

Chapter 1 Introduction

This manual describes the SupersPort Portable Computer, an 8088 based computer. The SupersPort Portable Computer and the SupersPort 286 Portable Computer, an 80286 based computer, appear almost identical except for the keyboard. Be sure that the unit you are working on is the SupersPort.

The SupersPort Portable Computer illustrated in Figure 1-1 is a fully PC-compatible computer. It offers full computing capabilities in a small, lightweight package. In performance and power it most closely resembles the Z-159 computer with some obvious differences. The video system uses an advanced LCD controller rather than the more common 6845 controller. It also uses the low-power 80C88-2 microprocessor and cannot accept expansion cards. Some of its other features are:

- A 25-row, 80-column liquid crystal display with a pixel resolution of 640 x 200. This display uses a twisted-phneumatic LCD display with an advanced video controller.
- A 78-key, full function PC-compatible keyboard that duplicates the functions of the standard 84-key PC keyboard. This keyboard uses several operational modes to provide maximum PC compatibility.
- A keypad interface connector (5-pin DIN). The optional external keypad accessory provides the functionality of the 101-key advanced keyboard.
- RGB and composite monochrome video outputs from a single 9-pin connector on the rear panel of the computer.
- One serial communications port (DB-9) and one parallel port (DB-25).
- An external floppy disk drive connector (DB-25).
- A real-time clock.
- A rechargeable Nicad battery for portable operation. 2.5 A/Hr rated standard with floppy disk drive units. 4.0 A/Hr rated standard with hard disk drive units.
- Two internal 720K, 3.5-inch floppy disk drives or one internal 720K, 3.5-inch floppy disk drive and one internal 20M, 3.5-inch hard disk drive. Depending on model. Also, an optional external disk drive unit is available with one 360K 5.25-inch drive.
- 640K of system memory.
- An optional Hayes 1200B- or 2400-compatible modem for data communication over telephone lines.
- A 120/240 auto-switching power line adapter.
- An optional 12-volt DC automotive cigarette lighter adapter.

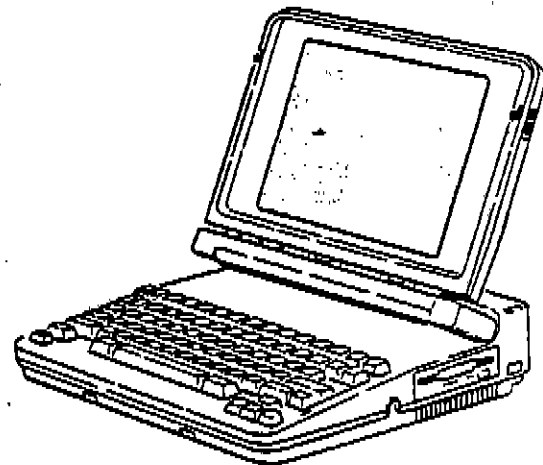


Figure 1-1. SupersPort Portable Computer

Optional Equipment

Table 1-1 lists the hardware options available for the Z-184 SupersPort computer.

Table 1-1. Hardware Options

HARDWARE OPTION	MODEL NUMBER
Expansion Chassis and Connection	ZAS-3034-EV
Expansion memory (1M)	ZA-181-63
12-volt DC lighter adapter	ZA-181-7
24-Key Numeric Keypad	ZA-180-39
Hayes 1200B-compatible modem	ZA-181-19
Hayes 2400-compatible modem	ZA-181-20

Related Publications

SupersPort Portable Computer User/Technical Manual (595-4078) — This manual, provided with the computer, describes the installation and operation of the computer for the user. It includes a brief description of the hardware, its configuration, and basic maintenance.

Intel IAPX 88 Book — This manual, published by Intel, provides information on the architecture and programming of the 80C88 CPU.

Intel IAPX 86/88, 185/188 User's Manual — This manual, published by Intel, provides programmer's reference material for the 80C88 and 8087 processors used in this computer. It also introduces the architecture of each integrated circuit.

8087 Applications and Programming for the IBM PC and Other PCs — This manual, published by Robert J. Brady Company, provides application programming information for the 8087 processor used in this computer.

MS-DOS Programmer's Utility Pack (CB-3163-30) — This software package from Zenith Data Systems contains information and software to write and assemble MS-DOS and 8088 assembly language programs. Separate packages are available for MS-DOS version 2 and MS-DOS version 3.

Specifications

CPU

Processor:	80C88-2 CMOS 16-bit processor.
Type:	16-bit internal.
Clock speed:	Switch selected: 4.77 MHz (0 wait states) or 8 MHz (1 wait state memory, 2 wait states I/O).
Coprocessor:	Optional 8087 numeric data coprocessor.
Memory:	1M dynamic RAM total standard. (256-kilobit x 4 devices). 640 system RAM, 2K scratch RAM area.
Display:	LCD device.
Capacity:	80 x 25 characters in text mode. 640 x 200 pixels in graphics mode. PC-compatible in normal text and graphics mode.
Sound:	Miniature transducer.

Input/output**Serial port:**

Asynchronous serial RS-232C port (DB-9 connector). 1 start bit, 7- or 8-bit word length, 1 or 2 stop bits. Selectable baud rates of 110, 150, 300, 600, 1200, 2400, 4800, or 9600 baud. RD, CTS, DSR, CD signals recognized. TD, RTS, DTR control signals generated. Half- or full-duplex operation.

Parallel port:

Centronics-type parallel output port (DB-25 connector).

Video:

Composite (monochrome) video and RGB (color) video with intensity signals. Output for both signals is through a single 9-pin connector.

Modem:

RJ-11 modular line and telephone connectors. Optional modems: 300/1200 baud (Hayes 1200B compatible) and 300/1200/2400 (Hayes 1200B compatible at 300 or 1200 baud and Hayes 2400 compatible at 2400 baud).

Floppy disk drives:

3.5-inch double-sided, double-density. Formatted capacity of 720K per drive, 135 tpi, 9 sectors per track. Write-protection recognized.

Optional external 5.25-inch double-sided, double-density floppy disk drive. Formatted capacity of 360K per drive, 48 tpi, 9 sectors per track. Write-protection recognized.

Hard disk drive:

3.5-inch 20M capacity.

Keyboard:

78 keys: 60-key alphanumeric typewriter arrangement with four multifunction keys, four cursor control keys, and ten function keys. Full PC-compatibility maintained by using mode switching and multiple keys to duplicate keypad and special function key operation.

Optional external keypad. Provides functionality of 101-key advanced keyboard.

Power requirements:

+18 VDC at 3.2 A maximum (57.6 watts).

External power line adapter**Input voltage:**

120/240-volt, auto-switching (90 - 260 VAC).

Input frequency:

50 or 60 Hz (48 - 62 Hz).

Current:	2 A maximum continuous under full load.
Output voltage:	16.5 VDC $\pm 5\%$ at 2 A maximum. ± 200 mv maximum ripple.
Battery:	<p>12.5 volt (2.5 Ahr) NiCad battery pack (removeable) standard - FDD systems. Thermocontrolled charging with overcharge and short circuit protection low battery indicator. Battery life 3.1 hours (heavy user duty cycle). Computer is operational while battery is recharging. Battery life - minimum 200 charge/discharge cycles. Shelf life up to 5 years. Battery pack weight - 2.2 lbs.</p> <p>12.5 volt (4.0 Ahr) NiCad battery pack (removeable) standard - HDD systems. Thermocontrolled charging with overcharge and short circuit protection low battery indicator. Battery life 3.1 hours (heavy user duty cycle). Computer is operational while battery is recharging. Battery life - minimum 200 charge/discharge cycles. Shelf life up to 5 years. Battery pack weight - 3.0 lbs.</p>
Environment	
Operating:	40° - 104° F (5° - 40° C) at 20% - 80% relative humidity (non-condensing).
Storage:	-40° - 125° F (-40° - 51° C) at 20% - 80% relative humidity (non-condensing).
Dimensions:	12.2" wide x 12.2" deep (front to back) x 3" tall at back (31.0 cm x 31.0 cm x 7.8 cm) with display closed. 11.5" tall (29.2 cm) with display in full upright position.
Weight:	9.2 lbs (4.6 kg) with standard configuration (two drives, 640K RAM).

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Chapter 2 Setup

This chapter discusses the installation and setup of the SupersPort Portable computer for service operation.

