

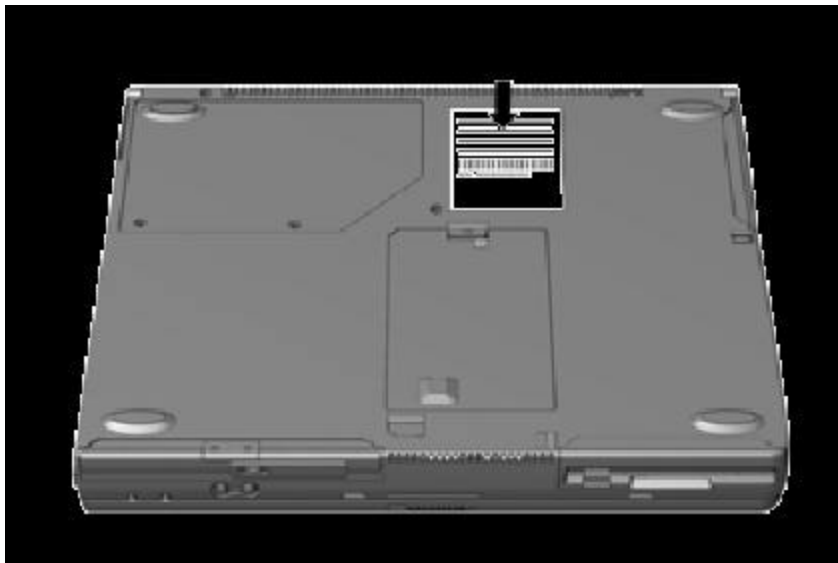
# *chapter* 5

## REMOVAL AND REPLACEMENT PROCEDURES

This chapter provides removal and replacement procedures for the Compaq Armada E500 and Armada V300 Series of Personal Computers.

### 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*

## 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	Preparing the Computer for Disassembly
5.4	Computer Feet
5.5	Mini PCI Slot
	Removing the Mini PCI Slot Cover
	Installing a Modem or Modem/Network Interface Card
5.6	Touch Button
5.7	Keyboard
5.8	Memory
	Removing a Memory Expansion Board
	Installing a Memory Expansion Board
5.9	Display Assembly
5.10	Real Time Clock (RTC) Battery
5.11	LED Board
5.12	Top Cover
5.13	Front Shield
5.14	Diskette Drive ( <b>Armada V300 only</b> )
5.15	System Board
5.16	Voltage Converter Board
5.17	Fan

**Figure 5-2.** Computer Disassembly Sequence Chart

### **5.3 Preparing the Computer for Disassembly**

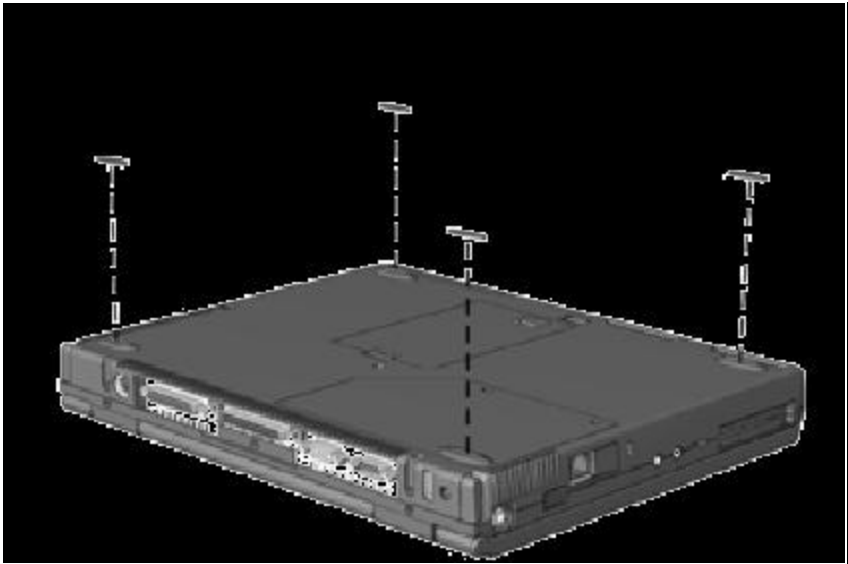
Perform the following steps before disassembling the computer. Consult the computer reference guide, available as an electronic book on the QuickRestore CD-ROM, for instructions on the steps below.

1. Undock the computer from the docking base.
2. Disconnect the AC Adapter and external devices.
3. Remove any battery packs inserted into the battery bay, DualBay (Armada E500 only), or MultiBay.
4. If installed, remove the diskette drive from the DualBay (Armada E500 only).
5. Remove the hard drive from the hard drive bay.
6. Remove any devices installed in the MultiBay.

### 5.4 Computer Feet

The base feet are oblong, adhesive-backed rubber pads. The base feet are included in the Miscellaneous Plastic Kit.

Computer Feet Spare Part Number Information	
Miscellaneous Plastics Kit, includes:	159536-001
Switch cover	RJ-11 modem cover
Hinge cover	RJ-45 LAN cover
Real time clock (RTC) battery	<b>Computer feet</b>
Touch button cable	Display screw covers
Front shield	TV out connector cover
Diskette drive bezel	PC Card space saver
Hard drive cover	Diskette drive space saver
Mini PCI slot cover	CD-ROM drive space saver
	Infrared lens



**Figure 5-3.** *Installing the Computer Feet*

## 5.5 Mini PCI Slot

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
### Modem and Modem/Network Interface Card Spare Part Number Information

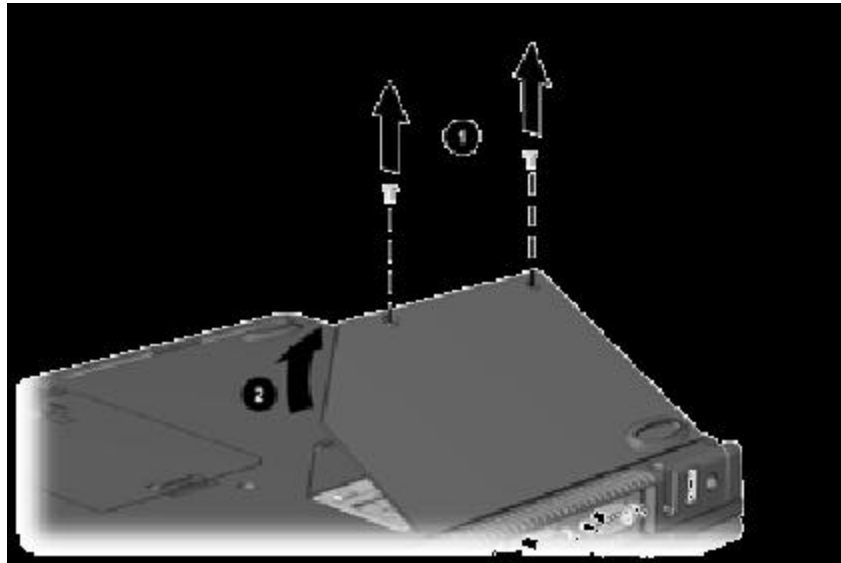
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Mini PCI V. 90 modem card	121895-001
Mini PCI V. 90 modem/Network Interface Card	153207-001

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#### Removing the Mini PCI Slot Cover

1. Prepare the computer for disassembly (Section 5.3).
2. Turn the computer bottom side up with the front facing forward.
3. Remove the two screws  that secure the mini PCI slot cover to the base enclosure (Figure 5-4).
4. Lift up the front edge of the mini PCI slot cover and swing the cover back .





