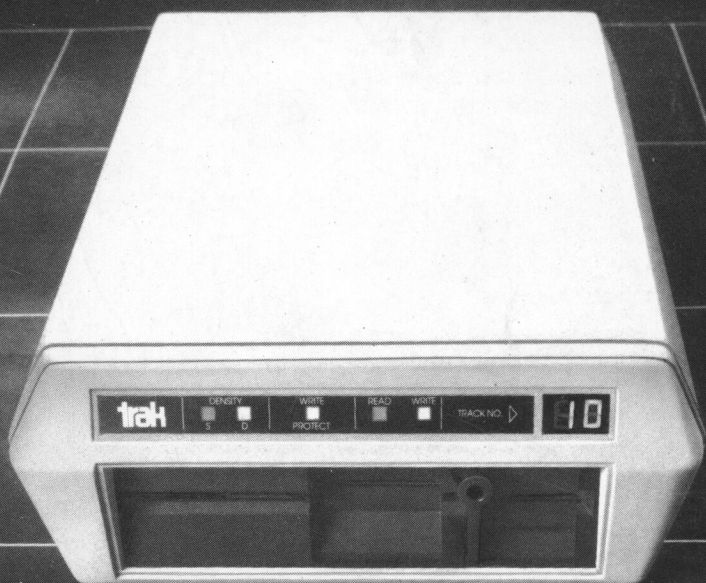


# TRAK 'AT' SERIES DRIVE USER'S GUIDE



THE MOST ADVANCED SINGLE AND DOUBLE  
DENSITY DRIVE SYSTEMS IN THE UNIVERSE

Congratulations!

You've just purchased the world's most advanced disk drives for your Atari\* computer system. In little more than two years, TRAK disk drive systems have edged out factory-supplied disk drives in overall performance, reliability and value. Consequently, TRAK has gained an enviable worldwide reputation for producing — and delivering — drive systems that represent major advances in technology and innovation. The word has quickly spread.

But we haven't rested on our laurels. We have engineered revolutionary intelligent and attractive drive systems which combine advanced microcomputer know-how and space-age design to enhance the performance of microcomputers as never before.

We made our new drives smarter, faster, more powerful and yet smaller in size and price. For example, our new smart drive systems have on-board microprocessors and programmed memory to provide twice the storage capacity of factory units and power and intelligence to control printers and modems as well - another industry first from TRAK!

But there's more. Improving on our winners, we designed command control panels with read, write and density indicators, track counters to locate every bit of your data and touch sensitive switches to protect it.

For business and professional users who need large high-speed storage, we designed the powerful and elegant COMMANDER series of expandable hard disk systems. These compact modular systems expand to meet the increasing data storage requirements of a growing business — with performance that transforms personal computers into powerful business machines.

You can expect the best values and service in disk drives from TRAK's worldwide dealer network, so enjoy the quality and dependability offered by the world's most advanced disk drives and the resulting enhanced performance of your Atari computer system.

\*Atari is a registered Trademark of Atari, Inc.

