VAXmate™

Expansion Box Installation Guide and Owner's Manual

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VAXmate™

Expansion Box Installation Guide and Owner's Manual

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Introduction

This guide describes how to install a VAXmate expansion box that contains a hard disk drive, test the installation, prepare and format the hard disk, and install options within the expansion box.

This guide is written for the following users.

- Someone installing an expansion box and VAXmate workstation that will be connected to a network.
- Someone installing an expansion box and VAXmate workstation that will be used as a standalone system.
- A system administrator installing an expansion box and VAXmate workstation that will be used as a VAXmate server for a network.

If you have a VAXmate workstation, expansion box, and several options, install the expansion box first.

You can install the expansion box and most other options. Digital Field Service installs the 80287 Coprocessor option inside the monitor where high voltages are present.

When to Use This Guide

Use this guide to:

- Install the VAXmate workstation and expansion box.
- Reconnect the VAXmate workstation and expansion box if the expansion box was separated from the VAXmate workstation.
- Install industry-standard options in the expansion box.
- Solve a hard disk problem.
- Install standalone software on hard disk.

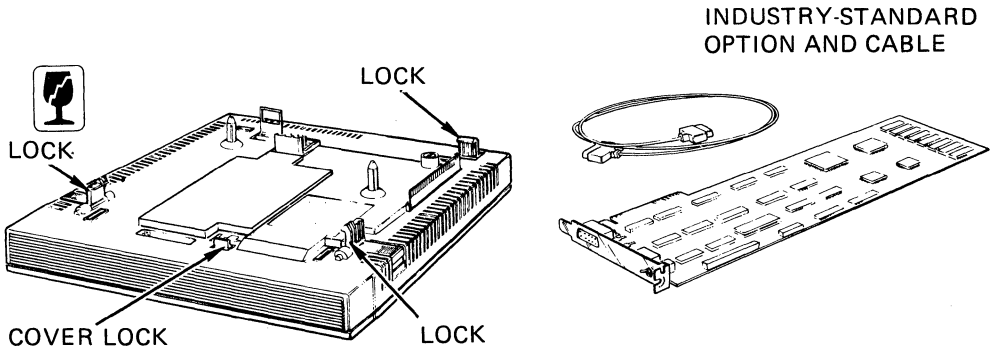
Conventions

This guide uses the following conventions.

- Keyboard keys and commands are bold.
- **<Return>** means press the **Return** key.
- A note contains important general information.
- A caution contains information to prevent damage to equipment or software.
- A warning contains information to prevent personal injury.

Chapter 1
Before You Begin

The following illustration shows some of the expansion box parts and a generic industry-standard option for the expansion box. Do not install such an option until instructed to do so.



Introduction

Your VAXmate expansion box has a power supply and a hard disk drive. The expansion box also has two option slots for industry-standard option boards. When power is applied to the expansion box, you can see a green light emitting diode (LED) through the left side vents (when you are facing the front).

Handle the expansion box carefully to avoid possible damage to the drive's read/write heads and nonremovable media.

Check your system type.

Identify your system type by the diskettes and documentation shipped with your system. You need to remember this information for later.

If You Received ...	Then You Are Installing ...
One diskette and the *VAXmate System Handbook*	A networked system
Several diskettes and the *VAXmate User's Guide*	A standalone system
Several diskettes and the *VAXmate User's Guide* and a *VAXmate System Administrator's Guide*	A VAXmate Server System

Installation Guidelines

Follow all instructions in sequence. The text tells you when instructions and screens are different because of specific requirements for networked or standalone systems.

> ***CAUTION***
> Do not plug in the power cord or switch on the system until instructed to do so.

If you are installing an expansion box with a networked system, you must connect the ThinWire Ethernet cable shipped with the VAXmate workstation. DIGITAL recommends that you read the Appendix, ThinWire Ethernet Cable Guidelines, before you handle the ThinWire Ethernet cable.

Installing and testing the expansion box can take up to 2 and 1/2 hours. That time includes preparing and formatting the hard disk drive by running the FDISK and FORMAT utilities, and installing software on the hard disk drive. That time does not include installing and testing any industry-standard options in the expansion box.

> ***CAUTION***
> Do not run the FDISK or FORMAT utilities if the hard disk has been used. These utilities destroy any data stored on the hard disk.

> ***NOTE***
> When you install the expansion box the first time, no data is stored on the hard disk.

Allow at least four inches of air space around the expansion box for cooling. Do not place any objects against the expansion box vents.

Install and test the expansion box to determine if it is working correctly. Do this before you install any industry-standard options you might have in the expansion box.

WARNING
Do not operate the VAXmate workstation with its rear door open.

Separate the expansion box from the VAXmate workstation whenever you want to move the VAXmate workstation to a new location. Never carry the VAXmate workstation with the expansion box attached.

WARNING
The expansion box and VAXmate workstation together weigh 44.5–50 lb (20.1–23 kg).

Whenever you reinstall the expansion box after separating it from the VAXmate workstation, you must run the VAXmate extended self-test. Instructions for running the extended self-test are in Chapter 6, Run extended self-Test After Reconnecting VAXmate Workstation.

Chapter 2
Installing the Expansion Box

This chapter describes how to install the expansion box on your VAXmate workstation. Installation procedures are included for VAXmate workstations that have not been used, and for VAXmate workstations that are already in use.

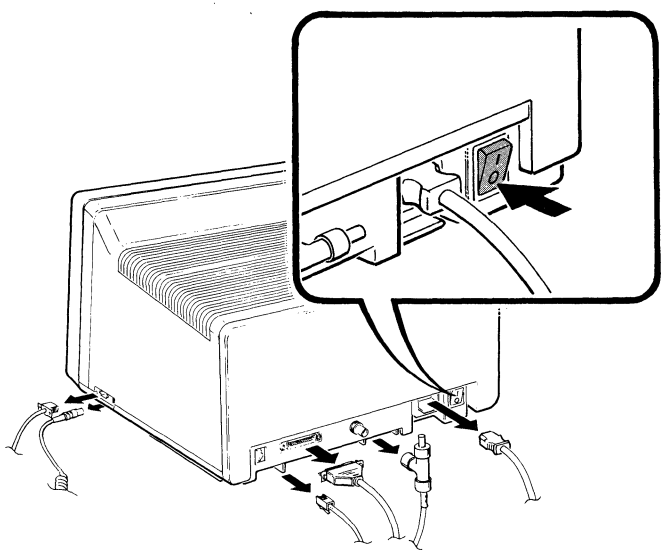
Is your VAXmate workstation already in use?

If a ThinWire Ethernet cable is connected to the VAXmate workstation, tell your system administrator that you are going to disconnect the T-connector from the VAXmate workstation.

1. Make sure the VAXmate workstation power switch is set to 0 (off).
2. Disconnect all cables from the VAXmate workstation.

   NOTE
   If present, remove the ThinWire Ethernet cable T-connector from the back of the VAXmate workstation, but do not remove the ThinWire cable from the T-connector.

   WARNING
   If telephone cables are connected to the VAXmate workstation, first disconnect the telephone cable from the wall, then from the VAXmate workstation.

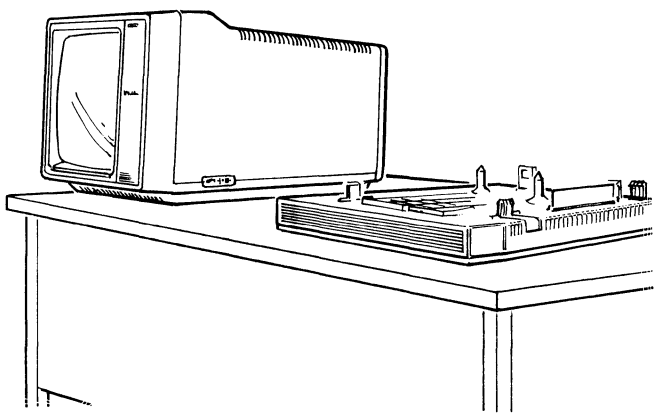


LJ-0981

Connect the VAXmate workstation to the expansion box.

1. Place the expansion box where you want the VAXmate workstation located.

   WARNING
   The VAXmate workstation weighs 33.5 lb (15.1 kg), and you must lift it to do steps 2, 3, and 4. The VAXmate workstation is heavier toward the front (screen) of the unit.



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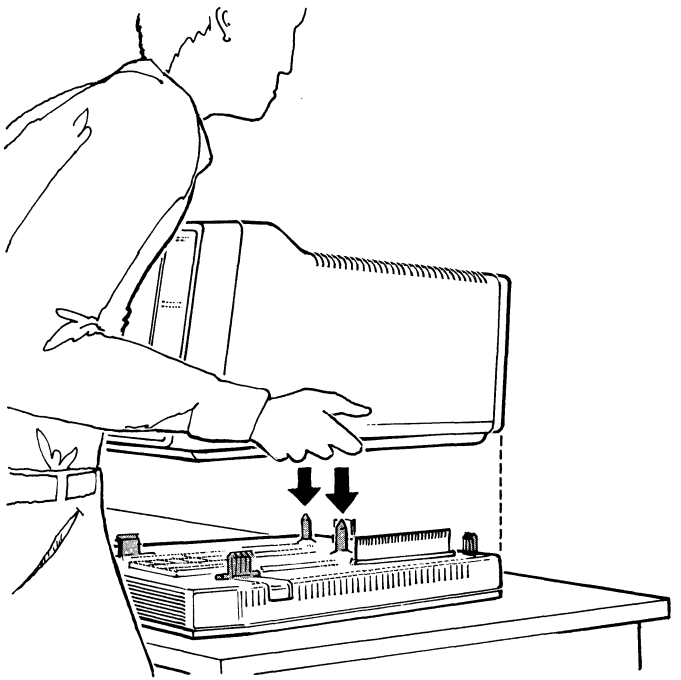
2. Lift the VAXmate workstation over the expansion box.
3. Gently lower the VAXmate workstation onto the two expansion box posts.



