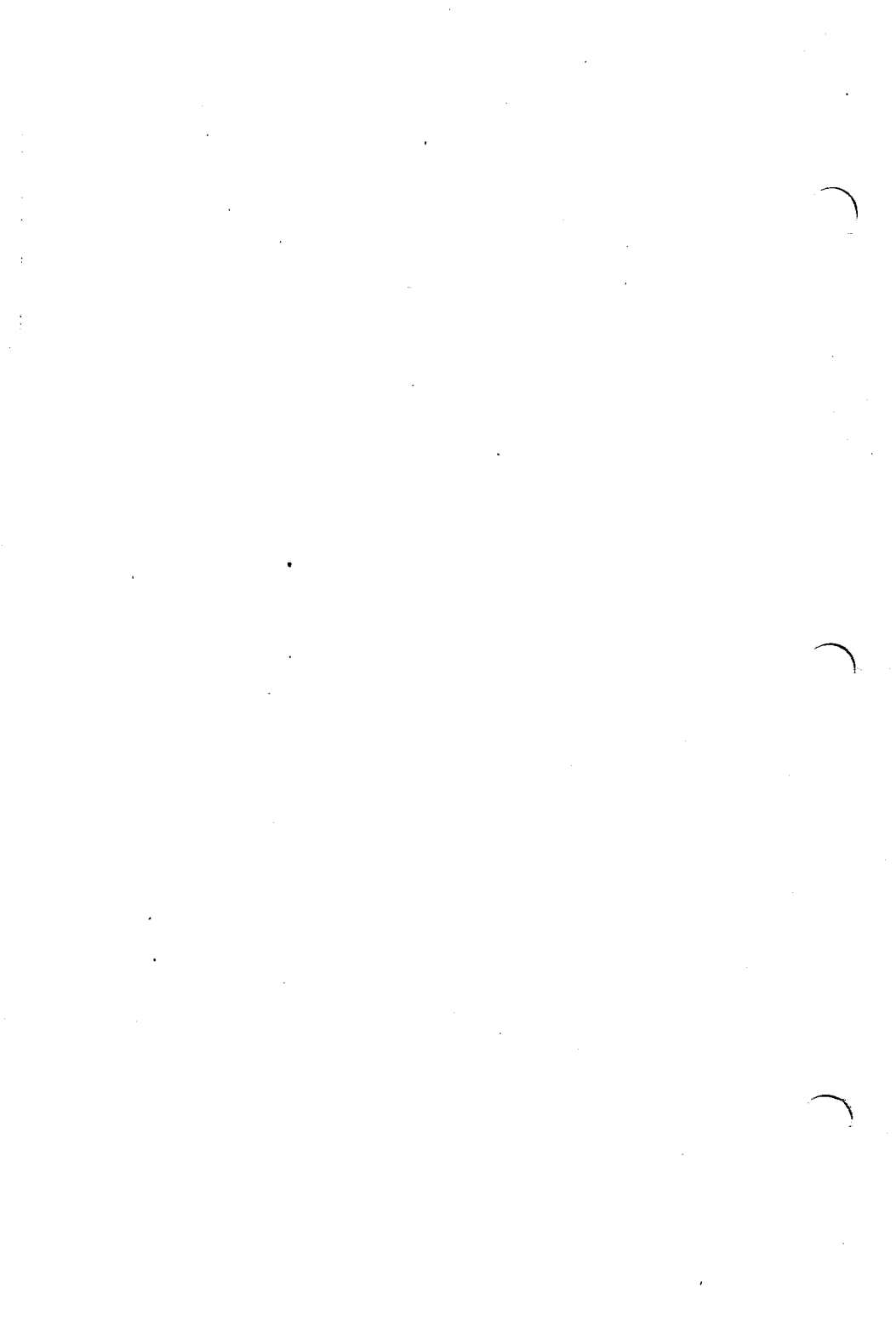


**AVL GENESIS**  
**DESK TOP COMPUTER**  
**INSTALLATION GUIDE**

**Audio Visual Laboratories, Inc.**



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## CHAPTER 1

### INTRODUCTION

#### 1.1 GENERAL INFORMATION

The AVL Genesis is a business and personal computer for the serious user who wants to run application programs quickly and efficiently.

Packed into a compact design, the AVL Genesis is a business computer system that combines the performance of a personal computer with an array of features and software which include professional audio visual capabilities.

To meet the future computing needs of today's business, AVL provides a family of computer systems. This family approach ensures compatibility, expandability, and the capability to solve business problems. The inherent economics in this approach yields profitability through increased efficiency. Your AVL Genesis desktop will fit right in.

## 1.2 GENERAL INDEX

This manual is divided into the following chapters:

- CHAPTER 1: INTRODUCTION - describes the contents of the AVL Genesis Installation Manual.
- CHAPTER 2: SYSTEM DESCRIPTION - describes each piece of hardware that goes in to making up the system.
- CHAPTER 3: INSTALLATION - outlines unpacking and inspection guidelines and describes the system installation and setup procedures.
- APPENDIX A: AVL GENESIS TECHNICAL SPECIFICATIONS



## CHAPTER 2

### SYSTEM DESCRIPTION

#### 2.1 GENERAL

This chapter introduces you to the basic components of the AVL Genesis Computer.

**NOTE:** If you are unfamiliar with a term or abbreviation used in this manual refer to the Glossary.

The remainder of this chapter describes each piece of hardware that makes up AVL Genesis.

#### 2.2 CENTRAL PROCESSING UNIT (CPU)

The main unit of the computer, referred to as the CPU, contains the main power ON/OFF control and disk drives. Inside the main unit is the Intel 8088 micro-processor, 256K bytes (expandable to 640K bytes) of RAM, and the circuits to control interfacing of all devices.

