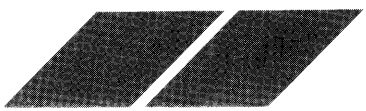
ATARI®

ST™ Computer

Owner's Manual

TABLE OF CONTENTS



INTRODUCTION

Only a few years ago, the speed, memory, and graphics power of the ATARI® ST™ Computer were beyond the dreams of most computer enthusiasts. And today, there is no computer that offers the power and performance of the ST Computer at as reasonable a price.

The ATARI ST Computer system combines the latest microcomputer technology with an easily understood and simple-to-use working environment. There are no obscure commands to memorize, nor complicated procedures to follow. Computer operations are represented by pictures and words on the screen; to operate, you simply point to the item and click the mouse button.

The ST Computer's operating system, TOS™, has been permanently installed inside the computer. Along with ample Random Access Memory (RAM), TOS and the ST Computer have the capacity to handle the most complex word-processing tasks or the most detailed spreadsheet procedures. In addition, the ST Computer includes a built-in double-density ATARI MicroFloppy Disk Drive that can store up to 357,376 (349K) or 726,016 (709K) bytes on each disk, depending on the model you have.

The ST Computer offers extensive computing power and potential, including 512 different colors, three screen-resolution modes, an 80-column display, and expansive memory and disk storage. The ease of adding a hard disk, modem, printer, or music synthesizer greatly enhances the ST Computer's potential and allows you to adapt it to new and exciting uses.

How to Use This Manual

Operating your new computer is not difficult; however, you should learn to use it correctly. This manual, designed for computer users from novices to seasoned experts, tells you how to do that. It is intended to be read from beginning to end, proceeding step by step from the simplest to the most advanced operations and procedures.

Most important is that you make a copy of your ST Language disk (**Chapter 2**) before beginning to work with your computer in earnest. Once you have a backup copy of the disk, you won't have to worry about damaging its contents.

The following outline summ

Chapter 1, Getting Starte features of the computer a unpack the computer and surveys the major features main unit.

Chapter 2, Operating You introduces you to the GEM manipulate it. The chapter Language disk.

Chapter 3, Icons, Windov manage your information, GEM Desktop.

Chapter 4, The Menu Bar menu options they supply.

Chapter 5, Applications f types of applications avail to the world of programmi database and graphics pr

Appendix A, Troublesho contains a rundown of pro up or operating your ST C find helpful hints regardin computer system.

Appendix B, Connector assignments of the ST Cc

Appendix C, ST Comput features and requirement

The **Glossary** defines cor with the ST Computer an

The **Index** is included for

Customer Support tells you where to find more information about your ST Computer.

Paragraphs marked **Warning** or **Note** appear throughout the manual. Warnings alert you to potential problems and suggest ways to avoid them. Notes contain useful hints and other information relevant to the topic at hand.

CHAPTER 1
GETTING STARTED

Unpacking Instructions

Using both hands, carefully lift the computer in its foam packing out of the carton. Remove the foam packing and plastic bag, and place the computer on a firm, level surface. Inside the carton you should find these items:

- ATARI ST Computer
- Mouse
- Power Cable
- ST Language Disk
- ST Owner's Manual

Before going on, make sure you have received all those items. If anything is missing, contact your ATARI Computer retailer.

Note: Save all packing materials for shipping and storing your computer.

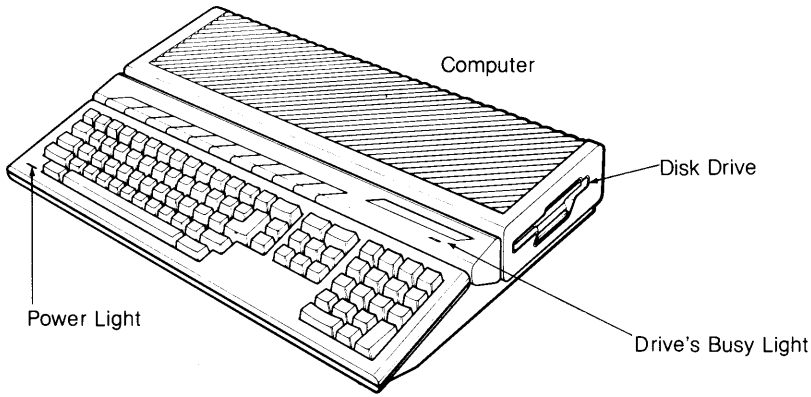
Connecting the System

Your ST Computer is a sophisticated piece of electronic equipment and you must choose a proper working environment for the system. Avoid places that expose the components to dust, grease, extreme temperatures, or high humidity. An environment you'd consider suitable for a stereo system or television should also serve your computer well. Arrange the components securely on a firm, level surface, then follow the instructions in this chapter.

Note: See **Appendix A, Troubleshooting and Preventive Maintenance,** for information on caring for your ST Computer system.

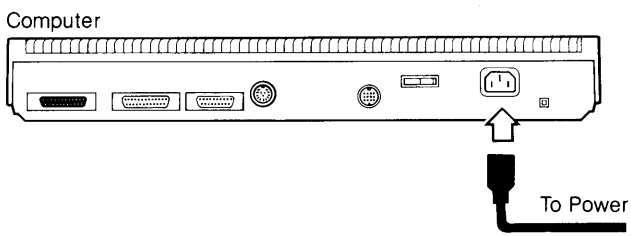
The Computer and Disk Drive

Your ST Computer includes a double-density ATARI MicroFloppy Disk Drive built into its right side panel. The disk drive is your primary means of storing and retrieving information. When you connect the power cable to your computer, you are also providing the power source for your disk drive. When the red light on the computer's front panel is illuminated, power to the computer and the drive is switched on. When the drive is "busy" (working to store or retrieve information), the light beside the computer's front panel label illuminates and the drive whirs.



Make sure the computer is switched off. Plug one end of the power cable into the jack marked "Power" on the back panel of your computer. Now plug the cable's electrical plug into a wall outlet or power strip.

