

HEWLETT-PACKARD

**Internal Flexible
Disc Drive
Installation Guide**

Notice

The information contained in this document is subject to change without notice.

Hewlett-Packard makes no warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Hewlett-Packard shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing performance, or use of this material.

Hewlett-Packard assumes no responsibility for the use or reliability of its software on equipment that is not furnished by Hewlett-Packard.

Personal Office Computer Division
974 E. Arques Avenue
P.O. Box 486
Sunnyvale, CA 94086, U.S.A.

To order this manual, specify Part Number 5959-2623

First Edition - October, 1987 Printed in USA

Internal Flexible Disc Drive Installation Guide

© 1984 Hewlett-Packard Company



FCC Statement

Federal Communications Commission Radio Frequency Interference Statement

Warning: This equipment has been certified to comply with the limits for a Class B computing device, pursuant to Subpart J of Part 15 of FCC Rules. See instructions below if interference to radio reception is suspected.



More About Radio and Television Interference

Because the Vectra PC generates and uses radio frequency energy, it may cause interference with radio and television reception in a residential installation.

Hewlett-Packard's system certification tests were conducted with HP-supported peripheral devices and HP shielded cables, such as those you receive with your system. Vectra meets the requirements for a Class B computing device in accordance with the specifications of Part 15, Subpart J, of FCC rules. These rules are designed to provide reasonable protection against interference with radio and television reception in a residential installation.

Hewlett-Packard provides instructions for using this computer in manuals covering setup, connection of peripheral devices, operation, service, and technical reference.

Installing and using the computer in strict accordance with Hewlett-Packard's instructions will minimize the chances that the Vectra will cause radio or television interference. However, Hewlett-Packard does not guarantee that the computer will not interfere with radio and television reception.

If you think your computer is causing interference, turn it off to see if the radio or TV reception improves. If the reception:

- Does not improve, your computer is not causing the problem.
- Does improve, your computer is causing the problem.

To correct interference, take one or more of the following steps:

- Relocate the radio or TV antenna.
- Move the computer away from the radio or television.
- Plug the computer into a different electrical outlet, so that the computer and the radio or television are on separate electrical circuits.
- Make sure that all of your peripheral devices are certified Class B by the FCC.
- Make sure you use only shielded cables to connect peripheral devices to your computer.
- Consult your computer dealer, Hewlett-Packard, or an experienced radio/television technician for other suggestions.
- Order the FCC booklet called *How to Identify and Resolve Radio-TV Interference Problems* from the U.S. Government Printing Office, Washington, D.C. 20402. The stock number of this booklet is 004-000-00345-4.

Warranty Information

Hewlett-Packard warrants this computer hardware product against defects in materials and workmanship for a period of one year from receipt by the user. During that warranty period, Hewlett-Packard or an authorized dealer will either, at their option, repair or replace products which prove to be defective.

For complete information, please refer to the page on **LIMITED ONE-YEAR WARRANTY** of your computer's Support and Services Information booklet that is shipped with your system unit.

HP Computer Museum
www.hpmuseum.net

For research and education purposes only.



Table of Contents

Chapter 1: Read This First

Chapter 2: Introduction

Types of Flexible Disc Drives	2-1
Internal Disc Drive Installation Order	2-2

Chapter 3: Installing the Flexible Disc Drive

Tools Needed	3-1
Preparing for Installation	3-1
Handling Disc Drives Safely	3-3
Installation Instructions	3-4
Removing a Drive	3-4
Installing a Drive	3-5

Chapter 4: Preparing Your System for Use

Running the SETUP Program	4-1
Installing the Driver for the 3.5-Inch Drive	4-3
Running the 35INSTAL Program	4-4

Chapter 5: About Flexible Discs

How to Buy Flexible Discs	5-1
A Note About 3.5-Inch Flexible Disc Formats	5-2
How to Format Flexible Discs	5-2

Appendix A:

**Manually Installing the Driver for
the 3.5-Inch Drive**

Appendix B:

**Sharing Data With Computers That Use
3.5-Inch Discs**

Read This First

DOS 3.2 is required to use a 3.5-inch internal flexible disc drive. DOS 3.2 Version B.01.01 or later allows you to read, write, and format 710 Kb and 720 Kb discs and to read and write 1.44 Mb discs. However, DOS 3.2 Version B.01.02 or later is required to format 1.44 Mb discs.





