a command similar to the following command:



* optional

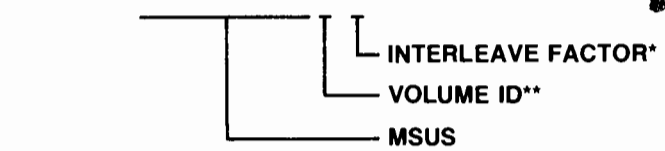
** optional (If you do not specify an interleave factor, a default interleave of 2 is used.)

When you initialize the fixed disc, you have a choice to make regarding interleave factors. Interleave factor affects performance. Therefore, the minimum interleave factor you should select is 3. Table 2 details recommended interleave factors:

Series 200	Recommended interleave (256 byte sectors)
With Disc Interface 98625A and DMA 98620B	3
With DMA 98620B only	4
With no DMA	7

Table 2: Recommended Interleave Factors for the Fixed Disc

Initialize the fixed disc, using a command similar to the following command:



*** The selection of an interleave factor is optional. If you do not specify an interleave factor, a default interleave of 3 is used.**

**** If your volume configuration switch is set on 0 or 1, you do not have to specify a volume ID. However, if your configuration switch is set on 2 through 9, you must specify a volume ID because each volume of your fixed disc must be initialized separately. Volumes on your fixed disc are numbered consecutively from 0. For example, if your fixed disc is partitioned into four volumes, the volume ID's are 0, 1, 2 and 3.**

The above initialize command tells the computer that you wish to initialize the fixed disc of the HP 9133 with an address setting of 00.

NOTE

Initialization takes approximately 2-3 minutes per megabyte or approximately 30 minutes for the 15 megabyte fixed disc. Initializing is an excellent investment of time because it not only prepares your disc to receive and store data, but also checks the disc for any damage it might have sustained during shipment.

Mass Storage Specifier

The mass storage is (MSI) command is used to direct all your disc drive commands to your most frequently used disc. If you use the MSI command, you do NOT have to specify an MSUS with every disc drive command. (The exception to this rule is the initialize command, which always requires the specification of an MSUS).

Boot your system according to the directions above. Make sure your disc drive is turned on. The MSI command appears similar to the following example:

MSI ":HP9133,700,0" and press ENTER

Once you have typed this MSI command, subsequent disc drive commands will be directed automatically to the fixed disc drive of the HP 9133D.

Catalog

The CAT command displays the directory of all files on the disc. In addition, the command displays the device MSUS in the upper right corner of the screen. The default MSUS for the HP 9133 appears as :CS80,700 (if the address is set at 00).

For example, if you wish to display the directory for the fixed disc, type:

CAT ":HP9133,700,0" and press ENTER.

If you used the MSI command to specify the fixed disc drive as the default drive, you can simply type:

CAT

Copying

To copy files from flexible discs onto the fixed disc, place the disc that you wish to copy in the flexible drive of your HP 9133D. Copy the individual files from the disc, using a command similar to the following:

COPY "Filename:,700,1" to "Filename:,700,0"

or

COPY "Filename:HP9133,700,1" to "Filename:HP9133,700,0"

where "filename" is the name of the file you wish to copy.

Most Used Mass Storage Commands

The following commands are probably the commands you will use most often when communicating with the disc drive. These commands operate as described in your Series 200 documentation.

CAT	Reads the directory of files on the disc.
COPY	Copies a volume or file.
CREATE	Creates a data file.
ENTER	Reads data from a data file.
GET	Reads an ASCII file into memory as a program.
INITIALIZE	Checks the disc for defects, establishes a volume label on the disc, and creates a directory.

LOAD	Reads programs from the disc.
OUTPUT	Writes data to a data file.
PURGE	Deletes files from the directory.
RE-STORE	Rewrites a program to the disc, and then purges the old revision from the directory.
SAVE	Creates an ASCII file and copies BASIC program files from memory into the file.
STORE	Writes programs to the disc.

Pascal 3.0

The following section explains how to initialize discs and make backup copies of discs using Pascal 3.0 Workstation System. Before you begin using Pascal 3.0 commands, set the configuration switch on your disc drive according to the directions in Chapter 4 of your HP 9133D operator's manual.

Disc Initialization

Use the following steps to initialize a disc:

1. Turn the computer system on.
2. Insert the **Boot**: disc in the flexible disc drive.
3. When the screen says, *Please put SYSVOL in unit #3 and press the X key,"* remove the **Boot**: disc. Insert the **Sysvol**: disc in the flexible disc drive, and press the X key.
4. When the screen displays, *New system date?*, type the date and press Enter.
5. When the screen displays, *New system clock time?*, type the time and press Enter.
6. Next, the following command line appears on the screen:

   Command: Compiler Editor Filer Initialize Librarian Run eXecute Version?

   When the command line appears, remove the **Sysvol**: disc and insert the **Access**: disc.
7. Type "X" for eXecute.
8. When the screen displays, *Execute what file?*, type:

   ACCESS:MEDIAINIT

   Press Enter.

