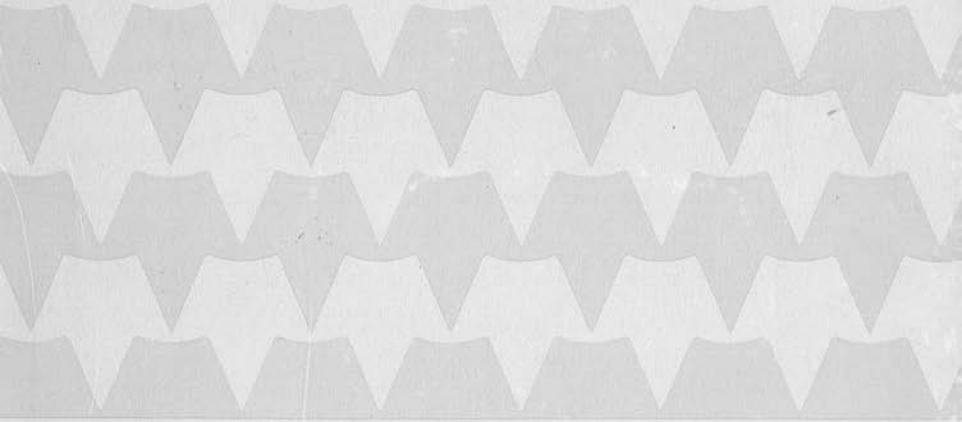
Model 1200 HD

An Introduction & Guide



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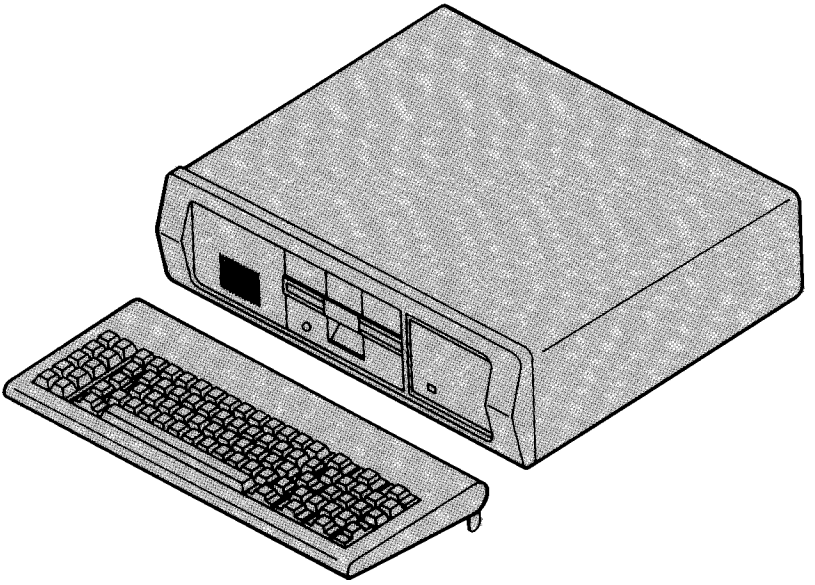

USER'S GUIDE
TANDY 1200 HD COMPUTER

NOTICE

This document, and the information contained herein, is copyright material and may not be duplicated or reproduced, in whole or in part, without the prior written approval of the manufacturer.

This document is intended to provide the user with detailed information adequate for the efficient installation and operation of the equipment involved.

However, while every effort has been made to keep the information contained herein current and accurate as of the date of publication, no guarantee is given or implied as to its accuracy.

CAUTION

This equipment generates and uses radio frequency energy. If not installed and used properly, that is, in strict accordance with the manufacturer's instructions, it may cause interference to radio and television reception. The equipment 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, Part 15, of Federal Communications Commission (F.C.C.) 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:

1. Reorient the receiving antenna.

2. Relocate the computer with respect to the receiver.

3. Move the computer away from the receiver.

4. Plug the computer into a different outlet so that computer and receiver are on different branch circuits.

5. Ensure card mounting screws, attachment connector screws, and ground wires are tightly secured.

6. Ensure card slot covers are in place when no card is installed.

If necessary, the user should consult the dealer or an experienced radio or television technician for additional suggestions.

Only peripherals certified to comply with the Class B limits may be attached to this equipment. Shielded cables must be used to attach these peripherals to this equipment. The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. It is the responsibility of the user to correct such interference.

The user may find the following booklet prepared by the F.C.C. helpful:

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

This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock Number 004-000-00345-4.

PRODUCT OVERVIEW

Major design features of the standard model include:

- 256 kilobyte Random Access Memory (expandable to 640 kilobytes by installation of memory modules on the main circuit board or a memory card in an expansion slot
- 80 column screen display
- 5-1/4 inch double-sided, double-density diskette drive (360 kilobytes, formatted)
- 5-1/4 inch fixed disk drive (10 megabytes, formatted)
- 84 key detachable keyboard
- Compatibility with software programs or hardware "cards" available for the IBM personal computer-XT
- Microsoft Disk Operating System (MS-DOS™) option (Other optional operating systems available)
- GW-BASIC™ programming language option (Other optional programming languages available)
- Six available slots for optional installation of additional Random Access Memory or device controllers
- Parallel printer output port (Standard)
- Plug-in disk fixed controller (Standard)
- Diskette drive controller included on main circuit board (Standard)
- Plug-in display controller (Optional)

MS-DOS™ and GW-BASIC™ are trademarks
of Microsoft Corporation.

ASSOCIATED DOCUMENTATION

There are three manuals available for your computer:

1. The User's Guide manual (included) will help you get your computer set up and running. In it, you will find information on such things as the computer keyboard, file names, the use of MS-DOS for file management and error messages that may be encountered during system start up.

2. The Disk Operating System manual (25-3130) is your guide to the Microsoft Disk Operating System. (MS-DOS). In it, you will find an in-depth discussion of file management and a comprehensive description and explanation of all MS-DOS commands.

3. The GW-BASIC manual (25-3130) is your reference guide to the GW-BASIC programming language. In it, you will find a comprehensive description and explanation of all GW-BASIC commands and statements.

HOW TO USE THIS MANUAL

This manual will help you get your computer set up and running. It will also help you learn the basics of program and data file management. Once you have gone through this manual, you should feel quite comfortable using virtually any applications program.

This manual is divided into four chapters. Appendices provide useful reference information.

CHAPTER 1, TURNING IT ON: This chapter introduces you to the computer and helps you get it up and running. Also, it takes you step-by-step through the very important task of making backup copies of the DOS diskette.

CHAPTER 2, TELLING DOS WHAT TO DO: This chapter provides a tutorial that will help you learn how to use DOS commands to manage your program and data files.

CHAPTER 3, TURNING IT OFF: This chapter provides procedures and general guidelines to follow when you turn off your computer. It also gives instructions on how to prepare your computer for relocation.

CHAPTER 4, OPTIONS: This chapter provides the information needed for installing options in your computer.

APPENDIX A, THE DOS KEYBOARD: This appendix provides a reference guide to the DOS keyboard commands.

APPENDIX B, THE DOS COMMANDS: This appendix provides a brief reference guide to selected DOS commands.

APPENDIX C, ERROR MESSAGES: This appendix explains the error messages that will be given if the computer finds a problem during the self-diagnostic test or during the use of the DOS and associated utility programs.

APPENDIX D, STORAGE MEDIA: This appendix provides a brief explanation of diskettes and fixed disk drives.

APPENDIX E, GLOBAL CHARACTERS: This appendix gives a brief explanation of how global characters can be used to save time and effort.

APPENDIX F, PRODUCT SPECIFICATIONS: This appendix lists the product specifications for the computer.

The peripheral devices discussed in this book are used only as illustrations. Their mention does not constitute a recommendation or endorsement of those products. The purchase, connection, and use of any such device is the sole responsibility of the user.

TABLE OF CONTENTS

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CHAPTER 1. TURNING IT ON

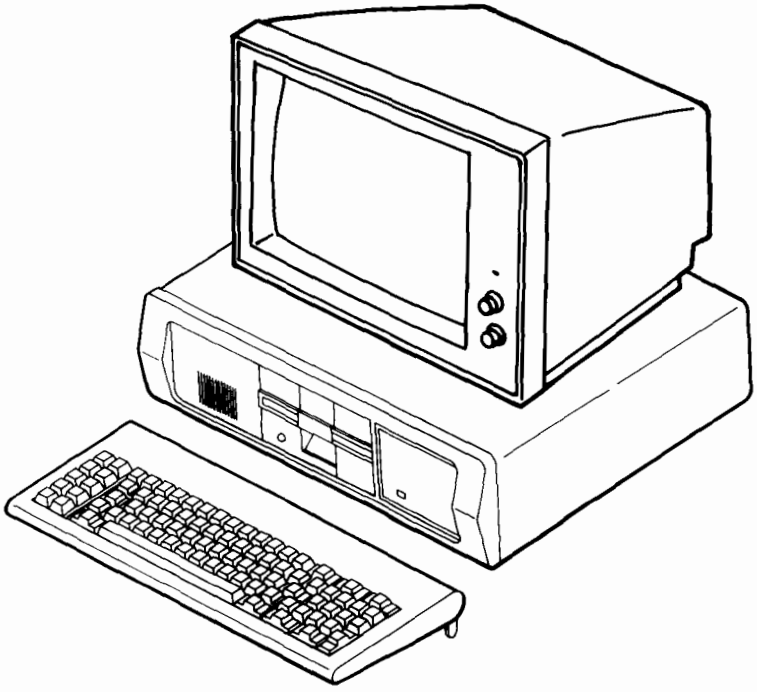
1.1 INTRODUCTION

Word processing, general accounting, data base management . . . these are only a few of the many capabilities of your computer.

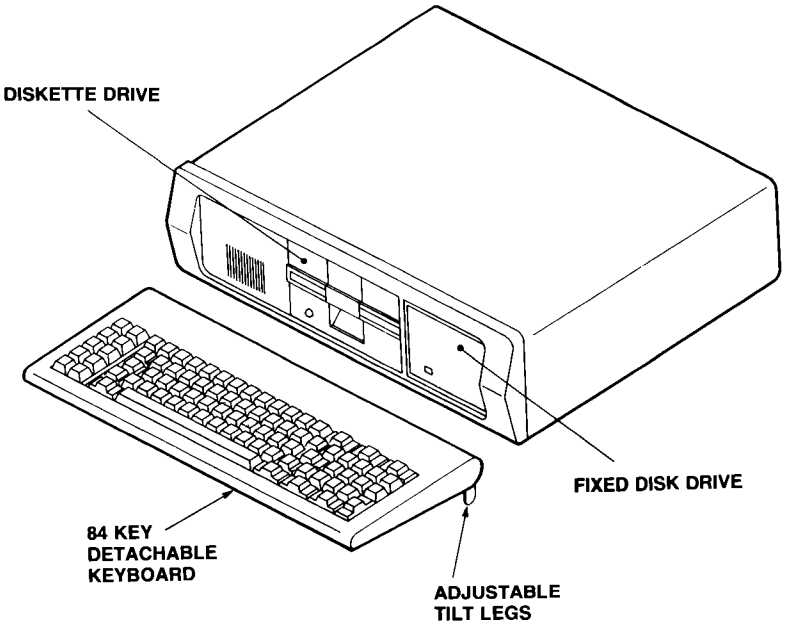
Whether you intend to use your computer for business, education, entertainment, engineering, or something more specialized, you will find it to be a useful and powerful tool.

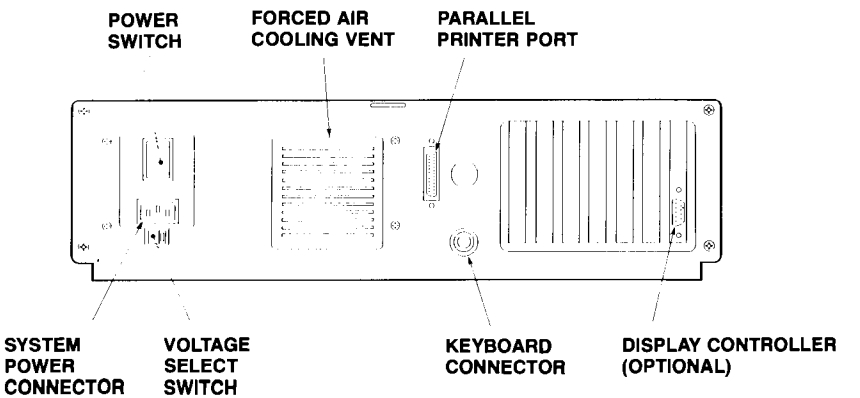
The built-in fixed disk drive provides convenience, speed of operation, and data storage capabilities that would not be possible with a diskette drive alone.

This chapter will help you get your computer up and running. It will also take you step-by-step through the very important task of making duplicate (backup) copies of your DOS diskette.



THE COMPUTER





1. SPEAKER LOCATED ON BOTTOM OF CHASSIS
2. DISKETTE DRIVE CONTROLLER BUILT INTO MAIN CIRCUIT BOARD
3. FIXED DISK DRIVE CONTROLLER BOARD INCLUDED

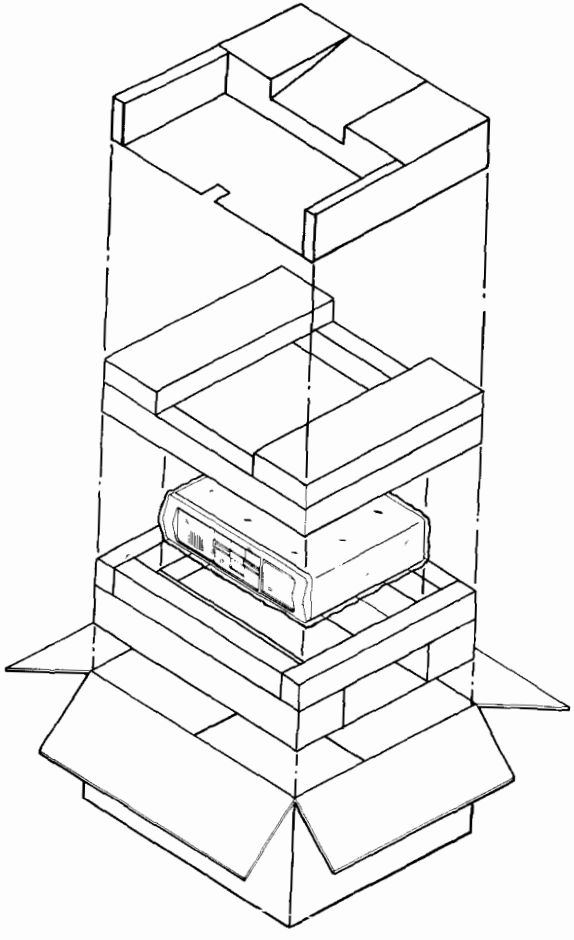
CONTROLS AND FEATURES

1.2 UNPACKING YOUR COMPUTER

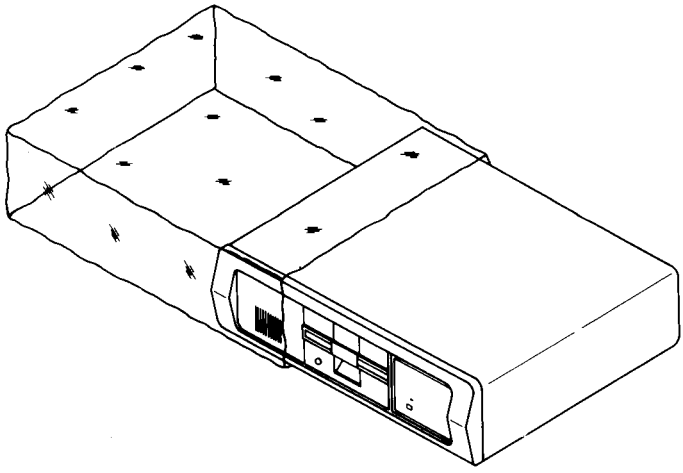
The computer comes in two shipping containers; one holds the system unit, and the other holds the keyboard. Both of these items should be handled with care. The system unit, especially, should always be kept in an upright position and never be bumped or jarred.

1. Place the system unit box on a flat, solid work surface and open the box.

2. Carefully remove the system unit and the foam packing from the box. Put the system unit on the work surface; keep it upright and avoid bumping or jarring it.



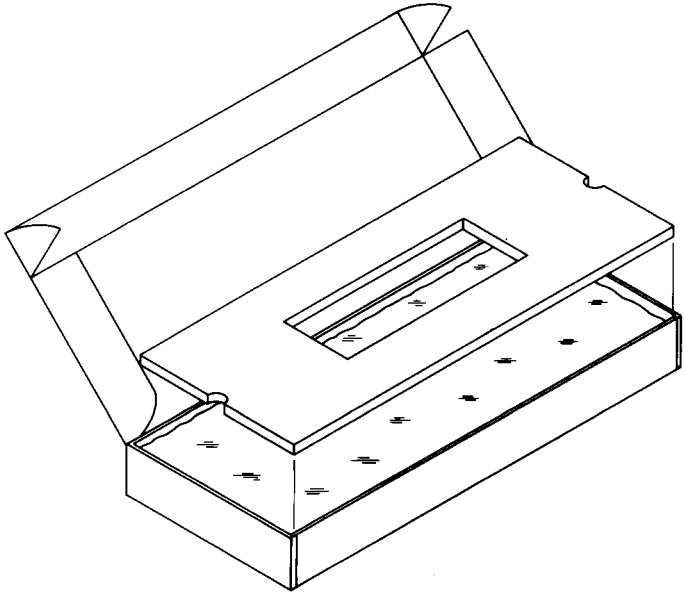
3. Remove the plastic wrapping from the system unit.



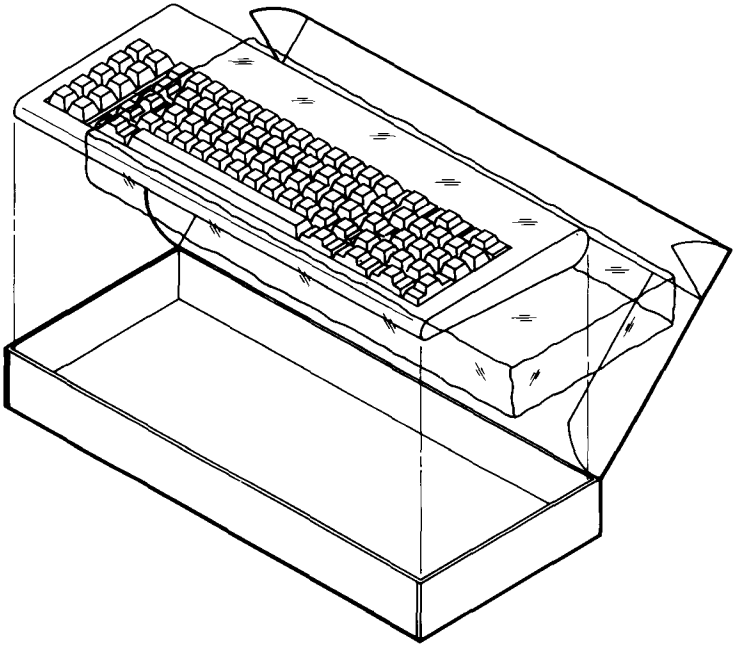
4. Remove the manuals and the power cord from the shipping box.

5. Place the keyboard box on the work surface and open the box.

6. Remove the top piece of protective foam.



7. Carefully lift the keyboard from the box and lay it on the work surface. Remove the plastic wrapping from the keyboard.