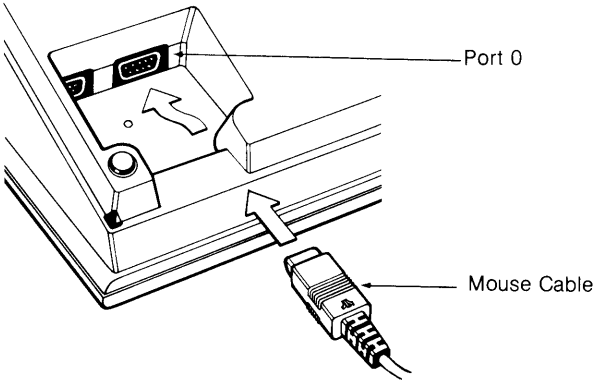
Warning: Be certain to remove the protective cardboard insert from your drive before switching on the power.



The Mouse

You will use the mouse to control much of what you do with your computer. You should connect it now.

To connect the mouse, plug its cable into the port marked "0" on the right underside of the computer.

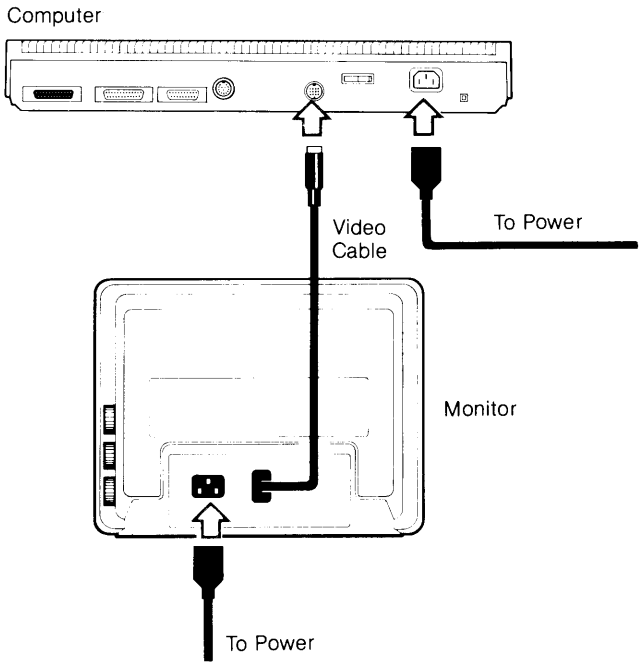


The Video Display

The display screen allows you to see what's going on. Without a video display screen, your computer has no way of communicating with you, nor can you effectively communicate with it. Depending on your ST Computer model, you may have the option of using a television as the video display screen for your computer. Keep in mind, however, that a monitor delivers a much sharper display than a television. Also, a television cannot display the high-resolution images your computer is capable of producing.

Monitor

If you have either an ATARI High-Resolution Monochrome Monitor or an RGB Analog Color Monitor, plug its video cable into the jack labeled "Monitor" on the back of the computer. Connect the monitor's power cable and plug it into a wall outlet or power strip.



Note: Consult the manual that came with your monitor for further information.

Television

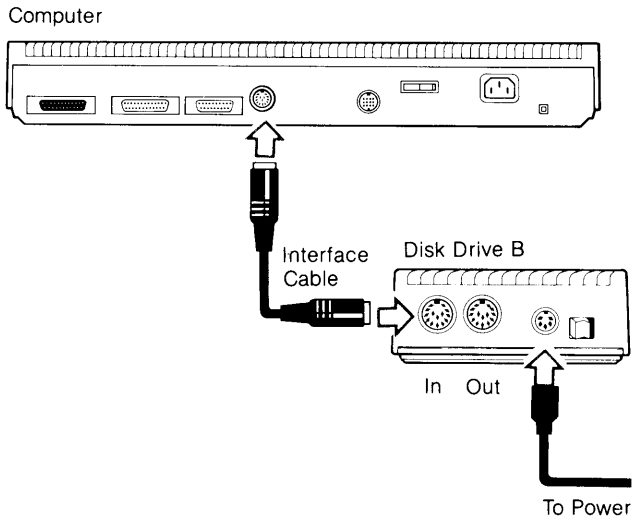
If the ST Computer model you have is equipped with a TV port, you can use a television as the computer's video display. To do that, connect the TV cable (supplied with your system) to your system and to your TV UHF aerial socket. Tune your television to channel 36.

A Second Disk Drive

In addition to the disk drive built into your computer, you may connect an additional drive to your computer system. A second drive enhances the convenience of data storage and retrieval.

To connect a second disk drive, follow these steps:

1. Make sure the computer is switched off, then plug one end of the drive's interface cable into the jack labeled "Floppy Disk" on the back of the computer. Plug the other end into the port marked "In" on the back of the drive.
2. Make sure the disk drive is switched off, then insert the AC power adapter's round plug into the jack labeled "Power" on the back of the disk drive. Insert the power adapter's electrical plug into a wall outlet or power strip.



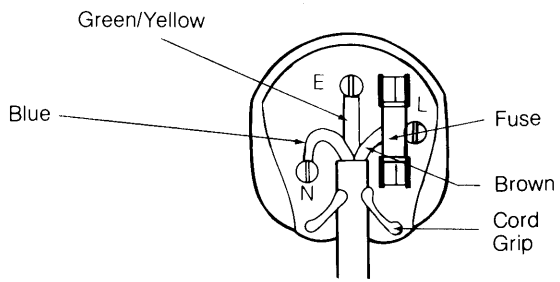
Note: You can connect a maximum of one external floppy disk drive to your ST Computer. The system always refers to your internal drive as Drive A. Your external drive is Drive B.

Connecting a 3-Pin Plug to the Mains Lead

This unit is designed to operate on ~240V 50 Hz mains supply.

The wires in this mains lead are colored in accordance with the following code:

Green/Yellow	— Earth (E)
Blue	— Neutral (N)
Brown	— Live (L)



If the colors of the wires in the mains lead of this appliance do not correspond with the colored markings identifying the terminals in your plug, proceed as follows:

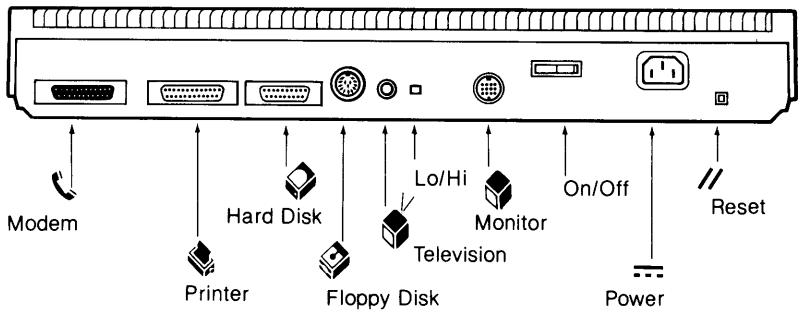
The wire colored GREEN/YELLOW must be connected to the terminal in the plug marked by the letter E or by the safety earth symbol ⏚ , or colored GREEN, or GREEN/YELLOW.

