

INTRODUCTION

The vortex System 2000 is an universal Hard disk sub-system that can be connected to different computers depending on the personality module that is used.

The main unit contains a 3.5" hard disk, power supply and disk controller. The SCA ProDisk interface, (Personality Module), connects the System 2000 to the PCW via the supplied high quality cable.

The Amstrad PCW can use two different operating systems, CP/M Plus and Locoscript. The System 2000 can be used with either, a separate boot disc is required for each.

The ProDisk interface can be supplied with internal RAM memory, to expand the M drive of the PCW. The switch next to the vortex connector on the interface indicates the base memory of the PCW, and must be up for a 512k machine and down for a 256k. If no RAM is fitted in the interface then this switch has no effect. Do not confuse memory with hard disk storage; memory is volatile and therefore its contents are lost when the machine is switched off.

The 61K CP/M TPA remains unchanged irrespective of any additional RAM being fitted. If you require extra memory please contact your supplier.

The system is thoroughly tested before dispatch and the hard disk formatted, ready for use. The hard disk will appear as logical drives : C> , D> , E> , F> , the floppy disk drive(s) remain as before A> , and B> .

On the supplied disk you will find hard disk versions of CP/M Plus for both the 8000 and 9000 series PCWs and various hard disk utilities.

Vortex System 2000

For the Amstrad PCW

IMPORTANT !

This unit contains a hard disk which is a precision piece of equipment. For safe and continuous use please observe the following.

- » Before moving the unit the hard disk must be parked and the power supply turned off.
- » Whilst the unit is in use avoid hard knocks or excessive vibration.
- » Insure that the fan at the rear of the unit is not obstructed.
- » The unit must not be placed in direct sunlight or near sources of heat.
- » The unit must not be operated in close proximity to magnetic or electromagnetic fields.
- » The unit must not be operated in a dusty or smoky environment.

The data on the hard disk can be lost or damaged through misuse of the system therefore always beware of the following:-

- » Formatting or partitioning the hard disk will result in the loss of data on the hard disk.
- » Data on the hard disk should be regularly safeguarded by making copies on floppy disks. This can be achieved using the utility BACKDISK.

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Digital Research CPM Plus.

Locomotive software Ltd. LocoScript, LocoScript 2.

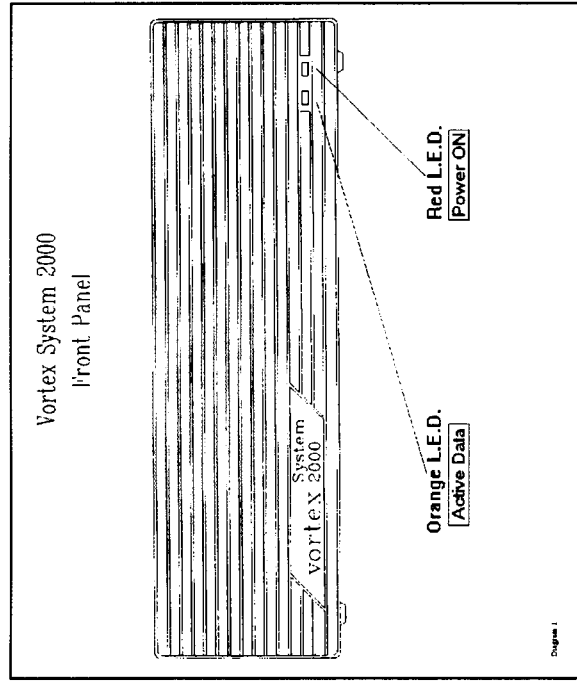
Amstrad UK Ltd. Amstrad.

vortex Computersysteme GmbH vortex, vortex System 2000,
vortex Personality module.

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Red LED

If this LED is lit this shows that the system unit is powered on and operational.

Orange LED

This is a disk activity LED and when lit signifies that data is being written/read to/from the hard disk.

GETTING STARTED

Please read the following before starting the installation.

Contents of package

The package includes the following:

The system 2000 main unit, ProDisk interface, mains cable, data cable, 3" floppy disk, 2 fixing screws, and this handbook.

The system unit must be handled carefully. SCA will not accept liability for drives damaged through mishandling. All packaging should be retained.

The ProDisk Interface

This connects the System 2000 to the PCW, and has the option to be fitted with extra RAM memory.