Preparation

Recommended Environment — Setup the SupersPort computer in an environment that meets the specifications listed in Chapter 1 for normal operating conditions. Remove all peripherals and non-Zenith additions to the hardware before you test the computer. This helps determine whether a problem exists in the SupersPort computer itself or in a peripheral device.

Power Requirements — Choose a dependable source of electrical power that is free of surges and transients before you test the computer. If a charged battery is used, make sure the battery voltage exceeds 12.5 volts.

Configuration Switch — The computer has one 8-position configuration switch. A small cover on the bottom of the computer cabinet protects the switch. To gain access to the switch, remove the cover. Refer to Figure 4-1 in Chapter 4 for the switch's location and to Table 4-1 for a description of each switch section. Make sure the switch settings are correct.

Power Connections

The computer can operate from any one of three different power sources: the battery pack, the external AC power line adapter (either 120 or 240 VAC) or 12 VDC. Each source requires the use of a different adapter.

The AC adapter senses the line voltage and automatically switches to operate at either 120 VAC or 240 VAC. It contains a step-down transformer and DC bridge rectifier to produce the nominal +16.5 VDC. The 12-volt DC adapter contains no circuitry and operates from an automobile cigarette lighter adapter.

The adapters connect to the DC power jack on the rear of the computer or battery pack. Figure 2-1 illustrates the location of the DC power jack and the ON/OFF switch. An adapter can be plugged into the battery pack without interrupting the computers operation. The adapter starts recharging the battery when you plug it into the battery pack.

CAUTION

Do not use the DC adapter to power the computer unless a battery pack is attached to the computer. Do not attempt to start a motor vehicle while the DC adapter is being used with the computer. The starting circuits of most motors send transients back through the power system that could damage the computer or cause it to malfunction.

Figure 2-1 illustrates the correct procedure for connecting an adapter into an operating computer. First, plug the adapter into its power source, then plug it into the computer. The adapter will not interrupt power from the battery when you plug it in. However, if you do not first plug the adapter into the power source, the adapter can load down a partially discharged battery and interrupt the computer's operation.

NOTE: If power is applied while the case is closed, an audible alarm will be heard.

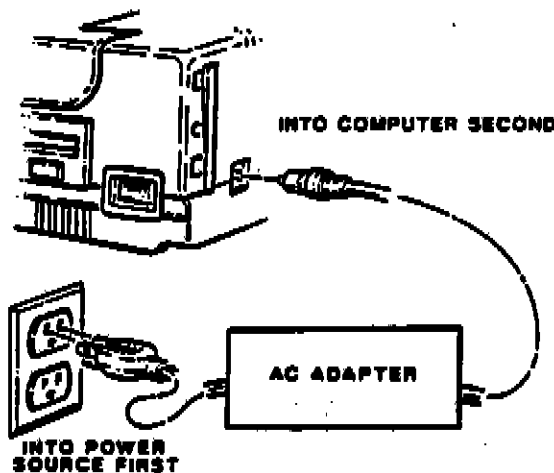


Figure 2-1. Connecting the Adapter

Operation

Refer to Figure 2-2 and slide the latches on each side of the top toward the front of the computer. Lift the display up to a vertical position. Adjust the screen for the most comfortable viewing angle.

NOTE: The latches used on the SupersPort computer will only open with the computer in a horizontal position. This prevents the top from opening during transportation and possibly damaging the computer.

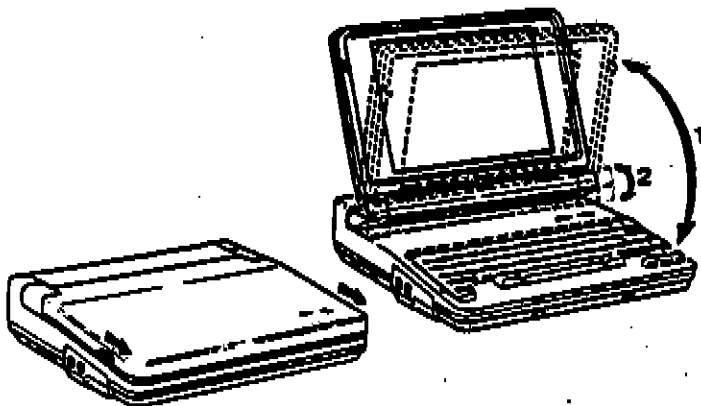


Figure 2-2. Opening the Computer

The disk drives are on the sides of the computer. The drive on the right side of the computer is drive A. Computers with a hard disk drive have the hard drive installed in the left side of the computer.

The floppy disk drives used in the SupersPort computer are equipped with an auto-lock feature to protect the read/write heads whenever there is not a disk installed in the drive.

To place a disk in the drive, position the disk with the label facing up and the metal cover toward the drive as shown in Figure 2-3. Insert the disk in the disk load slot and slide the disk all the way into the drive until it latches into place.

To release the disk from the drive, press the eject button.

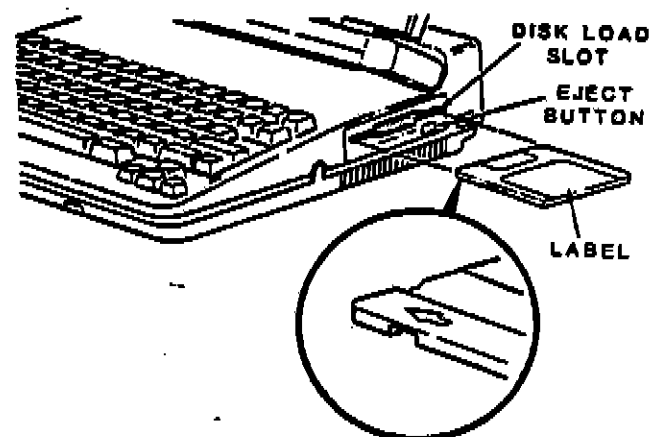


Figure 2-3. Inserting a Disk

Test Bench Power-Up

At this time you are ready to apply power to the computer. Check the following points to make sure the system is ready to have power applied.

- An AC adapter is properly connected.
- The computer display is in an upright position.
- A bootable system disk is installed in drive A.
- All peripherals are disconnected. After testing the computer, you can reattach the peripherals to check their operation.

After checking these items, apply power by sliding the ON/OFF switch to the ON position (toward the front of the computer).

The power-up sequence for the SupersPort computer is similar to other Zenith computers with a few exceptions. The following paragraphs describe this sequence as it occurs during normal system operation.

When you apply power to the computer, the backlight of the LCD display will come on. The display clears both the top and bottom halves at the same time. A cursor will rapidly flash in the upper-left corner of the display.

Next, the computer performs a number of internal power-up tests similar to other Zenith computer products. The SupersPort computer does not have internal LEDs to report the status of these tests, but the tests include the same tests in the same sequence used in other Zenith computers. If the computer completes these tests successfully, it attempts to boot the disk installed in drive A.

After approximately five seconds, the screen will blink and the disk access LED for drive A will light. On initial power-up, the system always autoboots to drive A. You cannot permanently defeat autoboot on the SupersPort computer. However, you can abort or bypass the autoboot sequence by pressing the ESC key after the boot sequence has started. When you bypass the autoboot sequence, the Monitor prompt (->) will appear on the screen.

Floppy Only Units — If a disk is not installed in drive A, a disk error message will appear. You can then reset the computer to the Monitor program by pressing the ESC key. With a bootable disk installed in drive A, the system will complete the boot-up operation.

Hard Disk Units — If a disk is not installed in drive A, the computer will attempt to load the operating system from the default partition of the hard drive. If the default partition does not contain an operating system, an error message will appear. You can then reset the computer to the Monitor program by pressing the ESC key. If the default partition contains an operating system, the system will complete the boot-up operation.

If the computer completes all operations normally, the computer will load the operating system. You can now load disk-based test software to continue testing the system. You can reset the computer at any time

by pressing CTRL-ALT-DEL. This restarts the power-up and autoboot sequence. You can reset the computer to the Monitor program by pressing CTRL-ALT-INS.

Power-Down — After testing the computer, use the following steps to power down the computer. This sequence prevents accidental damage that could extend your service time and costs.

1. Remove all disks.
2. Turn off the power to conserve battery power and prevent unintended operation of the computer (the top row of keys depress slightly when you close the computer).
3. Close and latch the computer to stabilize the cabinet.

