

COMPUTER DATACORDER UNIT

OPERATING INSTRUCTIONS

—SUITABLE FOR USE WITH COMMODORE COMPUTERS

TURN OFF THE COMPUTER BEFORE
CONNECTING THE UNIT TO IT.

Plug the attached cord in to connector at the back of the computer. The plug will only fit on the specific connector. DO NOT FORCE IT TO PREVENT DAMAGE.

It is important to keep the DATACORDER UNIT at least 2 feet away from the TV as radio emissions from the TV can interfere with the operation of the DATACORDER UNIT.

OPERATING INSTRUCTIONS FOR YOUR

DATACORDER UNIT

This DATACORDER unit was designed for use on Commodore VIC 20, 64, 128, C16, 116 and 264 computers.

The unit is a device for storing and/or recalling computer programs on ordinary cassette tapes. It can be used for saving programs you have written and want to recall for later use. It can also be used to read prerecorded programs that you have purchased.

DATAORDER OPERATING INSTRUCTIONS

FOR YOUR COMPUTER

Important information about your DATAORDER unit

Your DATAORDER unit is supplied with a cord attached. This cord connects the DATAORDER unit to the commodore computer. Power is supplied from the computer to the DATAORDER unit through this cord. The computer and DATAORDER communicate through the cord.

TURN OFF THE COMPUTER BEFORE CONNECTING THE DATAORDER UNIT TO IT.

Plug the attached cord in to a connector at the back of the commodore computer. The plug will only fit on the specific connector one way. Please **DO NOT FORCE IT TO PREVENT DAMAGE.**

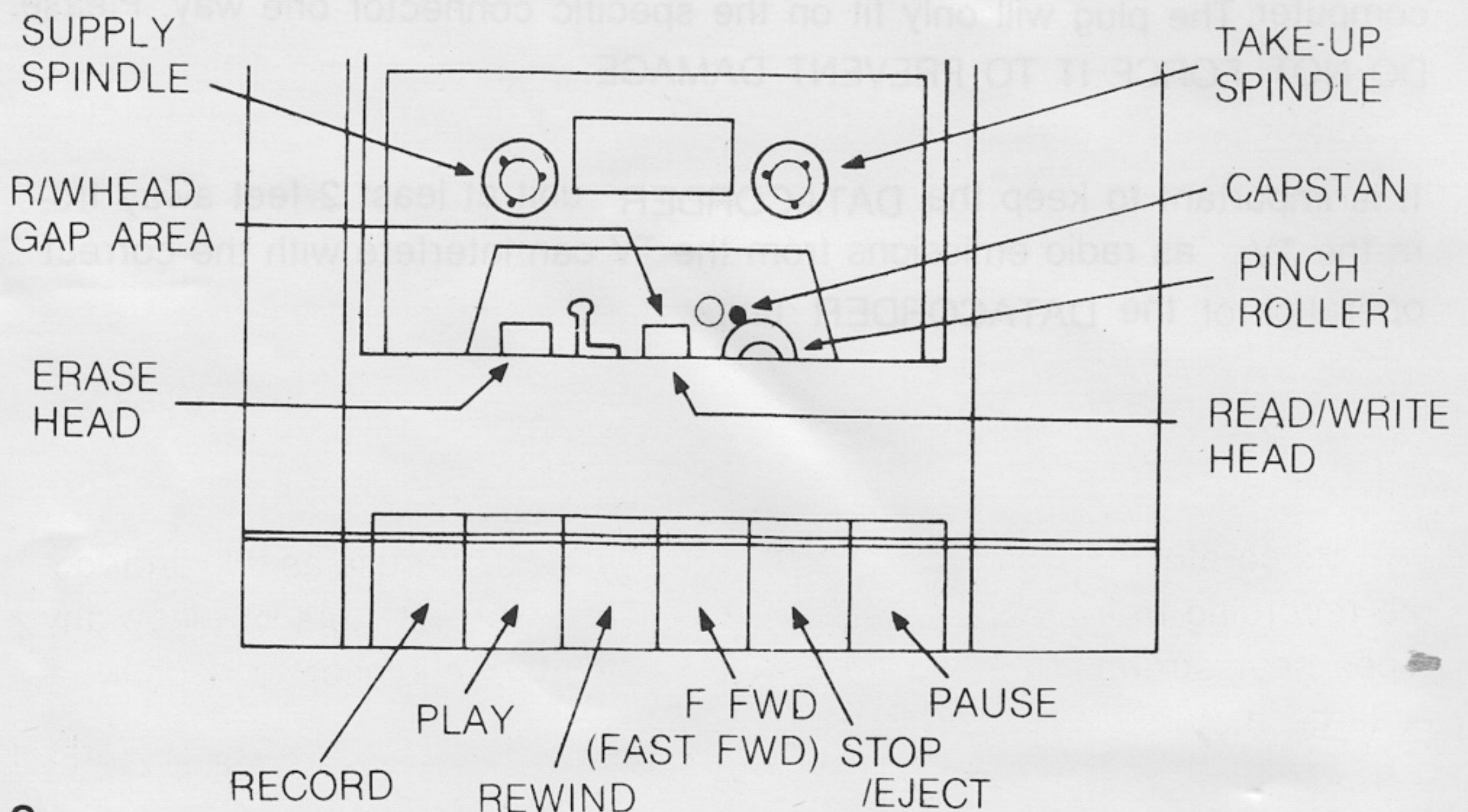
It is important to keep the DATAORDER unit at least 2 feet away from the TV as radio emissions from the TV can interfere with the correct operation of the DATAORDER unit.