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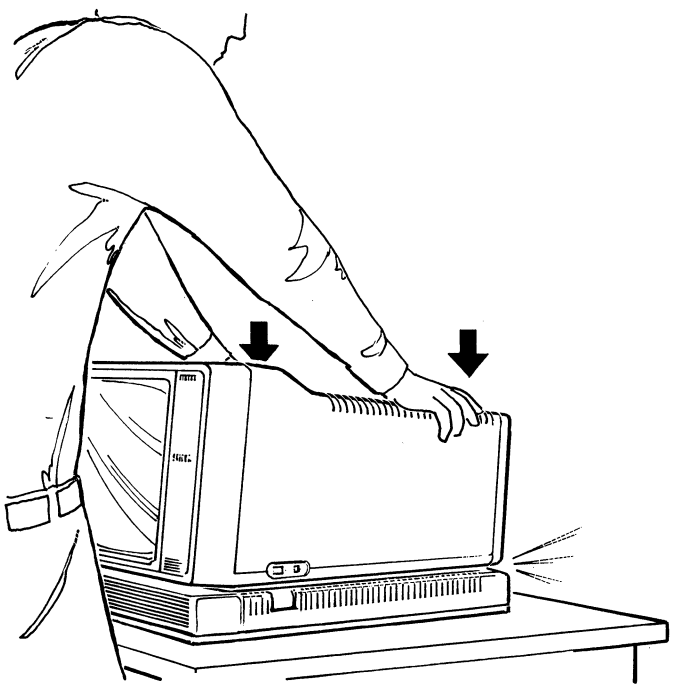
4. Press down firmly on the VAXmate workstation. You should hear the expansion box click into place.
5. If you have them, install the PC50X-MA integral modem and/or PC50X-AA 2 megabyte memory options. Follow the instructions provided with these VAXmate workstation options, then return here to continue.



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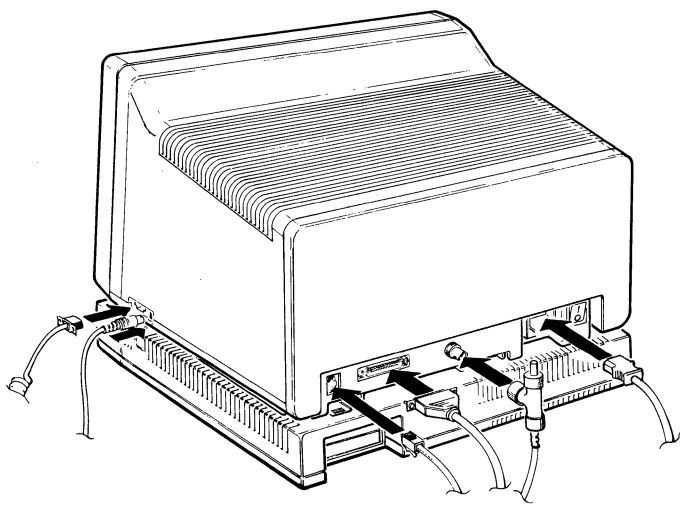
NOTE
If you are installing both the modem and memory boards, install the modem board first.

6. Connect all necessary cables as described in Chapter 1 of your *VAXmate System Handbook*. Then, go to Chapter 3 in this book to continue.

NOTE
If you are installing a standalone system, do not connect the ThinWire Ethernet cable to the VAXmate workstation.



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Chapter 3
Starting the VAXmate Workstation

Are you installing a VAXmate workstation to be connected to a network?

Get your key diskette and any password(s) you might need to access network software from your system administrator.

Was your VAXmate workstation in use in a networked system before you attached the new expansion box?

Ask your system administrator to prepare your key diskette for use with a hard disk.

Are you installing a standalone VAXmate workstation?

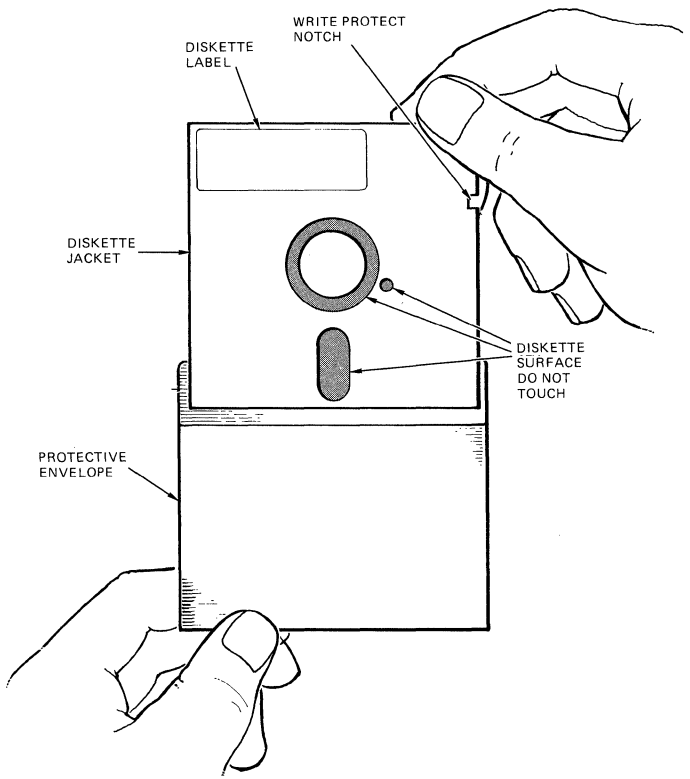
Use the VAXmate S/A Install diskette. This diskette is shipped with your system software. Then, continue with instructions in this book.

Are you a system administrator preparing to install the VAXmate server software?

Use the MS-DOS diskette to start the system. Follow the instructions in this chapter for standalone systems. Your start-up screen is the MS-DOS start-up screen (not shown here).

Starting the VAXmate Workstation

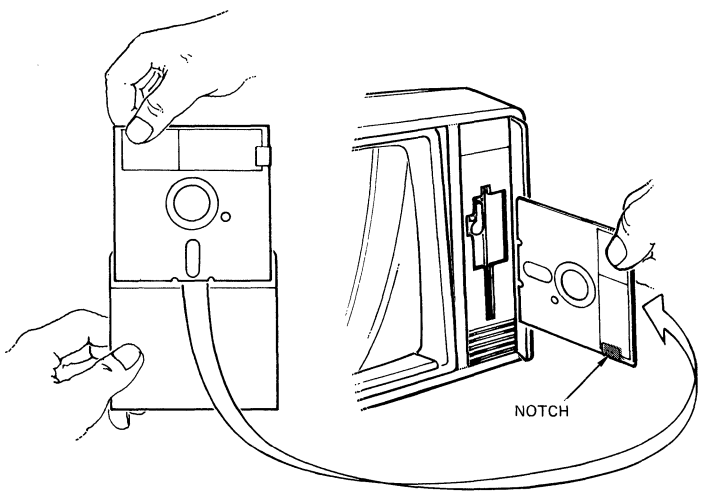
1. Remove your appropriate diskette from the envelope.



NOTE
Your diskette(s) may have a self-adhesive tab covering the write-protect notch. If so, do not remove the write-protect tab.

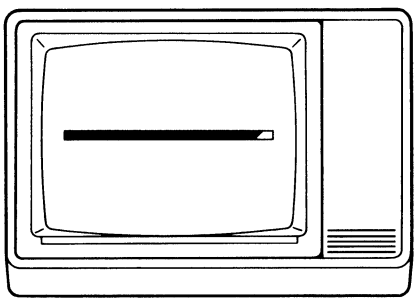
2. Make sure the notch on the diskette faces down, then insert the diskette in the diskette drive.
3. Push the diskette in until the diskette is seated.
4. Lock the diskette drive.

   See Chapter 2, steps 2 through 6, in your *VAXmate System Handbook* if you want more information about using the diskette drive, but make sure you do the remaining steps in this procedure.



5. Set the VAXmate workstation power switch to 1 (on) and watch for the first screen.

   The VAXmate workstation performs a short power-up test every time you switch it on. The test program draws a test bar across the screen and slowly fills this bar during testing.



LJ-0983

6. Did the screen display a number or remain blank? If so, the system might have a problem. Go directly to page 3-5 for help.
7. Did the system complete the power-up test and then display a blinking cursor only? If so, the diskette or the expansion box connection might have a problem. Go directly to page 3-5 for help.
8. Watch for your diskette's start-up screen. Check this page and page 3-4 for examples and information about your start-up screen. Follow the appropriate instructions.

Start-Up Screen Using the Key Diskette (Networked System)

After the power-up test, the system displays the key diskette start-up screen, which may vary with each user.

1. Set the power switch to off; wait five seconds, then turn the system back on. (This procedure allows the VAXmate computer to recognize the presence of the expansion box.)
2. Boot the key diskette by holding down the **Ctrl** key and pressing the **Alt** and **Del** keys at the same time.

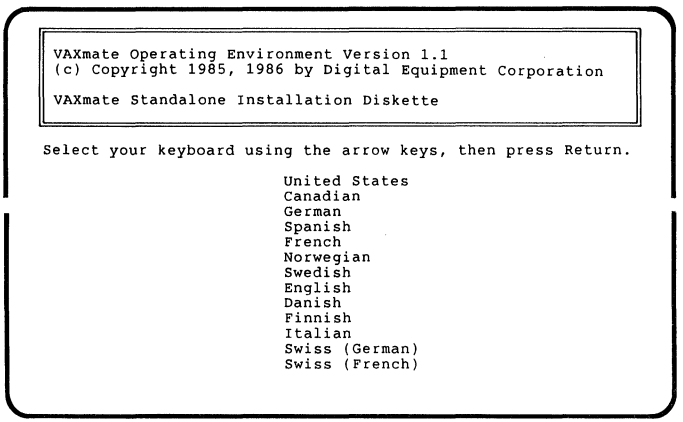
   The system should display the DOS prompt, either **A>** or **I>**.
3. Check to see if the hard disk has already been prepared. At the prompt, type:

   dir C: <Return>

   If your hard disk has been prepared for you, the system displays a list of files on it. If not, your system displays an error message.
4. In either event, go to Chapter 4, Testing, Formatting, and Installing Software on the Hard Disk (page 4-1).

Start-Up Screen Using the VAXmate S/A Install Diskette

After the power-up test, the system displays the following keyboard selection screen.



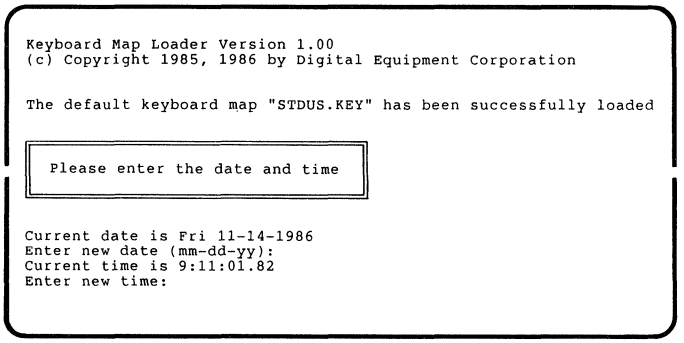
1. Using the arrow keys, select your keyboard. Then, press **Return**.

   If successful, a message similar to the following message displays on your screen. The file name in quotation marks varies depending on the keyboard selected.

