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Manual abstract:

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Contents vii preface USING THIS GUIDE This Maintenance and Service Guide is a troubleshooting reference that can be used when servicing the Compaq Armada 100S and Notebook 100 Series.

Compaq Computer Corporation reserves the right to make changes to the Compaq Armada 100S and Notebook 100 Series without notice. Symbols The following words and symbols mark special messages throughout this guide: WARNING: Text set off in this manner indicates that failure to follow directions in the warning could result in bodily harm or loss of life. CAUTION: Text set off in this manner indicates that failure to follow directions in the caution could result in damage to equipment or loss of information. IMPORTANT: Text set off in this manner presents clarifying information or specific instructions. NOTE: Text set off in this manner presents commentary, sidelights, or interesting points of information. ! Using This Guide ix Technician Notes ! WARNING: Only authorized technicians trained by Compaq should repair this equipment. All troubleshooting and repair procedures are detailed to allow only subassembly/module level repair. Because of the complexity of the individual boards and subassemblies, no one should attempt to make repairs at the component level or to make modifications to any printed wiring board. Improper repairs can create a safety hazard. Any indication of component replacement or printed wiring board modifications may void any warranty or exchange allowances.

WARNING: The computer is designed to be electrically grounded. To ensure proper operation, plug the AC power cord into a properly grounded electrical outlet only. CAUTION: To properly ventilate the system, you must provide at least 3 inches (7.62 cm) of clearance on the left and right sides of the computer. ! Serial Number When requesting information or ordering spare parts, provide the computer serial number. The serial number is located on the bottom of the computer. Locating Additional Information The following documentation provides additional information about the computer: s s s s s s s Compaq Armada 100S and Notebook 100 Series documentation set Microsoft Operating System Manual Compaq Service Training Guides Compaq Service Advisories and Bulletins Compaq QuickFind Compaq Service Quick Reference Guide Compaq Website at: http://www.compaq.com x Using This Guide chapter 1 PRODUCT DESCRIPTION 1.1 Computer Features and Models The Compaq Armada 100S and Notebook 100 Series offer AMD K6-2+ 533- and AMD K6-2 475-MHz processors, 13.

3-inch SVGA TFT and 12.1-inch SVGA TFT or HPA displays, a 5.0-GB hard drive, and a 24X Max CD-ROM drive. The computer also comes equipped with a TouchPad pointing device and 4 MB of shared UMA memory. Figure 1-1.

Compaq Armada 100S and Notebook 100 Series Product Description 1-1 Models The Compaq Armada 100S and Notebook 100 Series are available in the models shown in Table 1-1. The computer serial number is located on a bar code on the bottom of the computer and identifies the model's features. A 1 Key 1 2 3 4 5 Table 1-1 Compaq Armada 100S and Notebook 100 Model Naming Convention Example: serial number A10 K2 533 T3S 5 M 64 98 Key K2 533 T3S 5 M 64 98 2 3 4 5 6 7 8 Description Brand designator Processor Processor speed Display Options A = Armada 100S N = Notebook 100 1 K2 = AMD K6-2+ and AMD K6-2 533 = 533-MHz 475 = 475-MHz T3S = 13.3-in., T2S = 12.

1-in., H2S = 12.1-in., CTFT, SVGA CTFT, SVGA HPA, SVGA 5 = 5.0 GB Hard drive size (GB) 6 Integrated M = Modem 0 = None communication 7 RAM (in MB) 64 = 64 MB 32 = 32 MB 8 Operating system 98 = Microsoft Windows 98 SB = Microsoft Small Business 2 = Microsoft Word 2000 P = Personal 1 The Compaq Armada 100S uses an AMD K6-2+ 533-MHz processor. The Compaq Notebook 100 uses an AMD K6-2 475-MHz processor. 1-2 Product Description Table 1-2 Compaq Armada 100S and Notebook 100 Models 1 A A A A A A A A A A A A A A A A A A A N N N N N N N N N N N N N 2 K2 K2 K2 K2 K2 K2 K2 K2 K2 K2 K2 K2 K2 K2 K2 K2 K2 K2 K2 K2 K2 K2 K2 K2 K2 K2 K2 K2 K2 K2 K2 K2 3 533 533 533 533 533 533 533 533 533 533 533 533 533 533 533 533 533 475 475 475 475 475 475 475 475 475 475 475 475 4 T3S T3S T3S T3S T2S T2S T2S T2S T2S H2S H2S H2S H2S H2S H2S H2S H2S H2S T2S T2S T2S T2S T2S H2S H2S H2S H2S H2S H2S H2S 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 6 M M M M M M M 0 M M M M 0 M M M M M M M 0 M M M M 0 M M M 7 64 64 64 64 64 64 64 64 64 32 32 32 32 32 64 64 64 64 64 64 64 64 64 32 32 32 32 32 64 64 8 98/2 98/SB 98 98/P 98/2 98 98 98/2 98/SB 98/2 98 98 98/2 98/SB 98/2 98/2 98 98/2 98 98 98/2 98/SB 98/2 98 98 98/2 98/SB 98/2 98/SB SKU# 200524-XX4 200527-XX4 201166-XX4 200516-XX4 200525-XX4 200515-XX4 200515-XX5 200520-XX4 200522-XX4 200514-XX4 200517-XX4 200517-XX5 200519-XX4 200521-XX4 200523-XX4 213498-XX4 213498-XX5 201395-XX4 175844-XX4 180641-XX4 180641-XX5 180097-XX4 175599-XX4 175843-XX4 180640-XX4 180640-XX5 180096-XX4 175598-XX4 180095-XX4 180094-XX4 Config.

