

INTERFACE BOARD INSTALLATION

MODELS II AND 16A

1. Modify the CPU board.
 - a) Enhanced DMA and INTRQL modification.
(Rev A, B or C boards only. Rev D does not require this change.)
 - b) Replace R21 with 150 ohm resistor.
 - c) Replace Boot ROM U11 with new ROM included with kit.
2. Verify proper jumper configuration on the Hard Disk Drive Interface board. AK-AP, A-B, A-B, V-W (Two sets of A-B).
3. Install the interface board in the third card slot from the right facing the back of the machine. Board order: CPU, FDC, HD Interface, 64K RAM board, Video/Keyboard Interface.
4. Remove the disk expansion cable panel from the back of the unit.
5. Install the new expansion cable panel with the FDC and the internal Hard Disk Drive cable. Connect the internal cable to the 50 pin connector on the back of the Hard Disk interface board.
6. Assemble and test.

MODEL 12 ONLY

1. Verify proper jumper configuration on the Hard Disk Drive Interface board. A-B, A-B, V-W (Two sets of A-B).
2. Move the AK-AP jumper to the AG-AL position.
FOR MODEL 12 ONLY. Not for Model 16.
3. Install the Hard Disk interface board in the bottom slot of the card cage.
4. Route the Hard Disk Drive Cable through the bottom slot of the back access panel.
5. Assemble and test.

MODEL 16B ONLY

1. Before installing any boards look for the E38-E39 jumper. This will be a wire wrap jumper and is located on the main logic board between U61 and U62 to the left of the top row of RAM. You will have to remove the VDG board and look under the 50 pin cables that cover the RAMs. The top row is the row farthest from you. If the E38-E39 jumper is present it MUST be removed. THIS APPLIES TO MODEL 16B ONLY.
2. Verify proper jumper configuration on the Hard Disk Drive Interface board. AK-AP, A-B, A-B, V-W (Two sets of A-B).
3. Install the Hard Disk interface board in the bottom slot of the card cage.

4. Route the Hard Disk Drive Cable through the bottom slot of the back access panel.
5. Assemble and test.

ENHANCED DMA MODIFICATION PROCEDURE

This modification is the same as the Hard Disk modification except that it does not include anything unique to the Hard Disk, such as the Boot ROM. Revision A, B, and C boards are the ONLY CPU boards to which this modification applies. DO NOT perform this modification on Revision D and later boards as they have these modifications incorporated into their design. Refer to Figures 1 and 2 for schematic changes affected by this modification.

After determining that the revision level of the board is a Rev. A, B or C, perform the following procedure with all cuts and jumpers on the SOLDER SIDE of the board for consistency. Remember, DO NOT perform this modification on Rev. D or later boards.

CUTS (2):

U4 Pin 12 (Cut at the chip)
U13 Pin 6 to U21 Pin 1

JUMPERS (7):

U21 Pin 1 to U24 Pin 8
U4 Pin 12 to U21 Pin 6
U21 Pin 4 to WAIT*
 (the first feed through after the cut at U4 pin 12)
U21 Pin 5 to U15 Pin 11
U15 Pin 12 to U20 Pin 13
U15 Pin 13 to U24 Pin 4
U24 Pin 3 to U20 Pin 14

CONNECTING YOUR PRIMARY DRIVE

Be sure all power is OFF.

NOTE: The Master (Primary) unit does not come with Data Out connectors. These are supplied with each secondary unit and require installation.

MODEL 16

Connect one end of the hard disk expansion cable to the 50 pin connector on the back of the computer.

Connect the opposite end of the hard disk expansion cable to the COMPUTER IN connector, located on the rear panel of the primary drive.

MODEL 16B

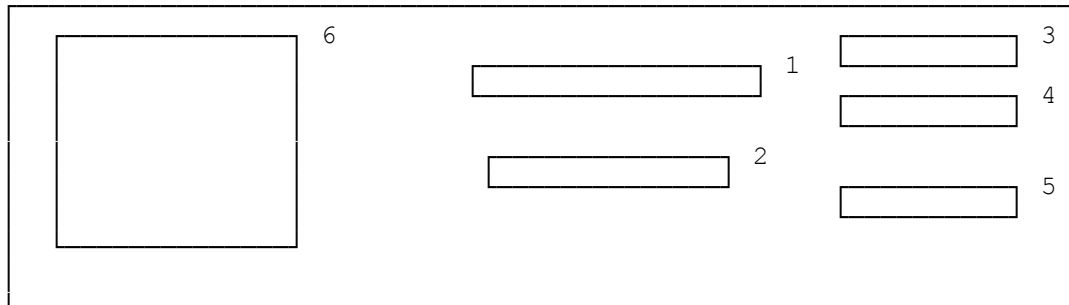
Locate the hard disk expansion cable. Connect one end of the cable to the Interface card connector of your Model 16. Be sure the cable exits the rear

of the computer so that it won't bind.

Connect the opposite end of the hard disk expansion cable to the COMPUTER IN connector, located on the rear panel of the primary drive.

Connect the power cord to the primary drive. Plug the other end into an appropriate AC power source.

Figure 3. Back Panel of Hard Disk Drive



1. Computer In (50-pin). Connect the Hard Disk Expansion Cable from the Computer to this connector.
2. Control Out (34-pin). Connect one end of a Secondary Hard Disk Expansion Cable to this connector. The other end connects to the first secondary drive.
3. Data Out A (20-pin). Connect one end of the Data Cable from the first secondary drive to this connector.
4. Data Out B (20-pin). Connect one end of the Data Cable from the second secondary drive to this connector.
5. Data Out C (20-pin). Connect one end of the Data Cable from the third secondary drive to this connector.
6. Filter.

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