The 3" Floppy Disk

The 3" floppy disk has the PCW9512 CP/M on one side, and the PCW8000 series CP/M and all the utility programs on the other. From this disk you will create a CP/M work disk using a blank 3" disk. **Do not use the original master disk when installing the System 2000, make a copy of it first and then use the copy.**

System 2000 Back Panel Details

Mains Switch

This switch is used to switch the unit on and off.

Fuse

The fuse must only be replaced when the unit is switched off and the power cord removed from the unit. Only replace with an equivalent 1.25amp fuse.

Personality Module connector

This connector is used with the supplied data cable to connect the system to the SCA ProDisk interface. the thumb screws on the connector must be tightened on both the base unit and the personality module.

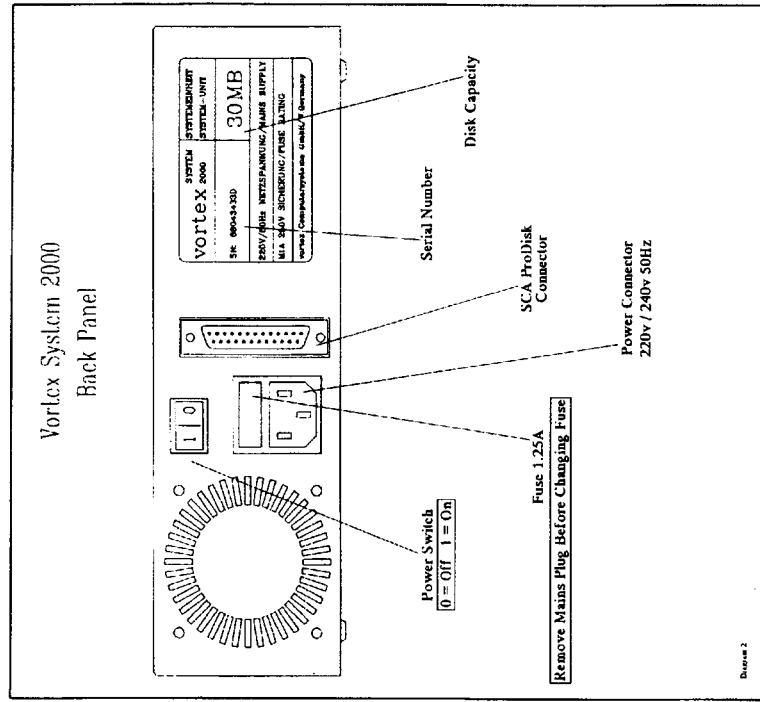
WARNING!!! this data cable must only be connected or disconnected when both the base unit and the PCW are switched off. Failure to observe this warning could cause damage to either unit.

Hard disk capacity

This is the formatted capacity of the hard disk, and drive type code number.

Serial number

This is the serial number of the base unit, and must not be removed or defaced.



Installing CP/M

Place the working copy of the CP/M disk into drive A and wait for the system to load.

The following message will appear on the screen.

```
CP/M Plus Amstrad plc
V. x, 61K TPA, x disk drive(s), xxxK drive M:
C-F SYSTEM 2000-PCW version 1.0 (C) 1988 vortex GmbH
A>
```

In the following instructions < RETURN > means press the return key on the PCW.

Now enter from the A>

```
C:< RETURN>
```

and you will get the C> prompt, then type **DIR < RETURN >**, and the files on the C drive of the hard disk will be displayed. These include a copy of the files supplied on the CP/M floppy disk.

The other partitions, D, E, F, should have no files on them.

That concludes the CP/M installation. If you use CP/M you may now want to copy your floppy disks onto the hard disk, and perhaps add a suitable PROFILE.SUB file onto your working disk to automatically start up your application. For PCW 8256 / 8512 users to make room for the SUBMIT.COM and PROFILE.SUB files, the hard disk utility files such as EX.* may be removed from the work disk.

Installing LocoScript 2

First check that you have LocoScript 2 version 2.2 or above. If your version of LocoScript 2 is earlier than 2.2 it will not work with the hard disk and you will need to purchase an upgrade.

One file needs to be copied from the C: drive onto your LocoScript start of day disk. The CP/M PIP command can be used to do this. At the A> prompt insert your original Amstrad CP/M disk in drive A and type PIP < RETURN >

Now put your LocoScript 2 start of day disk in drive A and type **A:= C:SYS00208.FID < RETURN >**.

