



# Tech Info Library

## Duodisk General Troubleshooting

### DESCRIPTION:

By following this procedure you can isolate a malfunction on the Duodisk and determine whether or not it is functional.

### YOU WILL NEED:

1. "Known good" Apple IIe computer
2. Two DOS formatted 5 1/4 disks (one write protected the other not)
3. "Known good" Duodisk controller PCB - IN SLOT 6
4. 2 copies of DAP (Drive Acceptance Program) (APN 077-8101) - it is copyable
5. DDD (Digital Diagnostic Disk) (APN 689-8024)
6. Level I Tech Procedures

### BEFORE YOU START:

1. If replacement or adjustment procedures are needed, refer to the Tech Procedures
2. If a replaced module/part doesn't fix a problem, reinstall the original module/part.
3. If the analog card proves to be problem, search on "HTS and Duodisk and Analog" for the analog card troubleshooting procedure.
4. After repair, check drive with "other" DAP disk (original may be damaged).

### INSTRUCTIONS:

1. Connect the problem Duodisk to the controller in the Apple IIe.
2. Boot the DAP disk in LEFT drive.

a. First screen shows 2 drives and 2 arrow keys.

b. You run the program with the 2 arrow keys.

c. If drive booted OK, go to step 3; if not, check for problems below.

PROB: Won't boot. Drive comes on but I/O errors occur

FIX: Recheck for the problem after each of the following steps

- (1) Try other DAP disk.
- (2) Try reading a file from the other drive on the Duodisk. If it fails, replace analog card.
- (3) Perform Dspeed adjustment in Tech Procedures (you'll need to use a known good drive in addition to the problem drive to make this adjustment). If the problem drive won't adjust, replace analog card
- (4) Examine the head. If dirty, clean it with solution of 80% denatured alcohol and 20 % distilled water (for more info search on Disk Drive

Preventive Maintenance); if the head is scored replace the mechanical assembly containing the head.

- (5) Replace interface cable
- (6) Replace disk mechanical on the problem drive
- (7) Replace analog card

PROB: Won't boot. Drive doesn't come on.

FIX: Recheck for problem after each of the following steps

- (1) Boot from other drive on Duodisk. If it fails, replace analog card.
- (2) Replace interface cable
- (3) Replace disk mechanical
- (4) Replace analog card

PROB: Drive makes unacceptable noise

FIX: Replace disk mechanical

- 3. Press "LEFT" arrow to select "LEFT" drive for test.
- 4. Screen asks you to install WRITE-PROTECTED blank disk into drive. After you do, press the RIGHT arrow to continue running the test...drive whirs. Read IMPORTANT below.

IMPORTANT: If a failure occurs during the following steps, the drive under test will be crossed out and the number(s) above the crossed out drive will indicate which test(s) failed. If this happens, go to the end of this procedure find the Test #(s) that failed and perform the appropriate repair action.

- 5. The changing arrows on the screen tell you to remove the WRITE-PROTECTED disk and install NON-WRITE-PROTECTED blank disk into drive. After you do, press RIGHT arrow to continue running the test...drive whirs test numbers change as tests are performed.
- 6. After a minute or so and while drive is still whirring, screen asks you to install DDD disk. After you do, PRESS the RIGHT ARROW to continue tests...drive continues to whir, DDD disk change screen leaves, etc.
- 7. The drive stops whirring and the screen asks you to remove the DDD disk, this is the end of the test and indicates that the LEFT drive is OK so press the LEFT arrow once to go back to the first screen, then press RIGHT arrow to select RIGHT drive for test and go back to step 4.

If a failure occurred in the procedure above, find the Test #(s) that failed and perform the appropriate repair action.

#### TEST# - REPAIR ACTION

- 1 Make sure test was done using proper disks (i.e., DOS 3.3 formatted, blank, write protected/non-write protected).

Replace disk mechanical  
Replace analog card  
Send to Apple

2     Adjust D-Speed  
       Replace analog card  
       Replace disk mechanical  
       Send to Apple

3     Replace analog card  
       Replace disk mechanical  
       Send to Apple

4     Rerun test (test 4 failure can indicate bad DDD disk)  
       Replace disk mechanical  
       Send to Apple

5     Replace disk mechanical  
       Send to Apple

6 or 7 Replace disk mechanical  
       Send to Apple

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