8087 Coprocessor Installation

The SupersPort computer supports an 8087 coprocessor. To install a numeric coprocessor:

1. Turn the computer off. If the external AC power supply is attached to the computer, disconnect it.
2. Close and latch the lid.
3. Place a soft cloth on your work surface and turn the computer upside down on your work surface.
4. Carefully pry up on the configuration switch cover, as shown in Figure 2-4.

CAUTION:

ICs are complex electronic devices that can be damaged by static electricity. Once you remove the IC from its protective foam packing, do not lay the IC down or let go of it until it is installed in its socket.

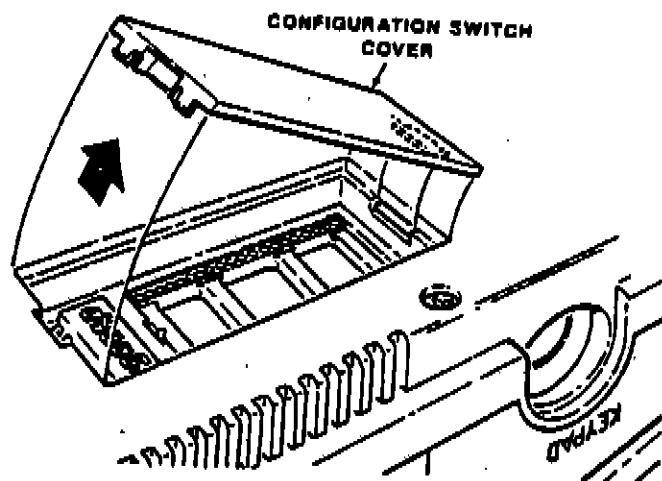


Figure 2-4. Removing the Configuration Switch Cover

5. Carefully install the 8087 coprocessor IC. Press the IC firmly into the socket.

NOTE: A pin can become bent under the IC and will appear to be correctly seated in its socket. If a malfunction occurs while testing, examine the IC (and remove it, if necessary) to be certain that all pins are correctly inserted.

6. Replace the configuration switch cover.

Chapter 3 Disassembly

Removing the Battery Pack

Refer to Figure 3-1 for the following steps.

1. Turn off the computer and disconnect all peripherals.
2. Press the battery pack button and swing the button end of the battery pack away from the computer.
3. Pull the battery pack so the catches, labeled A, are free from the computer. Set the battery pack aside.

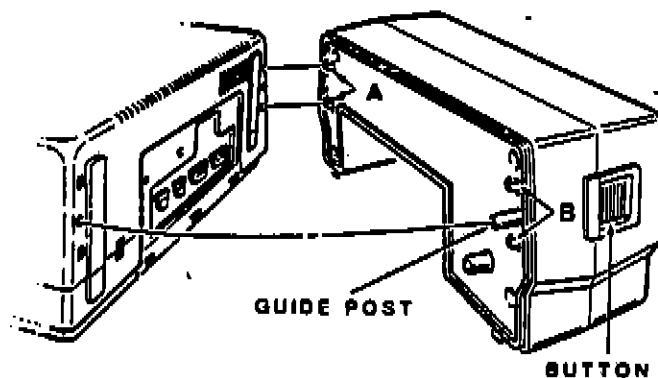


Figure 3-1. Removing the Battery Pack

Removing the Battery

Refer to Figures 3-2 and 3-3 for the following steps.

1. Remove the battery pack, as explained in the "Removing the Battery Pack" section.
2. Open the battery pack by removing the four screws, as shown in Figure 3-2.

3. Disconnect the battery connector from the battery pack 3-pin connector with the connector lock pressed, as shown in the inset of Figure 3-3. Lift the battery from the battery pack and set the battery aside.

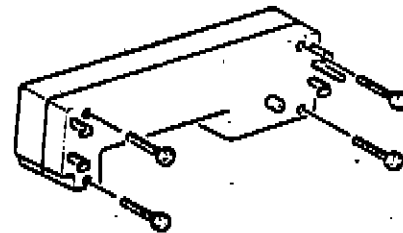


Figure 3-2. Opening the Battery Pack

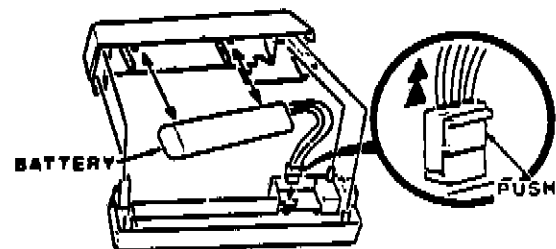


Figure 3-3. Disconnecting the Battery

Separating the Display from the Base Unit

Refer to Figure 3-4 and 3-5 for the following steps.

1. Disconnect the power cord and all peripherals.
2. Place the computer upside down on a clean, soft surface. Remove the seven screws, shown in Figure 3-4, and set the screws aside.

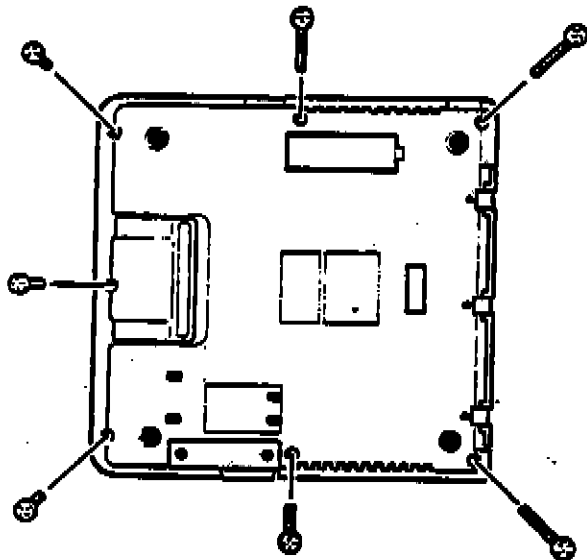


Figure 3-4. Bottom Screws

3. Carefully lift the computer from the keyboard top cover and set it down next to the top cover, as shown in Figure 3-5.
4. Place masking tape on corresponding ends of the display cable and the base unit connectors. This is to help you identify the matching ends of the connectors during reassembly. These connectors can be put together wrong (with the ends of the connectors interchanged).
5. Carefully disconnect the display cable from the base unit.

During reassembly, make sure the connectors are joined correctly (the corresponding ends which were marked with masking tape must be joined). Also, make sure the plastic hard drive cover is in place when the top and bottom covers of the base unit are joined.

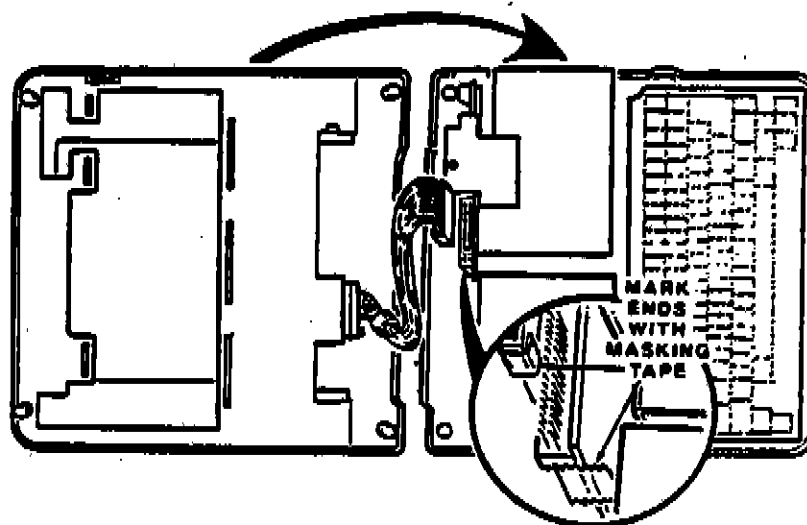


Figure 3-5. Disconnecting the Display

Removing the Keyboard

Refer to Figures 3-6 and 3-7 for the following steps.

1. Separate the display from the base unit as explained in the "Separating the Display from the Base Unit" section.
2. Remove the two screws securing the keyboard to the bottom cover, shown in Figure 3-6. Set the screws aside.
3. Lift the keyboard and lay it face down on the drives, as shown in Figure 3-7.

