Gateway

Gateway Solo 1450 Service Guide

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Replacing Components in Your Gateway Solo 1450

About this guide

Use this service guide to help plan your maintenance tasks for the Gateway Solo 1450 notebook. All tasks covered in this guide can be performed by a field technician without jeopardizing your notebook's warranty.

For information on your notebook's general maintenance, technical support, safety notices, and regulatory notices, see your Gateway user's guide.

If you have suggestions regarding the content of this guide, send an e-mail with the subject "Service Guide Comments" to channel.services@gateway.com.

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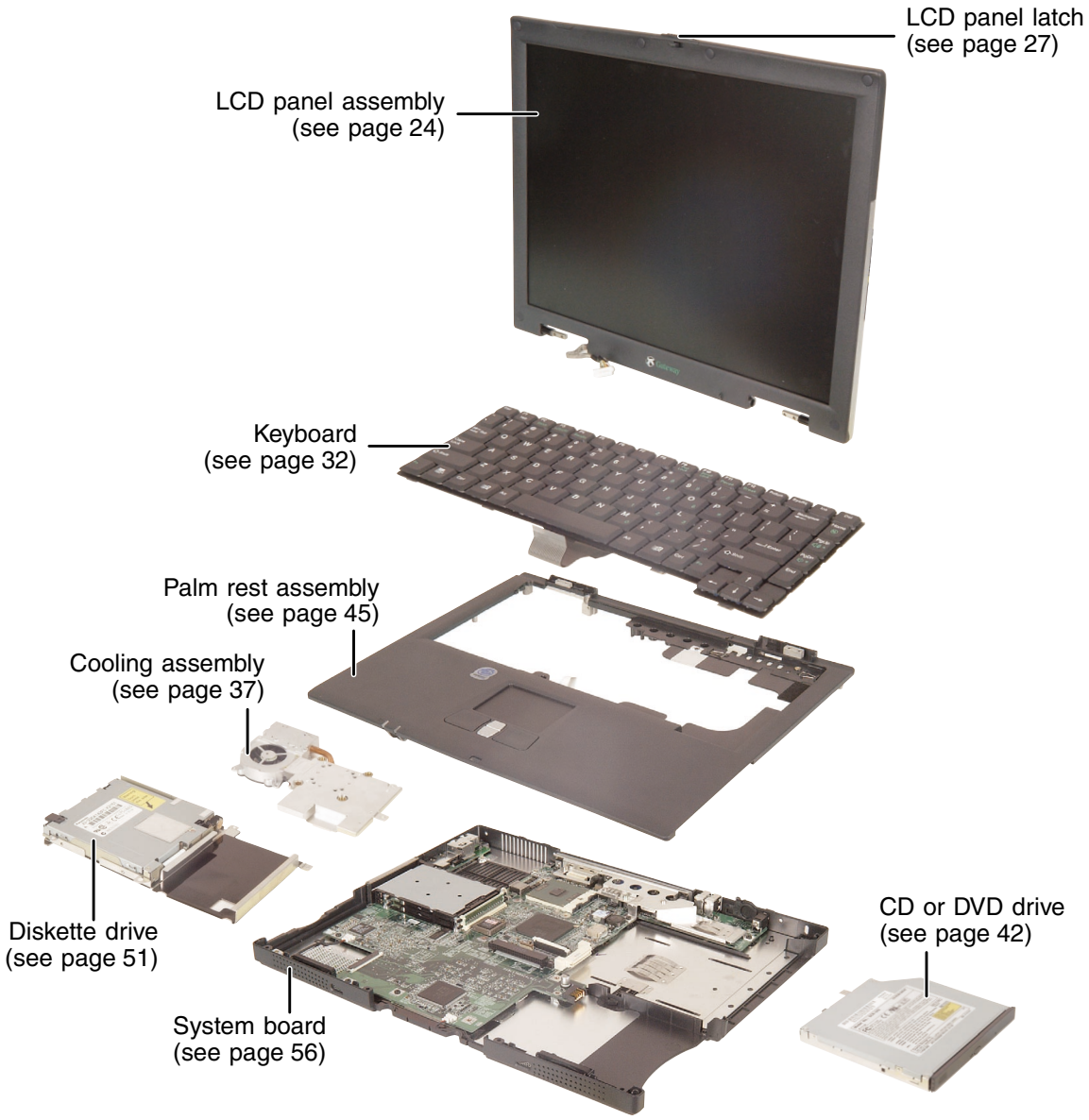
Identifying components

Where screw measurements are shown, the first number indicates screw head width, and the second number indicates screw length.

Use this chart to identify the main components of your notebook. For a complete list of replaceable parts, see “Contents” on page i.



Preparing your work space

Before performing maintenance on your notebook, make sure your work space and your notebook are correctly prepared.

- Wear a grounding (ESD) wrist strap.
- Use a grounded or dissipative work mat.
- Use a stable and strong table.
- Make sure the table top is large enough to hold each component as you remove it.
- Use bright lighting to make part identification easier.
- Keep your work surface free from clutter and dust that may damage components.
- Use a magnetized screwdriver for removing screws.
- As you remove components and screws, lay them toward the rear of your work surface (behind your notebook) or far enough to the side that your arms do not accidentally brush components onto the floor.
- To help keep track of screws, try the following:
    - Place each component's screws in their own section of a parts sorter.
    - Place each component's screws next to the component on your work surface.
    - Print the first page of each task, then place the page toward the rear of your work surface. As you remove screws, place the screws in their respective boxes on the page. Where screw measurements are shown, the first number indicates screw head width, and the second number indicates screw length.
    - When you place flat-headed screws on your work surface, stand them on their heads to prevent the screws from rolling off the table.

Preventing static electricity discharge

The components inside your notebook are extremely sensitive to static electricity, also known as *electrostatic discharge* (ESD).

Caution

ESD can permanently damage electrostatic discharge sensitive components in your notebook. Prevent ESD damage by following ESD guidelines every time you open your notebook case.

Warning

To avoid exposure to dangerous electrical voltages and moving parts, turn off your notebook, remove the battery, and unplug the power cord and modem cable before opening the case.

Before replacing components, follow these guidelines:

Warning

To prevent risk of electric shock, do not insert any object into the vent holes of your notebook.

- Turn off your notebook power.
- Remove the battery and unplug the power cord.
- Disconnect all peripheral devices and remove any PC Cards.
- Wear a grounding wrist strap (available at most electronics stores) and attach it to a bare metal part of your workbench or other grounded connection.
- Touch a bare metal surface on your workbench or other grounded object.
- Avoid static-causing surfaces such as carpeted floors, plastic, and packing foam.
- Remove components from their antistatic bags only when you are ready to use them. Do not lay components on the outside of antistatic bags because only the inside of the bags provide electrostatic protection.
- Always hold memory modules and modems by their edges, but avoid touching the edge connectors and components on the cards.
- Never slide any component over any surface.

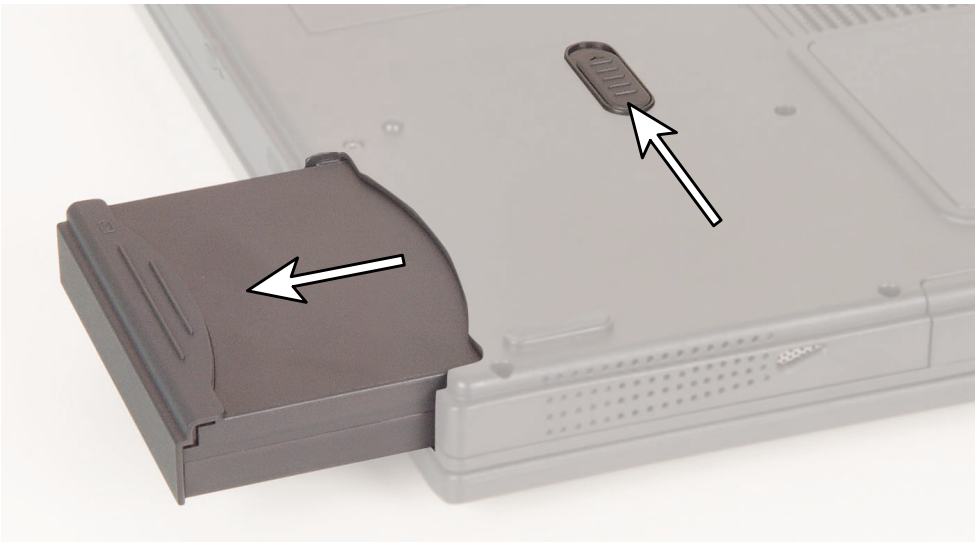
Preparing your notebook

Warning

To avoid exposure to dangerous electrical voltages and moving parts, turn off your notebook, remove the battery, and unplug the power cord and modem cable before opening the case. Replace the cover before you restore power or reconnect the modem cable.

To prepare your notebook for maintenance:

- Make sure the CD or DVD drive and the diskette drive are empty.
- Disconnect all peripheral devices and remove any PC Cards.
- Turn off your notebook and unplug the power cable (if attached).
- Turn over your notebook and remove the battery.

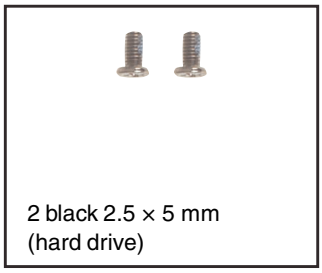


Replacing the hard drive kit

Tools you need to complete this task:

Phillips #0 screwdriver

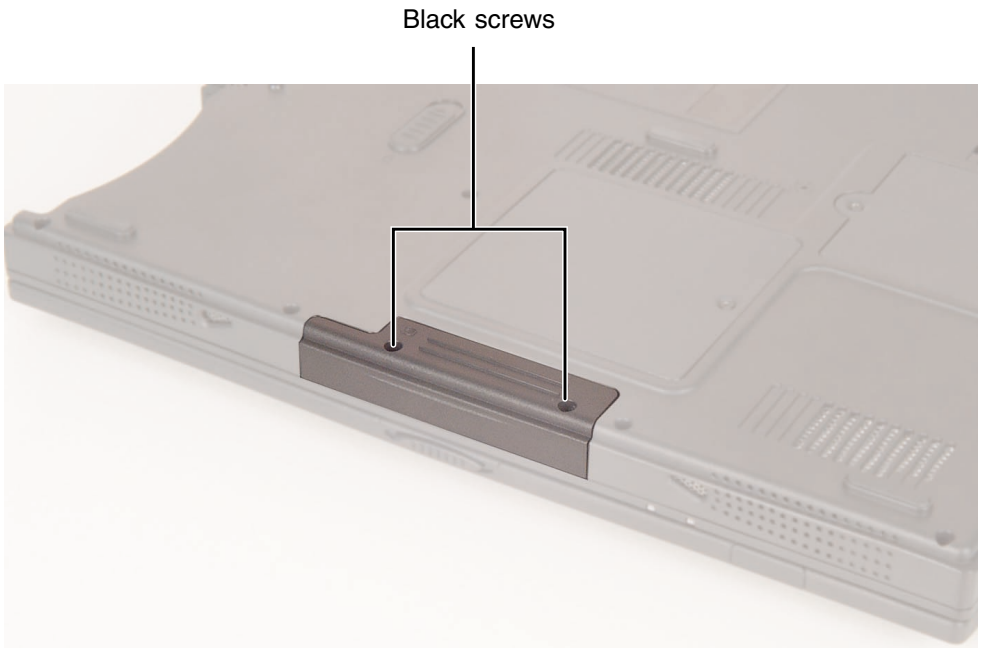
Screws removed during this task:



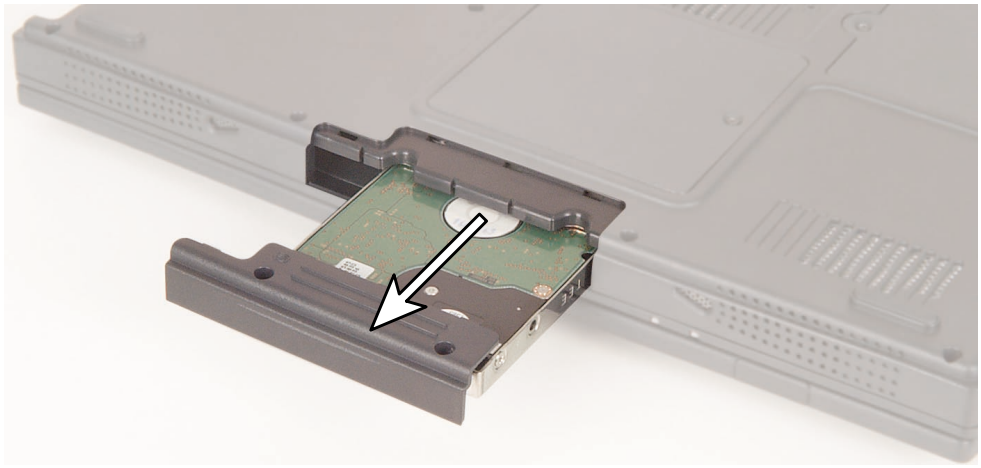
To replace the hard drive kit:

1. Disconnect the power cord, remove the battery, and prepare your notebook by following the instructions in “Preparing your notebook” on page 5.
2. Turn your notebook over so that the bottom is facing up.

3 Remove the two black screws that secure the hard drive kit to your notebook.



4 Slide the hard drive kit out of your notebook.



5 Insert the new hard drive kit and replace the two screws.

Replacing the hard drive in the hard drive kit

Tools you need to complete this task:

Phillips #0 screwdriver

Screws removed during this task:

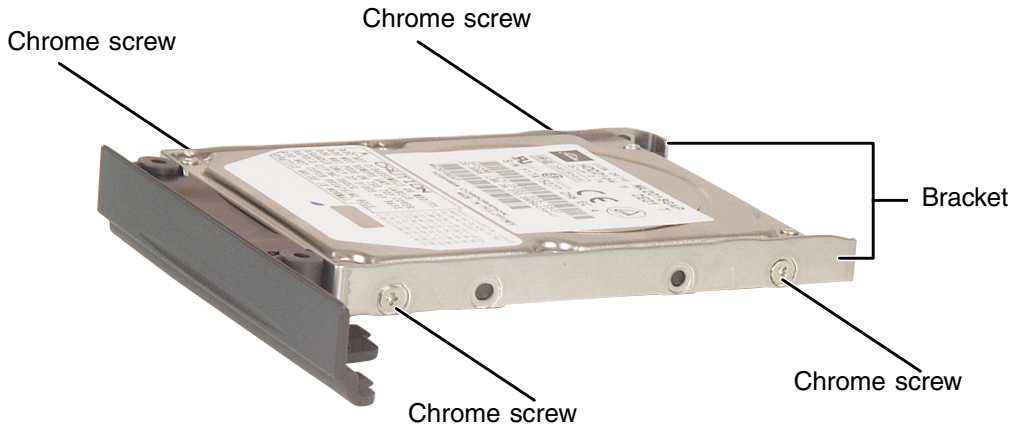
2 black 2.5 × 5 mm
(hard drive)

4 chrome 3 × 3.5 mm
(hard drive)

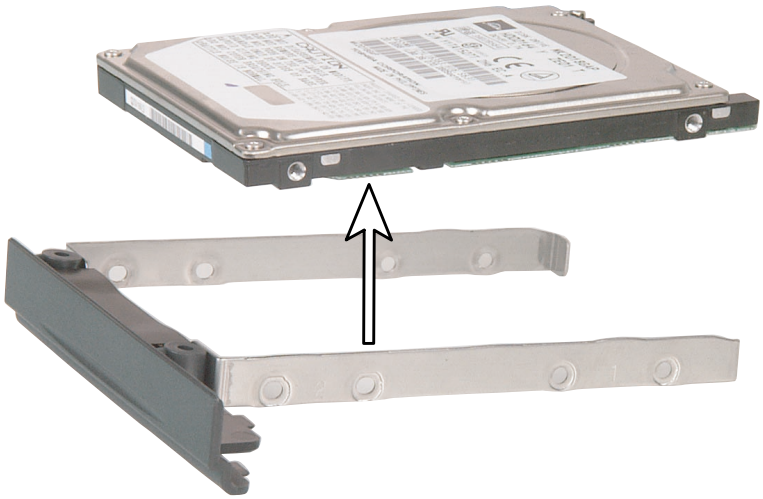
To install a new hard drive into the kit:

1. Disconnect the power cord, remove the battery, and prepare your notebook by following the instructions in “Preparing your notebook” on page 5.
2. Remove the hard drive kit by following the instructions in “Replacing the hard drive kit” on page 6.