Now reboot the PCW with your start of day disk in drive A and you will see the 4 new partitions of the hard disk in the Disk Manager Screen.

INSTALLATION

The whole installation procedure should take less than 10 minutes assuming you know how to format and copy disks & files using either DISCKIT and PIP or LocoScript 2.

You will need a blank 3" disk to create a CP/M work disk, this should be labelled: **Hard Disk CP/M**.

First we will install CP/M and check out the system, then we will install LocoScript 2 if required. Ensure that the supplied CP/M disk is write protected before copying files from it.

PCW 8000 Series

Use the DISCKIT program or LocoScript 2 to copy the PCW 8256 / 8512 side of the CP/M disk onto your work disk.

PCW 9000 Series

Format your work disk using either DISCKIT or LocoScript 2. Then copy the file J20CPM3.EMS from the PCW 9512 side of the CP/M disk onto your work disk. Then copy the file SYS00208.FID from the PCW 8256 / 8512 side of the CP/M disk.

Connecting the PCW

Disconnect the PCW from the mains, then remove any peripheral devices for the time being. Clean the expansion port connector of the PCW with a piece of clean rag and a little methylated spirit.

If the ProDisk interface has built-in RAM set the switch beside the 25 way D - connector to suit the base memory of your PCW, i.e. UP for a 512k machine and DOWN for a 256k machine.

Attach the personality unit to the expansion slot at the rear of the PCW making sure that the connector fits correctly, and secure it with the 2 screws supplied. On the 8000 series the 25 way D-connector will face naturally outwards, and on the PCW 9512 this connector will face upwards. Plug either end of the data cable into this connector, and tighten the screw locks. Then plug the other end of the cable into the 25 way D-connector on the rear of the system unit and again tighten the screw locks.

Connect the mains cable to the system 2000 and re-connect the PCW to the mains. Power on the system 2000 and then the PCW.

BACKDISK

Data that is kept on your hard disk should be secured regularly for several reasons.

- » damage or alteration to a file
- » accidental deletion of a file
- » accidental formatting of the hard disk
- » theft or damage to your system

The answer - although not 100% - to data protection is to secure all relevant data. This can be accomplished in different ways.

- » Files that will fit on a floppy disk (170kb or 720kb) can be copied using the CP/M program PIP.
- » Files that are of greater size than the capacity of the floppy disk, cannot be copied using PIP. In this instance a special program is needed.

The vortex disk backup program "BACKDISK" allows for the Backing up (transfer data from the hard disk to floppy disk(s)) and Restoring (transferring data from the floppy disk(s) to the hard disk) data that is held on the hard disk. In this files that are greater than the capacity of a single floppy disk be safeguarded.

BACKDISK.COM will be found on the C drive, and is run by typing:

BACKDISK < RETURN>

After the sign on message (which can be interrupted by pressing any key), the BACKDISK main menu will appear. The program is window's driven

The main menu has the following options:

- » BACKUP
- » RESTORE
- » OPTIONS
- » DISK ID.
- » END

The use of the program BACKDISK is straight-forward. All the available options will appear in the top window, options can be selected by pressing the first letter of the option or by use of the cursor keys together with the 'return' key. Before the first backup can be done, the OPTIONS menu has to be checked and understood.

PARKING THE HARD DISK

PARK

The system 2000 unit should not be moved under any circumstances without running the PARK utility, and must never be moved while the unit is still powered on.

The hard disk may be damaged if the above is not strictly adhered to, the park utility will move the read/write head on the hard disk to a locked position.

The program PARK is initiated by typing

PARK < RETURN>

the following message should appear

Hard Disk 0 has been parked.

The hard disk should now be switched off, after this the PCW can then be switched off. **The order of switching off is important, hard disk first, then the PCW.**

EX

The EX.COM utility will enable you to alter disk drive assignments.

EX < RETURN> the current drive assignments will be show n.

EX 1 < RETURN> maps the A and B drives onto the hard disk.

EX 0 < RETURN> restores to the original settings.

W* .T?T

backup all files on the default drive where the filename begins with the letter 'W' and has an extension starting with the letter 'T' and ending with the letter 'T'.
eg. WORK.TXT or WORK.TOT etc.

The wildcard symbol '?' can also be used to signify a single character wild card.

2-RM (Restore Matchcode)

Restore by match code. The rules for selective restoring of data are the same as those for selective backup.