##### 2.2.1 DISK DRIVES

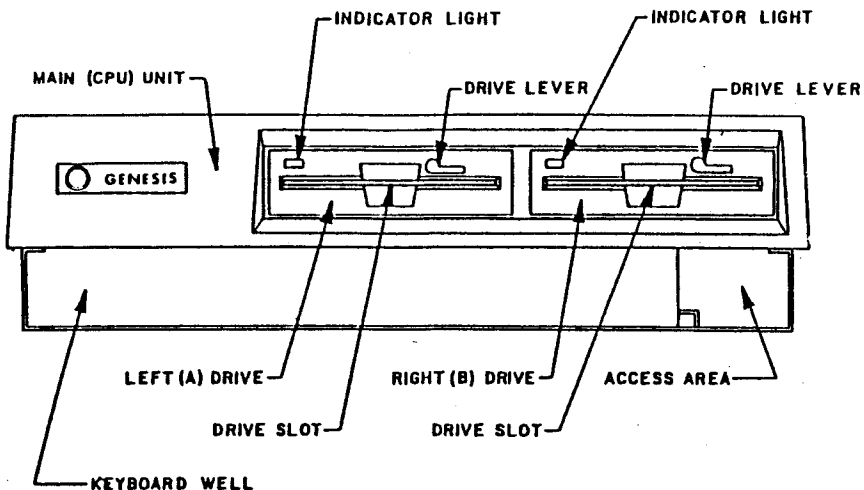
The computer RAM or internal memory is a temporary storage area for creating,

correcting, and viewing data. When the computer is turned off, any information in that temporary memory is lost. A disk drive provides you with a permanent recording of data on a floppy disk.

Your AVL Genesis has two floppy disk drives (see Figure 2-1). The floppy disk drives use 5-1/4 inch, 48 TPI (tracks per inch) disks. Either single sided or double sided formatted disks can be used. Purchased software application program disks must conform to these specifications to be read by your Genesis. The disk drive lever locks the disk into place after insertion. If a disk is not loaded properly or the lever is not closed, your system will not be able to access the disk, resulting in a disk read error message on your screen.

The A Drive is used to boot operating systems from system disks and store (save) program and data files onto floppy disks.

The B Drive is principally used to load files to temporary storage and save or copy data files onto disks.



**FIGURE 2-1 GENESIS FRONT PANEL**

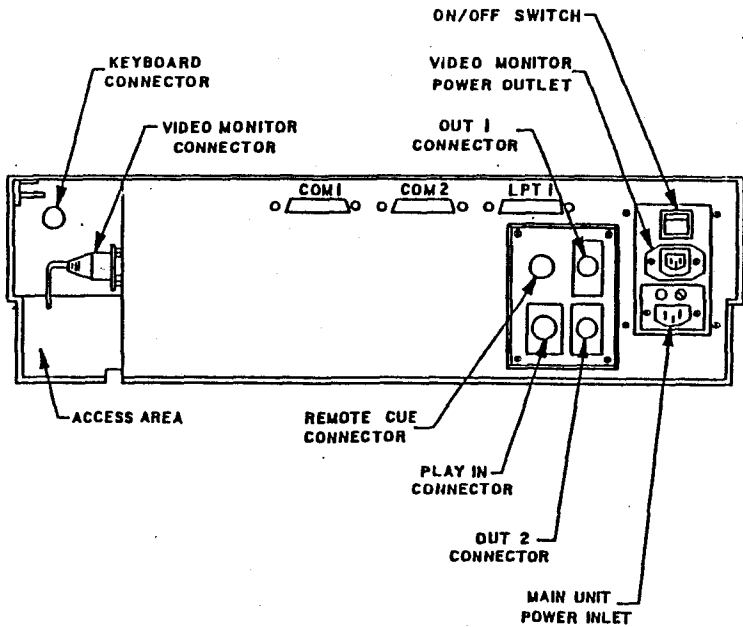
### **2.2.2 REAR PANEL**

The rear panel (see Figure 2-2) has two male 25-pin RS-232 serial communication ports (COM1) and (COM2) and one 25-pin female parallel port (LPT1). The serial

port allows you to interface with a variety of serial devices like serial printers or modems. The parallel port is the communications connection for parallel printers. Refer to Chapter 6: Printers, for information about serial and parallel printers.

The panel also contains the multi-image input and output jacks. The Kodak type Remote Cue jack is used to advance or reverse AVL Genesis from a remote location. The XLR type Out1 and Out2 jacks are for sending program data to dissolve units. The XLR type Play In jack is used for loading all incoming data: load programming information stored on magnetic tape; verify saved tapes; play data through Genesis without entering it into memory, in the MT (magnetic Tape) BYPASS MODE; and input sync and timing pulses.

The main unit rear panel also contains the ON/OFF switch, the power outlet for the user supplied video monitor, and the main unit power cord connection. The ON/OFF switch supplies power to the system. When the red circle is showing, the power is off.



**FIGURE 2-2 GENESIS REAR PANEL**

### 2.2.3 ACCESS AREA

The Access Area (see Figure 2-3) has a side panel door with a magnetic catch. The door can be opened by inserting your fingers into the access area through the rear opening and pushing the door open.

The side panel provides access to the connectors for the keyboard and video display monitor. The Access Area also has three input/output RCA type jacks. The middle RCA jack (Out1) and the top RCA jack (Out2) are used to send programming data to the dissolve units or other interfacing equipments. The bottom RCA jack (Play In) is used to input all incoming data and sync pulses.

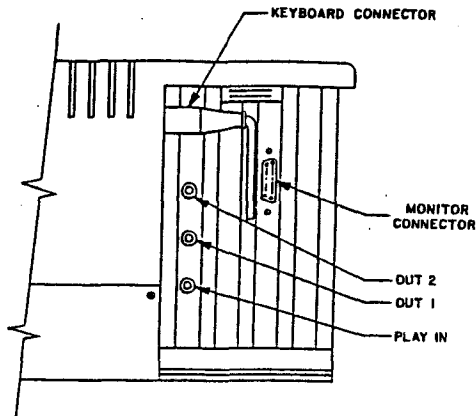


FIGURE 2-3 GENESIS ACCESS AREA

## 2.3 KEYBOARD

The keyboard (see Figure 2-4) is a separate unit attached to the main module by a lengthy cord to allow for individual placement. The keyboard contains 84 keys, including 10 function keys and a complete numeric keypad. Refer to the following pages for a brief description of the keyboard components. Refer to Using the Keyboard in Section 3 for more information on all the functions of the keys.

When closing up the system, slide the keyboard underneath the main unit.

### 2.3.1 MAIN KEYBOARD

The main section of the keyboard on the Genesis is similar to a standard typewriter. (Refer to Figure 2-1). You will find three shift keys, two are identical and act exactly as found on a standard typewriter. The third shift key, Caps Lock, shifts only the letters into uppercase. A convenient LED display on the Key will indicate whether or not the Caps Lock function is in use.