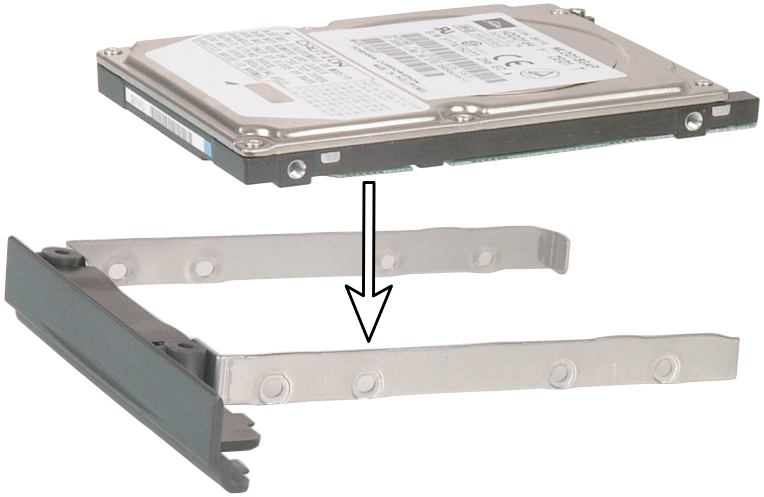
3 Remove the four screws that secure the hard drive to the hard drive kit bracket.



4 Remove the old drive from the bracket.



5 Insert the new drive into the bracket so that the screw holes line up.



6 Replace the four screws that secure the bracket to the drive.

7 Insert the hard drive kit into your notebook and replace the two screws that secure the kit to your notebook.

Adding or replacing memory modules

Tools you need to complete this task:

Phillips #0 screwdriver

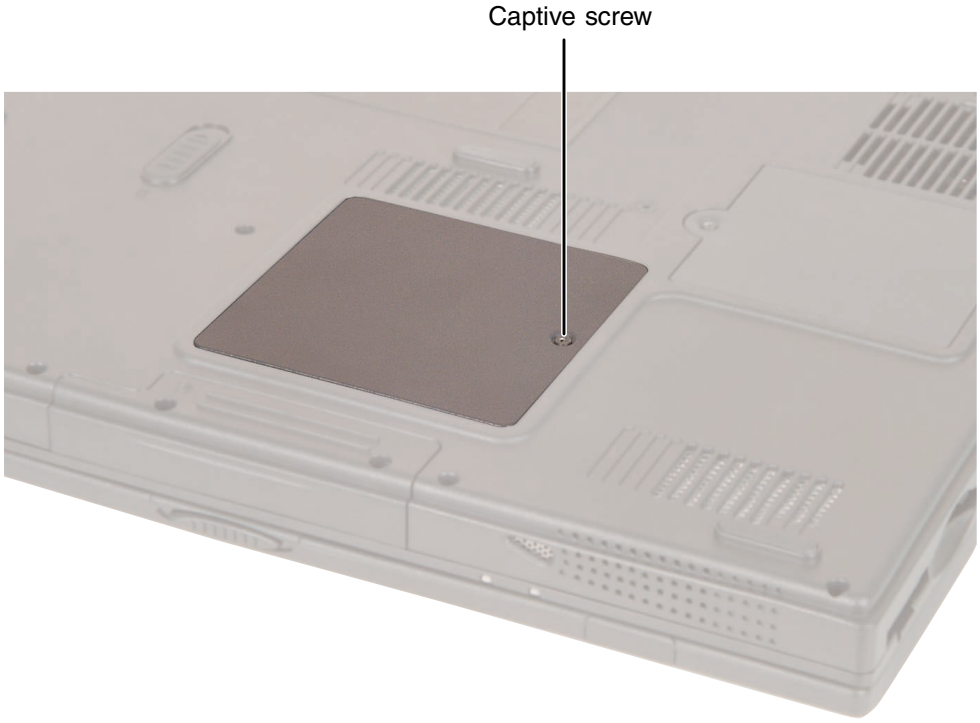
Important

Use only PC100 (100 MHz) or PC133 (133 MHz) memory modules.

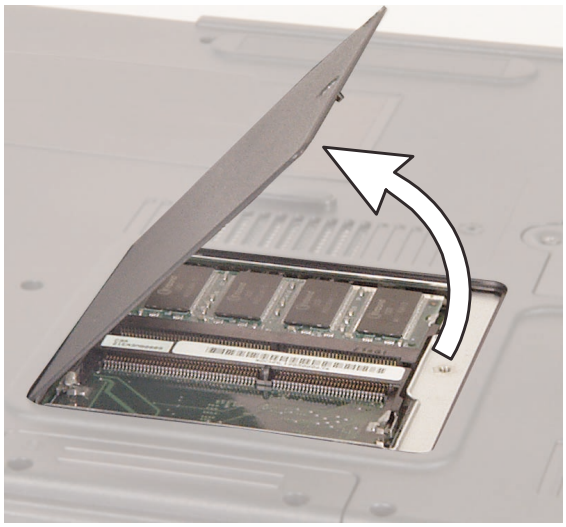
To add or replace memory modules:

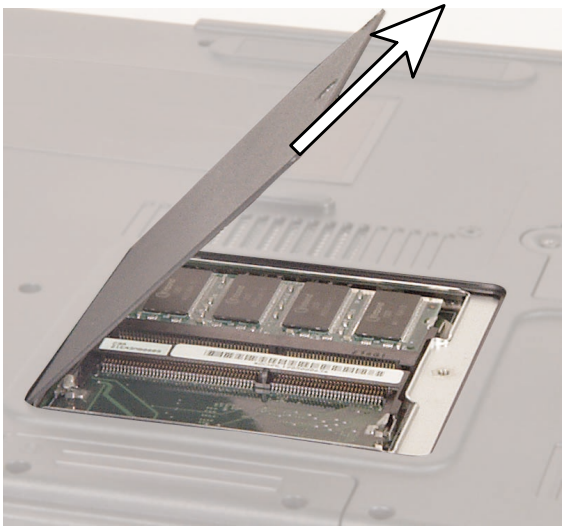
1. Disconnect the power cord, remove the battery, and prepare your notebook by following the instructions in “Preparing your notebook” on page 5.
2. Turn your notebook over so that the bottom is facing up.

3 Loosen the captive screw that secures the memory cover. (The screw cannot be removed.)

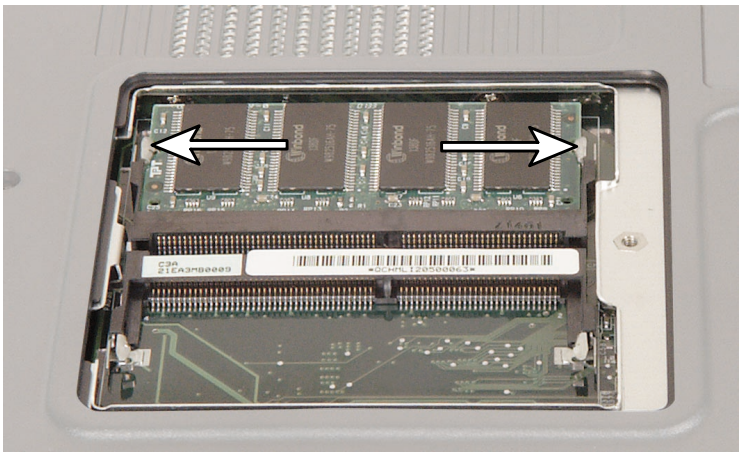


4 Tilt the screw side of the cover upward, then slide the cover out.

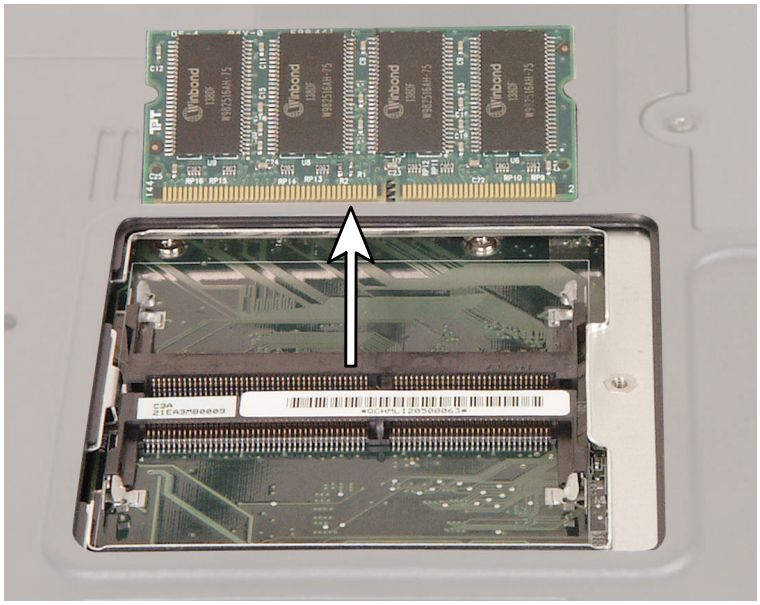




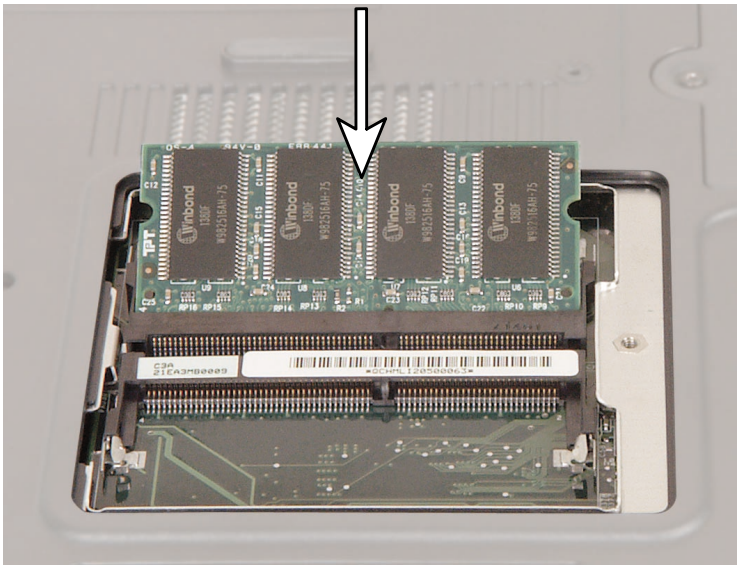
5 To remove a module, press outward on the clips at both ends of the memory module until the module tilts upward.



6 Pull the memory module out of the slot.



7 Hold the new or replacement module at a 30-degree angle and press it into the empty memory slot. This module is keyed so that it can only be inserted in one direction. If the module does not fit, make sure the notch in the module lines up with the tab in the memory bay.

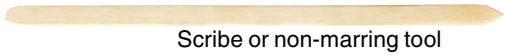


8 Replace the memory cover, then tighten the captive screw.

Replacing the modem

Tools you need to complete this task:

Phillips #0 screwdriver



Scribe or non-marring tool

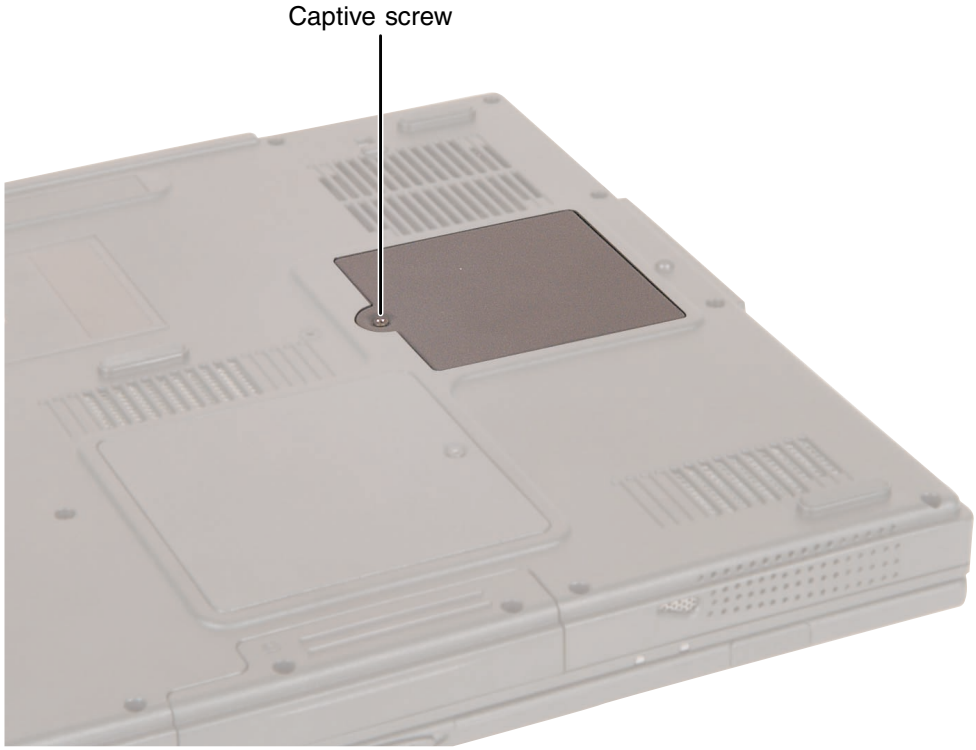
Screws removed during this task:

2 black 2.5 × 4 mm (modem)

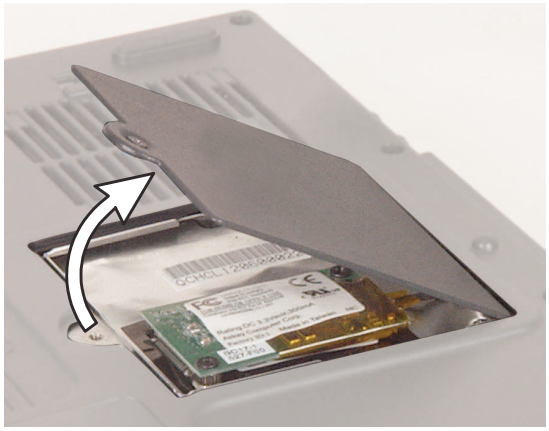
To replace the modem:

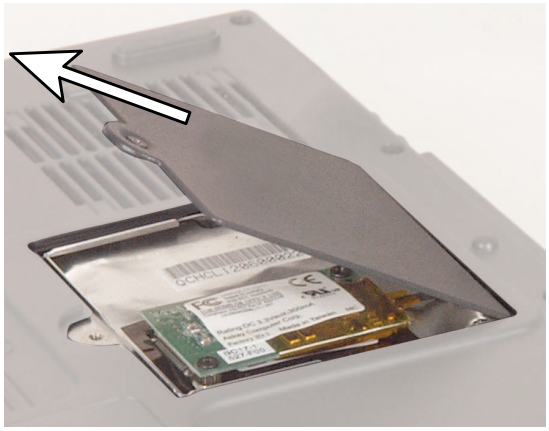
1. Disconnect the power cord, remove the battery, and prepare your notebook by following the instructions in “Preparing your notebook” on page 5.
2. Turn your notebook over so that the bottom is facing up.