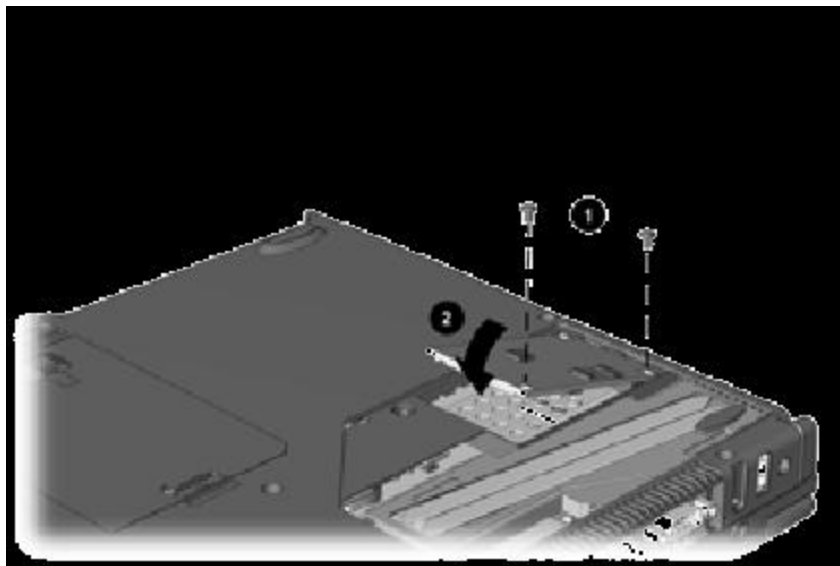
**Figure 5-4.** Removing the Mini PCI Slot Cover

5. Remove the mini PCI slot cover.

Reverse the removal procedure described above to replace the mini PCI slot cover.

## Installing a Modem or Modem/Network Interface Card

1. Remove the mini PCI slot cover.
2. Remove the two screws  that secure the modem or modem/NIC to the system board (Figure 5-5).
3. Make sure the appropriate RJ11/RJ45 cover(s) are removed from the base enclosure.
4. Install the card into the mini PCI slot, making sure to seat the card connector on the system board .



**Figure 5-5.** *Installing a Modem or Modem/Network Interface Card*

Reverse the installation procedure described above to remove a modem or modem/Network Interface Card.

## 5.6 Touch Button

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### Touch Button Spare Part Number Information

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Touch Button without TouchPad (Armada E500 only)	159530-001
Touch Button with TouchPad	135227-001

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### Removing the Touch Button

1. Prepare the computer for disassembly (Section 5.3).
2. Position the computer with the front facing forward.
3. Open the computer.
4. Use a flat blade screwdriver to pry the upper right corner of the touch button away from the top cover □ (Figure 5-6).
5. Lift the right side of the touch button away from the top cover □ and swing the touch button up and to the left □.
6. Disconnect the touch button cable from the system board □.
7. Remove the touch button.



**Figure 5-6.** Removing the Touch Button

8. Disconnect the touch button cable from the touch button (Figure 5-7).

**NOTE:** The touch button cable is included in the Miscellaneous Plastic Kit.

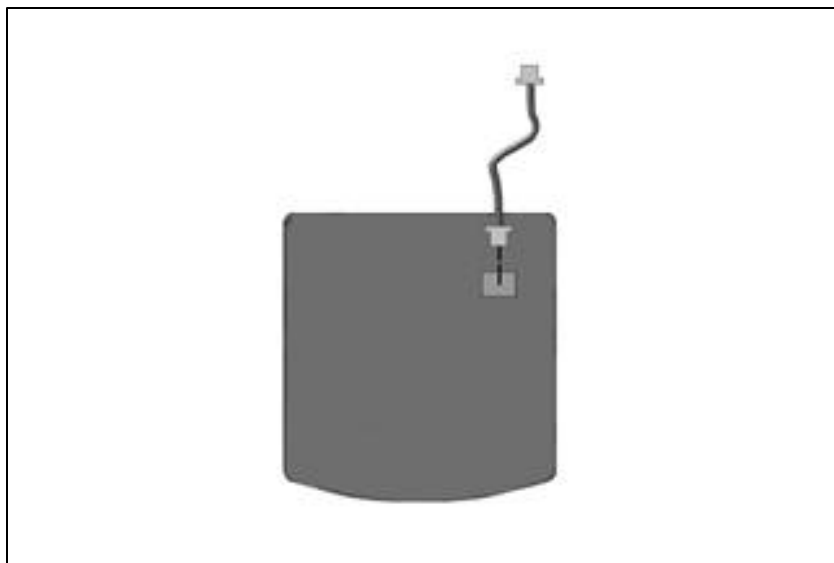
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### Touch Button Cable Spare Part Number Information

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Miscellaneous Plastics Kit, includes:	159536-001
Switch cover	RJ-11 modem cover
Hinge cover	RJ-45 LAN cover
Real time clock (RTC) battery	Computer feet
<b>Touch button cable</b>	Display screw covers
Front shield	TV out connector cover
Diskette drive bezel	PC Card space saver
Hard drive cover	Diskette drive space saver
Mini PCI slot cover	CD-ROM drive space saver
	Infrared lens

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**Figure 5-7.** *Disconnecting the Touch Button Cable*

Reverse the removal procedure described above to replace the touch button.



## 5.7 Keyboard

### Keyboard with Pointing Stick Spare Part Number Information (Armada E500 only)

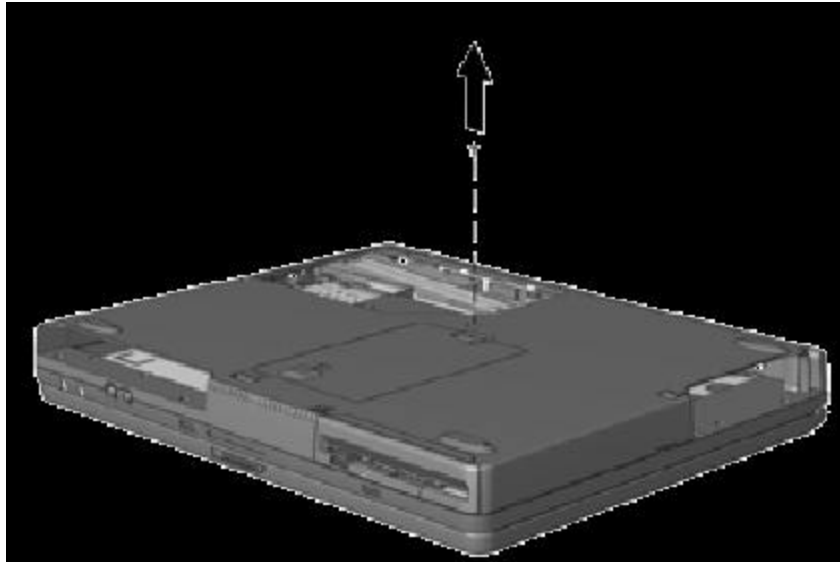
Keyboard with Pointing Stick				154876-XXX
Arabic	-171	Hungarian	-211	Slovenian -231
Brazilian	-201	Italian	-061	Spanish -071
Belgian	-181	International	-002	Swedish -101
Czech	-221	Japanese	-291	Swiss -111
Danish	-081	Korean	-AD1	Taiwanese -AB1
French	-051	Latin American		Turkish -141
French		Spanish	-161	U.K. English -031
Canadian	-121	Norwegian	-091	U.S.
German	-041	Portuguese	-131	English/ -001
Greek	-151	Russian	-251	Canadian

### Keyboard without Pointing Stick Spare Part Number Information



Keyboard without Pointing Stick				154877-XXX
Arabic	-171	Hungarian	-211	Slovenian -231
Brazilian	-201	Italian	-061	Spanish -071
Belgian	-181	International	-002	Swedish -101
Czech	-221	Japanese	-291	Swiss -111
Danish	-081	Korean	-AD1	Taiwanese -AB1
French	-051	Latin American		Turkish -141
French		Spanish	-161	U.K. English -031
Canadian	-121	Norwegian	-091	U.S.
German	-041	Portuguese	-131	English/ -001
Greek	-151	Russian	-251	Canadian