PRELIMINARY CHECKOUT

Before using your cassette drive unit to recall or store programs, you should complete the preliminary checks—which are described below:

1. Turn off the computer and connect the cassette unit through the cord to the computer.
2. Ensure that the cassette deck motor is off by checking that all of the function keys are up. If any are not, press the STOP button.
3. Turn the computer on.

Fig 1



4. Press the PLAY button on the cassette unit. Look to see that, as the button is engaged, the READ/WRITE heads move towards the spindles and the capstan comes into contact with the pinch roller (see Fig. 1). The take-up spindle should be moving smoothly in an anti-clockwise direction.
5. Now press the STOP button. The heads should move back and the spindle stop.
6. Press the REWIND button. The tape heads should remain in the inactive position and the supply spindle should move rapidly clockwise.
7. Press STOP again and then F. FWD. The tape heads should still remain in the inactive position and the take-up spindle should move rapidly anticlockwise.
8. Press STOP once more and then GENTLY attempt to press REC. You should feel strong mechanical resistance.
9. If all has worked, your cassette has been properly checked and is ready go to work

CARE OF TAPES

Be careful to rewind all tapes to the beginning after use as this protects the recording from abrasion and contamination. Do not store or place any tapes near strong magnetic fields such as may occur near loudspeakers or large motors.

OPERATIONS TEST

To test the operation of your new DATACORDER write a short program, SAVE it on to the cassette, and LOAD it back into the computer.

Get a blank cassette (a standard 1/8" audio cassette is all you need) and place it in the DATACORDER Always press REWIND to ensure that you are starting at the beginning of the tape.

NOTE: Use a tape with playing time of 0 to 30 minutes. Do NOT use anything longer than this, because it strains your machine.

The following program shows the displays for the VIC and PET/CBM; if you are using a different Commodore computer your display may vary slightly.

STEP 1 On the keyboard type: 10 PRINT"THIS IS A TEST"

STEP 2 Press **RETURN**

STEP 3 Type: SAVE"TEST"

STEP 4 Press **RETURN**

The display will show:
for VIC
for PET/CBM

PRESS RECORD & PLAY ON TAPE
PRESS PLAY & RECORD ON TAPE
No. 1

Do that by pressing the RECORD and PLAY buttons until both keys lock.

The display will show:
for VIC
for PET/CBM

OK
SAVING TEST
WRITING TEST

The red LED light will come on, and then after a few moments, the display will show:

READY

The LED light will go off. The light stays on only during the SAVE operation. Your program has now been SAVED. Let's verify this.

STEP 5 Erase the memory by typing: NEW

then press

RETURN

The display will show: READY

STEP 6 Type: LIST

then press

RETURN

The display will show: READY
indicating that the memory is blank.

STEP 7 Rewind the cassette by pressing REWIND, then STOP when the tape is at the beginning.

STEP 8 Type: LOAD "TEST"
the display will show:
for VIC PRESS PLAY ON TAPE
for PET/CBM PRESS PLAY ON TAPE No. 1
After obeying the command,
the display will show: OK
SEARCHING FOR TEST
and after a short while: FOUND TEST
LOADING
READY

Note: If the computer displays: LOAD ERROR
try the LOAD command a few more times, but if the message repeats, turn to the last page.

STEP 9 Type: LIST

and press

RETURN

Now the display will show that the memory has received the program "TEST" by displaying

10 PRINT "THIS IS A TEST"
READY

If all of the preceding steps have been successfully completed, your DATACORDER has been properly checked and is ready to go to work. The commands to use the DATACORDER are described later in this manual.

NOTE: If any of the above steps does not work, turn to the last page of this manual.

DATACORDER MAINTENANCE

The DATACORDER uses magnetic heads to record and retrieve the information on the cassette tapes. These heads tend to accumulate residue and dirt from the tape as the tape moves across them. After a period of time the accumulation lifts the tape slightly away from the heads drastically degrading the signal from the head.

