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maintenance & service guide

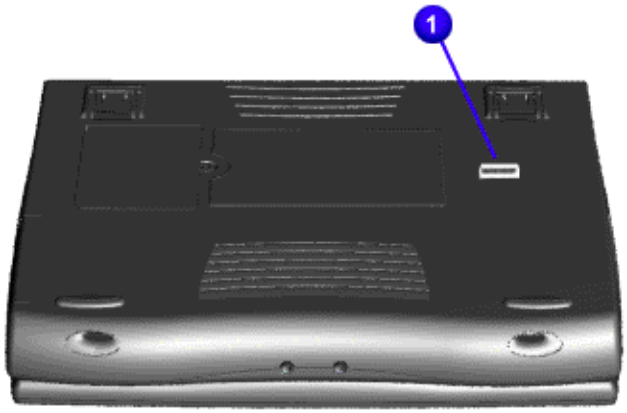
Presario 1200 Series
Models: XL101-XL113, XL115, XL118-XL127

Removal Sequence

This section explains the removal and replacement procedures for the 1200XL unit.

Serial Number Location

Report the unit's serial number ❶ to Compaq when requesting information or ordering spare parts. The serial number is located underneath the notebook as shown below.



Electrostatic Discharge

A sudden discharge of static electricity from a finger or other conductor can destroy static-sensitive devices or microcircuitry. Often the spark is neither felt nor heard, but damage occurs. An electronic device exposed to electrostatic discharge (ESD) may not seem to be affected at all and works perfectly throughout a normal cycle. Although it may function normally for a while, it may be degraded in the internal layers, reducing its life expectancy.

Networks built into many integrated circuits provide some protection, but in many cases, the discharge contains enough power to alter device parameters or melt silicon junctions.

Generating Static

The table below shows activities that generate static electricity and the associated electrostatic voltage level.

Typical Electrostatic Voltages			
Event	**Relative Humidity**		
	10%	**40%**	**55%**
Walking across carpet	35,000 V	15,000 V	7,500 V
Walking across vinyl floor	12,000 V	5,000 V	3,000 V
Motions of bench worker	6,000 V	800 V	400 V
Removing DIPS from plastic tubes	2,000 V	700 V	400 V
Removing DIPS from vinyl trays	11,500 V	4,000 V	2,000 V
Removing DIPS from styrofoam	14,500 V	5,000 V	3,500 V
Removing bubble pack from PCBs	26,000 V	20,000 V	7,000 V
Packing PCBs in foam-lined box	21,000 V	11,000 V	5,000 V

Note: 700 Volts can degrade a product.

Service Considerations

Listed below are some of the considerations to consider during the disassembly and assembly of the Notebook.

Tool and Software Requirements

The following items are required to service the computer:

- Compaq screwdriver kit (Spare Part No. 161946-001)
- Torx T-9 screwdriver
- 3/16-in. and 5mm nut drivers (for screwlocks and standoffs)
- Small, standard screwdriver
- Small, Phillips screwdriver
- Diagnostics software

Screws

The screws used in the Notebook are not interchangeable. If an incorrect screw is used during the reassembly process, it can damage the unit. Compaq strongly recommends that all screws removed during disassembly be kept with the part that was removed, and then returned to their proper locations.

> **Important:** As each subassembly is removed from the Notebook, place it away from the work area to prevent damage.

Cables and Connectors

Cables must be handled with extreme care to avoid damage. Apply only the tension required to seat or unseat the cables during insertion or removal from the connector. Handle cables by the connector whenever possible. In all cases, avoid bending, twisting, or tearing the cables, and ensure that the cables are routed in such a way that they cannot be caught or snagged by parts being removed or replaced. Most cables used throughout the unit are ribbon cables.

Cables

Use the following precautions when handling cables to avoid damage to the cable or Notebook:

- Always handle cables by their connectors.
- Avoid bending, twisting, or pulling on the cables.
- Apply minimum required force when seating or unseating the cables from their connectors.
- Place the cables in such a manner that they cannot be caught or snagged by parts being removed or replaced.
- Handle flex cables with extreme care; they can tear easily.

> **CAUTION:** When servicing these computers, ensure that cables are placed in their proper location during the reassembly process. Improper cable placement can cause severe damage to the unit.

The following illustrations show the proper placement for each cable:

- ZIF Connector
- CD or DVD Ribbon Cable
- Diskette Drive Ribbon Cable
- Speaker Assembly Cable
- Hard Drive Ribbon Cable

Connectors and Plastic Parts

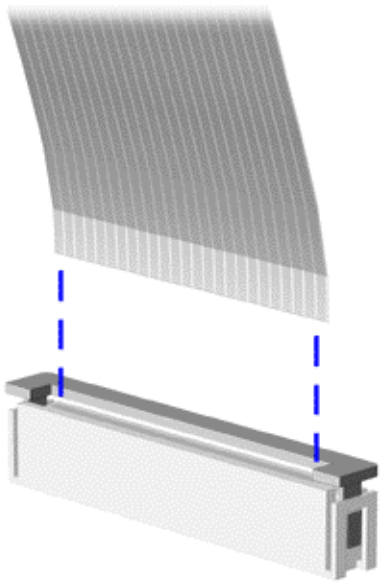
Plastic parts can be damaged by the use of excessive force during disassembly and reassembly. When handling these plastic parts, use care. Apply pressure only at the points designated in the maintenance instructions.

ZIF Connector

The 1200XL Series Notebooks use zero insertion force (ZIF) connectors on the system board.

> **CAUTION:** A ZIF connector and its attached cable can be easily damaged. Handle only the connector slide when removing or replacing a cable. Never pull or twist on the cable while it is connected.

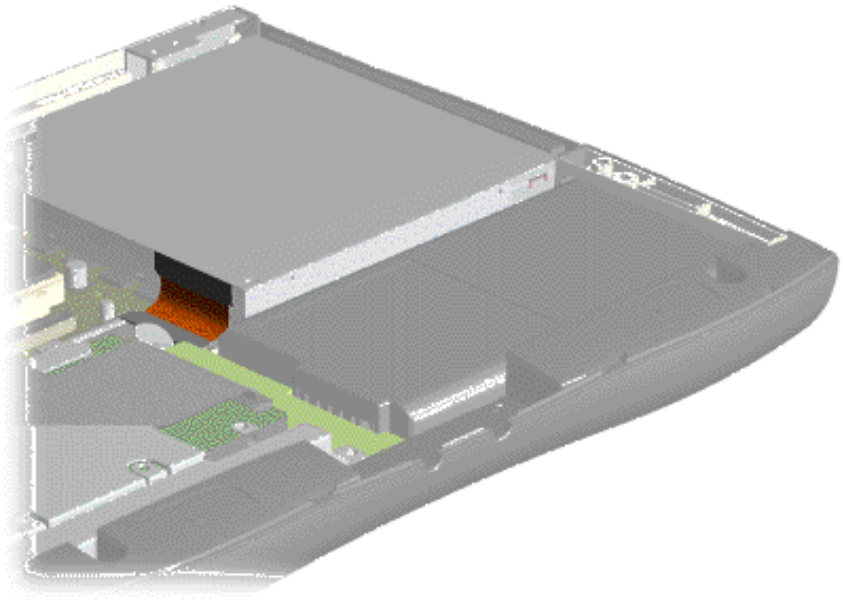
To remove a cable from a ZIF connector, lift both corners of the ZIF connector and slide the cable out simultaneously with constant light force.



> **CAUTION:** When servicing this notebook, ensure that cables are placed in their proper location during the reassembly process. Improper cable placement can damage the notebook.

CD or DVD Ribbon Cable

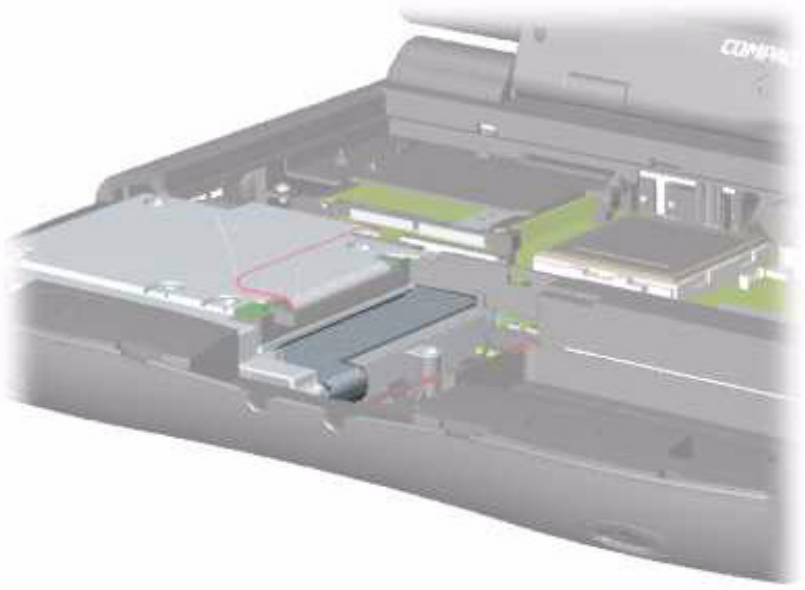
The ribbon cable position for the CD or DVD drive is shown below.