3 Loosen the captive screw that secures the modem cover. (The screw cannot be removed.)

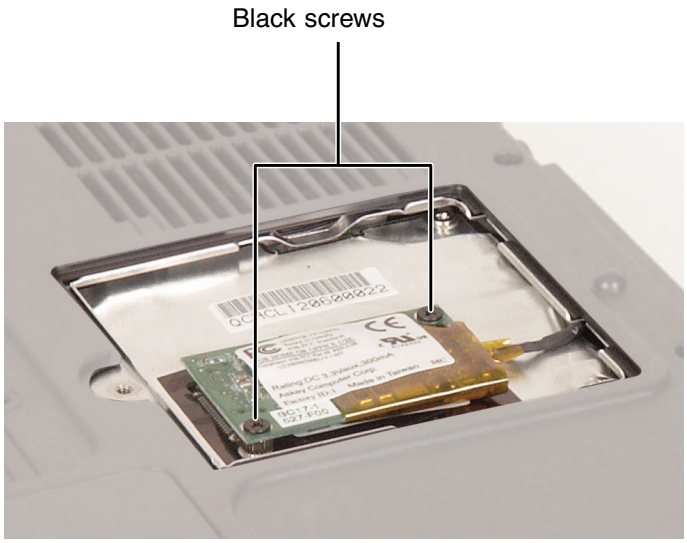


4 Tilt the screw side of the cover upward, then slide the cover out.

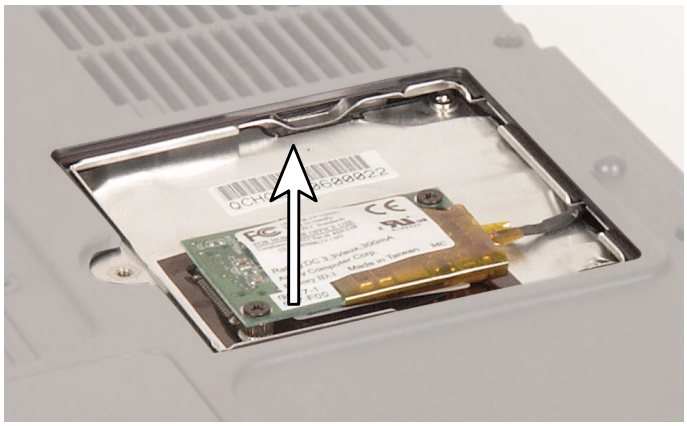




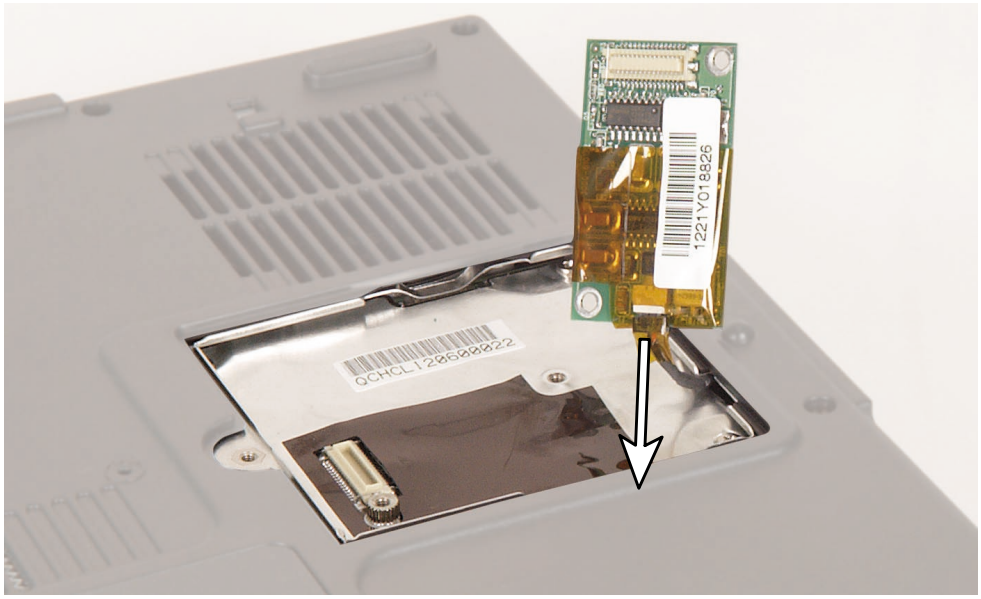
5 Remove the two black screws that secure the modem to your notebook.



6 Use a scribe or small flat-blade screwdriver to lift the modem out of your notebook.



7 Carefully disconnect the modem cable from the modem.



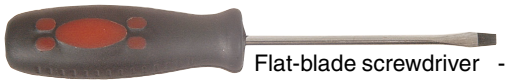
8 Connect the modem cable to the new modem, then align the modem's screw holes with the holes on your notebook and press the modem into place.

9 Replace the two black screws that secure the modem to your notebook.

10 Replace the cover, then tighten the captive screw.

Replacing the keyboard cover

Tools you need to complete this task:



Flat-blade screwdriver - OR -

Scribe or non-marring tool

To replace the keyboard cover:

1. Disconnect the power cord, remove the battery, and prepare your notebook by following the instructions in “Preparing your notebook” on page 5.
2. Open your notebook.
3. Insert a flat-blade screwdriver or non-marring tool into the small notch in the bottom of the keyboard cover just above and between the **Ins** and **Del** keys, then carefully pry the cover up.

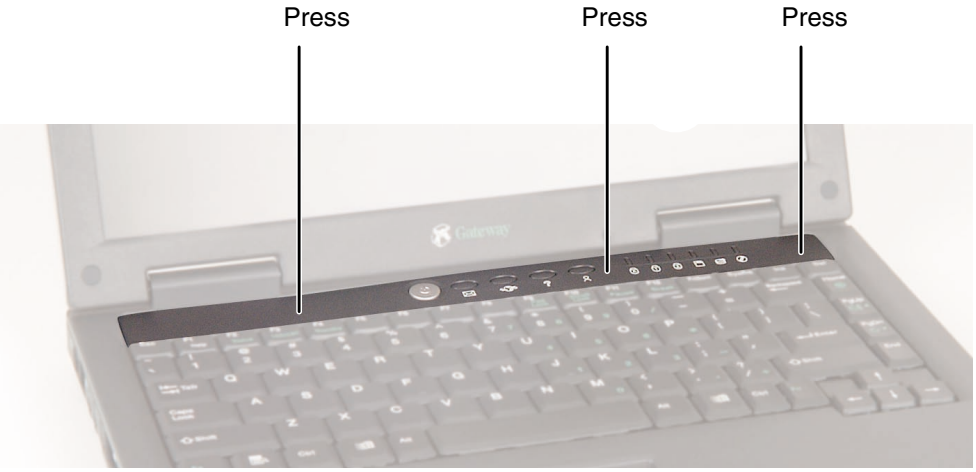
Important

To prevent damage to your notebook while using a screwdriver, insert a piece of cloth between the screwdriver, the keyboard, and your notebook case.

4 Lift the right end of the cover, then slide the cover off to your right.

5 Slide the left edge of the new cover into the left side of your notebook above the keyboard.

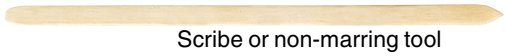
6 Press down at the locations shown until the cover clicks into place.



Replacing the hinge covers

Tools you need to complete this task:

Phillips #0 screwdriver


Scribe or non-marring tool

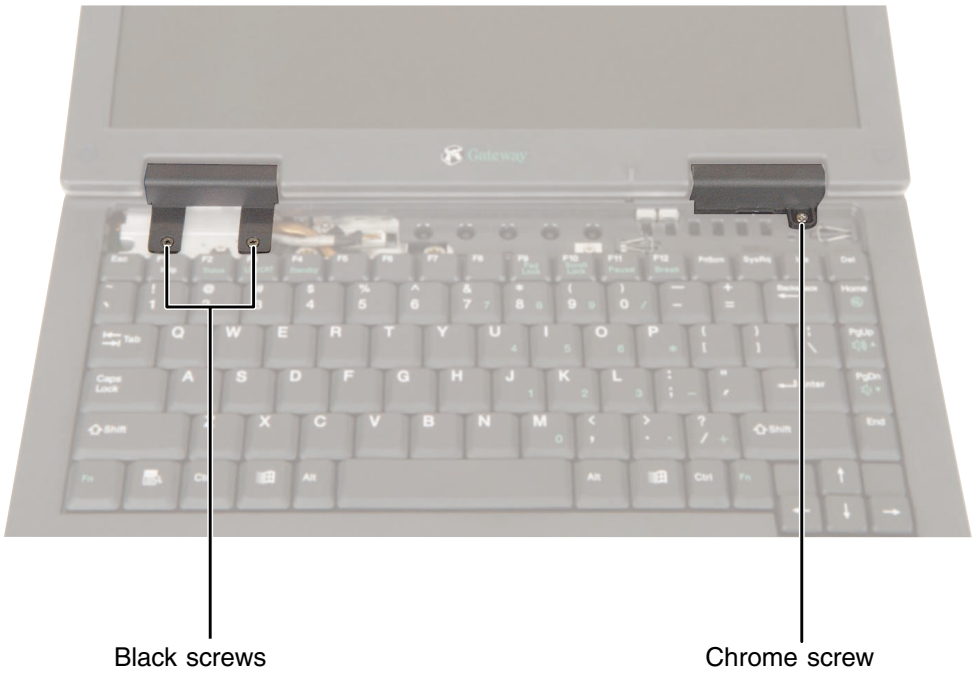
Screws removed during this task:

2 black 2.5 × 5 mm
(left hinge cover)
1 chrome 2.5 × 6 mm
(right hinge cover)

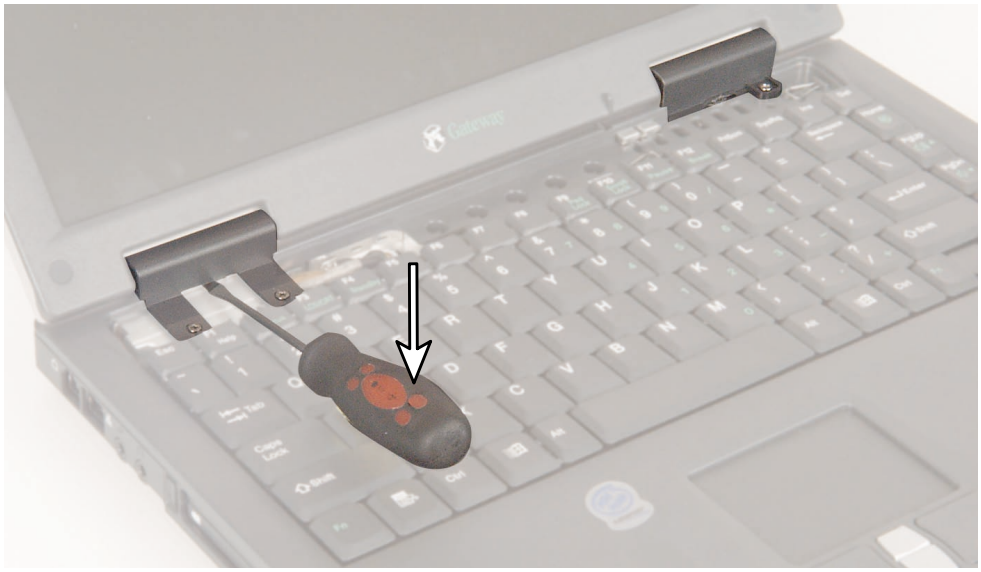
To replace the hinge covers:

1. Disconnect the power cord, remove the battery, and prepare your notebook by following the instructions in “Preparing your notebook” on page 5.
2. Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 19.
3. Open the LCD panel all the way, so that it lies flat on the table.

4 Remove the two black screws on the left hinge cover and the single chrome screw on the right hinge cover.



5 Insert a small screwdriver or non-marring tool underneath the hinge covers. When you remove the left hinge cover, make sure you pry near the hinge, not near the screw holes.



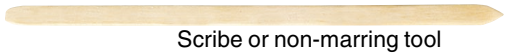
6 Pry the hinge covers up.

7 Snap the new covers into place over the hinges, then replace the screws.

Replacing the LCD panel assembly

Tools you need to complete this task:

Phillips #0 screwdriver


Scribe or non-marring tool

Screws removed during this task:

2 black 2.5 × 5 mm
(left hinge cover)
1 chrome 2.5 × 6 mm
(right hinge cover)

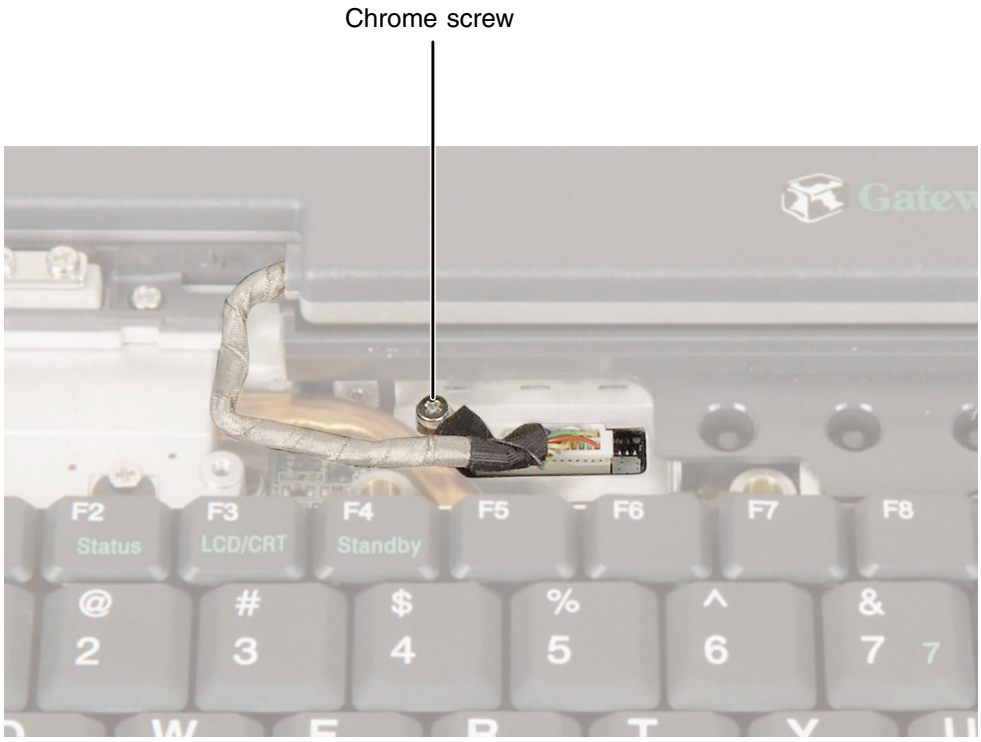
4 chrome 2.5 × 6 mm
(hinges)

1 chrome 2 × 4 mm
(LCD cable)

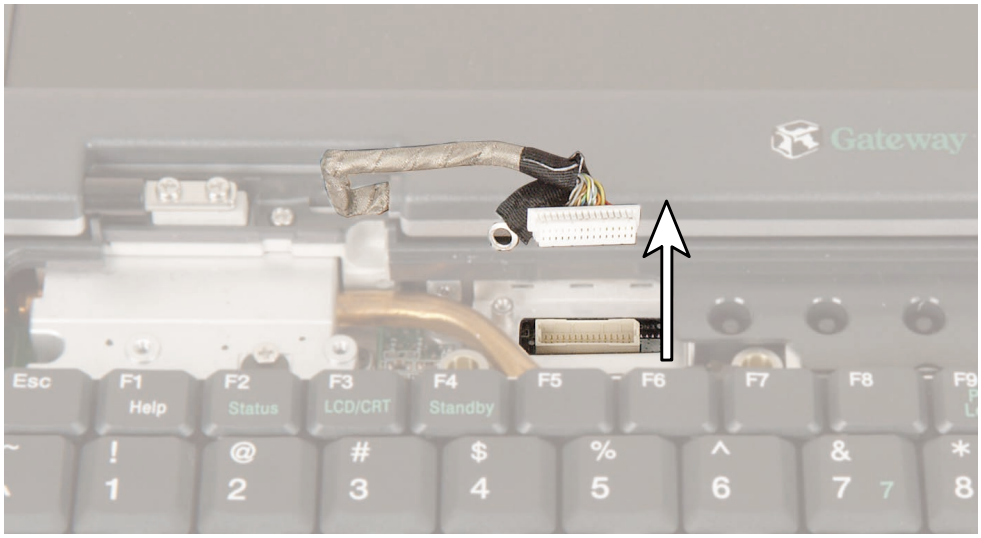
To replace the LCD panel assembly:

1. Disconnect the power cord, remove the battery, and prepare your notebook by following the instructions in “Preparing your notebook” on page 5.
2. Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 19.
3. Open the LCD panel all the way, so that it lies flat on the table.
4. Remove the hinge covers by following the instructions in “Replacing the hinge covers” on page 21.