2

Introduction

Types of Flexible Disc Drives

The following illustration shows the three types of flexible disc drives that HP offers for the Vectra personal computer.

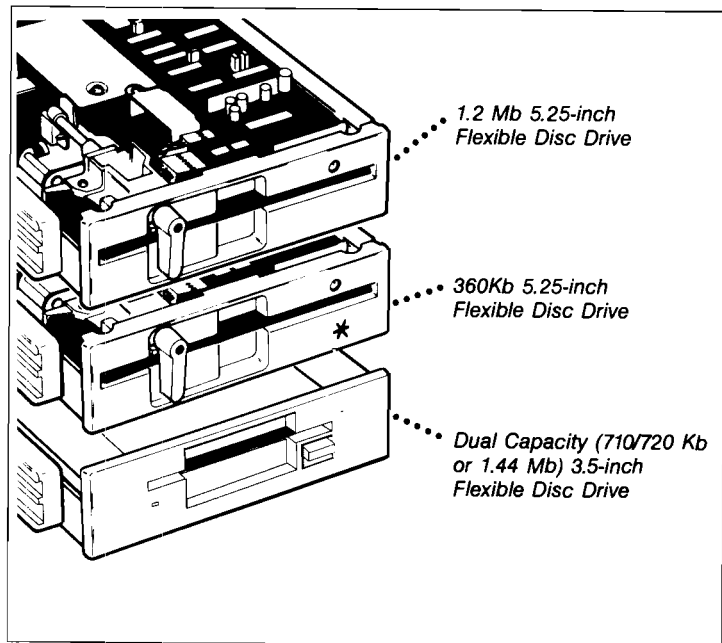


Figure 2-1. The Three Types of Flexible Disc Drives

Internal Disc Drive Installation Order

Most computers come with a 5.25-inch flexible disc drive installed in the top slot.

The second flexible disc drive must go in the next slot down from the top slot, unless you're installing a 1.2 Mb 5.25-inch drive (no "*" on front cover) in a computer that has a 360 Kb 5.25-inch drive ("*" on front cover) in the top slot. Then we recommend that you move the 360 Kb 5.25-inch drive to the next slot down and install the 1.2 Mb 5.25-inch drive in the top slot.

If you're installing a 3.5-inch flexible disc drive, you must install the drive in the next slot down from the top slot.

3

Installing the Flexible Disc Drive

Tools Needed

- Your computer's *Setting Up* manual
- Medium flat-blade screwdriver
- Pen to record setup information

Optional Tools:

- Electrically Conductive Field Service Grounding Kit (HP P/N 9300-0933)

Preparing for Installation

Before you install the flexible disc drive, you must perform the following tasks:

1. Follow the instructions in the chapter "Option 3: Prepare Internal Hard Disc Drive for Moving" in your *SETUP Program Guide* and the chapter "Removing the Cover" in your computer's *Setting Up* manual to do the following:
 - Park the heads of any 20 Mb hard disc drive installed in the computer. If you are setting up the computer for the first time, you don't need to park the heads.
 - Turn off and unplug the computer.

- Remove the computer cover.

Then come back and proceed to step 2.

2. Are you installing a 3.5-inch flexible disc drive in an HP Vectra CS?

- **NO.** Proceed to the next section "Handling Disc Drives Safely."
- **YES.** You must change the flexible disc controller jumper settings on the processor card. (In order to do this, you must remove the processor card.) To configure drive B: (the next slot down from the top slot) for a 3.5-inch flexible disc drive, move the jumper so that it covers both pins as shown in figure 3-1. Replace the processor card. Then proceed to the next section "Handling Disc Drives Safely."