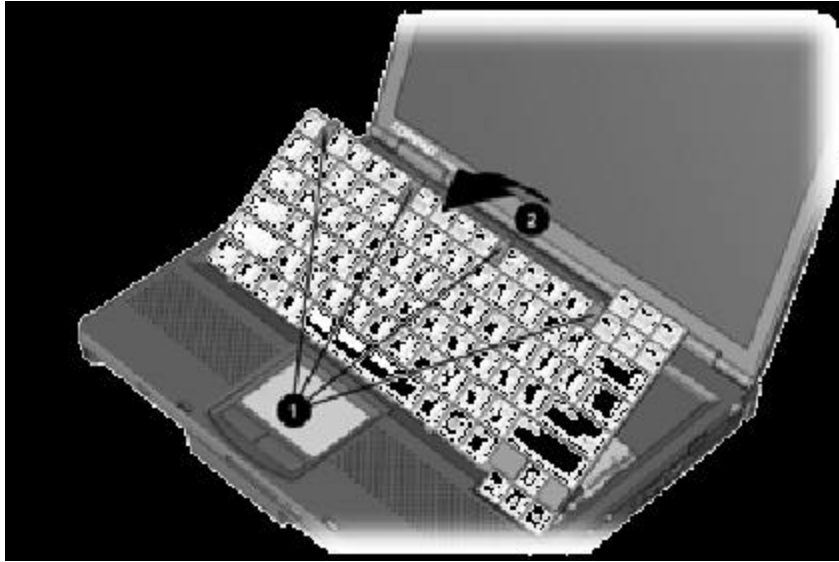
## Removing the Keyboard

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 that secures the keyboard (Figure 5-8).



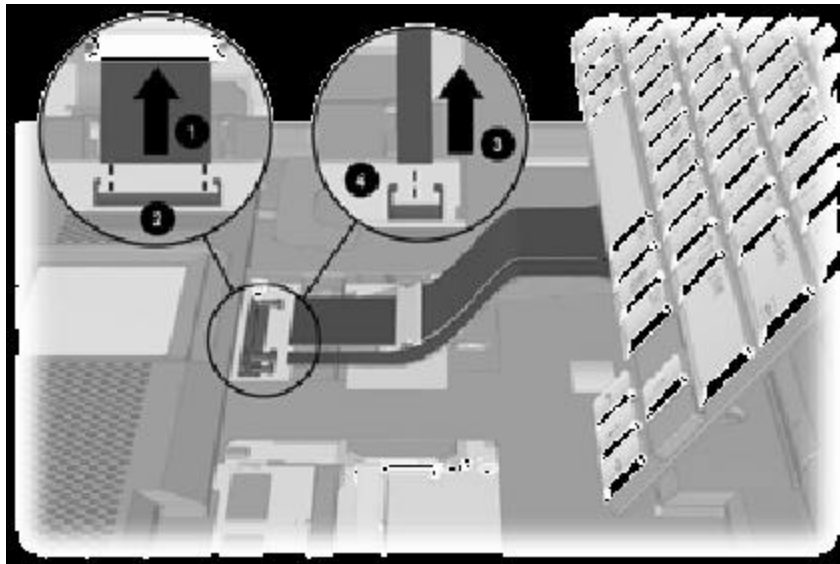
**Figure 5-8.** *Removing the Keyboard Screw*

4. Turn the computer right side up with the front facing forward.
5. Open the computer.
6. Slide the four latches  located along the top of the keyboard forward.
7. Swing the back edge of the keyboard  up and forward (Figure 5-9).



**Figure 5-9.** *Releasing the Keyboard*

8. Release the ZIF (Zero Insertion Force) connector that connects the keyboard cable □ (Figure 5-10).
9. Disconnect the keyboard cable from the system board □.
10. **(Armada E500 only)** Release the ZIF connector that connects the pointing stick cable □.
11. **(Armada E500 only)** Disconnect the pointing device cable from the system board □.



**Figure 5-10.** *Releasing and Disconnecting the Keyboard Cables*

12. Remove the keyboard.  
Reverse the removal procedure described above to replace the keyboard.

## 5.8 Memory

The Compaq Armada E500 and Armada V300 Series feature two memory expansion slots, located under the keyboard. Depending on the computer model, one slot will contain a 64- or 32-MB memory expansion board.



**WARNING:** Failure to unplug the power cord and remove the battery pack before installing a memory expansion board can damage the equipment and expose you to the risk of electrical shock.

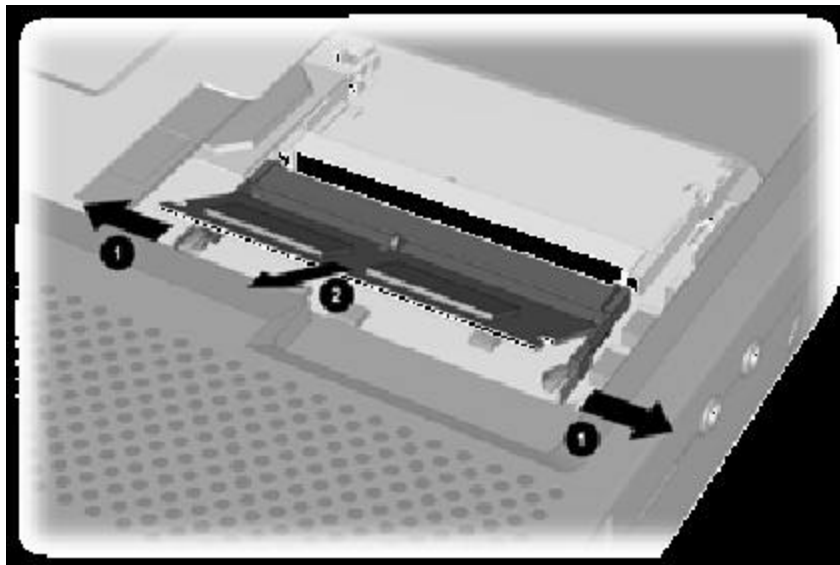
**CAUTION:** Electrostatic discharge (ESD) can damage electronic components. Before beginning this procedure, ensure that you are properly grounded. For more information, refer to the section on “Preventing Electrostatic Damage” in Chapter 4.

### Memory Expansion Board Spare Part Number Information

Memory expansion board	
256 MB	167136-001
128 MB	135244-001
64 MB	135243-001
32 MB	135242-001

## Removing a Memory Expansion Board

1. Prepare the computer for disassembly (Section 5.3).
2. Remove the keyboard (Section 5.7).
3. Spread the retaining tabs apart . The memory expansion board tilts upward (Figure 5-11).
4. Lift the edge of the memory expansion board and slide it gently out of the memory expansion slot at a 45-degree angle .
5. Place the memory expansion board in an electrostatic-safe container.

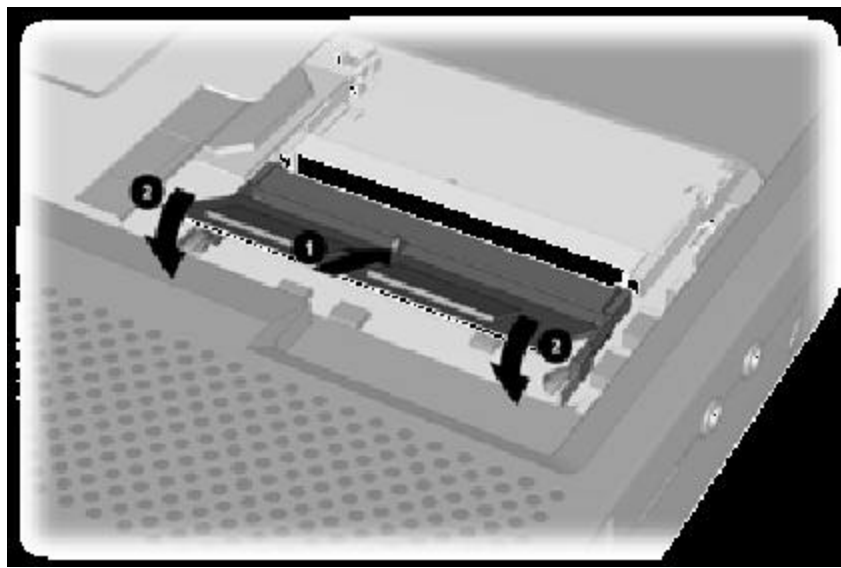


**Figure 5-11.** *Removing a Memory Expansion Board*

## Installing a Memory Expansion Board

All memory expansion boards are asymmetrically keyed (notched) to ensure correct positioning. Memory expansion boards can be used in either memory expansion slot.