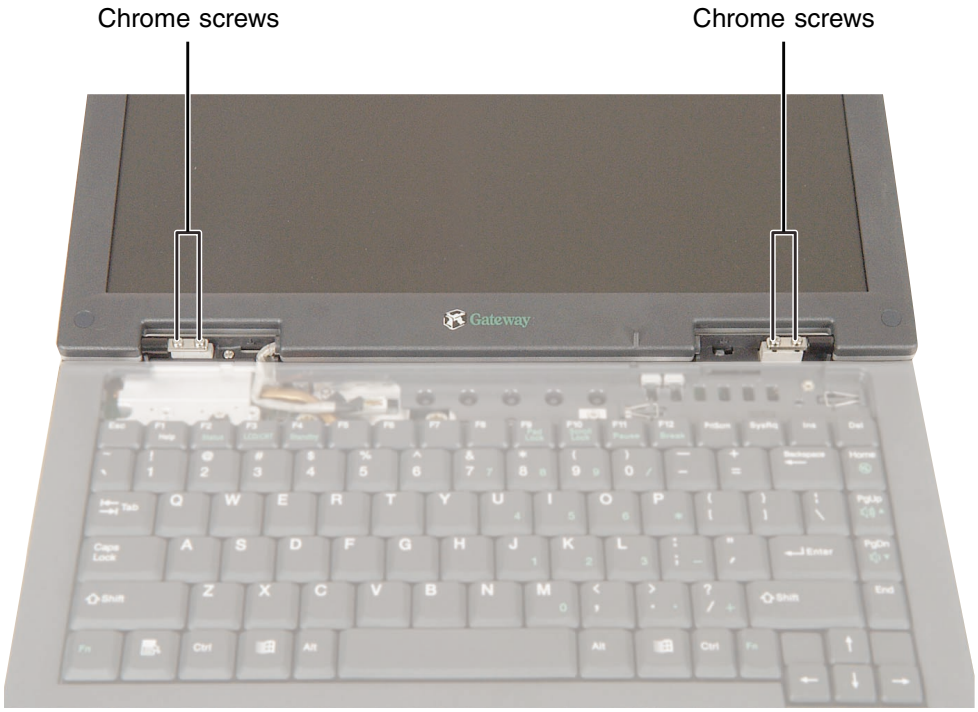
5 Remove the screw on the LCD cable plug.



6 Use a scribe or small, flat-blade screwdriver to carefully unplug the LCD cable.



7 Remove the four chrome hinge screws (two on each hinge). The LCD panel is now completely detached from your notebook.



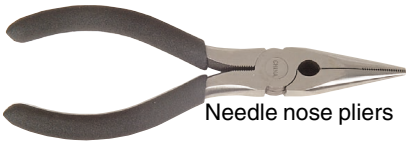
8 Place the new LCD panel assembly onto your notebook, then replace the four hinge screws.

9 Plug the LCD video cable into your notebook.

10 Reassemble your notebook.

Replacing the LCD lid latch

Tools you need to complete this task:



Screws removed during this task:

2 black 2.5 × 5 mm
(left hinge cover)
1 chrome 2.5 × 6 mm
(right hinge cover)

4 chrome 2.5 × 6 mm
(hinges)

1 chrome 2 × 4 mm
(LCD cable)

6 black 2.5 × 4 mm
(LCD panel face plate)

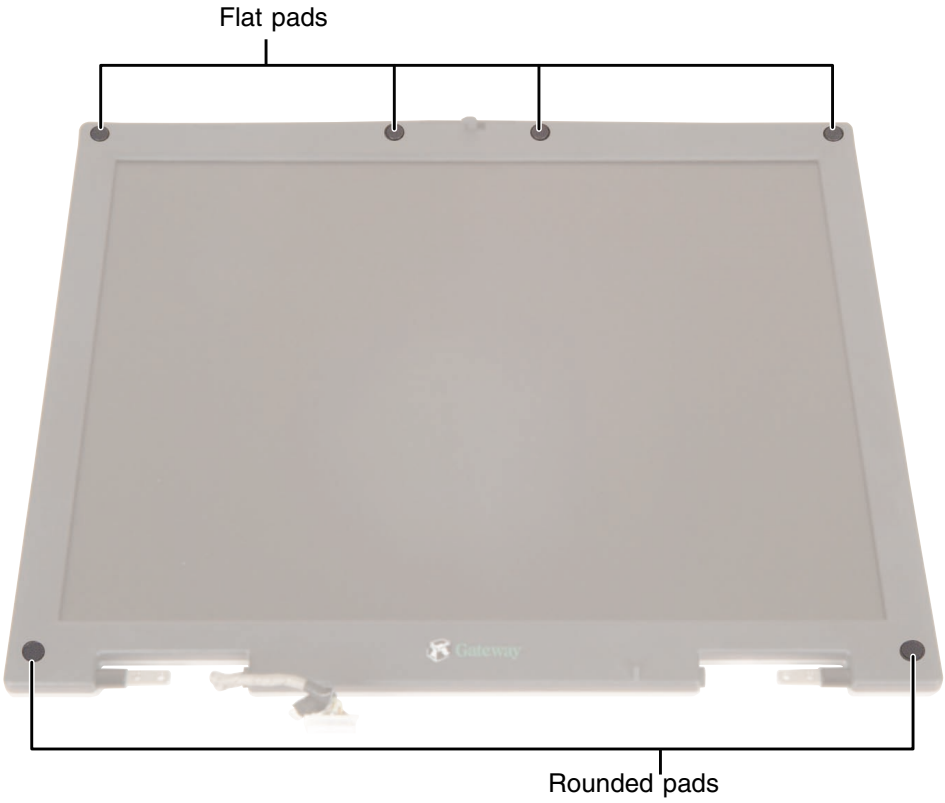
To replace the LCD lid latch:

1. Disconnect the power cord, remove the battery, and prepare your notebook by following the instructions in “Preparing your notebook” on page 5.
2. Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 19.
3. Remove the hinge covers by following the instructions in “Replacing the hinge covers” on page 21.

4 Remove the LCD panel assembly from your notebook by following the instructions in “Replacing the LCD panel assembly” on page 24.

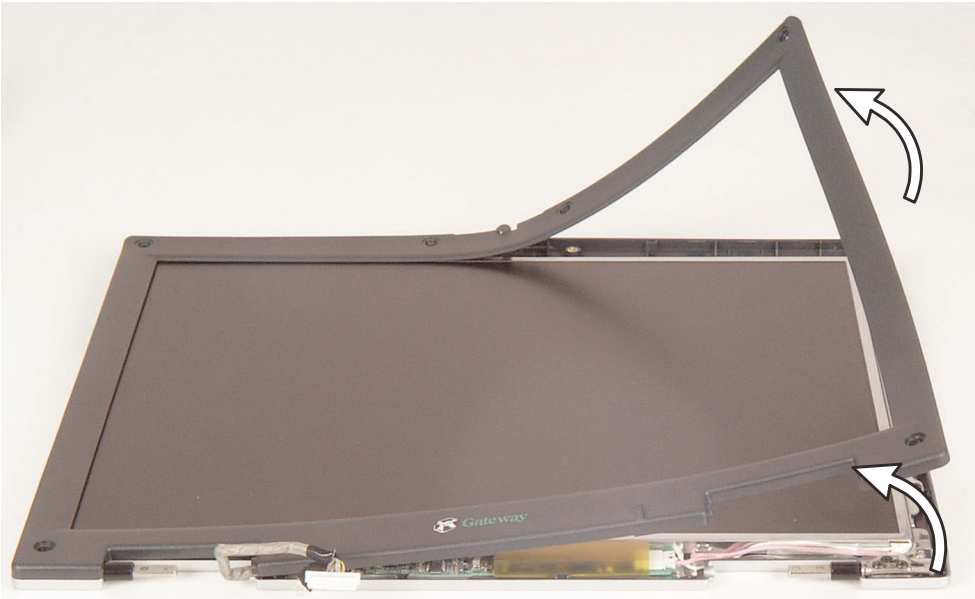
5 Move your notebook to the side and place the LCD panel assembly directly in front of you on the table.

6 Use a scribe or other non-marring tool to remove the six screw cover pads. Place the pads on a clean metal or plastic area of your work table.



7 Remove the six black screws on the LCD panel assembly.

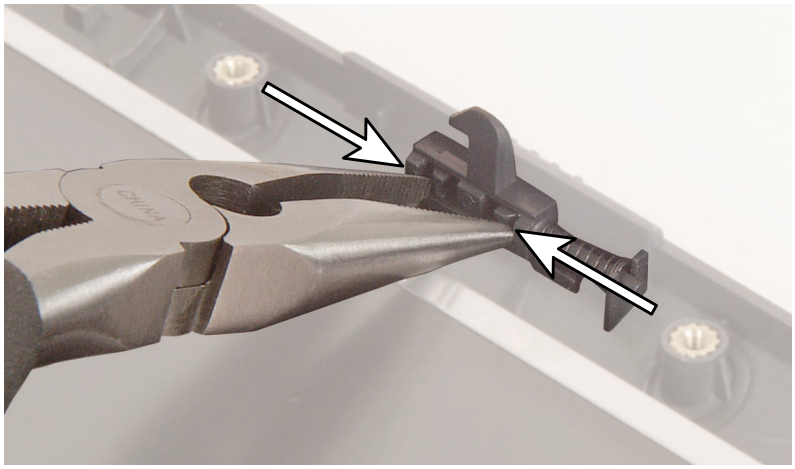
8 Insert a scribe or other non-marring tool behind the face plate, then carefully pry up the face plate until it completely detaches from the rest of the LCD panel assembly.



9 Use a pair of needle-nose pliers to pinch the two tabs that hold the latch together, then pull the latch and spring assembly away from the panel.

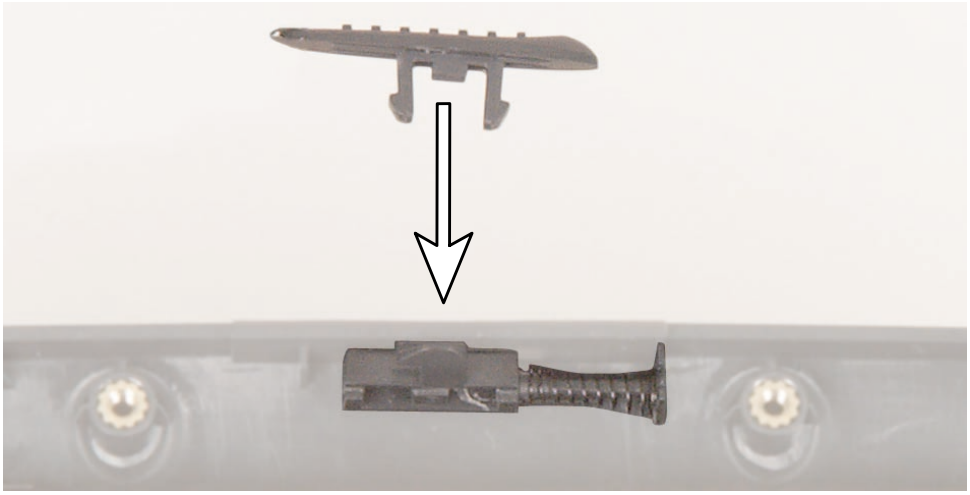
Important

The LCD latch assembly contains small parts and a strong spring. While removing the assembly, be careful to keep the spring on its mounting post or it will fall off the post and will be difficult to find. You can use a small piece of tape to help keep the spring in place.



10 Remove the latch button from the panel.

11 Place the new spring onto the new latch post, then press the new latch button into the new latch assembly through the slot in the LCD panel. Make sure the thickest end of the button is on the right.



12 If you have placed tape onto the spring to help keep it in place, remove it.

13 Replace the LCD face plate by lining up the edges and pressing it into place.

14 Replace the six screws that secure the LCD face plate.

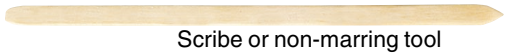
15 Replace the two rounded pads near the hinges, then replace the four flat pads near the top of the panel.

16 Reassemble your notebook.

Replacing the keyboard

Tools you need to complete this task:

Phillips #0 screwdriver



Scribe or non-marring tool

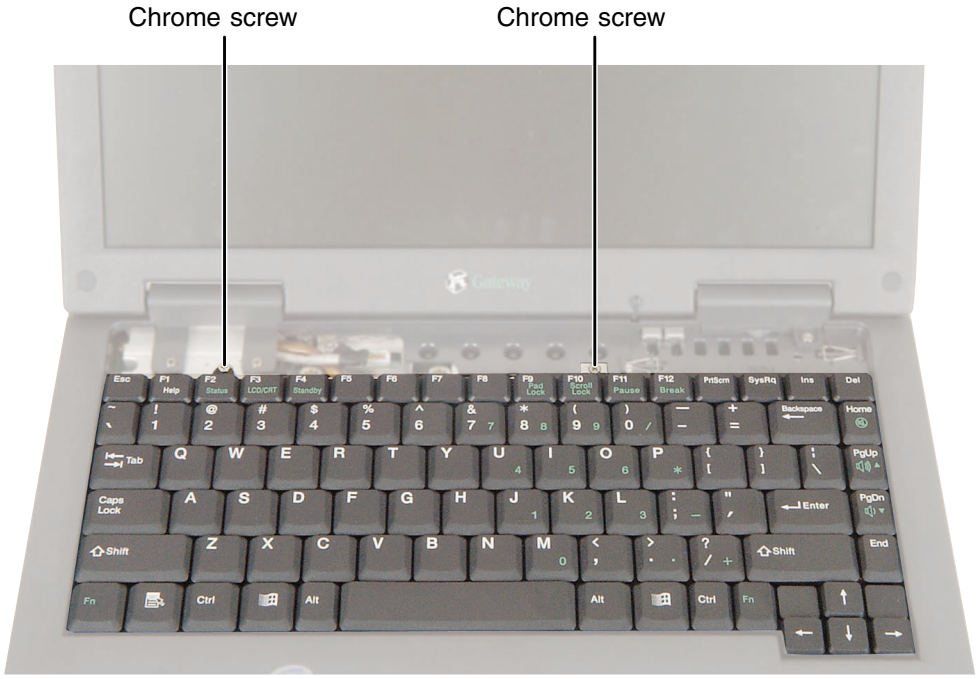
Screws removed during this task:

2 chrome 2.5 × 3 mm (keyboard)

To remove the keyboard:

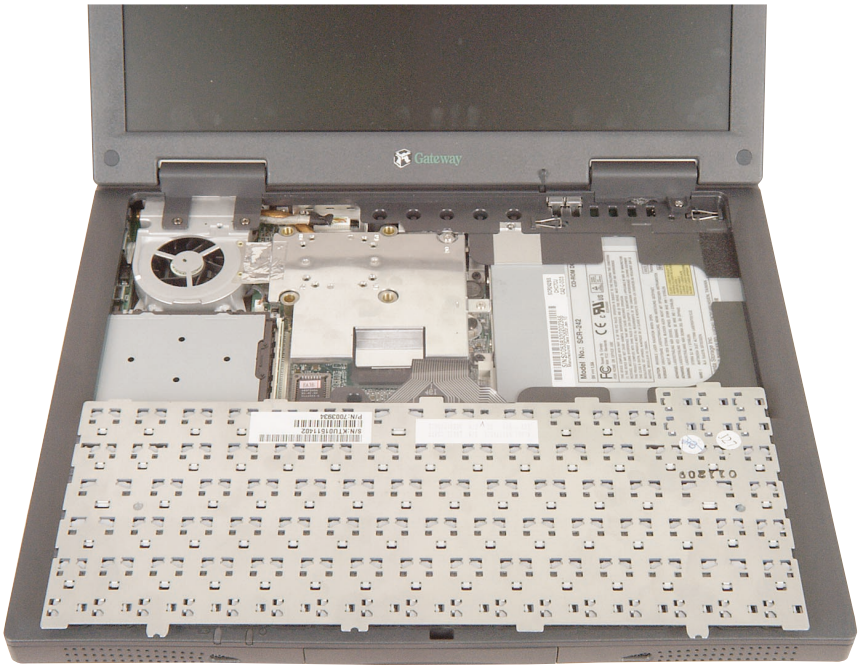
1. Disconnect the power cord, remove the battery, and prepare your notebook by following the instructions in “Preparing your notebook” on page 5.
2. Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 19.