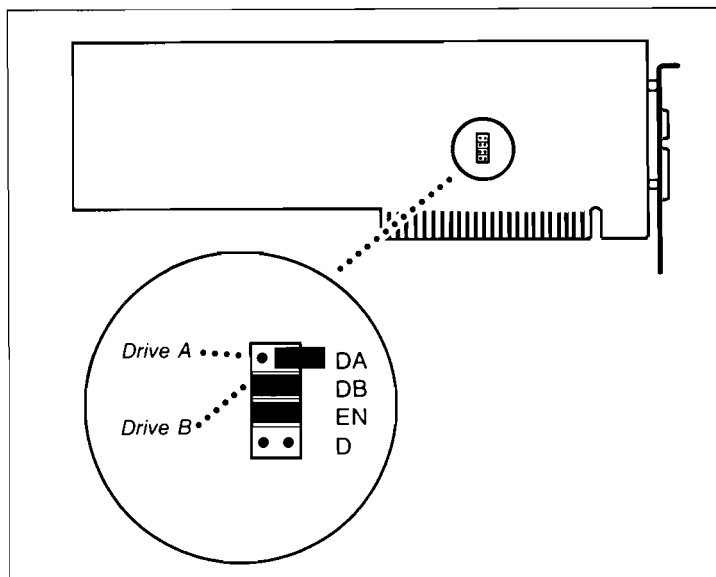


Figure 3-1. Jumpers on the Processor Card Configured for 3.5-Inch Drive in Drive B:

Handling Disc Drives Safely

HANDLE GENTLY. Take care unpacking and handling the disc drive during installation.

LEAVE THE DISC DRIVE AS IS. Do not remove the disc drive frame or touch any internal parts.

PROTECT FROM STATIC ELECTRICITY. Disc drives contain electrical components that are easily damaged by small amounts of static electricity. Whenever you handle a disc drive, take the following precautions:

- Leave the disc drive in its anti-static bag until you are ready to install it.
- If possible, use an anti-static wrist strap and a grounding mat such as those in the Electrically Conductive Field Service Grounding Kit (HP part number 9300-0933).
- If you don't have a grounding kit, touch an unpainted metal surface on the computer before installing the disc drive.
- When you remove the disc drive from the anti-static bag, handle it only by the frame. **DO NOT TOUCH** electrical components.
- Save the anti-static bag to protect the disc drive if you remove it from the computer.
- Handle disc drives as little as possible.

Installation Instructions

Are you installing a 1.2 Mb flexible disc drive (no "*" on front cover) in a computer that has a 360 Kb drive ("*" on front cover) in the top slot, or are you *replacing* a drive that is already installed in the computer?

- **NO.** Skip to the section "Installing a Drive."
- **YES.** Proceed to the next section "Removing a Drive."

Removing a Drive

Follow the steps below to remove a flexible disc drive from your computer:

1. Disconnect the flexible disc drive data cable and the power cable from the back of the flexible disc drive.
2. Depress the locking tabs located on both sides of the flexible disc drive and slide it out. (See figure 3-2 for location of tabs.)

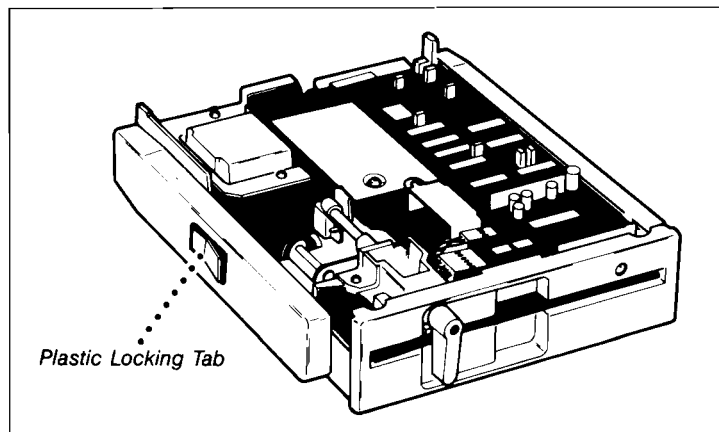


Figure 3-2. Location of Locking Tabs on Drive

Installing a Drive

Follow the steps below to install a flexible disc drive in your computer:

1. If you have a disc drive already installed in the top slot of the drive cage, partially slide that drive out as follows:
 - a. Depress the locking tabs located on both sides of the drive. (See figure 3-2.)
 - b. Slide the drive 1/4 of the way out of the slot. (This gives you more room to install the flexible disc drive and connect the cables to the drive.)
2. Now remove the flexible disc drive you will be installing from the anti-static bag.
3. Are you installing a 3.5-inch flexible disc drive?
 - **NO.** Skip to step 5.
 - **YES.** Continue with step 4.