Therefore, the following procedure should be used after every 10 to 20 hours of tape playing time to ensure that your DATACORDER continues to read and write reliably.

CLEANING AND DEMAGNETIZING YOUR DATACORDER HEADS

You'll need the following tools and materials:

1. Tape head cleaner. Alcohol may be used in emergency, but is not recommended for long term use.

NOTE: Do not use trichloroethane or any other plastic or rubber solvent.

2. Cotton swabs.

3. Tape head demagnetizer. Unit must have protective plastic or rubber covering on the piece that comes into contact with the tape heads so as not to scratch delicate head gap.

FOLLOW THIS PROCEDURE

1. Turn the computer off.
2. Press EJECT to open cover, then press PLAY to expose heads.
3. Put tape head cleaner on one side of a cotton swab. Gently wipe the surfaces of RECORD/PLAY and erase head (see Fig. 1). Scrub gently. (If there is any build-up of tape oxide particles on or around the head gap of the RECORD/PLAY head, it is sufficient reason for unreliable performance.)
Also clean pinch roller and other tape bearing surfaces if tape head cleaner is suitable for this purpose (check label).
4. Plug in demagnetizer, and activate it while it is at least one foot away from cassette DATACORDER heads.
5. Slowly move demagnetizer up to RECORD/PLAY head and around on head surface. Rate of motion should be approximately one inch per second during this time.
6. Slowly move demagnetizer to erase head and then to all other ferrous metal surfaces which come into proximity with the tape.
7. Now slowly move demagnetizer away from heads. Do not deactivate field until demagnetizer is at least two feet away from heads.

The tape head cleaning and demagnetizing procedure is now complete. Inspect RECORD/PLAY, surface for wear. If the tape has worn a groove on head surface more than a couple of tape thicknesses deep, program reading performance may be poor. If so, then replacement of tape head is indicated. (Normally few thousand hours of tape running time have been completed before replacement is required.)

DATACORDER OPERATION

Commands

Here are the commands that will activate your DATACORDER. Simply type the desired command and press **RETURN**. In the list of commands below, NAME stands for the name that you, the user, assign to your program. You should select a name that will distinguish that program from other programs (or data files) on the same tape. The name should have a meaning to you. PROG1, PROG2, etc., are not good choices because they are not distinctive. A program name can be no more than 16 characters long.

SAVE "NAME"

will SAVE a program by storing it on the DATACORDER

Example: SAVE "TEST"

will SAVE the program TEST on to the DATACORDER

NOTE: Simply typing SAVE will store the program without a name on the cassette.

LOAD "NAME"

will LOAD the program NAME from tape. All other programs on the same tape will be ignored.

Example: LOAD "TEST"

will LOAD the program TEST from the cassette.

If LOAD is typed, then the first program found on the cassette will be LOADED.

VERIFY"NAME"

will VERIFY that the program which has been SAVED has been stored correctly.

Example: VERIFY"TEST"

will search for and VERIFY the program named TEST on the cassette.

If the computer responds with	OK READY
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then the program has been stored correctly. If, however, the computer responds with	VERIFY ERROR READY
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then the program on the tape has not been stored properly. Re-SAVE the program and VERIFY again. If this still fails, then the DATACORDER is not working properly, the tape is of poor quality, or the tape heads need cleaning.

NOTE: VERIFY can be used to skip through a tape in order to SAVE a new program at the end of other programs. The technique to use is described here:

When you are ready to store the new program that is in your computer, give the command VERIFY"NAME" using the name of the last program on the tape. The computer will search for and VERIFY this last program on the tape, bypassing all other programs. Because the last program is not the same as the new program currently in memory, the display will read; VERIFY ERROR but the tape will have advanced to the end of all the programs on the tape. You can then SAVE your new program, typing SAVE"NAME", where NAME is the unique name of the new program that is in your computer. The new program is now on the cassette immediately after the other programs.

USING THE COUNTER

Your DATACORDER has a 3-digit counter that you can use to find SAVED programs quickly. When you use the counter properly, you can advance or rewind the tape to the location of the program you want to LOAD. This saves time because the computer doesn't have to search the whole tape.

The counter runs whenever the tape is PLAYing, RECORDing, REWINDing, or Fast Forwarding (F.FWD).

Here's how to use the counter to find a SAVED program quickly:

1. Make sure your tape is rewound to the beginning.
2. Reset the counter to 000 by pressing the black button beside the 3-digit display.
3. Note the counter number when you are ready to SAVE a program. This number tells you where that program will be located on the tape.
4. Advance (F.FWD) or REWIND the tape to the counter number at which you SAVED the program you now want to LOAD.
5. Follow the regular LOAD procedure.