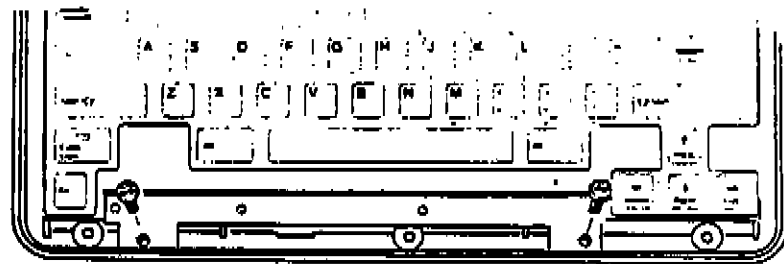


Figure 3-6. Keyboard Screws

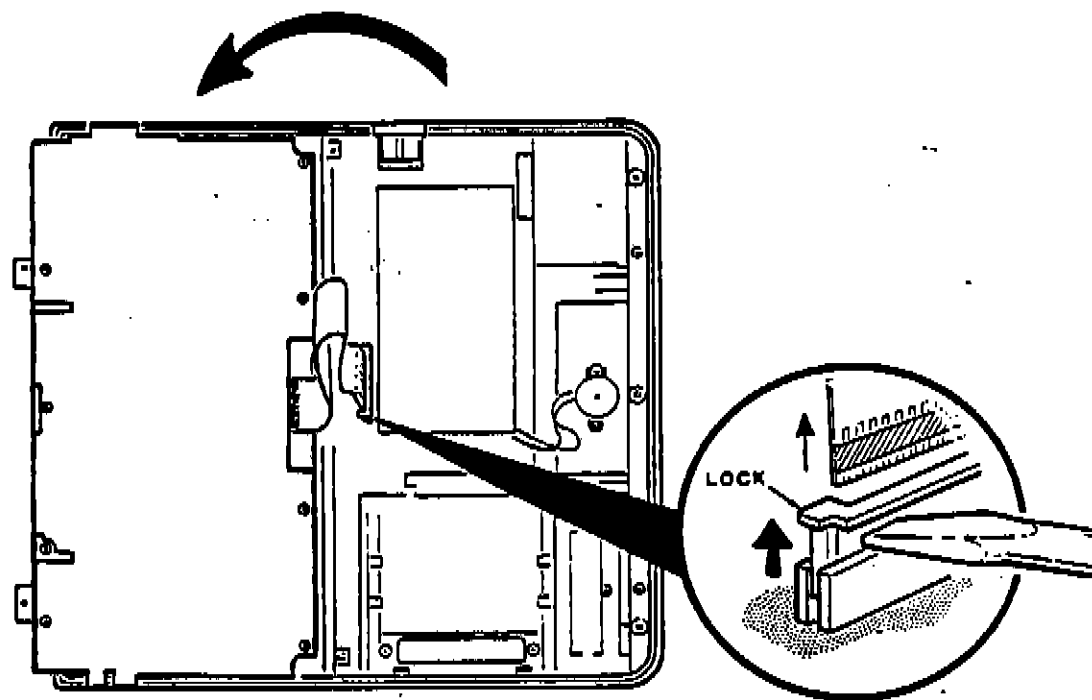


Figure 3-7. Removing the Keyboard

4. Use a small flat-blade screwdriver to lift the lock of the main board connector CN13 and pull the keyboard ribbon cable from the connector, as shown in the inset of Figure 3-7. Set the keyboard aside.

During reassembly, make sure that the keyboard ribbon cable is fully inserted into the connector before you push the connector lock down.

Removing Floppy Drive B

Refer to Figures 3-8 and 3-9 for the following steps.

Observe the position of the drive cables before disassembly so you can return the wires to their original positions during reassembly.

1. Remove the keyboard from the bottom cover, as explained in the "Removing the Keyboard" section.
2. Remove the three screws from the drive B mounting holes, as shown in Figure 3-8. Set the screws aside.

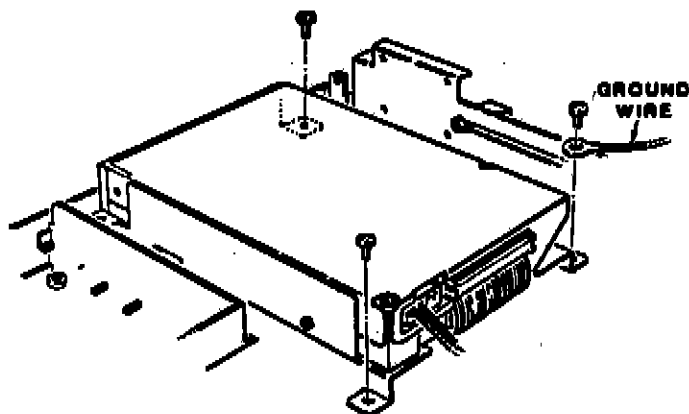


Figure 3-8. Floppy Drive B Screws

3. Lift drive B from the computer and use a small flat-blade screwdriver to remove the power connector, as shown in Figure 3-9.

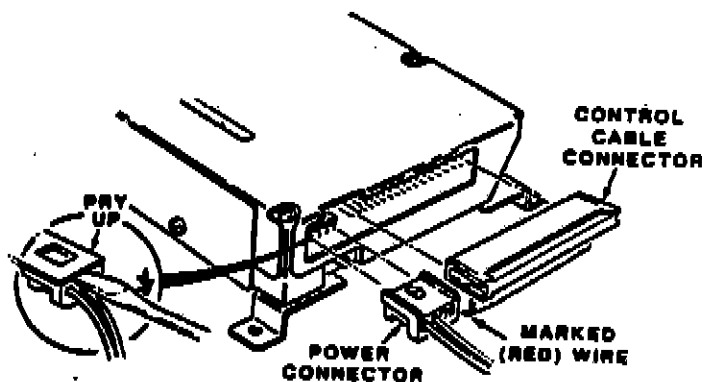


Figure 3-9. Disconnecting Floppy Drive B Power Cable

4. Use a small flat-blade screwdriver to disconnect drive B control cable. Set drive B aside.

During reassembly be sure:

- All wires are returned to their original positions.
- To reconnect the black wire ground cable lug by placing the lug under the drive B mounting screw.
- To push the power connector all the way on so that it fully engages the drive connector (the cable connector locking tab must be in its matching receptacle).
- The red wire of the control cable connector is located as shown in Figure 3-9, and the connectors are fully engaged.

Removing Floppy Drive A

Refer to Figures 3-10 and 3-11 for the following steps.

Observe the position of the drive cables before disassembly so you can return the wires to their original positions during reassembly.

1. Remove the keyboard from the bottom cover, as explained in the "Removing the Keyboard" section.
2. Remove the three screws from the drive A mounting holes, as shown in Figure 3-10. Set the screws aside.

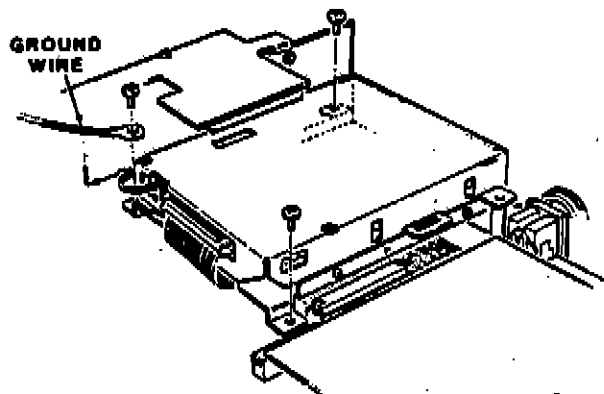


Figure 3-10. Floppy Drive A Screws

3. Use a small flat-blade screwdriver to disconnect drive A control cable.
4. Lift drive A from the computer and use a small flat-blade screwdriver to remove the power connector, as shown in Figure 3-11. Set drive A aside.

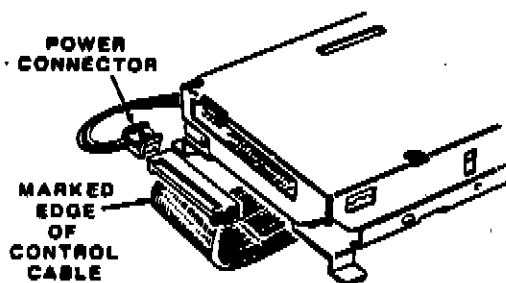


Figure 3-11. Disconnecting Floppy Drive A Power Cable

During reassembly be sure to:

- All wires are returned to their original positions.