1. Insert the memory expansion board into an empty memory expansion slot at a 45-degree angle □ (Figure 5-12).
2. Push the memory expansion board down □ until the board is seated in the plastic retention clips.
3. Run Computer Setup (refer to Section 2.5).






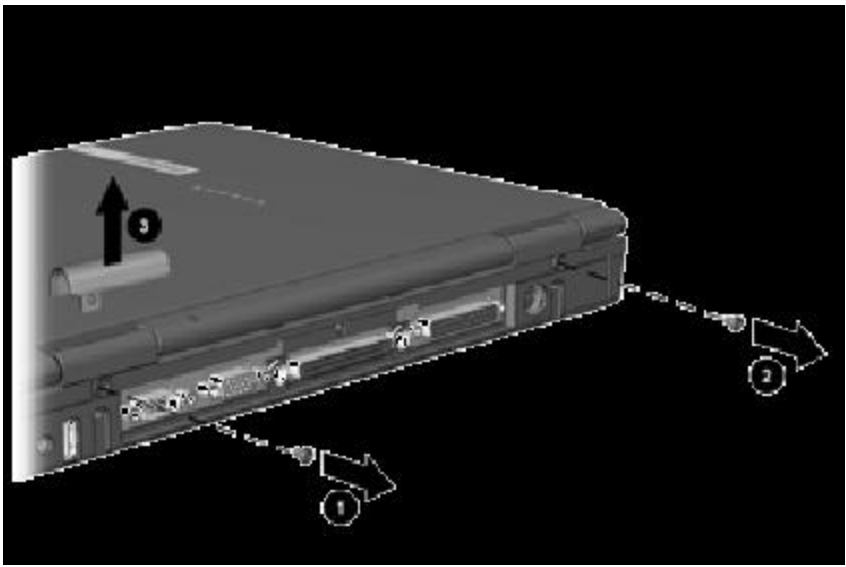
**Figure 5-12.** *Installing a Memory Expansion Board*

## 5.9 Display Assembly

Display Assembly Spare Part Number Information	
14.1-inch, XGA, TFT	159532-001
13.3-inch, XGA, TFT (Armada E500 only)	167133-001
12.1-inch, SVGA, TFT	159531-001
12.1-inch, SVGA, STN (Armada V300 only)	160536-001

### Removing the Display

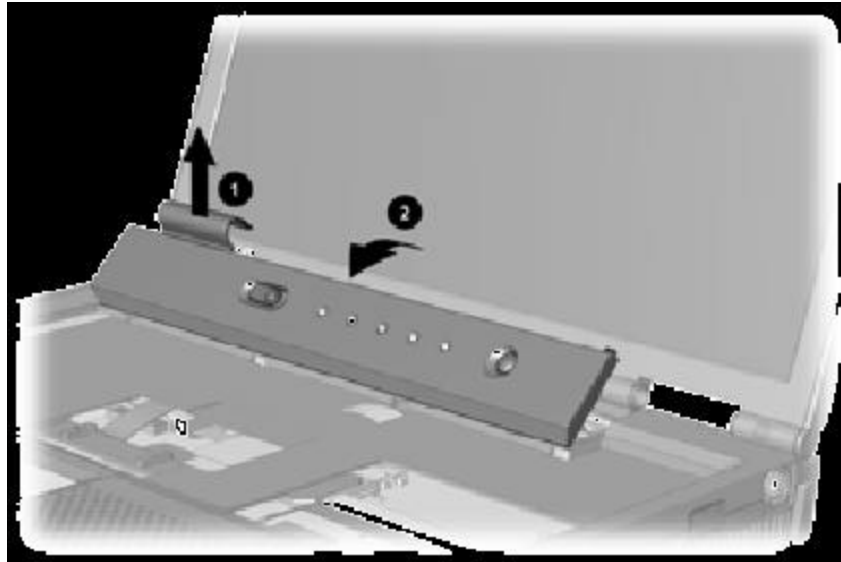
1. Prepare the computer for disassembly (Section 5.3).
2. Position the computer so the rear panel faces forward (Figure 5-13).
3. Remove the screws that secure the hinge cover  and switch cover .
4. Lift the hinge cover up  and remove it.



**Figure 5-13.** Removing the Switch and Hinge Cover Screws







5. Open the computer as far as it will open.
6. Push the back of the switch cover up ☐ (Figure 5-14).
7. Position the computer so the front faces forward.
8. Swing the switch cover up and forward ☐.
9. Remove the switch cover.

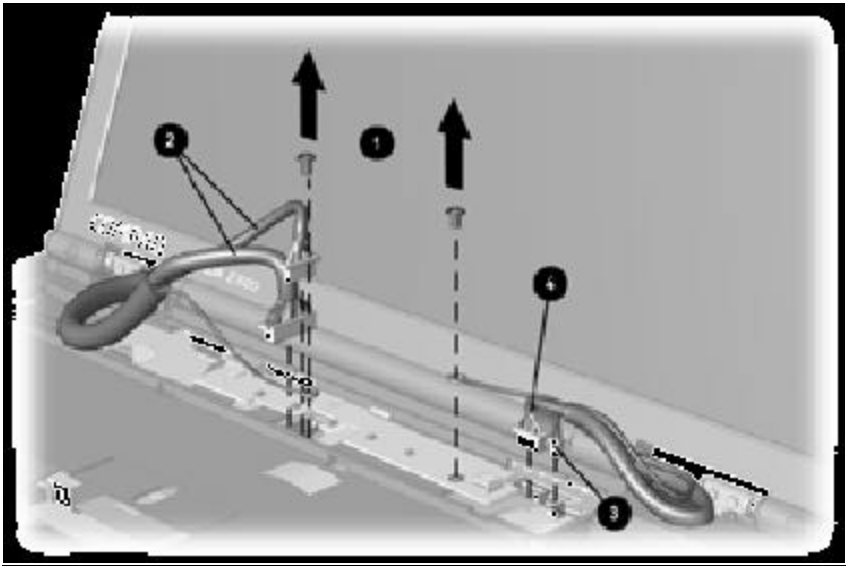


**Figure 5-14.** *Removing the Switch Cover*


**NOTE:** The hinge and switch covers are spared in the Miscellaneous Plastics Kit.

Switch and Hinge Cover Spare Part Number Information	
Miscellaneous Plastics Kit, includes:	159536-001
<b>Switch cover</b>	RJ-11 modem cover
<b>Hinge cover</b>	RJ-45 LAN cover
Real time clock (RTC) battery	Computer feet
Touch button cable	Display screw covers
Front shield	TV out connector cover
Diskette drive bezel	PC Card space saver
Hard drive cover	Diskette drive space saver
Mini PCI slot cover	CD-ROM drive space saver
	Infrared lens


- 10. Remove the screws  that secure the display ground cables (Figure 5-15).
- 11. Disconnect the display panel , microphone  and display inverter cables  from the system board.