3-BU (Backup Usercode)

Logical drives can be further divided into 15 user areas (1 - 15), this would allow different data to be kept in different user areas. This backup option allows the backup of data by user area. The user number 1 - 15 should be entered, the wild card '?' can be used to specify all user areas.

4-RU (Restore Usercode)

Restore by user number. Data can be restored from the backup set by entering the user number. The use of the wild card '?' will restore all files from all user areas on the backup disk set.

5-CD (Catalogue Drive)

BACKDISK does not use the standard CP/M format on the floppy disks that it uses. This option is used to select which floppy drive will be used for the BACKDISK catalogue file. This file is named VORTEX.CAT and will be placed on the drive selected here.

6-BD (Backup Drive)

This will select the floppy drive to be used for backing up the data.

OPTIONS MENU

This menu specifies how the Backup or Restore is to be done, through selecting the appropriate drives and files. For example, if you have a PCW 8512, and all your LocoScript documents are on drive D, you can preset the options to backup all of drive D onto drive B. This ability to preset options makes backups easy at the cost of a little understanding of the several options available.

The options are basically the Source Drive, Destination Drive, Drive Type, File Description, and whether you want to manually or automatically select files. You may save the options you select, in which case these are stored in a file called OPTION.DAT.

To make backups even easier, an OPTION.DAT file is already supplied that assumes a PCW 8512 and data on the C drive. If you have a single drive PCW, you may simply erase this file, and the options will default to using the A drive to backup drive C.

The menu will be displayed after entering the letter 'O' or by using the cursor keys to highlight the entry and then pressing 'RETURN'.

The 'OPTION' menu displays the following choices.

1-BM (Backup Matchcode)

This option allows selective backups to be made by filename from a logical drive. The format of the command is as follows.

d:filename.ext

d

logical drive letter (c:, d: etc.).

If the drive letter is not included the default drive will be used.

name filename. Wild Cards can be used.

ext extension. Wild Cards can be used.

examples:

c:.* Backup all data on logical drive C:

*.com Backup all COM files on default drive.

BACKUP MENU

This menu is accessed by pressing the letter "B" or by use of the cursor keys to highlight the BACKUP option on the main menu screen and the pressing return.

The backup procedure will then be started and the following phase will be entered.

A. The directory of the disk to be backed up will be searched using the matchcode provided. All files that match this code will be entered on a file named VORTEX on drive M: - the Ram Disk. Therefore make sure that there is enough space on your RAM disk, the minimum requirement is 100kb.

B. The information window will display the following details.

Files:	No. files to backup
Disks:	No. of diskettes required for backup
Total:	No. of bytes to be backed up

In the window the first file to be backed up will be displayed,

```
ud:name.ext
u          user area number
d          drive letter
name      filename
ext       filename extension
```

If no disk is found in the selected backup floppy drive the user will be prompted to insert a disk into the drive.

Warning!, the BACKUP routine recognises if a disk has been inserted into the drive. changing disks should only be done when prompted.

7-PR (Prompt Before Restore)

This option will allow the user the option to select, if the file to restored already exists on the drive, to overwrite (Y), to ignore (N), to create a new filename (O).

8-DT (Backup Drive Type)

This option allows the selection of the floppy drive type.

0	40 track, 1 head, 9 sectors, 170kb
1	80 track, 2 heads, 9 sectors, 720kb

Save

The save option will save any changes to the above defaults to a file named OPTION.DAT on the default drive.

End

This option will leave the 'OPTIONS' sub menu and return to the main 'BACKDISK' menu.

RESTORE MENU

This menu is accessed by pressing the letter 'R' or by use of the cursor keys to highlight the backup option on the main menu screen and then pressing 'RETURN'.

The backup menu will display the following options.

- Restore
- Selective
- Manual
- End

A catalogue disk is required except when performing a manual restore.

For all restore options if the option 'prompt on overwrite' is ON then, if on restoring, a file of the same name is found on the hard disk, the user will be prompted:

file already exists overwrite Y/N/O

- Y** the existing file will be overwritten
- N** the file will not be restored
- O** the user will be prompted to enter a new name for the file to be restored.

New Name:

the file will be restore using the given name, this filename will be used even if a file exist with this name, it will not be further checked - **if a file of the same name exists on the drive to be restored to it will be overwritten!**

The BACKUP routine will check the current disk - if there is any data on the disk the following message will be displayed.