CAUTION: When servicing this computer, ensure that cables are placed in their proper location during the reassembly process. Improper cable placement can damage the computer.

Diskette Drive Ribbon Cable

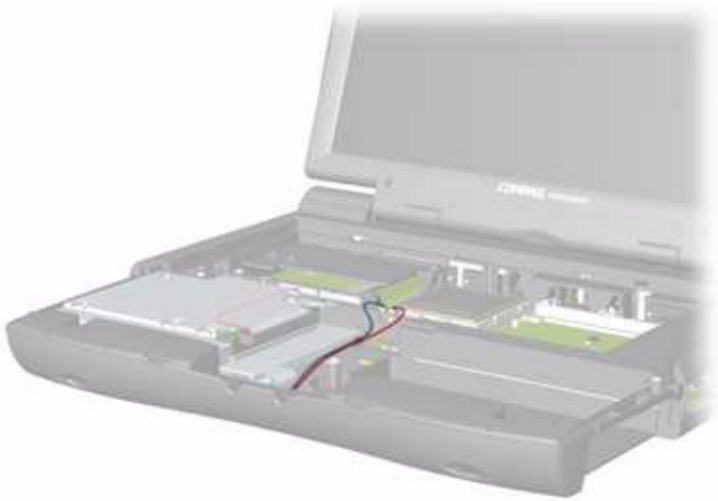
The ribbon cable position for the diskette drive is shown below.



CAUTION: When servicing this computer, ensure that cables are placed in their proper location during the reassembly process. Improper cable placement can damage the computer.

Speaker Assembly Cable

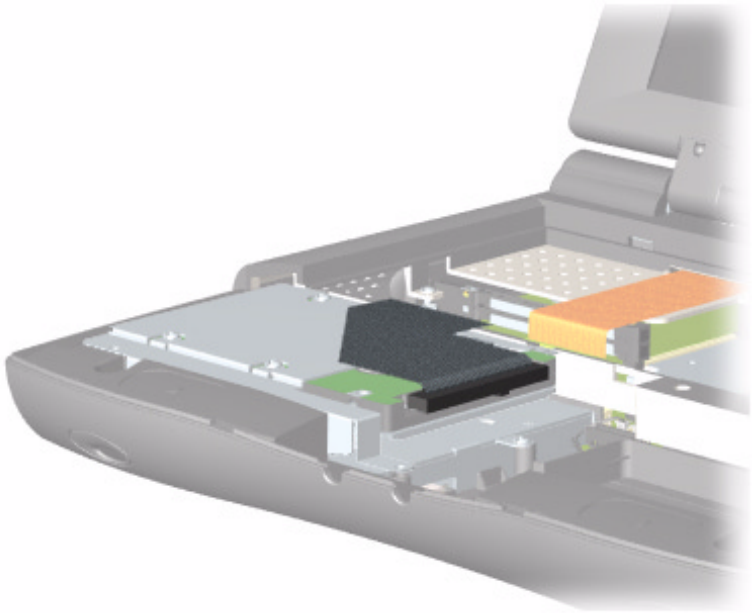
The cable position for the speaker assembly is shown below. The cable is routed under the battery charger board and under the edge of the system board.



CAUTION: When servicing this notebook, ensure that cables are placed in their proper location during the reassembly process. Improper cable placement can damage the notebook.

Hard Drive Ribbon Cable

The ribbon cable position for the hard drive is shown below.



CAUTION: When servicing this computer, ensure that cables are placed in their proper location during the reassembly process. Improper cable placement can damage the computer.

Preparing the Notebook for Disassembly

Before beginning Removal & Replacement Procedures, complete the following steps:

1. Disconnect AC power and any external devices.
2. Remove the battery pack (pg 11).
3. Remove any PC Cards.

Important: The battery pack should be removed before performing any internal maintenance on the Notebook.

⚠ **WARNING:** Metal objects can damage the battery pack as well as the battery contacts in the battery compartment. To prevent damage, do not allow metal objects to touch the battery contacts. Place only the battery pack for the Compaq Presario 1200XL Series Portable Notebooks into the battery compartment. Do not force the battery pack into the bay if insertion is difficult.

⚠ **CAUTION:** Do not crush, puncture, or incinerate the battery pack. Do not open a battery pack; this action damages the pack, makes it unusable, and exposes potentially harmful battery components. No field-serviceable parts are located inside the battery pack.

Note: Compaq Presario 1200XL Series Portable Notebooks have several screws of various sizes that are **not** interchangeable. Care must be taken during reassembly to ensure that the correct screws are used in their correct location. During removal keep respective screws with their associated subassembly.

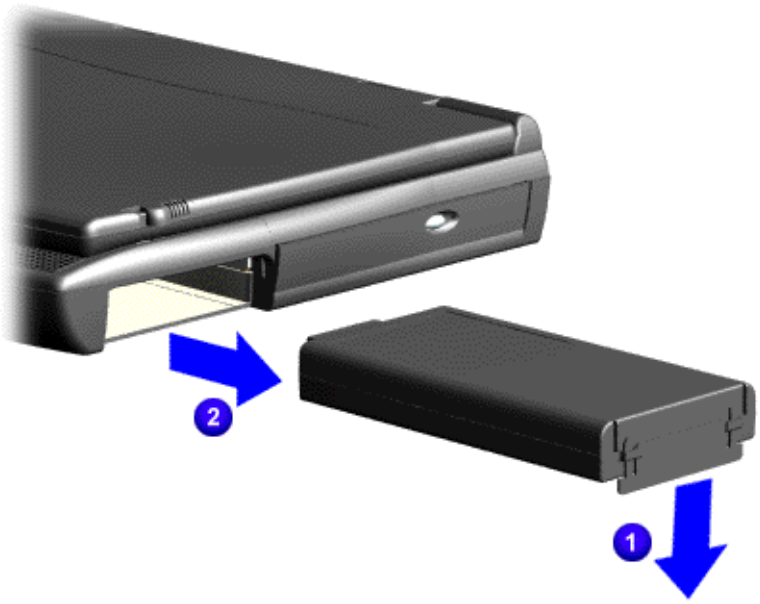
Removing the Battery

To remove the battery pack, complete the following steps:

1. Slide the battery compartment door down and remove it from the chassis.

Continued on next page.

2. Pull down ❶ the tab located on the end of the battery pack and then slide ❷ the battery out of the chassis.



To replace the battery pack, reverse these procedures.

Important: The battery pack should be removed before performing any internal maintenance on the notebook.

WARNING: Metal objects can damage the battery pack as well as the battery contacts in the battery compartment. To prevent damage, do not allow metal objects to touch the battery contacts. Place only the battery pack for Compaq Presario 1200XL Series Portable Notebooks into the battery compartment. Do not force the battery pack into the bay if insertion does not occur easily.

CAUTION: Do not crush, puncture, or incinerate the battery pack. Do not open a battery pack; this action damages the pack, makes it unusable, and exposes potentially harmful battery components. No field-serviceable parts are located inside the battery pack.

Removing the Palmrest Cover with TouchPad

The palmrest cover with TouchPad is the first component that must be removed to gain access to the interior components of the Notebook.

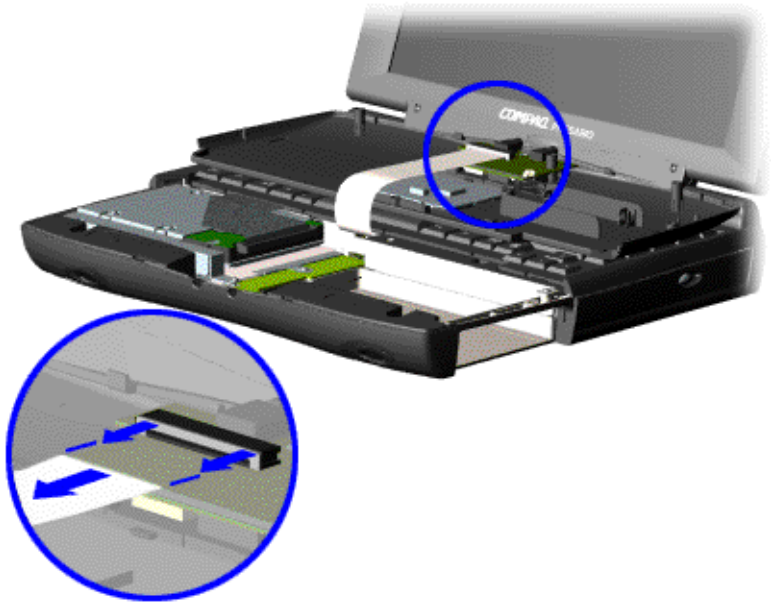
> **Note:** It is not necessary to remove the display panel assembly to access the interior components of the Notebook.