4. Verify that the jumpers at the rear of the drive are set properly using figure 3-3.

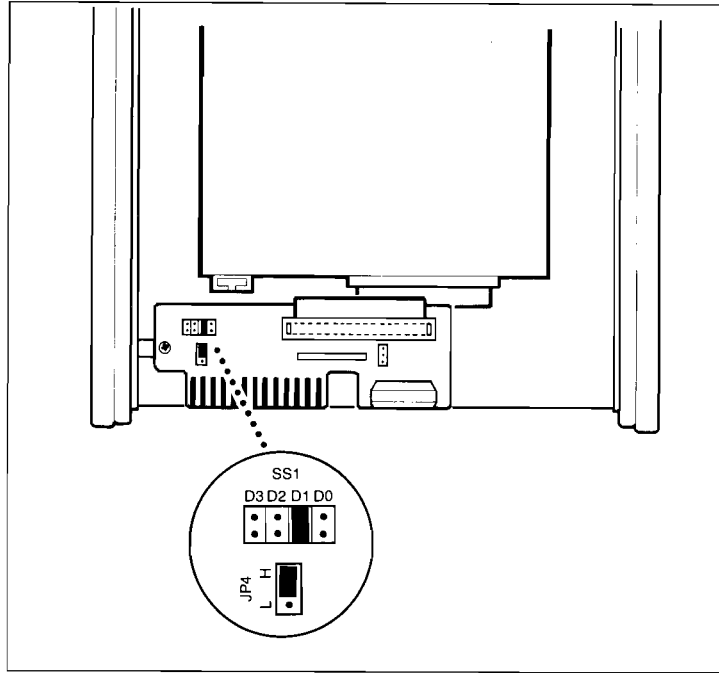


Figure 3-3. Jumper Settings on 3.5-Inch Drive for All HP Vectras, except Vectra CS (Top View of the Rear of Drive)

Note



If you're installing a 3.5-inch flexible disc drive in an HP Vectra CS, change the jumper settings using figure 3-4.

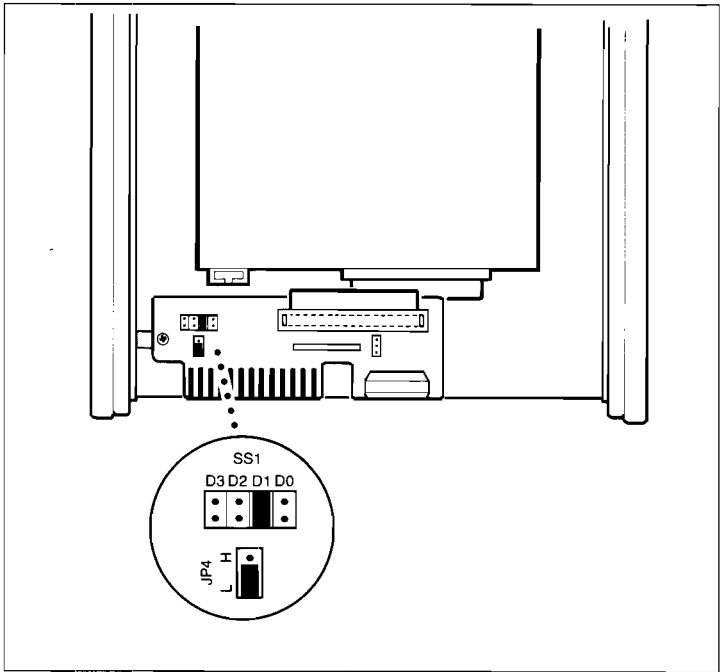


Figure 3-4. Jumper Settings on 3.5-Inch Drive for HP Vectra CS Only (Top View of the Rear of Drive)

5. Slide the flexible disc drive (holding it upright and by its front end) 3/4 of the way into the appropriate slot of the disc drive cage.
6. Plug the middle connector on the data cable into the rear of the flexible disc drive you just installed.