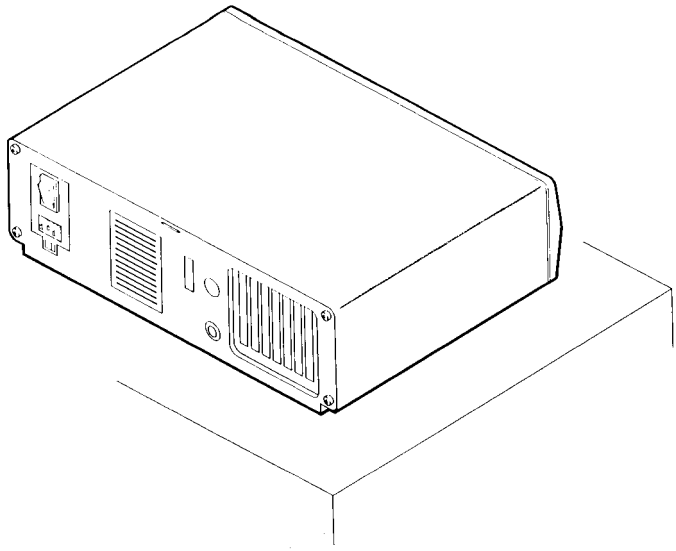
8. Check the system unit and the keyboard for any visible signs of damage.

9. Store the shipping containers, protective foam, etc., and use them whenever you need to relocate your computer.

1.3 SETTING UP YOUR COMPUTER

The design of the computer gives you freedom to set up your system components in a way that will suit your needs.

1. Place the system unit on a flat surface.



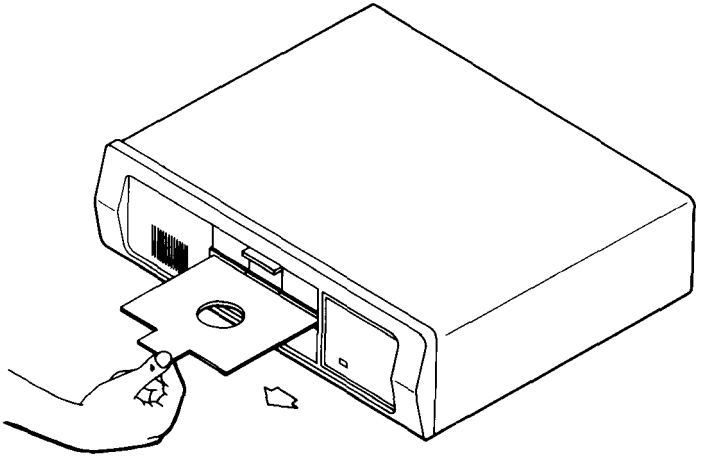
2. Install your display adapter at this time following the instructions provided. If you have not done so, unpack your monitor and connect the cable to the display adapter. If you have any options to install in your computer, install them at this time (see Chapter 4).

A parallel printer can be connected directly to your computer. A serial printer should be connected in accordance with the instructions supplied by its manufacturer.

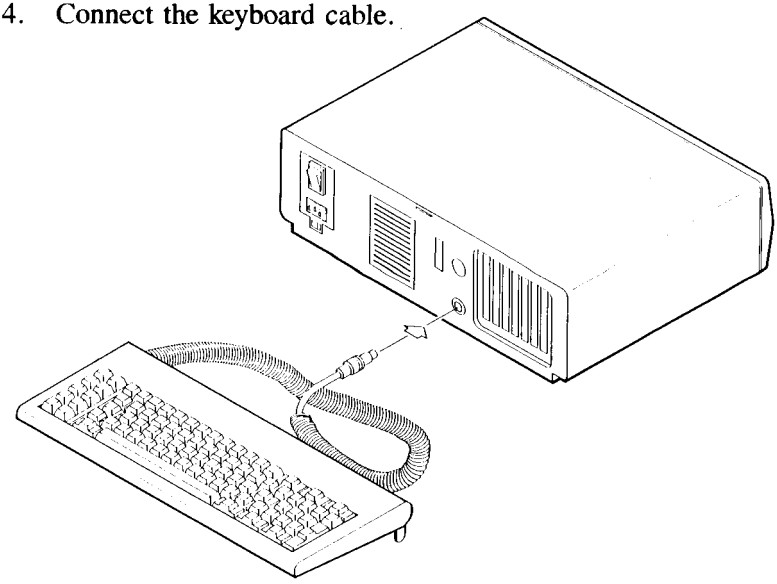
A parallel printer can be connected directly to the system unit. A serial printer, however, requires the installation of an optional serial interface card.

A monitor requires the installation of an appropriate (monochrome or color/graphics) display controller card.

3. Lift the door lever and remove the cardboard shipping insert from the diskette drive. Keep this insert and use it whenever you relocate the system unit



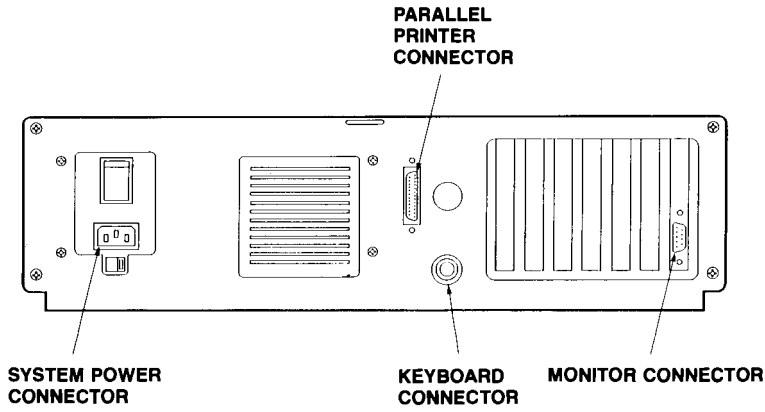
4. Connect the keyboard cable.



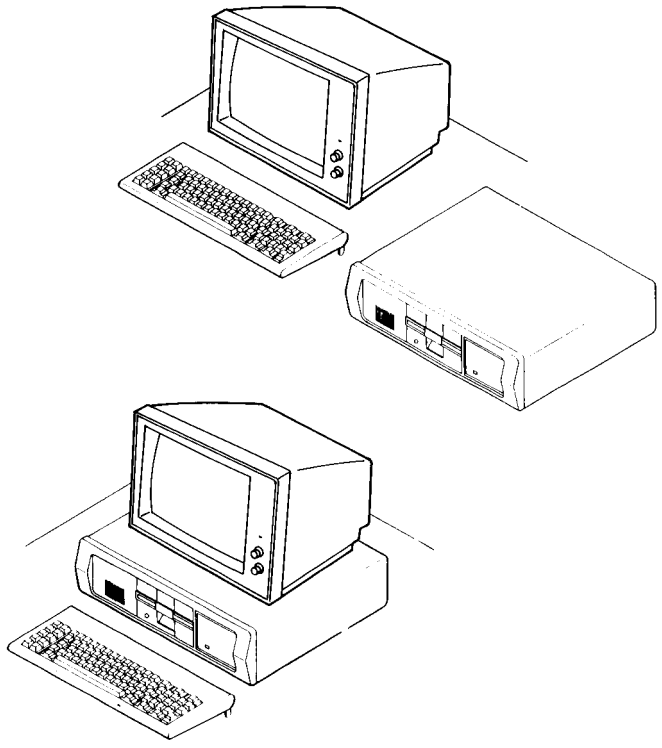
5. Refer to the diagram below, and connect all cords and cables other than the power cables.

NOTE

THE OUTPUT PORTS FOR YOUR MONITOR, AND ANY ADDED OPTIONS MAY NOT BE IN THE SLOT LOCATIONS INDICATED BELOW.

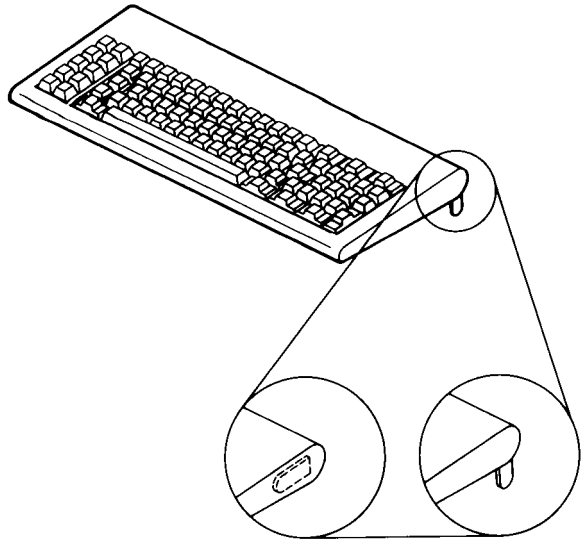


6. Now that your cords and cables are connected, you can arrange your system components to suit your needs. Position the system unit in such a way that the ventilation ports (at the front and rear) are not blocked.

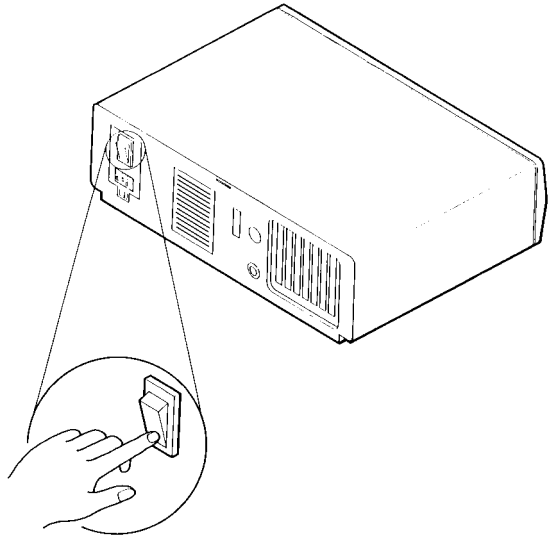


COMMON EQUIPMENT CONFIGURATIONS

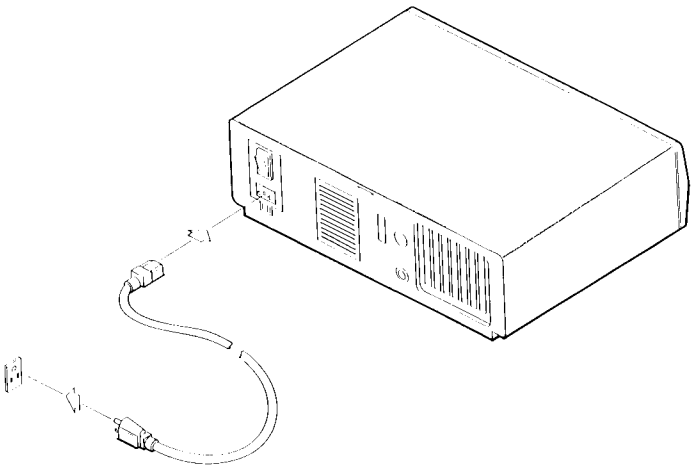
7. The keyboard is equipped with adjustable tilt legs. You may prefer either a level keyboard or a slightly tilted one. Adjust the tilt legs for the position you find most comfortable.



8. Set the power switches of all system components (system unit, monitor, etc.) to OFF.



9. Connect one end of the system unit power cord to the system unit and then connect the other end to a power outlet. Connect the power cords of all other system components (monitor, printer, etc.).

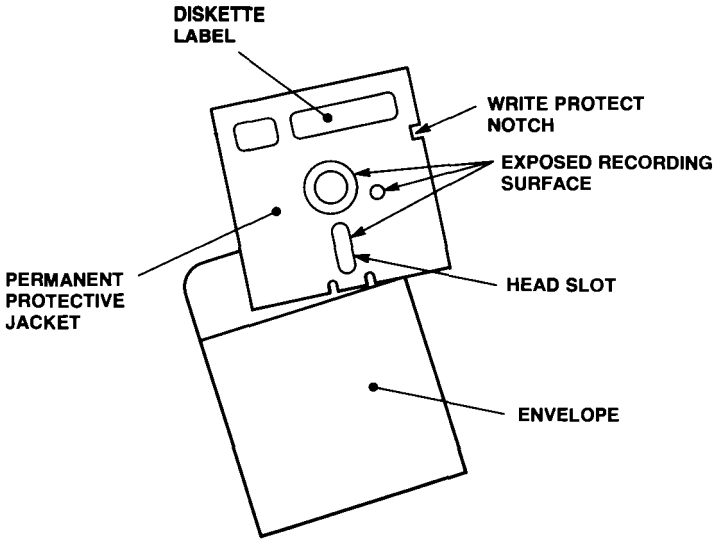


NOTE

ALL OF YOUR SYSTEM COMPONENTS (COMPUTER, PRINTER, MONITOR, ETC.) SHOULD BE PLUGGED INTO THE SAME POWER CIRCUIT.

1.4 HOW TO HANDLE AND INSERT A DISKETTE

Now that you have set up your computer, obtain the diskette labeled "MSDOS". Handle it with care.



THE DISKETTE

Programs and data files are recorded on magnetic disks. The mechanisms that operate the disks are called disk drives. Your computer is equipped with two types of disk drives. One uses rigid aluminum disks that are permanently built into the drive; this drive is called a fixed disk drive. The other drive uses flexible disks, commonly referred to as diskettes; this drive is called a diskette drive.

Diskettes are not built into the diskette drive, and you will need a supply of them in order to fully utilize your computer. You should ask your dealer for 5-1/4 inch, double-sided, double-density, soft-sectored diskettes.

Refer to Appendix D if you are interested in further information on diskettes and fixed disks.

HOW TO HANDLE A DISKETTE

Diskettes are inexpensive, but the information recorded on them is often very valuable and, sometimes, irreplaceable. It is, therefore, important that you handle diskettes with great care. If you observe the following rules and guidelines, your diskettes should prove durable and reliable.

1. Never touch the recording surface that is visible through the openings in the protective jacket of the diskette.

2. Never use anything but a felt-tipped pen to label a diskette.

3. Never store a diskette in the vicinity of an item that creates a magnetic field (e.g., electronic calculator, telephone, dictating machine, video monitor, etc.).

4. Never use a diskette that has had any substance spilled on it.

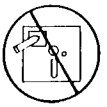
5. Never bend or fold a diskette.

6. Always store a diskette upright. Do not leave it lying where it might have something put on top of it.

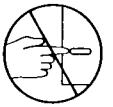
7. Always keep a diskette in its paper envelope when it is not in use.

8. Always store diskettes in a cool, dry, dust-free place.

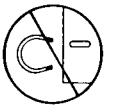
9. Always make backup copies of valuable programs and data files (Chapter 2).



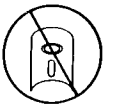
DO NOT WRITE ON THE JACKET WITH PEN OR PENCIL. USE A FELT TIPPED PEN.



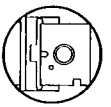
DO NOT TOUCH PRECISION SURFACE WITH YOUR FINGERS.



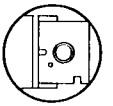
KEEP THE DISKETTE AWAY FROM MAGNETIC FIELDS.



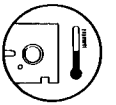
HANDLE WITH CARE; BENDING AND FOLDING MAY DAMAGE DISKETTE.



TO AVOID DAMAGE TO THE DISKETTE AND TO YOUR DRIVE, INSERT DISKETTE CAREFULLY UNTIL THE BACKSTOP IS ENCOUNTERED.



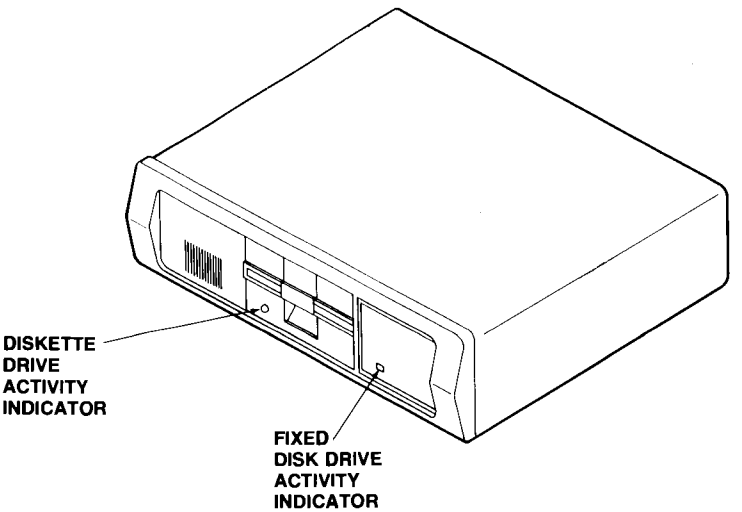
RETURN THE DISKETTE TO ITS ENVELOPE WHEN NOT IN USE.



DISKETTES SHOULD BE STORED AT 10°C to 52°C 50°F TO 125°F

HOW TO INSERT A DISKETTE

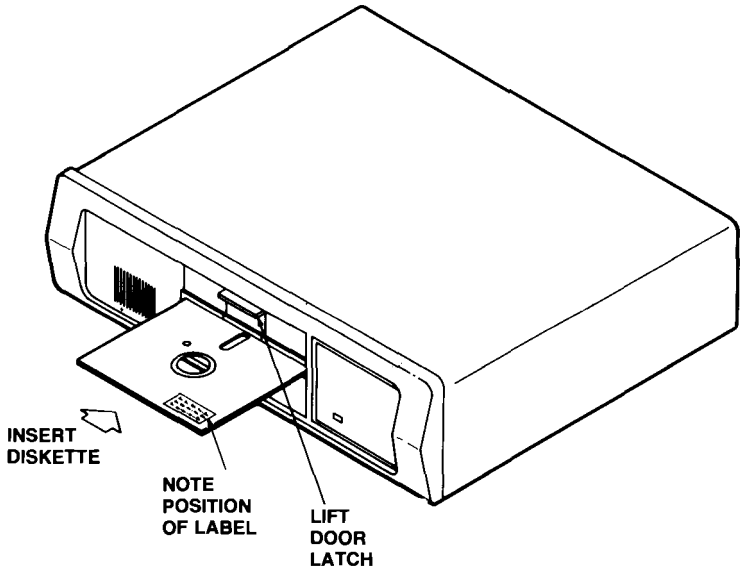
1. Take note of the small, red activity indicator on the diskette drive. This indicator lights whenever the diskette drive is in use. Never insert a diskette or open the drive door to remove a diskette while this indicator is lit.



2. Lift the door latch on the diskette drive to open the door.

3. Remove the diskette from its paper envelope.

4. Note the proper orientation of the diskette for insertion into the diskette drive.



5. Insert the diskette into the drive until you feel it contact the back stop. (Never force the diskette.) Do not close the door of the diskette drive until after you have turned on the system unit power switch.

NOTE

IF A DISKETTE IS INSTALLED, THE DOOR OF THE DISKETTE DRIVE MUST NOT BE CLOSED UNTIL AFTER THE SYSTEM UNIT POWER SWITCH HAS BEEN TURNED ON. THE DISKETTE MAY BE DAMAGED IF THIS PRECAUTION IS NOT OBSERVED.

HOW TO REMOVE A DISKETTE

The diskette must be removed from the diskette drive before the system unit is turned off.

1. To remove a diskette from the drive, simply lift the door latch of the diskette drive and remove the diskette. Remember, the diskette must not be removed if the activity indicator is lit.