To remove the palmrest cover with TouchPad, complete the following steps:

1. Prepare the computer for disassembly (pg 10).
2. Close the display and turn the computer upside down.
3. Remove three screws from the underside of the Notebook and one screw from the right-side of the computer.

Continued on next page.

4. Turn the Notebook over (right side up).
5. Pull the display release latches to open the display.
6. Lift up the front end and turn over the palmrest cover, allowing it to rest on top of the keyboard.
7. Disconnect the flex cable from the ZIF connector on the palmrest cover.



To replace the palmrest cover, reverse these procedures.

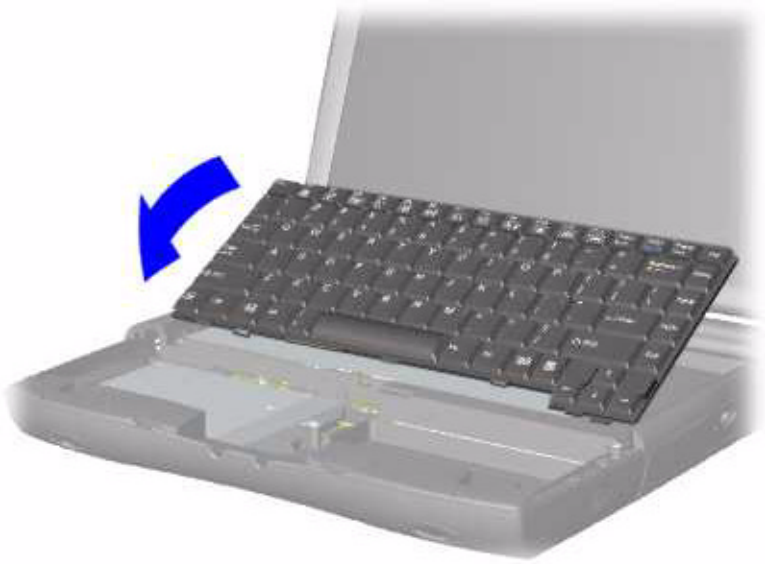
CAUTION: When replacing the palmrest cover, ensure that the cable is fully inserted into the ZIF connector on the system board. If the metal end comes in contact with the keyboard, the Notebook may be damaged.

Note: When replacing the palmrest cover, ensure that the cable is properly routed through the slot on the Upper CPU Cover.

Removing the Keyboard

To remove the keyboard, complete the following steps:

1. Prepare the computer for disassembly (pg 10).
2. Remove the palmrest cover with TouchPad (pg 13).
3. Gently lift and turn the keyboard over allowing it to rest where the palmrest cover normally sits.



4. Remove the heatspreader (pg 17).

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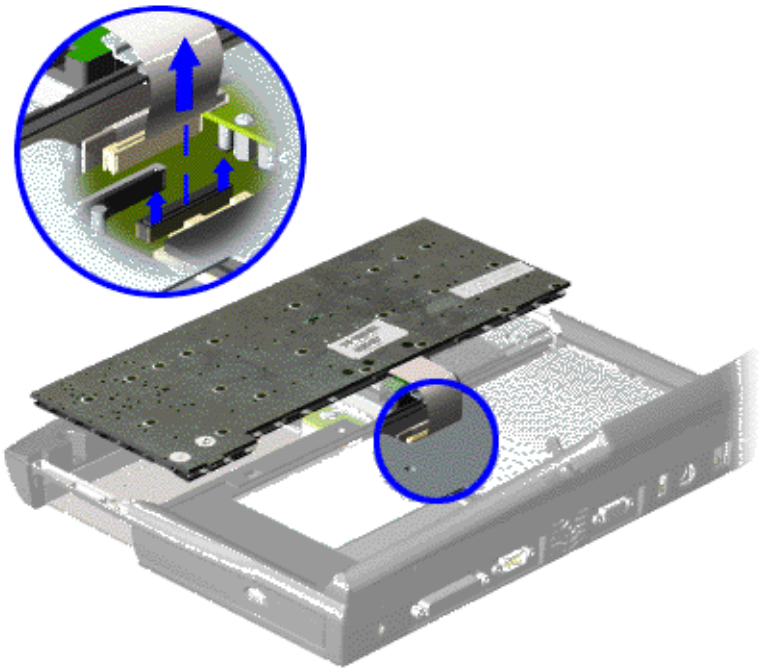
5. Disconnect the flex cable from the ZIF connector on the system board and remove the keyboard.

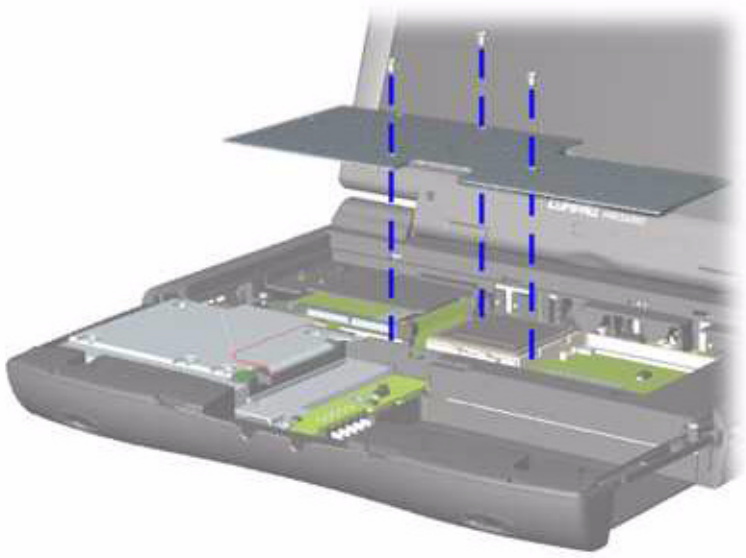


To replace the keyboard, reverse these procedures.

Removing the Heatspreader

To remove the Heatspreader, complete the following steps:

1. Prepare the computer for disassembly (pg 10).
2. Remove the Palmrest Cover with TouchPad (pg 13).
3. Gently lift and turn the keyboard over, allowing it to rest where the palmrest cover normally sits.
4. Remove three screws from the Heatspreader and lift it out of the chassis.



To replace the Heatspreader, reverse these procedures.

Note: If the thermal pads on the Heatspreader are missing or damaged, a new Heatspreader should be installed.

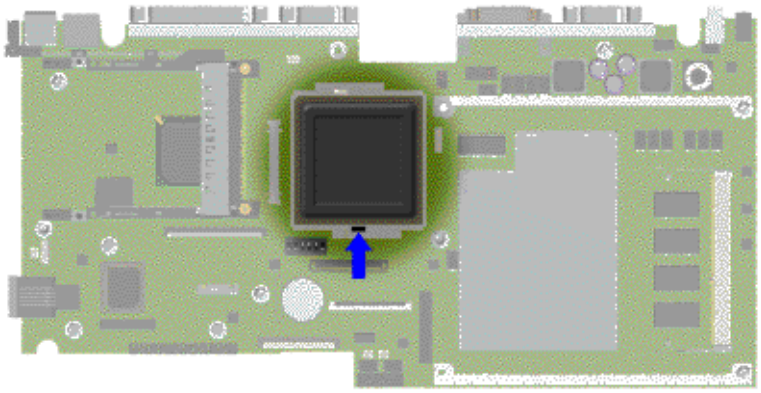
Important: Before installing the new Heatspreader, remove the plastic covering from the thermal pads.

WARNING: To prevent damage, do not use excessive force when replacing the screws.

Removing the Processor

To remove the processor, complete the following steps:

1. Prepare the computer for disassembly (pg 10).
2. Remove the palmrest cover with TouchPad (pg 13).
3. Remove the keyboard (pg 15).
4. Remove the heatspreader (pg 17).
5. Place the tip of standard screwdriver in the slot in front of the processor and push toward the display to release the processor from the chassis.
6. Lift the processor out of the chassis.



To replace the processor, perform the following:

1. Fully align the processor with the system board connector.

   Important: The notch on the upper left corner of the processor serves as an orientation indicator. Align the notch on the left corner of the processor with the notch on the left corner of the processor connector.