Note



If a flexible disc drive is already installed in the top slot of the drive cage, the top connector on the data cable is already connected to it.

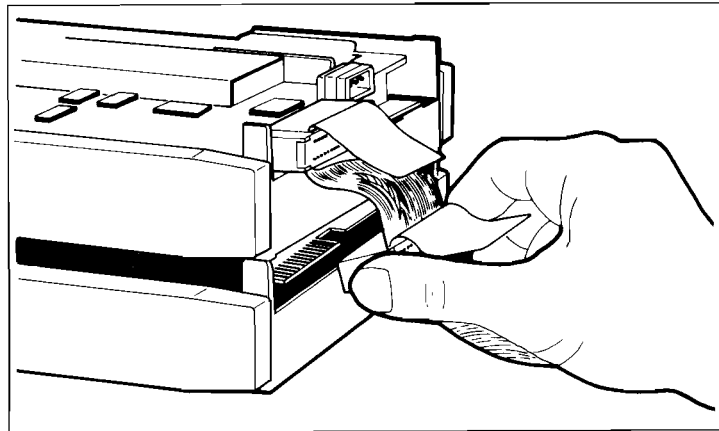


Figure 3-5. Connecting the Data Cable to the Drive

7. Plug any one of your computer's free drive power cables into the rear of the flexible disc drive.

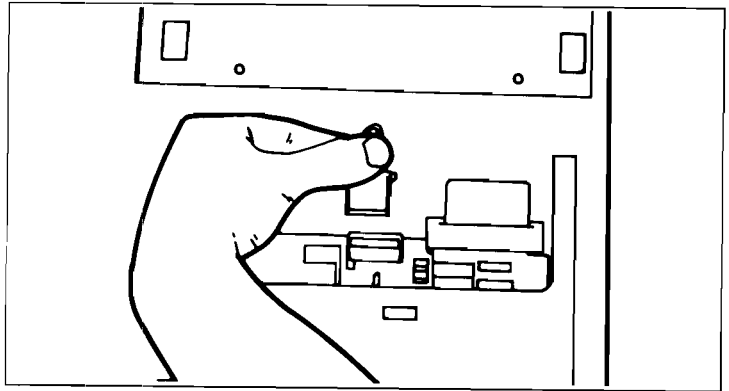
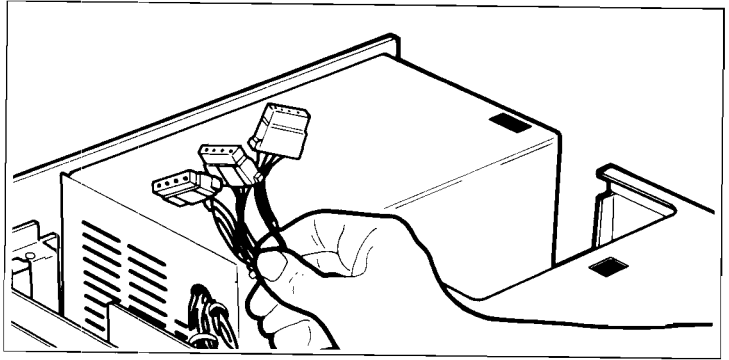


Figure 3-6. Connecting the Power Cable to the Drive (Top View of Computer)

8. Push the flexible disc drive all the way into the drive cage. You will hear it snap into place.
9. Push any drives you partially removed earlier back into the disc drive cage. You will hear them snap into place.
10. Install any drives you removed earlier back into the disc drive cage.