- Reconnect the black wire ground cable lug by placing the lug under the drive A mounting screw.
- Push the power connector all the way on so that it fully engages the drive connector (the cable connector locking tab must be in its matching receptacle).
- The marked wire of the control cable connector must be located as shown in Figure 3-11, and the connectors must be fully engaged.

Removing Hard Drive B

Refer to Figures 3-12 and 3-13 for the following steps.

Observe the position of the drive cables before disassembly so you can return the wires to their original positions during reassembly.

1. Remove the keyboard from the bottom cover, as explained in the "Removing the Keyboard" section.
2. Remove the floppy drive A, as explained in the "Removing Floppy Drive A" section.
3. Remove the three screws from the drive B mounting holes, as shown in Figure 3-12. Set the screws aside.

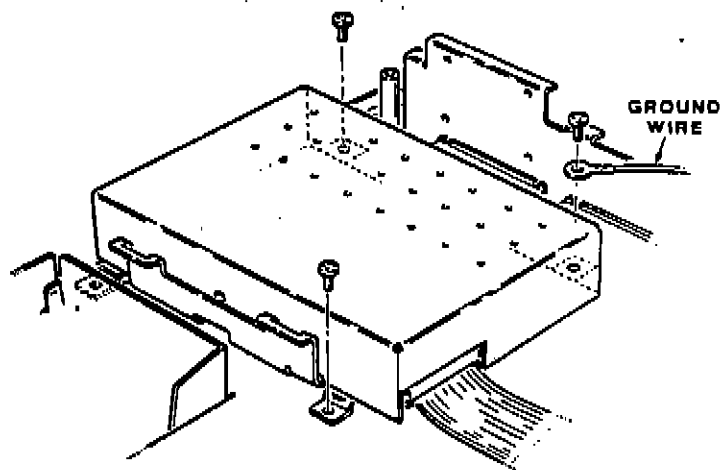


Figure 3-12. Hard Drive B Screws

4. Use a small flat-blade screwdriver to pry the ribbon cable connector from the hard drive, as shown in Figure 3-13. Set the hard drive aside.

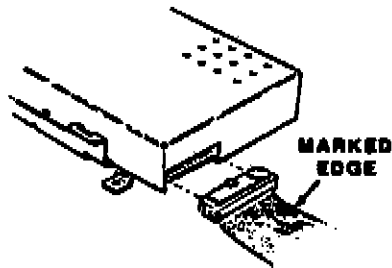


Figure 3-13. Hard Drive Ribbon Cable

Removing the Hard Drive Controller Card

Refer to Figure 3-14 for the following steps.

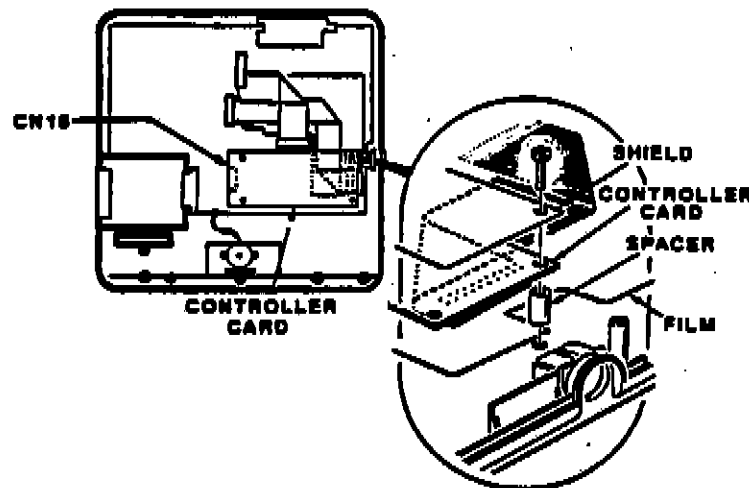


Figure 3-14. Controller Card and Ribbon Cables

1. Remove the keyboard from the bottom cover, as explained in the "Removing the Keyboard" section.
2. Remove the floppy drive A, as explained in the "Removing Floppy Drive A" section.
3. Remove the hard drive B, as explained in the "Removing the Hard Drive B" section.
4. Observe the position of the film, ribbon cables, screw, spacer, controller card, and card shield, as shown in Figure 3-14. These items will have to be returned to these positions during reassembly.
5. Remove the screw and spacer that secures the controller card and shield. Set the screw, spacer, and shield aside.
6. Disconnect the controller card from main board connector CN15 and set the controller card aside.

Removing the Power Supply

Refer to Figures 3-15 and 3-16 for the following steps.

1. Separate the display from the base unit, as explained in the "Separating the Display from the Base Unit" section.
2. Remove the two screws securing the power supply to the backplate of the computer, as shown in Figure 3-15. Set the screws aside.

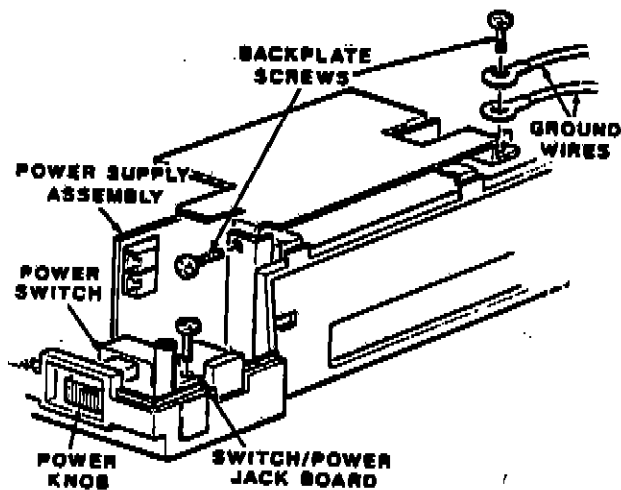


Figure 3-15. Power Supply Screws

3. Remove the screw securing the switch/power jack assembly, as shown in Figure 3-15. Set the screw aside.

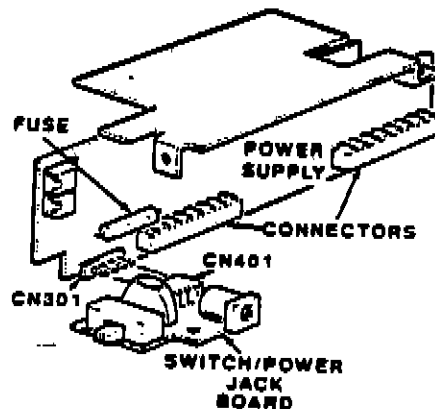


Figure 3-16. Accessing the Fuse

4. Lift the power supply from the computer.
5. Remove the switch/power jack board, as shown in Figure 3-16. The fuse on the power supply is now accessible.

During reassembly, make sure:

- The CN401 connector on the switch/power jack board is fully mated to CN301 on the power supply assembly.
- The power switch engages the power knob.
- The connectors on the power supply fully engage the connectors on the main board.
- The black ground wires are routed under the cable to the display.

Removing the Main Board

Refer to Figure 3-17 for the following steps.

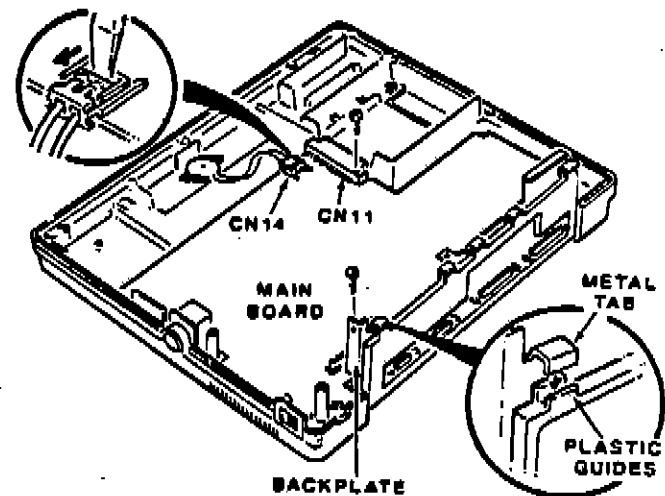


Figure 3-17. Removing the Main Board

1. Separate the display from the base unit, as explained in "Separating the Display from the Base Unit" section.
2. Remove the keyboard from the bottom cover, as explained in the "Removing the Keyboard" section.