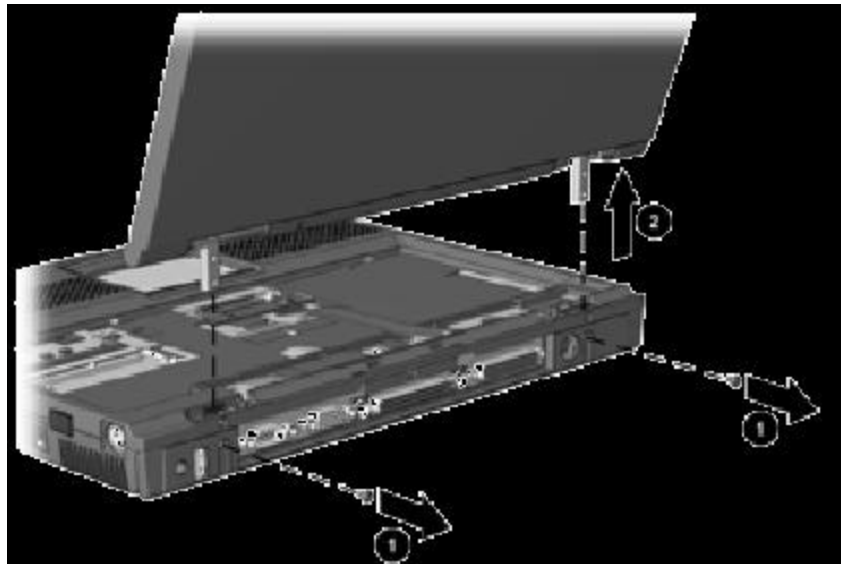


**Figure 5-15.** Disconnecting the Display Assembly Cables

12. Position the computer so the rear panel faces forward.
13. Remove the two screws that secure the display assembly to the base enclosure  (Figure 5-16).

**NOTE:** When these screws are removed, the display assembly is unsupported. Make sure to provide support for the display assembly when removing these screws.

14. Remove the display assembly .



**Figure 5-16.** *Removing the Display Assembly*

Reverse the removal procedure described above to replace the display assembly.

5.10 Real Time Clock (RTC) Battery

The RTC battery is spared in the Miscellaneous Plastics Kit.

RTC Battery Spare Part Number Information	
Miscellaneous Plastics Kit, includes:	159536-001
Switch cover	RJ-11 modem cover
Hinge cover	RJ-45 LAN cover
Real time clock (RTC) battery	Computer feet
Touch button cable	Display screw covers
Front shield	TV out connector cover
Diskette drive bezel	PC Card space saver
Hard drive cover	Diskette drive space saver
Mini PCI slot cover	CD-ROM drive space saver
	Infrared lens

Removing the RTC Battery

- 1. Prepare the computer for disassembly (Section 5.3).
- 2. Remove the switch cover (Section 5.9).
- 3. Disconnect the RTC battery cable from the LED board □ (Figure 5-17).
- 4. Remove the RTC battery from the base enclosure □.

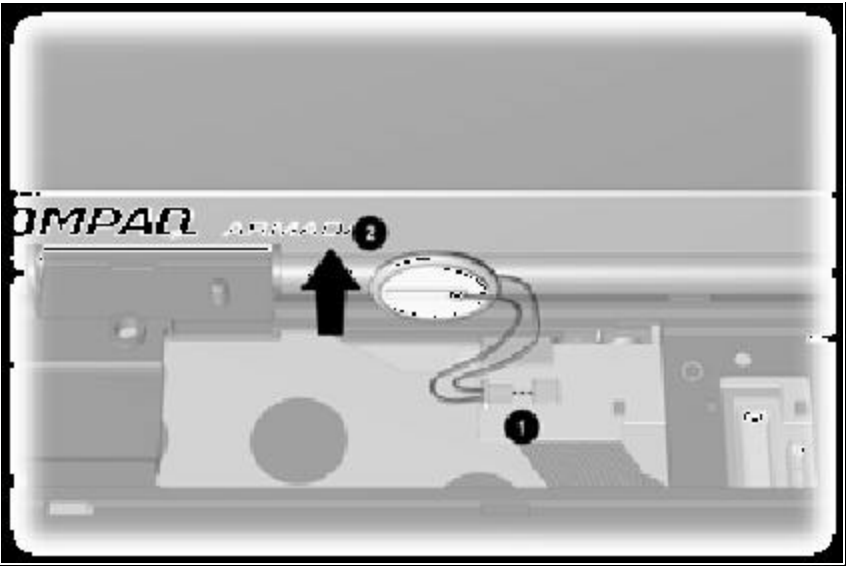


Figure 5-17. Removing the Real Time Clock Battery

The battery fits into two slots molded into the base enclosure. Make sure to reinsert the RTC battery into these slots when replacing the battery.

## 5.11 LED Board

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
### LED Board Spare Part Number Information

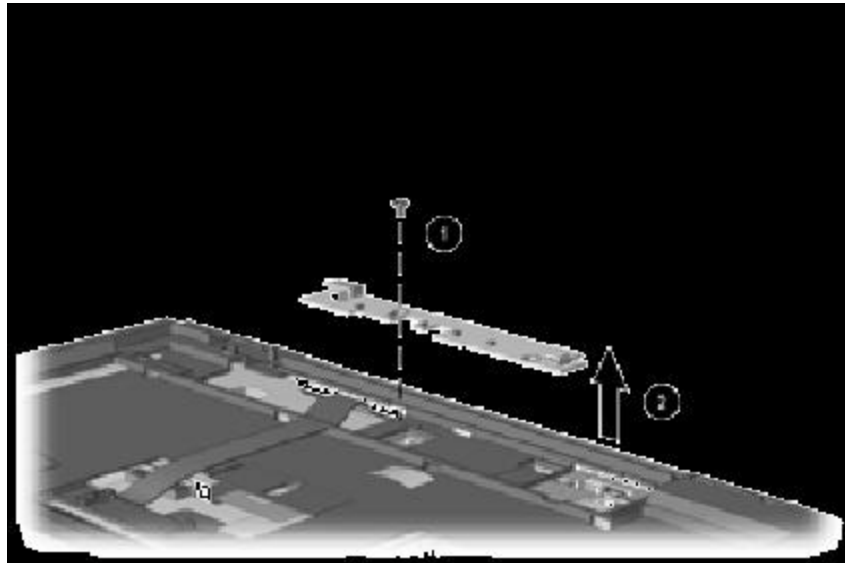
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LED Board	159539-001
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#### Removing the LED Board

1. Prepare the computer for disassembly (Section 5.3)
2. Remove the switch cover (Section 5.9).
3. Disconnect the display ground cables (Section 5.9) and RTC battery cable (Section 5.10) from the LED board.
4. Remove the screw  that secures the LED board to the system board (Figure 5-18).
5. Lift up on the right side of the LED board  to disconnect it from the system board.



**Figure 5-18.** *Removing the LED Board*

6. Remove the LED board.

Reverse the removal procedure described above to replace the LED board.

## 5.12 Top Cover

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### Top Cover Spare Part Number Information




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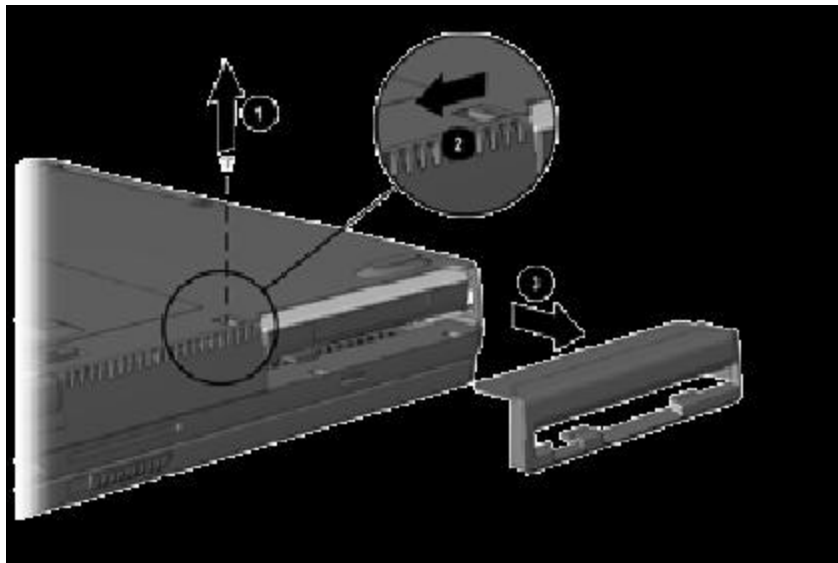
Top Cover

159533-001

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#### Removing the Top Cover

1. Prepare the computer for disassembly (Section 5.3) and, in the order below, remove the following components:
  - touch button (Section 5.6)
  - keyboard (Section 5.7)
  - display assembly (Section 5.9)
  - LED board (Section 5.11).
2. Turn the computer bottom side up with the front facing forward.
3. **(Armada V300 only)** Remove the screw  that secures the diskette drive bezel to the base enclosure (Figure 5-19).
4. **(Armada V300 only)** Slide the diskette drive release latch to the left .
5. **(Armada V300 only)** Remove the diskette drive bezel from the base enclosure .



