Dell™ Latitude™ V700 Service Manual

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NOTE: A NOTE indicates important information that helps you make better use of your computer.

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Before You Begin

Dell™ Latitude™ V700 Service Manual

- Preparing to Work Inside the Computer
- Recommended Tools
- Screw Identification

Preparing to Work Inside the Computer

NOTICE: Only a certified service technician should perform repairs on your computer. Damage or inoperability due to servicing not authorized by Dell is not covered by your warranty.

NOTE: Unless otherwise noted, each procedure in this document assumes that a part can be replaced by performing the removal procedure in reverse order.

NOTICE: To dissipate any static electricity while you work, periodically touch an unpainted metal surface on the surface of the computer, such as the I/O panel on the back of the computer chassis.

NOTICE: Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by it edges or by its metal mounting bracket. Hold a component such as a microprocessor by its edges, not by its pins.

1. To avoid damaging the computer, perform the following steps before you begin working inside the computer.
2. Make sure that the work surface is clean to prevent scratching the computer cover.
3. Save any work in progress and close all open programs.

NOTE: Make sure the computer is turned off and not in standby or hibernate mode. If you cannot shut down the computer using the computer's operating system, press and hold the power button for 4 seconds.

4. Turn off the computer and all attached devices.
5. Make sure the computer is not connected to a port replicator.
6. Disconnect the computer from the electrical outlet.

NOTICE: To avoid possible damage to the system board, wait 10 to 20 seconds before you disconnect any attached devices.

7. Disconnect all external cables and attached devices from the computer.
8. Remove any installed PC Cards or plastic blanks from the PC Card slot.
9. Close the display and turn the computer upside down on a flat work surface.
10. Remove the battery from the battery bay.

NOTICE: To avoid damaging the system board, you must remove the battery before you service the computer.

11. Remove any installed device in the media bay.

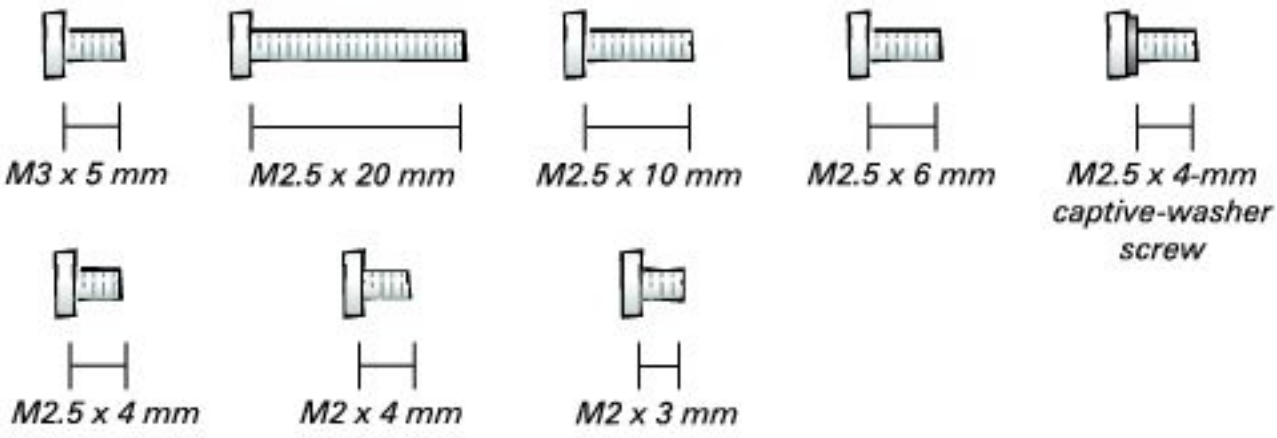
Recommended Tools

- #1 magnetized Phillips-head screwdriver
- Small flat-blade screwdriver
- Pry stick
- Small plastic scribe
- Microprocessor extractor

- Flash BIOS update program floppy disk or CD (required only when upgrading the microprocessor or replacing the system board)

Screw Identification

Before removing and replacing components, photocopy the screw placemat as a tool to help keep track of the screws. The placemat provides the number of screws and the sizes.



NOTICE: When reinstalling a screw, you must use a screw of the correct diameter and length. Make sure that the screw is properly aligned with its corresponding hole, and avoid over tightening.

Screw Placemat

Hard Drive Door Security: M3 x 5 mm (1 each) 	**Keyboard to Bottom Case Assembly**: M2.5 x 20 mm (4 each; one in memory door and one in Mini PCI card door) 	**Display to Base**: M2.5 x 6 mm (3 each; 2 at back of computer; 1 at flex-cable strain relief)
Display Bezel: Rubber screw covers (4 each) Plastic screw covers (2 each) M2.5 x 4 mm (6 each) 	**Display Panel to Display Mounting Bracket**: 15-inches M2 x 3 mm (6 each) **Flex-Cable Mounting Bracket to Top Cover**: M2.5 x 4 mm (1 each) 	**Display Panel to Display Mounting Bracket**: 14.1-inches M2 x 3 mm (4 each) **Flex-Cable Mounting Bracket to Top Cover**: M2.5 x 4 mm (1 each)