NOTE: The counter can't work accurately unless you follow steps 1 and 2. Don't reset the counter to 000 unless you're at the beginning of the tape.

FILE HANDLING

Experienced programmers may write more sophisticated programs that use large amounts of data. This data may be stored on a file on the cassette. The commands to handle data files are explained below.

Files of data can be written to and read from the DATACORDER. These CANNOT be LOADED like a program, but they can be read by a program. To communicate with the DATACORDER use the OPEN command.

OPEN A,B,C,"NAME"

This will OPEN a logical file where NAME identifies the file and:

- A Choose a reference number from 1 to 255. If your program uses more than one file, each file must have its own file number.
- B Must be 1 for the DATACORDER This is your device code.
- C Specifies whether the program will WRITE to or READ from this file, coded as follows:

if C = 0 read from tape

C = 1 write to tape with an End-Of-File marker to be written when the file is CLOSED.

C = 2 write to tape with an End-Of-Tape marker to be written when the file is CLOSED.

Example: OPEN5,1,1,"TEST"

will OPEN a file named "TEST" with a file number of 5. The program will WRITE to this file on the cassette.

If a value of 2 is chosen for C and "TEST" is chosen for the name, this will WRITE on End-Of-Tape marker at the end of the file. If the computer is then told to read a file which is after the file "TEST", then when the computer has passed TEST it will respond with: FILE NOT FOUND ERROR and stop. This is because the file "TEST" tells the computer that the tape has ended — regardless of whether it has or not — so the computer thinks that there are no more programs on the tape.

C and NAME may be left out if the user wishes. If NAME is not used, the file will be OPENed without a name. When a READ instruction is given by the computer, it will read the first file that it finds. If C is left out, then the file will be OPENed for READ.

INPUT # A,D

will input data from the cassette and use it in the program.

- A is the logical file number used in a previous OPEN statement which specifies READ from cassette.
- D is the BASIC variable to which the data from the tape will be transmitted. If words are to be read, then D should be D\$. The error message FILE DATA ERROR will be displayed if you don't use D\$.

Example: INPUT # 5, A\$

will input string data (words) from logical file 5. Data will be read from the cassette and assigned to the variable A\$.

GET # is an alternative to INPUT # . GET # will get one character (letter) at a time. GET # can read commas, colons, etc., whereas INPUT # cannot.

PRINT # A,D

will write data to the cassette where

- A is the logical file number used in the previous OPEN statement which specified WRITE to the cassette.
- D is the BASIC variable from which the data is to be written. If the data is words, then D\$ must be used.

Example: PRINT # 5, A\$

will output the string A\$ to logical file 5 on the tape provided the file has been OPENed for write. If the file was not properly OPENed, NOT OUTPUT FILE will be displayed.

CLOSE A

will close the file designated A, where A refers to the file number.

WARNING: If this command is not used after all the data has been written to the cassette, some data may not be written to the cassette.

Here are some sample program segments which use the above commands:

Example program 1 — writing data

```
10 OPEN1,1,1,"TEST FILE"  
20 FOR X = 1TO10  
30 PRINT# 1,X  
40 NEXT  
50 CLOSE1
```

Line 10 OPENS file 1 for WRITE as TEST FILE.

Line 20 Do everything between "FOR"&"NEXT" 10 times.

Line 30 PRINTs the variable 1 on to the tape.

Line 40 Goes back to line 20 for 10 times.

Line 50 CLOSEs the file.

Example program 2 — reading data using INPUT

```
10 OPEN1,1,0,"TEST FILE"  
20 INPUT# 1,D$  
30 PRINT D$  
40 IF ST = 0 GOTO 20  
50 CLOSE 1
```

Line 10 OPENS the file for READ as TEST FILE.

Line 20 Reads a string from the tape into D\$.

Line 30 Prints the value of D\$ on the screen.

Line 40 Checks the status of the cassette. If the tape is OK then GOTO line 20.

Line 50 CLOSEs the file.

Example program 3 — reading data using GET

```
10 OPEN1,1,0,"TEST FILE"  
20 GET# 1,D$  
30 PRINT D$  
40 IF ST = 0 GOTO 20  
50 CLOSE1
```

Line 10 OPENS the file for READ as TEST FILE.

Line 20 GETs a character into D\$.

Line 30 Prints the character in variable D\$ on the screen.

Line 40 Checks the status of the cassette. If the tape is OK then GOTO line 20.

Line 50 CLOSEs the file.

DATACORDER PROBLEMS

If you are experiencing problems with your DATACORDER either mechanically or electronically, return it to the dealer from whom it was purchased. If the DATACORDER is faulty and in warranty he will replace it for you.