11. Did you install a 5.25-inch flexible disc drive?
 - NO. Skip to step 13.
 - YES. Continue with step 12.
12. Rotate the disc drive lever counterclockwise and remove the cardboard shipping insert. Save it. If you ever move your computer, put it back in to protect the drive heads from damage.
13. Did you previously have a flexible disc drive installed in the slot where you just installed the flexible disc drive?
 - YES. Skip to step 15.
 - NO. Continue with step 14.
14. Turn the computer cover upside down. Remove the cover panel that previously covered the empty flexible disc drive slot by pressing the locking tabs and lifting the cover panel out. Save the cover panel in case you ever decide to remove the drive.
15. Record the following information about your flexible disc drive in the "Setup Inventory Foldout" in your computer's *Setting Up* manual:
 - a. The type of flexible disc drive you installed (360 Kb 5.25-inch drive, or 1.2 Mb 5.25-inch drive, or 3.5-inch drive).
 - b. Where it is installed (drive A: for the top drive or drive B: for the next slot down).

16. Are you setting up the computer for the first time?

- **YES.** Go to your computer's *Setting Up* manual. Continue with the chapter after "Installing Internal Disc Drives." When you're done setting up your computer, running the SETUP program, and installing the operating system, come back to this manual. If you installed a 3.5-inch flexible disc drive, proceed to the section "Installing the Driver for the 3.5-Inch Drive" in the chapter "Preparing Your System for Use." If you installed a 5.25-inch flexible disc drive, skip to the chapter "About Flexible Discs."
- **NO.** Continue with step 17.

Note



If you installed a 3.5-inch flexible disc drive in an HP Vectra CS, you don't need to install the driver for the 3.5-inch flexible disc drive.

17. Replace the computer cover. If you need assistance, refer to the chapter "Replacing the Cover" in your computer's *Setting Up* manual.
18. Go to the next chapter "Preparing Your System for Use."



Preparing Your System for Use

After you have installed the flexible disc drive, you must prepare it for use as described in this chapter.

Running the SETUP Program

Did you install a 3.5-inch flexible disc drive?

- **NO.** Run the **SETUP** program that came with your computer. Follow the instructions in your *SETUP Program Guide* to configure your computer for the 5.25-inch flexible disc drive you just installed. Then come back to this manual and read the chapter "About Flexible Discs."
- **YES.** Read the following chart to determine what you need to do to configure your computer for the 3.5-inch flexible disc drive you installed.

Note



If you installed a 3.5-inch flexible disc drive in an HP Vectra CS, you don't need to run the **SETUP** program or install the driver for the 3.5-inch drive. Your computer was configured for the 3.5-inch drive when you changed the jumper settings on the processor card and the drive.

If you have:	You need to:
HP Vectra ES or RS or a Vectra with SETUP program version A.02.01 or later	Run the SETUP program that came with your computer. Refer to the instructions in your <i>SETUP Program Guide</i> . Then come back and proceed to the section "Installing the Driver for the 3.5-Inch Drive" in this chapter.
HP Vectra with SETUP program version earlier than A.02.01	Run the SETUP program on the disc labeled "3.5-Inch Flexible Disc Drive Utilities" that came with the 3.5-inch drive. (If you try to use the SETUP program that came with your computer, you may not be able to configure your computer for the 3.5-inch flexible disc drive.) Refer to the instructions in this section to run the SETUP program.

Follow the steps below if you are using the SETUP program on the disc labeled "3.5-Inch Flexible Disc Drive Utilities" that came with the 3.5-inch drive.

1. Insert the disc labeled "3.5-Inch Flexible Disc Drive Utilities" into drive A: and turn the drive lever down.
2. Turn on the display and the computer.

The following message may appear on your screen:

Invalid configuration.

3. Press **F1** to continue.

The SETUP Main Menu will appear.

4. Press **Enter** to run option 1.
5. Continue to answer each question to configure your computer for the 3.5-inch flexible disc drive you just installed. (You only need to change the Flexible Disc Drive settings.)
6. When the system tells you "Your system must now be restarted," do the following:

If you have a hard disc with a copy of the operating system on it, remove the Utilities disc and press **Enter**.

If you do not have a hard disc, remove the Utilities disc and insert your MS-DOS work disc into drive A: and press **Enter**.

You should see the MS-DOS prompt or the PAM (Personal Applications Manager) Main Menu. Proceed to the next section.



