INDUS GT INSTALLATION

Required tools:

- Phillips Screwdriver

- IC extractor or small, flat-bladed screwdriver. Needed for removal of the stock DOS ROMs on the Indus circuit board. An IC extractor is recommended, but not necessary (the small screwdriver will suffice). However, if using a screwdriver, wrap a layer of tape around the tip to help prevent damage to the circuit board when prying.

- Hand or power drill. Necessary for installation of the JiffyDOS ROM selector switch in the MSD case assembly.

Procedure:

1. If a diskette is present in the disk drive, remove it.

2. Make sure the disk drive power switch and the power switch on your computer are **OFF**. Also make sure that any other peripherals attached to the serial bus are also switched **OFF**.

3. Unplug the power supply cord from its wall outlet.

4. Unplug all cables from the rear of the drive, including the power supply cable and serial bus cable(s).

5. Remove the two rear panel screws as shown below in Figure 1. Remove the rear panel bracket.

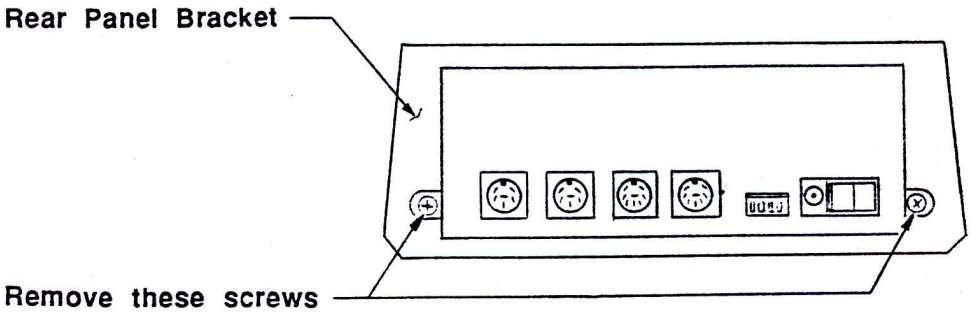

Figure 1 **REAR PANEL SCREW REMOVAL**

6. Turn the disk drive upside-down and remove the four screws from the bottom of the drive as indicated in Figure 2 below.

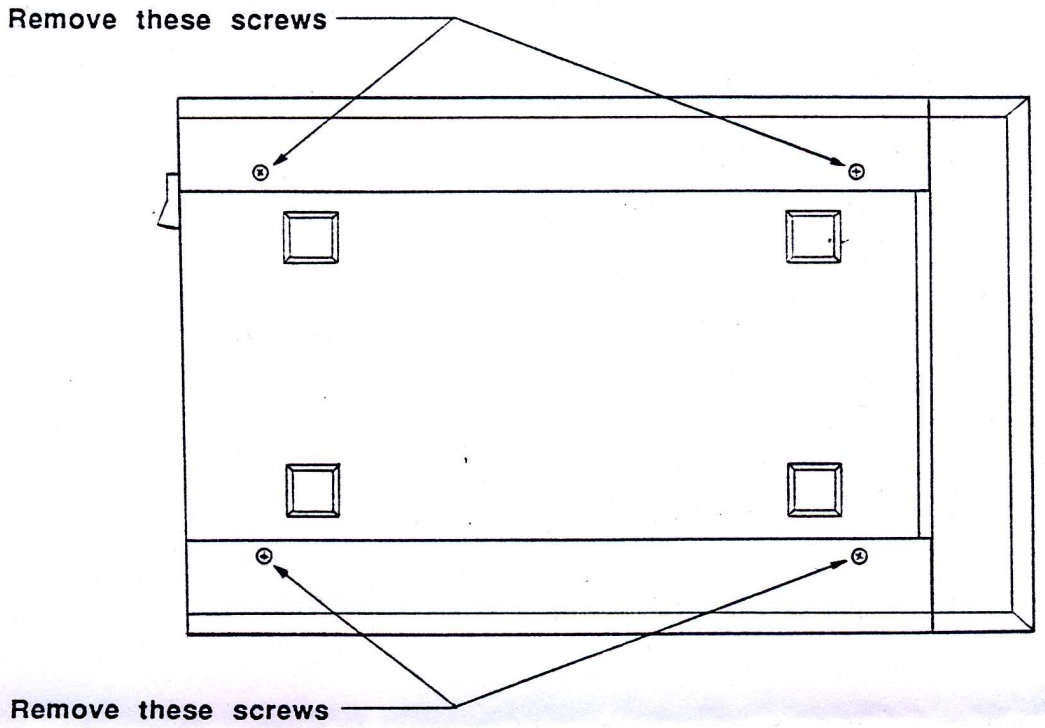

Figure 2 **BOTTOM PANEL SCREW REMOVAL**

7. Turn the drive rightside-up. Remove the top cover of the drive by sliding it to the rear. This should expose the internals of the drive.