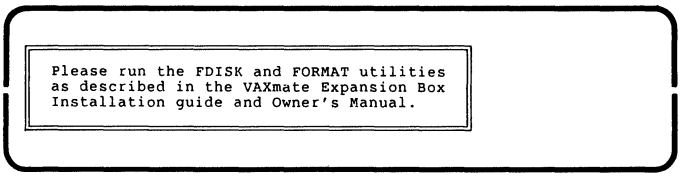
```
Keyboard Map Loader Version 1.00
(C) Copyright 1985, 1986 by Digital
Equipment Corporation

The default keyboard map ''STDUS.KEY''
has been successfully loaded.
A:>
```

2. Enter the new date and time in the format shown on the following screen. Press **Return** after each entry.

   NOTE
   The version number(s) displayed on your screen might be different.



3. If your disk has not been formatted, the screen displays the following message. If your disk has been formatted, you will not see this message. In either case, go to the next step.



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4. When you see the **A>** prompt, unlock the diskette drive and set the power switch to 0 (off).
5. Go to Chapter 4, Testing, Formatting, and Installing Software on the Hard Disk (page 4-1).

NOTE
Chapter 4 in this guide tells you when to turn the power switch on again. This procedure of turning the power on, off, and then on again prepares the VAXmate workstation for more testing.

When the Power-Up Test Displays a Number

Did the VAXmate workstation display the number 83?

The power-up test detected the presence of an unformatted hard disk. Ignore the number and go to Chapter 4, Testing, Formatting, and Installing Software on the Hard Disk (page 4-1).

Did the VAXmate workstation display any other number?

The system might have a fault. Try to clear the fault as follows.

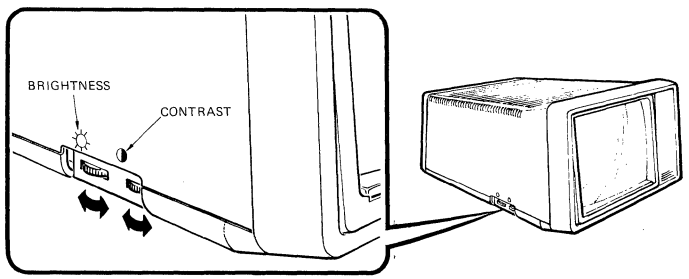
1. Unlock the drive and remove the diskette.
2. Set the power switch to 0 (off).
3. Make sure all cables are firmly connected.
4. Make sure the expansion box is firmly connected to the VAXmate workstation.
5. Wait 15 seconds and then insert your diskette. Make sure the write-protect notch is facing down.
6. Lock the drive and set the power switch to 1 (on). The power-up test runs again.

7. If the problem clears, go to page 3-3, step 8 to continue.
8. If the problem does not clear, unlock the drive and remove the key diskette. Then, set the power switch to 0 (off) and go to Chapter 8, Problem Solving, for help (page 8-1).

When the Screen Remains Blank

Try to correct the blank screen as follows.

1. Adjust the VAXmate workstation brightness and contrast controls to midrange.



2. Unlock the drive and set the power switch to 0 (off).
3. Press down on the VAXmate workstation to make sure the VAXmate workstation and expansion box are firmly connected.
4. Make sure the power cable is firmly connected, then wait 15 seconds.
5. Lock the drive and set the power switch to 1 (on). The power-up test runs again.
6. If the power-up test displays the test bar, go to page 3-3 step 8 to continue.
7. If the screen remains blank, unlock the drive and remove the diskette. Then, set the power switch to 0 (off) and call your system administrator or authorized service representative for help.

When the Screen Displays a Blinking Cursor After the Power-Up Test

When the screen displays a blinking cursor following the power-up test, the drive might not be locked, the diskette might be inserted incorrectly, or you might have the wrong diskette. Try to correct the problem as follows.

1. Unlock the drive and remove the diskette.
2. Set the VAXmate workstation power switch to 0 (off) and wait 15 seconds.
3. Make sure you have the correct diskette for your system.
4. Make sure the write-protect notch is facing down.
5. Insert the correct diskette for your system in the drive.
6. Make sure to lock the drive.
7. Set the VAXmate workstation power switch to 1 (on). The power-up test runs again.
8. If the screen displays your system start up screen, go to page 3-3, step 8 to continue.
9. If the screen still displays the blinking cursor after the power-up test, unlock the drive and remove the diskette. Then, set the power switch to 0 (off) and call your system administrator or authorized service representative for help.

Chapter 4
Testing, Formatting, and Installing Software on the Hard Disk

This chapter describes how to run the extended self-test, the FDISK utility (which partitions the drive), the FORMAT utility (which formats the drive), and how to install software on the hard disk. If you are using a key diskette, do not type INSTALL until this guide tells you to do so.

> ***CAUTION***
> If the hard disk already contains data, or you are reinstalling the expansion box, run the extended self-test only. Do not run the FDISK or FORMAT utilities. These utilities destroy any data on your hard disk.

> ***NOTE***
> If you are installing the expansion box for the first time, there is no data on the hard disk.

Before you begin, make sure the VAXmate workstation and expansion box are fully connected. Do this by pressing down firmly on the VAXmate workstation.

When the VAXmate workstation and expansion box are not firmly connected, you can get faulty messages when you test, partition, and format the hard disk.

Running the Extended Self-Test

The extended self-test takes about five minutes to complete. It prepares the VAXmate workstation to recognize the presence of all hardware and options and further tests the circuitry, video, and VAXmate options.

You can see Chapter 7, Owners Information, for more information about the test, but you do not need to read that information at this time. Use the following guidelines when running the extended self-test.

- Run the extended self-test when you install the expansion box for the first time and every time you separate the VAXmate workstation and expansion box.
- Run the extended self-test from the operating system prompt.
- Run the extended self-test with a formatted high-density diskette in the diskette drive (your key or standalone diskette).

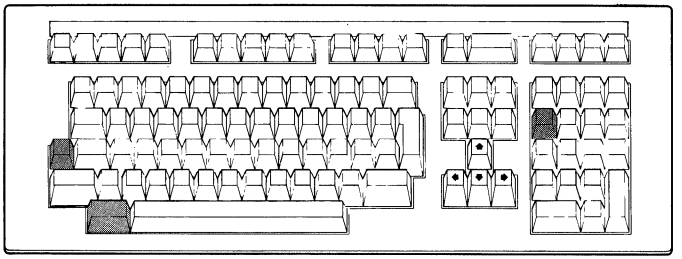
Run the extended self-test as follows.

1. Lock the diskette drive. (Your diskette should still be in the diskette drive).
2. Set the power switch to 1 (on).

   The VAXmate workstation performs the power-up test and then displays your start-up screen.

   NOTE
   If you are using a key diskette, do not type INSTALL yet.

3. At the MS-DOS operating system prompt (**A>**), press the **Ctrl** (control), **Alt** (alternate), and **Home** keys at the same time. The test now runs.



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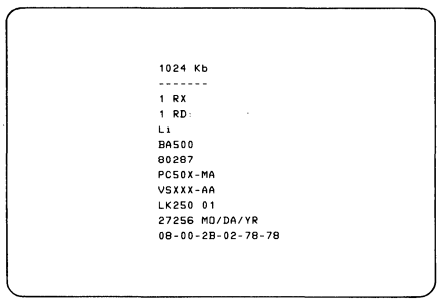
During part of the test it is normal for the VAXmate workstation to flash patterns on the screen.

When the extended self-test is complete, the system displays its configuration screen. Your screen display may be different than the one shown here.

NOTE
The screen should list all the options that you installed, including the hard disk drive, the expansion box (BA500), and the expansion box battery (Li).



LJ-1031

4. If the VAXmate workstation displayed a number, see Chapter 8, Problem Solving (page 8-1).
5. If the VAXmate workstation did not list all the options you installed, turn your system off, then turn it back on and run the extended self-test again.

   If the option is still not listed, call your system administrator or authorized service representative.
6. Press any key.

   The VAXmate workstation exits from the extended-self test.

   If you are using a key diskette, your VAXmate workstation displays the start-up screen again. Do not type **INSTALL** yet.

   If you are using the standalone or MS-DOS diskette, your VAXmate workstation displays the **A>** prompt.

Running the FDISK Utility

CAUTION
If the hard disk already contains data, do not run the following FDISK or FORMAT utilities. These utilities erase all data from the hard disk.

1. At the **A>** prompt, type:

   FDISK <Return>

   The FDISK main menu is displayed.

   During this procedure, you will be instructed to choose menu selections 1, 2, 3, 5, and 8 from the FDISK main menu. Use the number keys on the main keyboard to enter the selections.

   After you make the selections (some selections can take several minutes to process) the FDISK main menu is displayed again.

   Follow these instructions carefully. After you enter a selection and press **Return**, you cannot stop the command execution. The only exception is selection 2, Initialize the drive, where you are given a chance to change your mind.

   Enter your selection by typing a number followed by **<Return>.**

```
Hard Disk Setup Program Version 1.00
(C) Copyright 1985, by Digital Equipment Corporation

Drive type is: RD

Hard Disk disk partitions:

Startup priority: floppy disk, hard disk, network.

     1. Set drive type.
     2. Initialize the drive. (WARNING: erases the entire drive)
     3. Add a partition.
     4. Delete a partition.
     5. Set the startup partition.
     6. Prepare drive for shipping.
     7. Select network startup priority.
     8. Exit from this program.

Enter your selection by typing a number followed by (Return) or by
pressing the corresponding function key:
```

LJ-0989

2. Choose the **Set drive type** option from the FDISK main menu by typing:

   1 <Return>

   The FDISK utility displays another menu.

   Follow directions on the screen to choose your drive type.

   - Type 1 for RD31.
   - Type 2 for RD32.

3. Choose the **Initialize the drive** option from the FDISK main menu by typing:

   2 <Return>

NOTE
If you want to stop the initialization process, press **Return** to return to the FDISK start-up menu.

   Now press **<F10>**.

4. Choose the **Add a partition** option from the FDISK main menu by typing:

   3 <Return>

   The FDISK utility displays an instructional screen. When you create a partition, indicate the size as a percentage of the whole, such as 100 (100%). DIGITAL recommends that you create one partition of 100 percent.

5. Create one partition on the hard disk drive by typing:

   100 <Return>

   This creates partition C:.

6. Choose the **Set the start-up partition** option from the FDISK main menu by typing:

   5 <Return>

   The FDISK utility displays another menu. The start-up partition is the partition from which the MS-DOS operating system starts.

7. Choose partition C: from this menu as the start-up partition by typing:

   1 <Return>

   The FDISK utility displays the FDISK main menu and lists partition C: as the start-up partition.

8. Choose the **Exit from this program** option from the FDISK main menu by typing:

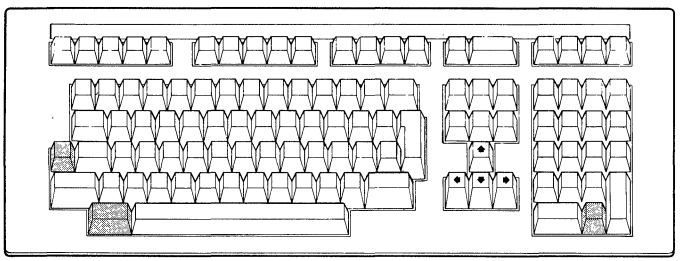
   8 <Return>

   When you exit the program, the FDISK utility displays a message that tells you how to restart the system.