Installing the Driver for the 3.5-Inch Drive

There are two ways to install the driver for the 3.5-inch flexible disc drive.

Note



Make sure that you have already created an MS-DOS work disc or installed MS-DOS 3.2 on your hard disc. If you haven't done this, do so now. Refer to your *Installing the Operating System* manual in your Vectra MS-DOS 3.2 Volume I binder.

- **METHOD 1.** Run the 35INSTAL program to automatically install the 3.5-inch flexible disc driver. This is the easiest way to install the driver. Go to the next section "Running the 35INSTAL Program."
- **METHOD 2.** Manually install the driver if you:
 - a. Are familiar with MS-DOS and you want to specify an exact driver location within the CONFIG.SYS file.

OR,

- b. Have DOS 3.2 Version B.01.01 and will be formatting 710 Kb or 720 Kb discs.

Go to the appendix "Manually Installing the Driver for the 3.5-Inch Drive."

Running the 35INSTAL Program

Follow the steps below to run the 35INSTAL program.

1. Start your computer. Make sure the MS-DOS prompt or PAM (Personal Application Manager) appears on your screen.

If you are in PAM, select:

MS-DOS COMMANDS

and press **Enter**.

2. Insert the disc labeled "3.5-Inch Flexible Disc Drive Utilities" into drive A: and turn the drive lever down.

3. Type:

A:35INSTAL

and press **Enter**.

A menu is displayed on your screen.

4. Press the appropriate key for your language.
5. Follow the instructions on your screen. When installation is complete, continue with step 6.
6. Remove the disc from drive A:.
7. Hold down **CTRL** and **Alt**, and press **DEL** to reset your computer. Proceed to the next chapter "About Flexible Discs."



5

About Flexible Discs

This chapter describes important information about flexible discs.

How to Buy Flexible Discs

For best results, you should use only high-quality flexible discs from Hewlett-Packard.

You can order discs in packages of ten directly from HP, or you can buy them in a computer store. When buying or ordering discs for the flexible disc drive, specify the following:

- For 5.25-inch 360 Kb drive, specify "Hewlett-Packard 5 1/4-inch, double-sided, flexible discs." (Part No. 92190A for a package of ten).
- For 5.25-inch 1.2 Mb drive, specify "Hewlett-Packard 5 1/4-inch, high-capacity (96 TPI), double-sided, flexible discs." (Part No. 92190X for a package of ten).
- For 3.5-inch drive, specify "Hewlett-Packard 3.5-inch, double-sided, micro flexible discs." (710/720 Kb) (Part No. 92192A for a package of ten).
- OR, specify "Hewlett-Packard 3.5-inch, high-capacity, double-sided, micro flexible discs." (1.44 Mb) (Part No. 92192X for a package of ten).

A Note About 3.5-Inch Flexible Disc Formats

Before you use a flexible disc, you must format it using an MS-DOS FORMAT command. The HP 3.5-inch 710/720 Kb disc should always be formatted to 710 Kb or 720 Kb capacity, and the HP 3.5-inch 1.44 Mb disc should always be formatted to 1.44 Mb capacity. A 710/720 Kb disc formatted to 1.44 Mb or a 1.44 Mb disc formatted to 710 Kb or 720 Kb will result in unreliable data recording and possible data loss.

Note



WINDOWS USERS: If you have Microsoft Windows Version A.01.03 or earlier, **DO NOT** use the Windows MS-DOS Executive "Format Data Disc..." command to format a 3.5-inch disc. Use the MS-DOS FORMAT command.

How to Format Flexible Discs

Refer to your *MS-DOS User's Reference*.

A

Manually Installing the Driver for the 3.5-Inch Drive

If you do not want to use the 35INSTAL program to install the driver for the 3.5-inch flexible disc drive or you have DOS 3.2 Version B.01.01 and will be formatting 710 Kb or 720 Kb discs, follow the instructions in this appendix.

Note



You must have a hard disc to manually install the driver.

1. Start your computer. Make sure the MS-DOS prompt or PAM (Personal Application Manager) appears on your screen.

If you are in PAM, select:

MS-DOS COMMANDS

and press **Enter**.