### 2.3.2 KEYPAD

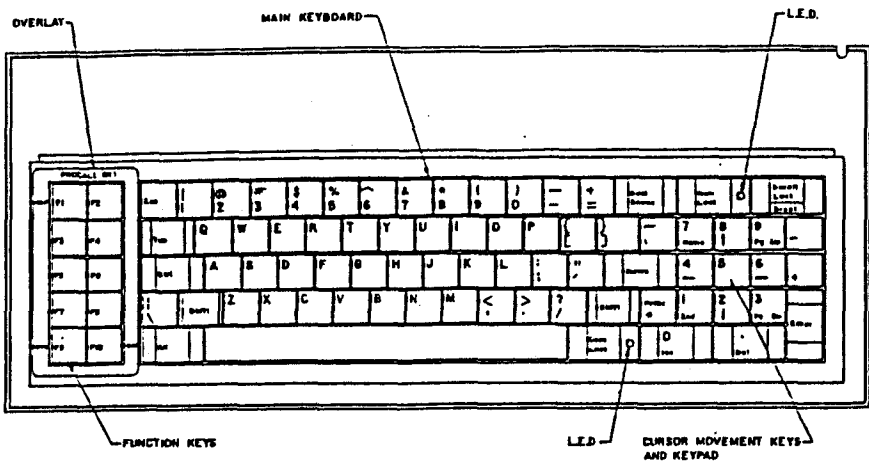
The calculator keypad, like the keypad on an adding machine or calculator, is used for entering numbers and mathematical expressions. The keypad consists of 14 keys: numbers 0-9, decimal point (.), plus (+), minus (-), and asterisk (\*) keys.

The keypad keys will also control cursor movement when used with certain software packages. In those instances, the [NUM LOCK] key is pressed (LED light on), the keypad keys are used as numeric keys.

### 2.3.3 FUNCTION KEYS

The gray keys to the left of the main keyboard, labeled F1-F10, are called FUNCTION KEYS. They perform special functions which will differ depending upon the software program used.





**FIGURE 2-4 GENESIS KEYBOARD**

## 2.4 VIDEO DISPLAY MONITOR

The video display monitor is a high resolution (720 x 350 pixels) CRT with a green nonglare screen.

The monitor can be conveniently placed on top of the main system enclosure for best visibility.

Refer to Figure 2-5 for an illustration of the monitor.

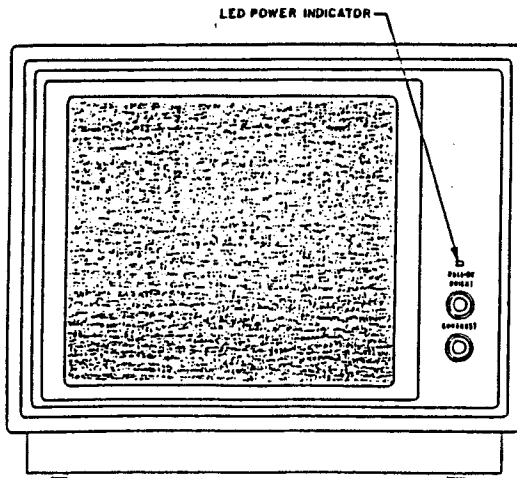


FIGURE 2-5: GENESIS DISPLAY MONITOR

## 2.5 KEYBOARD OVERLAY

The keyboard overlay fits over the function keys as shown in Figure 2-4. It names key F1 HELP, F9 REV Q, And F10 CUE. HELP, REV Q, and CUE are used when programming in PROCALL-X and PROCALL-5. Refer to Figure 2-6 for an illustration of the overlay.

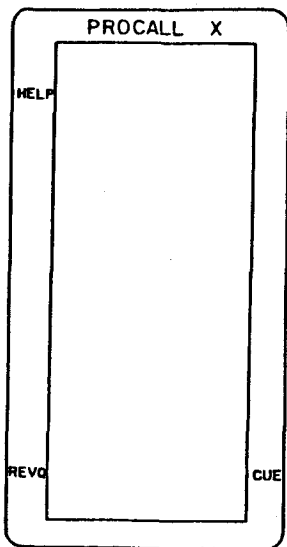


FIGURE 2-6 GENESIS KEYBOARD OVERLAY

**NOTES:**

## CHAPTER 3

### INSTALLATION

#### 3.1 GENERAL

The AVL Genesis Computer is a well designed system which can be easily unpacked and installed for immediate use.

The following topics are covered in this chapter:

- \* Site Requirements
- \* Electrical Requirements
- \* Initial Unpacking and Inspection
- \* Installation and Set-up Procedure
- \* System Description
- \* Transporting Your System

Before removing the computer from its shipping box, save yourself some time and trouble by taking a few moments to read about site requirements and the unpacking precautions.

### 3.2 SITE REQUIREMENTS

The compact, portable design of your computer allows you considerable flexibility in choosing a suitable location. Most office and residential environments are fine; however, extremes of temperature and humidity should be avoided (Refer to Appendix A).

### 3.3 ELECTRICAL REQUIREMENTS

Before plugging in the computer's power cord, make certain the following listed requirements are met.

- a. A properly Grounded 3-hole outlet.
- b. Correct AC line voltage: 110 VAC, 60 Hz, or 220 VAC, 60 Hz.
- c. Motor driven appliances such as refrigerators, copiers, etc., should be plugged into a separate circuit.

**WARNING:** The Genesis operates on either of the above voltages, but not both because of differences in fuses and power supplies. Use the correct voltage for your machine.

### 3.4 INITIAL UNPACKING AND INSPECTION

Keep the shipping container in an upright position until the unit is unpacked.

Save the shipping container and packing material. Should you need to repack the computer for moving, the original container provides the best protection for the system.

If the system is returned for repair, the computer must be in the original shipping container; otherwise AVL will not accept it for servicing.

When unpacking the system, inspect it for any evidence of shipping damage. If you find any evidence of damage, stop unpacking, replace the system in the container, and notify your dealer immediately.

**STEP 1** Place the shipping container upright on a flat work surface. Clear another large flat work surface for the computer system once it is removed from the shipping container.