**Figure 5-19.** Removing the Diskette Drive Bezel

**NOTE:** The diskette drive bezel is spared in the Miscellaneous Plastic Kit.

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**Diskette Drive Bezel  
Spare Part Number Information**

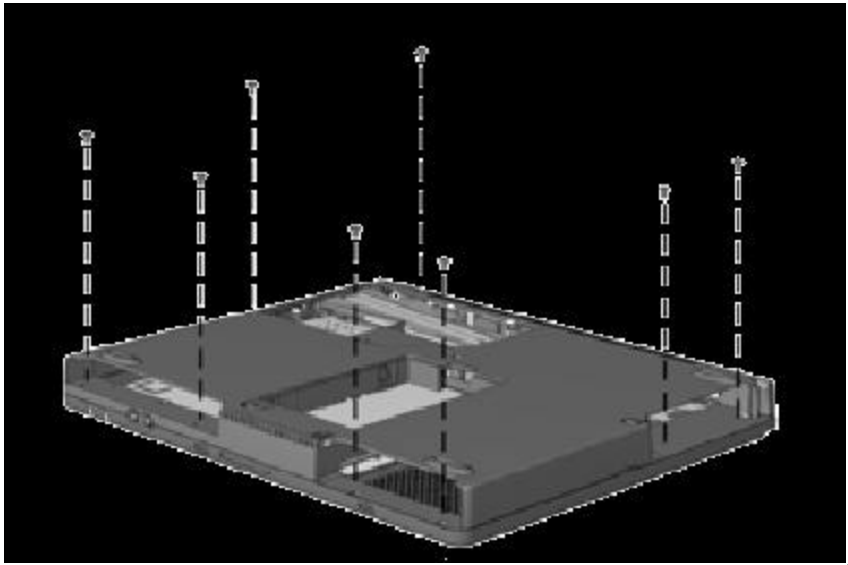
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Miscellaneous Plastics Kit, includes:	159536-001
Switch cover	RJ-11 modem cover
Hinge cover	RJ-45 LAN cover
Real time clock (RTC) battery	Computer feet
Touch button cable	Display screw covers
Front shield	TV out connector cover
<b>Diskette drive bezel</b>	PC Card space saver
Hard drive cover	Diskette drive space saver
Mini PCI slot cover	CD-ROM drive space saver
	Infrared lens




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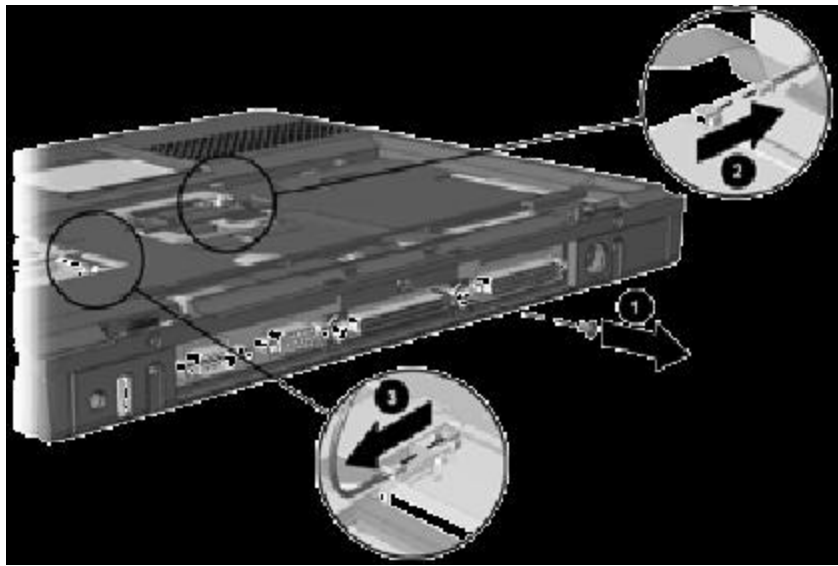
6. Remove the eight screws from the bottom of the computer that secure the top cover to the base enclosure (Figure 5-20).

**NOTE:** There are only seven screws to be removed in this step on the Armada V300 computer. The eighth screw was removed in Step 3 when removing the diskette drive bezel.



**Figure 5-20.** Removing the Top Cover Screws

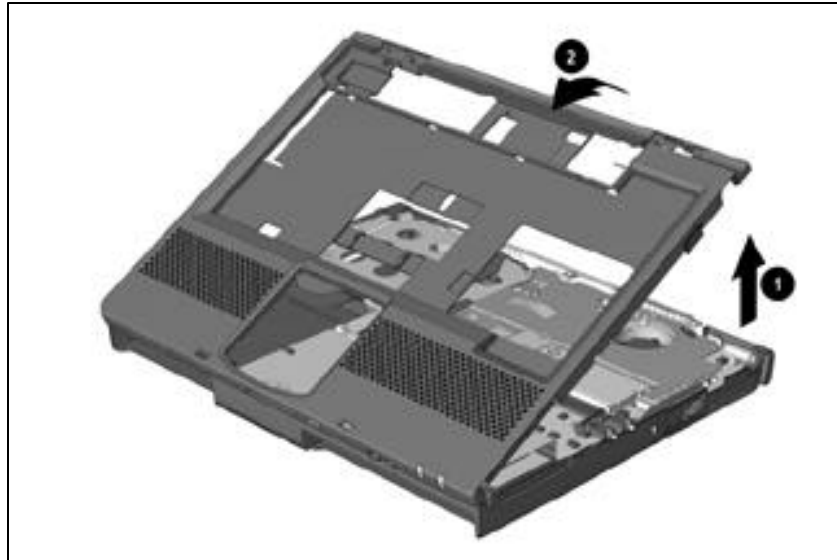
7. Turn the computer top side up with the rear panel facing forward.
8. Remove the screw  that secures the top cover to the base enclosure (Figure 5-21).
9. Disconnect the left  and right  speaker cables from the system board.



**Figure 5-21.** *Removing the Top Cover Rear Panel Screw and Disconnecting the Speaker Cables*



10. Lift the back edge of the top cover □ and swing it forward □ (Figure 5-22).



**Figure 5-22.** *Removing the Top Cover*

11. Remove the top cover.  
Reverse the removal procedure described above to replace the top cover.



### 5.13 Front Shield

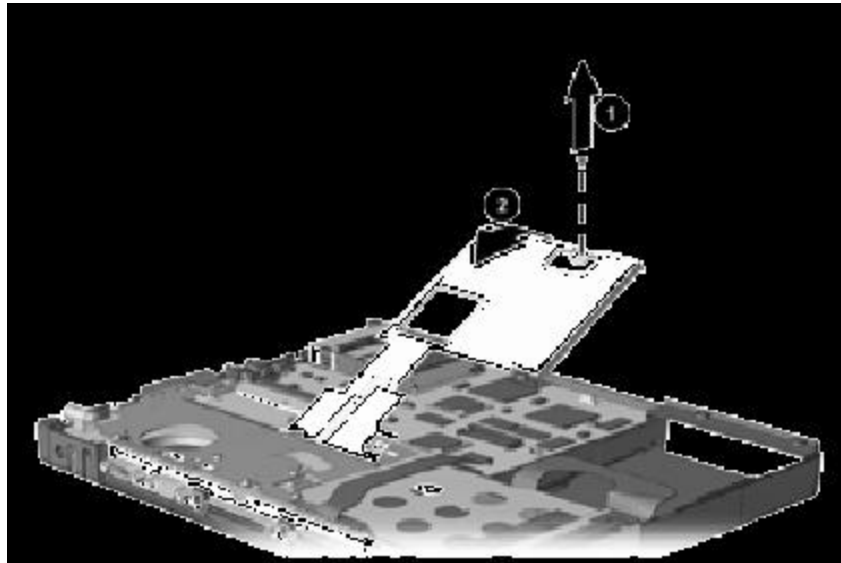
The front shield is spared in the Miscellaneous Plastics Kit.