8. Remove the drive mechanism by following the steps outlined below.

   a. Remove the four mounting screws which secure the drive mechanism to the disk drive frame (there are two screws on each side of the drive).

   b. Disconnect the ribbon cable connector (see Figure 3 on the next page) from the rear of the drive mechanism.

   c. Lift the drive mechanism upward and to the rear until it is clear of the frame. Next, carefully set the drive mechanism upside-down off to one side of the drive. BE CAREFUL NOT TO BREAK OR INADVERTANTLY DISCONNECT ANY OF THE CABLES CONNECTING THE DRIVE MECHANISM TO THE CIRCUIT BOARD.

9. Locate the three DOS ROMs (U17, U18, U19) by using the diagram in Figure 3 below.

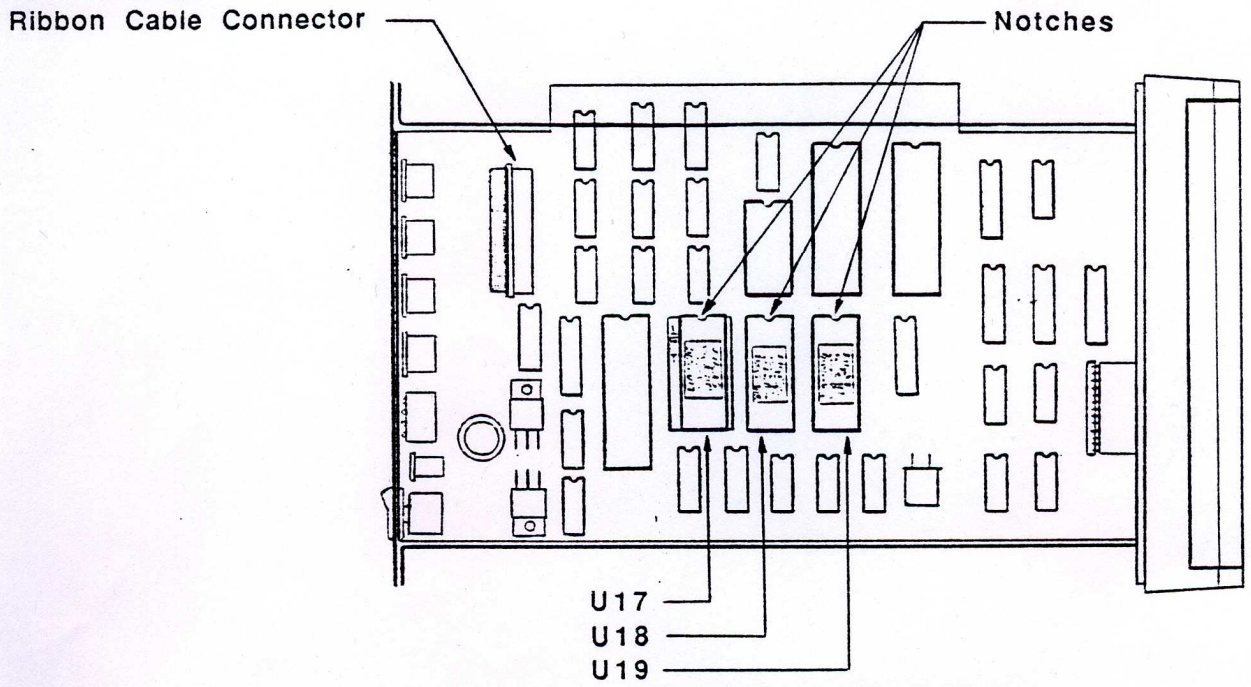

Figure 3 **DOS ROM LOCATIONS**

10. Carefully remove each DOS ROM from its socket using the IC extractor or flat-bladed screwdriver. Alternate lifting the ROM from each end, raising it from its socket a little at a time. If using a screwdriver, take care not to damage the circuit board while prying. For future reference, mark the ROMs "U17", "U18" and "U19" as they are removed (if they are not already marked as such).

11. Remove the JiffyDOS ROM labeled **INDUS-U19** from its packing. This is one of the ROMs <u>without</u> the adapter board assembly.

12. Inspect the JiffyDOS ROM carefully. If you observe any bent pins, carefully straighten them with a pair of tweezers.

13. "Test fit" the JiffyDOS ROM on top of the proper DOS ROM socket (U19). SEE FIGURE 3 ABOVE.