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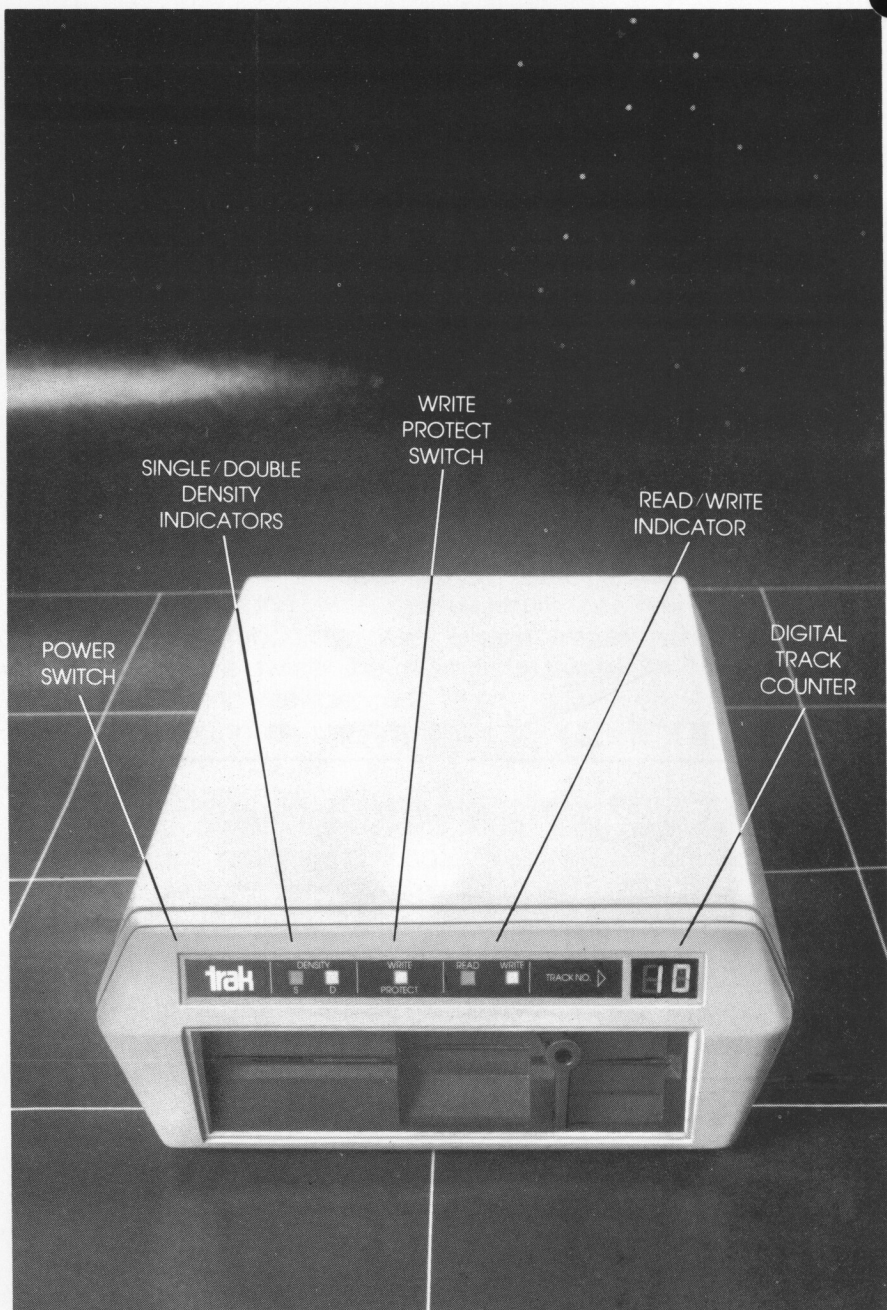


figure 1 Command Control Panel Features of 'AT' Series Drives



## features of TRAK's 'AT' series drives

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The **TRAK AT-1** is a double density, intelligent disk drive system for your Atari computer system. The Command Control Panel on the drive includes a touch-sensitive power switch and write protect switch, read/write indicators and single/double density indicators which continuously inform you as to what your drive is doing. With the AT-1 you can attach additional disk drives and other Atari peripherals such as cassette recorders. Upgrade kits available for the AT-1 include a parallel printer interface with a built-in 4K printer buffer which is upgradeable to 16K.

The **AT-D1** is a single density disk drive with all the features of the AT-1 **PLUS** a built-in parallel printer interface with a 4K printer buffer. You can upgrade this drive to include a 16K printer buffer and double density.

The top-of-the-line **AT-D2** combines all of the features of the AT-D1 **PLUS** double density operation.

**DOUBLE DENSITY** - TRAK's double density disk drives are true double density. They have a capacity of 176 bytes. That is twice the storage of Atari's 810 drive and half again as much as their new 1050 drive. You will be able to store more programs per disk. That saves you space and money, for you will not have to buy as many diskettes to store the same amount of data.