2. Put the diskette back into its paper envelope and store it in a safe place.

1.5 TURNING ON AND TESTING YOUR COMPUTER

LOADING DOS

Each time you turn on the power switch, the computer performs a self diagnostic test; that is to say, it tests its own circuits and components. If it should find a problem, it will alert you by a display on the monitor screen or by an audible error signal. Because of this feature, you can always be confident that you are working with a properly functioning system.

NOTE

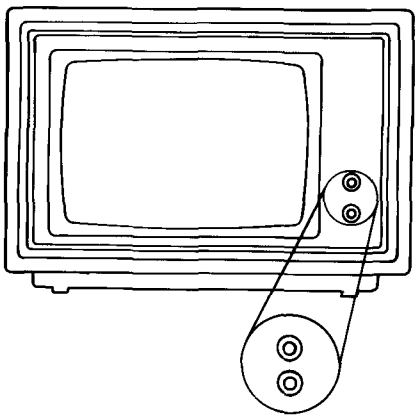
FOR AN EXPLANATION OF ERROR MESSAGES, REFER TO APPENDIX C.

The procedure for turning on and testing the computer is given below.

1. Make sure that you have correctly connected all the components of your system.

2. Turn on the monitor and wait one minute for it to warm up.

3. Turn the monitor's contrast and brightness controls all the way clockwise.



4. Insert the DOS diskette (Section 1.4), but do not close the door of the diskette drive.

5. Turn on the system unit power switch. If you have just turned off your computer, you must wait at least 15 seconds before turning it on again. In approximately 10 seconds, you should see the test status message displayed in the top left corner of your monitor screen.

xxxK Byte RAM Tested

NOTE

THE DIGITS IN THE TEST STATUS MESSAGE ARE CONSTANTLY CHANGING.

6. As soon as you obtain the test status message, close the door of the diskette drive.

NOTE

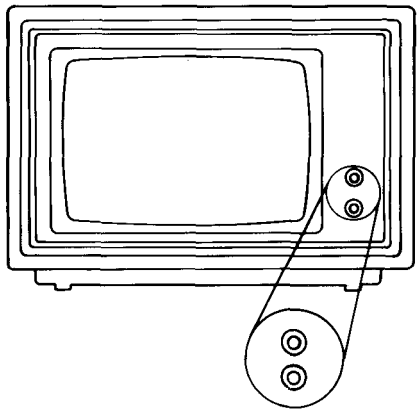
IF YOUR MONITOR SCREEN REMAINS BLANK, OR IF YOU RECEIVE AN ERROR MESSAGE RATHER THAN A TEST STATUS MESSAGE, REMOVE THE DISKETTE AND TURN OFF THE COMPONENTS OF YOUR SYSTEM. GO BACK TO STEP 1 AND TRY THE PROCEDURE ONCE AGAIN. IF YOU ARE STILL UNSUCCESSFUL, REFER TO APPENDIX C.

7. Once the self diagnostic test is complete, the diskette drive activity indicator will light for a few moments and then you will see the following display on your monitor screen:

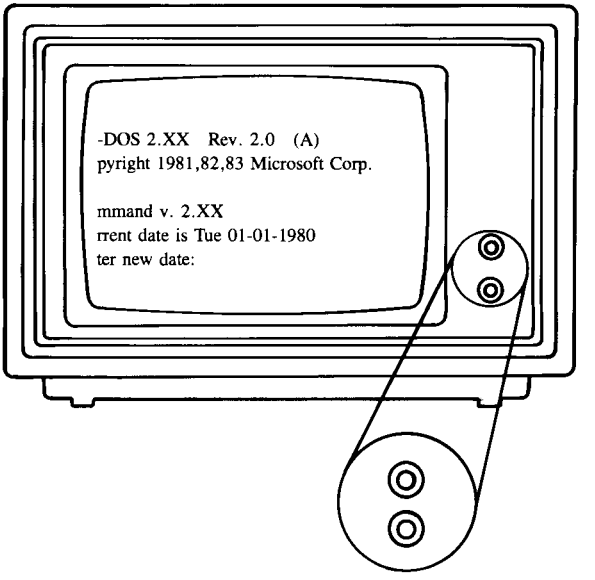
```
MS-DOS 2.XX  Rev. 2.0  (A)
Copyright 1981,82,83 Microsoft Corp.

Command v. 2.XX
Current date is Tue 01-01-1980
Enter new date:
```

8. Adjust the monitor's brightness and contrast controls for the best display.



9. Refer to the MODE command section of Chapter 2 if your screen display looks something like this (the left-most part of the display is not visible on the screen).



10. At the moment, there is no need for you to enter the date and time into your computer. Therefore, in response to the date prompt displayed on your monitor screen,

Press: Return

The following display will appear on your monitor screen:

```
Microsoft MS-DOS version 2.XX
Copyright 1981,82,83 Microsoft Corp.

Command v. 2.XX
Current date is Tue 1-01-1980
Enter new date:
Current time is 0:01:12.22
Enter new time:
```

NOTE

THE CURRENT TIME FIGURES SHOWN ARE ONLY EXAMPLES.

11. Once again,

    Press: (Return)

    The following prompt will appear on your monitor screen:

```
A>
```

NOTE

THE A> SYMBOL IS CALLED THE DOS PROMPT; IT INDICATES THAT THE COMPUTER IS READY TO RESPOND TO COMMANDS.

1.6 MAKING BACKUP COPIES OF THE DOS DISKETTE

Recorded on the DOS diskette are the Disk Operating System (DOS) programs. Because these programs are essential to the operation of the computer, you will want to make backup copies in case the original diskette should be lost or damaged.

First, you should copy DOS onto the fixed disk. After that, you should make a backup copy on a diskette as well.

As you make your backup copies of DOS, you will become familiar with your computer's operation, and you will begin to feel comfortable with its keyboard. Before you start, read through the procedures and be sure you understand them. Refer to Appendix A if you have questions about keyboard keys.

COPYING DOS ONTO FIXED DISK

This section gives a step-by-step procedure for copying the DOS programs onto the fixed disk drive.

If you already have some experience with computers, you may want to use the PREPARE command to format the fixed disk drive and copy the DOS files onto it. PREPARE is a quick and efficient procedure that combines four commands into a single utility. If you decide to use this utility, simply enter the PREPARE command and then follow the instructions and prompts that will be displayed on your monitor.

If, on the other hand, all this is rather new to you, it might be better to stick with the procedure given below; it will take you step-by-step through the individual commands that format the fixed disk drive and then copy the DOS files onto it. It is a four-part procedure that involves the LOW LEVEL FORMAT command, the PARTITION command, the FORMAT command, and the COPY command. The whole procedure takes more than an hour, but once it is done, it will, most likely, never have to be repeated.

Low Level Format (Fixed Disk)

Before you can store the DOS programs (or anything else, for that matter) on the fixed disk, you will have to format the fixed disk drive. By doing this, you will set up the directory, tracks, and sectors that will later be used to store and keep track of the files you save. (See Appendix D for more information on directories, tracks, and sectors.) The LOW LEVEL FORMAT procedure is the first step in formatting the fixed disk drive.

Before you begin, make sure your DOS diskette is installed in the diskette drive. (Don't remove it until you are instructed to.)

NOTE

ALTHOUGH YOU MAY NOT UNDERSTAND THE COMMANDS YOU ARE ABOUT TO USE, IT IS IMPORTANT TO TYPE THEM EXACTLY AS THEY ARE SHOWN.

IF YOU MAKE A MISTAKE WHILE TYPING A COMMAND, YOU CAN CORRECT THE ERROR BY PRESSING THE BACKSPACE KEY. THIS WILL CAUSE THE CURSOR TO MOVE BACKWARDS ACROSS THE SCREEN, ERASING CHARACTERS AS IT GOES. ONCE THE ERROR HAS BEEN ERASED, YOU CAN RETYPE, CORRECTING THE ERROR.

1. In response to the A> DOS prompt, enter your first command.

   Type: **llfdfmt**

   Press: (Return)

   The following display will appear on your monitor screen:

```
Low Level Fixed Disk Format Utility, Version X.X

ALL DATA on the fixed disk will be DESTROYED
Do you want to continue (y or n)?
```

2. When you format the fixed disk drive, any files stored on it will be destroyed. That is why the computer gives you this warning.

   There is no data stored on the fixed disk, so you can go ahead and tell the computer to continue.

   Type: **Y**

   The following prompt will appear on your monitor screen:

```
Which fixed disk to format (C or D)?
```

3. The standard computer has only one fixed disk drive; it is designated drive "C." Therefore,

   Type: **C**

   The following prompt will appear on your monitor screen:

```
Press any key when ready (Ctrl-Break to abort)
```

4. The computer is giving you your last chance to avoid destroying any files stored on the fixed disk drive. Once again, however, since the drive is brand new and there are no files stored on it, you do not need to worry.

   Press: Return

The activity indicator on the fixed disk drive will light, and the following message will appear on your monitor screen:

```
Formatting fixed disk c: allow one hour for completion
```

After the computer has carried out the LOW LEVEL FORMAT command (approximately one hour), a message similar to one of the following will appear on your monitor screen:

```
The following areas were deleted by the formatter:

      HEAD          CYLINDER          DEGREE
        2             148             138-158

Are there any areas to manually delete? (y or n)
```

— or —

```
Format complete, no areas deleted

Are there any areas to manually delete? (y or n)
```

NOTE

THE AREA DELETION DATA SHOWN ABOVE IS GIVEN AS AN EXAMPLE ONLY.

5. Type: N

The following message will appear on your monitor screen:

```
Format complete, returning to DOS
A>
```

Partition (Fixed Disk)

The PARTITION command is the second step in preparing the fixed disk drive for recording the DOS programs. The PARTITION command sets up the fixed disk drive so that all of its tracks and sectors (see Appendix D) will be available for use with DOS.

1. Once the LOW LEVEL FORMAT procedure is complete, the A>DOS prompt appears on your monitor. To begin partitioning the fixed disk

   Type: **part**

   Press: Return

   The following prompt will appear on your monitor screen:

```
Winchester PARTition Utility V1.00

PART Options

Choose one of the following:

    1. Display Partition Data
    2. Change Active Partition
    3. Delete DOS Partition
    4. Create DOS Pattern

Enter Choice:    [1]

Enter ESC to exit to DOS
```

NOTE

IF YOU ARE CURIOUS AS TO WHY THE COMPUTER HAS ALREADY SELECTED ONE OF THE OPTIONS ([1]), REFER TO THE EXPLANATION OF DEFAULT OPTIONS IN CHAPTER 2. (YOU WILL ENCOUNTER A SIMILAR SITUATION WITH THE [Y] IN STEP 2.)

2. Since your task at this time is to create a partition, ignore the [1] that follows the prompt.

   Type: 4

NOTE

OBSERVE WHAT HAS HAPPENED TO THE [1] THAT FOLLOWED THE PROMPT.

Press: Return

The following prompt will appear on your monitor screen:

```
Winchester PARTition Utility V1.00

Create DOS Partition

Do you wish to use the entire Winchester
disk for DOS (Y/N)?                          [Y]
```

3. In response to this prompt,

   Press: Return

   The following message will appear on your monitor screen:

```
Winchester PARTition Utility V1.00

Create Partition

Partition    Status    Type    Start    End    Size
    1          A       DOS       0      304     305

Total disk space is 305 cylinders.

Enter ESC key to return to Menu                    [ ]
```

4. Press the Esc key twice: The following message will appear on your monitor screen (don't worry if you don't understand it):

```
System must now be Rebooted
Insert a DOS diskette in drive A:
and strike any key

(If you are using PREPARE, you
must reload it after reboot to
complete the hard drive installation.)
```

5. Your DOS diskette should still be in drive A:. Therefore, all you have to do is

   Press: Return

   The monitor screen will temporarily clear, and the drive A: activity indicator will light as the system is reset (rebooted).

   The date prompt will appear on your monitor screen:

```
MS-DOS 2.XX  Rev. 2.0  (A)
Copyright 1981,82,83 Microsoft Corp.

Command v. 2.XX

Current date is Tue 1-01-1980
Enter new date:
```

6. In response to this prompt, enter the new date (i.e., today's date). For example, suppose the date were January 31, 1985.

   Type: 01-31-85

NOTE

THE FORMAT IS MONTH, DASH, DATE, DASH, YEAR.

Press: Return

The following prompt will appear on your monitor screen:

```
Current time is 0:01:12.22
Enter new time:
```

NOTE

THE CURRENT TIME FIGURES SHOWN ABOVE ARE ONLY EXAMPLES.

7. In response to this prompt, enter the new time (i.e., the present time). Note that the computer uses a 24-hour clock. For example, suppose the time were 3:30 p.m.

Type: **15:30**

Press: Return

The A> DOS prompt will now appear on your monitor screen.

```
A>
```

Format (Fixed Disk)

This is the last task that must be done before the DOS programs are copied onto the fixed disk drive.

1. In response to the A> DOS prompt,

   Type: **format c:/s/f**

   Press: Return

   The following prompt will appear on your monitor screen:

```
Press any key to start formatting fixed disk C:
```

2. In response to this prompt,

   Press: Return

   Formatting will take approximately ten minutes. Once the computer has executed the command, the following message will appear on your monitor screen:

```
Formatting drive C: . . . . .

Format Complete
System transferred

xxxxxxxx bytes total disk spaces
    xxxxx bytes in system files
xxxxxxxx bytes available on disk
A>
```

NOTE

ON YOUR MONITOR SCREEN, YOU MAY ALSO SEE AN ADDITIONAL MESSAGE:

```
xxxxx bytes in bad sectors.
```

THIS IS NOT AN INDICATION THAT THE DRIVE IS DEFECTIVE. IT IS SIMPLY THE COMPUTER'S WAY OF KEEPING TRACK OF WHERE ON THE FIXED DISK IT SHOULD AND SHOULD NOT STORE YOUR FILES.

Copy To Fixed Disk

Now that the fixed disk drive is fully formatted, you can give the command to have the DOS utility programs copied from the diskette to the fixed disk drive. To do this,

Type: **copy/v *.* c:**

Press: Return

NOTE

SEE CHAPTER 2 AND APPENDIX E FOR AN EXPLANATION OF THIS COMMAND.

A list of the programs on the DOS diskette will be displayed on your monitor screen. Once all the programs have been transferred to the fixed disk drive, the A> DOS prompt will once again appear on your monitor screen.

```
A>
```

NOTE

IF YOU RECEIVE SOMETHING OTHER THAN THE A> DOS PROMPT ON YOUR MONITOR SCREEN, GO BACK TO THE BEGINNING OF THE PROCEDURE FOR "COPYING DOS ONTO FIXED DISK" AND TRY AGAIN. IF, AFTER A SECOND TRY, YOU ARE STILL UNSUCCESSFUL, CONTACT YOUR DEALER.

COPYING DOS ONTO DISKETTE

Now that the DOS programs have been copied onto the fixed disk, you can easily make a backup diskette identical to the original DOS diskette.

Find a diskette on which to make your backup copy of the DOS diskette. Preferably, this should be a brand new diskette. Any files stored on the backup diskette will be destroyed during this procedure, so, if you intend to backup on a used diskette, make sure it does not contain any files you might later want.

Format (Diskette)

The backup diskette must be formatted before it can be used.

NOTE

AT THIS POINT, YOUR ORIGINAL DOS DISKETTE SHOULD STILL BE IN DRIVE A:.

1. In response to the A> DOS prompt,

   Type: **format a:/s**

   Press: (Return)

   The following prompt will appear on your monitor screen:

> Insert a new diskette in drive A: and press any key when ready

2. In response to this prompt,

   Remove the original DOS diskette, and insert the diskette on which you wish to make your backup copy of DOS. Close the door of the diskette drive.

   Press: (Return)

The activity indicator on the diskette drive will light as the diskette is being formatted. Then the following message and prompt will appear on your monitor screen:

```
Formatting drive A:
Format complete
System transferred

xxxxxx bytes total disk space
 xxxxx bytes used by system
xxxxxx bytes available on disk

Format another (Y/N)
```

NOTE

ON YOUR MONITOR SCREEN, YOU MAY ALSO SEE AN ADDITIONAL MESSAGE:

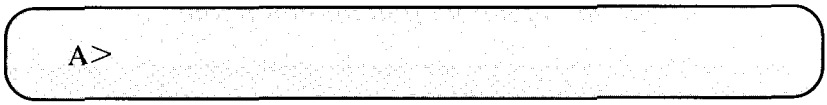
```
xxxxx bytes in bad sectors
```

THIS IS NOT AN INDICATION THAT THE DRIVE OR DISKETTE IS DEFECTIVE. IT IS SIMPLY THE COMPUTER'S WAY OF KEEPING TRACK OF WHERE ON THE DISKETTE IT SHOULD AND SHOULD NOT STORE YOUR FILES.

3. One backup diskette should be enough for the present, so, in response to the (Y or N) prompt,

   Type: **n**

The A> DOS prompt will appear on your monitor screen.



Copy To Diskette

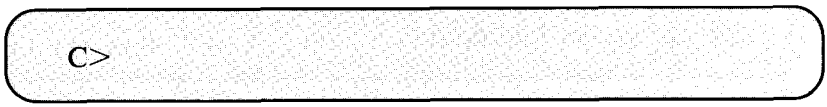
Now that the backup diskette has been formatted, you can give the command that will have the DOS programs copied from the fixed disk drive onto the backup diskette.

1. In response to the A> DOS prompt,

   Type: **c:**

   Press: Return

   Note that the DOS prompt on your monitor screen is now the C> symbol rather than the A> symbol.

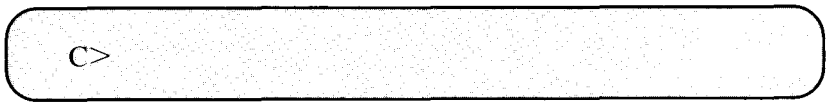


2. In response to the C> DOS prompt,

   Type: **copy/v *.* a:**

   Press: Return

   A list of the DOS programs will be displayed on your monitor screen, and then the C> DOS prompt will appear.



NOTE

IF YOU RECEIVE SOMETHING OTHER THAN THE C> DOS PROMPT ON YOUR MONITOR SCREEN, GO BACK TO THE BEGINNING OF THE PROCEDURE FOR "COPYING DOS ONTO DISKETTE" AND TRY AGAIN USING A NEW DISKETTE. IF, AFTER A SECOND TRY, YOU ARE STILL UNSUCCESSFUL, CONTACT YOUR DEALER.

SEE CHAPTER 2 AND APPENDIX E IF YOU ARE INTERESTED IN FINDING OUT WHAT HAPPENED IN STEPS 1 AND 2.

3. The DOS programs have now been duplicated on the backup diskette. Remove this diskette, label it with a felt-tipped pen, and use it in your day-to-day operations. Store the original DOS diskette in a safe place.

4. Unless you wish to continue using your computer, go ahead and turn it off. Chapter 3 tells you how to do this.

NOTES:

CHAPTER 2. TELLING DOS WHAT TO DO

2.1 INTRODUCTION

The operation of your computer may be very simple, or it may be rather sophisticated and complex — it all depends on the task and the applications program. However, a vast majority of applications programs are straightforward and easy to use. There is no need for you to learn computer programming, but you will need to be able to use the DOS commands that tell the computer how to manage your files. (Files are the programs and data stored on disks.)

DOS stands for Disk Operating System. It is simply a set of programs (recorded on a magnetic disk) that enable you to manage your computer files and control the various components of your computer system.