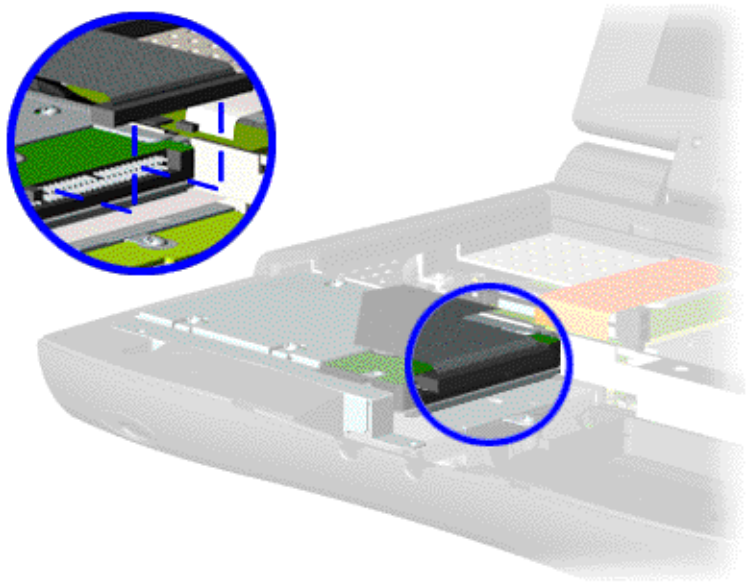
   Note: The processor should drop into the socket without any force.
2. Carefully press the processor into the socket.
3. Insert a small-blade screwdriver in the slot in front of the processor and push away from the display to lock the processor.
4. Reassemble the remaining components by reversing their removal procedures.

Removing the Hard Drive

> **Note:** Illustrations may show parts removed that are not part of this procedure. It is necessary to remove only the parts listed in the written procedure.

To remove the hard drive, complete the following steps:

1. Prepare the unit for disassembly (pg 10).
2. Remove the palmrest cover with TouchPad (pg 13).
3. Disconnect the hard drive data cable from the hard drive.



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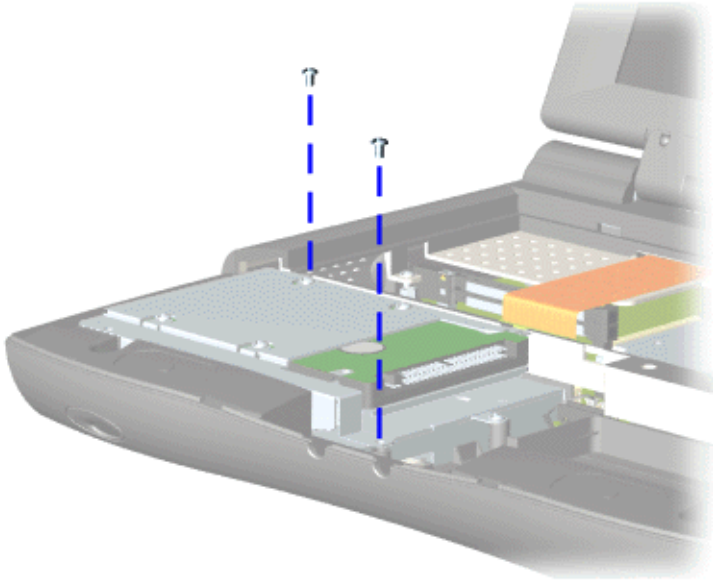
4. Remove two screws from the hard drive mounting bracket and lift out the hard drive with mounting bracket attached.



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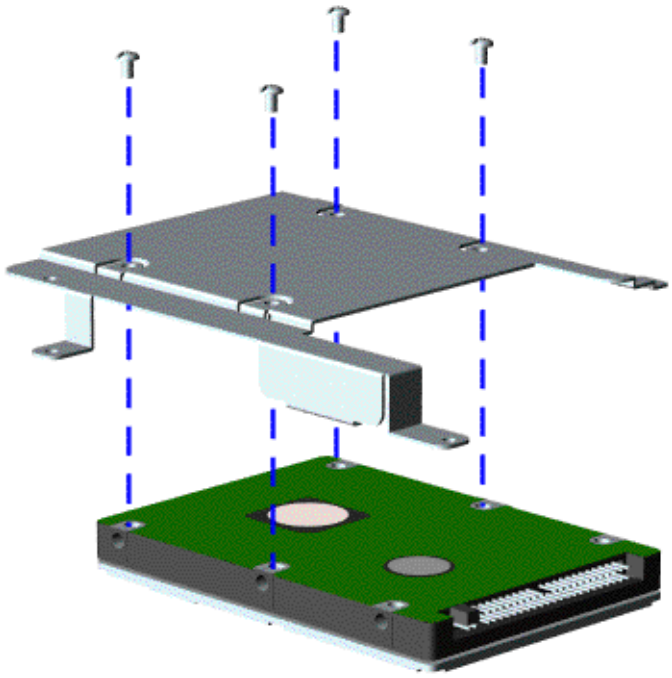
Removing the Hard Drive Mounting Bracket

To remove the hard drive mounting bracket, remove four screws from the top of the hard drive.



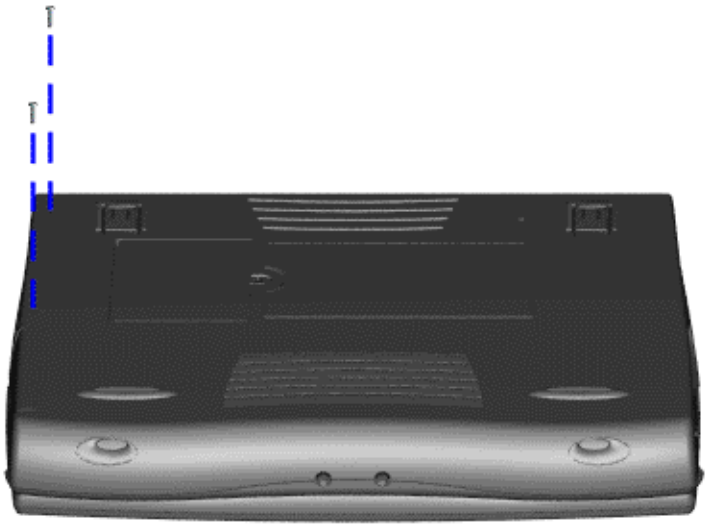
To replace the hard drive and mounting bracket, reverse these procedures.

Removing the CD/DVD Drive

> **Note:** Illustrations may show parts removed that are not part of this procedure. It is necessary to remove only the parts listed in the written procedure.

To remove the CD/DVD Drive, complete the following steps:

1. Prepare the computer for disassembly (pg 10).
2. Remove the palmrest cover with TouchPad (pg 13).
3. Remove the keyboard (pg 15).
4. Remove the heatspreader (pg 17).
5. Close the display and turn the Notebook over (upside down).
6. Remove two screws from the underside of the Notebook that secure the CD or DVD drive to the chassis.



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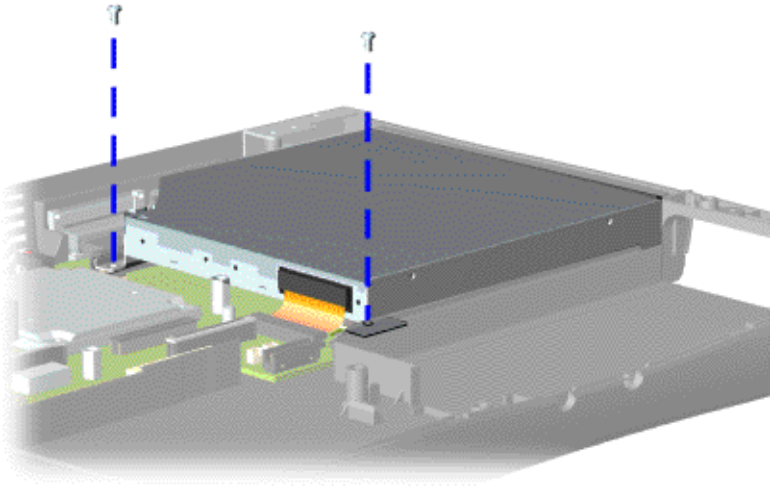
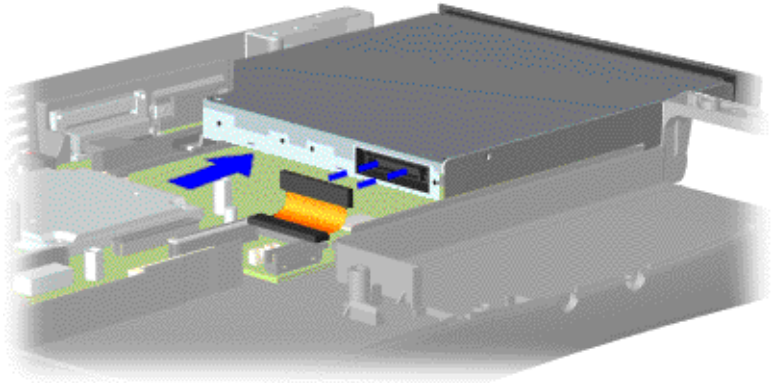
7. Turn the Notebook over (right side up) and open the display.
8. Remove two screws located at the back of the CD or DVD drive.