**STEP 2** Cut the strapping and open the top of the container.

**STEP 3** Place a hand under each side of the system and carefully lift it out. Place it on the cleared work surface.

**STEP 4** Remove the foam shipping blocks, packing material, and manuals.

**STEP 5** Check to see that the items listed below have been shipped with your Genesis:

- a. Computer with keyboard
- b. AVL Genesis Operator's Manual
- c. MS-DOS Operating System Manual
- d. PROCALL-X User's Guide
- e. PROCALL-5 User's Guide

**STEP 6** If the system is found to be damaged, or if one of the items listed is missing, contact your dealer.



### 3.5 INSTALLATION AND SET-UP PROCEDURE

- STEP 1 Place the video monitor next to or on top of the main unit.
- STEP 2 Connect the video monitor power cord into the power socket on the main unit rear panel. Refer to Figure 3-1.
- STEP 3 Connect the video monitor interface cable to the 9-pin video monitor connector in the side panel access area. Refer to Figure 3-1.
- STEP 4 Remove the cardboard insert from each floppy disk drive. Save this insert. You will need to reinsert it in the drive to protect the drives when you transport your system.

**WARNING:** Be sure to remove the cardboard inserts before turning on the power. If left in place, the insert could damage a floppy disk drive motor.

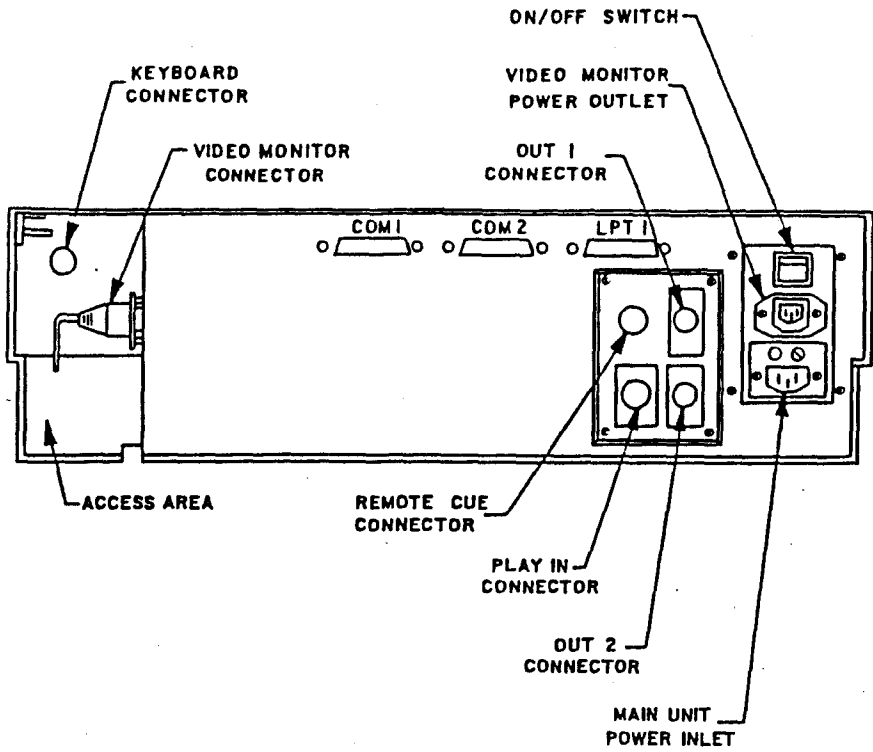
- STEP 5 Make sure the power ON/OFF switch, located on the rear panel of the main unit, is in

the OFF position. (The red circle on the switch should be showing). See Figure 3-1.

**STEP 6** Check that the power voltage listed on the product label on the system's rear panel matches the voltage of your power outlet. (Refer to **ELECTRICAL REQUIREMENTS** earlier in this section).

**STEP 7** Plug the power cord into a grounded, 3-hole AC outlet.

You are now ready to use your computer.



**FIGURE 3-1 REAR PANEL CONNECTORS**

**NOTES:**

## CHAPTER 4

### USING YOUR GENESIS COMPUTER

#### 4.1 GENERAL

Once you have unpacked and set up your computer, you are ready to begin operation. At this point, the exact procedures you perform will depend upon what system and software you have. The basics of running your system will be presented in this section.

Information regarding floppy disks is presented first in this section. Following that will be a discussion of operating systems and instructions for booting up (loading system software) from a floppy disk. A description on using the keyboard is presented, followed by a discussion of the proper way to turn off your system, and general preventive maintenance.

#### 4.2 FLOPPY DISKS

When using your software for the first time, you should backup your initial master set of application software onto floppy disks. The master set should then be stored away, to restore your copies if problems occur. When you

purchase additional application software, you should also make duplicate copies before use.

**NOTE:** When purchasing disks for your system, be sure to ask for 5-1/4 inch, double-sided, double density, soft sector disk.

#### 4.2.1 DISK CARE

A floppy disk is a circular piece of mylar plastic coated on one or both sides with a magnetic material. The disk is enclosed in a plastic or paper jacket to protect it from fingerprints, dust, and other contaminants. Refer to Figure 4-1 on the next page.

The oblong cut out in the protective jacket permits the read/write disk drive head to contact the exposed magnetic portion of the disk surface to record your information. Never touch this portion of the disk; oils from your fingers can contaminate the disk surface.

The square write-protect notch on the edge of the disk prevents unwanted or accidental erasure of information. When the notch is covered with a small adhesive tab accompanying the disks, the

disk can be read, but no information can be written onto or erased from the disk. You may write information on the disk only when the notch is left uncovered.

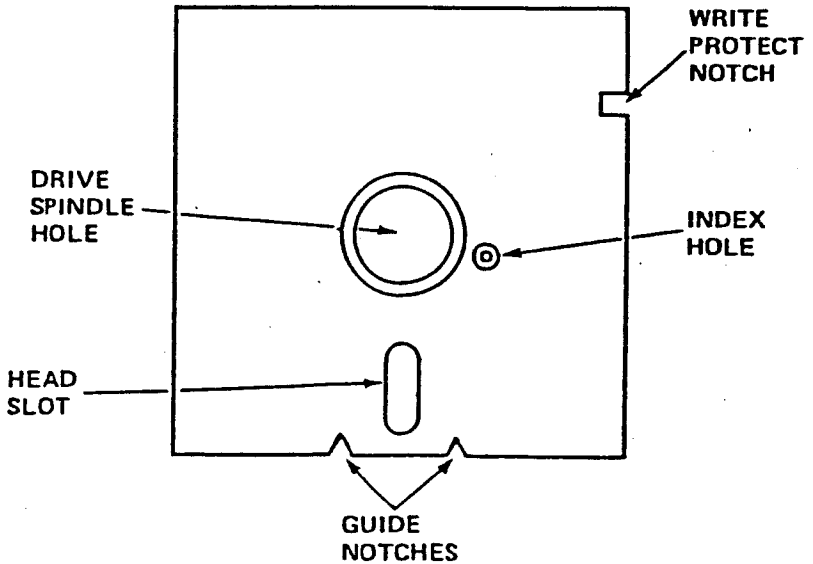


FIGURE 4-1 FLOPPY DISK

## 4.2.2 HANDLING PRECAUTIONS

Floppy disks are fragile and can be easily damaged if improperly handled. Your disks will soon be storing the results of hundreds of hours of valuable time and should be treated carefully. Heed the simple precautions outlined below to insure the continued good health of all your disks.