With DOS programs, you will be able to create files, name them, store them . . . then retrieve them back from storage and manipulate or alter them. But what does that mean? Let's look at an example.

With a certain applications program, you might create an address list of friends or clients with whom you wish to keep in touch. You might then let your computer do the tedious task of putting the list in alphabetical order. You would then label this alphabetized list with a name such as "FRIENDS" or "CLIENTS" and then store the list on a diskette. A list of this sort is called a "data file."

Two weeks later (or a year, for that matter), you could retrieve this list (data file) from the diskette. You could add some new names to the list and remove a few others . . . then store the updated list back on the diskette.

The purpose of DOS is to make it easy for you to manage and use the files that you save on diskette or fixed disk.

In this chapter, you will learn how to issue commands that control the operation of DOS. First, however, you will learn a little bit about the way your computer operates. After you have done that, you will be formally introduced to the keyboard, and then you will learn a few simple rules and guidelines for labeling your files.

The information given in this chapter will enable you to use most of the DOS commands needed for your normal day-to-day file management tasks. If you are interested in the more sophisticated uses of DOS, refer to your Disk Operating System manual.

Feel free to experiment. You can't hurt the computer by pressing a wrong key or giving an incorrect command. Be sure you have backup diskettes for DOS and any other valuable files you will be using (Chapter 1). Then go ahead and plunge into this chapter. If at first you don't understand what's going on, don't worry. You learn best by doing, so don't feel you have to understand everything before you start. Remember, you can't hurt the computer. If your computer should seem to stop working, simply turn the system unit off, wait fifteen seconds, then turn the power on and start again (see Chapter 3).

2.2 AN INTRODUCTION TO DOS

DOS makes file management easy. Instead of you having to learn the complex details of how to operate a computer and its disk drives (the DOS already "knows" this), all you have to do is learn how to issue a few commands that tell DOS what you want done. DOS will do the job for you.

MEMORY AND STORAGE

There are two ways in which your computer can store information; it can store it in its random access memory, or it can store it on a magnetic recording medium. One of the primary differences between these two forms of storage is permanency. The computer's random access memory (often referred to as RAM) cannot store information permanently — any time you turn the power off or even any time you experience a brief power failure, your computer's random access memory will be erased. However, information can be kept indefinitely if it is transferred from random access memory to a magnetic disk before power is turned off. Once stored on a disk, information is always available for you to refer back to, use, alter, manipulate, or erase.

WORKING WITH DOS

Typically, you will command DOS to retrieve an applications program (word processing, for example) from a disk and transfer it to the computer's random access memory. You will then interact directly with the applications program. (In this example, that simply means you do word processing.) The applications program will interact with DOS to manage your files. (In this example, the files are made up of the words and paragraphs you have typed on your word processor.)

In Chapter 1, you learned how to use several of the DOS commands. By giving these commands, you had the computer take the information on the DOS diskette and duplicate it on fixed disk and on a backup diskette.

THE DEFAULT DRIVE

You can select which of the computer's two disk drives you wish to use for any given operation. Each time you load DOS, your computer will establish a default drive. This simply means that it establishes the drive that it assumes you wish to use. Unless you specify otherwise, your DOS commands will be carried out using the default drive.

If DOS is loaded from the diskette drive (drive A:), the computer will designate drive A: as the default drive. Conversely, if DOS is loaded from the fixed disk drive (drive C:), the computer will designate drive C: as the default drive.
Your monitor screen tells you which drive has been established as the default drive. If the diskette drive is the default drive, the DOS prompt displayed on your screen will be the A> symbol; if the fixed disk drive is the default drive, the DOS prompt displayed on your screen will be the C> symbol.

See Section 2.4 for an explanation of how to change the default drive.

DEFAULT OPTIONS

You will find that, for certain prompts, DOS automatically selects an option; this is called a default option. Generally, this will make your task easier, but it is by no means an indication that you must go along with the DOS selection. DOS has been carefully designed to ensure that a default option will always be a safe way to go. For example, there would never be a default option that would erase all of the files on your fixed disk drive. However, just because the computer makes a selection for you does not mean that you have to go along with that selection.

For example, in Chapter 1, you used the PARTITION command to create partitions on the fixed disk drive. After you entered the PARTITION command, you were given a choice of the various tasks that can be performed under the PARTITION command. DOS assumed that option number 1 would be your choice. If it had been, you would have simply pressed the Return key. In this case, however, your task was to create a partition, so you ignored the default option (1) and typed in the option for creating a partition (4) before you pressed the Return key.

2.3 THE KEYBOARD

If you are familiar with a typewriter keyboard, you should feel quite comfortable with the keyboard of your computer.

The keyboard is the means by which you give commands and data to your computer. Because commands are seldom longer than a few letters, you need not be a skilled typist to use your computer.

Naturally, the way you use the keyboard to do word processing will be quite different from the way you use it to do financial calculations. Although most keys perform the same function from one applications program to another, the design of the computer makes it possible for the functions of certain keys to be altered. In other words, a key might perform one function when you are running a word processing program and quite another function when you are running a spreadsheet program — such keys are said to be "applications dependent."

For example, if you use the backspace key while using DOS, characters on the monitor screen are erased as the cursor moves back over them. In a word processing program, however, it might well be that the back space key moves the cursor back over characters without erasing them. This is not so complex as it may seem. What has, in fact, been done is to make it possible for the programmers who create applications programs to make your task easy.

If you have questions about how keys function with any given applications program, you should refer to the manual provided by the manufacturer of that program. In Appendix A, you will find a table listing the key functions associated with DOS.

On certain keys, symbols and abbreviations are used.

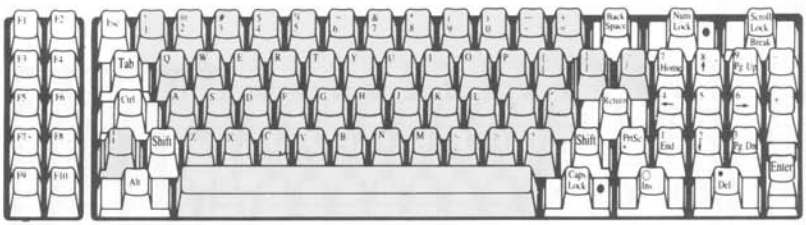
Key Names	Key Symbol
ALTERNATE	Alt
CONTROL	Ctrl
DELETE	Del
ESCAPE	Esc
NUMBER LOCK	Num Lock
PRINT SCREEN	PrtSc

THE FOUR KEYBOARD ZONES

The keyboard is divided into four zones.

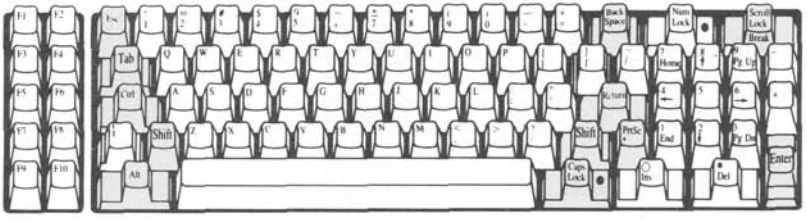
Zone 1, The Alphanumeric Keys:

These keys are used just like those on a standard typewriter keyboard. They provide uppercase and lowercase letters, decimal digits, and standard symbols.



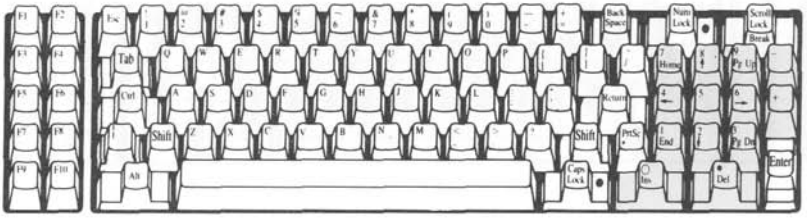
Zone 2, The Control Keys:

Some of these keys have counterparts on the standard typewriter keyboard — BACKSPACE [Backspace] and SHIFT [Shift], for example. Other keys are unique to the computer keyboard — ESCAPE [Esc], CONTROL [Ctrl], and ALTERNATE [Alt], for example.



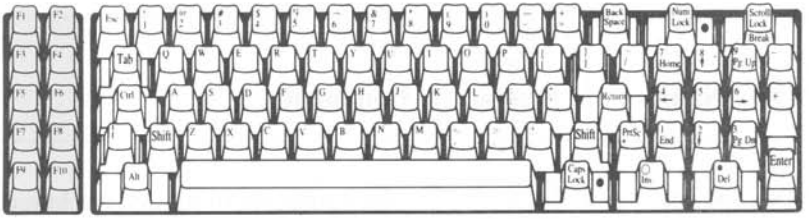
Zone 3, The Cursor/Number Pad Keys:

These keys can be used in two modes. In the standard (cursor) mode, they are used to move the cursor about on the monitor screen. If the NUMBER LOCK [Num Lock] key is pressed once, these keys enter the number pad mode and are used for entering numeric information. If the NUMBER LOCK [Num Lock] key is pressed a second time, these keys are returned to the cursor mode. When the NUMBER LOCK indicator is lit, the pad is in the number mode, and when it is off, the pad is in the cursor mode. To determine how exactly to use these keys, you should refer to the manual provided with your applications program.



Zone 4, The Function Keys:

These keys are applications dependent — that is, their functions are determined by the programmer who creates an applications program. The purpose of these keys is to save you time. For example, with a given applications program, you might be able to simply press one of the function keys rather than have to type a full command. Refer to the manual provided with your applications program. See Appendix A for a discussion of how these keys are used with DOS.



SOME COMMENTS REGARDING SPECIAL KEYS

In Table 2-1, you will find a list of a few keys that may need special explanation.

Table 2-1

Special Keys

Key Name	Key Symbol	Comments
Number 0	) 0	The number zero (0) and the letter O are not the same, and the computer "knows" the difference. If you mean to type the number zero (0), you must press the 0 key. If you mean to type the letter O, you must press the O key.
Letter O	0	
Number 1	! 1	When you use a typewriter, you can often use a lowercase L instead of the number one (1). When you use a computer, you cannot. Once again, the computer "knows" the difference. If you mean to type a lowercase L, you must press the L key (lowercase mode). If you wish to type the number one (1), you must press the 1 key.
Letter L	L	

Table 2-1 (Continued)

Special Keys

Key Name	Key Symbol	Comments
SPACEBAR		The SPACEBAR is the long key at the bottom of the keyboard. It is used to put blank spaces in a line you are typing; to this extent, it is equivalent to the typewriter SPACEBAR. Remember, however, that, if you use the SPACEBAR to move the cursor on the screen, characters will be erased as the cursor moves over them. To the computer, a space created by the SPACEBAR is not empty — it contains the space character. When you press the A key, an A character takes up one space on the monitor screen; when you press the SPACEBAR, a space character takes up one space on the monitor screen.

Table 2-1 (Continued)

Special Keys

Key Name	Key Symbol	Comments
SPACEBAR (cont.)		The space character created by the SPACEBAR also takes up one space in random access memory (RAM) and on a storage disk. Remember this when you use the SPACEBAR to do such tasks as erase a line.
CAPS LOCK		The CAPS LOCK key enables you to type uppercase letters. To use this key, press it once to enter the uppercase mode; the indicator will light. Press it once again to return to the standard lowercase mode; the indicator will go off. (Note that pressing the SHIFT key will not release the CAPS LOCK key.) This key does not enable you to type signed numbers nor the punctuation marks and the symbols that appear on the upper portion of certain keys.

Table 2-1 (Continued)

Special Keys

Key Name	Key Symbol	Comments
CAPS LOCK (cont.)		To type these symbols, you must press and hold the SHIFT key — regardless of whether or not the CAPS LOCK key is engaged. When the CAPS LOCK key is engaged, the SHIFT key allows the use of lowercase letters.
SHIFT	Shift	There are two SHIFT keys on the keyboard. Their functions are identical. They enable you to type uppercase letters as well as the punctuation marks and the symbols that appear on the upper portion of certain keys. To use the SHIFT key, hold it down as you type.

Table 2-1 (Continued)

Special Keys

Key Name	Key Symbol	Comments
RETURN	Return	The RETURN key enables you to enter a command into the computer. The fact that you have typed in a command and it appears on the monitor screen does not mean it has been entered into the computer. To enter a command, type the entire command statement then press the RETURN key. Up until you press the RETURN key, you can correct typing errors in your command statement. Only after you press the RETURN key can the computer respond to your typed command. (Refer also to the comments for the ENTER key.)
ENTER	Enter	The function of the ENTER key is identical to that of the RETURN key. However, the ENTER key is usually used in conjunction with the number pad keys.

2.4 SPECIAL DOS TASKS

You need to know a few special procedures that will make it easier to use the DOS commands.

Task: **To Stop a Command**

Explanation Of Task: If you accidentally enter an incorrect command, or if, for any reason, you do not wish to allow the computer to run through an entire command procedure, you can generally stop it immediately. Once the computer stops executing a command, you will be returned to the DOS prompt (A> or C>).

Procedure:

Press and hold: Ctrl

Press: Scroll Lock / Break

Release both keys.

Task: **To Correct Typing Errors**

Explanation Of Task: There are several ways to correct typing errors that are noticed before the RETURN [Return] key is pressed.

a. When you use the BACKSPACE [Back Space] key, the cursor moves backwards across the screen — erasing characters as it goes. Once the error has been erased, you can retype, correcting the error.

— or —

b. Perhaps you do not wish to use the BACKSPACE [Back Space] key and then retype. If you press the ESCAPE [Esc] key, a backslash (\ ) appears on the error line, and the cursor moves down a line. Now you can retype the command. The computer will ignore the error line.

Procedure:

a. Press: [Back Space] until the cursor has moved back and erased the error.

Retype, correcting errors.

— or —

b. Press: [Esc]

Retype entire line, correcting errors.

NOTE

THERE ARE OTHER WAYS TO CORRECT ERRORS. YOU CAN READ ABOUT THEM IN THE DISK OPERATING SYSTEM MANUAL.

Task: **To Enter A Command**

Explanation Of Task: Simply typing a command statement does not tell the computer to obey the command. You must "enter" the command into the computer by pressing the RETURN (Return) key or the ENTER (Enter) key.

Procedure:

Type in the command statement.

Press: (Return) or (Enter)

Task: **To Print What Is On The Screen**

Explanation Of Task: You may sometimes want a printed record (often called a hard copy) of what is displayed on your monitor screen. If you have a printer, you can do this.

Procedure:

Make sure your printer is connected in accordance with the instructions provided by its manufacturer. Turn on the printer. If you are using a serial printer, you will need to use the MODE command to set up the computer for printer use (see the Disk Operating System manual).

Press and hold: (Shift)

Press: (PrtSc)

Release both keys.

NOTE

IF YOU DO THIS WITHOUT A PRINTER CONNECTED, YOUR COMPUTER WILL SEEM TO STOP WORKING. IF THIS HAPPENS, WAIT ONE MINUTE; YOUR COMPUTER SHOULD RETURN TO NORMAL OPERATION, AND YOU CAN PROCEED. NOTHING IN THE RANDOM ACCESS MEMORY WILL HAVE BEEN LOST.

IF, AFTER ONE MINUTE, YOUR COMPUTER IS STILL NOT WORKING PROPERLY, TURN THE SYSTEM UNIT OFF, WAIT FIFTEEN SECONDS, TURN IT BACK ON, AND START AGAIN. NOTHING WILL HAVE BEEN HARMED, BUT, OF COURSE, EVERYTHING IN RANDOM ACCESS MEMORY WILL HAVE BEEN LOST.

Task: **To Print While You Type**

Explanation Of Task: Sometimes, you may want your printer to make an immediate and continuing copy of what you type and of what the computer itself displays on the monitor screen. When you enter this mode of operation, each time something new appears on the screen, it will be immediately copied on the printer (the printer "echoes" the screen).

Procedure:

Make sure your printer is connected in accordance with the instructions provided by its manufacturer. Turn on the printer. If you are using a serial printer, you will need to use the MODE command to set up the computer for printer use (see the Disk Operating System manual).

Press and hold: Ctrl

Press: PrtSc

Release both keys.

To stop this process of the printer "echoing" the screen,

Press and hold: Ctrl

Press: PrtSc

Release both keys.

Task: **To Stop a Moving Display**

Explanation Of Task: Sometimes you will find information is appearing and moving up the monitor screen too fast for you to read it. When this happens, you may want to temporarily stop the movement of the display.

NOTE

THE WAY INFORMATION IS DISPLAYED AND THEN MOVED UP THE SCREEN IS CALLED "SCROLLING"

Procedure:

Press and hold: Ctrl

Press: Num Lock

Release both keys. The display will stop moving.

When you wish to see more of the display,

Press: Return

Task: **To Start DOS Again (System Reset)**

Explanation Of Task: Sometimes you may wish to start over from the beginning — to go back to the original DOS date prompt display.

NOTE

THIS PROCEDURE WILL CAUSE ANY PROGRAM IN PROGRESS TO BE STOPPED. ALL INFORMATION WILL BE LOST IF IT IS NOT FIRST SAVED ON MAGNETIC DISK.

Procedure:

Press and hold: Ctrl and Alt

Press: Del

Release all three keys.

In a few seconds, the computer will reload DOS and display the original date prompt.

```
MS-DOS 2.XX  Rev. 2.X  (A)
Copyright 1981,82,83 Microsoft Corp.

Command v. 2.XX
Current date is Fri 1-04-1980
Enter new date:
```

Task: **To Change The Default Drive**

Explanation Of Task: Your monitor screen tells you which drive has been established as the default drive. (See Section 2.2 for an explanation of the default drive.) If the diskette drive is the default drive, the DOS prompt displayed on your monitor screen will be the A> symbol; if the fixed disk drive is the default drive, the DOS prompt displayed on your monitor screen will be the C> symbol.

Default status can be easily changed.

Procedure:

a. If the DOS prompt is the A> symbol,

   Type: C:

   Press: Return

   The DOS prompt will now appear as the C> symbol; the fixed disk drive is now the default drive.

b. If the DOS prompt is the C> symbol,

   Type: A:

   Press: Return

   The DOS prompt will now appear as the A> symbol; the diskette drive is now the default drive.

NOTE

THE CLS COMMAND DEPENDS UPON THE PRESENCE OF THE ANSI.SYS DEVICE DRIVER (INSTALLED USING THE CONFIG.SYS FILE.) PLEASE REFER TO THE DOS MANUAL, ''ANSI ESCAPE SEQUENCES'' AND ''INSTALLABLE DEVICE DRIVERS.''

2.5 HOW TO NAME FILES

As you know, files are used to organize information so that your task will be easy when you need to refer back to that information. Computer files serve a similar function.

MORE ABOUT FILES

There are two general categories of computer files — program files and data files.

Program files are lists of instructions for your computer; they are what a programmer creates when making an applications program. In most circumstances, there is no need for you to know the contents of these files. You simply command DOS to execute the program instructions. The GW-BASIC manual provides information on how you can create your own program files.

Data files are rather different in nature. You are very interested in the contents of these files. Data files do not contain instructions for the computer. Rather, they contain information that is valuable and useful to you. You, not the programmer, create these files.

When you use manila folders to keep your paper files, you put labels on the folder tabs. Without such labels, you would be hopelessly lost every time you tried to find some specific information stored in your files. The same is true with computer files — they have to be labeled.

FILE NAMES

File names are made up of a base name and an extension (sometimes optional).