**COMMAND CONTROL PANEL** - The command control panel featured on all of our 'AT' series disk drives puts vital information at your fingertips with easy to use, easy to access functions. Take the power switch for example. We put it right up front so it is easy to find. No more groping around the back of the drive to turn it on. Just brush the TRAK name with the tip of your finger and watch the drive come alive and await your command. (See figure 1)

We have added a write protect switch to protect your valuable data on command. A mere touch of a finger and your data is indestructible, no more fear of accidentally erasing your favorite program. An indicator light stands as a silent sentinel to ensure your data is safe from harm.

Other indicators tell you when you are reading or writing information and whether your drive is in single or double density operation. The digital track counter constantly shows you where all of your information is being read from or written to, an unprecedented programming aid.

**PRINTER PORT** - Our deluxe models, the AT-D1 and AT-D2 come standard with a built-in parallel printer interface. This allows you to plug in your favorite parallel printer directly into the back of your disk drive (See Figure 2a). You do not need to buy an expensive interface module from Atari, a savings to you of at least \$200.

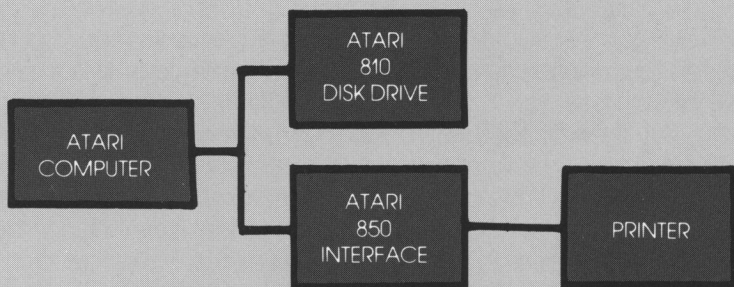
The printer operation through the disk drive is completely transparent to the computer. No extra commands are needed to control the printer.

**4K PRINTER BUFFER** - In addition to the built-in printer port, we also give you a 4K printer buffer to go with it. No more waiting while your computer is sending data to your printer at a snail's pace (See Figure 2b).

You see, the process that the Atari computer uses to communicate with the printer is very long and drawn out. It sends information one line at a time to the printer. It doesn't matter if the line is one character or one hundred. The computer reaches into memory, pulls out a line, sends it to the printer and the printer prints the line. Then the printer says to the computer "send me another line" and the whole long process starts over again and again and again until all the data has been printed.

# trak saves you more than money

THE ATARI WAY



ATARI NEEDS AN 850 MODULE TO OPERATE A PRINTER

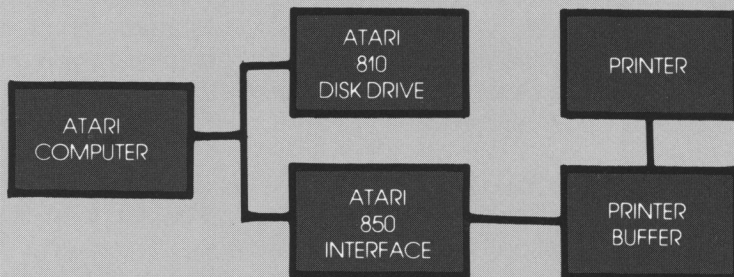
THE TRAK SOLUTION



TRAK'S BUILT-IN PRINTER INTERFACE SAVES THE COST AND SPACE OF THE 850 MODULE

figure 2a

THE ATARI WAY



ATARI NEEDS A PRINTER BUFFER TO ALLOW PRINTING WHILE PROGRAMMING

THE TRAK SOLUTION



TRAK'S BUILT-IN PRINTER BUFFER SAVES THE COST AND SPACE OF AN ADD-ON PRINTER BUFFER

figure 2b

## features, continued

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With our printer buffer, when the printer asks for the first line, the computer sends data in one continuous stream until it exhausts itself or it fills up the 4K buffer (about 2 pages worth). All the printer has to do now is reach into the buffer for the data to be printed and doesn't have to bother the computer for it. This frees up your computer to do other tasks in a matter of a second or two rather than sitting there waiting for the printer to stop printing. And, you can access the disk even while the buffer is sending data to the printer!