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Code FQ61 FQ62 FQ64 FQ63 FQ51 FQ52 FQ52 FQ53 FQ54 FQ41 FQ42 FQ42 FQ43 FQ44 FQ45 FQ48 FQ48 FQ47 FFG1 FFG2 FFG2 FFG3 FFG4 FFF1 FFF2 FFF2 FFF3 FFF4 FFF5 FFF6 Product Description 1-3 Features The Compaq Armada 100S and Notebook 100 Personal Computers have the following features: s Processors: s The Compaq Armada 100S features an AMD K6-2+ 533-MHz processor with 64 KB integrated L1 cache and 128 KB integrated L2 cache; The Compaq Notebook 100 features an AMD K6-2 475-MHz processor with 64 KB integrated cache and 512 KB external L2 cache. s s 64-MB 100-MHz SDRAM, expandable to 192 MB, or 32-MB 100-MHz SDRAM, expandable to 160 MB, varying by computer model. The Compaq Armada 100S and Notebook 100 also feature a SODIMM memory expansion slot, capable of accepting a memory expansion board of 32-, 64-, or 128-MB.

s By pressing Fn+F12. By closing the top cover, if the Cover Close option is set to Suspend in the SCU program. Suspend-to-Disk (Hibernation) When the computer suspends to disk, the system preserves all the running application programs as a file in a Suspend-to-Disk partition on the hard disk. The computer then turns off automatically. When the computer is powered on, the system reads the file from the Suspend-toDisk partition back into memory, returning the computer to the state it was in before it was suspended. If there is no Suspend-to-Disk partition on the hard disk, use thrline indicates Disabled. Enabled Product Description 1-11 Components Menu The Components menu changes settings on various components such as COM and LPT ports. Components Menu Item COM Port Function Assigns COM1 and COM2 to specific functions. In general, assign COM1 to RS-232 (the serial port); then assign COM2 to IR. Mode Setting for COM B--Sets the IR mode for COM B.

The mode depends on the type of device that the computer will communicate with. Default LPT Port Sets the address for the LPT (parallel) port. This system supports Enhanced Parallel Port (EPP) and Extended Capabilities Port (ECP) standards. If the port is set to ECP, choose a DMA channel setting for that port. Sets the function of the numeric keypad.

If you disable this option, the numeric keypad on the computer will not function, even if the Num Lock indicator is on. However, an external keyboard is not affected by this feature. Sets the repeat rate and delay time of keystrokes. The Key Repeat Rate sets the repeat rate while holding down a key. The Key Delay item sets delaying time between key repeats.

Enabled Keyboard Numlock Keyboard Repeat 1-12 Product Description Power Menu The Power menu contains Power Management settings that help conserve system power. Enable Power Saving--This is the master control for the Power Management features. If disabled, all Power menu items with the exception of Suspend Controls are automatically disabled. Timeout Settings--Sets up timeout functions. Note that some operating systems such as Windows 98 have built-in APM/ACPI configurations that could override these settings. Power Menu Item Video Timeout Function Sets the timeout period for the monitor to power down if not used during a set period. The monitor powers up again when a key is pressed. Available options are 30 Sec, 2 Min, 5 Min, 10 Min, 15 Min, and Always On. Sets the timeout period for the hard disk to power down if not accessed during the set period. The hard disk powers up again when next accessed.

Available options are 30 Sec, 1 Min, 1.5 Min, 2 Min, and Always On. Sets the timeout period for the whole system to power down if not in use during a specified period. The system powers up again once any key is pressed. Available options are 1 Min, 2 Min, 4 Min, 6 Min, 8 Min, 12 Min, 16 Min, and Always On. continued Disk Timeout Global Timeout Product Description 1-13 Power Menu continued Item Function Monitor Video Activity Sets up the system to monitor video activity. If enabled, any activity on the screen (such as displaying a movie) prevents the monitor from powering down. Available options are Enabled or Disabled. Sets the timeout period for the system to enter Suspend Mode if not in use during a preset period. The Suspend Mode is determined by the Suspend Type item in the Suspend Controls submenu.

Choices may be Suspend-toRAM or Suspend-to-Disk. When Suspend-to-RAM (Standby) mode is initiated, several subsystems enter standby or power-off mode to conserve power. The system wakes up when a key is pressed. Resume Timer and Ring Resume items will also wake the system from Suspend-to-RAM mode. When Suspend-to-Disk (Hibernation) mode is initiated, the system preserves all running application programs as a file in a suspend-to-disk partition on the hard disk.

Available options are 1 Min, 5 Min, 10 Min, 20 Min, 30 Min, and Never. Suspend-toDisk Sets the timeout period for the system to enter Suspend-to-Disk mode if not in use during a set period. When Suspend-to-Disk mode is initiated, the system preserves all running application programs as a file in a suspend-to-disk partition on the hard disk. Available options are 1 Min, 5 Min, 10 Min, 20 Min, 30 Min, and Never. The Suspend-to-Disk item functions regardless of the Suspend Timeout setting and the Suspend Type setting in the Suspend Controls submenu.

If the timing of this item is shorter that that of Suspend Timeout, the system directly enters Suspend-to-Disk mode if inactive for the timing. Suspend Timeout 1-14 Product Description Suspend Controls--Manages several suspend features. Suspend Controls Menu Item Power Button Function Function Sets the function of the Power button. Available options are Power On/Off and Suspend/Resume. If this item is set to Suspend/Resume, holding down the button for 5 seconds will turn off power. Sets the sequential event when the top cover is closed with power still available. The available options are Blank LCD and Suspend/Resume. Sets the suspend mode the system enters if it stays inactive for the time specified in the Suspend Timeout item. Lid Switch Function Suspend Type Ring Resume--Enables or disables the system from waking up from Suspend-to-RAM mode when the modem receives an incoming call. Resume Timer--Sets the date and time the system resumes from suspend mode.

The default setting is Disabled. Advanced CPU Controls--Sets up further advanced CPU functions. Advanced CPU Controls Menu Item Clock Control Mechanism Function Sets the CPU activity under normal condition. The available options range from 6% to full speed (Disabled). Note that although this item sets the usage of CPU resources, the CPU can still reach its full speed if the system is under a heavy job load. Enables whether the system can take advantage of the Southbridge chipset to help transmit data, thereby reducing the CPU job load. Clock Run Enable Product Description 1-15 Exit Menu The Exit pull-down menu displays ways of exiting SCU. This menu also restores default settings and displays BIOS version information.

When troubleshooting the Compaq Armada 100S and Notebook 100, it is important to obtain all facts about the error condition. @ @Obtain all error codes or beep codes.

Once all facts have been gathered, determine possible causes and search for issues. 1-16 Product Description 1.5 Compaq Configuration Record Utility Compaq Configuration Record Utility is an online information-gathering tool meant to replace the DOS-based Inspect utility. It runs from within Windows and gathers critical hardware and software information from various sources to give a complete view of the computer. The Compaq Configuration Record Utility delivers comprehensive configuration capture, provides a means for automatically identifying and comparing configuration changes, and has the ability to maintain a computer configuration history.