NOTE

IN FILE NAMES, DOS DOES NOT DISTINGUISH BETWEEN UPPER AND LOWER CASE LETTERS. YOU CANNOT CREATE DIFFERENT FILE NAMES BY SIMPLY USING DIFFERENT LETTER CASES.

Base Names

Assigning base names is the easiest way to label your files. A base name is a sequence of one to eight characters. Listed below are a few examples:

ACCTS	LETTER
GAME	POKER
CLIENTS	PRICES

Just by looking at these base names, you can probably guess at the type of information stored in each file.

Extensions

Extensions can be used to simplify the organization of your files. An extension is a sequence of one to three characters that are added at the end of a base name. A period is used to separate a base name from its extension. Listed below are some examples of base names followed by extensions.

ACCTS.'83	LETTER.#1
ACCTS.'84	LETTER.#2
GAME.PAC	POKER.BAS
GAME.ZAP	POKER.ASM
CLIENTS.1-4	PRICES.GDS
CLIENTS.5-9	PRICES.SVC

You can see from these examples that more than one file can be assigned the same base name so long as each has its own unique extension. You do not have to think up unique base names for all of your account files. For example, you could assign all of them a base name such as ACCTS and then differentiate between them by adding extensions that designate the year in which each was made.

The extension is often used to designate the programming language in which a program is written. For example, POKER.BAS would be a poker game written in the programming language called BASIC.

RESERVED NAMES

There are some names that are reserved by DOS for other purposes; therefore, you must not use any of the following names for your files:

AUX

COM1

COM2

CON

LPT1

LPT2

LPT3

PRN

NUL

See the Disk Operating System manual for an explanation of reserved names.

DRIVE SELECTION

When you want to store files, your computer gives you two options; you can store your files on diskettes, or you can store them on the magnetic disks built into the fixed disk drive.

Storing Files On Diskette

A diskette is capable of storing 360,000 characters of information (a character is often referred to as a byte). Thus, a single diskette is capable of storing more than 200 double spaced pages of information.

Diskettes are easy to use, and, since you can buy as many of them as you please, the amount of data you can store on diskette is virtually unlimited.

However, since you have a fixed disk drive in your computer, you will probably want to use it most of the time.

NOTE

TO HELP YOU KEEP TRACK OF YOUR DISKETTES, DOS MAKES IT POSSIBLE FOR YOU TO ASSIGN THEM NAMES JUST AS YOU ASSIGN NAMES TO YOUR FILES. SEE THE FORMAT COMMAND SECTION OF THIS CHAPTER FOR INFORMATION ON DISK NAMING.

Storing Files On Fixed Disk

The magnetic disks built into the fixed disk drive can store 10 million characters of information — that is approximately five thousand double spaced typewritten pages. You are not likely to quickly run out of storage space on your fixed disk drive!

As well as providing a vast storage space for files, the fixed disk drive is also very convenient and easy to use. When your files are stored on fixed disk, there is no need to insert a diskette into the diskette drive each time you wish to access a file, and your computer will operate much faster.

If, however, your fixed disk drive should malfunction or if you should accidentally give the wrong DOS command, you could temporarily or even permanently lose every file you have stored on the fixed disk drive. You should, therefore, keep a library of diskettes containing backup copies of every important file you have stored on the fixed disk. (For procedures on how to do this, refer to Section 2.8.)

USING THE DRIVE SPECIFIER

You will need to instruct your computer whether it should use drive A: or drive C:. To do this, you simply add a drive specifier code in front of the base name of the file. The drive specifier is a letter followed by a colon. An A: stands for the diskette drive, and a C: stands for the fixed disk drive. Given below are examples of drive specifier codes as they are used with base names and extensions.

A:ACCTS.'83	C:GAME.PAC
C:ACCTS.'84	A:GAME.ZAP

If you do not use a drive specifier code, the computer will assume that you want to use the default drive, and it will proceed accordingly. This is a perfectly acceptable way to do things if the default drive is your choice.

For example, if the DOS prompt is the A> symbol, the following two entries are equivalent — the computer will react in the same way to either.

A:ACCTS.'83	ACCTS.'83

DIRECTORY NAMES

You can use directory names to help you organize your files. The Disk Operating System manual provides full information on the use of directory names.

A FEW PRACTICAL CONSIDERATIONS

If you chose to, you could use a file name such as 4@#L%_. The computer would have no problem. You might, however. After a month or two, you would probably find it difficult to remember just what was stored in a file with a name like that.

You can use a file name as often as you wish, so long as it is used only once on any given disk. (See the Disk Operating System manual for an explanation of how hierarchical directories can be used to get around this.)

There are other matters that can be taken into consideration when you assign base names and extensions. You may want to refer to the Disk Operating System manual for more information on the subject. Appendix E of this manual provides an introduction to the use of global characters in file names.

HOW TO FORMAT FILE NAMES

Here are a few rules and guidelines that summarize what you have learned about the naming of files.

a. The base name is not optional. It must be from one to eight characters in length, without any spaces between characters.

b. The extension is sometimes optional. If it is used, a period must separate it from the base name. If it is not used, no period should follow the base name.

c. An extension, if used, must be from one to three characters in length.

d. The period can be used in only one place: between the base name and its extension.

e. The colon can be used in only one place: between the drive specifier and the base name.

f. The drive specifier is optional if the file is to be stored on the default drive.

g. None of the following characters may be used anywhere in the name of a file:

- the blank character (the space created by pressing the spacebar)

- the comma
- the double quotation mark

h. Any of the following characters may be used in the names of files:

- any letter of the alphabet (uppercase or lowercase)
- any digit
- the following symbols and punctuation marks:

$ & # % ' ( ) - @ ^ { } ~ ` !

A FEW BAD EXAMPLES

Below, you will find some examples of unacceptable file names.

File Name	Explanation
A: ACCTS.'83	There should not be a space between the colon and the base name.
PRICELIST.'85	The base name is too long.
A:ACCTS,1983	There are two problems with this name. A period instead of a comma should have been used between the base name and the extension. Also, the extension exceeds its three character limit.

2.6 LOADING DOS

Before the computer will accept DOS commands, the DOS programs must be loaded from disk storage into the computer's random access memory.

As soon as you turn it on, the computer performs a self diagnostic test. Once this test has been satisfactorily completed, the computer immediately searches the disk drives for the DOS programs. First, it searches the diskette drive; if it does not find the DOS programs there, it then searches the fixed disk drive. If it finds the DOS programs in either of these places, the DOS programs will be automatically transferred (loaded) to the computer's random access memory. The first drive on which DOS is found will be assigned default status. The computer will notify you of a successful transfer by presenting the date prompt on the monitor screen.

IF DOS IS ON FIXED DISK

If you have copied the DOS programs onto fixed disk in accordance with Chapter 1, perform the following procedure:

1. Turn the monitor on and wait one minute for it to warm up.

2. If you are uncertain about how your monitor's contrast and brightness controls should be set, turn them all the way clockwise.

3. Turn on the system unit power switch. Once the computer has run through its self diagnostic test (see Chapter 1), it will automatically load DOS from the fixed disk drive. The following display will then appear on your monitor screen:

```
MS-DOS 2.XX  Rev. 2.X  (A)
Copyright 1981,82,83 Microsoft Corp.

Command v. 2.XX
Current date is Tue 1-01-1980
Enter new date:
```

4. Adjust your monitor's contrast and brightness controls for the best display.

IF DOS IS NOT ON FIXED DISK

If you have not yet made a copy of the DOS programs on the fixed disk drive, you should perform the backup procedure given in Chapter 1. If, for some reason, you have decided not to use the fixed disk drive as your source for the DOS programs, it will be necessary for you to install the DOS diskette in the diskette drive each time you turn the computer on.

NOTE

TO AVOID POSSIBLE DAMAGE TO YOUR DISKETTES, YOU SHOULD NOT CLOSE THE DOOR OF THE DISKETTE DRIVE (IF YOU HAVE A DISKETTE INSTALLED) UNTIL AFTER THE RED ACTIVE LIGHT ON THE FLOPPY DRIVE COMES ON.

1. Turn the monitor on and wait one minute for it to warm up.

2. If you are uncertain about how your monitor's contrast and brightness controls should be set, turn them all the way clockwise.

3. Insert the DOS diskette (Chapter 1) but do not close the door of the diskette drive.

4. Turn on the system unit power switch.

5. As soon as you see the test status message (Chapter 1) appear in the top left corner of your monitor screen, close the door of the diskette drive. Once the computer has run through its self diagnostic test, it will automatically load DOS from the diskette drive. The following display will then appear on your monitor screen:

```
MS-DOS 2.XX  Rev. 2.X  (A)
Copyright 1981,82,83 Microsoft Corp.

Command v. 2.XX
Current date is Tue 1-01-1980
Enter new date:
```

6. Adjust your monitor's contrast and brightness controls for the best display.

2.7 TIME AND DATE

Once DOS is loaded, your computer will ask you for the current time and date. This is to help you manage your files by enabling you to keep track of when a file was created or last revised. For instance, this could help you keep track of the last time an address list file was updated.

To enter the time and date, follow the procedure given below.

1. Once DOS is loaded, the following display will appear on your monitor screen:

```
MS-DOS 2.XX  Rev. 2.X  (A)
Copyright 1981,82,83 Microsoft Corp.

Command v. 2.XX
Current date is Tue 1-01-1980
Enter new date:
```

2. You may respond to the date prompt in either of two ways:

   a. If a record of the date is not important to you,

      Press: Return

      — or —

   b. If you do want to keep track of the date, type in the date. For example:

      Type: 06-26-85

NOTE

THE FORMAT IS MONTH, DATE, YEAR (WITH A DASH BETWEEN EACH SEGMENT). THE MONTH MUST BE GIVEN IN DIGITS, NOT LETTERS. IT IS ALSO ACCEPTABLE TO USE A SLASH (/) RATHER THAN A DASH BETWEEN EACH SEGMENT.

Press: Return

Once you have performed either (a) or (b), the following display will appear on your monitor screen:

```
MS-DOS 2.XX  Rev. 2.X  (A)
Copyright 1981,82,83 Microsoft Corp.

Command v. 2.XX
Current date is Tue 1-01-1980
Enter new date: 06/26/85
Current time is 0:04:48.44
Enter new time:
```

NOTE

THE DATE AND TIME FIGURES SHOWN ABOVE ARE ONLY EXAMPLES. IF YOU DID NOT ENTER A DATE, THE "ENTER NEW DATE" LINE WILL NOT BE FILLED IN.

3. You may respond to the time prompt in either of two ways:

   a. If a record of the time is not important to you,

   Press: Return

— or —

b. If you do want to keep track of the time, type in the time. For example,

Type: **15:30**

NOTE

THE FORMAT IS HOUR, COLON, MINUTE. (ALTHOUGH THE CURRENT TIME LINE OF THE DISPLAY INDICATES HOURS, MINUTES, SECONDS, AND HUNDREDTHS OF SECONDS, YOU NEED ENTER ONLY THE HOURS AND MINUTES.) THE COMPUTER USES A 24 HOUR CLOCK, SO A 3:30 P.M. TIME SHOULD BE TYPED IN AS 15:30.

Press: Return

Once you have performed either (a) or (b), the DOS prompt will appear on your monitor screen:

```
C>
```

NOTE

GENERALLY, IN THIS SECTION, THE DOS PROMPT IS ASSUMED TO BE THE C> SYMBOL. OF COURSE, IF THE A: DRIVE WAS THE SOURCE OF THE DOS PROGRAMS, OR IF YOU HAVE ELECTED TO CHANGE THE DEFAULT DRIVE, THE DOS PROMPT ON YOUR MONITOR SCREEN WILL APPEAR AS THE A> SYMBOL.

IF A PROCEDURE CALLS FOR A SPECIFIC DOS PROMPT, YOU MUST OBTAIN THAT PROMPT BEFORE CONTINUING (REFER TO THE PROCEDURE FOR CHANGING THE DEFAULT DRIVE IN SECTION 2.4).

2.8 THE DOS COMMANDS

RESIDENT AND NONRESIDENT COMMANDS

Although vast amounts of information can be stored on magnetic disks, the amount of information that a computer's random access memory (RAM) can hold at any given time is relatively limited. In order to leave this memory space open for your files, only the most often used DOS programs are put into the computer's random access memory when DOS is initially loaded. These programs are referred to as resident commands. The programs for nonresident commands are transferred from disk to random access memory only after you have entered the command statement. This means that, if you do not have the DOS programs on fixed disk, you must have the DOS diskette installed in the diskette drive at the time you enter a command statement for any of the nonresident commands.

The resident DOS commands are:

BREAK	PATH
CHDIR (CD)	PROMPT
CLS	RENAME (REN)
COPY	RMDIR (RD)
DATE	TIME
DEL (DELETE)	TYPE
DIR (DIRECTORY)	VER (VERSION)
ERASE	VERIFY
MKDIR (MD)	VOL (VOLUME)

TYPING THE DOS COMMANDS

Throughout this manual, when you are told to type in a command statement, you will be shown the statement in lowercase letters. If you so choose, however, you can type in the command statements using uppercase letters, lowercase letters, or mixed-case letters. Otherwise, you must type in the command exactly as it is shown.

SOME OF THE DOS COMMANDS

Table 2-2 lists and briefly describes the DOS commands dealt with in this manual. For a more extensive list of DOS commands, refer to Appendix B. The Disk Operating System manual provides in-depth information on all DOS commands.

Table 2-2

Command	Description
COPY	Copies a specified file either from one disk to another, or onto the same disk (with change of file name).
DEL	Deletes specified files.
DIRECTORY	Lists the files on a disk.
FORMAT	Sets up the directory, tracks, and sectors on a disk.
MODE	Centers the display on the monitor screen and sets up various I/O device parameters (see the Disk Operating System manual).
RENAME	Renames a file.
TYPE	Displays the contents of a specified file.

This manual does not provide comprehensive information on the DOS commands. If you have had previous experience with MS-DOS, you will probably realize, for instance, that the command formats set forth in the following discussions are often simplified.

For example, an actual format for the COPY command is:

copy [d:][path]base name[.ext][/A][/B]
[d:][path][base name[.ext][/A][/B][/V]

If you feel up to dealing with a command like that, you should probably ignore the remainder of this chapter and dive right into the Disk Operating System manual.

However, you may feel more comfortable with a command format like the following:

copy <file name> <drive>

That is the format dealt with in this manual. Using it, you can do a lot of copying, and there is a good chance it will be sufficient for your day-to-day tasks.

The simplified commands given in this chapter will give you enough information to do a majority of the tasks that most people perform with DOS.

NOTE

SEE APPENDIX B FOR INFORMATION ON THE CONVENTIONS OF THE FORMAT NOTATION USED IN THIS MANUAL.

THE DOS COMMANDS

COMMAND: **COPY**

FORMAT: **copy <file name> <drive>**

EXPLANATION: The COPY command is used to duplicate a file. (Remember, if you update a file, your backup copy of that file should be updated as well.) It is possible to copy from diskette to diskette, from diskette to fixed disk, or from fixed disk to diskette. For the diskette to diskette procedure and for variations on the COPY command, refer to your Disk Operating System manual.

NOTE

ALTHOUGH THIS MANUAL DOES NOT COVER THE DISKETTE TO DISKETTE COPY PROCEDURE, REMEMBER THAT YOU CAN ALWAYS COPY FROM DISKETTE TO FIXED DISK AND THEN BACK TO DISKETTE.

PROCEDURE:

DISKETTE TO FIXED DISK

1. Install the diskette containing the file you want copied, and close the door of the diskette drive.

2. Obtain the A> DOS prompt.

3. In response to the DOS prompt, type the COPY command followed by the file name (base name and extension) of the file you want copied and then the drive specifier of the fixed disk drive. For example,

THE DOS COMMANDS

COMMAND: **COPY (continued)**

PROCEDURE: (continued)

Type: **copy letter.#10 c:**

Press: Return

The activity indicators will light as information is transferred from diskette to fixed disk. Then the following message will appear on your monitor screen:

```
1 file(s) copied

A>
```

4. The file has now been copied onto the fixed disk drive. You may wish to confirm this by using the DIRECTORY command.

FIXED DISK TO DISKETTE

1. Obtain the C> DOS prompt.

2. Install the diskette on which you want a copy made and close the door of the diskette drive.

3. In response to the DOS prompt, type the COPY command followed by the file name (base name and extension of the file you want copied and then the drive specifier of the diskette drive. For example,

THE DOS COMMANDS

COMMAND: **COPY** (continued)

PROCEDURE: (continued)

Type: **copy letter.#10 a:**

Press: Return

The activity indicators will light as information is transferred from the fixed disk drive to the diskette. Then the following message will appear on your monitor screen:

```
1 file(s) copied

C>
```

4. The file has now been copied onto the diskette. You may wish to confirm this by using the DIRECTORY command.

THE DOS COMMANDS

COMMAND: **DELETE**

FORMAT: **del <file name>**

EXPLANATION: The DELETE command enables you to remove a file from a disk. For instance, you might wish to erase files from a disk that is becoming cluttered with a lot of obsolete files. In so doing, you would make your files easier to manage, and, at the same time, you would free storage space for new files you might want to add to the disk.

NOTE

YOU WILL HAVE TO KNOW THE EXACT BASE NAME AND EXTENSION OF THE FILE YOU WISH TO DELETE. USE THE DIRECTORY COMMAND IF YOU ARE UNCERTAIN.

MAKE SURE YOU WILL NEVER WANT TO USE THE INFORMATION STORED IN THE FILE THAT IS TO BE DELETED. YOU MAY WANT TO USE THE TYPE COMMAND IF YOU ARE UNCERTAIN.

PROCEDURE:

1. If the file to be deleted is on diskette, insert the diskette and close the drive door.

2. Obtain the DOS prompt for the drive on which the file to be deleted is located (A> for diskette, C> for fixed disk).

3. In response to the DOS prompt.

THE DOS COMMANDS

COMMAND: **DELETE** (continued)

PROCEDURE: (continued)

type the DELETE command followed by the file name (base name and extension) of the file that you wish to delete. For example, if you no longer need the file named LETTER.#10,

Type: del letter.#10

Press: Return

The DOS prompt will appear on your monitor screen.

NOTE

THE FILE HAS BEEN DELETED. YOU MAY WISH TO USE THE DIRECTORY COMMAND TO CONFIRM THIS.

THE DOS COMMANDS

COMMAND: **DIRECTORY**

FORMAT: **dir**

EXPLANATION: The DIRECTORY command displays a list of the files stored on a diskette or on the fixed disk drive. The command is very useful when you have forgotten the contents of a disk or when you are uncertain of the exact name you assigned to a specific file.

PROCEDURE:

1. If you have a printer and would like a printed copy of the directory, make sure your printer is connected in accordance with the instructions provided by its manufacturer. Turn on the printer. If you are using a serial printer, you will need to use the MODE command to set up the computer for printer use (see the Disk Operating System manual).

2. Obtain the DOS prompt for the drive whose directory you wish to see (A> for diskette, C> for fixed disk).

3. If you have a printer and would like a printed copy of the directory,

   Press and hold: Ctrl

   Press: PrtSc

   Release both keys.