The wire colored BLUE must be connected to the terminal marked with the letter N or colored BLACK. The wire colored BROWN must be connected to the terminal marked with the letter L or colored RED.

If a 13-amp (BS1363) plug is used, a 3-amp fuse must be fitted, or if any other type of plug is used, a 3- or 5-amp fuse must be fitted either in the plug, adaptor, or on the distribution board.

Ports

The Back Panel



Modem

Any industry-standard RS232 modem may be connected to your computer through this port. Connect the modem's interface cable from the modem to this port. Your computer uses a modem to transmit and receive information to and from other computers via a telephone line. With a modem in your system, you can hook into a variety of electronic information and mail services, communicate with the computer at work, or talk to a friend's computer. You can also connect a serial printer or any other RS232 device through the Modem port.

Printer

An ATARI ST Printer connects to your computer through this port. Connect the interface cable that came with your printer to this port, then to the printer. The Printer port is an industry-standard parallel interface, so almost any parallel printer can be attached here.

Hard Disk

An ATARI Hard Disk Drive attaches to your computer through this port. Simply connect the interface cable that came with your hard disk to this port, then to the hard disk. A hard disk drive can store much more information and transmit that information much faster than a floppy disk drive. Your hard disk drive is Drive C.

Floppy Disk

A second disk drive (Drive B) can be connected to your ST Computer through this port.

Television

If your ST Computer has a built-in TV modulator, you can use a television as your video display. The cable connecting the computer to the television is connected to this port.

Lo/Hi Switch

The Lo/Hi switch selects the channel that is weakest in your area for the computer's video display. This switch is only present on ST Computer models with a built-in modulator.

Monitor

An ATARI RGB Analog Color Monitor or an ATARI High-Resolution Monochrome Monitor can be attached to your computer through this jack.

I O On/Off

This switch turns the computer on and off; 1 is on, 0 is off.

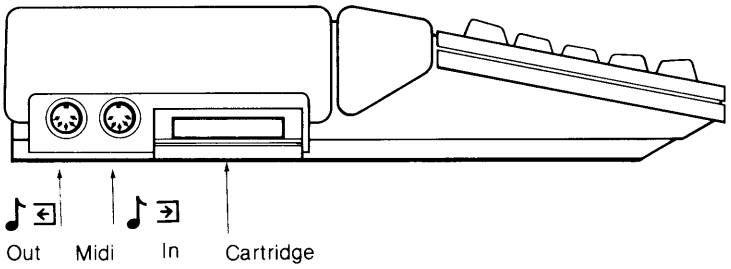
⎓ Power

This plug connects the computer to the power source.

// Reset

This button restarts the computer without switching it off and on. Restarting the computer this way is known as a "warm" start.

The Left Side Panel



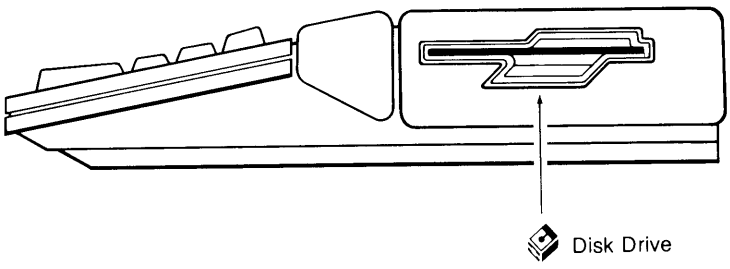
Midi Out/Midi In

MIDI stands for Musical Instrument Digital Interface. The two MIDI ports give your computer access to the latest generation of electronic musical instruments. The Midi In port allows the computer to monitor a synthesizer or any other MIDI-equipped instrument. The Midi Out port lets the computer control an instrument's digital interface, letting you play complex compositions while changing the volume, tempo, and instrumentation. Using the MIDI interfaces, your computer can become a sophisticated studio recorder that lets you create music one track at a time.

Cartridge

Software programs for ST Computers that come in cartridge form are inserted in the cartridge slot. Cartridge programs load instantly, and because they are external, they do not use any of the computer's memory in order to load. Up to 131,072 (128K) bytes of program information can be contained on a single cartridge. The system treats the cartridge as Drive c.

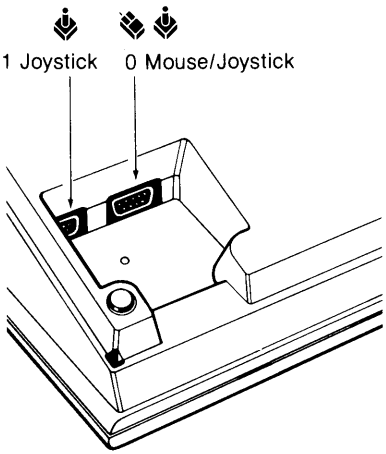
The Right Side Panel



Disk Drive

The built-in ATARI MicroFloppy Disk Drive is double-density, and either single- or double-sided, depending on the ST Computer model you have.

The Right Underside



Mouse & Joystick

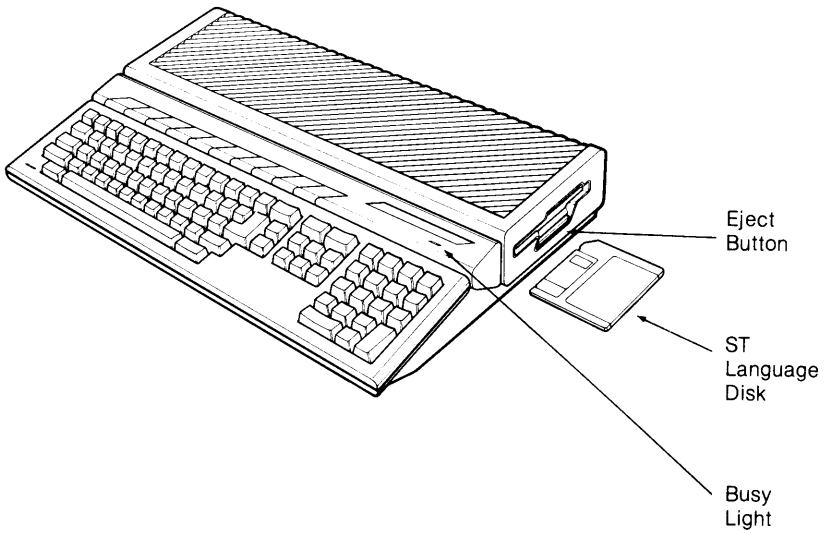
The mouse connects to your computer through the Mouse/Joystick port 0. ATARI-compatible joysticks can also be connected through either port 0 or 1. Joysticks are used when playing computer games; they allow you to control the action of the game on the screen.

