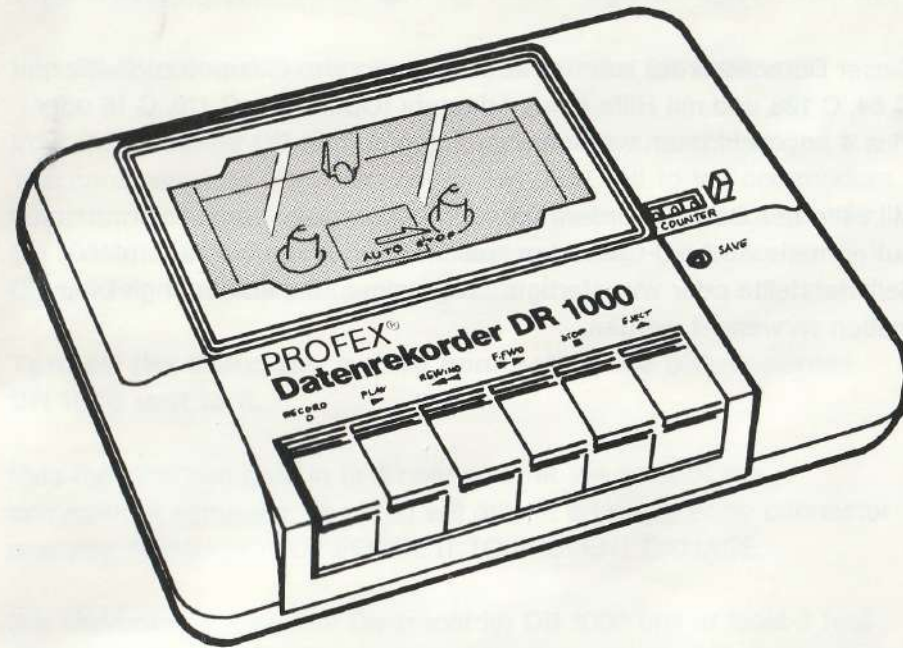


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**Bedienungsanleitung
Datenrekorder
für Commodore-Computer
Operating Instructions
Datarecorder
for Commodore-Computer**

DR 1000

Bedienungsanleitung Datenrekorder DR 1000

Dieser Datenrekorder kann an ihren Commodore Computer VC 20, C 64, C 128 und mit Hilfe eines Adapters (Option) an C 116, C 16 oder Plus 4 angeschlossen werden.

Mit Hilfe des Datenrekorders DR 1000 können Sie Computerprogramme auf normale Audio-C-Cassetten speichern oder von ihnen abrufen. Selbsterstellte oder vorgefertigte Programme können damit gleichermaßen verwendet werden.

Operating instructions for your Datarecorder DR 1000 unit

This Datarecorder DR 1000 unit was designed for use on Commodore VIC 20, 64, 128 and with adapter (option) for C 116, C 16 and Plus 4.

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.

Datarecorder DR 1000 Operating instructions for your Computer

Important information about your Datarecorder DR 1000 unit.

Your Datarecorder DR 1000 unit is supplied with a cord attached. This cord connects the Datarecorder DR 1000 unit to the Commodore computer. Power is supplied from the computer to the Datarecorder DR 1000 unit through this cord. The computer and Datarecorder DR 1000 communicate through the cord.

Turn off the Computer before connecting the Datarecorder DR 1000 unit to it.