THE DOS COMMANDS

COMMAND: **DIRECTORY** (continued)

PROCEDURE: (continued)

4. If you wish to see a directory of the files on a diskette, insert the diskette and close the drive door.

5. In response to the DOS prompt,

   Type: dir

   Press: Return

   The monitor screen will present a display similar to that shown below. (Your actual display will, of course, be determined by the contents of the disk whose directory is being shown.)

```
Directory of A:  \

ACCTS          '83          15957        10-19-83        7:51p
GAME           ZAP           5986         1-04-83        8:23a
LETTER         #1            8080        10-19-83        7:51p
```

NOTE

THE DIRECTORY DISPLAY SHOWS THE BASE NAME, EXTENSION, AND SIZE (NUMBER OF BYTES) OF EACH FILE. IT ALSO SHOWS THE DATE AND TIME EACH FILE WAS CREATED OR LAST UPDATED.

6. If the directory display is moving up the screen (scrolling) too quickly for you to read it,

THE DOS COMMANDS

COMMAND: **DIRECTORY** (continued)

PROCEDURE: (continued)

Press and hold: Ctrl

Press: Num Lock

Release both keys.

The display will stop scrolling.

When you want to see more of the directory,

Press: Return

The directory display will once again begin to scroll. To stop it again, return to the beginning of step 6.

7. Once the entire directory has been displayed, the DOS prompt will appear on your monitor screen.

8. In order to stop the printer,

   Press and hold: Ctrl

   Press: PrtSc

   Release both keys.

THE DOS COMMANDS

COMMAND: **FORMAT**

FORMAT: **format** <**drive**>

EXPLANATION: The FORMAT command is used to set up the directory, tracks, and sectors on a disk (see Appendix D for information on directories, tracks, and sectors).

NOTE

THE FORMAT COMMAND IS USED TO FORMAT BOTH THE FIXED DISK DRIVE AND INDIVIDUAL DISKETTES. THIS SECTION DEALS ONLY WITH THE FORMATTING OF DISKETTES. REFER TO CHAPTER 1 AND TO THE DISK OPERATING SYSTEM MANUAL FOR INFORMATION ON FORMATTING THE FIXED DISK DRIVE.

Formatting must be done before files can be stored on a diskette. Normally, a diskette will be formatted only once — when it is brand new. When a diskette is formatted, all files stored on it are destroyed. This could be useful if you wished to clear a diskette of all files and start again with a blank, formatted diskette. Obviously, however, you would not want to format a diskette on which you had stored valuable files (especially if you did not have backup copies of those files).

It is possible to assign a name to a diskette at the time you format it. If you do this, the diskette name will appear on your monitor screen when you use the DIRECTORY command to display the contents of the diskette.

THE DOS COMMANDS

COMMAND: **FORMAT** (continued)

EXPLANATION: (continued)

If you feel this would help you keep better track of your diskettes, you should refer to the Disk Operating System manual for procedures.

If you want the DOS system programs to be recorded on a diskette as it is being formatted, use the variation of the FORMAT command used in Chapter 1 (i.e., FORMAT/S). Usually, however, you will wish simply to format a diskette to prepare it for file storage. Refer to the Disk Operating System manual or Chapter 1 if you wish both to format and to record the DOS programs.

PROCEDURE:

1. Obtain the DOS prompt for the drive that contains your DOS programs.

2. In response to this prompt,

   Type: format a:

   Press: Return

   The following prompt will appear on your monitor screen:

```
Insert new diskette in drive A: and press any key when ready
```

THE DOS COMMANDS

COMMAND: **FORMAT** (continued)

PROCEDURE: (continued)

3. In response to this prompt,

   Insert the diskette you want formatted and close the diskette drive door.

   Press: Return

   The diskette drive activity indicator will light as the diskette is formatted. Then the following message and prompt will appear on your monitor screen:

```
Formatting Drive A . . . . .
Format complete
xxxxxx bytes total disk space
xxxxxx bytes available on disk
Format another disk (Y/N)?
```

4. In response to this prompt,

   Type: n

5. Remove the formatted diskette. It is now ready to have files stored on it.

THE DOS COMMANDS

COMMAND: **RENAME**

FORMAT: **rename <old file name> <new file name>**

EXPLANATION: The RENAME command enables you to change the base name and/or extension of a file. For instance, you may wish to change a name that you find hard to remember or not quite appropriate.

NOTE

YOU MUST KNOW THE EXACT OLD NAME OF THE FILE YOU WISH TO RENAME. YOU MAY WISH TO USE THE DIRECTORY COMMAND AT THIS TIME IF YOU ARE UNCERTAIN.

PROCEDURE:

1. If the file to be renamed is on diskette, insert the diskette and close the drive door.

2. Obtain the DOS prompt for the drive on which the file to be renamed is located (A: for diskette, C: for fixed disk).

3. In response to the DOS prompt, type in the RENAME command followed by the old file name (base name and extension) and then the new file name to be assigned. For example, if the file's old name is CRSPND.#10 and you wish to give it the more easily remembered name LETTER.#10.

   Type: rename crspnd.#10 letter.#10

THE DOS COMMANDS

COMMAND: **RENAME** (continued)

PROCEDURE: (continued)

Press: Return

The DOS prompt will appear on your monitor screen.

NOTE

THE FILE IS NOW RENAMED. YOU MAY WISH TO USE THE DIRECTORY COMMAND TO VERIFY THIS.

THE DOS COMMANDS

COMMAND: **MODE**

FORMAT: **mode ,r,t**

EXPLANATION: With certain video monitors, the first few characters of a line may not, at first, be visible on the screen. If your video monitor does not have a horizontal adjustment control that enables you to move these characters onto the screen (move them to the right), you can use the MODE command. For other uses of the MODE command (e.g., setting up the computer to use a serial printer), refer to the Disk Operating System manual.

PROCEDURE:

1. Obtain the DOS prompt for the drive that contains your DOS programs.

2. In response to the DOS prompt,

   Type: **mode ,r,t**

NOTE

THE FORMAT IS IMPORTANT. TYPE THE COMMAND, A SPACE, A COMMA, AN "R", A COMMA, AND A "T".

THE DOS COMMANDS

COMMAND: **MODE** (continued)

PROCEDURE: (continued)

Press: Return

The following display will appear on your monitor screen:

```
HHHHHHHHHHHHHHHH.....HHHH

Is screen aligned properly? (Y/N)
```

3. There are two possible responses to this prompt:

   a. If the display alignment is correct,

      Type: y

      Press: Return

NOTE

IF YOU ENTERED A "Y" FOR YES, YOU WILL BE RETURNED TO THE DOS PROMPT. DO NOT TRY TO CONTINUE WITH THE REMAINDER OF THIS PROCEDURE; YOUR DISPLAY IS ALREADY SET UP.

THE DOS COMMANDS

COMMAND: **MODE** (continued)

PROCEDURE: (continued)

— or —

b. If the display alignment is not correct,

Type: n

Press: Return

The monitor screen will present the following display:

```
HHHHHHHHHHHHHHHH.....HHHH

Is screen aligned properly? (Y/N) y
```

4. In response to the above display,
   Return to the beginning of Step 3.

NOTE

IF YOU ARE USING A VM-3 MONITOR, DO NOT USE THE ,R,T OR THE ,L,T FUNCTIONS OF THE MODE COMMAND. YOUR VM-3 HAS A HORIZONTAL ADJUSTMENT LOCATED ON THE REAR OF THE MONITOR. SEE YOUR VM 3 USER'S MANUAL FOR DETAILS.

THE DOS COMMANDS

COMMAND: **TYPE**

FORMAT: **type <file name>**

EXPLANATION: The TYPE command enables you to see the contents of any given file. You can have the contents of the file displayed on the monitor screen, and, if a printer is connected to your computer, you can have a printed copy as well.

NOTE

YOU MAY SEE SOME UNUSUAL INFORMATION DISPLAYED ON YOUR SCREEN AND PRINTER. THIS INFORMATION HAS MEANING TO THE COMPUTER EVEN THOUGH IT LOOKS INCOMPREHENSIBLE TO YOU. THIS WILL BE TRUE ESPECIALLY WITH FILES THAT HAVE .EXE, .COM, OR .SYS EXTENSIONS.

PROCEDURE:

1. If you want a printed copy of the file, make sure your printer is connected in accordance with the instructions provided by its manufacturer. Turn on the printer. If you are using a serial printer, you will need to use the MODE command to set up the computer for printer use (see the Disk Operating System manual).

2. Obtain the DOS prompt for the drive on which the file whose contents you wish to see is located (A: for diskette, C: for fixed disk).

THE DOS COMMANDS

COMMAND: **TYPE** (continued)

PROCEDURE: (continued)

3. If you do not have a printer or simply do not want a printed copy, go directly to Step 4. If you have a printer and do want a printed copy, respond to the DOS prompt as follows:

   Press and hold: Ctrl

   Press: PrtSc

   Release both keys.

   Press: Return

   The DOS prompt should appear on your monitor screen, and the printer should "echo" the screen by printing the DOS prompt. If this does not occur, repeat Step 3.

4. If the file to be displayed is on diskette, insert the diskette.

5. In response to the DOS prompt, type the TYPE command followed by the file name (base name and extension) of the file whose contents you want displayed. For example,

   Type: `type letter.#10`

   Press: Return

THE DOS COMMANDS

COMMAND: **TYPE** (continued)

PROCEDURE: (continued)

The command you just entered and the contents of the specified file will be displayed on the monitor screen and, if you so elected, printed on your printer.

6. In order to stop the printer,

   Press and hold: Ctrl

   Press: PrtSc

   Release both keys.

NOTES:

CHAPTER 3. TURNING IT OFF

3.1 PROCEDURES FOR TURNING OFF THE COMPUTER

There are a few guidelines you should observe when you turn your computer off:

- Save (store) your files on diskette or fixed disk before you turn off the power to your computer. Everything in the random access memory (RAM) will be lost, so do a file save before you set the system unit power switch to off.

- Do not turn off the computer if either of the disk drive activity indicators is on.

- Do not turn the computer off while a diskette is installed in the diskette drive.

The procedure for turning off your computer is given below:

1. Return to the DOS prompt (A> or C>).

2. Make sure both disk drive activity indicators are off.

3. If a diskette is installed, open the door of the diskette drive and remove the diskette.

4. Turn off the power switch at the rear of the system unit.

5. Turn off the video monitor.

6. Turn off any other system components.

3.2 RELOCATING THE COMPUTER

1. Obtain the DOS prompt on your monitor screen (A> or C>).

   Type: shiptrak

   Press: Return

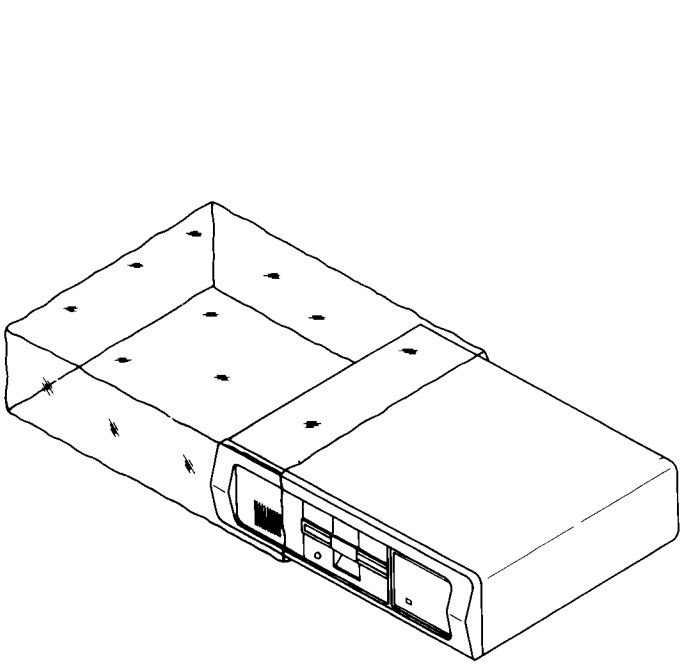
   The following message will appear on your monitor screen:

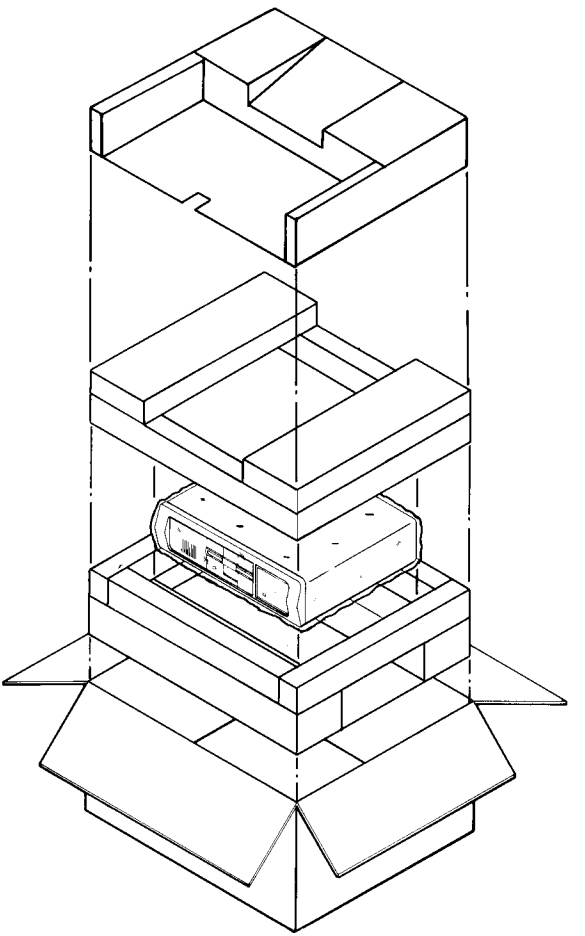
> Remove power from the System Now!

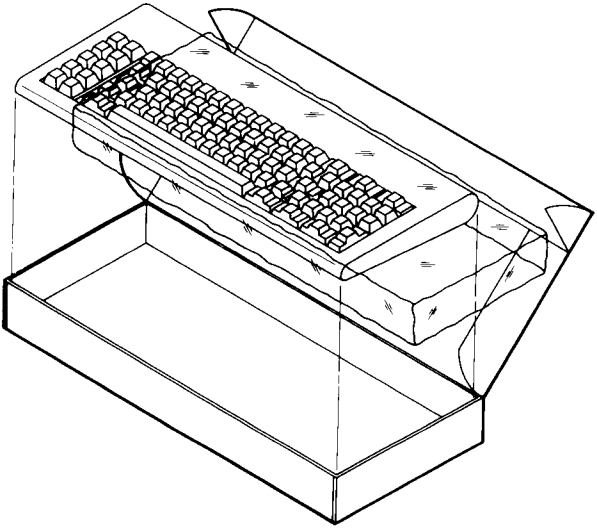
2. Make sure the activity indicators are off.
3. Remove any diskette that might be in the drive.
4. Turn off the power switch at the rear of the system unit.
5. Turn off the monitor power switch.
6. Turn off any other system components.
7. Disconnect the power cord from the system unit.
8. If you have a printer, disconnect it from the computer.
9. Disconnect all remaining cables.
10. Install the cardboard shipping insert that was removed from the diskette drive when the system unit was first taken from its shipping box.
11. For short moves, each system component should be moved separately.

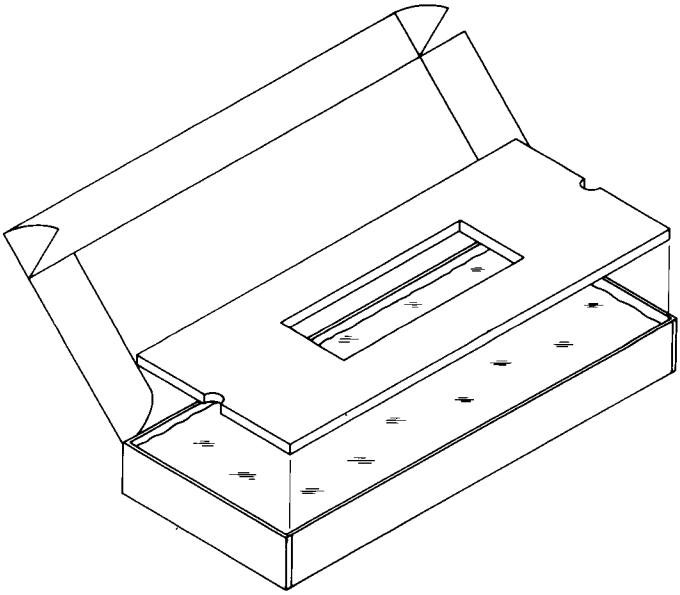
12. For long distance moves, pack each system component in its original shipping container, protective wrappers, foam, etc.

13. To set up your computer after a move, refer to Sections 1-2, 1-3, and 1-5.









NOTES:

CHAPTER 4. OPTIONS

* * * * * *

1. Memory Integrated Circuits Option

2. Coprocessor Option

4.1 INTRODUCTION

A wide variety of options can be installed in your system unit.

The installation of an option may affect the warranty on your computer, so read your warranty information and consult your dealer if you have questions.

This chapter provides guidelines and procedures that apply to the installation of a wide variety of options. For detailed instructions, you should refer to documentation provided by the manufacturer of your option.

Section 4.2 gives instructions on how to prepare your system unit for the installation of options. Section 4.3 gives guidelines for the installation of option cards in their slots. Section 4.4 provides a table giving switch settings and jumper configurations for various options. Section 4.5 gives instructions on how to prepare your system unit for use after an option has been installed.

In general, the information presented in this chapter should take precedence over the information provided by the manufacturer of an option. If these two sources of information seem to be in conflict, you may wish to contact your dealer before you begin the installation procedure.

Coprocessors and memory integrated circuits are typically supplied without documentation. This manual, therefore, provides instructions for the installation of these options.

4.2 PREINSTALLATION PROCEDURE

In this section, you will find instructions on how to prepare your system unit for the installation of options.

If you have just unpacked your computer (Section 1.3) and intend to install options before setting up your system, go directly to step 10.

1. Obtain the DOS prompt for the drive that contains your DOS programs.

2. In response to the DOS prompt,

   Type: shiptrak

   Press: Return

   The following message will appear on your monitor screen:

> Remove power from the System Now!

3. Make sure the disk drive activity indicators are off.

4. Remove any diskette that might be in the diskette drive.

5. Turn the system unit power switch off.

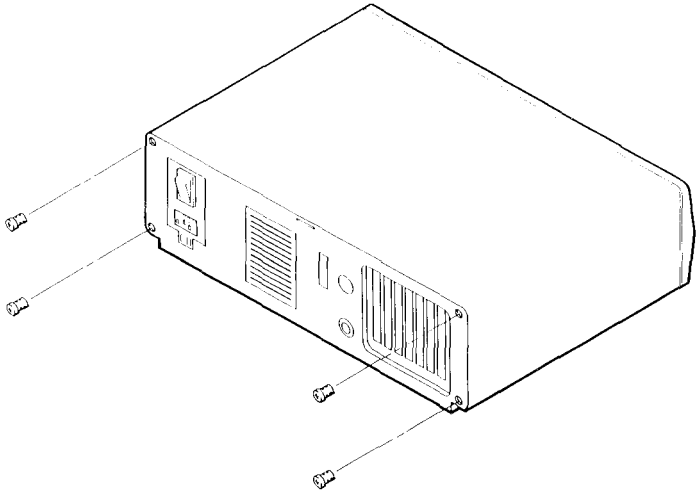
6. Turn the monitor power switch off.