CHAPTER 2
OPERATING YOUR ST COMPUTER: AN OVERVIEW

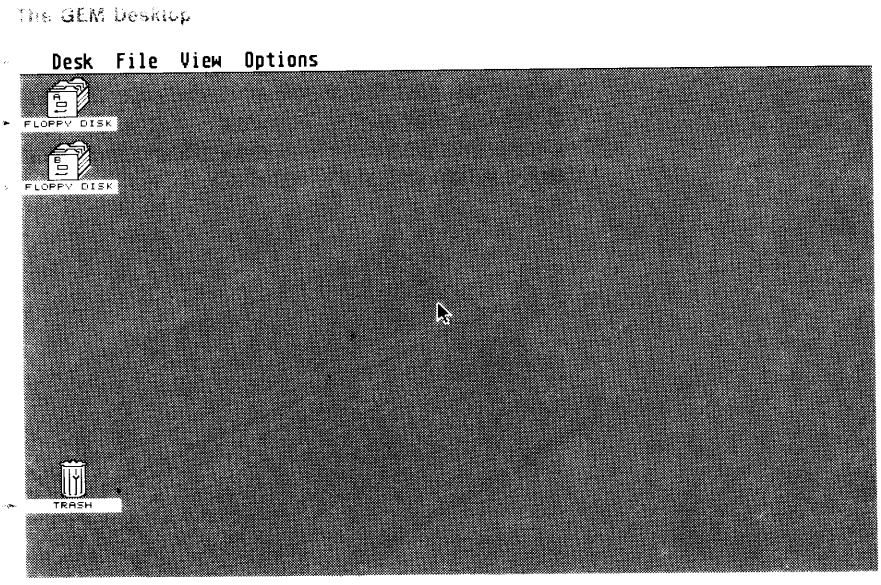
Switching On the System

Once you have connected all the components, you are ready to switch on the power to your computer system. Follow these steps:

1. Hold the ST Language disk by its plastic casing with the label facing up and the metal end towards the slot on the disk drive. Slide the disk gently forward into the drive opening until it clicks into position. The disk should be completely inside the drive when properly installed.



2. Switch on your monitor, a second disk drive (if you have one), then your computer (always switch your computer on last). The drive's busy light goes on and the drive whirs, while the Bee icon appears and some of the disk's information loads into your computer. (Whenever the computer transfers or retrieves information from the disk drive, the screen displays the Bee icon.) After a few moments, your screen looks like this:



This is the GEM Desktop. It is the starting point for almost everything you do with your ST Computer. As you become acquainted with your computer system, the GEM Desktop and its features will serve as an important point of reference for you.

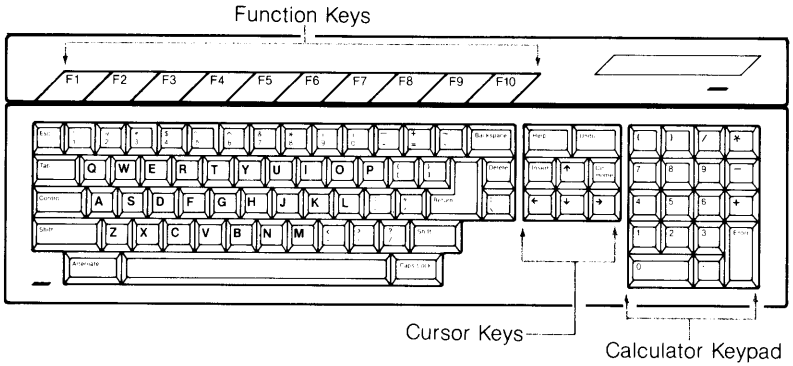
Note: If the GEM Desktop fails to appear on your screen, switch the computer off and make sure that your video display is switched on, that the ST Language disk is correctly inserted inside the drive, and that all cable connections are proper and secure. Try switching the system on again. If the problem persists, refer to **Appendix A, Troubleshooting and Preventive Maintenance.**

What is GEM?

GEM stands for Graphics Environment Manager, which is just a fancy way of saying that the desktop conveys and manages information by means of graphic images and words instead of words alone. The opening screen display is called the "Desktop" because it's graphically modeled to imitate and function as one's home study or office desk.

The GEM Desktop consists of the Menu Bar along the top of the screen, three icons (pictures) along the left side, and the remaining screen space. The Menu Bar gives you access to the utilities and applications available from the GEM Desktop. The Floppy Disk icons allow you to control and manipulate the information stored on your disks. And the Trash icon lets you dispose of your unwanted information. (See **Chapter 3** for an explanation of the Floppy Disk and Trash icons. See **Chapter 4** for a detailed presentation of the Menu Bar and its contents.)

The Keyboard



The central part of your ST Computer keyboard is arranged much like a conventional typewriter keyboard. This is because much of what you'll do with the computer will involve typing; for instance, writing letters or reports. These keys function just as on a typewriter. The **[S]** key produces the letter "s" on your screen; pressing **[Shift] [S]** produces the capital letter "S."

But computers, because they are not mechanical, require special keys to replace those keys on a typewriter that perform mechanical functions. One example is the **[Return]** key on your computer keyboard. It replaces the carriage return lever (or key) on a typewriter, and returns you to the screen's left margin. Another example is the computer's set of cursor ("arrow") keys. The cursor is a graphic point on the screen that keeps your place when you type with the computer. The cursor keys allow you to control the movement of the cursor on your screen.

The **[Esc]**, **[Control]**, and **[Alternate]** keys work much like the **[Shift]** key, in that they often change the meaning of a second key to produce special instructions or codes. Along the top of the keyboard are the function keys, **[F1]** through **[F10]**. These keys have no set meaning, though many software applications use them to perform special operations.