3 Remove the two chrome screws that secure the keyboard to your notebook.

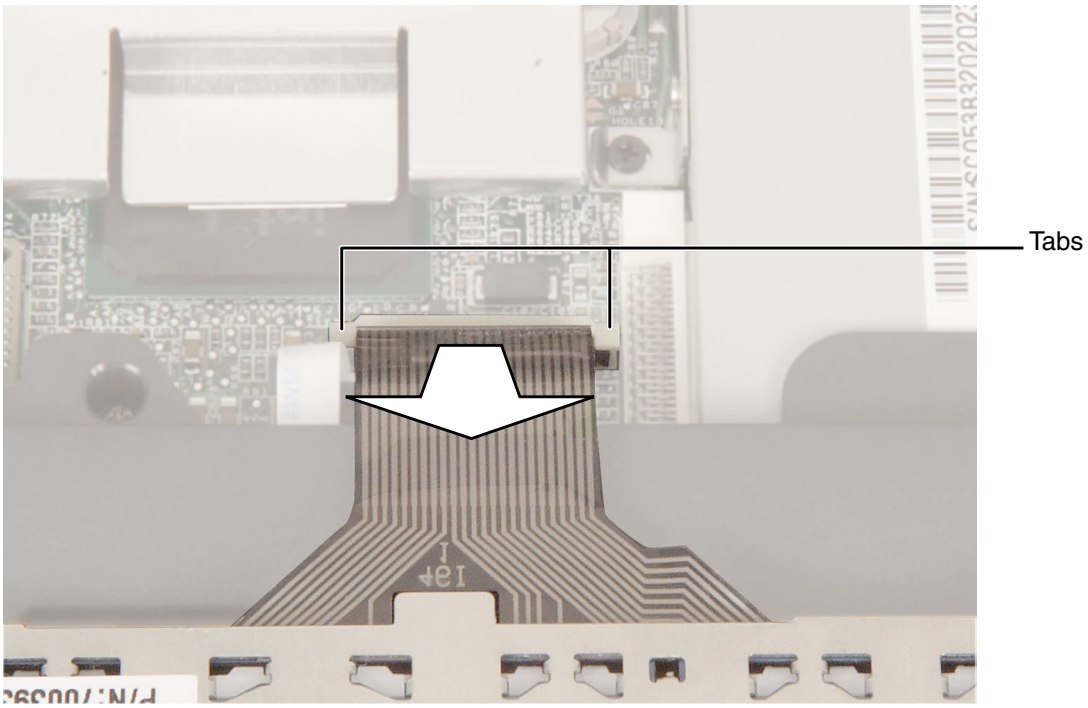


4 Raise the back edge of the keyboard slightly, then carefully slide the keyboard back until the five tabs on the front edge of the keyboard are free from their slots. Be careful not to damage the LCD panel.

5 Slowly rotate the keyboard toward you so that it lies **keys-down** on top of your notebook. Be careful not to damage the LCD panel.



6 Pull up on the plastic keyboard connector tabs using two fingers. After the connector is in the raised position, carefully pull the cable out of the connector. Be careful not to touch or damage any other components.



7 Place the new keyboard **keys-down** on your notebook with the space bar away from you.

8 Pull up on the keyboard connector tabs to verify the connector is in the raised position.

9 Slide the end of the keyboard cable into the keyboard connector.

Important

The keyboard cable should slide easily into the keyboard connector. The cable is correctly oriented if it is not twisted.

10 Use two fingers to press down on the keyboard connector tabs. This locks the keyboard cable into the keyboard connector.

11 Insert the five tabs located on the front edge of the keyboard into the corresponding slots under the palm rest. Be careful not to damage the LCD panel.

12 Carefully press the keyboard down until it is flat all the way across. The keyboard should easily fall into place.

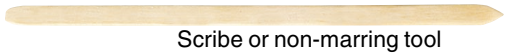
13 Replace the two keyboard screws.

14 Reassemble your notebook.

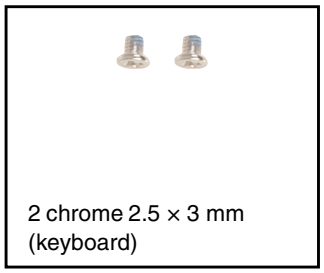
Replacing the cooling assembly

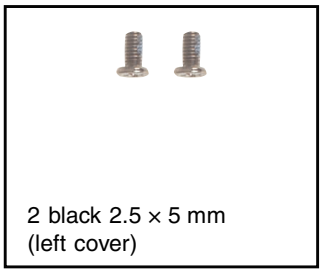
Tools you need to complete this task:

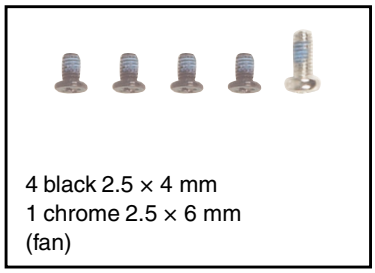
Phillips #0 screwdriver

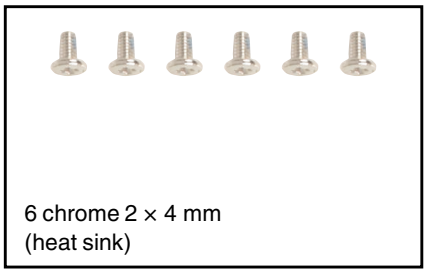

Scribe or non-marring tool

Screws removed during this task:





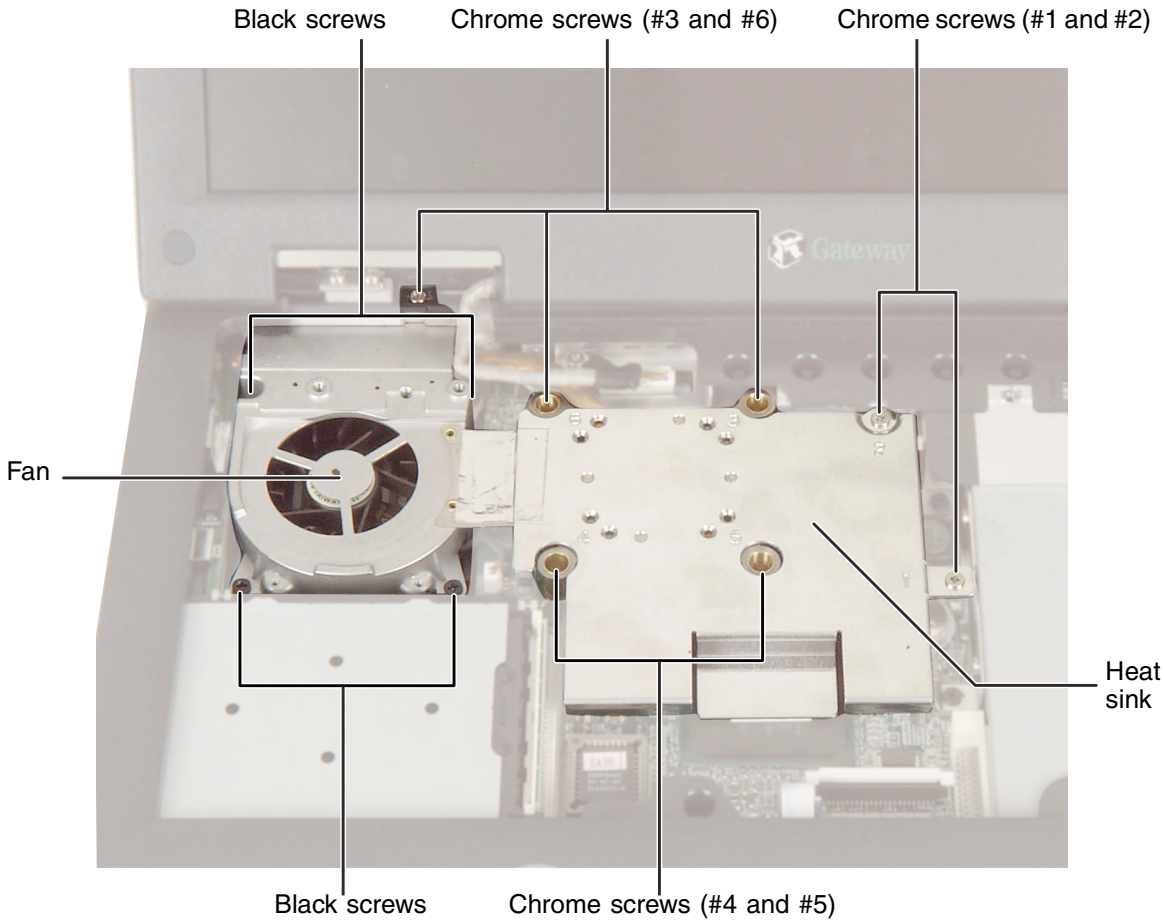




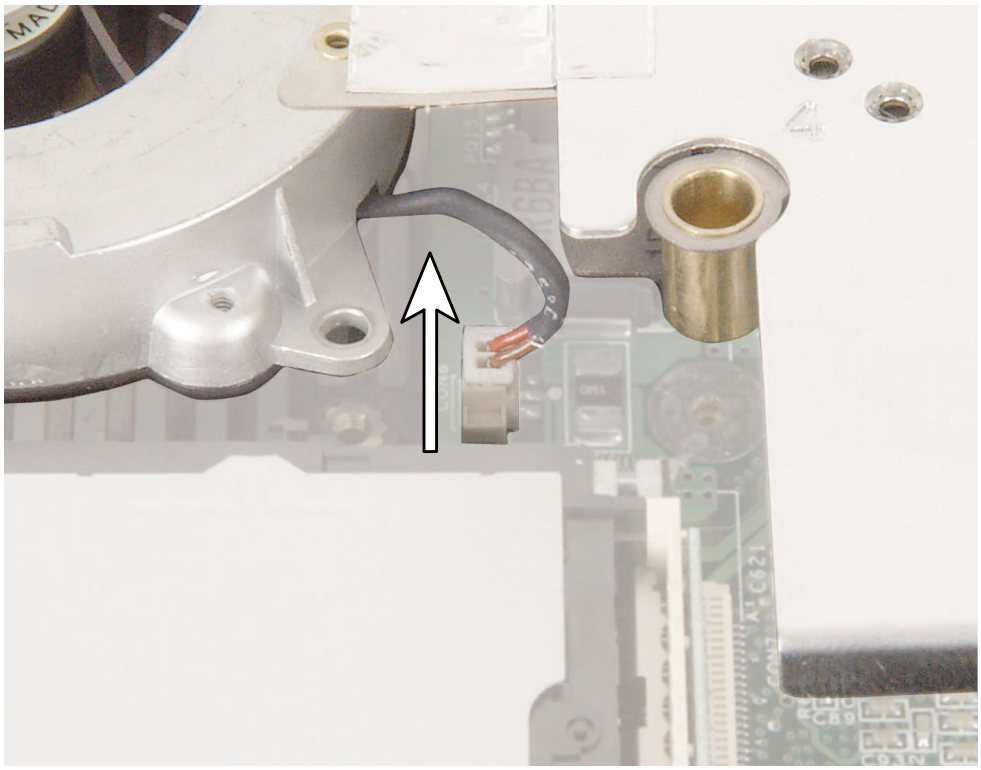
To replace the cooling assembly:

1. Disconnect the power cord, remove the battery, and prepare your notebook by following the instructions in “Preparing your notebook” on page 5.
2. Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 19.
3. Remove the keyboard by following the instructions in “Replacing the keyboard” on page 32.
4. Remove the left hinge cover by following the instructions in “Replacing the hinge covers” on page 21.

5 Remove the four black screws and one chrome screw on the cooling fan, then remove the six chrome screws on the heat sink.



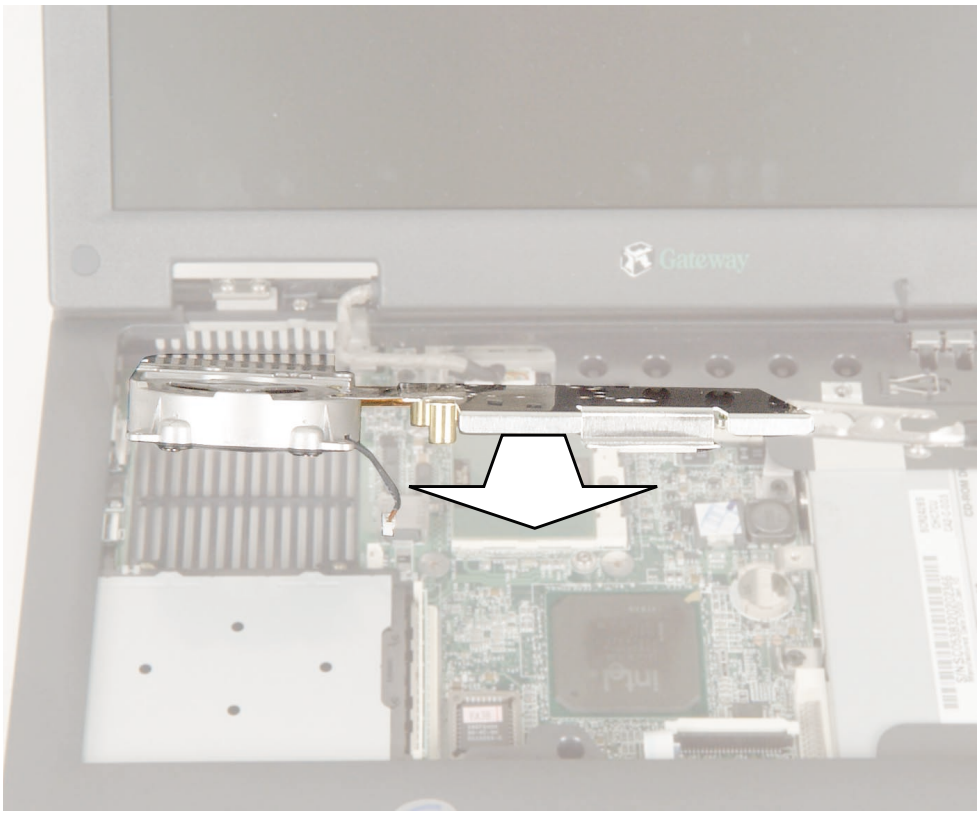
6 Unplug the cooling fan.



7 Lift the part of the cooling assembly that is closest to you, then pull it out toward you.

Important

If the cooling assembly gets stuck under the plastic near the heat sink's screw hole marked **2**, use a scribe or other non-marring tool to carefully pry the plastic away from the assembly.



8 Insert the new cooling assembly into your notebook, then plug in the cooling fan.

Warning

When replacing the heat sink's chrome screws into the numbered holes, tighten them **in numerical order**.