9. Disconnect the CD/DVD drive cable from the CD or DVD drive.
10. Remove the CD or DVD drive from the chassis.



To replace the CD/DVD drive, reverse these procedures.

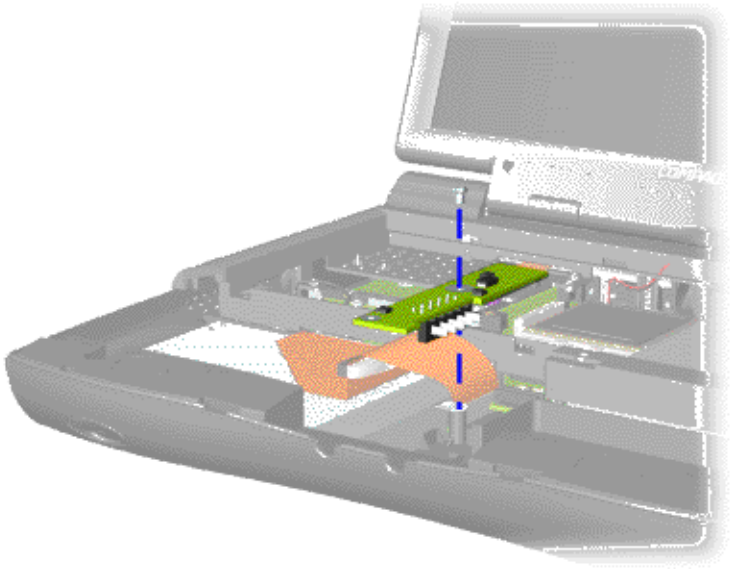
Removing the Battery Charger Board

(Voltage Converter Board)

> **Note:** Illustrations may show parts removed that are not part of this procedure. It is necessary to remove on the parts listed in the written procedure.

To remove the battery charger board, complete the following:

1. Prepare the Notebook for disassembly (pg 10).
2. Remove the palmrest cover with TouchPad (pg 13).
3. Remove the hard drive (pg 19).
4. Remove one screw from the battery charger board, unplug the board from the connector on the system board, and lift it out of the chassis.



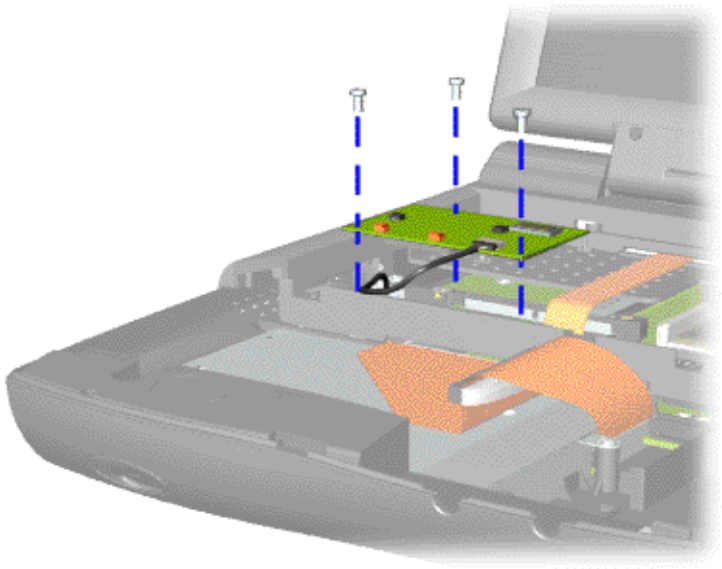
To replace the battery charger board, reverse these procedures.

> **Important:** When replacing the battery charger board, ensure that the pins are aligned with the connector on the system board.

Removing the Modem

To remove the modem, complete the following steps:

1. Prepare the computer for disassembly (pg 10).
2. Remove the palmrest cover with TouchPad (pg 13).
3. Remove the keyboard (pg 15).
4. Remove the heatspreader (pg 17).
5. Remove three screws securing the modem, and disconnect the modem from the connector on the system board.



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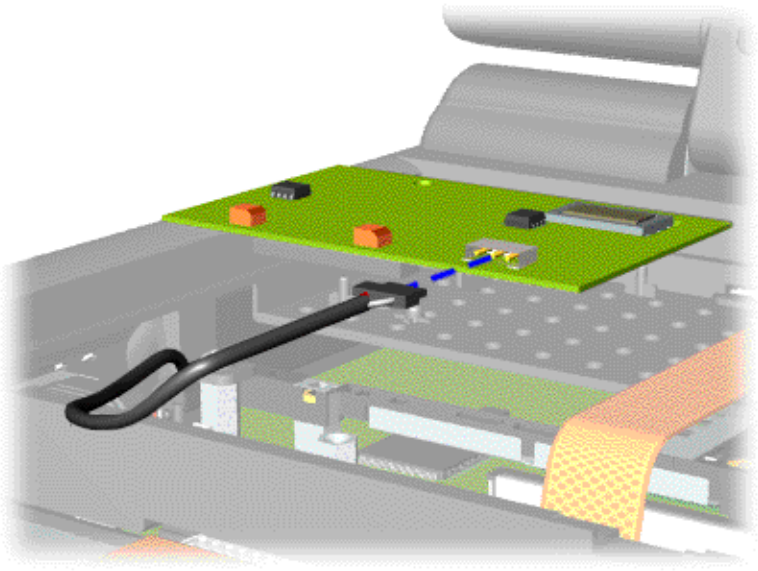
6. Disconnect the modem cable from the modem.



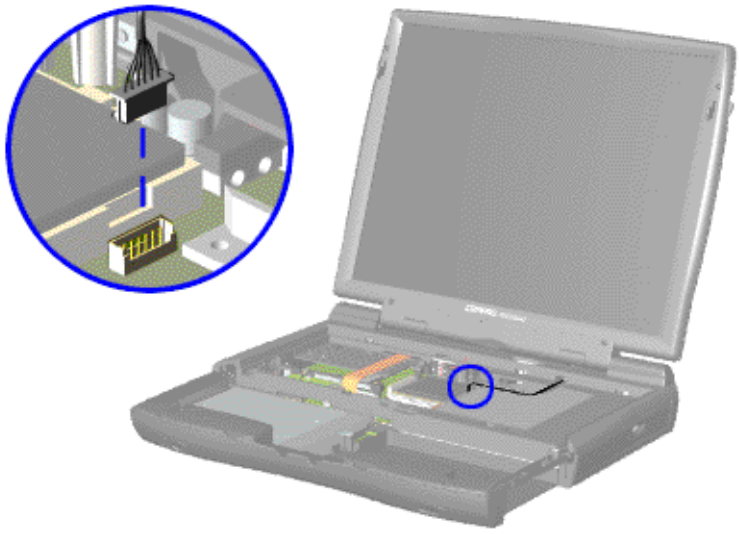
To replace the modem, reverse these procedures.

Removing the Display Panel Assembly

> **Note:** Illustrations may show parts removed that are not part of this procedure. It is necessary to remove only the parts listed in the written procedure.

To remove the display panel assembly, complete the following steps:

1. Prepare the computer for disassembly (pg 10).
2. Remove the palmrest cover with TouchPad (pg 13).
3. Remove the keyboard (pg 15).
4. Remove the heatspreader (pg 17).
5. Disconnect the backlight cable attached to the display panel assembly from the connector on the system board.



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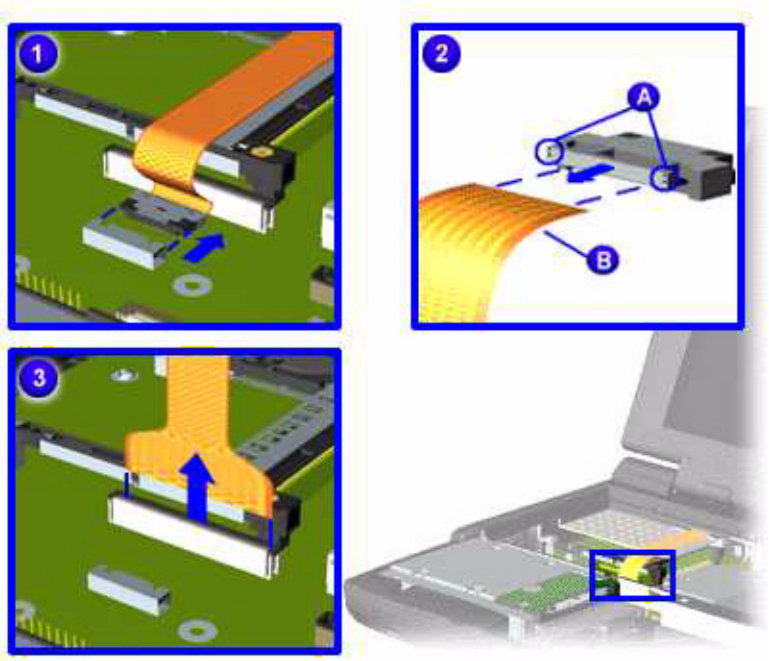
6. For units with Thin Film Transistor (TFT) displays, disconnect the display data cable from the LVDS connector as shown in ❶ and ❷ below. For units with High-Performance Addressing (HPA) displays, disconnect the display data cable from the CMOS connector as shown in ❸ below.