The information can be saved as a history of multiple sessions. The Compaq Configuration Record Utility captures data as sessions; a session is defined as an organized group of data describing the configured state of the system at a specific point in time. The session information is maintained in a log file, located in the same directory as the executable portion of the program. This file contains all of the ASCII text configuration information captured for a session. This file can be analyzed locally by the Configuration Record Utility, or it can be sent to another location such as a help center, or to Compaq.

The sessions are organized as two distinct types: s Active--The Active session (referenced as session now.log) is the most recent information captured. The utility overwrites this session each time a sample is taken. Original--The Original session (referenced as session base.log) is the first session sampled. The Compaq Configuration Record Utility will treat this session as a "master configuration," and the utility will never overwrite this session. s Product Description 1-17 1.6 Information Gathering The comparison feature provides several reports that enable the administrator to specify the particular type and level of information that will be most useful in a particular case. The different report types available are Show Only Differences and Show Details and Differences. Show Only Differences Report This feature provides a mechanism for filtering the level of information displayed when comparing two different configuration snapshots (or sessions).

For example, when a user requests the Configuration Record Utility to generate a comparison of sessions using the "differences" filter, the tool automatically compares those two sessions (which are already stored in a Configuration Record file). It then generates a report that shows only the differences between the two generations. In this case, the differences report will include all information recorded, such as changes in amounts of free memory. Reviewing the differences occurring between different configuration snapshots can help identify trends causing intermittent computer problems, such as low memory resources. 1-18 Product Description Show Details and Differences Report This report provides the level of detail that is necessary for service personnel to get a clear picture of the system configuration. It provides a much greater depth of information on hardware, operating system services, and drivers that are running on the computer. The Compaq Configuration Record Utility is supported under Windows 95, Windows 98, and Windows NT 4.0. This utility is available on SoftPaq. Product Description 1-19 1.

7 Diagnostics Using Compaq Diagnostics s Access Compaq Diagnostics for Windows by selecting Start!Settings!Control Panel!Compaq Diagnostics. To select a category, choose one of two methods: s s s Select the Categories menu, then select a category from the drop-down list. Select a category icon on the toolbar. To run diagnostic tests: 1. Select the Test tab.

2. In the scroll box, select the category or device you want to test. 3. Select the Quick, Complete, or Custom test type. 4.

Select the Interactive or Unattended test mode. 5. Select the Begin Testing button. 6. View test information by selecting a report from the Status, Log, or Error tab. s To print the information or save it to a drive, select the File menu, then select Print or Save As. 7. To exit, select the File menu!Exit. NOTE: Compaq Diagnostics may intermittently fail the CPU speed test in systems with AMD PowerNow! Installed. 1-20 Product Description 1.

8 Design Overview This section presents a design overview of key parts and features of the computer. Refer to Chapter 3 for the illustrated parts catalog and Chapter 5 for removal and replacement procedures. The system board provides the following device connections: s Memory expansion board s Hard drive s Display s Keyboard/TouchPad s Audio s AMD K6-2+ and AMD K6-2 processor s Fan s PC Cards s Modem or modem/NIC The Compaq Armada 100S and Notebook 100 use an electrical fan for ventilation. The fan is controlled by a temperature sensor and is designed to turn on automatically when high temperature conditions exist. These conditions are affected by high external temperatures, system power consumption, power management/battery conservation configurations, battery fast charging, and software applications. Exhaust air is displaced through the ventilation grill located on the right side of the computer. CAUTION: To properly ventilate the computer, do not allow the fan intake vent on the bottom of the computer to be blocked. Product Description 1-21 1.9 Computer External Components The external components on the display and right side of the computer are shown in Figure 1-2 and described in Table 1-4. Figure 1-2.

Display and Right Side Components Table 1-4 Display and Right Side Components Item 1 Component TouchPad and touch buttons Keyboard Stereo speakers Power state lights Display release latch Microphone Activity/Lock lights Volume control CD-ROM drive Infrared port Diskette drive Product Description Function The TouchPad moves the mouse cursor, selects, and activates. The touch buttons function like the left and right mouse button on an external mouse. Provides alphanumeric keys, numeric keypad, 12 function keys, and special fn keys. Produce high-quality stereo sound. Indicate AC/battery power and charge status.

Opens the computer. Allows for audio input. Indicate mass storage device activity and keyboard lock status. Adjusts the volume of the stereo speakers. Accepts CD-ROM disks.

Provides wireless communication between the computer and another infrared-equipped device using an infrared beam. Accepts 3.5-inch diskettes. 2 3 4 5 6 7 8 9 10 11 1-22 The external components on the left side of the computer are shown in Figure 1-3 and are described in Table 1-5. Figure 1-3. Left Side Components Table 1-5 Left Side Components Item 1 2 3 4 5 Component Security cable slot Power button RJ-11 jack (internal modem models only) PC Card slot Battery pack Function Accepts an optional security cable to secure the computer to a fixed object to prevent theft.

Turns the computer on or off or exits Standby. Connects the modem cable to an internal modem. Supports 32-bit (CardBus) and 16-bit PC Cards. Accepts either the standard 9-cell NiMH or optional 8-cell Li ion battery packs.

The battery pack supplies power to the computer if external power is not available. Product Description 1-23 The external components on the rear of the computer are shown in Figure 1-4 and described in Table 1-6. Figure 1-4. Rear Components Table 1-6 Rear Components Item Component 1 2 Mono microphone jack Stereo speaker/ headphone jack Function Connects a mono microphone, disabling the built-in microphone. Connects stereo speakers, headphones, or headset. This jack is driven by an amplifier and has volume control. The internal computer speakers are turned off when external speakers or headphones are plugged into this jack. Connects USB devices, such as cameras for video conferencing, or hubs which connect multiple USB devices. The USB connector is a powered hub. When running Windows 98, any combination of up to five powered or unpowered hubs can be connected in any sequence, as long as two unpowered hubs are not connected next to each other.

When running a lower version of Windows, or if using a different operating system, up to two hubs can be connected. Connects an optional parallel device, such as a printer. @@Connects an optional full-sized keyboard or a mouse. Both external mouse and computer pointing device are active. @@@@@@Obtain all error codes or beep codes.

@@Is the computer turned on and is the power indicator illuminated? Are all cables connected properly and secure? @@Does the computer have all necessary device drivers? Have printer drivers been installed for each application? Was the Windows operating system properly exited? @@@@The POST alerts you to problems by displaying error messages. @@@@@@Therefore, if the test fails, you can determine where the problem occurred by reading the last value written to POST 378H by the PIO Debug Board Plug at the PIO port. The following table lists error codes in sequential order on the PIO Debug Board. Table 2-1 Error Codes Code 01h 02h 03h 04h 05h 06h 07h 08h 09h 0Ah 0Bh 0Ch 0Fh 10h 11h Description Start of boot loader sequence. Initialize chipset.