3. Remove drive A, as explained in the "Removing Floppy Drive A" section.
4. Remove drive B, as explained in the applicable section, "Removing Floppy Drive B" or "Removing the Hard Drive B". For ZWL-184-2 computers, remove the controller card, as explained in the "Removing the Hard Drive Controller Card" section.
5. Remove the power supply, as explained in the "Removing the Power Supply" section.
6. Remove the screw securing main board connector CN11 to the bottom cover, as shown in Figure 3-17. Set the screw aside.
7. Remove the screw that secures the computer metal backplate to the bottom cover, as shown in Figure 3-17. Set the screw aside.
8. Use a small flat-blade screwdriver to disconnect the speaker connector, CN14 and lift the main board from the computer.

During reassembly, make sure all tabs on the metal computer backplate fit into the slots of the plastic back, as shown in the inset of Figure 3-17.

Opening the Display

Refer to Figures 3-18 and 3-19 for the following steps.

1. Turn off power and disconnect all peripherals.
2. Open the computer and lay the display flat facing up, as shown in Figure 3-18.
3. Remove the two screws to release the display from the top, as shown in Figure 3-18.

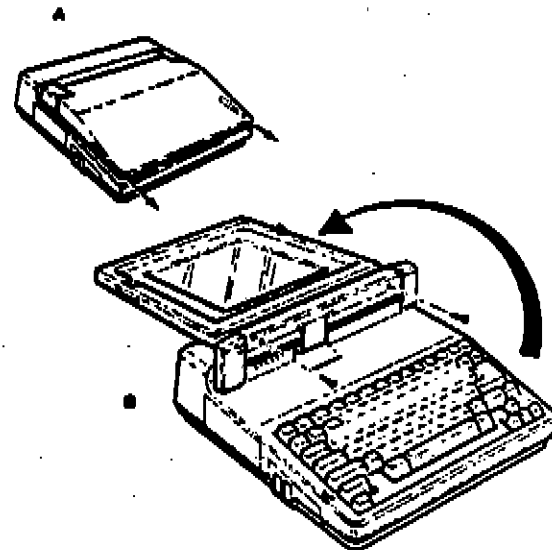


Figure 3-18. Opening the Display

4. Separate the display from the top cover and carefully rotate the display about 90 degrees. Locate the wire coming from the shield to the controls assembly, as shown in Figure 3-19.

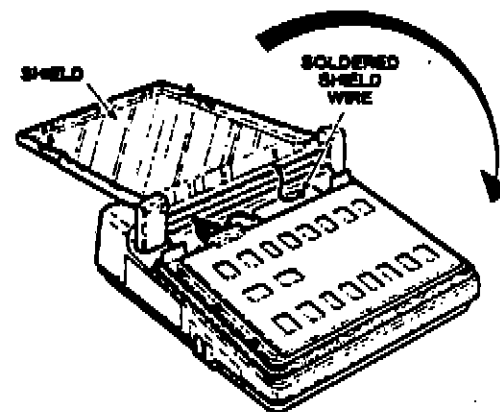


Figure 3-19. Unsoldering the Shield Wire

5. Unsolder the shield wire from the controls assembly and lay the display face down, on top of the keyboard. Observe the position of all cables connected to the controls assembly, LED assembly, and LCD assembly so that the cables can be positioned in their original locations during reassembly.

Removing the Control Assembly

Refer to Figures 3-20 and 3-21 for the following steps.

1. Open the Display, as explained in the "Opening the Display" section.
2. Remove the two screws securing the contrast and brightness control assembly to the display, as shown in Figure 3-20.

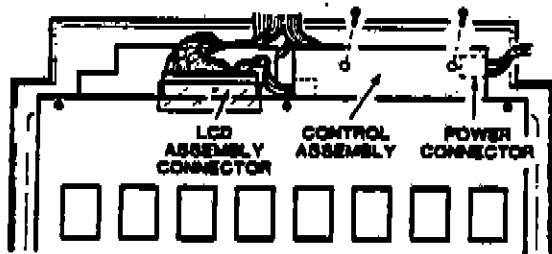


Figure 3-20. Control Assembly Screws

3. Lift the controls assembly and pry cable connectors CN601, CN602, and CN603 from the assembly with a small flat-blade screwdriver, as shown in Figure 3-21. Set the controls assembly aside.

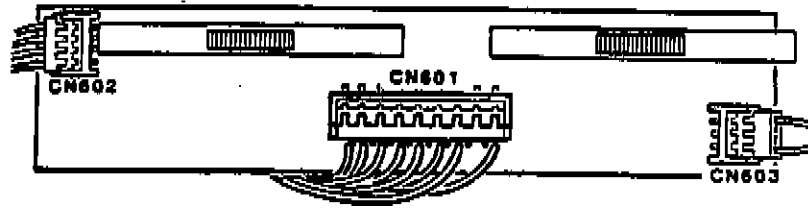


Figure 3-21. Connectors CN601, CN602, and CN603

Removing the LCD Assembly

Refer to Figures 3-22 and 3-23 for the following steps.

1. Open the display according to the "Opening the Display" section.
2. Remove and save the tape covering the LCD board connector solder terminals.
3. Disconnect the cable connector from the LCD assembly connector (see Figure 3-22).

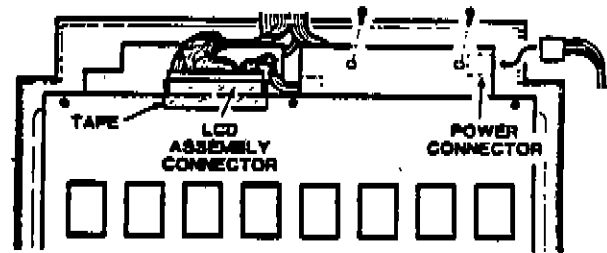


Figure 3-22. Display Board Connector

4. Disconnect the power cable connector from the contrast and brightness assembly, as shown in Figure 3-22.
5. Remove the three screws A securing the LCD assembly to the display front cover, and loosen three screws B, as shown in Figure 3-23.

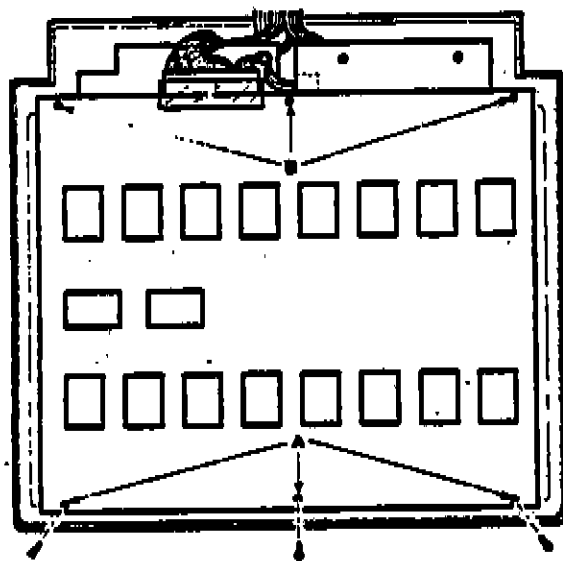


Figure 3-23. LCD Assembly Screws

6. Lift the LCD assembly from the bottom cover and set aside.

During reassembly, make sure that the tape removed earlier, covers the LCD board connector solder terminals so they do not contact the shield in the top cover.

Removing the LED Assembly

Refer to Figures 3-24, 3-25, and 3-26 for the following steps.

1. Open the display assembly according to the "Opening the Display" section.
2. Disconnect the LCD assembly connector, as shown in Figure 3-24.