**16K BUFFER UPGRADE -AND THERE'S MORE!** Not only do we give you a 4K printer buffer on our AT-D1 and AT-D2 models but you can upgrade that memory to 16K, four times more memory for printing long program listings and documents up to 16,000 characters long.

**TURBO SOFTWARE** - Not only do we make your Atari smarter, we make it **faster!** Our turbo software enables your Atari to access information from the disk many times faster than ANY other disk drive! Here is how the turbo mode works. Your Atari computer normally looks for the information it requires by reading one sector off of the disk, looking to see if it is the sector that it needs, loading the data into memory or discarding it. Then the computer repeats the entire operation until it has all of the necessary information in memory. This is rather slow and inefficient.

With our turbo software, your Atari is able to read 18 sectors at a time instead of just one. The computer then takes whatever information it needs and instead of throwing the other data away it loads it into the printer buffer! Now, if the computer requests any other data from the track previously read, it first looks in the buffer for that data. If it locates the data in the buffer it does not have to access the disk drive which not only saves time but decreases wear and tear on the drive!



Now add the 16K upgrade and you could literally have entire programs stored in the printer buffer and not access the drive at all in many cases! This feature cuts access time dramatically on several of the new copy protected software where the program is stored in several non-consecutive sectors on the disk.

**SHUT DOWN TIME** - Another feature we have used to make your TRAK drive last a lot longer is our quicker shut-down time. A regular Atari disk drive runs for 8 seconds after all of the data has been accessed. All 'AT' drives run for only 4 seconds afterwards, thus cutting wear and tear in half.

**AUTOMATIC DIAGNOSTICS** - All 'AT' drives automatically tell you how they feel whenever you turn them on. Our built-in automatic diagnostic programs only take a half second to run but they test every function of your disk drive. You will get a status report on your screen or on your printer if it is connected to the back of the drive.

**COMPACT DESIGN** - TRAK drives take up a lot less room than other drives. Our 'AT' series drives are half the size of Atari's 810.

All these features combined will give you quality, performance and reliability unmatched by any other drive, for any other computer! Depend on it! Enjoy your new TRAK drive and the enhanced performance of your Atari computer system!

# unpacking your disk drive

Please make sure that the following items are included with your drive:

1. The disk drive unit
2. The power supply
3. The connecting cable
4. The TRAK software utility diskette
5. The user's guide

If any items are missing, please contact your local dealer.

\* Please keep all of your packing material in case you need to send your unit in for repair. If drive unit is not properly packed, extensive damage may result.

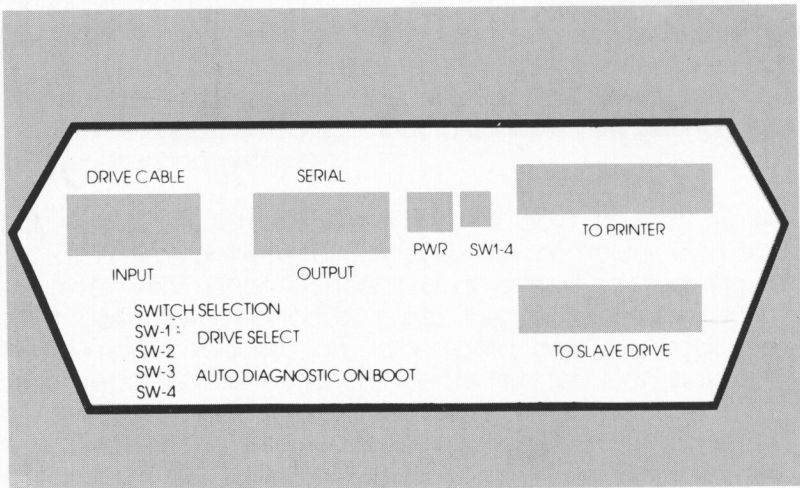


figure 3 Power and Peripheral Connections for 'AT' Series Drives

## connecting your trak disk drive

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If this is the only disk drive in your system, please follow steps 1-6 below. If you already have one or more disk drives, please turn to the next page for instructions on how to set your drive as second, third or fourth drives.