Memory sizing. Perform conventional RAM (1 640K) test with crossed pattern R/W. Move boot loader to the RAM. Start point of execution of boot loader in RAM. Shadow screen BIOS. Initialize clock synthesizer. Initialize audio controller. Detect internal ISA modem. Proceed with normal boot. Proceed with crisis boot.

DRAM sizing. Initial L1, L2 cache, make stack and diagnose. @@Initialize the chipset (DRAM). Search for ISA bus VGA adapter. Reset counter/timer 1, excite the RAM. User register config. Dispatch to 1st 64K RAM test. Checksum the ROM. Reset PIC's (8259s). Initialize video adapter(s). Initialize video (6845 regs). Initialize color adapter. Initialize monochrome adapter. Test 8237A page registers. Perform keyboard self-test. Test and initialize keyboard controller. Check if RAM valid. Test battery fail & X-SUM. Test DMA controllers. Initialize 8237 controller. Initialize interrupt vectors table. RAM quick sizing. Protected mode entered safely. RAM test completed. Protected mode exit successful. Setup shadow. Prepare to initialize video. Search for monochrome adapter. @@Special init of keyboard ctlr. Test if keyboard present.

Test keyboard interrupt. Test keyboard command Byte. Test, blank, and count all RAM. Protected mode entered safely (2). RAM test complete. Protected mode exit successfully. Update keyboard output port to disable gate of A20. Setup cache controller. Test if 18.2Hz periodic working. Initialize BIOS data area at 40.0. Initialize the hardware interrupt vector table. Search and initialize the mouse. Update NUMLOCK status. OEM initialization of COM and LPT ports. Configure the COM and LPT ports. Initialize the diskette drive. Initialize the hard disk. OEM's unit of PM with USB. Initialize additional ROMs. Update NUMLOCK status. Test for coprocessor installed. OEM's unit of power management (check SMI). OEM's functions before boot (PC Card, CardBus). Dispatch to operation system boot. @@@@@@@@@@Visually inspect the SDRAM socket for bent pins. @@@@Use the SCU to verify. Ensure that the diskette drive is connected properly. @@Ensure that the CD-ROM drive is connected properly.

@@@@Ensure that the USB driver is installed. @@@@Ensure that the COM port is set properly. @@Check the LPT port settings. @@Ensure that the appropriate software drivers are installed. Try another working speaker, cable, and CD-ROM. @@@@@@@@@@English -061 Italian -001 U.S. English -291 Japanese Top cover 176043-001 Continued Illustrated Parts Catalog 3-3 Computer System Major Components (continued) 3-4 Illustrated Parts Catalog Table 3-1, Spare Parts: Computer System Major Components continued Item Description Spare Part Number 6 7 8 9 EMI shield TouchPad 5.0-GB hard drive System board 64-MB SDRAM (used only with config. codes beginning with "FQ5" and "FQ6") 64-MB SDRAM (used only with config. codes "FQ45", "FQ47", and "FQ48") 64-MB SDRAM (used only with config. codes "FFG1" through "FFG4") 64-MB SDRAM (used only with config. codes "FFF5" and "FFF6") 32-MB SDRAM (used only with config. codes "FQ41" through "FQ44") 32-MB SDRAM (used only with config. codes "FFF1" through "FFF4") Diskette drive, 1.

44-Megabyte Cable Kit, includes: Diskette drive cable Modem cable CD-ROM drive cable Base assembly Battery pack NiMH (standard) Li ion (available only as an option) Processor board AMD K6-2+ 533-MHz processor (used only with config. codes beginning with "FQ") AMD K6-2 475-MHz processor (used only with config. codes beginning with "FF") 24X CD-ROM drive 56 Kbps modem Fan assembly 176002-001 176044-001 176040-001 207657-001 207656-001 189047-001 176035-001 207655-001 176034-001 176047-001 176004-001 10 11a 11b 11c 12 13 14 176042-001 174373-001 174372-001 203099-001 176036-001 176039-001 176052-001 176051-001 15 16 17 Illustrated Parts Catalog 3-5 3.3 Miscellaneous Plastics Kit Figure 3-3. Miscellaneous Plastics Kit Components Table 3-2 Miscellaneous Plastics Kit Components Spare Part Number 176048-001 Item 1 2 3 4 5 6 7 Description Left and right hinge covers Speaker housing RJ11 cover PC Card door I/O cover Modem cover Fan/CPU cover 3-6 Illustrated Parts Catalog 3.

4 Hardware Kit Components Figure 3-4. Hardware Kit Components Table 3-3 Hardware Kit Components Spare Part Number 176049-001 Item 1 2 3 4 Description Speakers (2) Real time clock battery Processor bracket Modem shield Illustrated Parts Catalog 3-7 3.5 Cable Kit Components Figure 3-5. Cable Kit Components Table 3-4 Spare Parts: Cable Kit Components Spare Part Number 176004-001 Item 1 2 3 Description Diskette drive cable Modem cable CD-ROM drive cable 3-8 Illustrated Parts Catalog 3.

6 Mass Storage Devices Figure 3-6. Mass Storage Devices Table 3-5 Spare Parts: Mass Storage Devices Item 1 2 3 Description 5.0-GB hard drive 24X CD-ROM drive (standard) Diskette drive, 1.44-Megabyte Spare Part Number 176040-001 176039-001 176047-001 Illustrated Parts Catalog 3-9 3.7 Miscellaneous Table 3-6 Spare Parts: Miscellaneous (Not Illustrated) Description AC Adapter, 50 W Automobile Adapter Compaq Armada 100S and Notebook 100 Maintenance & Service Guide Logo kit Memory expansion board 128 MB 64 MB 32 MB Miscellaneous Screw Kit PC Cards Compaq Microcom 420 56K Global Modem Compaq Netelligent 10/100 TX network card Compaq Microcom 500 10/100 +56K combination modem/network interface card Power cord, black, 6 feet) Australian -011 Korean Danish -081 Swiss International -021 U.K.