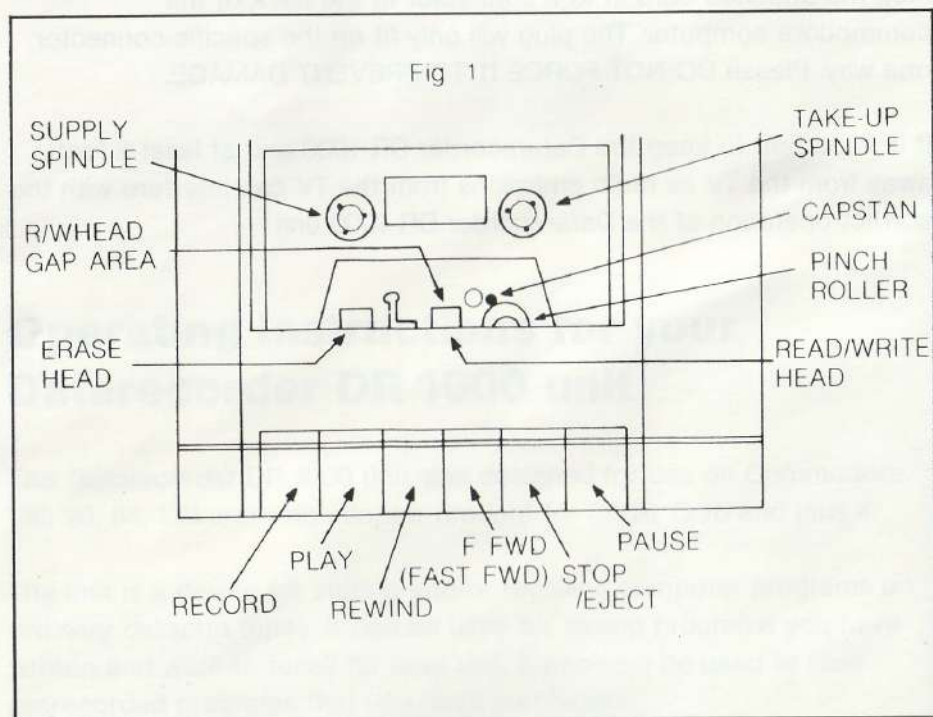
Plug the attached cord in to a connector at the back of the Commodore computer. The plug will only fit on the specific connector one way. Please **DO NOT FORCE IT TO PREVENT DAMAGE.**

It is important to keep the Datarecorder DR 1000 unit at least 2 feet away from the TV as radio emissions from the TV can interfere with the correct operation of the Datarecorder DR 1000 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.



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 Datarecorder DR 1000 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 Datarecorder DR 1000. 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
for PET/CBM

PRESS PLAY ON TAPE
PRESS PLAY ON TAPE No. 1

After obeying the command, the display will show:

OK
SEARCHING FOR TEST
FOUND TEST
LOADING
READY

and after a short while:

LOAD ERROR

NOTE: If the computer displays: 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 Datarecorder DR 1000 has been properly checked and is ready to go to work. The commands to use the Datarecorder DR 1000 are described later in this manual.

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

Datrecorder DR 1000 Operation

Commands

Here are the commands that will activate your Datrecorder DR 1000.

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. PROG 1, PROG 2, 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 Datrecorder DR 1000

Example: SAVE "TEST"

will Save the program TEST on to the Datrecorder DR 1000

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	OK
with	READY
then the program has been	
stored correctly.	
If, however, the computer	
responds with	VERIFY ERROR
	READY

then the program on the tape has not been stored properly. Re-SAVE the program and VERIFY again. If this still fails, then the Datrecorder DR 1000 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, 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.

Datarecorder DR 1000 Maintenance

The Datarecorder DR 1000 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 Datarecorder DR 1000 continues to read and write reliably.

Cleaning and demagnetizing your Datarecorder DR 1000 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 Datarecorder DR 1000 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.)

Using the counter

Your Datarecorder DR 1000 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 Datarecorder DR 1000. These **CANNOT** be **LOADED** like a program, but they can be read by a program. To communicate with the Datarecorder DR 1000 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 Datarecorder DR 1000. 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: **OPEN 5, 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 OPEN 1, 1, 1, "TEST FILE"
20 FOR X = 1 TO 10
30 PRINT # 1, X
40 NEXT
50 CLOSE 1
```

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 OPEN 1, 1, 1, "TEST FILE"
20 INPUT # 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 OPEN 1, 1, 1, "TEST FILE"
20 GET # 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 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.

Alle in diesem Handbuch gegebenen Informationen wurden überprüft und sind daher zuverlässig. Für eventuelle sachliche Fehler kann jedoch keinerlei Verantwortung übernommen werden. Die Bedienungsanleitung dient nur Ihrer Information.
Technische Änderungen jederzeit vorbehalten.