1. Turn off the power to all of the parts of your computer system.
2. Plug the AC adapter into an electric outlet. Plug the other end into the hole marked PWR on the back of the disk drive (see figure 3).
3. Plug one end of the interface cable into the jack on the side of your computer marked PERIPHERAL. Plug the other end into the jack marked INPUT on the back of your disk drive. If you have any other accessory plugged into the peripheral jack on your computer, remove it and plug it into the jack marked OUTPUT on the back of your disk drive.
4. Turn on the disk drive. Open the door by turning the handle in a counter-clockwise direction. Turn on the power to all of your other devices except the computer.
5. Insert the Atari Disk Operation System (DOS) diskette and close the door of the drive.
6. Turn on your computer. You are now ready to use the disk drive. Refer to your DOS manual or the manual accompanying any other software program that you wish to operate with your system for specific instructions.

# switch settings for drive selection and automatic diagnostics

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There is a small switch module in the back of the disk drive containing four small switches marked SW1-4. These switches are used for two purposes. The first two decide the position the drive will occupy in your system (first drive, second drive, etc.). The second two enable the disk drive to run a series of diagnostic tests on itself each time before you use it in order to see that everything is running properly. (See figure 4).

There are two positions for each switch, off and on. They are mounted so that when a switch is in the "UP", or 1 position, it is on, and off in the "DOWN" or 0 position.

Please refer to figure 5 to see how you should set your switches. Setting these switches is called configuring your drive.

NOTE: All drives are shipped preset as the first drive with the automatic diagnostics set to ON. If this is the only drive in your system, do not change the switch settings.

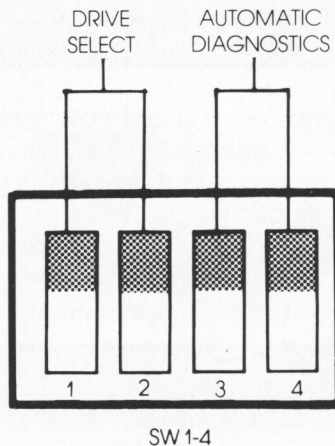
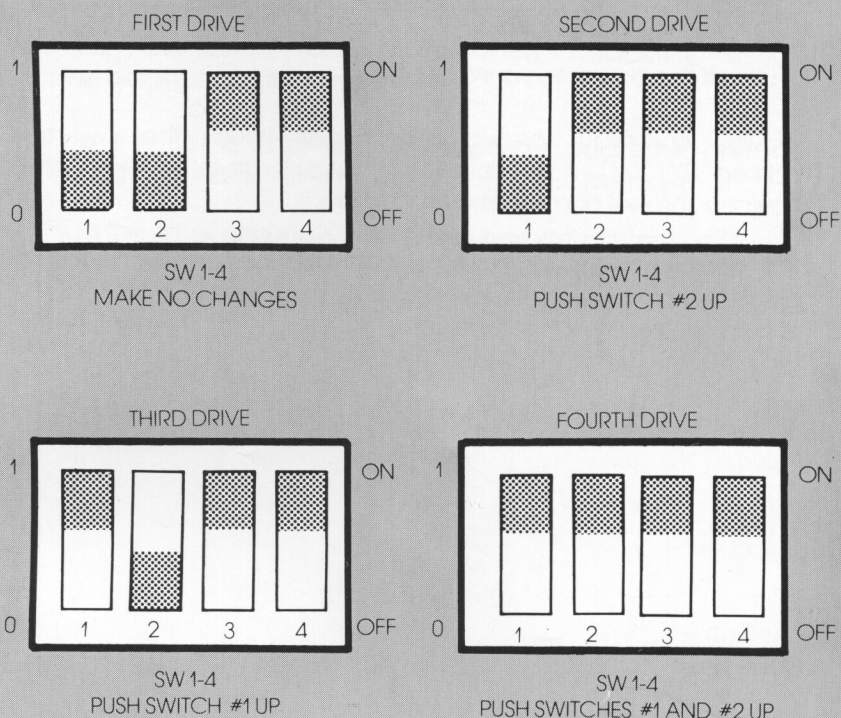