7. Turn all other system components off.

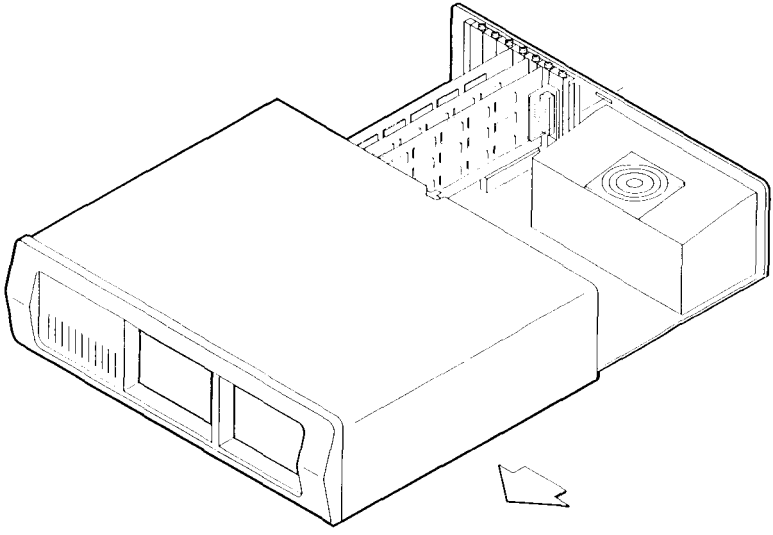
8. Disconnect the power cord from the system unit.

9. Disconnect all other cords and cables from the system unit.

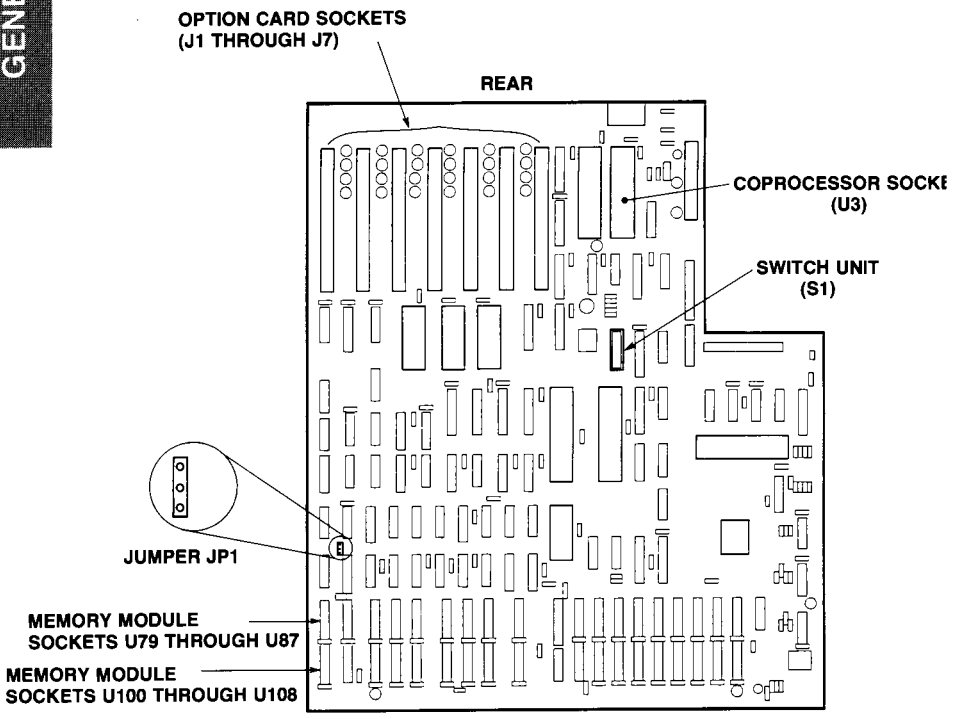
10. Remove four screws from the rear of the system unit. Set the screws aside for use when you reinstall the case on the system unit.



11. Carefully slide the case off of the system unit chassis.



12. Take a few moments to become acquainted with the layout of your computer's main circuit board.



NOTE

ALL EXPANSION SLOTS ARE FUNCTIONALLY IDENTICAL, AND, IN GENERAL, ANY CIRCUIT CARD CAN GO IN ANY SLOT. HOWEVER, TO AVOID POSSIBLE DIFFICULTIES WITH CABLING, ETC., IT IS SUGGESTED THAT, IF YOU REMOVE A CIRCUIT CARD, YOU REINSTALL IT IN ITS ORIGINAL SLOT. YOU MAY, THEREFORE, WISH TO NOTE THE POSITION OF EACH CARD.

13. Refer to the option manufacturer's instructions or to the appropriate option section of this chapter and install your option. Refer to Section 4.3 for guidelines on the installation of option cards and to Section 4.4 for appropriate switch settings and jumper configurations.

4.3 OPTION CARD INSTALLATION

Observe the following guidelines when installing option cards in your system unit.

- All option slots are functionally identical, and, in general, any circuit card can go in any slot.

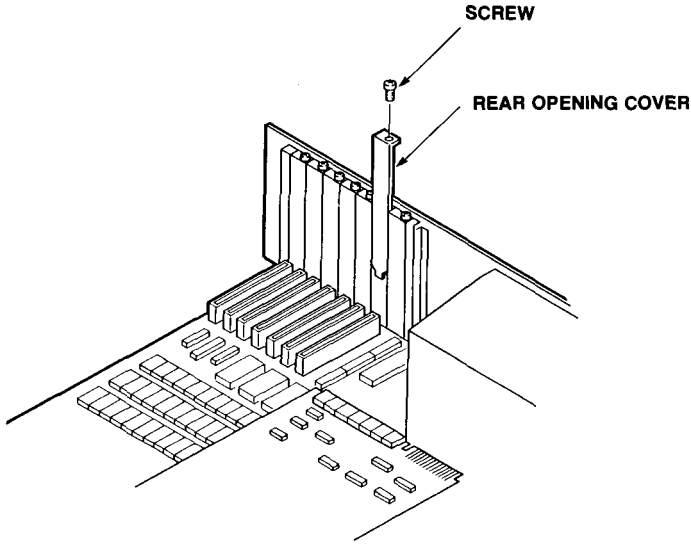
- Because of such factors as the physical shape of a given circuit card or the location of components on the main circuit board, it may be impossible to mount some circuit cards in certain expansion slots. You should use a slot that physically accommodates your option card and any cables it may use.

- Do not use force! If your option card will not seat easily, stop and determine what is causing the difficulty before you proceed.

- If you option card is a long one, be sure its front edge is properly located in the appropriate guide on the chassis front panel.

- Any slot not occupied by an option card must have its rear opening cover installed. If an empty slot has no rear opening cover, the computer's forced air cooling system will not function properly, and your system unit may overheat.

1. When you are ready to begin installation, select the expansion slot in which your option card will be installed. Remove the screw that holds the rear opening cover for that slot, and remove the rear opening cover.



CAUTION

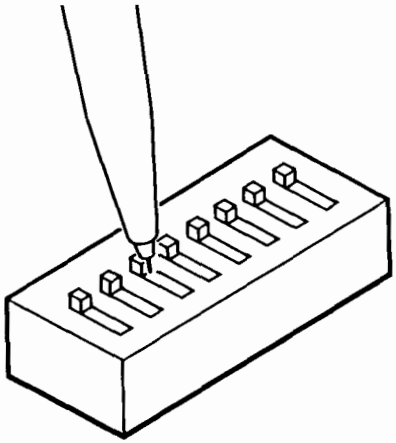
DO NOT DISCARD THE REAR OPENING COVER. IT MUST BE REINSTALLED IF EVER THE CIRCUIT CARD IS REMOVED FROM THE EXPANSION SLOT. IF THIS PRECAUTION IS NOT OBSERVED, YOUR SYSTEM UNIT MAY OVERHEAT.

2. Slide the option card straight down into the expansion slot and fasten it to the rear of the chassis with the screw that held the rear opening cover in place.

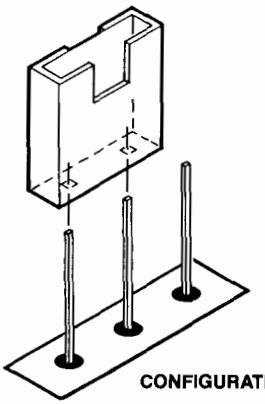
4.4 SWITCH SETTINGS AND JUMPER CONFIGURATIONS

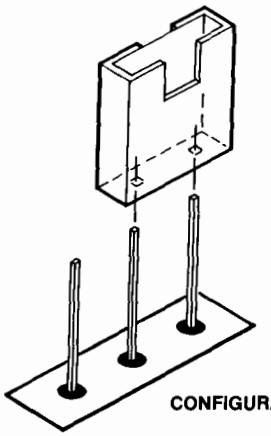
The information in this section deals with Switch Unit S1 and Jumper JP1 (both located on the main circuit board of the system unit). This information should take precedence over that provided by the manufacturer of your option.

A ball pen works nicely for setting the switches on Switch Unit S1.



The following diagram illustrates the two possible configurations for Jumper JP1. Simply lift the jumper cap off of the jumper and install it on the appropriate pins.





SWITCH SETTINGS AND JUMPER CONFIGURATIONS

MEMORY INSTALLATION USING 64K MODULES

Memory Size	Module Installation	Switch Unit S1 Setting		Jumper JP1 Configuration
128K	Standard configuration	#3-on	#4-off	A
192K	Fill sockets U79-U87	#3-off	#4-on	A
256K	Fill sockets U79-U87 and U100-U107 *1	#3-off	#4-off	A
640K	Fill sockets U79-U87 and U100-U108, and install memory expansion card. *2	See instructions provided by manufacturer of card.		

MEMORY INSTALLATION USING 256K MODULES

128K	Standard configuration	#3-on	#4-off	B
384K	Fill sockets U79-U87	#3-off	#4-on	B
640K	Fill sockets U79-U87 and U100-U108 *1	#3-off	#4-off	B

*1 Do not fill sockets U100-U107 until sockets U79-U87 have been filled.

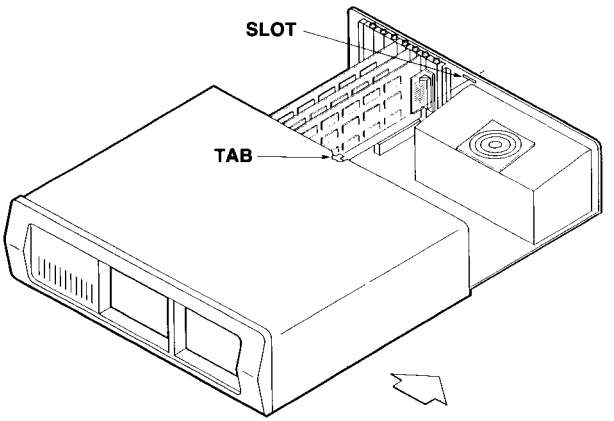
*2 Memory expansion card not to be used in conjunction with 256K modules.

Option Adaptors and Default Setup	Switch Unit S1 Setting	
Monochrome adaptor only	#5-off	#6-off
Color adaptor only (40 × 25 display)	#5-off	#6-on
Color adaptor only (80 × 25 display)	#5-on	#6-off
Monochrome and color adaptors installed, monochrome default	#5-off	#6-off
Monochrome and color adaptors installed, color 40 × 25 default	#5-off	#6-on
Monochrome and color adaptors installed, color 80 × 25 default	#5-on	#6-off
No display adaptor installed	#5-on	#6-on
System start-up from drive A: or C:	#1-off	
System start-up from drive C: only	#1-on	
Numeric processor (8087) installed	#2-off	
Standard processor (8088) installed (coprocessor socket empty)	#2-on	
Two diskette drives installed	#7-off	
One diskette drive and fixed disk drive installed	#7-on	

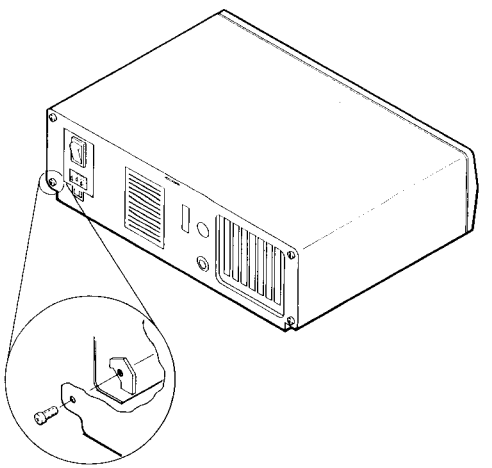
4.5 POSTINSTALLATION PROCEDURE

1. Now that your option is in place, look over your work. Make sure your option is correctly installed, circuit board switches are properly set, and all circuit cards, etc. have been installed.

2. Slide the case back onto the system unit chassis. Make sure the tab at the rear of the case is fitted into the slot in the chassis.



3. Fasten the case to the chassis with four screws.



4. Set up your computer and connect all cables and cords (Section 1.3).

5. Turn your computer on and allow it to run through its self diagnostic test (see Sections 1.4 and 1.5). If the self diagnostic test reveals any problems, go over the option installation procedure once again and make sure you have properly installed and assembled everything. Verify that all cables and cords are correctly connected. If the self diagnostic test still reveals a malfunction, refer to Appendix C.

MEMORY INTEGRATED CIRCUITS OPTION

INSTALLATION PROCEDURE

These pages provide instructions for installing memory integrated circuits (memory modules) on the main circuit board of the system unit.

The main circuit board of the computer provides sockets for the optional installation of additional memory integrated circuits. These integrated circuits come in small modules that can be easily plugged into the sockets. Two types of modules are available—the 64K type and the 256K type. Random access memory (RAM) can be increased to 256 kilobytes by the installation of 64K modules, and to 640 kilobytes by the installation of 256K modules.

NOTE

IF 64K MODULES ARE USED, MEMORY CAN BE EXPANDED BEYOND 256 KILOBYTES BY THE USE OF A MEMORY EXPANSION CARD. SUCH A CARD CANNOT BE USED IN CONJUNCTION WITH 256K MODULES.

To install additional memory modules, you will need the following:

- tool for installation of memory modules (optional)
- memory modules

  Type: 64KX1 DRAM integrated circuits (200 nanosecond 4164 or equivalent)

  — or —

  256KX1 DRAM integrated circuits (200 nanosecond 41256 or equivalent)

  Quantity: Nine 64K type modules for 192 kilobytes of random access memory or nine 256K type modules for 384 kilobytes of random access memory

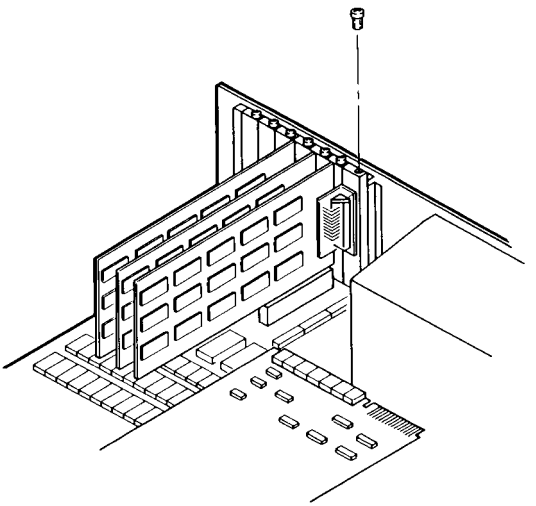
  — or —

  Eighteen 64K type memory modules for 256 kilobytes of random access memory or eighteen 256K type modules for 640 kilobytes of random access memory

NOTE

THE ILLUSTRATIONS IN THE FOLLOWING PROCEDURE MAY NOT ACCURATELY DEPICT THE INTERIOR LAYOUT OF YOUR COMPUTER; THEY ARE PROVIDED AS EXAMPLES ONLY.

1. Once you have removed the cover from the system unit, locate any main circuit board switches, jumpers, sockets, etc., that will be used during memory module installation. Remove the mounting screws from any circuit cards that block access to these items. Remove the cards. Set the screws aside for use when you reinstall the circuit cards.



NOTE

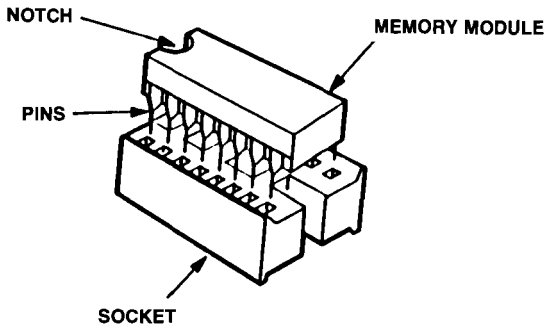
CERTAIN CIRCUIT CARDS MAY BE ATTACHED TO THE SYSTEM UNIT BY ONE OR MORE CABLES. YOU SHOULD NOT DISCONNECT THESE CABLES AT EITHER END. SIMPLY SLIDE THE CARDS UP AND OUT OF THEIR SLOTS. THEN LAY THEM ASIDE WITH CABLES STILL ATTACHED. DO NOT STRAIN THE CABLES.

2. Before you begin plugging in memory modules, take note of how they should be handled and installed.

   - Note the notch or dot at one end of each memory module and socket. Install memory modules so that their notches or dots are at the same end as the notches or dots on the sockets.

   - Be careful not to bend the pins of the memory modules.

   - Make sure all pins are aligned in the pin sockets before inserting a module.



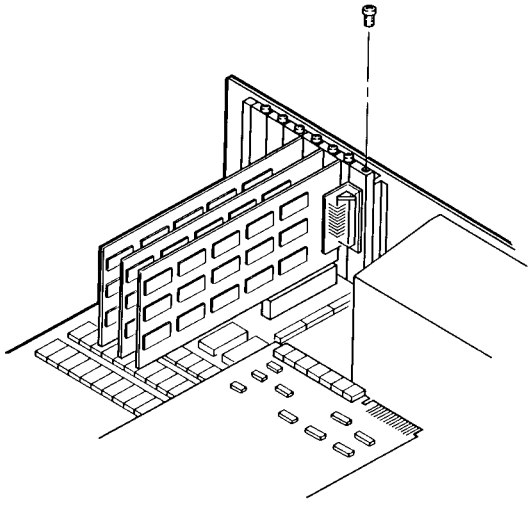
3. Configure switches and/or jumpers as appropriate for the number and type of memory modules you have installed.

4. Reinstall any circuit cards that have been removed. Slide the cards straight down into their slots.

NOTE

IT IS SUGGESTED THAT YOU INSTALL THE CIRCUIT CARDS IN THEIR ORIGINAL SLOTS.

5. Use screws to fasten all reinstalled circuit cards to the rear of the system unit chassis.



COPROCESSOR OPTION

Installation Procedure

These pages provide instructions for installing a coprocessor (8087) on the main circuit board of the system unit.

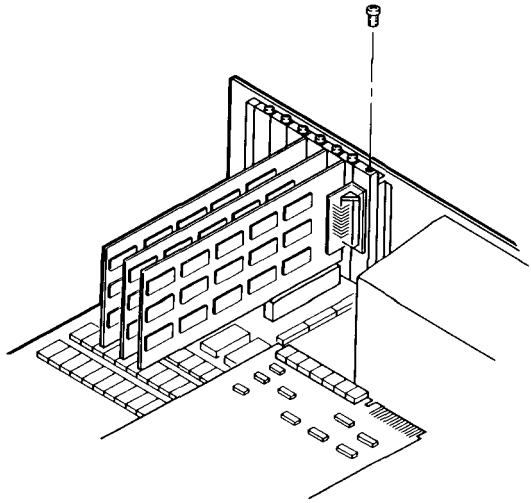
You computer uses a 16-bit 8088 microprocessor. However, you have the option of installing an 8087 microprocessor as well. This optional microprocessor is designed specifically to speed up mathematical operations. If you intend to use your computer for long and complex mathematical operations, you may wish to add this option. Before you begin, you will need to obtain an 8087 microprocessor.