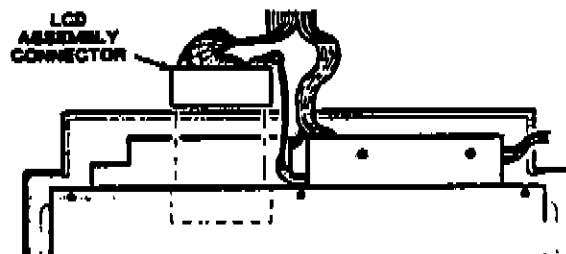


Figure 3-24. LCD Assembly Connector

3. Remove the screw securing the LED assembly to the front cover, as shown in Figure 3-25.

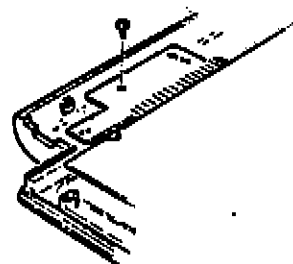


Figure 3-25. LED Assembly Screw

4. Lift and tilt the LED assembly away from the LCD assembly connector until the LED assembly clears the pins of the LCD assembly connector. The LCD assembly may have to be loosened or removed to provide the necessary clearance.
5. Use a small flat-blade screwdriver to disconnect the cable connector from CN201 on the LED assembly, as shown in Figure 3-26. Set the LED assembly aside.

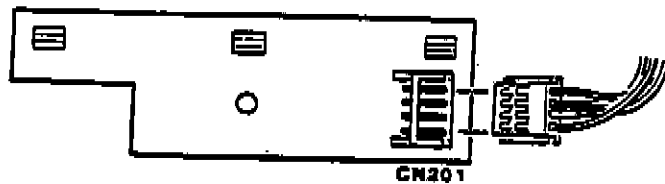


Figure 3-26. CN201 Connector

Removing the Pivot Assemblies

Refer to Figures 3-27 through 3-31 for the following steps.

1. Separate the display from the base unit, as explained in the "Separating the Display from the Base Unit" section.
2. Remove screw A with its washer and screw B from each retainer on the display assembly, as shown in Figure 3-27.

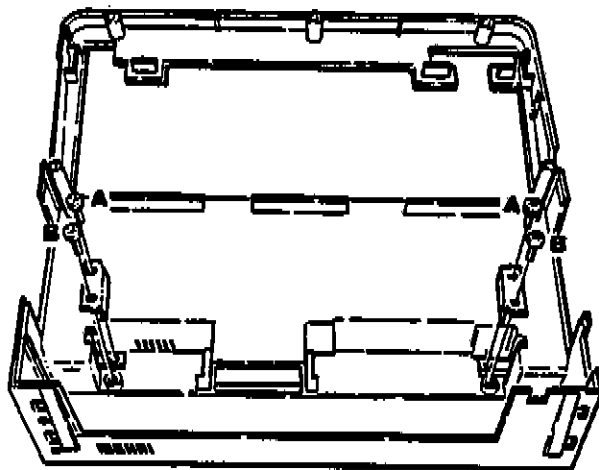


Figure 3-27. Retainer Screws

3. Turn the display assembly over and rotate it from the computer top so the display is open all the way, as shown in Figure 3-28.

4. Remove the two screws from the LCD bezel, as shown in Figure 3-28.

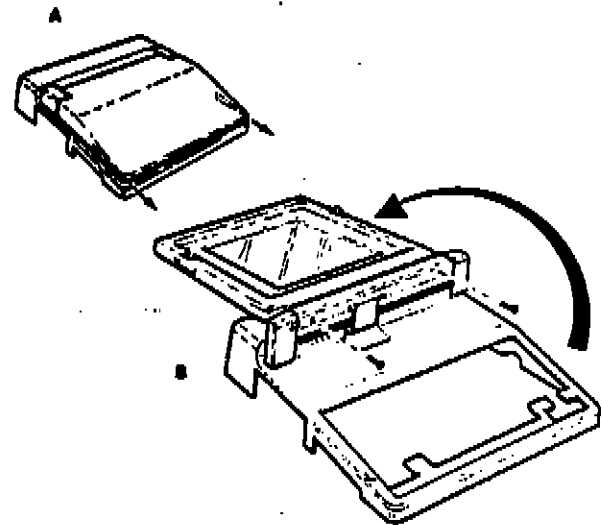


Figure 3-28. LCD Bezel Screws

5. Separate the LCD bezel from the top cover and carefully rotate the bezel about 90 degrees. Locate the wire coming from the shield to the controls assembly, as shown in Figure 3-29.

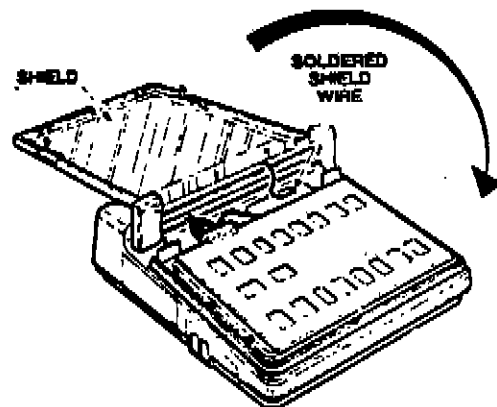


Figure 3-29. Unsoldering the Shield Wire

6. Unsolder the shield wire from the controls assembly and lay the bezel face down, on top of the keyboard. Observe the position of all cables connected to the controls assembly, LED assembly, and LCD assembly so that the cables can be positioned in their original locations during reassembly.
7. Remove the screw securing the left pivot assembly to the display cover, as shown in Figure 3-30. Set the pivot assembly and screw aside.
8. Remove the screw securing the right pivot assembly to the display cover, as shown in Figure 3-30. Set the pivot assembly and screw aside.

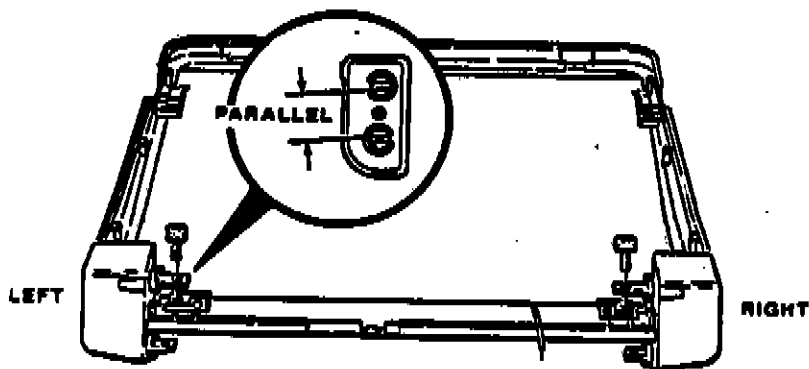


Figure 3-30. Removing the Pivot Assemblies

During reassembly be sure:

- To install the right and left pivots to their respective positions with the flats on the shafts parallel.
- The bottom shaft is in the opening on the base unit top, as shown in Figure 3-31.
- To resolder the shield ground wire.

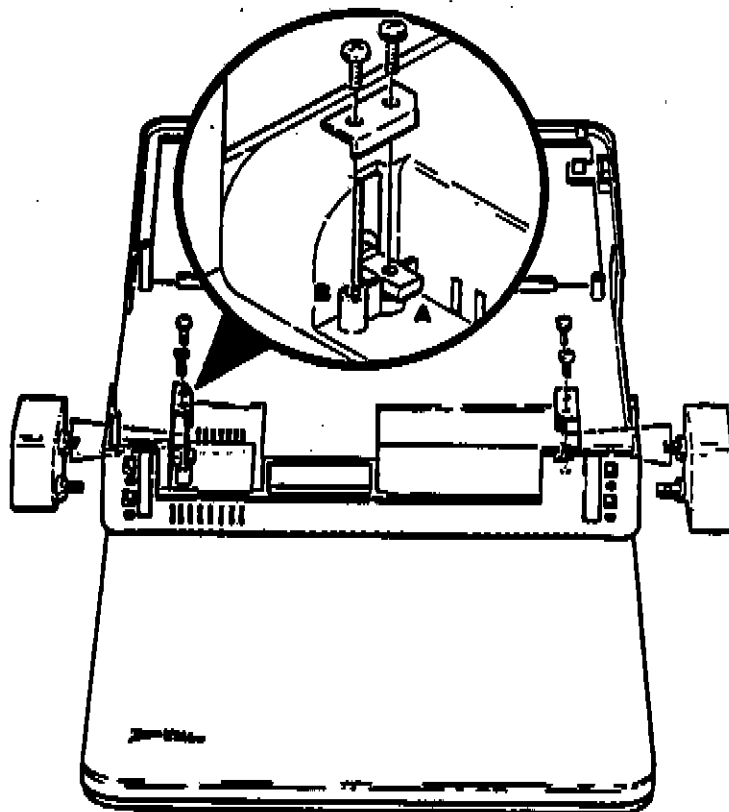


Figure 3-31. Installing the Pivot Assemblies

Removing the Cover Latches

Refer to Figure 3-32 for the following steps.