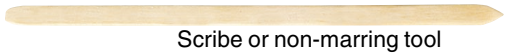
9 Replace the cooling assembly screws. Make sure you tighten the heat sink's chrome screws in numerical order. Each screw hole has a numeral next to it.

10 Reassemble your notebook.

Replacing the CD or DVD drive

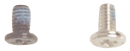
Tools you need to complete this task:

Phillips #0 screwdriver


Scribe or non-marring tool

Screws removed during this task:

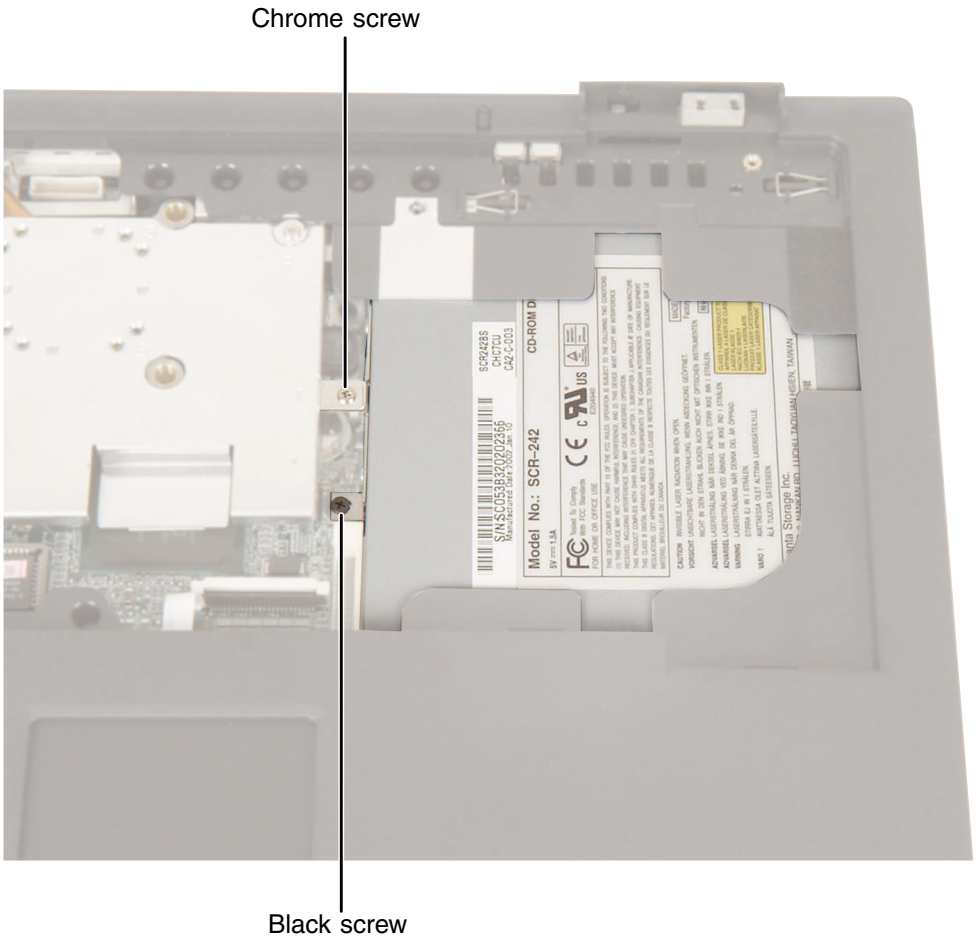
2 chrome 2.5 × 3 mm
(keyboard)


1 chrome 2 × 4 mm
(CD or DVD drive top)
1 black 2.5 × 4 mm
(CD or DVD drive bottom)

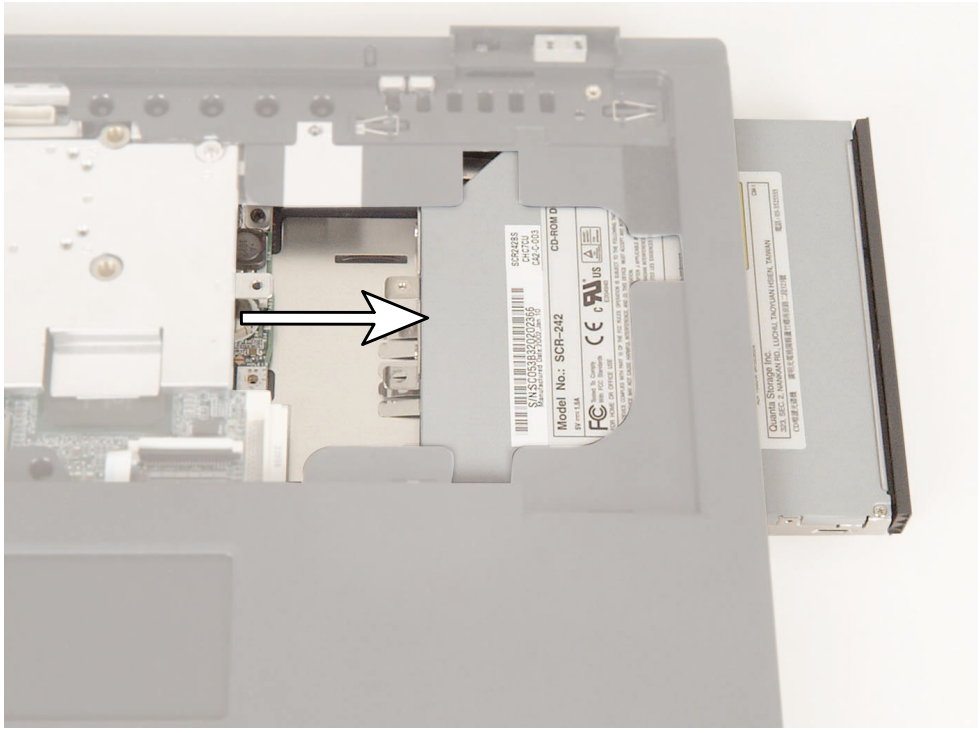
To replace the CD or DVD drive:

1. Disconnect the power cord, remove the battery, and prepare your notebook by following the instructions in “Preparing your notebook” on page 5.
2. Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 19.
3. Remove the keyboard by following the instructions in “Replacing the keyboard” on page 32.

4 Remove the chrome screw and the black screw that secure the CD or DVD drive to your notebook.



5 Slide the CD or DVD drive out of your notebook.



6 Insert the new CD or DVD drive.

7 Replace the two screws that secure the CD or DVD drive to your notebook.

8 Reassemble your notebook.

Replacing the palm rest assembly

Tools you need to complete this task:

Phillips #0 screwdriver

Scribe or non-marring tool

Screws removed during this task:

2 black 2.5 × 5 mm
(hard drive)

2 chrome 2.5 × 3 mm
(keyboard)

2 black 2.5 × 5 mm
(left hinge cover)
1 chrome 2.5 × 6 mm
(right hinge cover)

4 chrome 2.5 × 6 mm
(hinges)

1 chrome 2 × 4 mm
(LCD cable)

2 chrome 2.5 × 6 mm
(palm rest top)

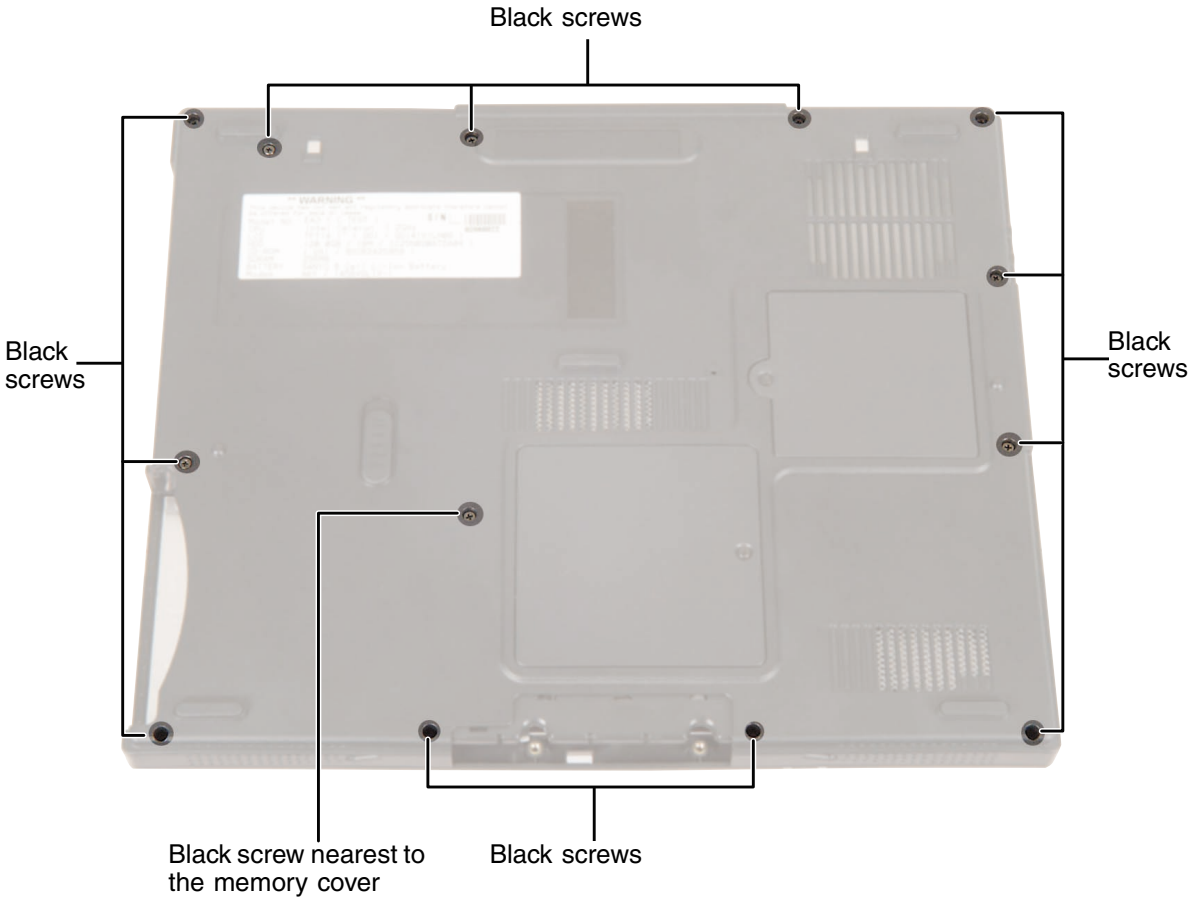
13 black 2.5 × 5 mm
(palm rest bottom)

3 black 2.5 × 5 mm
(palm rest back)

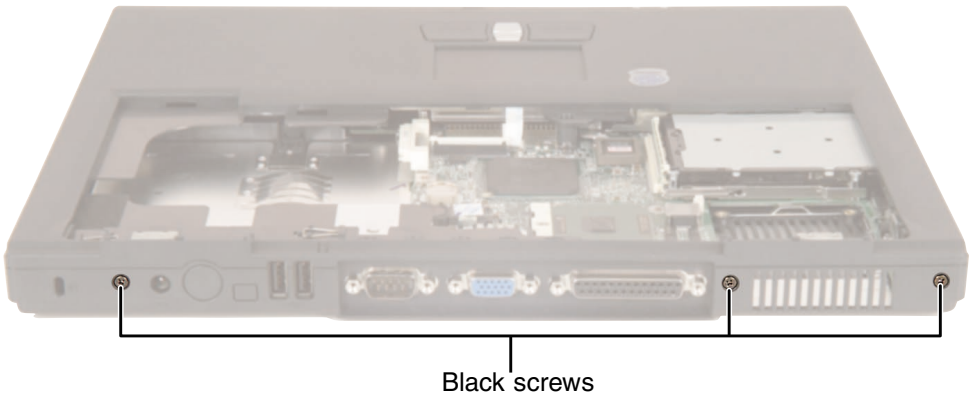
To replace the palm rest:

1. Disconnect the power cord, remove the battery, and prepare your notebook by following the instructions in “Preparing your notebook” on page 5.
2. Remove the hard drive kit by following the instructions in “Replacing the hard drive kit” on page 6.
3. Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 19.
4. Remove the keyboard by following the instructions in “Replacing the keyboard” on page 32.
5. Remove the hinge covers by following the instructions in “Replacing the hinge covers” on page 21.
6. Remove the LCD panel by following the instructions in “Replacing the LCD panel assembly” on page 24.

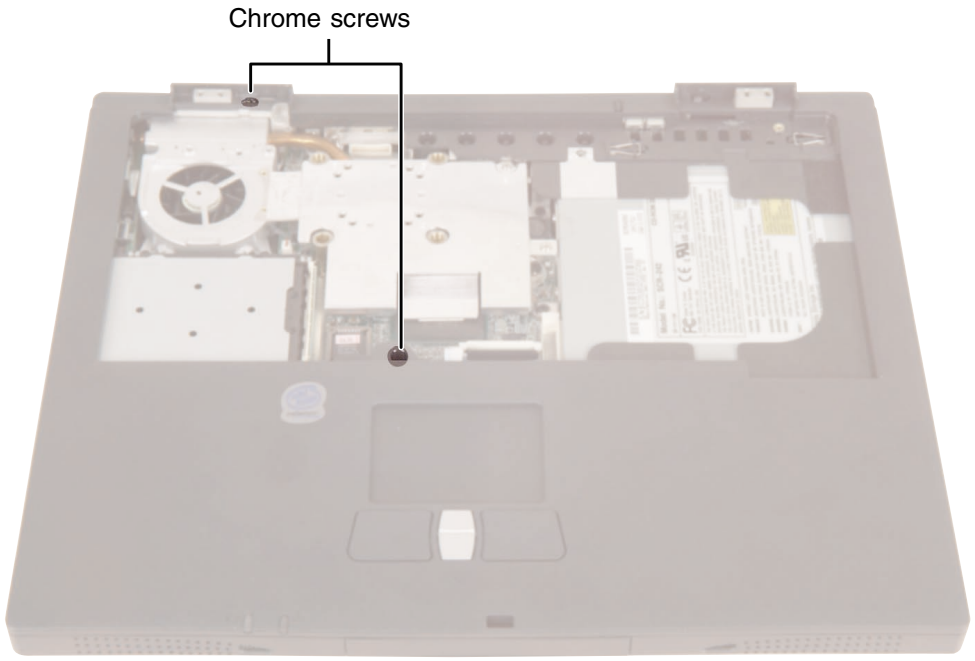
7 Remove the thirteen black screws on the bottom of your notebook. If you can loosen the screw nearest the memory cover but you cannot completely remove it, either leave it in place or use a scribe or other non-marring tool to remove it.



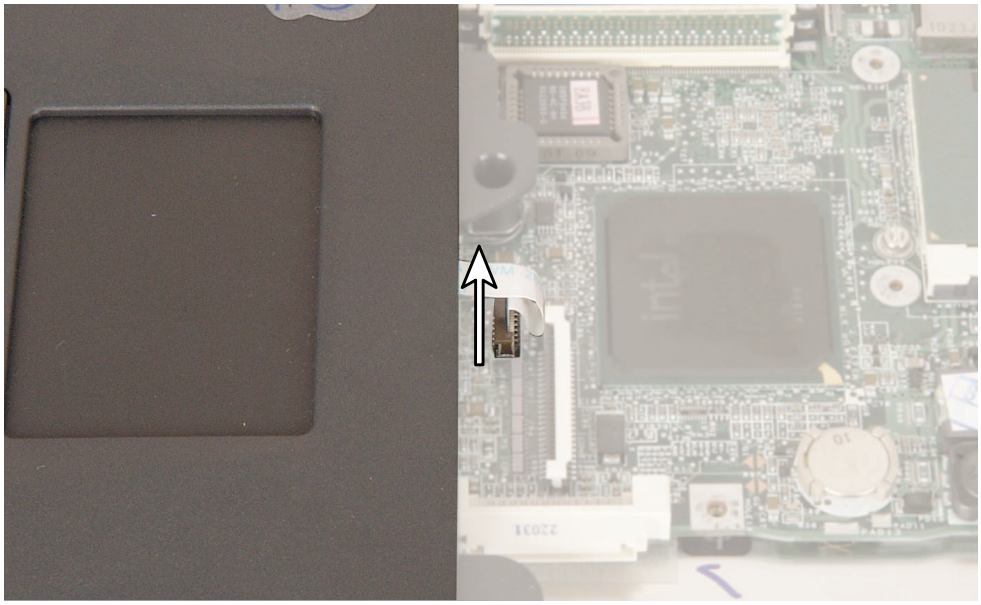
8 Turn your notebook over, then remove the three black screws on the back of your notebook.