- \* Do not bend or fold the disk. The magnetic coating will crack and you will lose your stored information.
- \* Do not insert or remove a disk when the disk drive indicator light is on. Pulling the disk out with the indicator light on can damage the disk's stored information.
- \* Do not use paper clips, rubber bands, or tape on the disk.
- \* Do not touch or attempt to clean the exposed surfaces of the disk. Any scratches or oil deposits can cause loss of stored data.
- \* Keep the disk away from magnetic fields, which can destroy a disk's data. Many common devices such as



telephones and paper holder stands use magnets.

- \* Do not eat, drink, or smoke when handling disks.
- \* Replace the disk if it becomes physically damaged, or if the recording surface becomes contaminated. Discard damaged disks.
- \* Make duplicate copies of your disks on a regular basis.

#### 4.2.3 FORMATTING A DISK

Before a new disk can store your programs and files, it has to be formatted. Formatting magnetically divides the disk into tracks and sectors (See Figure 4-2) which the AVL Genesis computer uses as reference points when storing and reading your files. For instructions on formatting disks, please refer to MS-DOS 2.0 Utility Procedures.

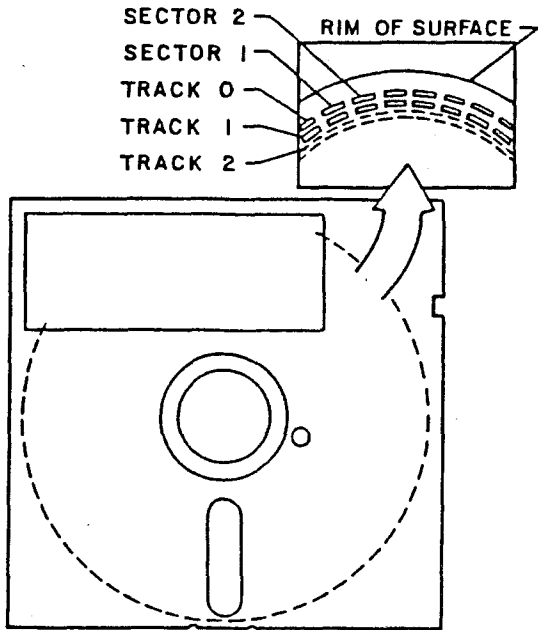


FIGURE 4-2 DISK SKELETON VIEW

#### 4.2.4 LABELING DISKS

It is important to label your disks carefully. The label should state what is stored on the disk and whether it is a master, working, or backup disk. Other notations, such as which operating system is required, can also be valuable label information.

To label your disk, fill out one of the adhesive labels that accompany the disk package BEFORE you attach it to the disk.

**CAUTION:** Writing on a label attached to a disk with a ball-point pen or pencil can gouge the recording surface, resulting in the loss of stored information. If you must write on a label which is already attached to a disk, then use a felt-tipped pen and press lightly.

#### 4.2.5 STORING DISKS

Always replace the disk in its protective envelope after you remove it from the disk drive, even if you plan to reinsert it in a short time.

There are many ways to store your disks. We recommend that you store them upright in a hard plastic container (Refer to Figure 4-3 Disk Storage Case) or in plastic disk pockets like the one included with this manual. Label your containers or disk pockets for easy reference. Both storage items can be purchased from your local authorized AVL computer dealer.

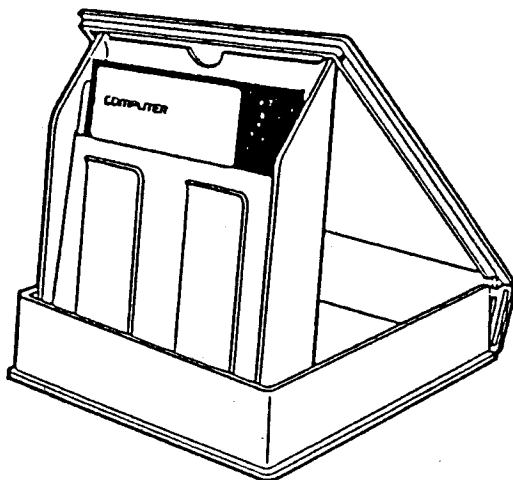
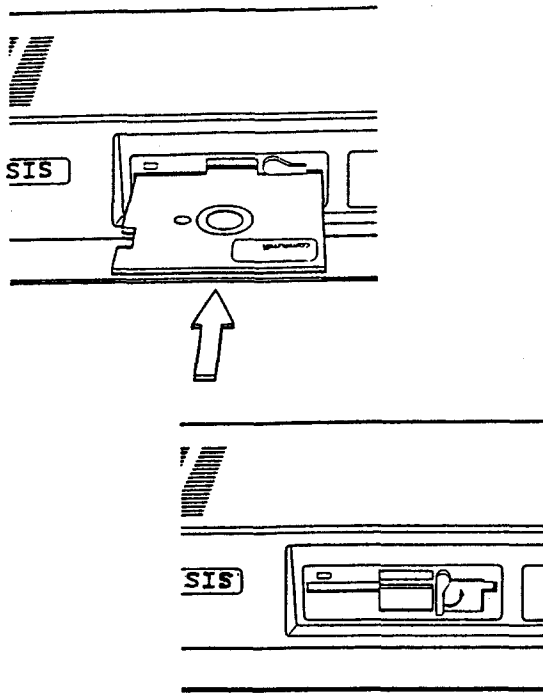


FIGURE 4-3 DISK STORAGE CASE



**FIGURE 4-4 INSERTING A DISK**

#### **4.2.6 INSERTING AND REMOVING DISKS**

Refer to Figure 4-4 when inserting or removing a disk from a disk drive.

- STEP 1** Turn the floppy disk drive lever to the horizontal position.
- STEP 2** With the disk label facing up and the notch on the left, slide the disk into the disk drive slot. If it does not

slide in easily, stop! Do not force it. Remove it and try again.