9. Follow the instructions on the screen. Press the **Ctrl**, **Alt**, and **Del** keys at the same time.

   The VAXmate workstation displays the start-up screen after a few seconds.

   If you are using the standalone or MS-DOS diskette, enter the time and date again. You are now ready to format partition C:.



LJ-0991

The VAXmate workstation displays the start-up screen after a few seconds.

If you are using the standalone or MS-DOS diskette, enter the time and date again. You are now ready to format partition C:.

Running the Format Utility

CAUTION
If your hard disk contains data, do not run the following FORMAT utility.

Formatting places a part of the MS-DOS operating system on the partition. If you later choose to create more than one partition, you must format each partition.

NOTE
When you type the **FORMAT** command, enter all the spaces exactly as shown.

1. At **A>** prompt type:

   FORMAT C: /S <Return>

   The FORMAT utility displays the following warning.

```
WARNING, ALL DATA ON NON-REMOVABLE DISK
DRIVE C: WILL BE LOST!
Proceed with Format (Y/N)?
```

   The **FORMAT** command with the /S switch formats the partition and copies the IO.SYS, MSDOS.SYS, COMMAND.COM and the boot loader files to the partition. This lets you start the system from drive C:.

2. **Type Y <Return>.**

   The FORMAT utility displays a message telling you how to continue or abort. If you do not want to continue you can stop the FORMAT utility by pressing the **Ctrl** key and **C** at the same time.

3. Press **Return.**

   The FORMAT utility counts the cylinders as each cylinder is formatted and verified.

   When formatting is complete, the system prompts you for a label (name) for the partition.

4. Follow the directions on the screen. After the question mark, type a name (up to 11 characters) and press **Return.**

   If you do not want to label your drive, do not type a name, just press **Return.**

   The VAXmate workstation displays a message telling you how many bytes are available on the hard disk. The numbers your VAXmate workstation displays can be different. Follow whichever instructions in step 5 that are appropriate for your system.

```
21277720 bytes total disk space
   65536 bytes used by system
    6291 bytes used by bad sectors
21205893 bytes available on disk
```

5. **If you are using a key diskette** – the screen displays the **A>** prompt. Go to Installing Software on the Hard Disk.

   If you are using the S/A Install diskette – press the **Ctrl, Alt,** and **Del** keys at the same time. The start-up screen is displayed. Enter the time and date again. Then, go to Installing Software On the Hard Disk.

   If you are using the MS-DOS diskette – go to Installing Software On The Hard Disk.

Installing Software on the Hard Disk

See the following instructions for the type of system you are installing.

Are You Using the MS-DOS Diskette and Preparing to Install the VAXmate Server Software?

1. Unlock the diskette drive and remove the MS-DOS diskette.
2. Turn off the VAXmate workstation and go to the Introduction in your System Administrator's documentation. Follow all the instructions carefully.

   NOTE
   If you have industry-standard options to install in the expansion box, do so after you install the server software. Go to Chapter 5, Install Industry-Standard Options (page 5-1) in this guide for instructions.

Are you using the key diskette?

Install your key diskette software on the hard disk drive as follows.

1. At operating system **A>** prompt type:

   Install <Return>

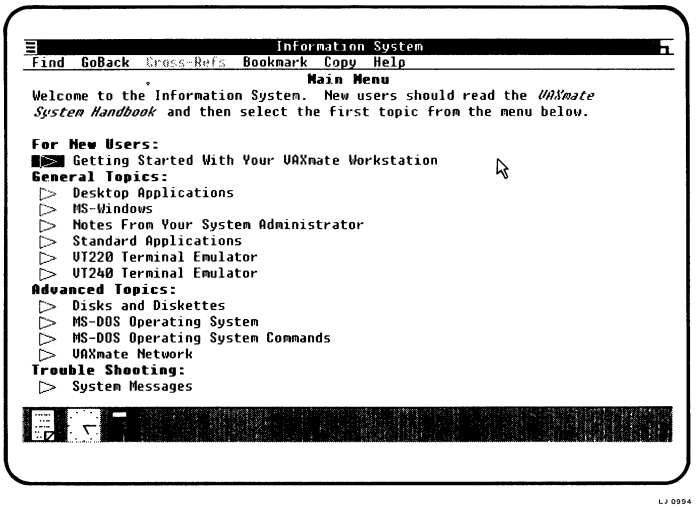
   The screen displays the name of each file as it is copied onto the hard disk from the key diskette.

2. Type your password if the screen prompts you for one. Then, press **Return**.

   When all the files and connections are complete, the system displays a screen similar to the following screen. Do not do anything with this screen until you are instructed to do so by your *VAXmate System Handbook*.

   This screen is the first screen of the Information System, a software program that runs with MS-Windows.

3. The expansion box and your software is now installed. Go to What To Do Next on page 4-10.



Are you using the VAXmate S/A Install Diskette to install a standalone system?

Instructions on the screens describe when to change diskettes and which diskettes to use.

1. Follow the instructions carefully. It will take about 25 minutes to install your software on the hard disk.

   You will be prompted to insert the diskettes you received with your standalone kit.

   NOTE
   Make sure the diskette drive LED is off before you remove a diskette. Also, make sure the diskette write-protect notch faces down, and that you lock the diskette drive.

2. Press any key when you are ready to continue.

   The system automatically starts the diskette and copies the files to the hard disk drive. When all the files are copied onto the hard disk, the screen prompts you for the next diskette. Wait for this message before you change any diskette.

   If you insert the wrong diskette, the screen prompts you to insert the correct diskette.

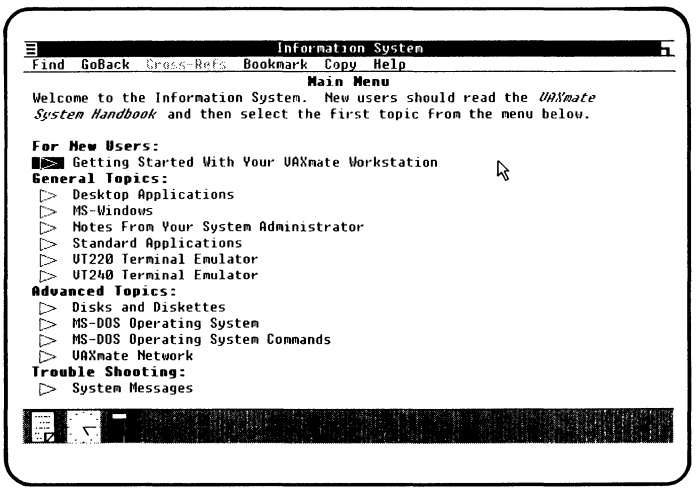
3. Remove the S/A Install diskette and store it with the other diskettes in a safe place.

4. Reset the system by pressing the **Ctrl**, **Alt**, and **Del** keys at the same time.

   The VAXmate workstation starts from the hard disk drive and displays a screen similar to the one shown here.

   This is the first screen of the Information System, a software program that runs under MS-Windows. Do not do anything with this screen until you are instructed to do so by your *VAXmate System Handbook*.

5. The expansion box and your software is now installed. Go to What to do Next.



LJ 0994

What to do Next

Are you installing the expansion box for the first time with no industry-standard options?

Go to Chapter 3, Working With MS-Windows, in your *VAXmate System Handbook*. Follow the procedures in order. Save this book for future reference.

> ***NOTE***
> The next time you turn on the VAXmate workstation you do not need to use your key diskette or standalone diskette. The VAXmate workstation automatically starts from the hard disk.

Are you installing the expansion box for the first time and have industry-standard options to install?

1. Unlock the diskette drive and remove any diskette from the diskette drive.
2. Turn off the VAXmate workstation and go to Chapter 5, Installing Industry-Standard Options (page 5-1).

Are you familiar with the VAXmate MS-Windows software, and have no industry-standard options to install?

1. Unlock the diskette drive and remove any diskette from the diskette drive. Store your diskette in a safe place.
2. Turn off the VAXmate workstation.

   NOTE
   The next time you turn on the VAXmate workstation you do not need to use your key diskette or standalone diskette. The VAXmate workstation automatically starts from the hard disk.

Chapter 5
Installing Industry-Standard Options in the Expansion Box

This chapter describes how to install industry-standard options in the expansion box.

> ***CAUTION***
> Static electricity can damage the option boards. Avoid touching the board components whenever possible.

Never install an option board, or combination of option boards, that use more than 19 watts total. See your option documentation or sales representative for your option's wattage requirements.

Make sure the expansion box has been tested by running the extended self-test before you install any industry-standard options.

Run the extended self-test after you complete installing your option(s) (see Chapter 6, Run Extended Self-Test after Reconnecting Expansion Box).

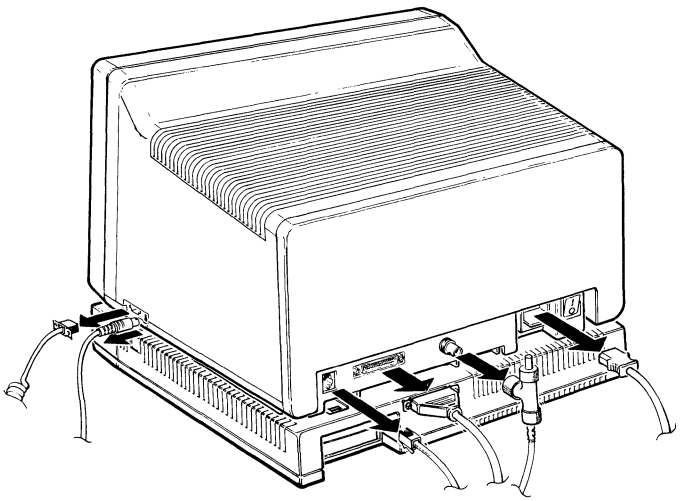
Is a modem installed in the VAXmate workstation?

Run the system power-up test to test the modem, then disable the modem power-up test as instructed in this chapter. Chapter 7, Owner's Information, has an explanation, but you do not need to read that now.

Prepare the expansion box and VAXmate workstation.

If a ThinWire Ethernet cable is connected to the VAXmate workstation, tell your system administrator that you are going to disconnect the T-connector from the VAXmate workstation.

1. Remove any diskette from the drive.
2. Make sure the VAXmate workstation power switch is set to 0 (off).
3. Disconnect all cables from the VAXmate workstation and expansion box.



