

**M A G I C**

**D I S K K I T**

## **INTRODUCTION**

Welcome to one of the unique range of Robtek products that you have just bought. You are in possession of a highly sophisticated product that will help you to get a better performance and a longer life from your disk drive. To be able to enjoy the full benefits from this product it is important that you read the instructions carefully. Robteks Magic Disk Kit is simple to use and easy to correct. It is an economical method that not only cleans and checks your drive but solves most of your problems.

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## **A. SIMPLE MAINTENANCE TIPS**

Most of the problems that occur with a disk drive are due to a poor operating environment. By following the tips listed below you will get a much better performance and a longer life from your disk drive and floppy disks.

1. Keep your operating environment clean from dust and smoke.
2. Always place the disk drive on a hard and clean surface.
3. Make sure that your disk drive is well ventilated on all sides.
4. Turn off your disk drive when it is not in use, this will minimize the heating problem.
5. Never turn your drive on or off with a floppy disk inserted.
6. Never remove a floppy disk from your drive when the green light is on. This means that the drive is in use, and you might lose information.
7. Keep all floppy disks away from magnetic fields.
8. Temperature extremes, especially heat, can damage floppy disks:
9. Do not bend or fold a floppy disk.
10. Always store floppy disks upright in their jackets.
11. Don't clip, staple or use an elastic band on your floppy disks. Once a floppy disk is bent or the jacket is breached, errors can occur.
12. Don't write on floppy disks with anything but a soft felt tip pen. Write out labels first before you place them on your disks.
13. Remove old labels before applying new ones, label thickness can interfere with the operation of your disk drive.
14. Clean your disk drive head frequently (use the special Robtek head cleaner disk).

## **B. LOADING INSTRUCTIONS**

1. Insert program disk in your disk drive.
2. To start program type in : LOAD "\*", 8, 1
3. The Magic Disk Kit menu will now appear on your screen.
4. You can now select a function from the menu a function.

**WARNING: Only use this program when your disk drive is cold.**

## **C. DEVICE NUMBER**

If your drive is badly out of alignment you may have to load the program from someone elses drive. This is not a problem because the Magic Disk Kit allows you to choose a device number from 8 to 12.

## **INSTRUCTIONS**

1. Select device number function from menu : Press number 2.
2. Type in the number of the disk drive that you want to test or clean.
3. Cursor will return to the menu : Select the function that you want to start.

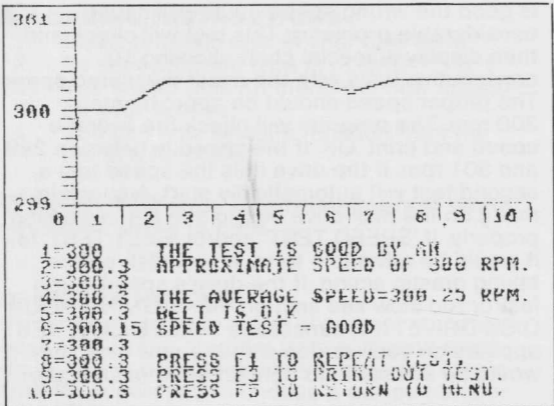
## **D. SPEED TEST**

The speed at which the disk rotates in the drive is very important. Even if the alignment of your drive

is good the wrong speed could still cause considerable problems. This test will check and then display a special chart showing 10 consecutive tests with the exact measured speed. The proper speed should be approximately 300 rpm. The program will check the average speed and print 'OK' if the speed is between 299 and 301 rpm. If the drive fails the speed test a second test will automatically start. A check is made on the disk drive belt to see if it is working properly. If 'SPEED TEST' and/or 'BELT TEST' fail it would be advisable to try a new disk before taking drastic action. If the drive's speed is too fast or too slow see section 'REALIGNING YOUR DISK DRIVE'. If the message 'FAILED BELT TEST' appears on your screen with the new disk, then it would be advisable to contact your local dealer.

## **INSTRUCTIONS**

1. This test should only be used with a cold disk drive.
2. Select speed test function from menu :  
press number 2.
3. Make sure that the 'PROGRAM DISK' is inserted in the disk drive before starting the test.
4. If you have a bad speed test see section 'REALIGNING YOUR DISK DRIVE'.
5. If the speed test is 'OK' then a chart like the one shown on the next page will appear on your screen.