English Italian -061 U.S. English Japanese -291 Return Kit Spare Part Number 174371-001 192378-001 190369-001 176003-001 179966-001 179965-001 179964-001 176050-001 317900-001 335506-B21 321550-B21 246959-XXX -AD1 -AG1 -031 -001 159541-001 3-10 Illustrated Parts Catalog chapter 4 REMOVAL AND REPLACEMENT PRELIMINARIES NOTE: In most countries, there are no options for warranty repair other than "whole unit return." Check with your Geo Service Manager to determine if warranty repair costs are covered before ordering spare parts or performing repairs. This chapter provides essential information for proper and safe removal and replacement service. 4.1 Required Tools You will need the following tools to complete the removal and replacement procedures: s s Magnetic Phillips screwdriver Tool kit (includes connector removal tool, loopback plugs, and case utility tool) 4.2 Service Considerations Listed below are some of the considerations that you should keep in mind during disassembly and assembly procedures. IMPORTANT: As you remove each subassembly from the computer, place it (and all accompanying screws) away from the work area to prevent damage. Plastic Parts Using excessive force during disassembly and reassembly can damage plastic parts.
Use care when handling the plastic parts. Apply pressure only at the points designated in the maintenance instructions. Removal and Replacement Preliminaries 4-1 Cables and Connectors Cables must be handled with extreme care to avoid damage. Apply only the tension required to unseat or seat the cables during removal and insertion. Handle cables by the connector whenever possible.
In all cases, avoid bending, twisting, or tearing cables. Ensure that cables are routed in such a way that they cannot be caught or snagged by parts being removed or replaced. Handle flex cables with extreme care; they tear easily. CAUTION: When servicing the computer, ensure that cables are placed in their proper location during the reassembly process. @@@@@@@Ensure that the CD-ROM tray is closed.
@@While handling a drive, avoid touching the connector. @@Avoid dropping drives from any height onto any surface. After removing a hard drive, place it into a static-proof bag. @@Do not use excessive force when inserting a drive into a drive bay. @@@@Circuitry design and structure determine the degree of sensitivity. @@@@Often the spark is neither felt nor heard, but damage occurs. An electronic device exposed to electrostatic discharge may not be affected at all and can work perfectly throughout a normal cycle. It may function normally for a while, then degrade in the internal layers, reducing its life expectancy. 4.5 Packaging and Transporting Precautions Use the following grounding precautions when packaging and transporting equipment: s To avoid hand contact, transport products in static-safe containers such as tubes, bags, or boxes.

Protect all electrostatic-sensitive parts and assemblies with conductive or approved containers or packaging. Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations. Place items on a grounded surface before removing them from their container. Always be properly grounded when touching a sensitive component or assembly. Place reusable electrostatic-sensitive parts from assemblies in protective packaging or non-conductive foam. Use transporters and conveyers made of antistatic belts and roller bushings. Ensure that mechanized equipment used for moving materials is wired to ground, and that proper materials were selected to avoid static charging. When grounding is not possible, use an ionizer to dissipate electric charges. s s s s s s Removal and Replacement Preliminaries 4-3 4.6 Workstation Precautions Use the following grounding precautions at workstations: s Cover the workstation with approved static-dissipative material (refer to Table 4-2 later in this chapter).
Use a wrist strap connected to a properly grounded work surface and use properly grounded tools and equipment. Use field service tools, such as cutters, screwdrivers, and vacuums that are conductive. When using fixtures that must directly contact dissipative surfaces, use fixtures made of static-safe materials only. Keep work area free of nonconductive materials such as ordinary plastic assembly aids and Styrofoam. Handle electrostatic-sensitive components, parts, and assemblies by the case or PCM laminate.
Handle them only at static-free workstations. Avoid contact with pins, leads, or circuitry. Turn off power and input signals before inserting or removing connectors or test equipment. s s s s s s s 4.7 Grounding Equipment and Methods Grounding equipment must include either a wrist strap or a foot strap at a grounded workstation.
s When seated, wear a wrist strap connected to a grounded system. Wrist straps are flexible straps with a minimum of one megaohm ±10% resistance in the ground cords. To provide proper ground, wear a strap snug against the skin at all times. On grounded mats with banana-plug connectors, connect a wrist strap with alligator clips. When standing, use foot straps and a grounded floor mat. Foot straps (heel, toe, or boot straps) can be used at standing workstations and are compatible with most types of shoes or boots. On conductive floors or dissipative floor mats, use them on both feet with a minimum of one-megohm resistance between the operator and ground. To be effective, the conductive strips must be worn in contact with the skin. s 4-4 Removal and Replacement Preliminaries Other grounding equipment recommended for use in preventing electrostatic damage include: s s s s s Antistatic tape Antistatic smocks, aprons, or sleeve protectors Conductive bins and other assembly or soldering aids Non-conductive foam Conductive tabletop workstations with ground cord of one-megohm resistance Static-dissipative table or floor mats with hard tie to ground Field service kits Static awareness labels Material-handling packages Non-conductive plastic bags, tubes, or boxes Metal tote boxes Electrostatic Voltage Levels and Protective Materials s s s s s s s Removal and Replacement Preliminaries 4-5 Table 4-1 shows how humidity affects the electrostatic voltage levels generated by different activities.

Table 4-1 Typical Electrostatic Voltage Levels Relative Humidity Event Walking across carpet Walking across vinyl floor Motions of bench worker Removing DIPS from plastic tube Removing DIPS from vinyl tray Removing DIPS from Styrofoam Removing bubble pack from PCB Packing PCBs in foam-lined box 10% 35,000 V 12,000 V 6,000 V 2,000 V 11,500 V 14,500 V 26,500 V 21,000 V 40% 15,000 V 5,000 V 800 V 700 V 4,000 V 5,000 V 20,000 V 11,000 V 55% 7,500 V 3,000 V 400 V 400 V 2,000 V 3,500 V 7,000 V 5,000 V NOTE: A product can be degraded by 700 volts.