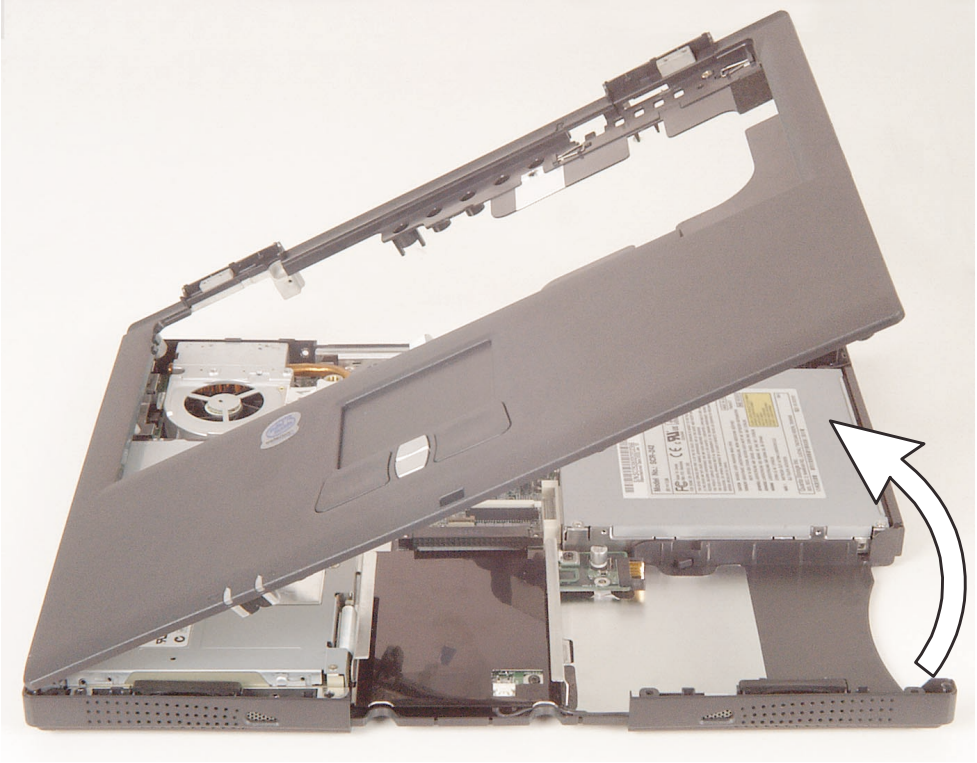
9 Remove the chrome screws above the touchpad and next to the left hinge.



10 Unplug the touchpad's ribbon cable from your notebook.



11 Lift the palm rest assembly away from your notebook.



12 Place the new palm rest onto your notebook.

13 Attach the new palm rest's ribbon cable to your notebook, then replace all of the palm rest's screws.

14 Reassemble your notebook.

Replacing the diskette drive

Tools you need to complete this task:

Phillips #0 or #1 screwdriver

Scribe or non-marring tool

Screws removed during this task:

2 black 2.5 × 5 mm
(hard drive)

2 chrome 2.5 × 3 mm
(keyboard)

2 black 2.5 × 5 mm
(left hinge cover)
1 chrome 2.5 × 6 mm
(right hinge cover)

4 chrome 2.5 × 6 mm
(hinges)

1 chrome 2 × 4 mm
(LCD cable)

2 chrome 2.5 × 6 mm
(palm rest top)

13 black 2.5 × 5 mm
(palm rest bottom)

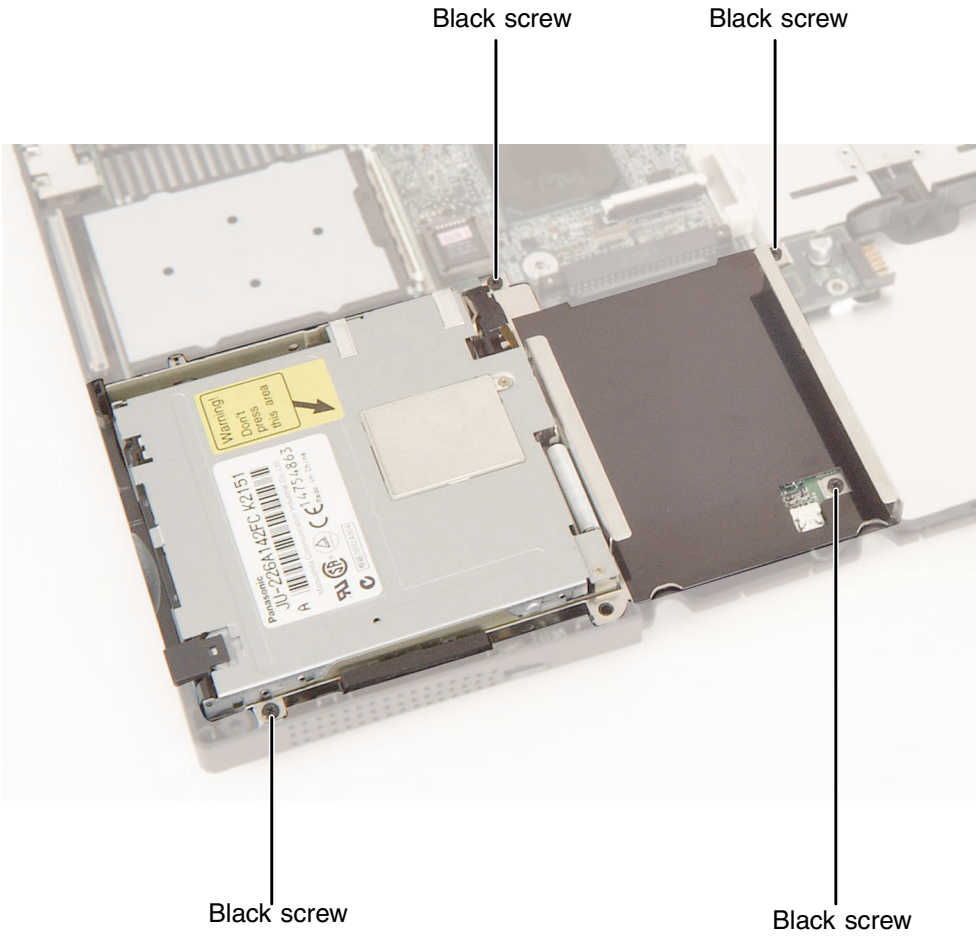
3 black 2.5 × 5 mm
(palm rest back)

4 black 2.5 × 4 mm
(diskette drive)

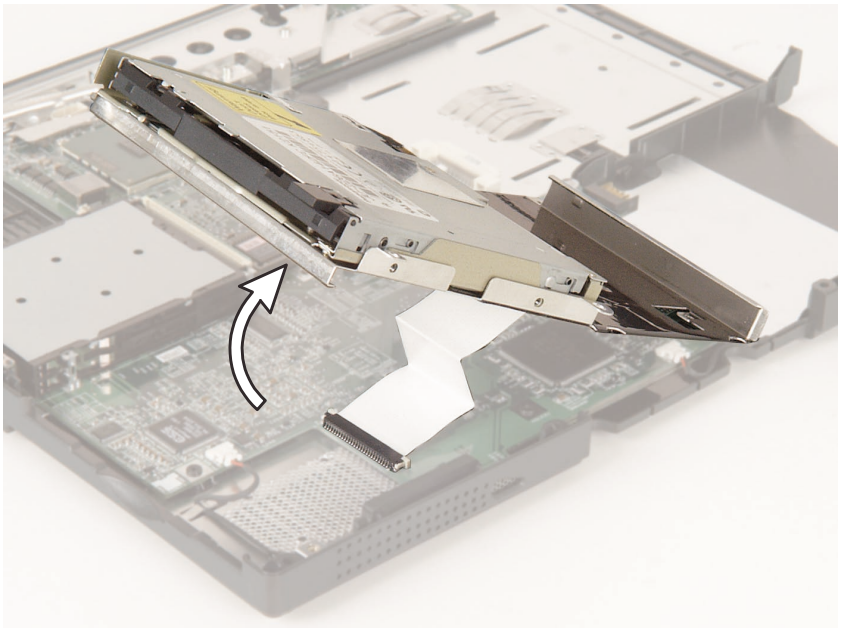
To replace the diskette drive:

1. Disconnect the power cord, remove the battery, and prepare your notebook by following the instructions in “Preparing your notebook” on page 5.
2. Remove the hard drive kit by following the instructions in “Replacing the hard drive kit” on page 6.
3. Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 19.
4. Remove the keyboard by following the instructions in “Replacing the keyboard” on page 32.
5. Remove the palm rest assembly by following the instructions in “Replacing the palm rest assembly” on page 45.

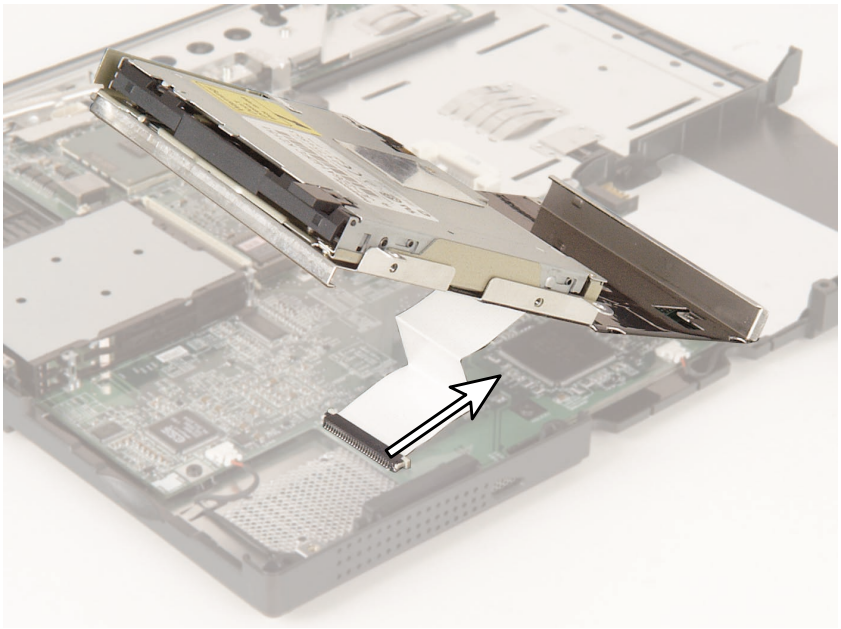
6 Remove the four black screws that secure the diskette drive to your notebook.



7 Lift the diskette drive a few inches from your notebook.



8 Disconnect the diskette drive's ribbon cable and remove the drive.



9 Attach the new diskette drive's ribbon cable to your notebook, then line up the drive's screw holes with your notebook's screw holes.

10 Replace the four black screws.

11 Reassemble your notebook.

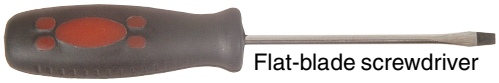
Replacing the system board

Tools you need to complete this task:

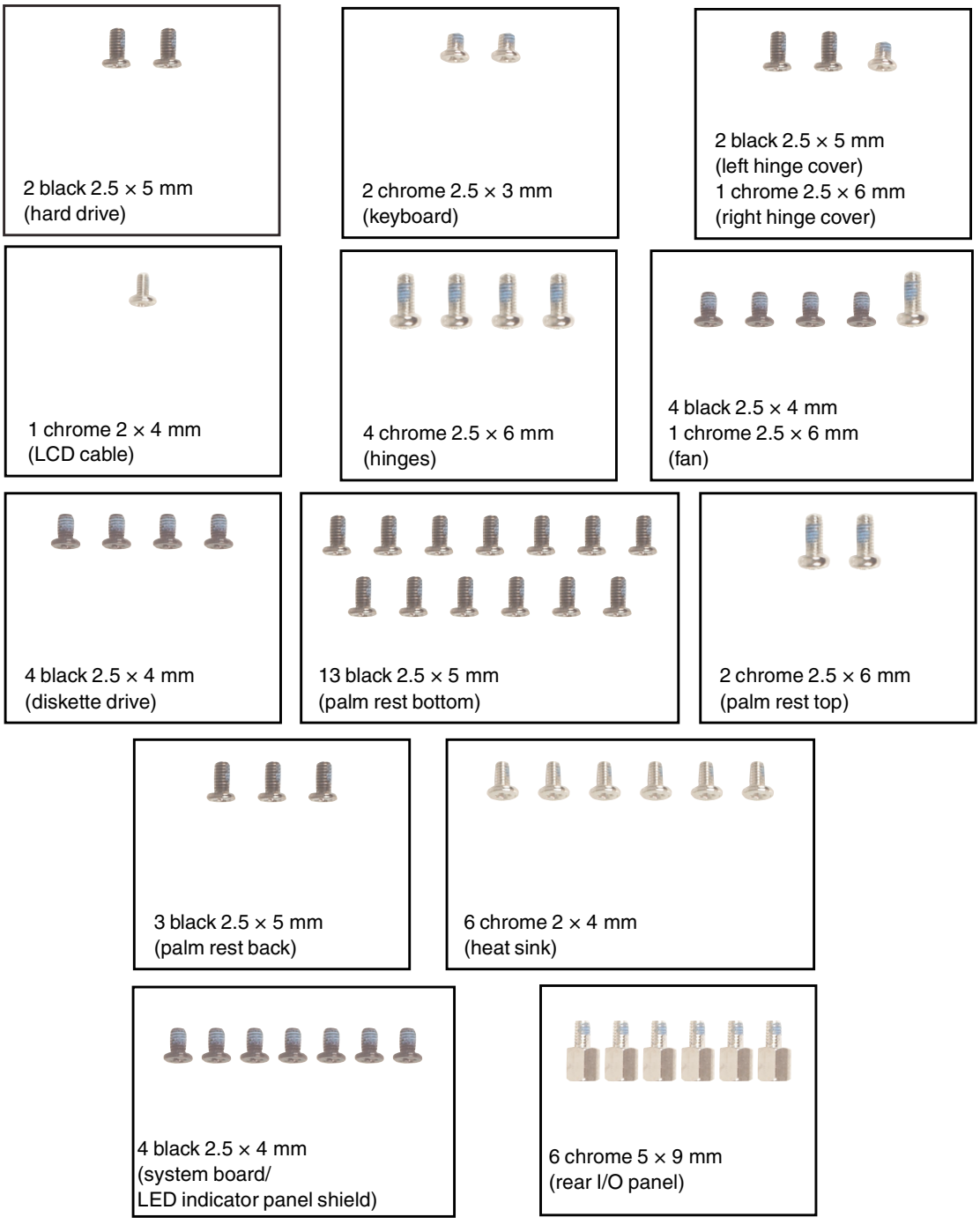
Phillips #0 screwdriver

5.0 mm hex nutdriver

Scribe or non-marring tool


Flat-blade screwdriver

Screws removed during this task:

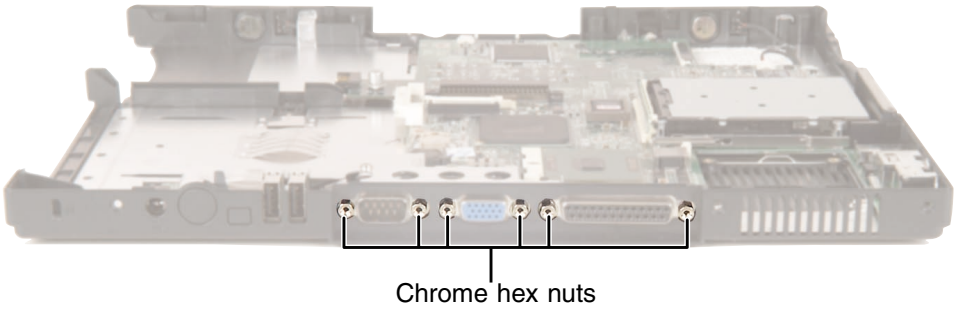


To replace the system board:

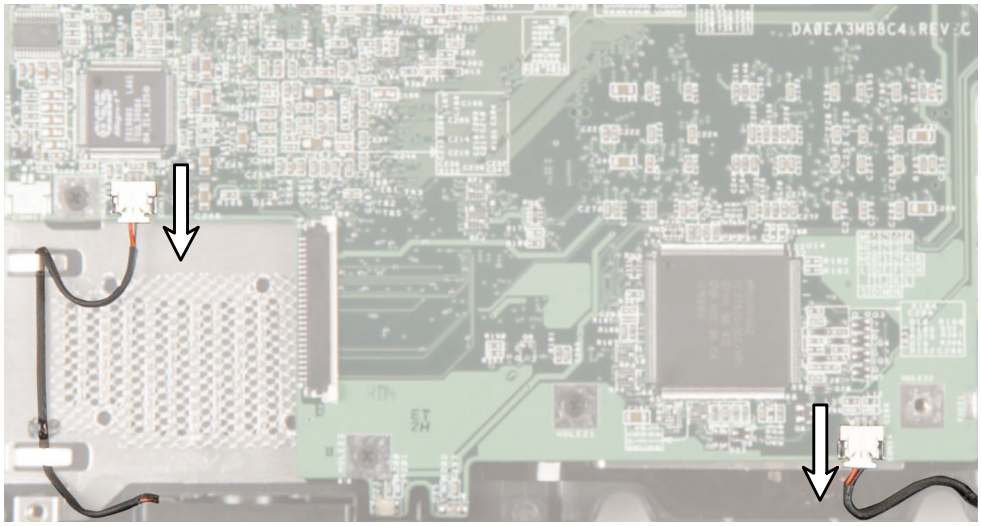
1. Disconnect the power cord, remove the battery, and prepare your notebook by following the instructions in “Preparing your notebook” on page 5.
2. Remove the hard drive kit by following the instructions in “Replacing the hard drive kit” on page 6.
3. Remove the memory modules by following the instructions in “Adding or replacing memory modules” on page 11.
4. Remove the modem by following the instructions in “Replacing the modem” on page 15.
5. Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 19.
6. Remove the hinge covers by following the instructions in “Replacing the hinge covers” on page 21.
7. Remove the LCD panel assembly by following the instructions in “Replacing the LCD panel assembly” on page 24.
8. Remove the keyboard by following the instructions in “Replacing the keyboard” on page 32.
9. Remove the cooling assembly by following the instructions in “Replacing the cooling assembly” on page 37.
10. Remove the CD or DVD drive by following the instructions in “Replacing the CD or DVD drive” on page 42.

    The CD or DVD drive and the cooling assembly share a chrome screw. The chrome screw referenced in Step 4 of “Replacing the CD or DVD drive” on page 42 was removed in Step 5 of “Replacing the cooling assembly” on page 37.
11. Remove the palm rest assembly by following the instructions in “Replacing the palm rest assembly” on page 45.
12. Remove the diskette drive by following the instructions in “Replacing the diskette drive” on page 51.

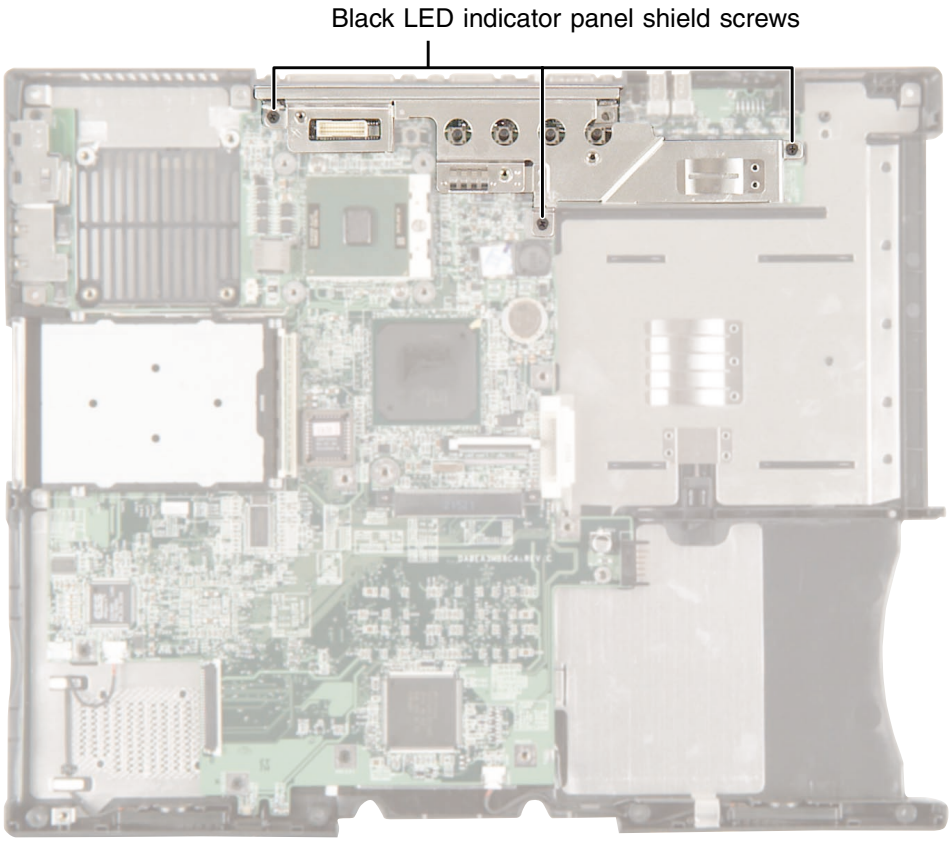
13 Remove the six chrome hex nuts on the rear I/O panel.



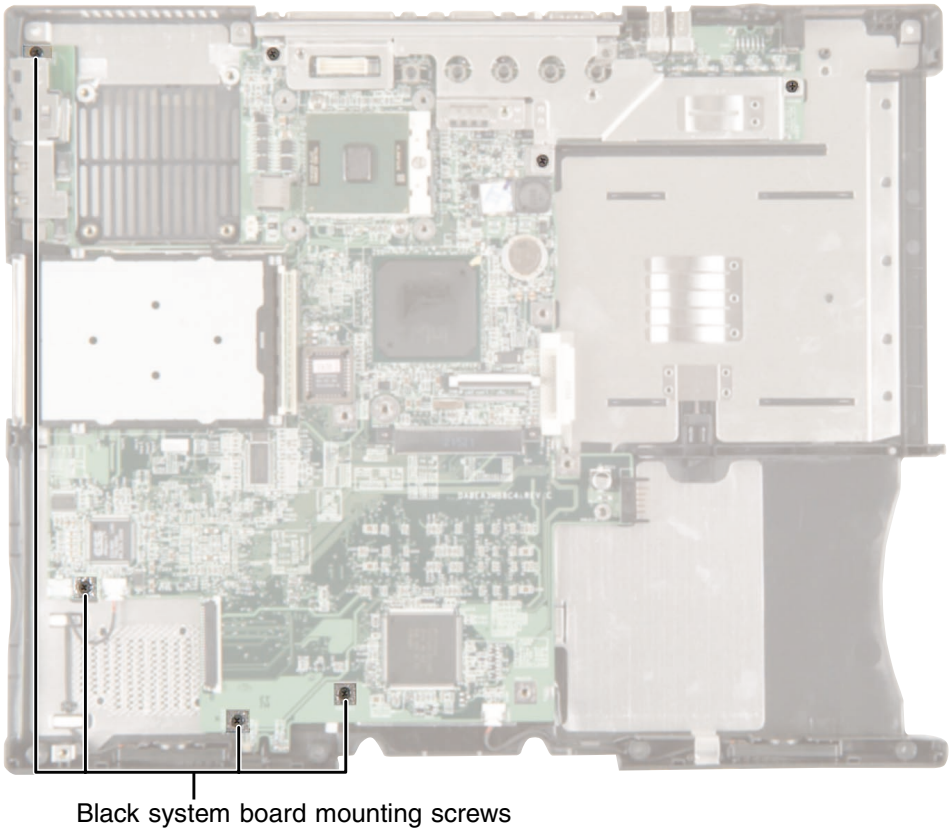
14 Unplug the left and right speakers from the system board.



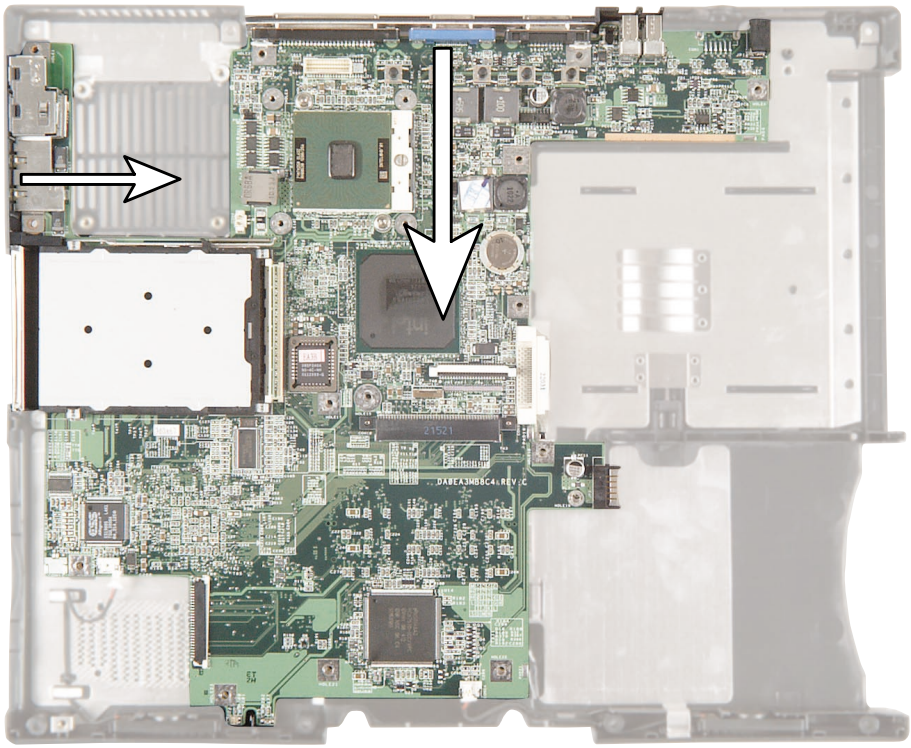
15 Remove the black LED indicator panel shield screws numbered 2, 4, and 8, then remove the LED indicator panel shield.



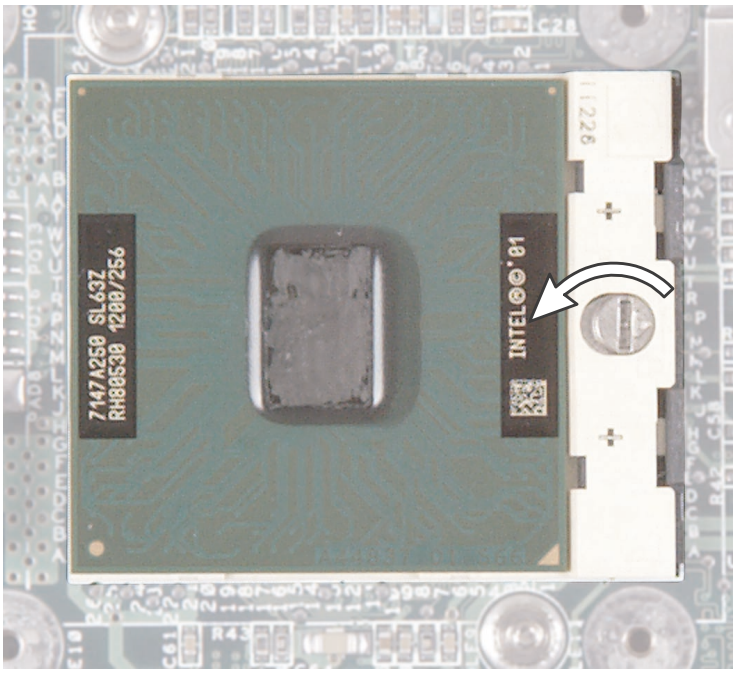
16 Remove the black system board mounting screws numbered 1, 20, 21, and 23.



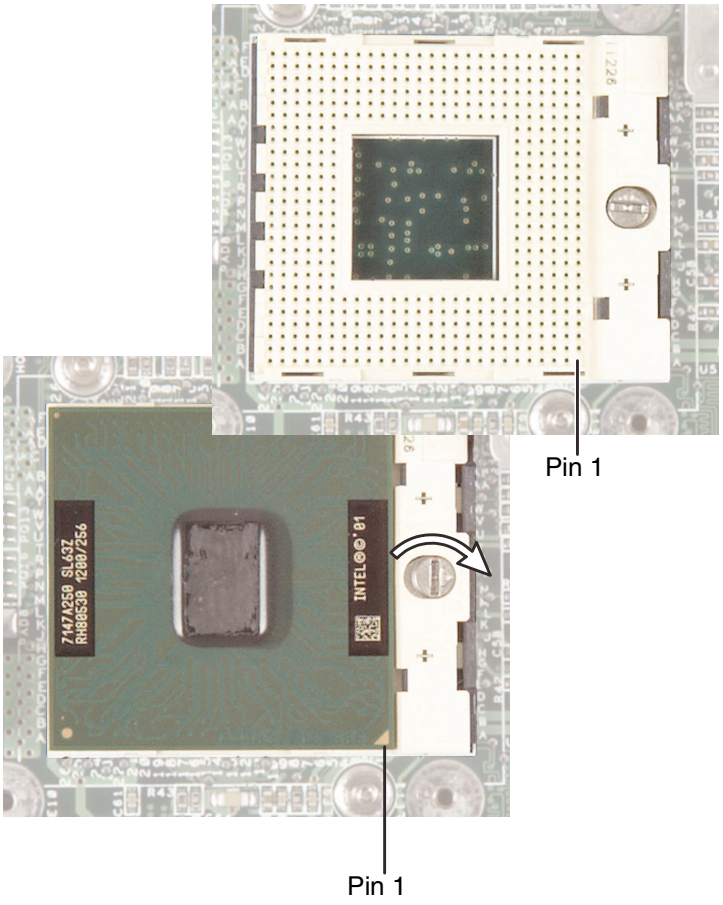
17 While pushing in on the PC Card eject button, remove the system board. Make sure the rear I/O panel clears the bottom tray (shown by the top arrow) and the side audio jacks clear the bottom tray (shown by the left arrow).



18 Use a flat-blade screwdriver to turn the processor lock screw ¼-turn counter-clockwise, then remove the processor from the old system board.



19 Install the processor into the new system board making sure that Pin 1 on the processor (indicated by the silk-screened arrow on the corner of the processor) aligns with Pin 1 on the processor socket (indicated by the absence of a pin hole in the processor socket), then lock the processor in place by using a flat-blade screwdriver to turn the processor lock screw ¼-turn clockwise.



20 Place the new system board onto your notebook.

21 Replace the LED indicator panel shield and the three LED indicator panel shield screws.

22 Replace the four system board mounting screws.

23 Connect the two speaker wires.

24 Replace the six rear I/O panel hex nuts.

25 Reassemble your notebook.

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