figure 4 Switches for Drive Selection and Automatic Diagnostics

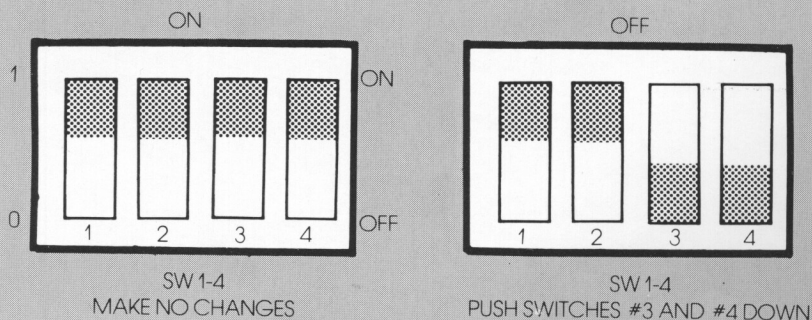


## CONFIGURING YOUR DRIVE FOR DRIVE SELECTION



ALL DRIVES ARE SHIPPED SET IN THE FIRST DRIVE POSITION

## CONFIGURING YOUR DRIVE FOR AUTOMATIC DIAGNOSTICS



ALL DRIVES ARE SHIPPED WITH THE AUTO-DIAGNOSTIC MODE SET TO ON

figure 5 Switch settings for Drive Selection and Automatic Diagnostics

## connecting an additional disk drive or peripheral

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1. Turn off the power to your disk drive.
2. Using a small screwdriver or pen, push the switches (marked SW 1-4) in the back of the disk drive to match the drive assignment number shown in figure 5.
3. If you wish to use another Atari peripheral such as a cassette recorder just plug it into the jack marked OUTPUT on the back of the disk drive (see figure 3).

## connecting a printer to the drive

If you have an AT-D1 or AT-D2 drive you may connect a printer with a Centronics parallel interface capability directly into the back of our disk drive.

1. Plug the flat end of our AT-PC printer cable into the jack on the back of the disk drive marked TO PRINTER (see figure 3).
2. Plug the other end into your favorite parallel printer.
3. You are now ready to use the printer; no special commands are needed.

# double density operation

Your TRAK AT-1 and AT-D2 disk drives are capable of double density operation. In addition, the AT-D1 can be upgraded to double density operation by your dealer.

When you first insert a diskette into your drive it will detect the diskette's density and switch the disk drive operation accordingly.

To initialize a double density diskette there are two procedures.

1. If you are running Atari DOS, format a blank diskette using our DDINIT utility.

- A. Load your DOS diskette
- B. Insert a blank diskette
- C. Type DDINIT and press return

Please refer to your Atari DOS operating manual for detailed instructions.

2. If you are using OS/A\* +, load the OS/A disk and run the CONFIG program.

- A. Boot OS/A +
- B. Insert blank diskette
- C. Type CONFIG and press return

Please consult your OS/A manual for detailed instructions.

Diskettes formatted under these procedures will always read and write double density.