Diskette contains data
Overwrite Y/N/F

The three options are:

Y: overwrite disk

N: remove disk and insert another - the routine will also check this disk for data.

F: format this disk

If an un-formatted disk or a disk of different format is found the disk will be automatically formatted.

C. The backup routine will now continue automatically.

D. After all the data has been copied to the backup diskettes the backup catalogue directory will be written to the catalogue disk as defined in 5-CD (select catalogue drive).

Warning: if while the backup process is running, any key is pressed to interrupt the process the complete backup must be started from disk 1.

if during the backup an error occurs the options of **Retry**, **Ignore** or **Abort** will be displayed. If after several retry attempts the error is not corrected you can continue by using the ignore option but you must be aware the backup will continue but not all the data has been secured.

DISK ID

Each disk in a backup set has a unique ID. This is important as the files on the PCW will not be time and date stamped unless the user has installed a real time clock or has manually entered the date and time on power up. It is not possible to time and date stamp LocoScript 2 files.

- + select entry for restoring - the no. of files to be restored will be incremented.
- delete a previous marked entry
- A** no of entries to select.
how many entries to mark.
- B** This allows the deletion of marked files
- C** set new cursor position
- M** the following will appear in the dialogue window
Enter matchcode
This option allows the selection of files to be download by using wildcards.
eg. *.com, this will mark all entries with the extension .COM.
- F** this will prompt the user
Enter search Code:
If the user were to enter the match code of *.com the first occurrence of the matchcode will be sought and the user will be prompted.

Search for more: Y/N

If the option 'Y' is taken the next entry will be searched for, a 'N' reply will end the process.

This option allows the user a fast way of determining if the file required is on this backup set.

Press RETURN this will exit from the selective mode, the restore will continue in either of two ways.

If no files have been marked for restoring the routine will be exited.

If files have been tagged for restoring these files will now be restored - the user will be prompted to insert the required disks.

RESTORE MENU - Manual Restore

This will restore all files on the backup disk without reference to a catalogue disk or the restore options.

RESTORE MENU - Restore Option

The restore option requires the catalogue disk containing the directory information of the file set to be restored. These files will have been entered to the catalogue when previously backed up.

The restore matchcode must have been entered in the main menu OPTIONS entry. Only matching entries will be restored.

eg. drive C: is used for word processing, the complete contents of which have been backed up. Through an error all files with the extent .TXT have been lost. By using the wild card * .TXT all files on the backup disks can be restored.

RESTORE MENU - Selective Restore

This method of restoring also requires the catalogue directory disk, and is the most flexible of restoring methods.

Insert the catalogue disk in the default catalogue drive, and press return. The main window will display the following information.

files 0 Number of files marked for restoring.

Curr 1

nnn Number of entries in this catalogue

The selection of entries to restore must now be made.

Cursor down move the selection bar to the next entry

Cursor up move the selection bar to the previous catalogue entry.

Control R page up

Control C page down

FORMAT

This option will proceed to physically format the hard disk.

Before the format begins the user will be prompted to enter the 'interleave factor', press the 'RETURN' key to accept the default value.

The following message will appear.

Data will be lost

Do you wish to continue? Y= Yes N= No

If you answer 'Y' the format procedure will start and all data on the PCW will be lost.

The formatting of the hard disk will take up to 10 minutes to complete, after which time a message will appear on the screen.

Format successful

PARTITION

This option may be used to alter the partition sizes, and to delete partitions perhaps leaving just one large partition. The number of directory entries may be altered from the standard 500.

All data will be lost so unless you have just formatted the hard disk do a backup first. The PCW will re-boot after partitioning.

ZERO

This option will delete all files irrespective of any Read/Only attributes on a specified partition.

SCAN TEST

This will perform a non destructive test of the data on the hard disk. All data will be read and any errors found will be displayed.

HARD DISK MANAGER

SYS2000 Hard Disk Manager

The SYS2000 program will perform the following functions.

- » Formatting of the hard disk
- » Setup logical partitions on the hard disk
- » Delete logical partitions on the hard disk
- » Test for bad sectors
- » Continuous Read/Write test
- » Create boot disks from the hard disk

To start the SYS2000 program enter:

SYS2000 < RETURN>

The screen will be cleared and the mainmenu will appear.