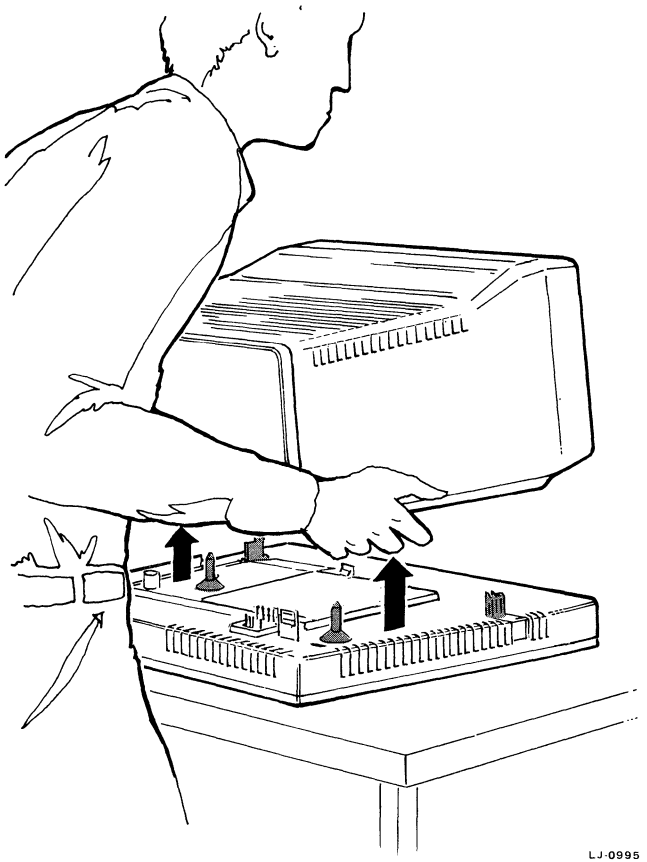
LJ-0817

4. If present, remove the ThinWire Ethernet cable T-connector from the back of the VAXmate workstation, but do not remove the ThinWire cable from the T-connector.

WARNING
In the U.S. and Canada, if telephone cables are connected to the VAXmate workstation, first disconnect the telephone cable from the wall, then, from the VAXmate workstation.

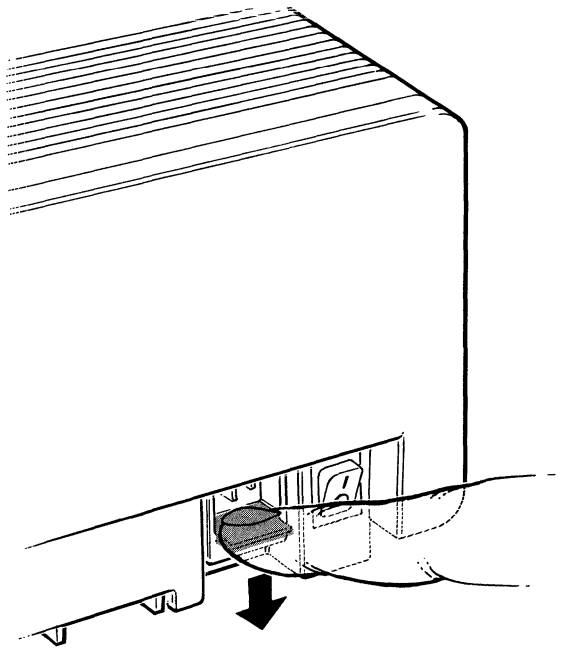
Separate the VAXmate workstation from the expansion box.

1. Press down on the rear expansion box lock.
2. Gently pry up both rear corners of the VAXmate workstation.
3. Press down on the two side expansion box locks.
4. Lift the VAXmate workstation straight up and set it aside.
5. If you do not have a modem installed in the VAXmate workstation, go to page 5-7 to continue.



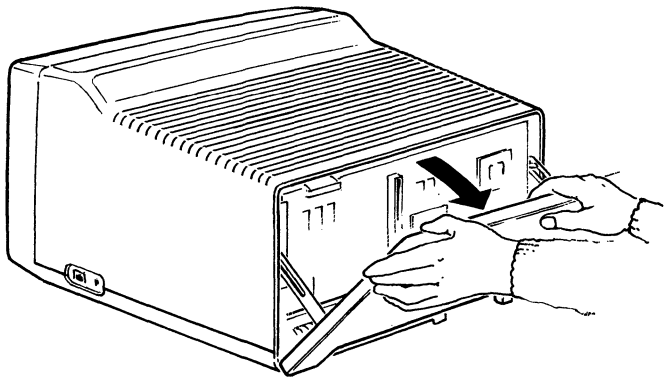
Disable the modem power-up test.

1. Unlock the VAXmate workstation rear door.



LJ-0717

2. Open the rear door.

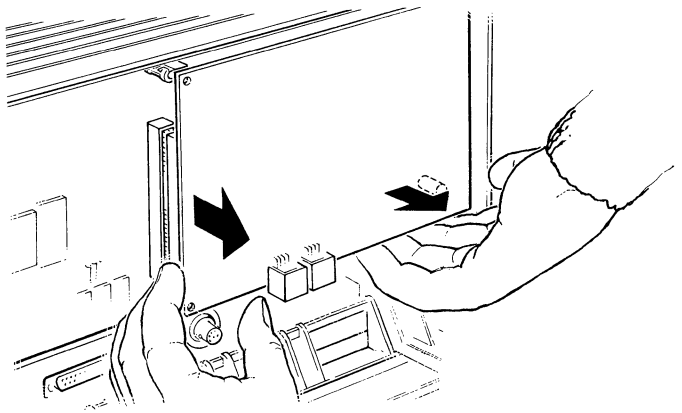


LJ-0718

3. Remove the modem as follows.

   a. If a memory option is also installed in the VAXmate workstation, remove it before trying to remove the modem.

   b. Release the modem standoff and gently pull the modem straight out.

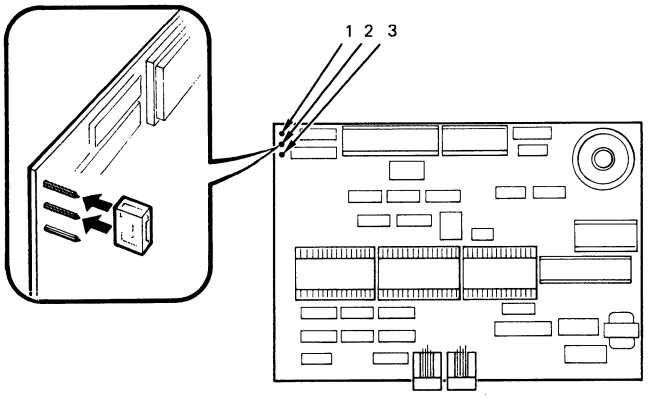


LJ-0920

4. Move the modem jumper clip to pins 1 and 2 as follows.

   a. Use your finger or needle-nose pliers to remove the jumper clip from pins 2 and 3. Then, pull the jumper clip straight up.

   b. Place the jumper over pins 1 and 2 and press firmly into place.

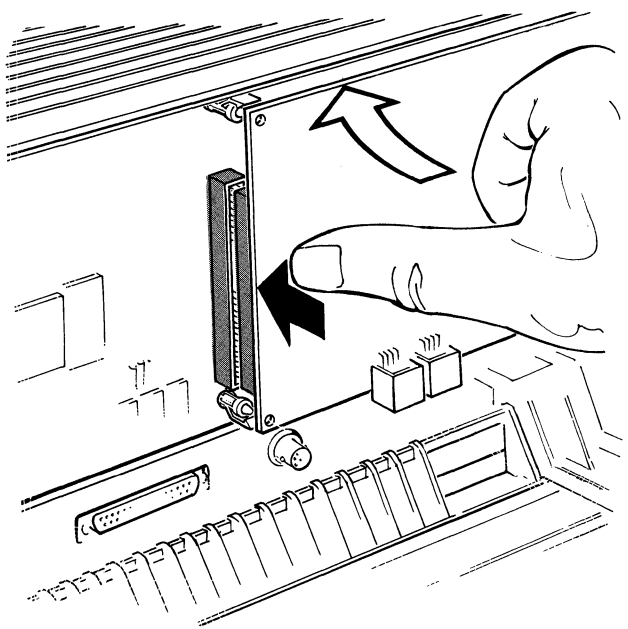


LJ-0921

5. Install the modem in the VAXmate workstation as follows.

   a. If you have a memory option, install it after you install the modem.

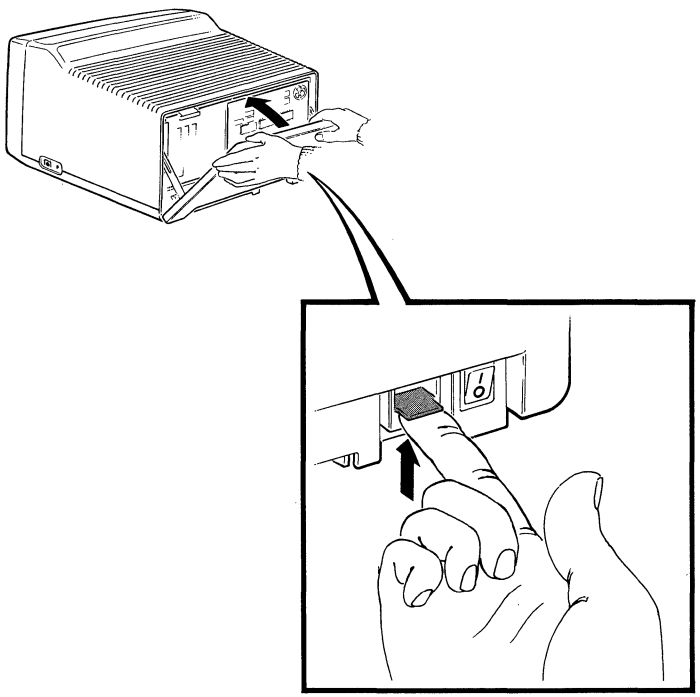
   b. Tip the upper edge of the modem into the VAXmate workstation. Then, line up the connector and press firmly into place.



LJ-0719

6. Close and lock the rear door.

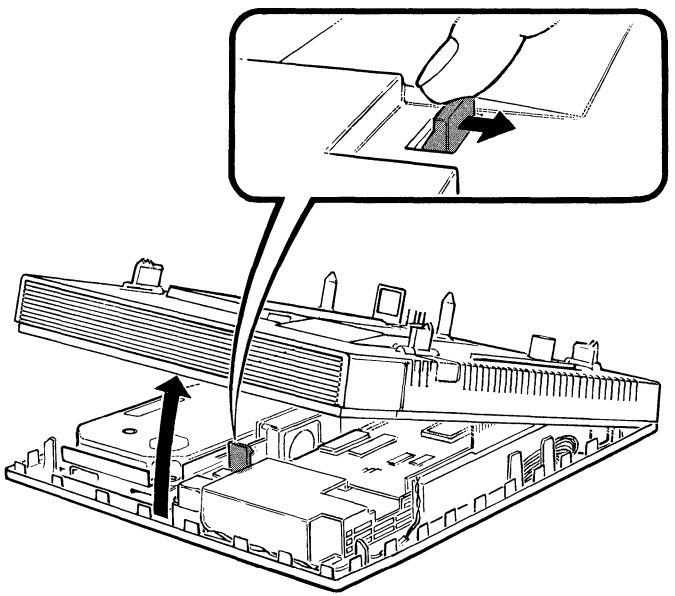
   WARNING
   Do not operate this unit with the rear door open.