# trak software and utilities

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There are three types of Trak software diskettes:

1. The first is the Double Density software, utilities and game diskette which is packed with every 'AT' series double density drive system. This diskette includes the DDINIT utility for initializing a disk under double density, diagnostic programs which test the disks ROM, RAM and controller. It also performs a random read/write test. Also included on this diskette are one or more games.
2. The second type of software is our Turbo-Charged™ software. This software includes utilities that enable your drive to access information from your diskette many times faster than any other drive available today. This software can be purchased from your local Atari dealer.
3. The third type are special utilities, games and business applications that TRAK is now developing. These software packages are being developed to further enhance the speed and capabilities of your Atari system by fully utilizing the unique advanced features of the 'AT' series drives. Please check with your local dealer for availability.

# care of diskettes

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Keep the diskette in its protective envelope when it is not being used. The surface of an unprotected diskette can be damaged by atmosphere pollutants or liquids.

Do not expose your diskettes to direct sunlight or excessive heat.

Never wet or wash a diskette.

Do not bend your diskette; it must turn freely in the protective jacket.

Load the diskette gently into the drive so that it does not bend.

Store the diskettes upright so that they do not bend.

Do not use pencil erasers on diskette labels. Eraser dust is abrasive and will damage the diskette surface.

Never write on your diskettes with a pencil or pen. Use a felt-tipped pen to avoid indenting the diskette or write on the label prior to affixing it to the diskette.

Do not place the diskette near the television set to avoid magnetic fields which will erase the stored data.

# back-up diskettes

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To avoid loss of valuable data, you should make back-up copies of all your diskettes. These copies should be stored in a secure location. Refer to your Atari DOS manual for detailed instruction.

## diskette write protection

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Most diskette manufacturers incorporate a write-protect notch on the jackets of their diskettes. (See figure 6).

When the notch is open, the computer can write on the diskette. By covering the notch with a piece of adhesive tape, the write mechanism in the drive is disabled and the diskette is write-protected.

Your 'AT' drive will also automatically write-protect your diskette regardless of the write-protect tab, if you press the write-protect switch on your control panel! The light will then go on and your data will be protected. This eliminates the need to repeatedly add or remove the tab and helps avoid errors by which your data may be accidentally erased.

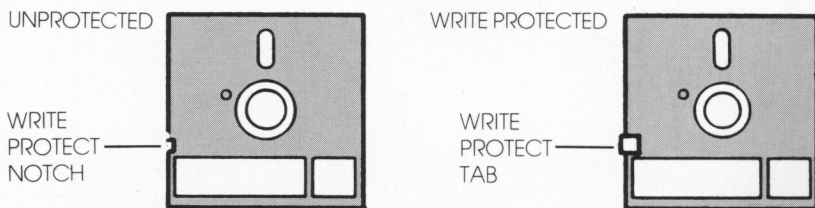


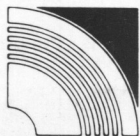
figure 6 Write-Protecting Your Diskettes

## warranty information

TRAK Microcomputer Corporation warrants its products to be free from defects in material and workmanship for a period of 90 (ninety) days from the date of original purchase. If a product fails within the warranty period, customer must obtain a Return Authorization Number (RA #) from his TRAK dealer or from TRAK and return the product to his TRAK dealer or to TRAK freight prepaid with the RA # marked on the shipping carton and proof of purchase enclosed. TRAK will either repair or replace the product at its option and return it to the Dealer or customer, freight prepaid.

The above warranty is contingent upon proper use in the application for which the products were intended and does not cover equipment modified without TRAK's approval or which was subjected to unusual physical or electrical stress. Except for the express warranties set forth above, TRAK grants no other warranties, either expressed or implied of merchantability and fitness, and the stated express warranty is in lieu of all liabilities or obligations of TRAK for damages including, but not limited to incidental or consequential damages occurring out of or in connection with the use or performance of TRAK's products.

For products out of warranty, the procedures outlined above apply except that TRAK's published service fees shall be charged and the products will be returned freight collect. All repairs shall receive a 90 day warranty on parts and labor. For an extended warranty, see your TRAK dealer or write to TRAK for details on TRAK's service agreement.



**trak**  
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