1. Open the display, as explained in "Opening the Display" section.
2. Remove the screw securing the left latch assembly, as shown in Figure 3-32. Set the latch assembly and screw aside.
3. Remove the screw securing the right latch assembly, as shown in Figure 3-32. Set the latch assembly and screw aside.

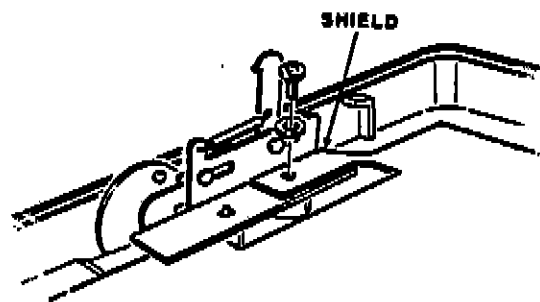


Figure 3-32. Latch Screws

During reassembly, make sure the screws pass through the hole in the shield first.

Removing the Access Door

Refer to Figure 3-33 for the following steps.

1. Turn off power and disconnect all peripherals.
2. Place the computer face down on a clean soft surface.
3. Remove the access door from the computer by lifting the door at the notch and pulling its tabs free, as shown in Figure 3-33.

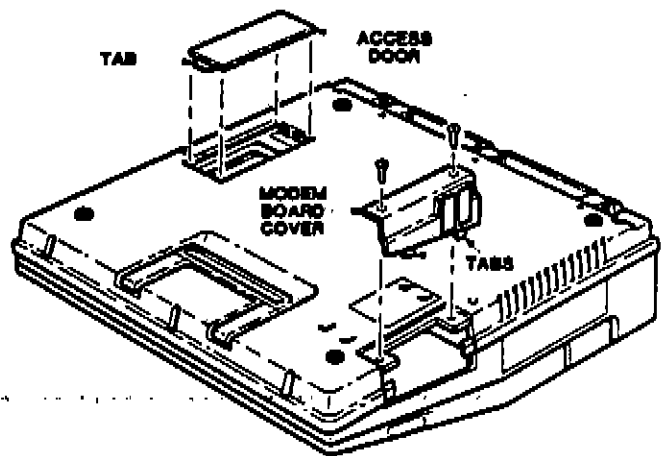


Figure 3-33. Removing the Access Door and the Modem Board Cover

Removing the Modem Board Cover

Refer to Figure 3-33 for the following steps.

1. Turn off power and disconnect all peripherals.
2. Place the computer face down on a clean soft surface.
3. Remove the two screws securing the modem board cover to the computer, as shown in Figure 3-33.

During reassembly, make sure the modem board cover tabs are on the inside of the base unit bottom.

Chapter 4 Configuration

This chapter explains how to configure the computer. The SupersPort use a single, 8-section switch to configure the computer. You can change the settings on the switch without disassembling the computer. A removable access cover, located on the bottom of the computer, protects the switch. Refer to Figure 4-1 for the switch's location and Table 4-1 for a description of each switch section. The text that follows the table explains each switch option.

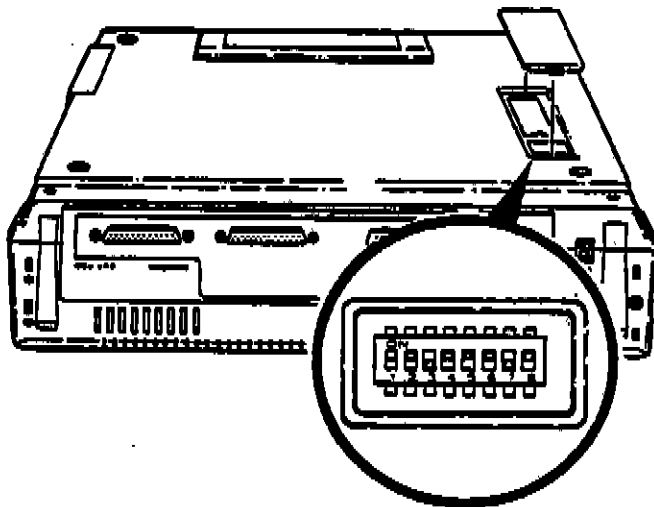


Figure 4-1. Configuration Switch Location

Table 4-1. Configuration Switch Settings.

SWITCH SECTION	DESCRIPTION	SETTINGS
1	Left Drive Active LED	
	Hard disk drive	ON**
	Floppy disk drive	OFF*
2	Drive A location	
	Internal drive A location	ON*
	External drive A location	OFF

Table 4-1 (continued). Configuration Switch Settings

SWITCH SECTION	DESCRIPTION	SETTINGS
3	CPU clock speed	
	4.77 MHz**	ON
	8 MHz	OFF*
4	Reserved for future use	
5	Display width	
	80 characters	ON*
	40 characters	OFF
6	Display type	
	Internal (LCD)	ON*
	External (CRT)	OFF
7 and 8	Floppy Drive count	
	One drive	ON, ON**
	Two drives	OFF, ON*
	Three drives	ON, OFF
	Four drives	OFF, OFF

* = factory setting

** = factory setting for computers with hard disk drives.

Left Drive Active LED — The left Drive Active LED lights when the drive in location B is accessed. When this drive is a floppy disk drive, select the OFF position. If a hard disk is installed, select the ON position.

Drive A location — Some copy-protected software requires that drive A contain the distribution disk. Software distributed this way is on 5.25-inch disks, which you cannot use in the built-in 3.5-inch disk drives. If you need to use the external disk drive as drive A, select the OFF position. Select the ON position to use the 3.5-inch disk drive in location A as disk drive A.

CPU clock speed — Some software requires the original PC speed (4.77 MHz) for software-driven timing loops. If you have software that requires the slower speed to load or operate, select the ON position. For 8 MHz operation, select the OFF position.

Display width — You can select one of two display widths: 40 or 80 characters per line. Select the ON position for a display width of 80 characters per line. Select the OFF position for a display width of 40 characters per line. 80 characters per line is the most widely used width.

Display type — The video controller in the computer supports only one type of display at a time. Select the ON position to use the built-in display. Select the OFF position to use an external monitor.

Floppy Drive count — These two switches indicate the number of floppy disk drives connected to the computer. The external drives can be either 3.5-inch or 5.25-inch floppy disk drives.

Refer to Table 4-2 for the default drive name assignments.

Table 4-2 Drive Name Assignments

SWITCH SECTIONS 7 AND 8 SETTINGS	SWITCH SECTION 2 LOCATION SETTING	INTERNAL DRIVE LOCATION	INTERNAL DRIVE LOCATION	EXTERNAL DRIVE LOCATION	EXTERNAL DRIVE PARTITIONS	HARD DISK DRIVE			
		A	B	A	B	1	2	3	4
ON, ON	ON	A and B	—	—	—	C	D	E	F
OFF, ON	ON	A	B	—	—	C	D	E	F
ON, OFF	ON	A	B	C	—	D	E	F	G
OFF, OFF	ON	A	B	C	D	E	F	G	H
ON, ON	OFF	—	—	A and B	—	C	D	E	F
OFF, ON	OFF	B	—	A	—	C	D	E	F
ON, OFF	OFF	C	B	A	D	D	E	F	G
OFF, OFF	OFF	C	B	A	D	E	F	G	H

NOTE: If you access a disk that is not present, the system generates an error message.

Optional EMS Memory Configuration

Up to 1 megabyte of RAM with EMS (Extended Memory Specification) can be added to the SupersPort.

Some software programs are designed to use this memory when available. Before this memory can be recognized and used by an application, a device driver (EMM.SYS) must be loaded into memory.

To load the EMM.SYS driver into memory, the command `DEVICE = EMM.SYS` must exist in a file named `CONFIG.SYS` and this file must exist on your bootable disk or in the root directory of the boot partition on your hard disk.

If the file `CONFIG.SYS` exists on your system, use a text editor to add the command to the file.

If the file does not exist, use a text editor or EDLINE to create the file.