Front Shield Spare Part Number Information	
Miscellaneous Plastics Kit, includes:	159536-001
Switch cover	RJ-11 modem cover
Hinge cover	RJ-45 LAN cover
Real time clock (RTC) battery	Computer feet
Touch button cable	Display screw covers
<b>Front shield</b>	TV out connector cover
Diskette drive bezel	PC Card space saver
Hard drive cover	Diskette drive space saver
Mini PCI slot cover	CD-ROM drive space saver
	Infrared lens

### Removing the Front Shield

1. Prepare the computer for disassembly (Section 5.3) and, in the order below, remove the following components:
  - touch button (Section 5.6)
  - keyboard (Section 5.7)
  - display assembly (Section 5.9)
  - LED board (Section 5.11)
  - top cover (Section 5.12).
2. Position the computer so the rear panel faces forward.

3. Remove the screw  that secures the front shield to base enclosure (Figure 5-23).
4. Lift the front edge of the front shield up and swing it toward the back of the computer .



**Figure 5-23.** *Removing the Front Shield*

5. Remove the front shield.

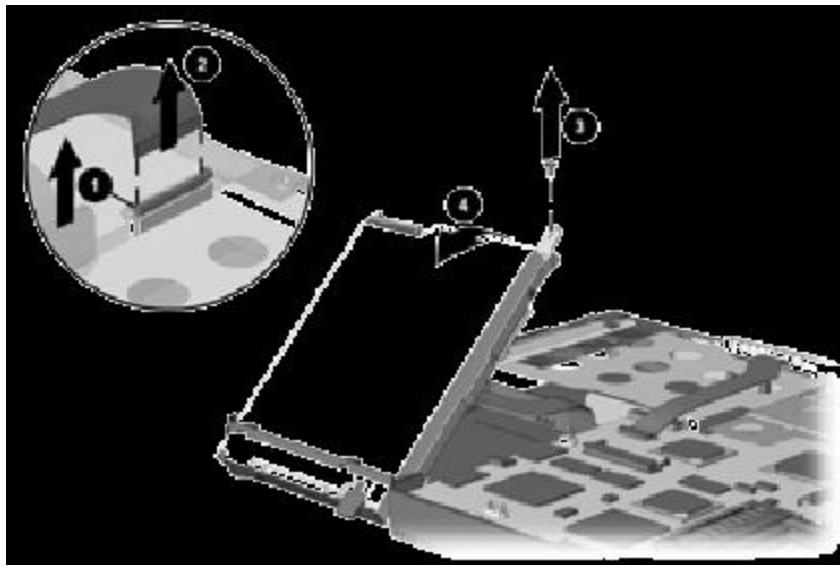
Reverse the removal procedure described above to replace the front shield.

## 5.14 Diskette Drive (Armada V300 only)

Diskette Drive Spare Part Number Information	
Diskette drive	160537-001

### Removing the Diskette Drive

1. Prepare the computer for disassembly (Section 5.3) and, in the order below, remove the following components:
  - touch button (Section 5.6)
  - keyboard (Section 5.7)
  - display assembly (Section 5.9)
  - LED board (Section 5.11)
  - top cover (Section 5.12).
2. Release the ZIF connector that connects the diskette drive ☐ (Figure 5-24).
3. Disconnect the diskette drive cable ☐.
4. Remove the screw that secures the diskette drive to the base enclosure ☐.
5. Lift up on the back of the diskette drive ☐ and remove it.



**Figure 5-24.** Removing the Diskette Drive

Reverse the removal procedure described above to replace the diskette drive.

## 5.15 System Board

**IMPORTANT:** When replacing the system board, remove the voltage converter board and retain it for use on the new system board. A new voltage converter board is not shipped with the new system board.

Refer to Section 5.15 for voltage converter board removal procedures.

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### System Board Spare Part Number Information

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#### System board

##### **Armada E500 only**

Intel Pentium III 450-MHz processor with 64 MB SDRAM	165101-001
Intel Pentium II 400-MHz processor with 64 MB SDRAM	159528-001
Intel Pentium II 366-MHz processor with 64 MB SDRAM	159527-00

##### **Armada V300 only**

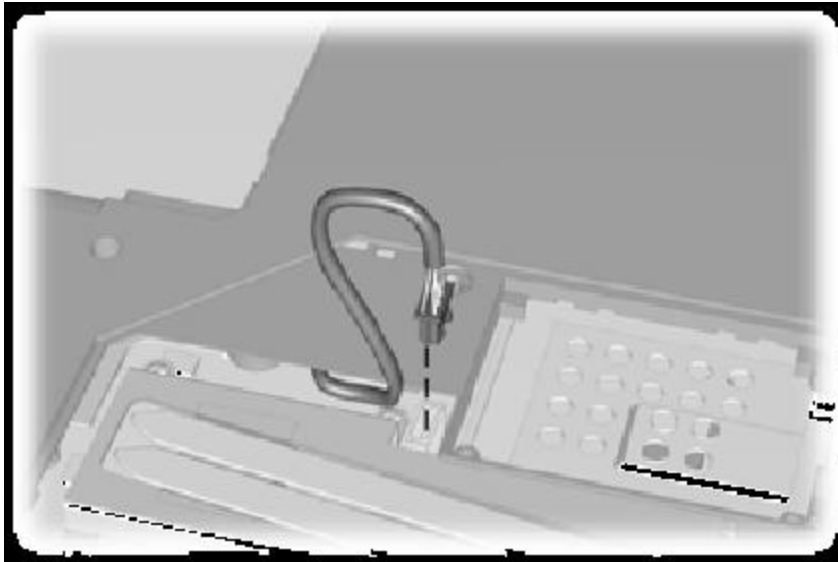
Intel Celeron 466-MHz processor with 64 MB SDRAM	160535-001
Intel Celeron 400-MHz processor with 64 MB SDRAM	160534-001
Intel Celeron 400-MHz processor with 32 MB SDRAM	159540-001

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
## Removing the System Board

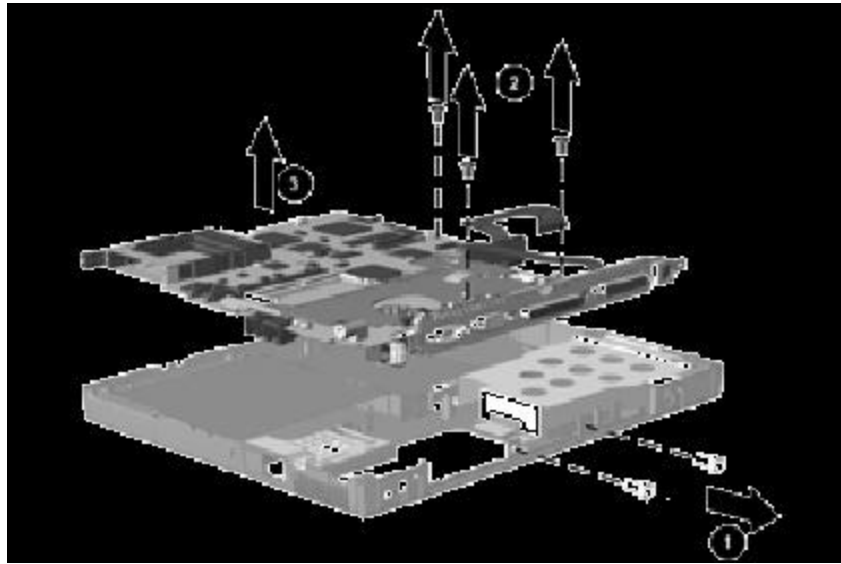
1. Prepare the computer for disassembly (Section 5.3) and, in the order below, remove the following components:
  - modem or modem/Network Interface Card (Section 5.5)
  - touch button (Section 5.6)
  - keyboard (Section 5.7)
  - display assembly (Section 5.9)
  - LED board (Section 5.11)
  - top cover (Section 5.12)
  - front shield (Section 5.13)
  - diskette drive (Section 5.14, Armada V300 only).
2. Turn the computer bottom side up with the front facing forward.