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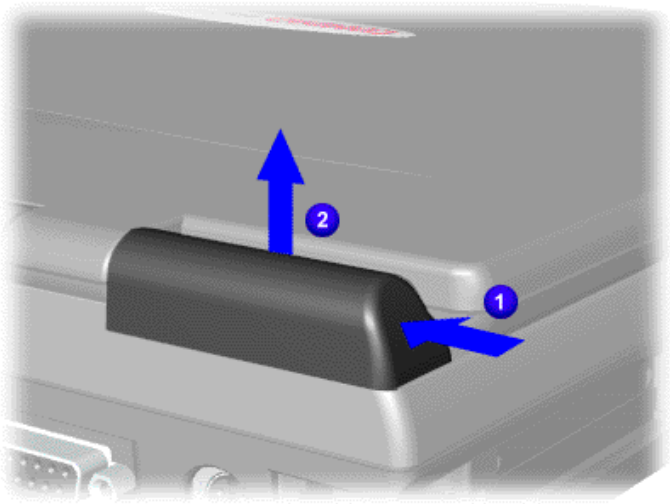
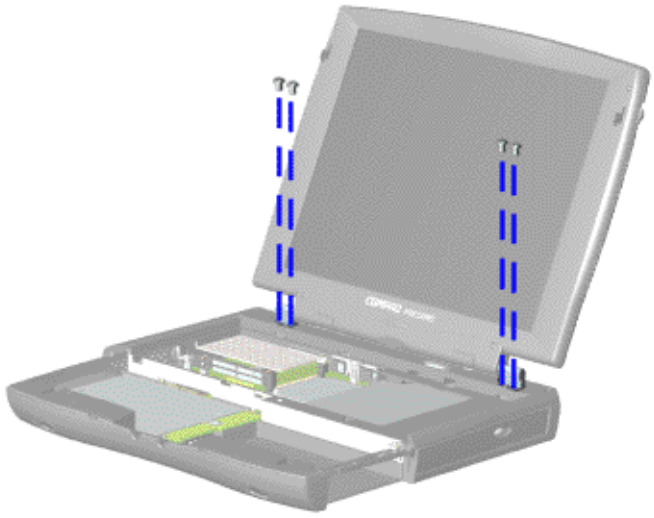
7. Close the display, carefully push in ❶ on the hinge covers, and then lift ❷ the covers off the hinges.



8. Support the back of the display panel and remove two screws from each of the hinges.



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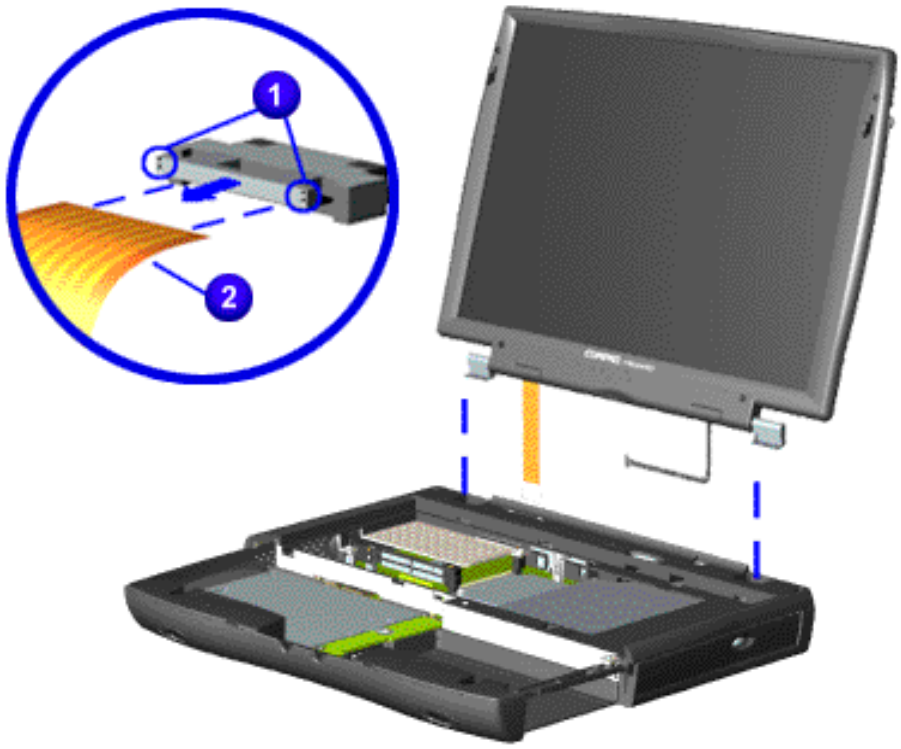
9. If the display data cable has the LVDS connector on the end as shown below, remove the connector by ❶ grasping the edges of the connector and ❷ gently pulling out the cable.

   CAUTION: For TFT displays, the connector on the end of the flex cable must be removed before the cable can be routed through the slot on the upper CPU cover.

10. Gently pull the flex data cable and backlight cable attached to the display panel through the slot on the upper CPU cover and lift the display panel off of the unit.



Important: When removing the display panel assembly, take note of the correct routing position for the display flex cable for use during replacement.

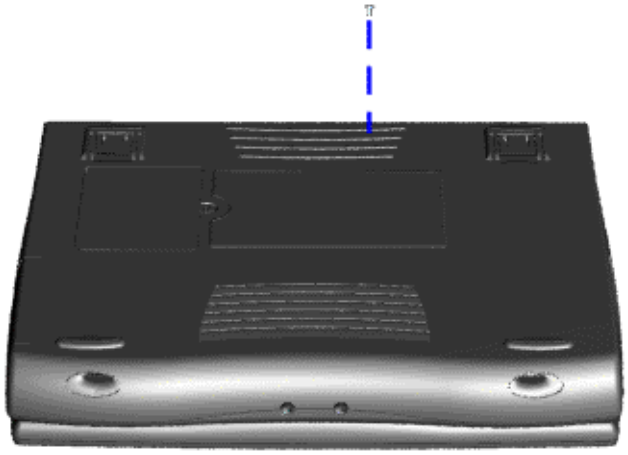
Note: For TFT displays, Compaq recommends replacing the LVDS connector on the end of the display flex cable after the display panel assembly has been removed from the unit.

To replace the display panel, reverse these procedures.

Removing the Upper CPU Cover

To remove the upper CPU cover, complete the following:

1. Prepare the computer for disassembly (pg 10).
2. Remove the palmrest cover with TouchPad (pg 13).
3. Remove the keyboard (pg 15).
4. Remove the heatspreader (pg 17).
5. Remove the hard drive (pg 19).
6. Remove the display panel assembly (pg 27).
7. Remove the screw on the underside of the unit, which secures the upper CPU cover to the chassis.



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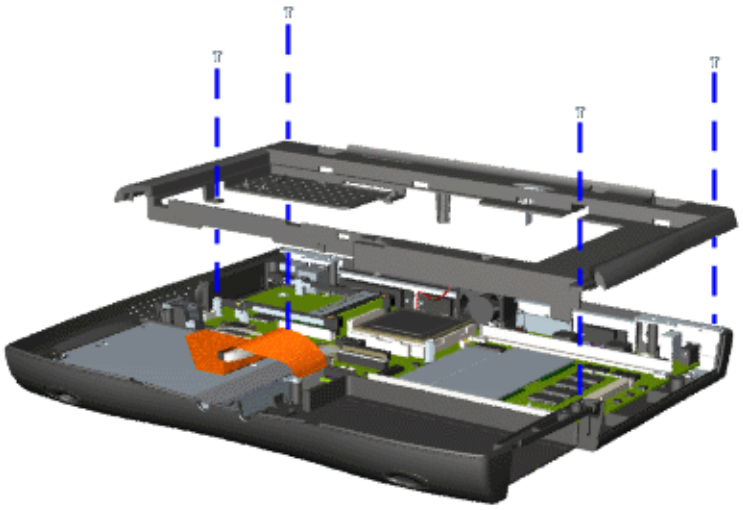
8. Remove four screws located on the top of the upper CPU cover.
9. Lift the cover off the snaps on the chassis to disconnect the power switch from the connector on the system board.