### E. ALIGNMENT TEST

The most common problem with the 1541/1570 disk drives is head alignment. The mechanism that positions the heads tends to shift out of alignment very easily. If your disk drives heads are incorrectly aligned, read errors will occur. If you try to load a long program you will see the red light on your disk drive blink on and off. This means that the drive is having trouble reading the disk. Most alignment problems are caused by heavily protected software that use read errors for program protection. The hammering noise that

you hear is the mechanism being bumped against the mechanical stop in the drive. This repeated hammering will eventually knock the head out of position. Another problem is that after your drive has been operating for a long time, it gets hot inside, the metal expands and the drive wheel may slip if stress is applied. By using the specially prepared Robtek disk it is now possible to remedy head alignment problems without buying expensive equipment.

## **INSTRUCTIONS**

1. This test should only be used with a cold disk drive.
  2. Select alignment test function from menu :  
press number 3.
  3. Make sure that the program disk is inserted in the disk drive before starting the test. The alignment test will only give true readings with the Robtek program disk.
- \* The alignment will be tested in three different places : inside, middle and outside tracks.
  - \* Half tracks and full tracks will be displayed.
  - \* Step : This tells you that the stepper motor has positioned the drives read/write heads to the position where it expects to find that track. When the disk rotates past the head a special routine attempts to read the header blocks of the tracks as they move past.
  - \* Read : This displays the track that has

actually been read.

- Inside** : If full tracks are being read the track number under STEP should correspond with the track number displayed under READ.  
If half tracks are being read the track number under STEP should be half a track higher than displayed under READ.
- Middle** : If full tracks are being read the track number under STEP should correspond with the track number displayed under READ.  
If half tracks are being read the track number under STEP should be half a track lower than displayed under READ.
- Outside** : If full tracks are being read the track number under STEP should correspond with the track number displayed under READ.  
If half tracks are being read the track number under STEP should be half a track higher than displayed under READ.
4. A perfectly aligned disk drive will display a chart as shown opposite.

if the alignment from your disk drive is incorrect then see the section 'REALIGNING YOUR DISK DRIVE'.



HALF TRACKS--FULL TRACKS		STEP--READ
T=01	=====	1 1
	-----	2 .5 2
	-----	3 .5 3
	-----	4 17
	-----	5 18
T=18	=====	6 .5 19
	-----	7 .5 20
	-----	8 .5 21
	-----	9 .5 22
	-----	10 .5 23
T=35	=====	11 .5 24
	-----	12 .5 25
	-----	13 .5 26
	-----	14 .5 27
	-----	15 .5 28

PRESS F1 TO REPEAT TEST.  
 PRESS F3 TO PRINT OUT TEST.  
 PRESS F5 TO RETURN TO MENU.  
 PRESS F7 TO ABORT.

## F. HEAD CLEANER

- Recommended usage - Clean read/write heads at least once a week.
- Do not use the cleaning disk more than 15 times.
  - It is possible to reorder a new cleaning disk from Robtek for £1.95.

## INSTRUCTIONS

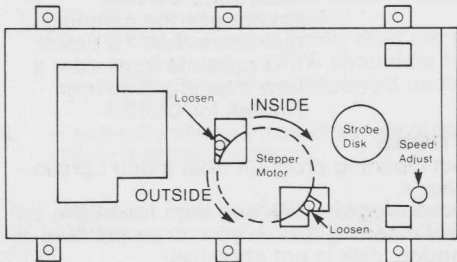
1. Select cleaning program from menu : press number 4.
2. Remove program disk and then insert the special cleaning disk in your drive (no fluid is needed, disk is not abrasive).

3. If you want to clean a dual sided disk drive remove the tab on your cleaning disk.
4. Press return to start cleaning program.
5. A clock will appear and the read/write heads will be engaged for approximately 30 seconds.
6. When the cleaning program is finished remove cleaning disk and insert program disk.

## G. REALIGNING YOUR DISK DRIVE

### INSTRUCTIONS

1. Remove all leads from your disk drive.
2. Turn drive upside down and remove the four corner screws.
3. Carefully turn drive right way up, remove top cover.
4. Place drive in the same position as shown below.