LJ-0996

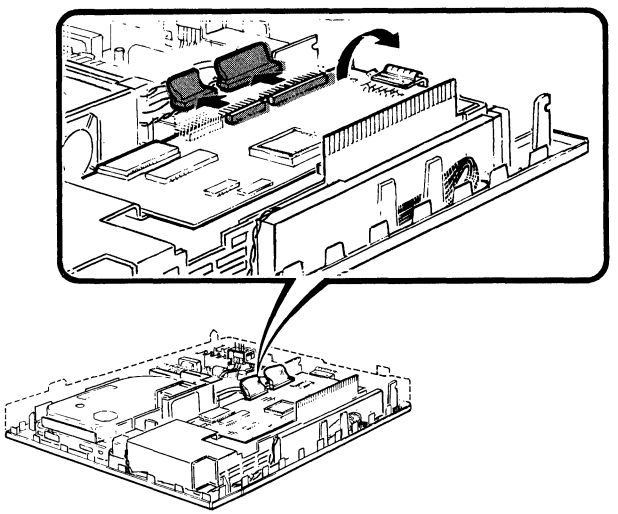
Install options in the expansion box.

1. Release the expansion box cover lock.
2. Lift the front edge of the cover, then lift off the cover.



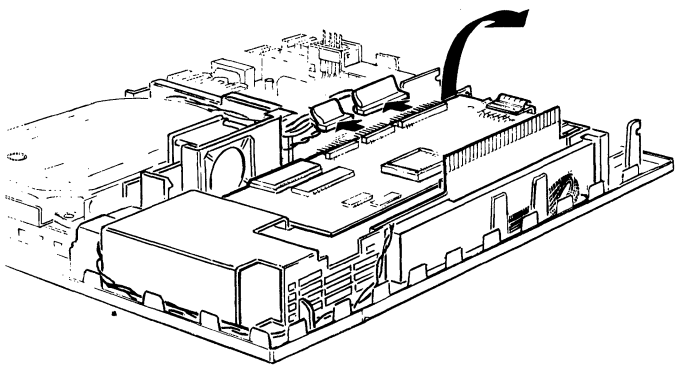
LJ-0819

3. Disconnect the hard disk drive cables from the controller board.



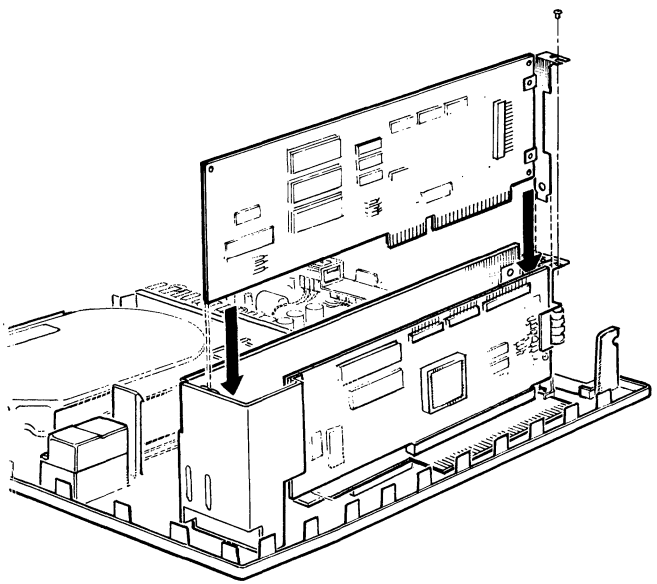
LJ-0820A

4. Tip the card cage on its back.



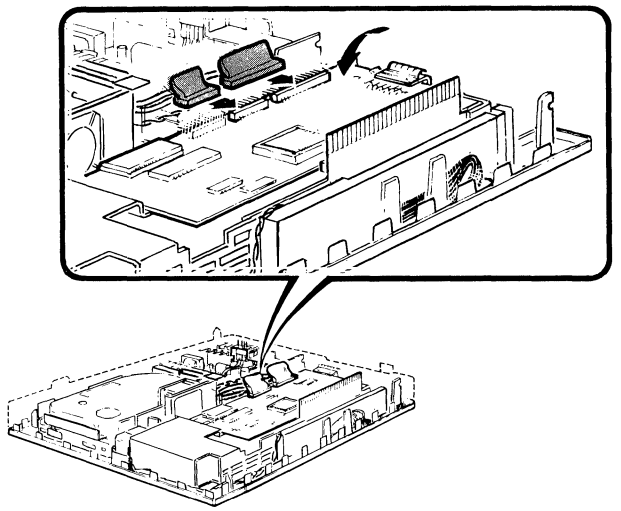
LJ-0820

5. Install your industry-standard option in either option slot.
6. Make sure the option connectors are firmly installed.
7. Secure the option with the screw as shown.



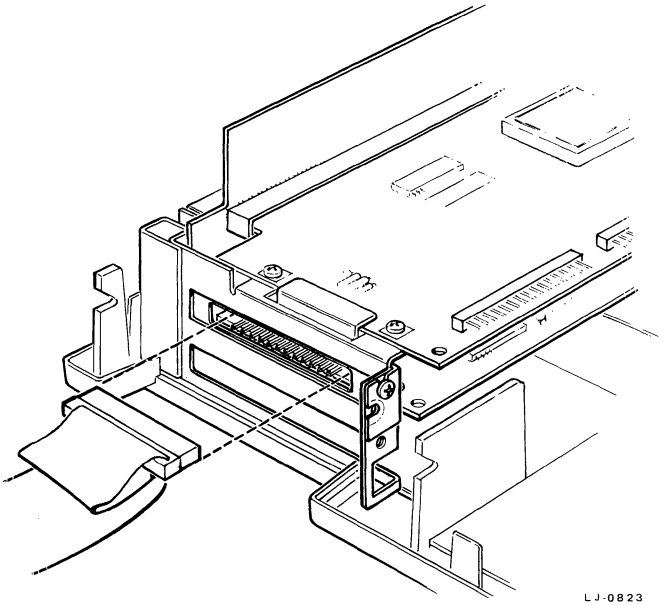
LJ-0821

8. Tip the card cage back into place.
9. Connect the hard disk drive cables to the controller board.
10. Make sure the cable connectors are seated correctly on the pins.



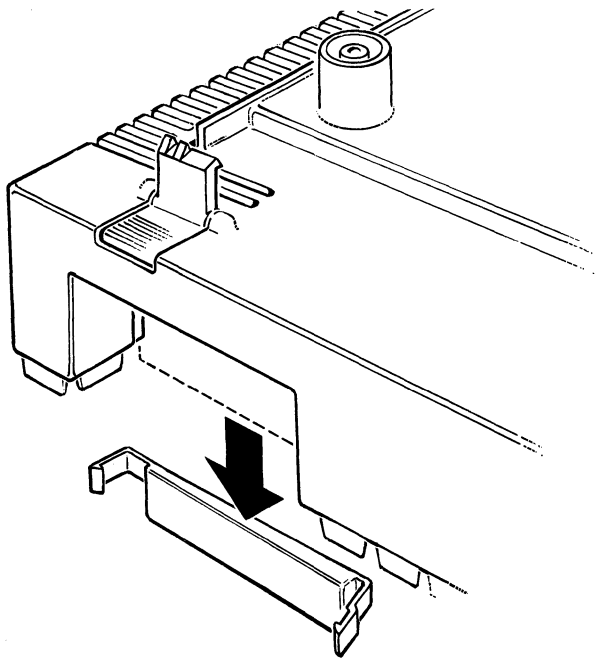
LJ-0820A1

11. Connect the cable for your option (if present). Follow the instructions provided with your option to install the cable and any device shipped with your option module.



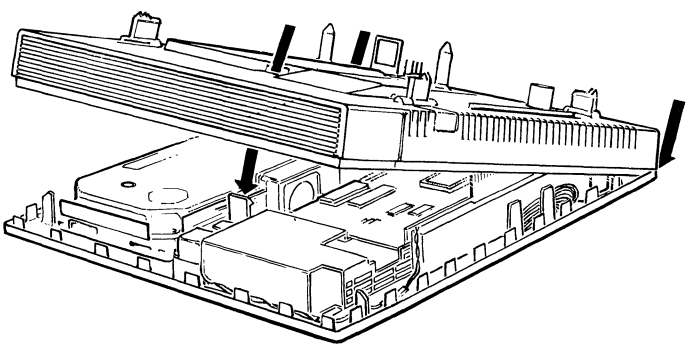
LJ-0823

12. If you installed an option cable, remove the cable access plate from the top cover.



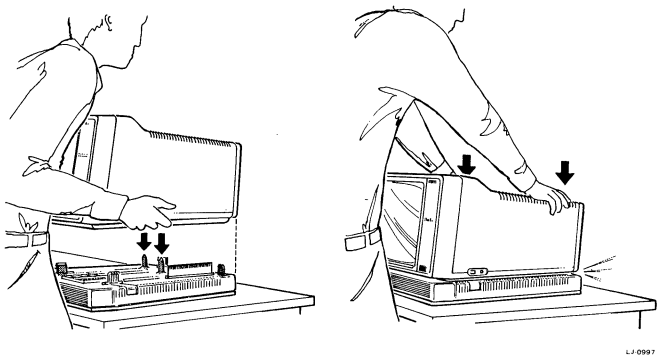
LJ-0824

13. Replace the expansion box cover as follows.
    a. Lower the back corners of the cover into the groove on the back of the base.
    b. Make sure the corners are seated correctly.
    c. Make sure all the wires are inside the expansion box base so they do not interfere with the cover and the tabs that stick up around the perimeter of the base.
    d. Lower the cover into place.
    e. Make sure the cover lock latches.