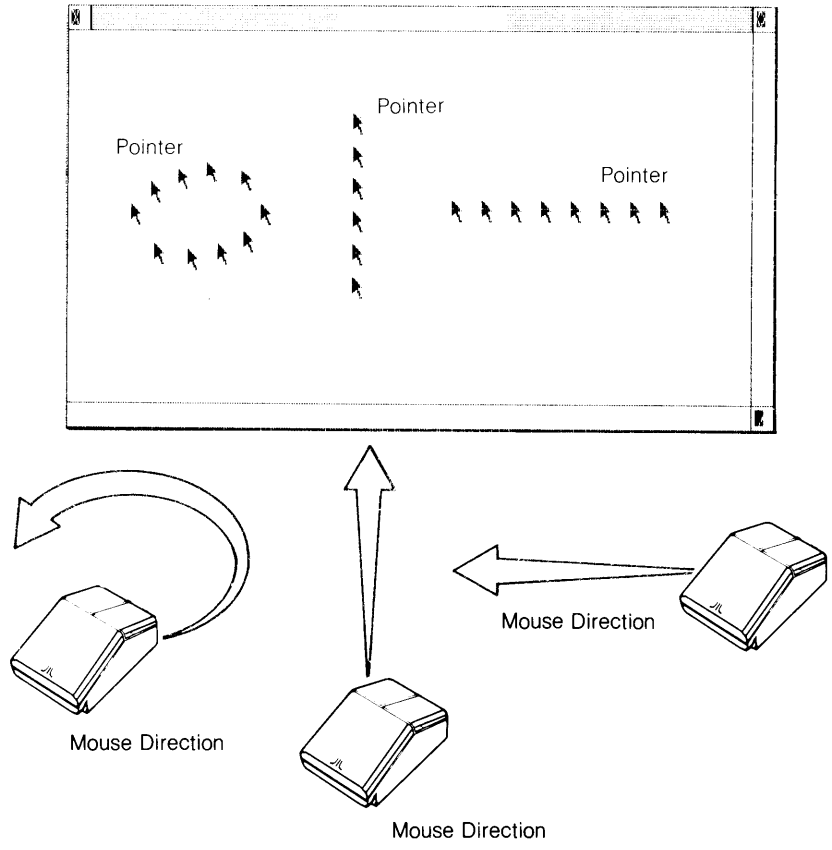
Note: Throughout this manual, letters or words enclosed by square brackets ([ ]) represent keys on your ST Computer keyboard. Some functions require that you simultaneously press two or three keys; in that case, the keys are listed serially.

Controlling the Mouse

The mouse is the main device for moving around and manipulating the desktop. It is a small, rectangular box with two buttons on top, a ball underneath, and a cable running from the mouse to Mouse/Joystick port 0 on the computer.

The mouse detects motion (direction, distance, and speed) through the movement of its ball as it rolls over your working surface. On the screen, a small arrow called the "mouse pointer" mirrors the movement of the mouse. The mouse allows you to position its pointer anywhere on the GEM Desktop. You use the left mouse button to "select" items on the desktop; you will always use the left button within the desktop. The right mouse button is used with some application programs.

To understand further how the mouse operates, situate it on a flat, clean surface (your computer desk or tabletop) so that the side with the cable is facing the screen. Now move the mouse around—left, right, forward, backward, in circles. Practice moving the pointer around the desktop so you get the feel of the mouse and how it controls the pointer's movement.



Pointing and Clicking (Selecting)

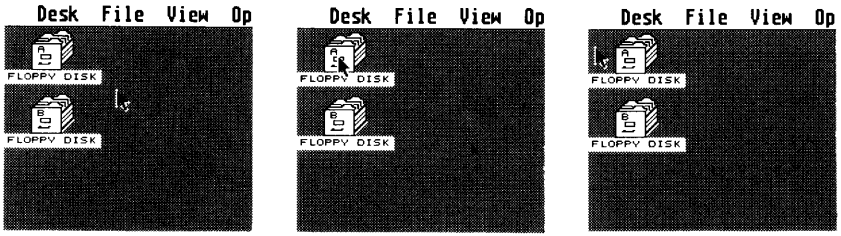
When you "select" an item on the GEM Desktop, you tell the computer that you want to do something with the file or function that the item represents. Use the mouse pointer to point at the item you wish to select. Then select the item by "clicking" the left mouse button.

Note: To customize the clicking rate and responsiveness of the mouse button, see **Control Panel** in **Chapter 4**.

Selecting an Icon

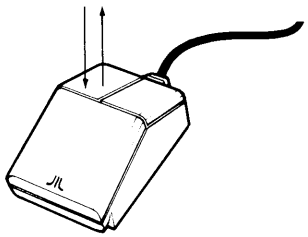
To point at an icon, position the tip of the pointer on that icon.

Positioning the Mouse Pointer



Incorrect Correct Incorrect

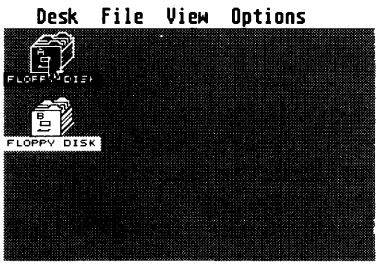
To select an icon, click and immediately release the left mouse button.



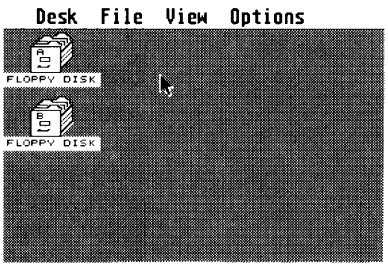
Try pointing at and clicking on one of the icons. When you click on an icon, it reverses shading (highlights) to indicate that it has been selected.

To cancel your selection, move the pointer anywhere else on the GEM Desktop and click the left mouse button. Selecting a second icon before canceling the first selection automatically cancels the first selection. (See **Multiple Selections** in **Chapter 3** for techniques on selecting more than one item at a time.)