Table 4-2 lists the shielding protection provided by antistatic bags and floor mats. Table 4-2 Static-Shielding Materials Material Antistatic plastic Metallized laminate Use Bags Floor mats Voltage Protection Level 1,500 V 7,500 V 15,000 V Carbon-loaded plastic Floor mats 4-6 Removal and Replacement Preliminaries chapter 5 REMOVAL AND REPLACEMENT PROCEDURES NOTE: In most countries, there are no options for warranty repair other than "whole unit return." Check with your Geo Service Manager to determine if warranty repair costs are covered before ordering spare parts or performing repairs. This chapter provides removal and replacement procedures for the Compaq Armada 100S and Notebook 100 Series. 5.1 Serial Number Report the computer serial number to Compaq when requesting information or ordering spare parts. The serial number is located on the bottom of the computer (Figure 5-1). Figure 5-1. Serial Number Location Removal and Replacement Procedures 5-1 5.2 Disassembly Reference Chart Use the chart below to determine the section number to be referenced when removing components from the computer.
5.3 5.4 5.5 5.6 5.
7 5.8 5.9 Preparing the Computer for Disassembly Battery Pack Modem Fan Assembly CD-ROM Drive Processor Memory Removing a Memory Expansion Board Installing a Memory Expansion Board 5.10 Top Cover 5.11 Hard Drive 5.
12 Real Time Clock (RTC) Battery 5.13 Keyboard 5.14 EMI Shield 5.15 TouchPad 5.16 Speakers 5.17 Display Assembly 5.18 Speaker Housing 5.19 System Board 5.20 Diskette Drive 5.3 Computer Disassembly Preparation Perform the following steps before disassembling the computer.

Consult the computer reference guide for instructions on the following steps: 1. Remove any diskettes installed in the diskette drive. 2. Remove any CD-ROM discs installed in the CD-ROM drive. 3. Turn off the computer and close it. 4. Disconnect the AC Adapter and external devices. 5. Remove the battery pack (Section 5.
4). 5-2 Removal and Replacement Procedures 5.4 Battery Pack Battery Pack Spare Part Numbers Battery pack, NiMH Battery pack, Li ion 174373-001 174372-001 1. Prepare the computer for disassembly (Section 5.3).
2. Turn the computer bottom side up with the right side facing forward. 3. Lift the battery tab up (Figure 5-2). 4.
Slide the battery release switch to the left . 5. Lift up the front edge of the battery pack and swing it away from computer . 6. Remove the battery pack. Figure 5-2. Removing the Battery Pack Reverse the removal procedure to replace the battery pack. Removal and Replacement Procedures 5-3 5.5 Modem Modem Spare Part Numbers 56Kbps modem board Modem cover (spared in Plastics Kit) Modem shield (spared in Hardware Kit) Modem cable (spared in Cable Kit) 176052-001 176048-001 176046-001 176004-001 1. Prepare the computer for disassembly (Section 5.

3). 2. Turn the computer bottom side up with the front facing forward. 3. Remove the screw securing the modem cover to the base assembly (Figure 5-3). 4. Lift the left side of the modem cover and swing it up and to the right . 5. Remove the modem cover. Figure 5-3.
Removing the Modem Cover 5-4 Removal and Replacement Procedures 6. Remove the two screws securing the modem shield to the base assembly (Figure 5-4). 7. Remove the modem shield . Figure 5-4.
Removing the Modem Shield Removal and Replacement Procedures 5-5 8. Swing the plastic modem protector toward the back of the computer (Figure 5-5). 9. Disconnect the modem cable from the system board . 10.
Lift the left side of the modem board to disconnect it from the system board . 11. If necessary, disconnect the modem cable from the modem board and replace the modem cable . Figure 5-5. Removing the Modem 12. Remove the modem board. Reverse the removal procedure to replace the modem. 5-6 Removal and Replacement Procedures 5.6 Fan Assembly Fan Assembly Spare Part Numbers Fan assembly (includes fan shield, fan, and heat sink) Fan/CPU cover (spared in Plastics Kit) 176051-001 176048-001 1. Prepare the computer for disassembly (Section 5.

3). 2. Turn the computer bottom side up with the front facing forward. 3. Remove the four screws securing the fan/CPU cover to the base assembly. Note that the two screws removed from the back edge of the cover differ in size from the other two screws (Figure 5-6). 4. Remove the fan/CPU cover . Figure 5-6. Removing the Fan/CPU Cover Removal and Replacement Procedures 5-7 5.
Disconnect the fan cable from the system board (Figure 5-7). 6. Remove the four screws securing the fan assembly to the system board. 7. Remove the fan assembly .
Figure 5-7. Removing the Fan Assembly Reverse the removal procedure to replace the fan assembly. 5-8 Removal and Replacement Procedures 5.7 CD-ROM Drive CD-ROM Drive Spare Part Numbers 24X Max CD-ROM drive CD-ROM drive cable (spared in Cable Kit) 176039-001 176004-001 1. Prepare the computer for disassembly (Section 5.
3). 2. Remove the fan assembly (Section 5.6). 3. Disconnect the CD-ROM drive cable from the system board (Figure 5-8). 4. Remove the screw securing the CD-ROM drive to the base assembly . 5. Push on the back of the CD-ROM drive and slide the drive to the left .

Figure 5-8. Removing the CD-ROM Drive 6. Remove the CD-ROM drive. Removal and Replacement Procedures 5-9 7. If necessary, disconnect the CD-ROM drive cable from the CD-ROM drive (Figure 5-9). Figure 5-9. Removing the CD-ROM Drive Cable Reverse the removal procedure to replace the CD-ROM drive. 5-10 Removal and Replacement Procedures 5.8 Processor Processor Spare Part Numbers AMD K6-2+ 533-MHz processor (used only with config. codes beginning with "FQ") AMD K6-2 475-MHz processor (used only with config. codes beginning with "FF") Processor bracket 203099-001 176036-001 176046-001 1. Prepare the computer for disassembly (Section 5.3). 2. Remove the fan assembly (Section 5.
6). 3. Swing the left side of the processor bracket up and to the right (Figure 5-10). 4. Remove the processor bracket .
Figure 5-10. Removing the Processor Bracket Removal and Replacement Procedures 5-11 5. Insert the tip of a flat-blade screwdriver into the left socket . This socket is marked "SKT OPEN" (Figure 5-11). 6. Swing the screwdriver to the right to release the processor . 7. Remove the processor. Figure 5-11. Removing the Processor 5-12 Removal and Replacement Procedures When replacing the processor, make sure the white square is in the upper-right corner .

Insert the tip of the screwdriver into the right socket (marked "SKT CLOSE") and swing the screwdriver to the right to seat the processor (Figure 5-12). Figure 5-12. Replacing the Processor Removal and Replacement Procedures 5-13 5.9 Memory Memory Expansion Board Spare Part Numbers 128 MB memory expansion board 64 MB memory expansion board 32 MB memory expansion board 179966-001 179965-001 179964-001 The Compaq Armada 100S and Notebook 100 computers feature one memory expansion slot, located under the fan assembly. Removing a Memory Expansion Board 1. Prepare the computer for disassembly (Section 5.3). 2. Remove the fan assembly (Section 5.6).