9. The screen then displays, *Volume ID?*. If you wish to initialize the fixed disc, type #11. (Volume ID's on the fixed disc vary from #11 to #18, depending on the setting of the configuration switch.) If you wish to initialize a flexible disc, type #3.
10. Remove the **Access**: disc. If you wish to initialize a flexible disc, insert the flexible disc into the flexible disc drive.
11. When the screen displays, *Are you sure you want to proceed Y/N*, type Y if you wish to continue with the initialization procedure. Type N if you wish to stop the initialization procedure.
12. If you are initializing the fixed disc, proceed to step 13. You will not see the display described in step 12.

    If you are initializing the flexible disc, the screen now displays, *Formatting option? (defaults to 0)*. You have five choices, as described in Table 3:

Format Option	Bytes/ Sector	Double-Sided or Single-Sided Formatting	Kbytes of Storage
*1	256	Double-Sided	630K
2	512	Double-Sided	710K
3	1,024	Double-Sided	788K
*4	256	Single-Sided	270K

* Denotes best performance options

Table 3: Flexible Disc Formatting Options

You must remember three important things when selecting a format option.

A. You can format double-sided only on double-sided flexible discs in a double-sided disc drive (e.g., HP 9133D).
B. A flexible disc formatted double-sided can only be used in a double-sided disc drive (e.g., HP 9133D).
C. A flexible disc formatted single-sided can be used in both a single-sided and a double-sided disc drive.

Please see Chapter 1, Single-Sided Versus Double-Sided, for further information on this subject.

Press ENTER if you wish to select the default option of 0. Otherwise, type the number of the format option that you wish to select, and press ENTER.

13. The screen now displays, *Interleave factor? (defaults to 2)*. If you are formatting a flexible disc, the recommended interleave factor is 2. If you are formatting a fixed disc, the minimum interleave factor is 3. Table 4 details the recommended interleave factors.

Series 200	Recommended Interleave (256 byte sectors)
With Disc Interface 98625A and DMA 98620B	3
With DMA 98620B Only	4
With no DMA	7

Table 4: Recommended Fixed Disc Interleave Factors

14. The screen now displays, *Medium initialization in progress*.

NOTE

Initialization takes approximately 2-3 minutes per megabyte or approximately 30 minutes for the 15 megabyte fixed disc. Initialization is an excellent investment of time because it not only prepares your disc to receive and store data, but also checks the disc for any damage it might have sustained during shipment.

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15. At the end of the initialization process, another line is added to the display on your screen. The screen now displays:

    Medium initialization in progress
    Medium initialization completed

    About ten seconds later, the screen displays:

    Volume zeroing in progress
    Volume zeroing completed

16. The disc has been successfully initialized.

Copying

Use the following steps to copy all the files on a flexible disc to the fixed disc.

1. Once you have booted the computer, insert the **Access**: disc into the flexible disc drive.

2. When the command line appears (Command: Compiler Editor Filer . . .), type F for Filer.
3. When the filer line appears (Filer: Change Get . . .), remove the **Access**: disc. Place the disc that you wish to copy in the flexible disc drive.
4. Type F for Filecopy.
5. When the screen displays, *Filecopy what file?*, type **#3:** = and press Enter. This tells the computer that you wish to copy all the files from the disc that is in the flexible disc drive.
6. When the screen displays, *Filecopy to what?*, **type #11:$** and press Enter. This tells the computer that you wish the copy to go TO the fixed disc.
7. The screen now displays *Reading* . . . and the flexible disc access light is lit.
8. The screen now displays *Writing* . . .. The disc access light is lit alternately on the flexible and fixed disc drives. The copying process takes only a few minutes.
9. When copying is complete, the filer line (Filer: Change Get . . .) again appears on the screen.
10. Type Q for Quit and press Enter.
11. Refer to the Filer section of your Pascal manual for additional information.

Use the following steps when you want to make copies of some files on a disc, but do not want to copy all the files on the disc:

1. Once you have booted the computer, insert the **Access**: disc into the flexible disc drive.
2. When the command line appears (Command: Compiler Editor Filer. . .) type F for Filer.
3. When the filer line appears (Filer: Change Get . . .) on the screen, remove the **Access**: disc. Place the disc that you wish to copy in the flexible disc drive.
4. Type F for Filecopy.
5. When the screen displays, *Filecopy what file?*, type **#3:filename**, and press Enter. (Filename is the name of the file to be copied.) This tells the computer that you wish to copy "filename" from the disc that is in the flexible disc drive.
6. When the screen displays, *Filecopy to what?*, type **#11:filename**, and press Enter. This tells the computer that you wish to copy the file to the fixed disc.

7. The screen now displays *Reading* . . . and the flexible disc access light is lit.
8. The screen now displays *Writing* . . .. The Disc access light is lit alternately on the flexible and fixed disc drives. The copying process takes only a few minutes.
9. When copying is complete, the filer line (Filer: Change Get . . .) again appears on the screen.
10. Type Q for Quit if you are finished copying. Repeat steps 4 through 9 if you wish to copy more files, or your may refer to the Filer section of your Pascal manual for additional information.