<u>VERY IMPORTANT</u>

MAKE SURE THAT THE NOTCH ON THE JIFFYDOS ROM IS FACING AS SHOWN IN FIGURE 3.

14. With all pins on the JiffyDOS ROM properly aligned with the socket, and with the ROM notch facing as shown in Figure 3, carefully press the ROM into the socket using finger pressure until it is fully seated.

15. Remove the JiffyDOS ROM labeled **INDUS-U18** from its packing. This is the second ROM <u>without</u> the adapter board assembly.

16. Inspect the JiffyDOS ROM carefully. If you observe any bent pins, carefully straighten them with a pair of tweezers.

17. "Test fit" the JiffyDOS ROM on top of the proper DOS ROM socket (U18). SEE FIGURE 3 ON THE PREVIOUS PAGE.

<u>VERY IMPORTANT</u>

MAKE SURE THAT THE NOTCH ON THE JIFFYDOS ROM IS FACING AS SHOWN IN FIGURE 3.

18. With all pins on the JiffyDOS ROM properly aligned with the socket, and with the ROM notch facing as shown in Figure 3, carefully press the ROM into the socket using finger pressure until it is fully seated.

19. Remove the JiffyDOS ROM labeled **INDUS-U17** from its packing. This is the ROM which <u>includes</u> the adapter board and switch assembly.

20. Inspect the JiffyDOS ROM carefully. If you observe any bent pins, carefully straighten them with a pair of tweezers.

21. "Test fit" the JiffyDOS ROM on top of the proper DOS ROM socket (U17). SEE FIGURE 3 ON THE PREVIOUS PAGE.

<u>VERY IMPORTANT</u>

MAKE SURE THAT THE NOTCH ON THE JIFFYDOS ROM IS FACING AS SHOWN IN FIGURE 3.

22. With all pins on the JiffyDOS ROM properly aligned with the socket, and with the ROM notch facing as shown in Figure 3, carefully press the ROM into the socket using finger pressure until it is fully seated.

23. Route the JiffyDOS selector switch and wire connected to U17 towards the rear of the disk drive. Secure the wire to the circuit board so that it will not be able to become entangled in the moving parts of the drive mechanism once it is back in place.

24. Carefully set the drive mechanism back into position in the disk drive. Secure it to the frame with the four mounting screws you removed earlier (two screws on each side of the drive).

25. Reconnect the ribbon cable removed in Step 8 to the rear of the drive mechanism.

26. Drill a 1/4" hole in the Indus GT case assembly to accomodate the JiffyDOS ROM selector switch. We recommend a position on the rear panel of the drive. See Figure 4 on the next page.

    WHETHER YOU CHOOSE THIS POSITION OR AN ALTERNATE ONE, MAKE ABSOLUTELY SURE THAT THE SWITCH IS POSITIONED SO THAT IT WILL NOT COME INTO CONTACT WITH ANY OF THE INTERNAL COMPONENTS OF THE DISK DRIVE.

IMPORTANT

WHEN DRILLING, MAKE SURE THAT YOU DEVISE SOME METHOD OF KEEPING THE METAL SHAVINGS OFF OF THE CIRCUIT BOARD AND OUT OF ANY PART OF THE DRIVE'S INTERNAL ASSEMBLIES.

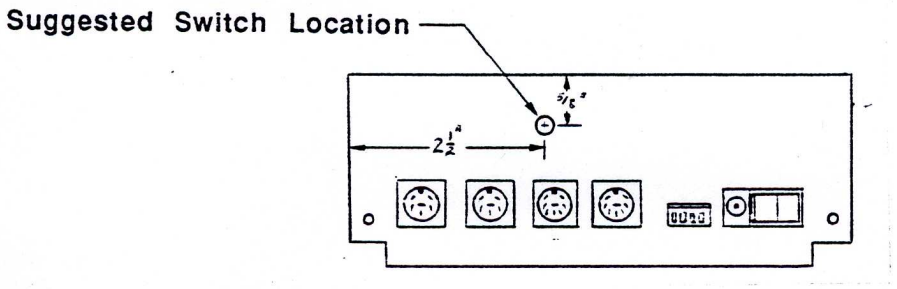

Figure 4 **SUGGESTED SWITCH LOCATION**

27. After drilling, clean the drive to make sure it is free of metal shavings.

28. Install the JiffyDOS Selector Switch into the hole just drilled in the case and secure it using the hardware provided with the switch. **Make sure that you secure the switch wire so that it will not interfere with any moving parts in the drive mechanism.**

29. Slide the top cover back into place. Turn the drive over, and secure the cover using the four screws removed in Step 6.