3. Disconnect the battery terminal cable from the system board (Figure 5-25).



**Figure 5-25.** *Disconnecting the Battery Terminal Cable*

4. Turn the computer top side up with the rear panel facing forward.
5. Remove the two bushing guides  that secure the system board to the I/O bracket (Figure 5-26).
6. Remove the three screws  that secure the system board to the base enclosure.
7. Lift the system board straight out of the base enclosure .



**Figure 5-26.** *Removing the System Board*

Reverse the removal procedure described above to replace the system board.

### 5.15 Voltage Converter Board

**IMPORTANT:** When replacing the system board, remove the voltage converter board and retain it for use on the new system board. A new voltage converter board is not shipped with the new system board.

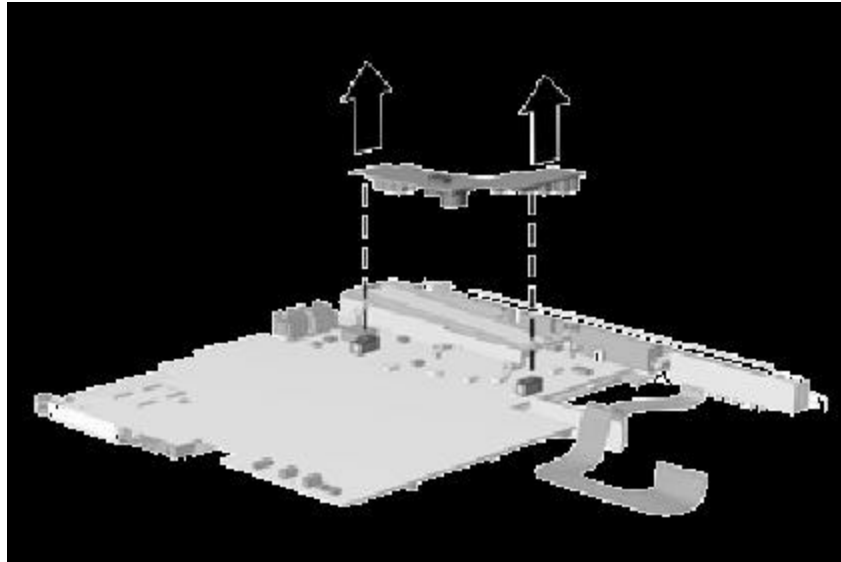
Voltage Converter Board Spare Part Number Information	
Voltage converter board	159928-001

### Removing the Voltage Converter Board

1. Prepare the computer for disassembly (Section 5.3) and, in the order below, remove the following components:
  - modem or modem/Network Interface Card (Section 5.5)
  - touch button (Section 5.6)
  - keyboard (Section 5.7)
  - display assembly (Section 5.9)
  - LED board (Section 5.11)
  - top cover (Section 5.12)
  - front shield (Section 5.13)
  - diskette drive (Section 5.14, Armada V300 only)
  - and system board (Section 5.15).
2. Turn the system board bottom side up and position the board so the I/O bracket faces forward.



3. Lift the left and right edges of the voltage converter board to disconnect it from the system board (Figure 5-27).



**Figure 5-27.** *Removing the Voltage Converter Board*

4. Remove the voltage converter board.

Reverse the removal procedure described above to replace the voltage converter board.




## 5.16 Fan

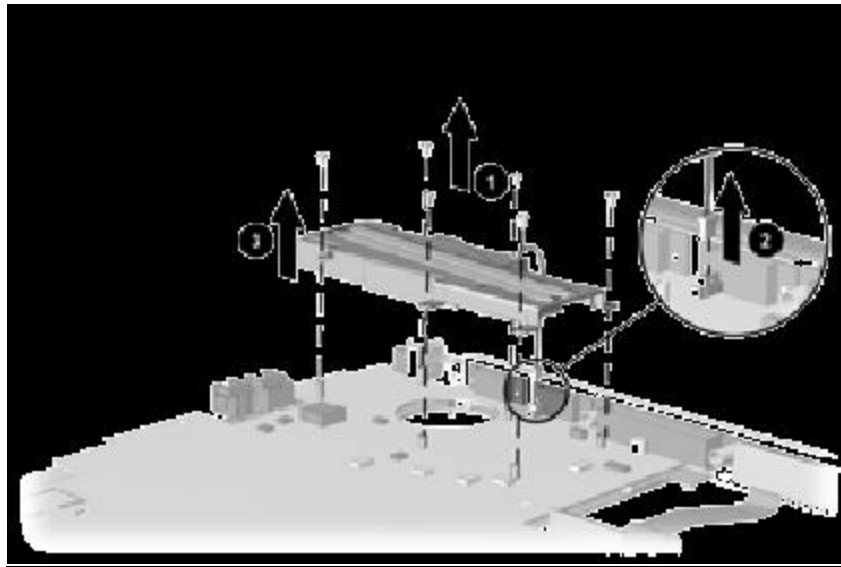
**IMPORTANT:** The fan is to be replaced only by central repair depot personnel.

Fan Spare Part Number Information	
Fan	159535-001

### Removing the Fan

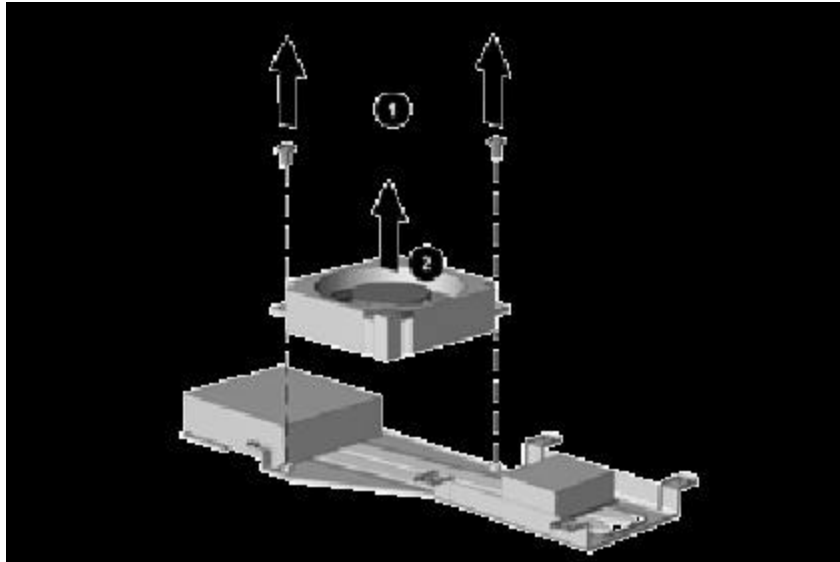
1. Prepare the computer for disassembly (Section 5.3) and, in the order below, remove the following components:
  - modem or modem/Network Interface Card (Section 5.5)
  - touch button (Section 5.6)
  - keyboard (Section 5.7)
  - display assembly (Section 5.9)
  - LED board (Section 5.11)
  - top cover (Section 5.12)
  - front shield (Section 5.13)
  - diskette drive (Section 5.14, Armada V300 only)
  - and system board (Section 5.15).
2. Turn the system board bottom side up and position the board so the I/O bracket faces forward.

3. Remove the six screws that secure the fan and heat sink to the system board  (Figure 5-28).
4. Disconnect the fan cable from the system board .
5. Remove the fan and heat sink from the system board .



**Figure 5-28.** Removing the Fan and Heat Sink

6. Remove the two screws that secure the fan to the heat sink ☐  
(Figure 5-29).
7. Remove the fan from the heat sink ☐.



**Figure 5-29.** *Removing the Fan*

Reverse the removal procedure described above to replace the fan and heat sink.