Selecting an Icon



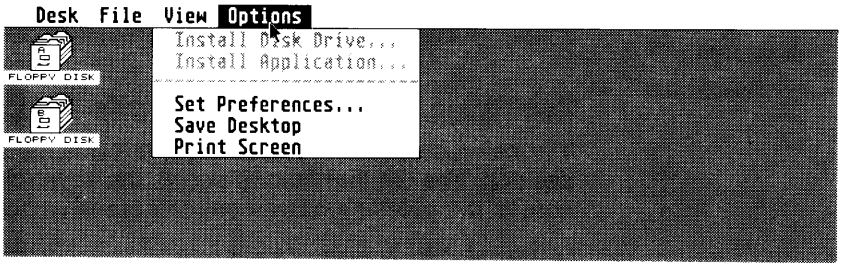
Canceling the Selection



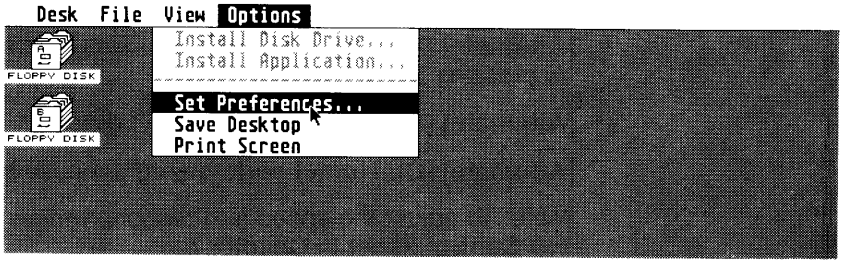
Selecting a Menu Heading and Option

To point at a menu option, move the pointer to one of the Menu Bar's headings. The appropriate menu immediately drops down. Now move the pointer to the menu option you want to select. Notice that the items reverse shading as you point at them. To select a menu option, click on that option when it's highlighted.

Positioning the Mouse Pointer on a Menu Bar Heading



Positioning the Mouse Pointer on a Menu Option

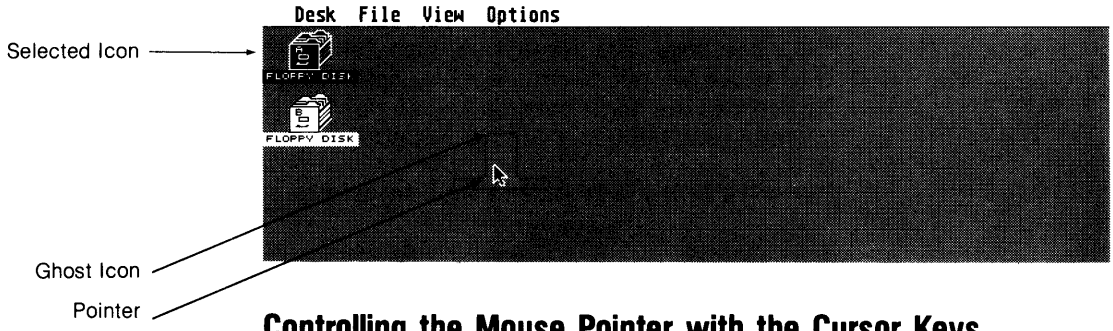


To cancel without making a selection, move the pointer outside the menu and click the left mouse button. Also, moving to a second menu automatically cancels the first menu.

Dragging

Another important mouse technique is "dragging." When you drag an icon, you move it from one place to another on the desktop. To drag an icon, select it, then press and hold the left mouse button while you move the mouse pointer. A "ghost" (outline) of the icon follows the pointer. When you release the button, the icon jumps to its new location, appearing at the last position of the ghost icon.

Dragging an Icon



Controlling the Mouse Pointer with the Cursor Keys

You can also use the cursor keys to move the pointer around the desktop. The list that follows shows the keystroke combinations that control the pointer's movement on screen without using the mouse.

[Alternate] [any cursor key] moves the pointer eight pixels (screen dots) in the direction indicated by the cursor key.

[Alternate] [Shift] [any cursor key] moves the pointer one pixel.

[Alternate] [Insert] selects an icon. This combination is the same as pressing the left mouse button.

[Alternate] [Insert] [any cursor key] drags an icon.

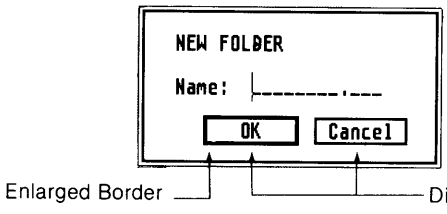
[Alternate] [Clr Home] performs right mouse button functions.

Note: To adjust the speed and responsiveness of the cursor keys, see **Control Panel** in **Chapter 4**.

Dialog Boxes and Alert Messages

Dialog Boxes

Whenever the ST Computer needs to communicate with you, it displays a Dialog Box at the center of the GEM Desktop. Dialog Boxes establish a dialog between you and the computer. For example, the Dialog Box below requests information from you so that a certain procedure may be completed.

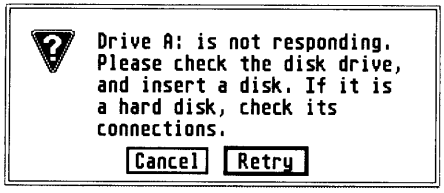


To execute your action from a Dialog Box, point at one of the Dialog buttons and click the left mouse button. If a Dialog button has an enlarged border, you can simply press **[Return]** on the ST Computer keyboard rather than clicking on that button.

Alert Messages

Alert Messages are Dialog Boxes punctuated with stop signs, question marks, or exclamation points. Alert Messages warn you that the operation you are performing or about to perform has potentially dire consequences, or that it is improper or impossible.

When you see an Alert Message, such as the one below, follow its instructions and click on the appropriate Dialog button inside.



Making a Backup ST Language Disk

It is imperative that you make a backup copy of your ST Language disk. If something should happen to the ST Language disk that came with your system, you would be unable to access many of the desktop's features.

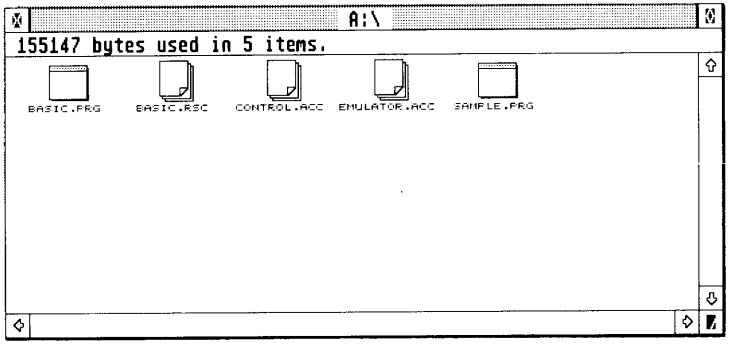
To make a backup of your ST Language disk you will need a new, blank, 3½-inch disk. (The disk may be either single- or double-sided.) Disks can be purchased at any computer retailer. The duplication procedure is simple, and will begin to acquaint you with the workings of the GEM Desktop.