LJ-0819A

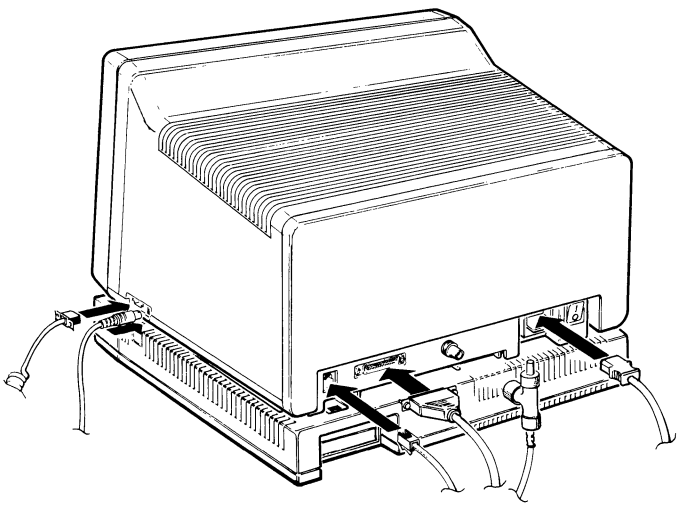
14. Hold the VAXmate workstation over the expansion box and lower it onto the expansion box.
15. Press the VAXmate workstation firmly into place. You should hear the expansion box click into place.



16. In the U.S. and Canada, connect any telephone cables that you removed.

    WARNING
    First connect the telephone cable to the VAXmate workstation, and then to the wall.

17. Connect all cables except the ThinWire Ethernet cable. You will be instructed to connect this cable after you run the extended self-test.



18. Go to the next chapter to run the extended self-test.

Chapter 6
Running Extended Self-Test After Reconnecting VAXmate Workstation

You must run the extended self-test every time you reconnect the expansion box to the VAXmate workstation. You must toggle the power switch first, as described in this chapter. This toggling sets a bit in the VAXmate workstation. You must also insert a formatted high-density diskette (your key or MS-DOS diskette) in the diskette drive. If no diskette is present, the extended self-test reports a problem with the diskette drive.

> ***NOTE***
> The extended self-test does not test industry-standard options installed in the expansion box.

> ***CAUTION***
> Whenever you have industry-standard options installed in the expansion box, make sure that the ThinWire Ethernet cable is NOT connected to the VAXmate workstation when you run the extended self-test.

Chapter 7, Owner's Information, has more information about the necessary conditions for running the extended self-test, but you do not need to read that information now.

Toggle the power switch.

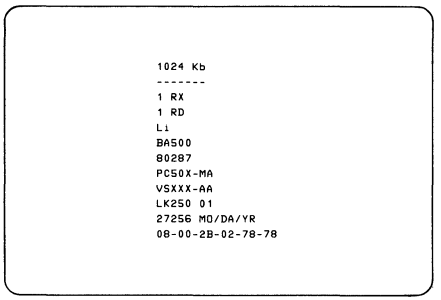
1. Set the VAXmate workstation power switch to 1 (on). The power-up test starts.
2. Set the power switch to 0 (off) after about 15 seconds or when the test bar disappears and lines flash on and off in the upper portion of the screen. Chapter 7, Owner's Information has more information about this procedure, but you do not need to read that information now.
3. Insert a formatted high-density diskette in the diskette drive and lock the diskette drive.
4. Leave the power off for about 15 seconds and then set the power switch to 1 (on).

Run the extended self-test.

You are ready to run the extended self-test when the power-up test is complete and the red LED on the diskette drive goes off, or the screen displays the operating system prompt (**A>**).

1. Press the **Ctrl**, **Alt**, and **Home** keys at the same time.

   The extended self-test takes about five minutes to run. When the extended self-test is complete, the screen displays a list similar to the following screen.



LJ-1031

2. To end the test, press any key. Do not follow any instructions that might be displayed on the screen.

   If a VAXmate workstation option, the expansion box, the hard disk drive, or the battery are not on the list, turn your system off and back on, then run the extended self-test again. If an option is still missing, call your system administrator or authorized service representative.

   If the VAXmate workstation displayed a number, see Chapter 8, Problem Solving (page 8-1).
3. Unlock the diskette drive and remove the diskette.
4. The option boards are now installed and the extended self-test is complete. Go to What to do Next (page 6-3).

What to do Next

Are diagnostics or checkout procedures provided with your industry-standard option?

See the documentation provided with your option for instructions. Then, return here.

Did you remove the ThinWire Ethernet cable from the VAXmate workstation?

1. Reconnect the ThinWire Ethernet cable T-connector to the back of the VAXmate workstation. Do not remove the ThinWire cable from the T-connector.
2. Tell your system administrator that you reconnected the ThinWire Ethernet cable.

Is this the first time you are using the VAXmate workstation and VAXmate MS-Windows software?

1. Press the **Ctrl**, **Alt**, and **Del** keys at the same time. This restarts the VAXmate workstation from the hard disk drive.

   If you have a networked system, type a password if the screen prompts you for it, then press **Return.**
2. The DIGITAL logo is displayed followed by the first Information System screen. Do not do anything at this screen until instructed to do so by your *VAXmate System Handbook*.
3. Go to Chapter 3, Working With MS-Windows, in your *VAXmate System Handbook*. Follow the procedures in order. Save this book for reference.

Are you already familiar with the VAXmate MS-Windows software?

1. If you want to use the VAXmate workstation now
   a. Remove the diskette from the drive.
   b. Start the system from the hard disk by pressing **Ctrl**, **Alt**, and **Del** at the same time.
2. If you want to continue at a later time, remove the diskette from the drive and set the power switch to 0 (off).

   NOTE
   The next time you turn on the VAXmate workstation, it starts automatically from the hard disk drive.

Chapter 7
Owner's Information

This chapter has information about the expansion box that you might need, including the following topics.

- Expansion box components
- Expansion box LED
- Power requirements for expansion box option boards
- Expansion box battery
- Toggling the power switch and running extended self-test
- When to separate the expansion box and VAXmate workstation
- Partitioning the hard disk
- Using a modem when you have an expansion box
- Using Industry-Standard Video Options
- Preventing hard disk problems

Expansion Box Components

The expansion box contains the following components.

- Hard disk drive
- Card cage with three option slots used as follows

  Hard disk drive controller board (top slot)
  Industry-standard options (bottom two slots)
- Power regulator that distributes power from the VAXmate workstation to the expansion box card cage and hard disk drive
- Light emitting diode (LED) on the power regulator
- Battery for the VAXmate workstation event timer

Expansion Box LED

The expansion box has a green light emitting diode (LED) that you can see through the left side air vents (when facing the front) when power is applied to the expansion box. When on, this LED indicates that the expansion box is receiving power from the VAXmate workstation. See Problem Solving if the LED fails to come on.

Power Requirements for Expansion Box Option Boards

The VAXmate workstation power supply and expansion box power regulator provide a total of 28.5 watts of power to the expansion box card cage, 9.5 watts per option slot. The hard disk controller occupies the top slot. A total of 19 watts is available for the industry-standard options you can install in the remaining two option slots.

> ***CAUTION***
> Never install option boards that exceed the available expansion box wattage supply.

A single option or combination of industry-standard options that needs more that 19 watts can:

- Damage the expansion box or option board connectors and circuitry.
- Blow the VAXmate workstation fuse.
- Burn out the VAXmate workstation power supply.

See your option documentation or sales representative to determine the wattage requirements for the industry-standard options that you want to install.

Expansion Box Battery

The expansion box battery provides power for the VAXmate workstation time of day clock and event timer.

For the VAXmate workstation to recognize the presence of the battery, you must toggle the power switch to reset a bit in the VAXmate workstation. Then, you must run the extended self-test to register the battery and expansion box with the VAXmate workstation.

Toggling the Switch and Running the Extended Self-Test

1. Turn the VAXmate workstation power switch on and wait about 15 seconds, or until the video test begins. (The test bar disappears and lines flash on and off on the upper portion of the screen.)
2. Set the VAXmate workstation power switch to off and wait about 15 seconds. This lets the disk drives spin down.
3. Insert a formatted high-density diskette in the diskette drive. You can use your key diskette or MS-DOS diskette.
4. Set the VAXmate workstation power switch to 1 (on).

   When the power-up test is complete, run the extended self-test by pressing **Ctrl**, **Alt**, and **Home** at the same time (also see page 6-2).

A formatted, high-density diskette must be in the diskette drive, otherwise, the system screen displays a error number.

When an industry-standard option is installed in the expansion box, you must disconnect the ThinWire Ethernet T-connector from the VAXmate workstation before you run the extended self-test. This lets the extended self-test complete correctly. Remember to reconnect the T-connector when you are done testing. See Using Industry-Standard Video Options in this chapter for more information.

When to Separate the VAXmate Workstation and Expansion Box

Separate the VAXmate workstation and expansion box whenever the following conditions occur. Always run the extended self-test when you reinstall the expansion box.

- You want to move the VAXmate workstation and expansion box to a new location. The VAXmate workstation and expansion box together weigh 44.5 lb (20.1 kg). If you have a networked system, tell your system administrator that you are disconnecting the T-connector from the VAXmate workstation.
- You want to install an industry-standard option in the expansion box.
- You need to replace the VAXmate workstation fuse.
- You want to install an integral modem and have industry-standard options installed in the expansion box. See Using the Integral Modem When You Have an Expansion Box.

Partitioning the Hard Disk

You can divide the hard disk into up to four partitions. Partitions make it easier for you to organize information stored on your hard disk.

DIGITAL requires only one partition on the hard disk for standalone systems. DIGITAL recommends only one partition for other systems.

You can check the size and label of the partitions on your hard disk by starting the FDISK utility. The first screen displays the size and label of the current partitions. Pressing the 8 key exits you from this utility.

See your Information System or *VAXmate User's Guide* for more information about partitioning and formatting your hard disk.

Using the Integral Modem When You Have an Expansion Box

When you have an integral modem and expansion box, some industry-standard options can cause the modem power-up tests to malfunction or prevent you from using both the modem and the option. These industry-standard options use the same expansion ROM address space in the VAXmate workstation as the modem. The address space is 0C0000H through 0EFFFFH.

DIGITAL recommends that you disable the modem power-up tests whenever you install any industry-standard option in the expansion box. It might be difficult to tell if the option uses the same expansion ROM address space.

You can disable the modem power-up tests by moving a jumper on the modem module.

Modem Jumper Location and Setting

The modem jumper on the upper left corner of the board lets you enable and disable the modem power-up tests. The factory configuration of the jumper (pins 2 and 3) enables all tests.

Setting the jumper to pins 1 and 2 disables the modem power up test. The jumper setting does not affect modem tests that you can run by using the modem test commands described in the *VAXmate Modem User's Guide*. This guide is shipped with the modem.

Using Industry-Standard Video Options

Some industry-standard video options contain on-board firmware that substitutes its own interrupt vectors for the normal VAXmate INT 10H interrupt vectors during testing.

You can help avoid problems during testing by removing the ThinWire Ethernet cable T-connector from the back of the VAXmate workstation when you run the extended self-test.

DIGITAL recommends that you always disconnect the ThinWire T-connector whenever you run the extended self-test with any industry-standard options installed in the expansion box. It might be difficult to tell if the option firmware interfered with the VAXmate firmware.