STEP 3 Once the disk is fully inserted in the disk drive, turn the lever down to the vertical position.

STEP 4 To remove the disk, turn the lever to the horizontal position and remove the disk from the drive.

#### 4.3 OPERATING SYSTEMS

An operating system directs data traffic to the proper destinations: it runs the computer. It interacts intimately with the physical hardware which makes up the computer. Many of its operations are invisible to the user and are quite complex.

Usually an operating system has certain standard routines which the user can use to manually transfer files, direct communications, and access the disk drives. Often the user can configure parameters in the operating system, so that later internal operations of the operating system (perhaps used by applications programs) will automatically perform correctly.

Every time a computer system is successfully turned on and booted up (started), some kind of operating system has been used. Sometimes the operating system is a familiar one like MS-DOS but often games or other popular software use a special operating system which fulfills the minimum requirements for their application, but which can not be copied (it is hoped) using the usual operating system routines.

Your Genesis computer is shipped with an MS-DOS 2.0 operating system. MS-DOS 2.0 can read and manipulate MS-DOS 1.25 files.

**CAUTION:** An MS-DOS 2.0 9-sectored disk if used by an MS-DOS operating system earlier than 2.0, cannot be read and, if written to, will be ruined.

#### 4.4 SYSTEM START-UP

To start up the system for operation, the computer must be plugged in and the power switch turned on. When these two things are performed, the EPROM (resident memory in the computer) routines cause the computer to read the operating system).

The system retrieves the operating system from a floppy disk properly inserted in the left floppy drive.

When the operating system has been successfully loaded into the computer, various things may occur. For MS-DOS operating systems, if there is a batch file named AUTOEXEC.BAT on the disk drive from which the operating system was obtained, then the computer will perform those batch assignments before restoring control to the user. If there is no such batch file, then MS-DOS will request the correct date and time.

If you use the PROCALL-X system disk to boot up the system, it will ask you what your name is.

**NOTE:** If your system fails to power up or boot from the floppy disk, please refer to: Trouble-Shooting Guide.



#### 4.4.1 BOOT-UP FROM POWER OFF

Below is a summary of how to boot from each of the disk drives from a power-off condition (known as a cold boot) assuming no initial programs are run upon booting (for example, where no AUTOEXEC.BAT file is present).

STEP 1 Insert a floppy systems disk into the left disk drive. A systems disk is one that has some type of operating system installed on it along with the program or data. You can not boot from a disk that just contains data files.

STEP 2 Close the lever over the disk and turn on the power. The power switch is located on the rear panel.

STEP 3 If booting is successful, the date and time screen message will appear. Enter the date and time and press the Return key to accept the defaults. The A> system prompt will appear on the screen. A> indicates that the default drive you are using is the

left floppy disk drive.

If you started the system using a system disk other than MS-DOS, a prompt asking a question or giving specific directions should come on the screen.

**NOTE:** Return is a quick way to answer date and time requests if they are not important. Otherwise, the date and time is stored with the disk file information so that later, you can determine which file is the most current.

#### 4.4.2 REBOOTING THE SYSTEM

After you have been using the system for a while, you may want to boot off another floppy disk to run a specific program or game. Or you may want to clear the buffer memory and restart the system. You can do both of these tasks by rebooting the system, which reloads the operating system into the system memory.

If you have trouble rebooting, consult the Trouble-Shooting Guide.

**CAUTION:** Unsaved work will be lost when rebooting is performed.

**STEP 1** Put the appropriate floppy systems disk into the drive slot. Close the lever over the disk.

**STEP 2** The floppy disk LED indicator should light, and the disk drive should engage.

**STEP 3** If booting is successful, the date and time screen message will appear. Enter the date and time or press the Return key to accept the defaults. The A> system prompt will appear on the screen. A> indicates that the default drive you are using is the left floppy disk drive.

**NOTE:** Remember that only a systems disk containing an operating system can be booted from because the instructions for the computer reside in the operating system.

## **4.5 USING THE KEYBOARD:**

The next several pages describe the functions of most of the keys on the 84-key keyboard. Refer to Figure 4-5 for the location of the keys.

### **4.5.1 FUNCTION KEYS**

There are ten function keys labeled F1 through F10 on the left side of the keyboard. These keys have special uses depending on how software supports them. The ten function keys on the keyboard access up to forty different functions keys. F11-F20 are obtained by using the Shift key with keys F1-F10. F21-F30 are obtained by using the Ctrl key with F1-F10. And F31-F40 are obtained by using the Alt key with F1-F10. In other words Shift adds ten to any function key, Ctrl adds twenty, and Alt adds thirty. The MS-DOS Operating System uses F1-F5 for certain editing features.

See your MS-DOS OPERATING SYSTEM MANUAL for details regarding the editing uses of function keys F1-F5.

#### 4.5.2 ALPHANUMERIC KEYS

The main section of the keyboard is arranged in the standard format of most typewriters. Both upper and lower case key symbols are accessible using utility keys like Shift. A full set of punctuation symbols are also provided.

#### 4.5.3 UTILITY KEYS

The main section of the keyboard has several keys not always found on typewriters for modifying the function of other keys or providing special input to the computer. A list of these keys (beginning at the top left of the keyboard and moving across the top row) and their use follows:

**Esc**

Also known as Escape. Software will use the ESCAPE character to signal the user's intent to stop or abort a program. It is also used sometimes as a prefix to codes which determine selection of print styles.

**Back Space** This key moves the cursor to the left one position. Usually, software will delete the letter which is Back Spaced over. This key, therefore, is used to correct minor entry errors.

**Num Lock** The Num Lock key is used to change the definition of the keypad keys. When the computer is first booted up (or rebooted), the keypad., +, -, and \* keys are interpreted as special function keys. Some applications software will then use these special functions to control cursor movement.

**Scroll Lock** This key is supported only with certain software programs. The Break function is used with the Ctrl key. See below.

**Tab** This key is used to advance the cursor to tab positions. The default tab is every seven spaces. Applications

software may define a different tab field, and may support a backwards tab (through, perhaps, Shift + Tab).

**Ctrl**

Also known as Control. This key modifies the function of other keys. Control characters (the characters resulting from Ctrl + C), are displayed on the screen, as for example, C.

**Retrn**

Also known as Return. This key is used to enter commands or data into the computer. As an example, all operating system commands (like DIR) are typed in the followed by pressing the Return key.