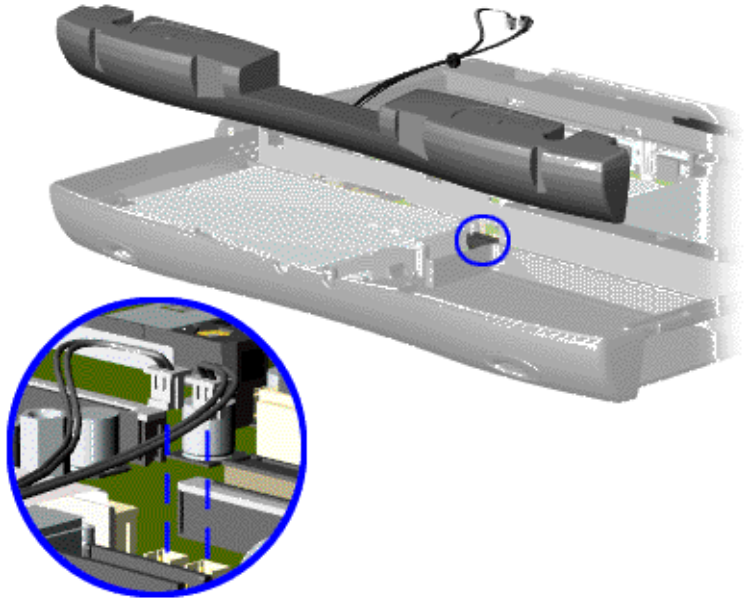


To replace the upper CPU cover, reverse these procedures.

Removing the Speaker Assembly

To remove the speaker assembly, complete the following steps:

1. Prepare the Notebook for disassembly (pg 10).
2. Remove the palmrest cover with TouchPad (pg 13).
3. Remove the keyboard (pg 15).
4. Remove the heatspreader (pg 17).
5. Remove the hard drive (pg 19).
6. Remove the display panel assembly (pg 27).
7. Remove the upper CPU cover (pg 31).
8. Remove the battery charger board (pg 24).
9. Disconnect the speaker cables from the system board as shown below and remove the speaker assembly from the chassis.

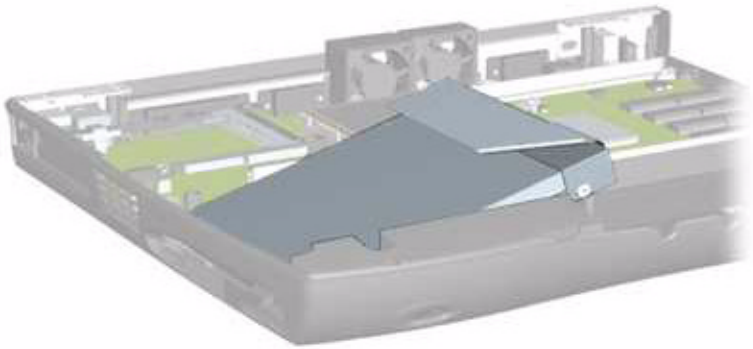


To replace the speaker assembly, reverse these procedures.

Removing the Diskette Drive

To remove the diskette drive, complete the following:

1. Prepare the Notebook for disassembly (pg 10).
2. Remove the palmrest cover with TouchPad (pg 13).
3. Remove the keyboard (pg 15).
4. Remove the Heatspreader (pg 17).
5. Remove the hard drive (pg 19).
6. Remove the display panel assembly (pg 27).
7. Remove the upper CPU cover (pg 31).
8. Remove the battery charger board (pg 24).
9. Remove the speaker assembly (pg 33).
10. Lift up the diskette drive.
11. Disconnect the diskette drive data cable from the system board and remove the diskette drive from the unit.



To replace the diskette drive, reverse these procedures.

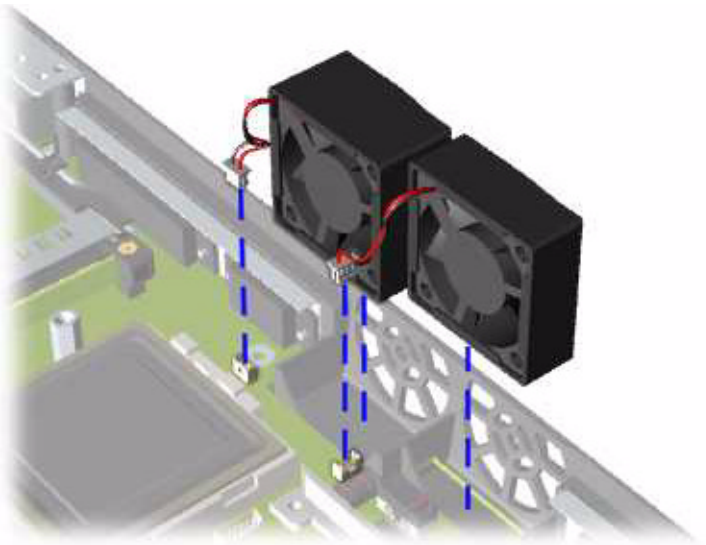
Note: When replacing the diskette drive, ensure that the diskette drive eject lever is properly inserted in the chassis slot.

CAUTION: Ensure that cables are placed in their proper locations during the reassembly process.

Removing the Fan Assemblies

To remove the fan assemblies, complete the following steps:

1. Prepare the Notebook for disassembly (pg 10).
2. Remove the palmrest cover with TouchPad (pg 13).
3. Remove the keyboard (pg 15).
4. Remove the heatspreader (pg 17).
5. Remove the hard drive (pg 19).
6. Remove the display panel assembly (pg 27).
7. Remove the upper CPU cover (pg 31).
8. Disconnect the fan cables from the connectors on the system board and lift the fan assemblies from the chassis slots.



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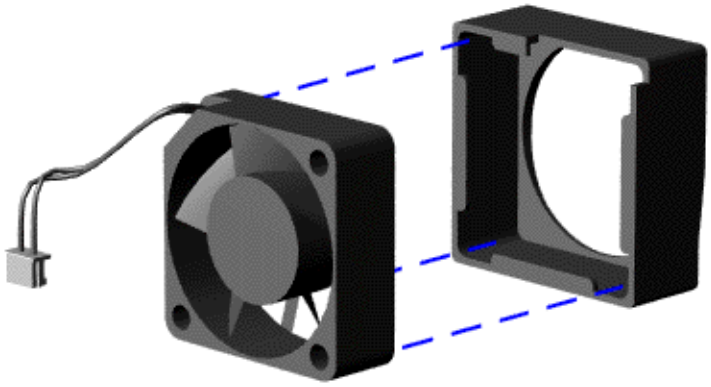
To remove the fan gasket, pull the gasket from the fan.



To replace the fan assemblies and gaskets, reverse these procedures.

Important: When replacing the fan assembly, ensure that the arrow (located on the top of the fan gasket) is pointing inward.

Removing the System Board

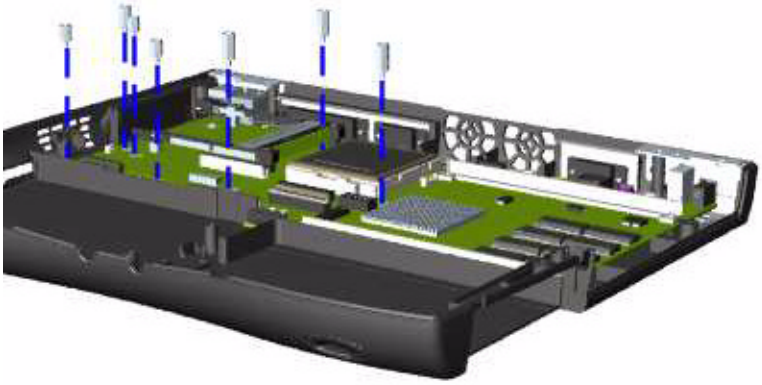
(See also *Verifying Dip Switch Settings* later in this section.)