Installation Procedure

NOTE

THE ILLUSTRATIONS IN THE FOLLOWING PROCEDURE MAY NOT ACCURATELY DEPICT THE INTERIOR LAYOUT OF YOUR COMPUTER; THEY ARE PROVIDED AS EXAMPLES ONLY.

1. Once you have removed the cover from the system unit, locate the coprocessor socket and any circuit board switches that have to be set at the time of coprocessor installation. Remove the mounting screws from any circuit cards that block access to these items. Remove the cards. Set the screws aside for use when you reinstall the circuit cards.



NOTE

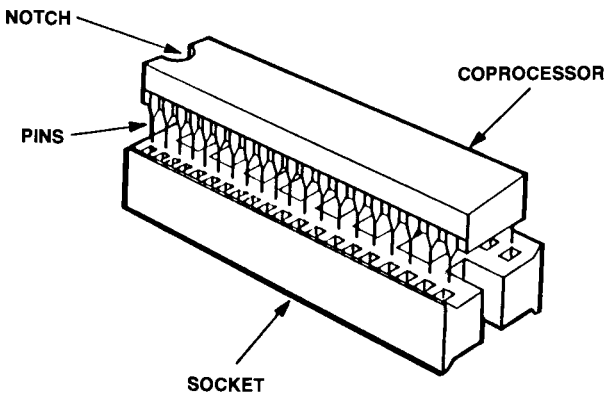
CERTAIN CIRCUIT CARDS MAY BE ATTACHED TO THE SYSTEM UNIT BY ONE OR MORE CABLES. YOU SHOULD NOT DISCONNECT THESE CABLES AT EITHER END. SIMPLY SLIDE THE CARDS UP AND OUT OF THEIR SLOTS. THEN LAY THEM ASIDE WITH CABLES STILL ATTACHED. DO NOT STRAIN THE CABLES.

2. Insert the 8087 coprocessor into the coprocessor socket on the main circuit board. Observe the following guidelines:

   - Note the notch or dot at one end of the coprocessor and its socket. Install the coprocessor so that its notch or dot is at the same end as the notch or dot on the socket.

   - Be careful not to bend the pins of the coprocessor.

   - Make sure all pins are aligned in the pin sockets before inserting the coprocessor.



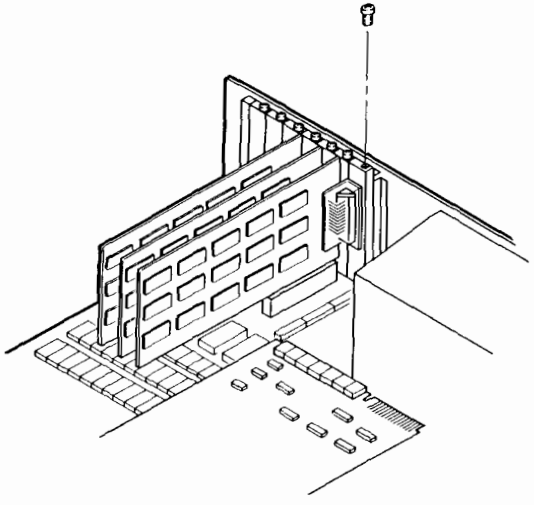
3. Make any switch settings required for the installation of an 8087 coprocessor.

4. Reinstall any circuit cards that have been removed. Slide the cards straight down into their slots.

NOTE

IT IS SUGGESTED THAT YOU INSTALL THE CARDS IN THEIR ORIGINAL SLOTS.

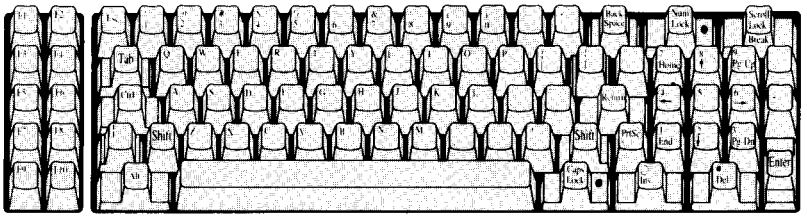
5. Use screws to fasten all reinstalled cards to the rear of the chassis.



APPENDIX A

The DOS Keyboard

The functions performed by many of the keys on the computer keyboard vary from one application to another. The information in this appendix refers only to key functions pertaining to DOS.



APPENDIX A

The DOS Keyboard
(continued)

Key Name	Key Symbol	Description
FUNCTION 1	F1	This key redisplays the previously entered line, one character at a time.
FUNCTION 2	F2	This key displays portions of the previously entered line that lies before any given character. Press this key and then a character key. The screen will display the portion of the previously entered line that lies before the character you entered.
FUNCTION 3	F3	This key redisplays the entire previously entered line.

APPENDIX A

The DOS Keyboard
(continued)

Key Name	Key Symbol	Description
FUNCTION 4	F4	This key displays portions of the previously entered line that comes after any given character. Press this key and then a character key. The screen will display the portion of the previously entered line that lies after the character you entered.
FUNCTION 5	F5	This key saves the currently displayed line for further editing.

APPENDIX A

The DOS Keyboard
(continued)

Combined Function Keys

Combined Function	Key Comb.	Description
SUSPEND	Ctrl + Num Lock	This key combination suspends operation so you can read the display. To continue operation, press any key.
ECHO	Ctrl + PrtSc	This key combination prints what you type and what the system displays. To stop the printing, press the same key combination once again.
BREAK	Ctrl + Scroll Lock / Break	This key combination stops a command while it is running.

APPENDIX B

The DOS Commands

This manual does not provide full information on all of the DOS commands. If you have any questions, you should refer to your Disk Operating System manual.

The command formats given below are, in many cases, simplified.

FORMAT NOTATION

In this manual, the following conventions are used to indicate how the DOS commands should be entered (i.e., their formats).

1. Words shown in lowercase bold letters (but not enclosed by brackets) must be typed exactly as they are shown (only exception: they can also be typed uppercase or mixed-case). For example, if **"copy"** is part of a command format, you should type the word **"copy."**

2. Words shown within angle brackets <> should not be typed in as they are shown. For example, if <file name> is part of a command format, you should not type **"file name."** Instead, you should type the file name (base name and extension) of the file you are dealing with (for example, letter.#10). You do not type the angle brackets.

   Similarly, if <drive> is part of a command format, you should not type **"drive."** Instead, you should type the drive specifier of the drive you are dealing with (for example, a: or c:). You do not type the angle brackets.

APPENDIX B

The DOS Commands
(continued)

3. Anything shown within square brackets [ ] is optional. Whether or not you enter the optional information, you do not type the square brackets. All commands are entered by pressing the RETURN (Return) or ENTER (Enter) key.

DOS Commands

COMMAND:	**CHECK DISK**
PURPOSE:	Checks a disk and indicates the memory space available on it.
FORMAT:	**chkdsk <drive>**
COMMAND:	**FILE COMPARE**
PURPOSE:	Compares two files on the same disk, or on two different disks.
FORMAT:	**fc [<drive>] <file name> [<drive>] <file name>**
COMMAND:	**COPY**
PURPOSE:	Copies a specified file.
FORMAT:	**copy <file name> <drive>**
COMMAND:	**DELETE**
PURPOSE:	Deletes a specified file name from a directory.
FORMAT:	**del <file name>**

APPENDIX B

The DOS Commands
(continued)

COMMAND:	**DIRECTORY**
PURPOSE:	Displays the files recorded on a disk.
FORMAT:	**dir**
COMMAND:	**DISK COMPARE**
PURPOSE:	Compares two diskettes.
FORMAT:	**diskcomp**
COMMAND:	**DISK COPY**
PURPOSE:	Copies the contents of one diskette to another.
FORMAT:	**diskcopy**
COMMAND:	**ERASE**
PURPOSE:	Deletes specified files.
FORMAT:	**erase <file name>**
COMMAND:	**FORMAT**
PURPOSE:	Prepares a disk for filing operations.
FORMAT:	**format [<drive>] [/s] [/v]**
COMMAND:	**MODE**
PURPOSE:	Sets the printer/display mode and the I/O device parameters.
FORMAT:	(See the Disk Operating System manual for the various formats.)

APPENDIX B

The DOS Commands
(continued)

COMMAND:	**PAUSE**
PURPOSE:	Temporarily suspends the current operation (used only in BATCH files).
FORMAT:	**pause <remark>**
COMMAND:	**REMARK**
PURPOSE:	Displays a remark in a batch file.
FORMAT:	**rem <remark>**
COMMAND:	**RENAME**
PURPOSE:	Renames a file.
FORMAT:	**ren <file name> <file name>**
COMMAND:	**SYSTEM**
PURPOSE:	Transfers DOS system files to a new diskette.
FORMAT:	**sys <drive>**
COMMAND:	**TYPE**
PURPOSE:	Displays the contents of a specified file.
FORMAT:	**type <file name>**

APPENDIX C

Error Messages

A. SYSTEM START-UP ERROR MESSAGES

If the computer finds a problem during its self diagnostic test, it will give an error message that can help you or a technician isolate the source of the problem. Most problems should be left to a qualified technician, but the information given below could help you resolve some problems by yourself. Other error messages are explained in the DOS and GW-BASIC manuals.

SCREEN DISPLAY MESSAGES

ØØ Keyboard Error

Explanation/Action: The keyboard may be disconnected from the system unit. Make sure your keyboard is properly connected.

nn Keyboard Error

Explanation/Action: A key may be stuck. The "nn" is the keyboard scan code for the stuck key. Make sure none of the keyboard keys are stuck.

Diskette Error

Explanation/Action: The diskette drive may be disconnected. If you have opened the system unit to add an option, you may want to check that you did not accidentally disconnect the diskette drive cable. Remember to turn off and unplug the system before removing the cover!

APPENDIX C

Error Messages
(continued)

Load Error (press Esc key to retry)

Explanation/Action: The DOS programs failed to load. Make sure either that you have the DOS programs recorded on fixed disk or that you have the DOS diskette installed and the door of the diskette drive closed. Then press the ESCAPE (Esc) key. If you are using a diskette and you have to do this several times before your DOS programs load successfully, your diskette may be damaged. Try copying the DOS programs onto a new diskette.

Corrupted Partition Table

Error Loading DOS

Invalid Boot Record

Explanation/Action: Each of the above messages indicates a fundamental error in the organization of data on the fixed disk drive. Partial recovery of the lost data can sometimes be achieved by running the PART command. In any event, the permanent solution may require complete reformatting of the fixed disk drive (LLFDFMT followed by PART and then FORMAT).

No Active Partition

Explanation/Action: This message indicates either of two conditions: a) no partitions have been created, or b) existing partitions are not active. You will have to use the PART command either a) to create new partitions, or b) to activate existing partitions.

APPENDIX C

Error Messages
(continued)

1701
LOAD ERROR (press Esc key to retry)

Explanation/Action: The DOS programs failed to load from the fixed disk. Verify that the fixed disk drive is properly installed, its cables are securely connected, and the drive controller circuit board is properly seated. Remember to turn off and unplug the system unit before removing its cover.

The following error messages and tones indicate internal hardware or software errors. If one of these errors occurs, turn off the system unit power switch, wait fifteen seconds, turn the power switch on, and try again. If the same error occurs again, contact your dealer.

I/O Parity Error

Expansion I/O Error

System Parity Error

Fatal RAM Error

AUDIO MESSAGES

One long beep followed by two short beeps

Explanation/Action: This message indicates a hardware error related to the color/graphics video board. Operation will continue. Check seating and connection of color/graphics video board. Remember to turn off and unplug the system unit before removing its cover.

One long beep followed by one short beep

Explanation/Action: This message indicates a hardware error related to the monochrome video board. Operation will continue. Check seating and connection of monochrome video board. Remember to turn off and unplug the system unit before removing its cover.

Two or more short beeps

Explanation/Action: This message indicates a hardware error. Contact your dealer.

B. DOS ERROR MESSAGES

If you receive an error message on your screen while running DOS, refer to your Disk Operating System manual.

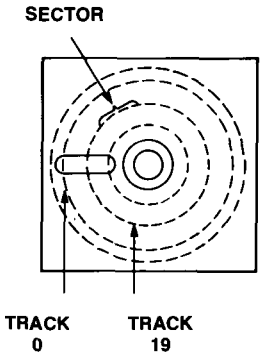
APPENDIX D

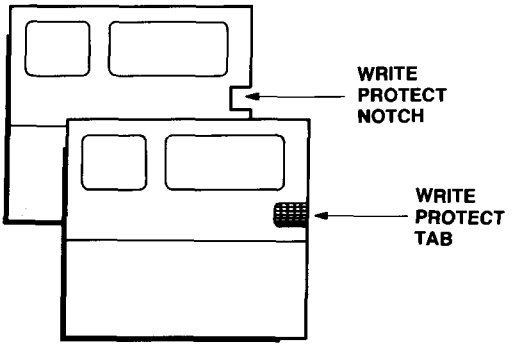
Storage Media

Your computer uses two types of storage media — the diskette and the fixed disk.

THE DISKETTE

The square protective jacket of the diskette encloses a disk made of materials very similar to those used in conventional recording tape. The protective jacket helps to keep the recording disk clean and free from scratches. The head slots in the jacket enable the recording heads to come into contact with the magnetic coating on the disk.





Appendix D

Storage Media
(continued)

A diskette can store up to 360 kilobytes of information (one kilobyte is equivalent to approximately one thousand characters). This information is recorded on concentric tracks on the diskette. There are forty such tracks on each side of the diskette, and each track is divided into several sectors. When you format a diskette, you are actually having DOS set up these tracks and sectors on the diskette. During the format procedure, DOS also sets up a directory on the diskette.

In the directory, DOS keeps a catalog of every file stored on the diskette. It records the file name of each file and also the tracks and sectors on which each file can be found.

There is a write protect notch on one edge of most diskettes. If you cover this notch with a tab, the computer will be unable to record anything on the diskette. Thus, if you put a write protect tab on an important diskette, you will make it impossible to accidentally erase or alter any of the files on that diskette. You can always remove the tab from a write protected diskette if you later decide to alter its contents. Applications programs often come on diskettes that have no write protect notch. Such diskettes are permanently write protected.

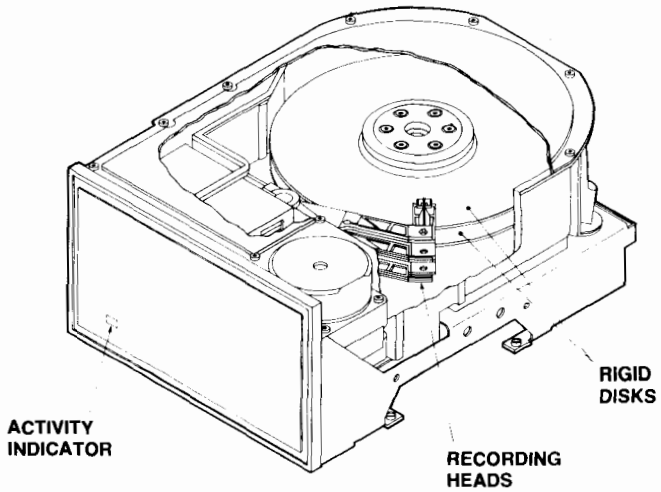
APPENDIX D

Storage Media
(continued)

THE FIXED DISK

Instead of using interchangeable plastic diskettes, the fixed disk drive uses two built-in aluminum disks. The disks are permanently sealed in a dust-free compartment within the drive.

The information stored on fixed disks is recorded in tracks and sectors similar to those on diskettes. However, the disks built into the fixed disk drive provide a capacity for the storage of 10 million bytes (characters) of information. (That is approximately equal to the amount of information that can be stored on twenty-eight diskettes.)



APPENDIX E

Global Characters

Global characters can save you time and effort when they are used with certain commands. The two global characters are the question mark (?) and the asterisk (*).

The question mark can be used to replace any single character in a file name. A question mark in a base name or in an extension means that any character can be in that position.

NOTE

THE FOLLOWING EXAMPLES ASSUME THE DEFAULT DRIVE IS A: AND CONTAINS THE SOURCE DISKETTE; THEREFORE, DRIVE C: INDICATES WHERE THE COPIES ARE TO BE MADE.

For example, suppose you had a diskette that had the following files stored on it:

(a) 79ACCTS.MAR

(b) 79ACCTS.MAY

(c) 79ACCTS.JUN

(d) 79ACCTS.JUL

(e) 80ACCTS.JAN

(f) 80PRICES.MAR

1. If you entered the DOS command

   COPY ??ACCTS.??? C:

   All files except file (f) would be copied.

APPENDIX E

Global Characters
(continued)

2. If you entered the DOS command

   COPY ??ACCTS.J?? C:

   Files (c), (d), and (e) would be copied.

An asterisk can be used to replace a single character or a sequence of consecutive characters in a file name. An asterisk in a base name means that any character can be in that position and in the rest of the base name. Similarly, an asterisk in an extension means that any character can be in that position and in the rest of the extension.

With the same diskette used in the examples above,

1. If you entered the DOS command

   COPY 79*.M* C:

   Files (a) and (b) would be copied.

2. If you entered the DOS command

   COPY *.M* C:

   Files (a), (b), and (f) would be copied.

APPENDIX E

Global Characters
(continued)

3. If you entered the DOS command

   COPY 8*S.* C:

   Files (e) and (f) would be copied.

Now you know what you were doing in Chapter 1 when you made backup copies of your DOS diskette. You entered the following DOS command:

COPY/V *.* C:

This caused every file on the DOS diskette to be copied. Every base name and every extension was covered (globally defined) by this single command.

Global characters can be time savers, but consider what could happen if you used them with the ERASE command. If you were not careful, you could accidentally erase files you never intended to. DOS is forgiving, and it will prompt you to make sure you really wish to go ahead with global commands such as erase *.*. If you are not sure, you have a chance to bail out. Nonetheless, you should be cautious when using global characters. Detailed information on the use of global characters can be found in your Disk Operating System manual.

APPENDIX F

Product Specifications

Memory	256 Kilobytes RAM (expandable to 640 Kilobytes)
Microprocessor	16 bit, 8088
Diskette Drive	double sided, double density 500 Kilobytes unformatted, 360 Kilo bytes formatted
Fixed Disk Drive	5-1/4 inch 12.75 Mega bytes unformatted, 10 Megabytes formatted
I/O Ports	
Parallel Printer	25 pin subminiature D connector
Video	
Monitor	9 pin subminiature D connector
Keyboard	84 key detachable (coiled cable)
Power Requirements	3 AMPS at 115 Volts A.C. (1.5 AMPS at 220 Volts A.C. optional)

APPENDIX F

Product Specifications (continued)

Size (inches)	H W D
Keyboard	1.44 x 17.77 x 7.69
System Unit	5.75 x 19.03 x 15.31
Cooling	Forced Air
Operating System	MS-DOS (optional)
Language	GW-BASIC (optional)

RADIO SHACK, A DIVISION OF TANDY CORPORATION

U.S.A.: FORT WORTH, TEXAS 76102
CANADA: BARRIE, ONTARIO L4M 4W5

TANDY CORPORATION

AUSTRALIA
91 KURRAJONG AVENUE
MOUNT DRUITT, N.S.W. 2770

BELGIUM
PARC INDUSTRIEL
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