What's on the ST Language Disk?

Before you begin the duplication procedure, take a look at what's on the ST Language disk. As you will see, the ST Language disk contains recorded information arranged in files. CONTROL.ACC and EMULATOR.ACC are the Desk Accessory files. The bulk of the information on the disk is files for running the programming language, ST BASIC™.

To view the files on the disk, follow these steps:

1. With the ST Language disk in your built-in drive (Drive A) and the GEM Desktop displayed, point at the Floppy Disk A icon and click the left mouse button (you are "selecting" Drive A).
2. Point at the File heading on the Menu Bar, then move the pointer until the word "Open" reverses shading. Click the left mouse button once (you are "selecting" the Open utility).
3. Your "window" to the contents of Drive A now opens. The disk's files are displayed as icons; each file (icon) has a name. Just take a moment to see that indeed there are files on your ST Language disk.



4. Now close Drive A's window. Move the pointer to the File heading once again. Move down the menu until "Close" reverses shading, then click the left mouse button. Drive A's window disappears.

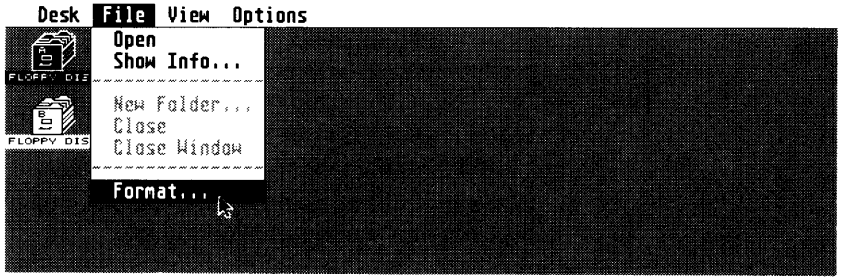
How to Format Your Blank Disk

Before you copy the ST Language disk, you must prepare the blank disk to receive information. This procedure is called "formatting." To format your blank disk, follow the steps below and read the prompts that appear in the Dialog Boxes on your screen.

1. If you have one disk drive, remove the ST Language disk from your drive by pressing the drive's eject button. Place the ST Language disk aside, and insert your new blank disk into the drive.

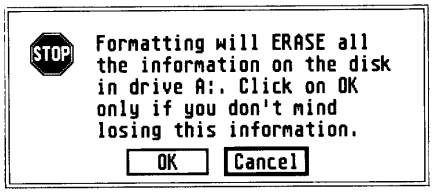
   If you have two disk drives, insert the ST Language disk into Drive A and the blank disk into Drive B (your external drive). With two drives, you can keep the ST Language disk in Drive A and the blank disk in Drive B during the formatting and duplication processes.

2. If you have one drive, select the Floppy Disk A icon, then select Format from the File heading on the Menu Bar (click on Format).

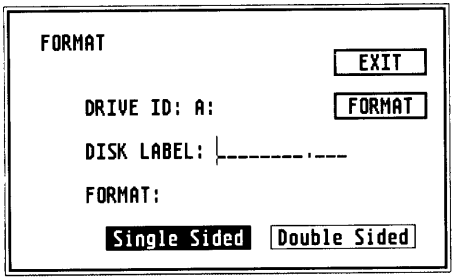


   If you have two disk drives, select the Floppy Disk B icon, then select Format from the File heading on the Menu Bar (click on Format).

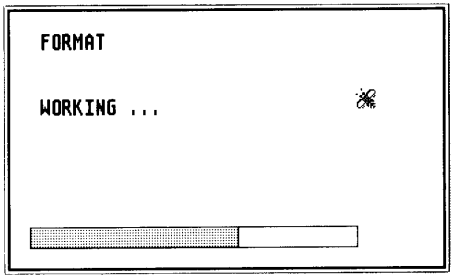
3. The GEM Desktop now displays the following Alert Message:



As a safeguard, this message warns you that formatting will erase any information previously stored on the disk. Since you are beginning with a blank disk, the warning doesn't apply. Click on the OK button and proceed to the Format box.



4. Make sure the single-sided box is shaded, then click on the Format button. (Do not label your disk.)
5. While the disk is being formatted, the computer monitors the process in the Format Working box.



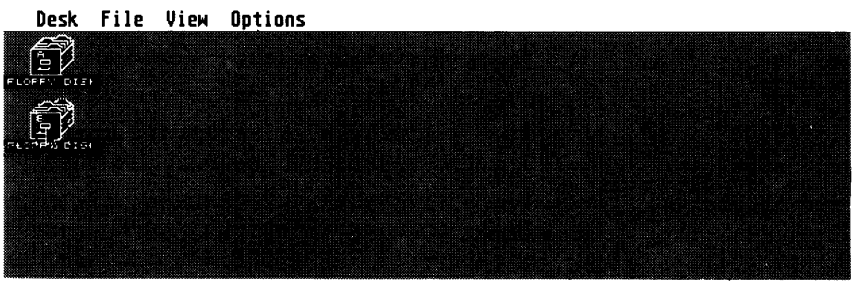
Your blank disk is now formatted and can hold 357,376 bytes of information, which is more than enough to copy the ST Language disk. Click on the OK button. You will return to the Format box. Click on the Exit button to return to the GEM Desktop.

Note: If your computer does not report that the formatted disk can hold 357,376 bytes of information, the disk may be defective. Try formatting it again. If the problem persists, place a new disk in the drive and format it.

How to Copy the ST Language Disk

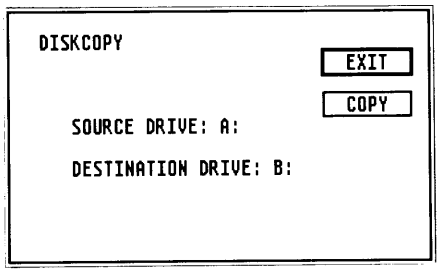
To copy the ST Language disk to your now formatted blank disk, follow these steps. If your ST Language disk has a write-protect tab, move it to the open (protected) position (see **Write-Protecting Disks** later in this chapter).