The various options are straight forward to use as well as self explanatory.

The SYSTEM-2000 program falls into two categories:

- » Utilities that will destroy the information on the hard disk.
- » Utilities that will not damage the information on the hard disk.

Options that will destroy information on the hard disk will be prompted by the message:

Are you sure you wish to continue. Y= Yes N= No

If the above prompt is answered with Y then **all data on the hard disk will be lost.**

MAIN MENU OPTIONS

CPM

Will exit the SYS2000 program and return to CP/M

SYS2000 Error messages

- > > **SYS2000.OVL?**
The overlay file SYS2000.OVL is not present in the default drive.
- > > **SYS2000.OVR cannot be found or is corrupt program will be aborted**
The overlay program SYS2000.OVR cannot be found on the default drive or contains corrupted data
- > > **Hard disk not ready program will be aborted**
The program will attempt to access the hard disk if after 15 seconds the hard disk does not respond, the hard disk will be tested again and the above message displayed.
- > > **Drive parameters incorrect program will be aborted**
The hard disk controller could not read the disk parameters from the hard disk.
- > > **Serious error! hard disk cannot be formatted**
- > > **Bad map table is full**
make the partition smaller and use the MARK option and restart
- > > **Fatal error on writing Bad map table on partition x:**
use the mark option and restart
- > > **Directory on partition x: is full**
Delete files on partition and/or increase size of partition - restart using the MARK option.

MARK

*Run disk
mark*

This routine must be used after the hard disk has been re-formatted or partitioned. It should also be used if you see any error messages when using the hard disk.

APPEND

A hard disk may not be totally defect free and can contain bad sectors when released by the manufacturer. If these defective sectors are not entered into the system bad map any program accessing data on these areas may 'hang/stop'. Data areas marked as bad will be entered in the bad block map and will not be used by the system.

During normal use a sector on the hard disk may become bad and therefore must be entered into the bad map. If this should happen the file which contains this bad block will be defective. On running the MARK option you may then see the message:

Bad Block: xxxx Partition: y User: z ---name.ext
Delete file Y= Yes N= No

If the Y option is taken the above file will be deleted.

If the file contains important data then the No option should be taken. The file should then be copied to another partition on the hard disk using the CP/M command PIP. The user will be prompted Bad Sector Retry / Ignore, if the I option is taken the file will be copied ignoring the bad sector. The file can now be accessed but the user must be aware that this file will contain erroneous data.

BOOTDISK

This option allows, depending on selection, the creation of a CP/M or Locoscript Boot disk. This depends on the fact that a hard disk version of the operating system is running

Insert CP/M Plus or Locoscript Boot disk in drive 'A' and press any key to continue, (press 'Q' to abort)

The disk will be searched for the system file J*.EMS.

Insert a formatted disk into drive 'A'
Press any key to continue. ('Q' to abort)

TECHNICAL DATA

» capacity	20 - 60 mbytes
» average seek time	30ms
» MTBF	20,000 hours
» Operating temperature	+ 10C to 45C
» Storage temperature	-15C to 55C
» Shock	max 10g for 10ms without damage
» humidity	8% to 80%
» power	40 watts
» weight approx.	3.30 kg
» dimensions	221 mm * 232 * 70mm

The above specification may be altered.

APPENDIX

RE-INSTALLING THE HARD DISK

Although the hard disk is thoroughly tested before shipping, and carefully packed and delivered, some event may cause complete loss of data; and the hard disk will need to be erased and re-installed. A complete re-installation may take one hour.

You will need the original work disk in drive A. PIP.COM should be copied onto this disk.

1) specify the Drive type. Enter:

INS2000

You will be asked for a 2 character hard disc drive code. This code is found on the back of the system unit, and is for example, A1 or Y7 for 20Mbyte drives, or F1 for 30Mbytes. *Y8 = 40 n.3y785.*

2) Configure SYS2000 to format and partition. Enter:

PIP SYS2000.OVL= SYS2INS.OVL

3) Format and partition the hard disk. Enter:

SYS2000 INPUT N

This will take up to 10 minutes. The PCW will automatically re-boot.

4) Restore SYS2000. Enter:

PIP SYS2000.OVL= SYS2TXT.OVL

5) Use SYS2000 to mark bad blocks. This may take an hour. The PCW will re-boot.

6) Copy the work disk onto the hard disk. Enter:

PIP C:= A:*.*