3. Spread the retaining tabs apart . The memory expansion board tilts upward (Figure 5-13). 4. Lift the edge of the memory expansion board and gently slide it out of the memory expansion slot at a 45-degree angle .

5. Place the memory expansion board in an electrostatic-safe container. Figure 5-13. Removing a Memory Expansion Board 5-14 Removal and Replacement Procedures Installing a Memory Expansion Board All memory expansion boards are asymmetrically keyed (notched) to ensure correct positioning. 1. Insert the memory expansion board into an empty memory expansion slot at a 45-degree angle (Figure 5-14). 2. Push the memory expansion board down until the board is seated in the plastic retention clips. Figure 5-14. Installing a Memory Expansion Board Removal and Replacement Procedures 5-15 5.10 Top Cover Top Cover Spare Part Numbers Top cover 176043-001 1. Prepare the computer for disassembly (Section 5.3). 2. Turn the computer bottom side up, with the front facing forward.

3. Remove the six screws securing the top cover to the base assembly (Figure 5-15). Figure 5-15. Removing the Top Cover Screws 4. Turn the computer top side up, with the front facing forward. 5. Open the computer. 5-16 Removal and Replacement Procedures 6. Lift up the front edge of the top cover and swing it toward the back of the computer (Figure 5-16). Figure 5-16.

Removing the Top Cover 7. Remove the top cover. IMPORTANT: When installing the top cover, align the five tabs on the back edge of the top cover with the slots in the speaker housing. Removal and Replacement Procedures 5-17 5.11 Hard Drive Hard Drive Spare Part Numbers 5.

0 GB hard drive 176040-001 1. Prepare the computer for disassembly (Section 5.3). 2. Remove the top cover (Section 5.

10). 3. Remove the two screws securing the hard drive to the base assembly (Figure 5-17). 4. Lift up the right side of the hard drive , and then pull the hard drive to the right to disconnect it from the TouchPad assembly. Figure 5-17. Removing the Hard Drive 5. Remove the hard drive. Reverse the removal procedure to replace the hard drive. 5-18 Removal and Replacement Procedures 5.

12 Real Time Clock (RTC) Battery NOTE: Removal of the RTC battery clears all information from CMOS. Real Time Clock Battery Spare Part Numbers Real time clock battery (spared in Hardware Kit) 176049-001 1. Prepare the computer for disassembly (Section 5.3). 2. Remove the top cover (Section 5.10). 3. Disconnect the RTC battery cable from the TouchPad (Figure 5-18). 4.

Remove the RTC battery from the base assembly . Figure 5-18. Removing the RTC Battery Reverse the removal procedure to replace the RTC battery. Removal and Replacement Procedures 5-19 5.13 Keyboard Keyboard Spare Part Numbers Keyboard Arabic Belgian Brazilian Danish French German Hungarian International Italian Japanese -171 -181 -201 -081 -051 -041 -211 -002 -061 -291 176041-XXX -AD1 Korean Latin American -161 Spanish -091 Norwegian -131 Portuguese -071 Spanish -101 Swedish -111 Swiss -031 U.

K. English -001 U.S. English 1. Prepare the computer for disassembly (Section 5.

3). 2. Remove the top cover (Section 5.10). 5-20 Removal and Replacement Procedures 3. Lift up the front edge of the keyboard and swing it back toward the display (Figure 5-19). 4. Release the ZIF (zero insertion force) connector to which the keyboard cable is attached . 5. Disconnect the keyboard cable from the system board .

Figure 5-19. Releasing the Keyboard and Disconnecting the Keyboard Cable 6. Remove the keyboard. IMPORTANT: When installing the keyboard, align the three tabs on the back edge of the keyboard with the slots in the EMI shield. Removal and Replacement Procedures 5-21 5.14 EMI Shield EMI Shield Spare Part Numbers EMI shield 176002-001 1. Prepare the computer for disassembly (Section 5.3). 2. Remove the top cover (Section 5.

10). 3. Remove the keyboard (Section 5.13). 4.

Remove the 12 screws securing the EMI shield to the base assembly (Figure 5-20). NOTE: Three different sizes of screws are removed in this step: the silver screws are removed/installed in location ; the longer black screws are removed/installed in location ; the shorter black screw is removed/installed in location . Also note that one of the silver screws secures the display ground cable to the EMI shield. Figure 5-20. Removing the EMI Shield Screws 5-22 Removal and Replacement Procedures 5.

Lift up the front edge of the shield and swing it toward the back of computer (Figure 5-21). Figure 5-21. Removing the EMI shield 6. Remove the EMI shield. Reverse the removal procedure to replace the EMI shield. Removal and Replacement Procedures 5-23 5.15 TouchPad TouchPad Spare Part Numbers TouchPad 176044-001 1. Prepare the computer for disassembly (Section 5.3) and, in the order below, remove the following components: s Top cover (Section 5.10) s Hard drive (Section 5.

11) s RTC battery (Section 5.12) s Keyboard (Section 5.13) s EMI shield (Section 5.14) 2. Lift the back edge of the TouchPad to disconnect it from the system board (Figure 5-22). 3. Remove the TouchPad . Figure 5-22. Removing the TouchPad Reverse the removal procedure to replace the TouchPad. 5-24 Removal and Replacement Procedures 5.

16 Speakers Speakers Spare Part Numbers Speakers (2; spared in Hardware Kit) 176049-001 1. Prepare the computer for disassembly (Section 5.3) and, in the order below, remove the following components: s Top cover (Section 5.10) s Keyboard (Section 5.13) s EMI shield (Section 5.

14) 2. Disconnect the speaker cables from the system board (Figure 5-23). 3. Remove the speakers from the speaker housing . Figure 5-23.

Removing the Speakers Reverse the removal procedure to replace the speakers. Removal and Replacement Procedures 5-25 5.17 Display Assembly Display Assembly Components Spare Part Numbers 13.3-inch panel, TFT (used only with config. codes beginning with "FQ6") 12.1-inch panel, HPA (used only with config. codes beginning with "FFF" and "FQ4") 12.1-inch panel, TFT (used only with config. codes beginning with "FFG" and "FQ5") Left and right hinge covers (spared in Plastics Kit) 204204-001 222714-001, 216081-001, and 176037-001 222715-001, 212897-001, and 176038-001 176048-001 1. Prepare the computer for disassembly (Section 5.