30. Turn the drive rightside-up, replace the rear panel bracket and secure it with the two screws removed in Step 5.

31. Reconnect the power supply cable to the rear of the disk drive.

32. Plug the AC power supply cord into a working outlet.

33. Connect the serial bus cable between the disk drive and your computer.

34. Proceed with the Installation Checkout Procedure found on the next page.

Installation Checkout Procedure:

NOTE: Some of the steps in the following installation checkout procedure require the use of a JiffyDOS-equipped computer.

1. Switch the Indus GT ON. The busy light should stay on for about one second, and then shut off as it normally does upon power-up.

   IF THE BUSY LIGHT STAYS ON, OR AN ERROR MESSAGE IS DISPLAYED, IMMEDIATELY SWITCH THE DRIVE OFF. THEN FOLLOW THE STEPS BELOW.

   1a. Recheck all cable connections to the drive. Make sure that the serial bus and power supply cables have been connected properly. **Make sure that the AC power cord has been plugged into a working outlet.** If any cabling errors have been made, correct the errors and try powering up the drive again.

   1b. If the problem is not with the cabling, disassemble the disk drive according to the procedure you used earlier. Remove the JiffyDOS ROMs from their sockets and then reinstall them according to Steps 11-22. **Make sure that the ROMs are in the correct sockets, that the notches are oriented correctly, that there are no bent pins, and that the ROMs are seated snugly.** Once the JiffyDOS ROMs have been reinstalled and the drive has been reassembled, try powering up the Indus GT again.

   1c. If Steps 1a and 1b both fail, remove the JiffyDOS ROMs and reinstall the stock DOS ROMs. Follow the same procedure for installing the stock ROMs as you did for installing the JiffyDOS ROMs. Make sure that the notches on the stock DOS ROMs are oriented correctly. Try powering up the drive again. If it powers up properly, return the JiffyDOS ROMs to Creative Micro Designs for replacement under warranty. If your disk drive does not power up properly, seek the assistance of a qualified technician.

2. Once the disk drive has been powered up successfully, select JiffyDOS on your computer and then power it on (make sure that the power-on message indicates that JiffyDOS is active). Insert a known good diskette with a few programs on it into the disk drive.

3. At your computer, type **@$** and **RETURN.** The activity light on the disk drive should come on and a directory listing should appear on the screen.

   IF THE DIRECTORY LISTING DOES NOT APPEAR, OR AN ERROR MESSAGE IS DISPLAYED, SHUT OFF THE DRIVE AND COMPUTER. FOLLOW THE TROUBLESHOOTING PROCEDURES OUTLINED BELOW.

   3a. Make sure that JiffyDOS is selected on your computer. When JiffyDOS is selected, the power-on screen will display: **JIFFYDOS/64 VERSION x.x,** or **JIFFYDOS/128 VER. x.x.** If you did not have JiffyDOS selected on your computer, select it now and try reading the disk directory again.

   3b. Make sure that you have a known good disk in the disk drive. Make sure that the disk is properly inserted.

3c. Recheck the serial bus cabling between your computer and disk drive. Correct any errors and try reading the directory again.

3d. If the problem persists, proceed with troubleshooting procedure 1b above.

4. Test the operation of the JiffyDOS ROM selector switch. To do this, shut the Indus OFF, and then turn it back ON. **Make sure that your computer is in JiffyDOS mode.** Type **@** and **RETURN** on the keyboard (this will read and display the Indus status channel). Depending on the position of the ROM selector switch, one of the following messages will be displayed:

73,JIFFYDOS 5.0 1541,00,00

73,INDUS GT C64 V1.1,00,00

Next, power off the Indus, select the alternate position on the ROM selector switch, and then power the drive back on. Type **@** and **RETURN** on the keyboard. This time the other message should be displayed.

IF YOU CANNOT GET BOTH MESSAGES TO BE DISPLAYED, FOLLOW THE INSTRUCTIONS BELOW:

4a. Toggle the selector switch back and forth several times to break through any oxidation on the switch contacts and repeat this step (Step 4) from the beginning.

4b. If exercising the switch does not work, disassemble the Indus and check the switch wire connections at the switch and at the ROM assembly for shorts or breaks. Repair any evident problems (resolder the connections, if necessary), reassemble the drive, and then repeat Step 4 again.

4c. If the problem persists, return the JiffyDOS ROM assembly to Creative Micro Designs for replacement under warranty. Please be sure to include a note explaining the problem.

5. After the directory test has been completed successfully, your drive is ready to use. If there are any more peripherals to connect to your system, shut off the disk drive and your computer, and connect them at this time.