**Shift**

These two keys, one on each side of the bottom row of letters can be used interchangeably. The main function of the shift keys is to obtain the uppercase symbols for the keys in the main section of the keyboard

**Shift** When Caps Lock is depressed, the Shift key with the N key untoggles (inactivates) the Caps Lock function, so that the lower case character is obtained.

A Shift Key will also toggle the state of the Num Lock key if the keypad keys are struck when Shift is depressed.

**PrtSc\*** Shift + PrtSc\* will print out whatever is displayed on the screen on the LPT1 (parallel printer device).

**Alt** Also known as Alternate. This key modifies the function of other keys, as Shift and Ctrl do. When Alt is used to modify a key, the result usually has no printed symbol.

**Caps Lock** This key changes the alphabetical characters (A-Z) to uppercase. Numbers and punctuation symbols are not affected. When the Lock function



is being used, the LED indicator glows.

**Ins** Allows the insertion of text in the middle of existing text, when supported by software.

**Del** Removes the character underneath cursor and shifts remaining text to the left, when supported by software.

Numeric data input can be speeded up by using the keypad as a 10-key entry pad. In order for those keys to be interpreted as digits and not as special function keys used by software, press the Num Lock key. The LED indicator will glow, indicating that the function has been toggled on (activated).

**NOTE:** Some software programs do not take Num Lock into consideration if the keypad digits are used only for directional purposes (games, for instance). However, applications software like word processors and spread sheets will usually make the distinction between true "Num Locked" digits and special directional functions.

The Shift key in combination with one of the keypad digits will temporarily reverse the state of Num Lock. Num Lock's LED indicator does not reflect this temporary change.

#### 4.5.4 THE KEYPAD AND NUM LOCK

The comments below which refer to numbers concern only the numerals within the keypad, not the numerals on the main keyboard.

The keypad is located at the right side of the keyboard. The keypad includes the digits 0-9; the decimal point (.); and the arithmetic keys, minus (-), plus (+), and asterisk (\*).

The Num Lock key is used to change the definition of the keypad keys. When the computer is first booted up (or rebooted), the keypad numerals, ., -, +, and \* keys are interpreted as special function keys. Some applications software will then define these special functions to control cursor movement.

**NOTE:** In applications software which support these cursor movement functions, do not use the space bar to move the cursor to the right.

Using the space bar in this manner will insert spaces along the entire path of the cursor. Instead, use the right-direction cursor movement key (appropriately toggled to the un-Num Lock state).

**Enter**                      Functionally the same as Return. Can be used anytime Return is used.

#### 4.5.5 OTHER SPECIAL KEYS

**Ctrl + PrtSc\***      This combination will cause whatever is subsequently displayed on the screen to be echoed to the LPT1 device, until Ctrl + PrtSc\* is struck again.

**Ctrl - Break**      Cancels a current operation, only if the Break Off command is not set in the operating system.

**Ctrl + NumLock**      Suspends system operation. To resume operation, strike this combination again.

**Ctrl + S**              Suspends display

scrolling until Ctrl + S  
is struck again.

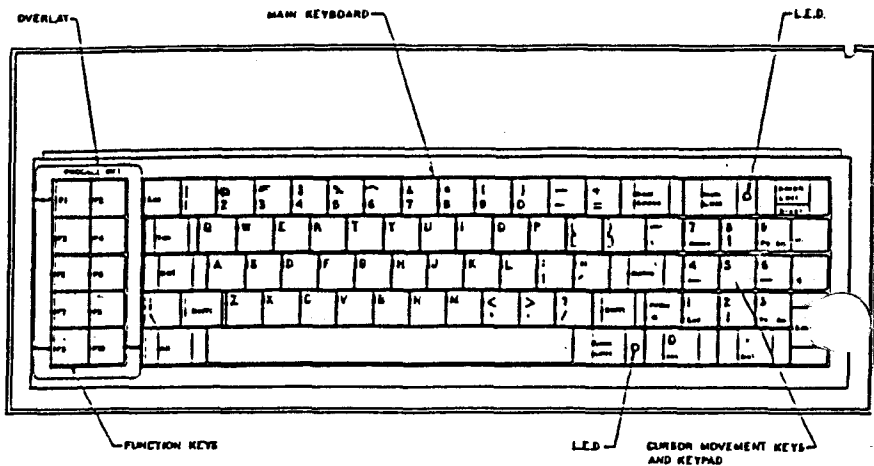


FIGURE 4.5 AVL GENESIS KEYBOARD

#### 4.6 TURNING OFF YOUR SYSTEM

To turn off the system, follow the procedure outlined below.

- STEP 1           Exit from the software program after saving your work, and return to the operating system prompt C>.
  
- STEP 2           Remove disk from floppy drive.
  
- STEP 3           Turn the power switch to the OFF position.

## 4.7 PREVENTIVE MAINTENANCE

Genesis has been designed to provide years of trouble-free service. If the following preventive maintenance guidelines are followed, your system should be as good looking and reliable as the day it was purchased.

**VIDEO SCREEN** Do not allow direct sunlight to strike the display screen for extended amounts of time. Sunlight can damage the phosphor screen.

Clean the surface of the video display with a B22 window cleaner and a soft cloth or paper towel.

**KEYBOARD** Clean the keyboard keys, or enclosure with a damp (not wet) cloth.

**MAIN UNIT** Keep the ventilation slots at the right rear of the main unit clear and clean. Do not block any ventilation vents.

Do not place drinks, food, cigarettes, or small objects (like paper clips) on top of the main

unit. Foreign material which enters the interior of the computer can damage the electronics.

**FLOPPY**

Every six months the floppy disk drive heads DISK DRIVE should be cleaned with a head cleaning kit recommended by your AVL dealer.

**DISK**

Please refer to Disk Care in Paragraph 4.2.1.

**NOTES:**



## CHAPTER 5

### MS-DOS 2.0 UTILITIES

#### 5.1 GENERAL

The information in this section concerns only the MS-DOS 2.0 Operating System. This material is presented so that you can perform certain fundamental operations without resorting to other manuals. Several of these operations must be performed upon initial start up of the system, other operations are presented as useful reference.

Creating copies of your data and program disks on a regular basis is extremely important. By doing so, you protect yourself against the loss of valuable files should one of your disks become worn or damaged.