3) and, in the order below, remove the following components: s Top cover (Section 5.10) s Keyboard (Section 5.13) s EMI shield (Section 5.14) 2. Use a flat blade screwdriver to gently pry up and remove the left and right hinge covers (Figure 5-24). Figure 5-24. Removing the Hinge Covers 5-26 Removal and Replacement Procedures 3. Open the computer as far as it will open. 4. Disconnect the display video cable , display inverter cable , and microphone cable (Figure 5-25).

Figure 5-25. Disconnecting the Display Cables Removal and Replacement Procedures 5-27 5. Remove the four screws securing the display hinges to the base assembly (Figure 5-26). 6. Remove the display assembly .

NOTE: Make sure the display assembly is supported and does not fall when the screws are removed. Figure 5-26. Removing the Display Assembly 5-28 Removal and Replacement Procedures When installing the display assembly, make sure the display video cable is routed behind the left speaker connector on the system board (Figure 5-27). Figure 5-27. Routing the Display Video Cable Removal and Replacement Procedures 5-29 When replacing the system board or display assembly, it is imperative that the DIP switches be set correctly.

To set the display DIP switches on the system board, follow these steps: 1. Locate the part number label on the display microphone cable (Figure 5-28). 2. Part numbers 541566850001/176038-001, 541566931001/ 212897-001, and 413000020183/222715-001 correspond to the 12.1-inch, TFT display assemblies. If these part numbers are on the label, make sure the display DIP switch on the system board is set according to setting . Part numbers 541566850002/176037-001 and 541566931003/ 216081-001 correspond to two of the 12.1-inch, HPA display assemblies. If these part numbers are on the label, make sure the display DIP switch on the system board is set according to setting . Part number 413000020228/222714-001 corresponds to the third 12.

1-inch, HPA display assembly. If this part number is on the label, make sure the display DIP switch on the system board is set according to setting 4. Part number 541566931002/204204-001 corresponds to the 13.3-inch, TFT display assembly. If this is the part number on the label, make sure the display DIP switch on the system board is set according to setting 5. Figure 5-28. Setting the Display DIP Switches 3. After the DIP switch settings have been verified, reassemble the computer. 5-30 Removal and Replacement Procedures 5.18 Speaker Housing Speaker Housing Spare Part Numbers Speaker housing (spared in Plastics Kit) I/O cover (spared in Plastics Kit) 176048-001 176048-001 1.

Prepare the computer for disassembly (Section 5.3) and, in the order below, remove the following components: s Top cover (Section 5.10) s Keyboard (Section 5.13) s EMI shield (Section 5.14) s Display assembly (Section 5.

17) 2. Position the computer so the rear panel faces forward. 3. Remove the screw securing the I/O cover to the speaker housing (Figure 5-29). 4. Flex the middle of the I/O cover away from the computer . Figure 5-29. Removing the I/O Cover 5. Remove the I/O cover. Removal and Replacement Procedures 5-31 6. Remove the five screws securing the speaker housing to the base assembly (Figure 5-30). 7. Remove the speaker housing . Figure 5-30. Removing the Speaker Housing Reverse the removal procedure to replace the speaker housing.

5-32 Removal and Replacement Procedures 5.19 System Board System Board Spare Part Numbers 64 MB SDRAM (used only with config. codes beginning with "FQ5" and "FQ6") 64 MB SDRAM (used only with config. codes "FQ45", "FQ47", and "FQ48") 64 MB SDRAM (used only with config. codes "FFG1" through "FFG4") 64 MB SDRAM (used only with config. codes "FFF5" and "FFF6") 32 MB SDRAM (used only with config. codes "FQ41" through "FQ44") 32 MB SDRAM (used only with config. codes "FFF1" through "FFF4") RJ11 cover (spared with Plastics Kit) PC Card door (spared with Plastics Kit) 207657-001 207656-001 189047-001 176035-001 207655-001 176034-001 176048-001 176048-001 IMPORTANT: When replacing the system board, it is imperative that the DIP switches be set correctly. Refer to Section 5.17 for information on setting the display DIP switches.

1. Prepare the computer for disassembly (Section 5.3) and, in the order below, remove the following components: s Top cover (Section 5.10) s Hard drive (Section 5.11) s RTC battery (Section 5.

12) s Keyboard (Section 5.13) s EMI shield (Section 5.14) s TouchPad (Section 5.15) s Speakers (Section 5.16) s Display assembly (Section 5.

17) s Speaker housing (Section 5.18) 2. Turn the computer bottom side up with the rear panel facing forward. Removal and Replacement Procedures 5-33 3. @@Removing the System Board Screws 4. @@@@6. @@7. Remove the system board from the base assembly . Figure 5-32. Removing the System Board IMPORTANT: When installing the system board, make sure the diskette drive cable does not get trapped underneath the system board.

Removal and Replacement Procedures 5-35 If necessary, remove the PC Card door by partially opening the door , flexing the middle of the door away from the computer , and removing the door (Figure 5-33). Figure 5-33. Removing the PC Card Door 5-36 Removal and Replacement Procedures 5.20 Diskette Drive Diskette Drive Spare Part Numbers Diskette drive, 1.44 MB Diskette drive cable (spared in Cable Kit) 176047-001 176004-001 1. Prepare the computer for disassembly (Section 5.3) and, in the order below, remove the following components: s Top cover (Section 5.10) s Hard drive (Section 5.11) s RTC battery (Section 5.12) s Keyboard (Section 5.

13) s EMI shield (Section 5.14) s TouchPad (Section 5.15) s Speakers (Section 5.16) s Display assembly (Section 5.17) s Speaker housing (Section 5.

18) s System board (Section 5.19) Removal and Replacement Procedures 5-37 2. Lift the back edge of the diskette drive and swing it up and toward the front of the base assembly (Figure 5-34). Figure 5-34. Removing the Diskette Drive 3.

@@@@@@@@The power cord sets received with the computer meet the requirements for use in the country where the equipment is purchased. Power cord sets for use in countries outside the United States must meet the requirements of the country where the computer is used. For more information on power cord set requirements, contact a Compaq authorized reseller or service provider. General Requirements The requirements listed below are applicable to all countries: 1. The length of the power cord set must be at least 5.00 feet (1.5 m) and a maximum of 6.50 feet (2.0 m). 2.

All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country where the power cord set will be used. 3. The power cord set must have a minimum current capacity of 10A and a nominal voltage rating of 125 or 250 volts AC, as required by each country's power system.