1. If you have one disk drive, insert the ST Language disk into the drive, select Floppy Disk A with the mouse pointer and drag it on top of the Floppy Disk B icon. When the Floppy Disk B icon reverses shading, release the left mouse button. (If you are working with one disk drive, copying to Disk B simply means that your drive will function as both Drive A and Drive B in the duplication process.)

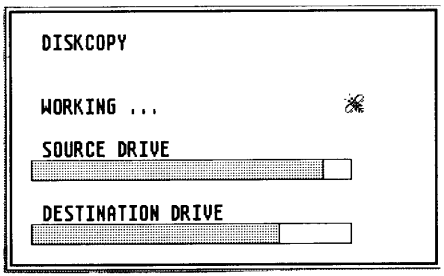


   If you have two disk drives, be sure the ST Language disk is in Drive A (your internal drive) and the formatted disk is in Drive B (your external drive). Then select Floppy Disk A with the mouse pointer and drag it on top of the Floppy Disk B icon. When the Floppy Disk B icon reverses shading, release the left mouse button.

2. As a precaution, you will see an Alert Message warning you that copying Disk A to Disk B erases all information on Disk B. Again, since you are beginning with a blank disk, the warning doesn't apply. Click on the OK button. You now see the Diskcopy box.



Click on the Copy button and follow the prompts to finish the copying process. You will be instructed to switch disks, if working with one disk drive, until the copying process is complete. The computer monitors the duplication process in the Diskcopy Working box.



The "source" disk is the disk you are making a copy of. The "destination" disk is the disk you are copying to.

3. When the procedure is complete, you will see the Diskcopy box again. Click on the Exit button to return to the GEM Desktop. Put the original ST Language disk in a safe storage place. Using a stick-on paper label, label the copy's plastic housing "Working ST Language." From now on, use your Working ST Language disk whenever using your computer.

Note: You were previously instructed not to name your newly formatted disk in the Format box because making a disk-to-disk copy erases all information on the destination disk, including the disk label, so the effort would have been pointless. Under other circumstances, you may of course name disks in the Format box. For more information, see **Format** in **Chapter 4**.

Disks and Your Disk Drive

Most of the information you load into your ST Computer will be stored on 3½-inch microfloppy disks. Disks and your disk drive enable you to load information into the computer, as well as store programs and other information that you create with your ST Computer.

Note: See **Appendix A, Troubleshooting and Preventive Maintenance**, for information on caring for your disks and disk drive.

Single-Sided/Double-Sided

The disk drive built into your ST Computer is either a single- or double-sided drive, depending on the ST Computer model you have. Single-sided drives can record and read information on single-sided disks. Double-sided drives can record and read information on double-sided disks. Single-sided disks have one recordable side, whereas double-sided disks can accept recorded information on two sides. ATARI single-sided MicroFloppy Drives allow you to store up to 357,376 bytes on one single-sided disk. ATARI double-sided MicroFloppy Drives allow you to store up to 726,016 bytes of information on one double-sided disk.

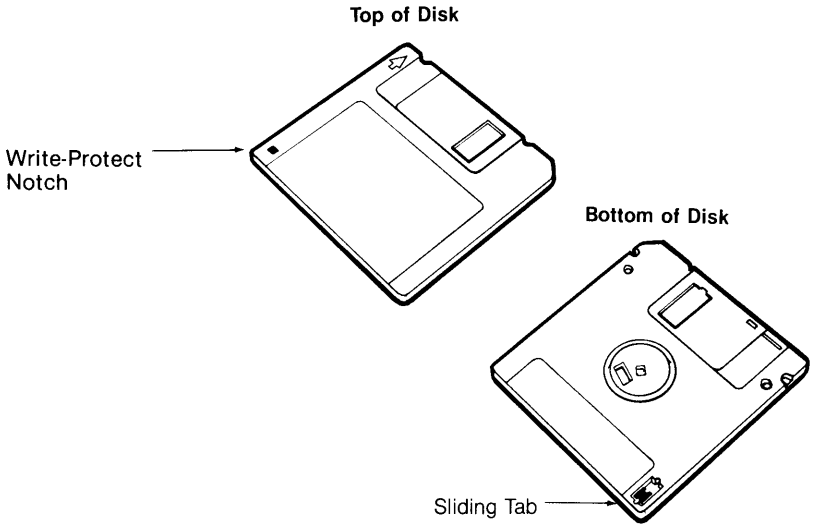
If you have a double-sided drive, you must use double-sided disks when using the double-sided format option. A double-sided drive will also accept single-sided disks. It is important that your drive be able to do this because most of the commercial software programs for your ST Computer will be on single-sided disks. You may format double-sided disks in the single-sided format, though the disk's other side will be unable to record any data.

You cannot directly copy a single-sided disk to a disk that has been formatted as a double-sided disk, nor vice versa. The ST Language disk that came with your system is single-sided. That is why, if you have a double-sided drive, you had to format your blank disk as single-sided, even though your drive is double-sided and the new disk you used may have been double-sided. Remember, if you have one double-sided disk drive and one single-sided disk drive in your system, you cannot do a disk-to-disk copy from a double-sided disk to a single-sided disk, nor vice versa. However, by unplugging one of your drives then switching on your system, you'll be able to do a disk-to-disk copy—the lone disk drive will act as both source and destination drive.

To find out more about how to get the information from a formatted double-sided disk to a formatted single-sided disk (and vice versa), see **Copying Files** and **Folders** in **Chapter 3**.

Write-Protecting Disks

When you write-protect a disk, you prevent information from being "written to" the disk. To "write to" means to put information on the disk; the computer and disk drive work together to record information on the disk. (Similarly, to "read" a disk means to retrieve information recorded on the disk; the drive and computer work together to "load" information into the computer's memory.)



Most disks have a small write-protect notch at the lower left-hand corner of their plastic casing. Turning the disk over, you see a small, sliding tab. To write-protect a disk, slide the tab until you can see through the notch.

While write-protected, a disk cannot be formatted, erased, or written to. You can move the write-protect tab back to the unprotected position any time you wish to record information on the disk.

Commercial program disks usually do not have write-protect tabs. These disks are permanently write-protected as a safety precaution. You cannot format, erase, or write to a permanently, write-protected disk.

Before duplicating a disk or copying files from one disk to another, it is recommended that you write-protect the disk you are duplicating or copying files from. Doing so safeguards you against mistakenly inserting your original disk when the drive is ready to write information on the duplicate. Such confusion is likely when you are using a single disk drive to duplicate disks or copy files.