2. Insert the disc labeled "3.5-Inch Flexible Disc Drive Utilities" into drive A: and turn the drive lever down.
3. At the C> prompt, type:

**COPY A: INDSKBIO.SYS **

and press **Enter**.

4. Remove the 3.5-Inch Flexible Disc Drive Utilities disc.

5. At the C> prompt, type:

```
TYPE CONFIG.SYS
```

and press **Enter**.

The contents of your CONFIG.SYS file are displayed.

6. For your own protection, make a backup copy of your CONFIG.SYS file on your hard disc called CONFIG.BAK. You can delete the CONFIG.BAK file when you have successfully completed this procedure.
7. Add the following lines to your CONFIG.SYS file:

```
DRIVPARM=/d:1 /f:7 /t:80 /s:18 /h:2 /c  
DEVICE=\INDSKBIO.SYS /d:1
```

Use a word processing application or refer to the EDLIN command in your *MS-DOS User's Reference* to learn how to add a line to your CONFIG.SYS file.

Note



If you have MS-DOS 3.2 Version B.01.01 and will be formatting 710/720 Kb discs, you must add a different DRIVPARM value to your CONFIG.SYS file:

```
DRIVPARM=/d:1 /f:2 /c
```

When you upgrade to DOS 3.2 Version B.01.02 or later and want to format 1.44 Mb discs, you must manually change the DRIVPARM value in your CONFIG.SYS file to

```
DRIVPARM=/d:1 /f:7 /t:80 /s:18 /h:2 /c
```

8. Hold down **CTRL** and **Alt**, and press **DEL** to reset your computer.

The 3.5-inch flexible disc driver is now installed.

B

Sharing Data With Computers That Use 3.5-Inch Discs

With the HP 3.5-inch internal flexible disc drive in an HP Vectra personal computer using MS-DOS 3.2 Version B.01.02 or later, you can use, and share data, with 3.5-inch discs of other HP and IBM personal computers. The HP Vectra can share data on 3.5-inch discs with the computers listed in the table below.

3.5-Inch Disc Data Sharing Table

Computer:	How Data Can Be Shared:
HP Touchscreen	The HP Vectra can read, and write data to, discs formatted by the HP Touchscreen (in either 710Kb HP format, or 720Kb IBM format). The HP Touchscreen can also read, and write data to, discs formatted by the HP Vectra using the FOR150 command. (Refer to your <i>MS-DOS User's Reference</i> .)
HP Portable and Portable Plus	The HP Vectra can read, and write data to (see note on next page), discs formatted by the HP Portable and Portable Plus (710Kb HP format). The HP Portable Plus can read, and write data to, discs formatted by the HP Vectra (710Kb HP format and 720Kb IBM format). The HP Portable CANNOT read, or write data to, discs formatted by the HP Vectra.

3.5-Inch Disc Data Sharing Table (Continued)

Computer:	How Data Can Be Shared:
IBM PC, XT, or AT	The HP Vectra can read, and write data to, discs formatted by the IBM PC, XT, or AT (720Kb IBM format). The IBM PC, XT, or AT can also read, and write data to, discs formatted by the HP Vectra (720Kb IBM format).
IBM PS/2	The HP Vectra can read, and write data to, discs formatted by the IBM PS/2 (720Kb and 1.44Mb IBM format). The IBM PS/2 can also read, and write data to, discs formatted by the HP Vectra (720Kb and IBM 1.44Mb format).

Note



To read from, or write to, an HP Portable formatted disc in the HP Vectra, you **MUST** add the parameter **/HP110** to the device statement line in your CONFIG.SYS file to make the line read as follows:

```
device=\INDSKBIO.SYS /d:1 /HP110
```

Note



The HP Vectra with an external HPIB 3.5-inch drive can read, and write data to, discs formatted by the 3.5-inch internal flexible disc drive (710Kb HP format). The HP Vectra with a 3.5-inch internal flexible disc drive can read, and write data to, discs formatted by the external HPIB 3.5-inch drive (710Kb HP format).



Printed in USA 10/87
Part Number 5959-2623