When you purchase software it is also good practice to make a duplicate copy immediately for safekeeping. There are three valid ways to copy the contents of a disk:

- \* Use DISKUTIL
- \* Use FORMAT and COPY
- \* Use FORMAT and DISKCOPY

A description of how to use these

commands is found in the following pages. Details of these commands can be found in the MS-DOS 2.0 ADDENDUM of your MS-DOS OPERATING SYSTEM MANUAL.

## 5.2 DISK DRIVE DESIGNATORS

AVL Genesis can read and store data files from either the hard disk or from floppy disks. For convenience, the disk drives are given abbreviated reference symbols so that you can easily specify which drive you wish to use.

Under the MS-DOS 2.0 Operating system the left floppy drive is A, and the right floppy drive is B.

When using the MS-DOS Operating System, the standard prompt is X>, where "X" indicates the current default disk drive. Default means that the operating system looks on the drive in current use for programs and files, unless another drive is specifically requested.

For example, A>DIR will provide a directory of drive A. Note that "A" is printed by operating system on the screen. You type "DIR" and press RETURN. This holds true for the following examples as well. B>DIR A: will provide a directory of the floppy disk in the drive A.

### 5.3 DISKUTIL

The DISKUTIL program also formats disks. Options include single or double sided formatting, and eight or nine sectors per track. DISKUTIL will not install an operating system on a freshly formatted disk except for certain DISKUTIL copy options. And, a volume label cannot be given to a disk when formatting with DISKUTIL except when you copy a disk which already has a volume label.

However, DISKUTIL is the easiest utility program to use. It is a menu-driven program that allows you to choose from five different options: Perform a read-only test on a floppy disk, format a disk, copy a disk, copy a disk with formatting, and change disk format.

The following procedure explains how to use the program.

#### 5.3.1 FORMATTING WITH DISKUTIL

- STEP 1 Turn on the system and enter the MS-DOS operating system.
- STEP 2 At the operating system prompt, type DISKUTIL and

press RETURN. The following message appears on the screen:

Enter the number of Disk Drives Available (1 or 2)

- STEP 3 Type "2" and press RETURN.
- STEP 4 The next screen that appears concerns the format of your disks. The format of the disk in the default Drive A is displayed at the top of the screen. You may choose to change the format. If the current setting matches the format of the disks you intend to copy or format, type N press RETURN, and skip to STEP 7. You can alter the format selection by typing Y and pressing RETURN.
- STEP 5 If you typed Y to the last prompt, the following menu appears. The selections in this menu allow you to test, format, and copy your disks. The options are explained later.

F1 = AVL 48 TPI Single Sided  
160K (8 Sectors)  
F2 = AVL 48 TPI Double Sided  
320K (8 Sectors)  
F3 = AVL 48 TPI Single Sided  
180K (9 Sectors)  
F4 = AVL 48 TPI Double Sided  
360K (9 Sectors)

STEP 6 Select the format by pressing the corresponding function key. Selection F4 is normally appropriate for Genesis. F1 and F3 are for IBM program disks. F2 for disks created under versions of MS-DOS earlier than 2.0.

STEP 7 Once a format selection is made, the next menu appears. The selections in this menu will allow you to test, format, and copy your disks. The options are explained in Paragraph 5.3.2 below.

F1 = Perform read only test on  
drive A (left)  
F2 = Perform read only test on  
drive B (right)  
F3 = Format a disk in drive A  
(left)  
F4 = Format a disk in drive B  
(right)

F5 = Copy from drive A (left)  
to drive B (right)  
F6 = Copy from drive A (left)  
to drive B (right)  
with formatting  
F7 = Change disk format

STEP 8 When you have finished with  
the program and wish to return  
to the operating system, press  
ESC.

### 5.3.2 DISKUTIL COPY FUNCTIONS

The following subparagraphs detail the  
COPY functions of DISKUTIL.

#### 5.3.2.1 PERFORM READ ONLY TEST ON DRIVE A (LEFT)

This option tests your disks for the  
integrity of data. Use this option if  
you experience difficulty in reading or  
saving a file, or operating a program  
from disk. Insert the disk you wish to  
test into the floppy drive before you  
select the option. Once selected, the  
option will immediately go into its test  
mode with this message:

Read Only test in progress

If the test is successful, the previous

menu will reappear. If it fails, the screen will display the type of error and this message:

Your options are -

- 1) retry the operation
- 2) return to the menu

If the message appears, retry the operation. If the same message appears, return to the menu, and try the same test on several other disks of known reliability. If every disk fails, either you selected the wrong disk format in STEP 5, or the floppy disk drive has a problem, in which case you will need to contact your AVL Customer Services for assistance. To recover the files from a failed disk, format a blank disk and transfer the files with the MS-DOS internal COPY command.

#### 5.3.2.2 PERFORM READ ONLY TEST ON DRIVE B (RIGHT)

This option tests your disks for the integrity of data. Use this option if you experience difficulty in reading or saving a file, or operating a program from disk. Insert the disk you wish to test into the floppy drive before you select the option. Once selected, the option will immediately go into its test

mode with this message:

**Read Only test in progress**

If the test is successful, the previous menu will reappear. If it fails, the screen will display the type of error and this message:

Your options are -

- 1) retry the operation
- 2) return to the menu

If the message appears, retry the operation. If the same message appears, return to the menu, and try the same test on several other disks of known reliability. If every disk fails, either you selected the wrong disk format in STEP 5, or the floppy disk drive has a problem, in which case you will need to contact your AVL Customer Services for assistance. To recover the files from a failed disk, format a blank disk and transfer the files with the MS-DOS internal COPY command.

**5.3.2.3 FORMAT A DISK IN DRIVE A  
(LEFT)**

To use the option, insert the floppy disk to be formatted into drive A (left), then select the option. A



## 5.4 FORMATTING A DISK

All disks which your computer will use must be formatted in one way or another. Formatting a disk allocates the space on the disk so that the areas have recognizable locations (such as Sector 7, Track 3) for retrieval of stored data.

The blank disks which you purchase to store programs or make backups must be formatted using your computer system. The program disks you purchase which have software on them have already been formatted. Formatting a disk erases the contents, so be careful not to format disks which have information already on them.

To format a disk, you may either use the **FORMAT** or **DISKUTIL** programs. These programs reside in the Root directory of the MS-DOS Operating System.

### 5.4.1 FORMAT PROCEDURE

For this example procedure, assume that the default drive is "A" and the current directory is the A disk root directory.

**STEP 1** Turn on the computer and enter the MS-DOS 2.0 Operating System.