If you install one of these industry-standard video options in the expansion box, the VAXmate diagnostics do not test it. The VAXmate workstation display of diagnostic progress and results might be difficult or impossible to interpret. This display can vary from a totally blank screen to a frozen screen of information, depending on the type of video option and the history of operations performed.

The following list describes some test results you might see when you have video options that emulate a monochrome display, a color graphics display, or a combination monochrome/color display.

Monochrome Display

- During the power-up test, the test bar appears normal on the VAXmate workstation screen.
- During the extended self-test, the VAXmate workstation displays the test bar and configuration list. The configuration list remains on the screen until you turn off the VAXmate workstation.

Color Graphics Display

The power-up test and extended self-test disable the VAXmate workstation video and try to use the option. Because all diagnostic displays use INT 10H functions, the test results depend on how the option responds to commands from the VAXmate firmware.

Monochrome/Color Graphics Display

The power-up test and extended self-test disable the VAXmate workstation video and try to use the option's graphic functions. The test results depend on how the option responds to commands from the VAXmate firmware.

Preventing Hard Disk Problems

Use the following guidelines to help prevent problems with your hard disk drive.

- Backup all files on the hard disk on a regular basis by using the back-up command. Also keep a backup copy on diskette(s) to recover information in the case of accidental loss. See your Information System or *VAXmate User's Guide* for instructions.
- Do not switch the system off while you are editing or entering text on the hard disk. You might lose information.
- Back up all files on the hard disk if you want to change partition size.
- Static electricity can add extra characters or garble the text on your hard disk. Help prevent static electricity by using antistatic mats around the VAXmate workstation.

Chapter 8
Problem Solving

Use the tables in this Chapter to help isolate a problem when you are installing or using the hard disk drive, or when you have options installed in the VAXmate system unit.

Table 1 lists symptoms, their probable cause, and possible solutions. Table 2 lists some power-up test messages, their probable cause, and possible solutions.

In all cases, if you can not solve the problem, run the extended self-test to try to isolate the problem. Then, call your system administrator or authorized service representative for help. Note any symptoms and messages that the VAXmate workstation displays.

Problem Solving by Using Symptoms

Problems can occur that are not isolated by the VAXmate workstation power-up test. Use Table 1 to help solve problems related to the expansion box.

Table 1 Symptoms

Symptom	Probable Cause	Solution
Expansion box LED did not come on.	Expansion box and workstation are not connected correctly.	Press down firmly on the back of the VAXmate workstation.
	Fuse is blown due to excessive wattage of industry-standard option board.	Remove industry-standard option and replace the fuse (see your *VAXmate System Handbook*).
	Thermal shut down occurred.	Allow the VAXmate workstation to cool a few minutes. Make sure all vents are not obstructed and that the temperature of the room does not exceed 90° F (18° C).
System does not start and system LED is off.	Power cord is unplugged or no power exists at outlet.	Firmly connect the power cable. Test wall outlet with a lamp if necessary.
	Fuse is blown.	Separate the VAXmate and expansion box. Replace the fuse (see your *VAXmate System Handbook*). Press the VAXmate firmly onto the expansion box.

Table 1 Symptoms *(cont.)*

Symptom	Probable Cause	Solution
	Expansion box option board(s) exceeds the wattage limit of the expansion box option slots and blew the fuse.	The total wattage limit of the expansion box option slots is 19 watts. Check your option board manuals or consult your sales representative. Remove the appropriate board and replace the fuse. Do not remove the hard disk controller.
Power is on but screen remains blank.	Expansion box might not be fully connected.	Press down firmly on the VAXmate workstation to correctly connect the expansion box. If the problem persists, call your system administrator or service representative.
Screen displays the number 83.	Hard disk is newly installed and not formatted.	Run the FDISK and FORMAT utilities from the MS-DOS operating system.
Screen displays a number begining with 4, 5, 7, 8, or 9.	An option is loosely connected.	Firmly connect the option and any option cables. See Table 2 to identify the option.
Power is on but system does not start from the hard disk.	Diskette is in the diskette drive.	Unlock the drive and remove the diskette. Then, press **Ctrl, Alt,** and **Del** at the same time.
	There is no software on the partition.	Install software on the partition hard disk. See your *Information System*, *VAXmate User's Guide*, or system administrator.
	Requested partition does not exist or is not formatted.	Start the FDISK utility and check the partitions. Format the partition. Repartition if necessary.

Table 1 Symptoms *(cont.)*

Symptom	Probable Cause	Solution
Hard disk cannot read or write information.	Problem exists with the disk drive or drive controller.	Call your system administrator or authorized service representative for help.
Hard disk works but produces extra characters or garbled text.	Hard disk is affected by static electricity	Move system away from any motors, magnetic devices, or photocopiers.
		Increase the humidity in the room and use antistatic mats around the system.
Software that has a time of day clock does not work or does not record the time.	Expansion box and VAXmate workstation have been separated and the extended self-test was not run.	Toggle the power switch and then run the extended self-test from the MS-DOS operating system.
You can not use an option installed in expansion box and a modem is present.	The modem diagnostic jumper is enabled.	Move the modem jumper clip from pins two and three to pins one and two. See pages 5-4 – 5-6 for directions
Extended self-test displays the message 43.	No Diskette is in drive, or diskette is not a formatted high-density diskette.	Make sure to use a formatted high-density diskette.

Problem Solving by Using Power-up Test Numbers

Table 2 lists actions you can take if certain numbers appear on the screen during the power-up self test. The number remains on the screen until you request a system function, such as displaying the directory. As the directory scrolls onto the screen, the number scrolls off the top of the screen.

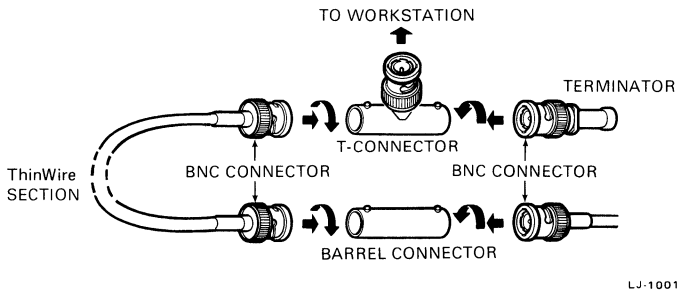
Table 2 Power-Up Test Numbers

Number	Probable Cause	Solution
0 – 40	VAXmate CPU or I/O problem	Call your authorized service representative.
40 – 46	Nonformatted diskette, drive not locked, or diskette inserted wrong.	Use a formatted diskette, insert with notch facing down, and lock the drive. Then, restart the system.
50 – 52	Memory option board is loose.	Reset the memory option board. Then, restart the system.
60	Keyboard cable is loose; or something is pressing on the keyboard during self-test.	Turn off the system. Firmly connect the keyboard cable. Then restart the system.
70 – 82	Problem might be with hard disk drive or hard disk controller.	Turn off, then turn on the system. If the problem persists, call your system administrator or authorized service representative.
83	Hard disk drive is present, but not formatted.	Turn off, then turn on the system. Run the extended power-up test and then the FDISK and FORMAT utilities.
84 – 86	Problem might be with hard disk drive or hard disk controller.	Turn off, then turn on the system. If problem persists, call your system administrator or authorized service representative.
87	Hard disk drive is present, but not formatted.	Turn off, then turn on the system. Run the extended power-up test and then the FDISK and FORMAT utilities.
90 – 99 and 9A	Modem option board or telephone cables are loose.	Reset the modem option board. Firmly connect telephone cables, then restart the system.

Appendix A
ThinWire Ethernet Cable Guidelines

ThinWire Ethernet cable is used to connect your VAXmate workstation to a computer network managed by your system administrator. Your system administrator might ask you to remove your ThinWire cable from your VAXmate workstation from time to time when network testing is necessary.

Use the guidelines in this appendix whenever you handle ThinWire Ethernet cable. The following illustration shows the parts of the ThinWire Ethernet cable.



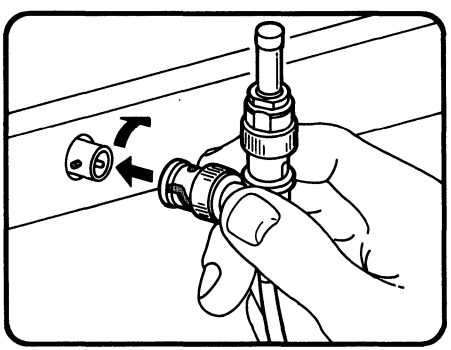
Handling ThinWire Ethernet Cable

Installation

1. Always connect the stem of the ThinWire cable T-connector to the back of the VAXmate workstation as follows.

   a. Match the slots of the T-connector with the posts on the network connector on the back of the VAXmate workstation.

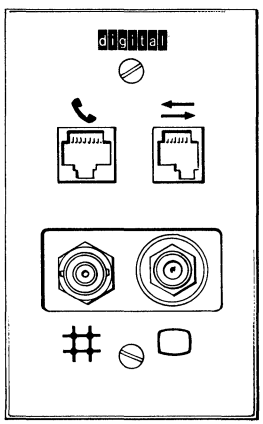
   b. Push the stem of the T-connector onto the network connector and turn the etched part clockwise.

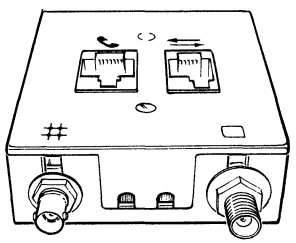


LJ-1000

2. Connect the other end of the ThinWire Ethernet cable to a DIGITAL DECconnect wall or faceplate.

   NOTE
   If a DIGITAL DECconnect wall or faceplate is not present, ask your system administrator for instructions. Do not connect this end of the ThinWire cable anywhere else without more information.





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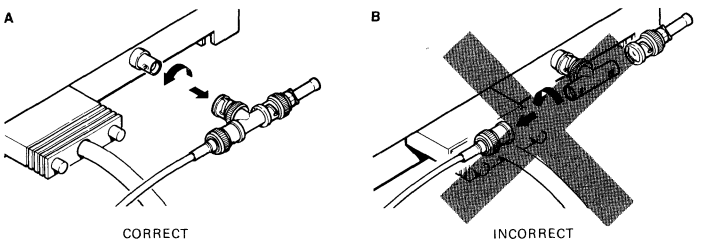
Removal

1. Turn the etched part of the T-connector stem counterclockwise.
2. Remove the T-connector from the back of the VAXmate workstation. Do not disassemble the T-connector. Doing so causes the network to malfunction.



General Rules

- Never remove a ThinWire cable from a T-connector unless your system administrator tells you to do so.
- Never remove a terminator from a T-connector unless your system administrator tells you to do so.
- Never remove the T-connector from the VAXmate workstation until you tell your system administrator you are going to do so.
- Never remove a ThinWire cable from a barrel connector unless your system administrator tells you to do so.

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