To remove the system board, complete the following steps:

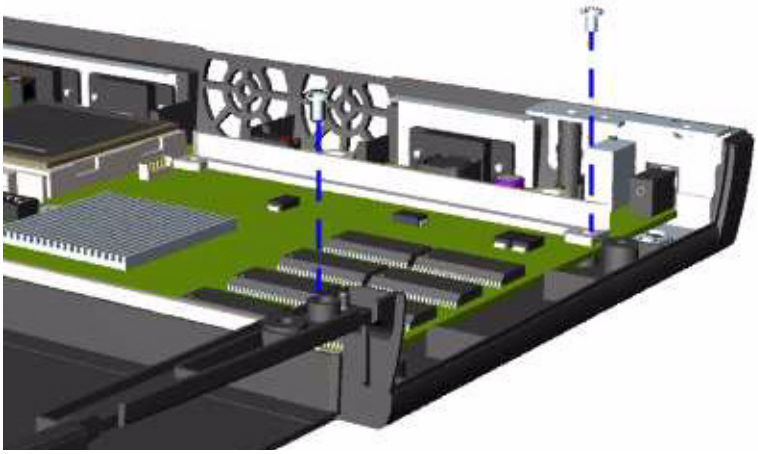
1. Prepare the Notebook for disassembly (pg 10).
2. Remove the palmrest cover with TouchPad (pg 13).
3. Remove the keyboard (pg 15).
4. Remove the heatspreader (pg 17).
5. Remove the processor (pg 18).
6. Remove the modem (pg 25).
7. Remove the hard drive (pg 19).
8. Remove the display panel assembly (pg 27).
9. Remove the upper CPU cover (pg 31).
10. Remove the battery charger board (pg 24).
11. Remove the CD/DVD drive (pg 22).
12. Remove the fan assemblies (pg 35).
13. Disconnect the data cable and the speaker assembly cables (pg 33).

Continued on the next page.

14. Remove seven standoffs from the system board.



15. Remove two screws from the CD/DVD drive mounting rails and remove the mounting rails from the system board.



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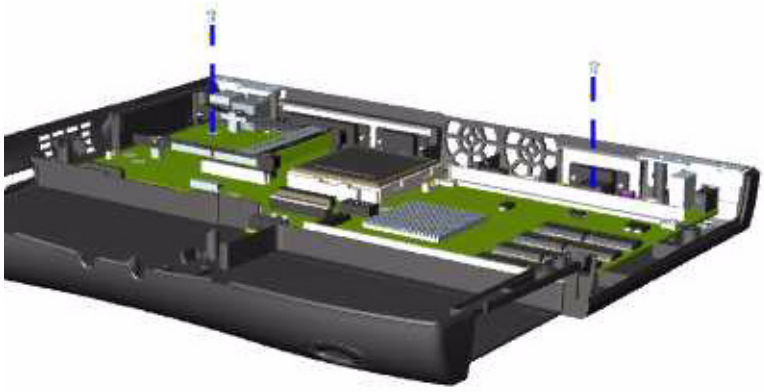
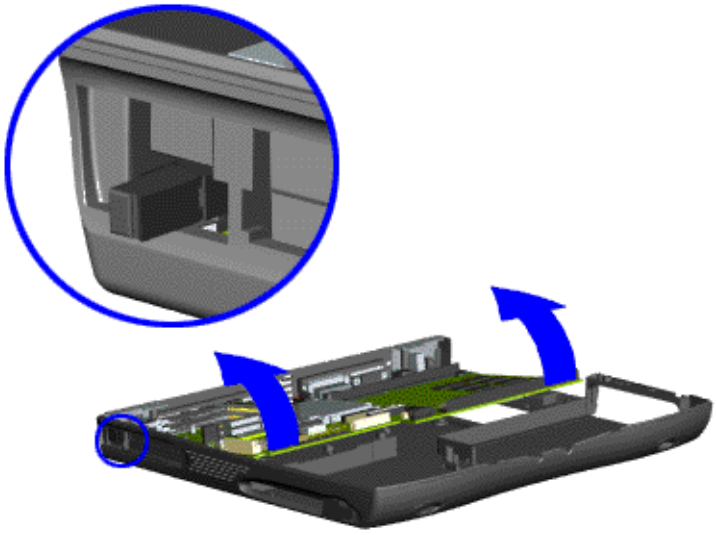
16. Remove two screws from the system board.



17. Extend the PCMCIA eject lever out of its slot, lift up the front side of the system board, and pull forward to remove the system board from the chassis.



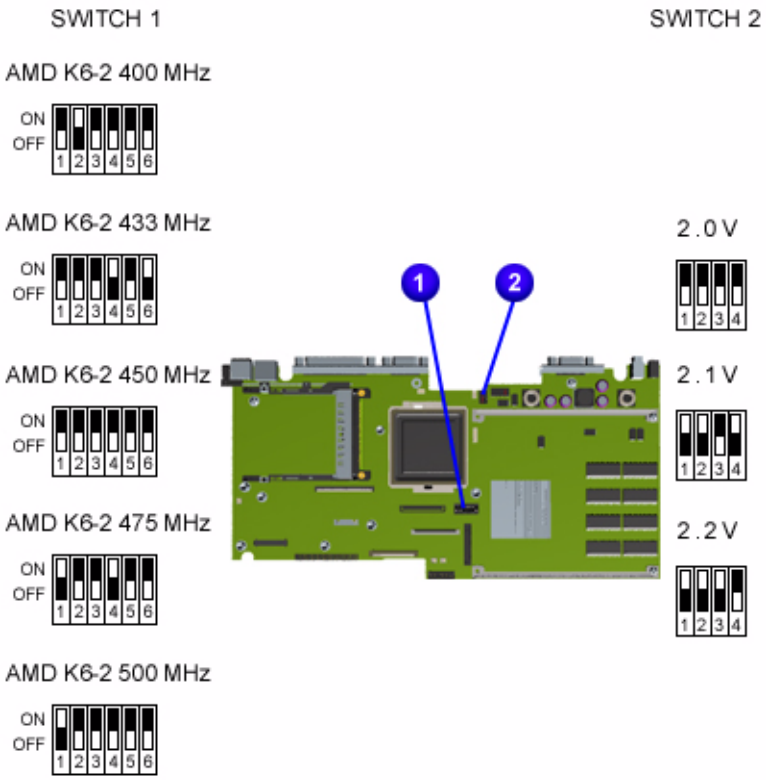
To replace the system board, reverse these procedures.

> **Important:** When replacing the system board, remove the memory module and all cables from the system board.

See also *Verifying Dip Switch Settings*.

Verifying Dip Switch Settings

⚠ **CAUTION:** If the system board dip switch voltage settings are not correct, damage may occur to the Notebook and/or system board. Ensure that the dip switch settings for ❶ Switch 1 and ❷ Switch 2 are as illustrated below.

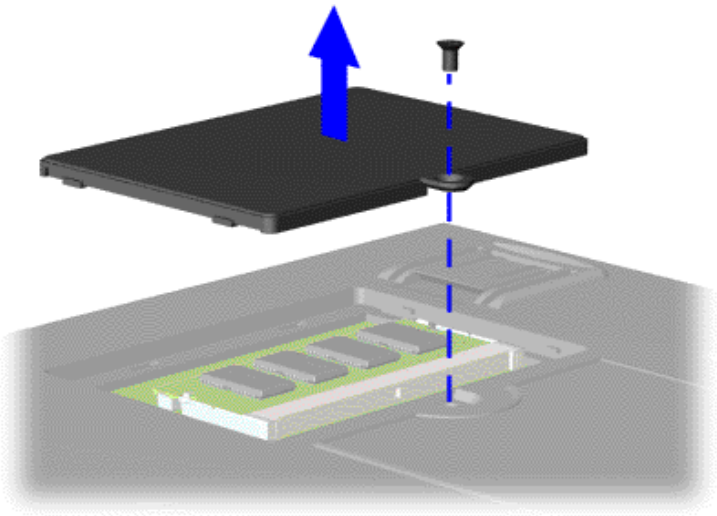


Note: Black portions of the switch diagrams above indicate the position of the switch.

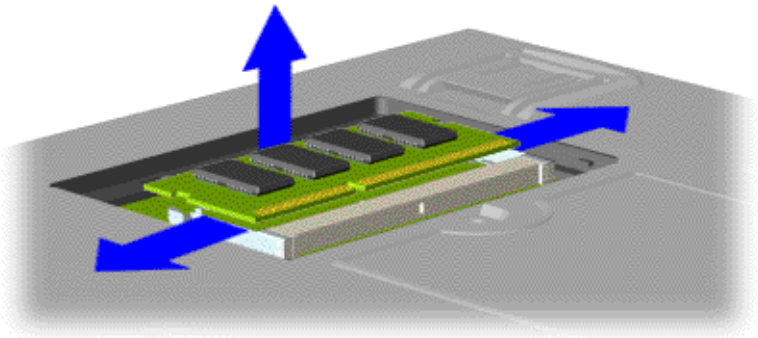
Removing the Memory Module

To remove the memory module, complete the following steps:

1. Prepare the Notebook for disassembly ().
2. Close the display and turn the Notebook over (upside down).
3. Remove the screw from the memory module door and lift the door off the unit.



4. Pull the side levers to release the memory module and unplug the memory module from the system board.



To replace the memory module, reverse these procedures.

COMPAQ

maintenance & service guide

Presario 1200 Series

Models: XL101-XL113, XL115, XL118-XL127