5. Leaving drive upside down, carefully reconnect all leads and switch the drive back on.
6. With the drive in the upside down position insert Magic Disk program.
7. Run the program.

### **FAILED SPEED TEST**

1. Select option 2 from the menu.
2. Using a screwdriver turn the 'SPEED ADJUST' screw slightly in a clockwise or counterclockwise direction. Repeat the speed test until the display on your screen shows the correct speed.
3. Rebuild your drive in the reverse order.

### **FAILED ALIGNMENT TEST**

1. Using a screwdriver slightly turn the two screws holding the 'STEPPER MOTOR' in place. The motor should not be loose, but you should be able to turn the stepper motor with your hand in both directions.
2. Select option 3 from the menu.
3. If the stepper motor positions the heads at a track, and the actual track read is higher, then turn the stepper motor to the outside.
4. If the stepper motor positions the heads at a track, and the actual track read is lower, then turn the stepper motor to the inside.
5. Once you are satisfied with the head positioning carefully tighten the adjustment screws.

6. Rebuild drive in the reverse order.

## **H. HOW TO RECOVER A PHYSICALLY DAMAGED FLOPPY DISK.**

This method could come in handy if you accidentally spill a drink over your floppy disk (especially if there are NO BACKUPS).

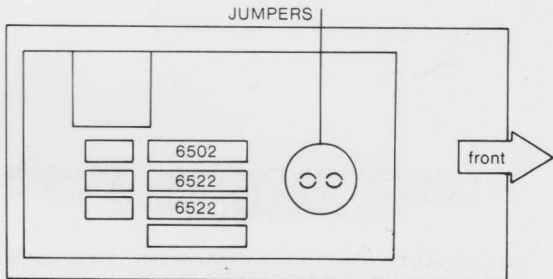
1. Using a sharp knife pry open the flaps of the protective jacket and remove the floppy disk very carefully.
2. Make sure not to touch the floppy disk surface with your skin (wear gloves).
3. Rinse off the floppy disk with clean water.
4. Place the floppy disk on a soft, dust free surface to dry.
5. Now take another floppy disk and remove the disk from its protective jacket.
6. When the floppy disk is completely dry insert the disk into its new jacket.
7. Try to load the floppy disk, with some luck you might find that the disk is alright now. If this is the case make a copy immediately.
8. If the floppy disk still does not work remove the disk and turn it over. This is just in case the disk is upside down.
9. If it still does not work then the disk can not be saved.

## **I. PERMANENT DISK DRIVE DEVICE CHANGE.**

This method can be used to permanently change

the device number of your disk drive. This also means that as soon as you switch the computer on the second disk drive will be immediately available.

1. Remove all leads from your disk drive.
2. Turn drive upside down and remove four corner screws.
3. Carefully turn drive right way up to remove top cover.
4. Place drive in the same position as the diagram below.



5. To carry out the hardware conversion you will have to cut the jumpers. These jumpers are not wires but round spots of solder on the circuit boards, they are separated into two parts. Using a knife break the

interconnecting link between the jumpers to change the device number.

For device 9 : Break link on front circle.

For device 10 : Break only the rear link.

For device 11 : Break both links.

6. After you have finished this rebuild your disk drive in reverse order.
7. Having reassembled the disk drive carry out a test with just one drive connected to ensure that the modification was successful.

**GUARANTEE :** THIS PRODUCT IS PROTECTED BY A ONE YEAR GUARANTEE. PLEASE CONTACT YOUR DEALER IF ANY PROBLEMS SHOULD ARISE.

**IMPORTANT :** THE ROBTEK MAGIC DISK KIT AND ALL ITS DOCUMENTATION IS COPYRIGHT © ROBTEK 1986. ANY ATTEMPT TO COPY THE PRODUCT OR MANUAL IS ILLEGAL AND WILL RESULT IN PROSECUTION.

**WARNING:** THIS PROGRAM WILL ONLY WORK PROPERLY ON ROBTEK MAGIC DISK. IF YOU MAKE A COPY YOU WILL NOT BE ABLE TO GET THE TRUE READINGS FROM YOUR DISK.

The logo for Robtek is rendered in a bold, stylized font where each letter is composed of multiple horizontal black bars of varying lengths, creating a striped or digital effect. The letters are 'R', 'o', 'b', 't', 'e', and 'k'.

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