Video Memory Cache Card: M2.5 x 4 mm (2 each) 	**Palm Rest to Bottom Case Assembly**: M2.5 x 20 mm (9 each) 	**LED Board**: M2 x 4 mm (2 each)
System Board: M2.5 x 4-mm captive-washer screws (3 each) M2.5 x 20 mm (1 each) 	**Fan**: M2 x 4 mm (3 each) 	**RJ-11/RJ-45 Board**: M2.5 x 4 mm (1 each)

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System Components

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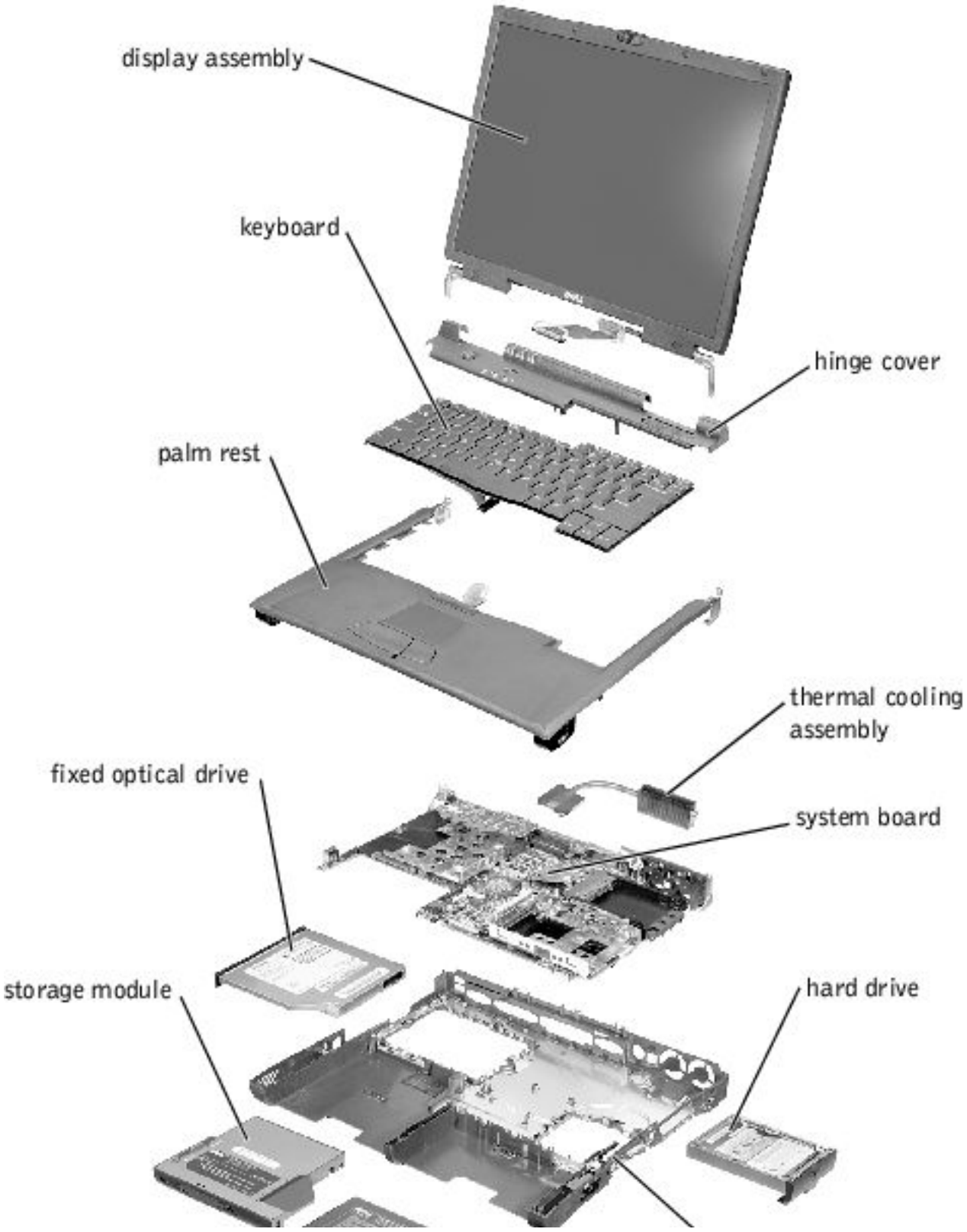

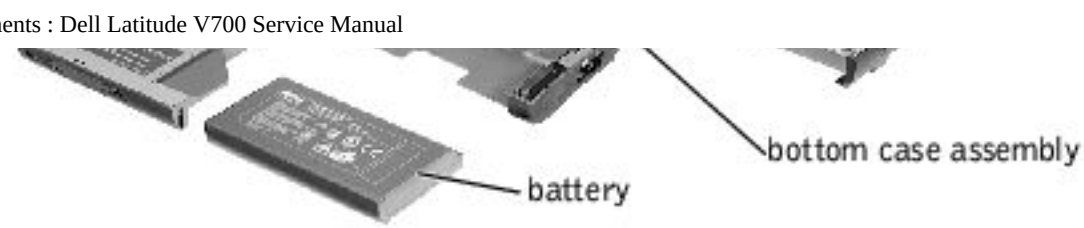

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Hard Drive and Fixed Optical Drive

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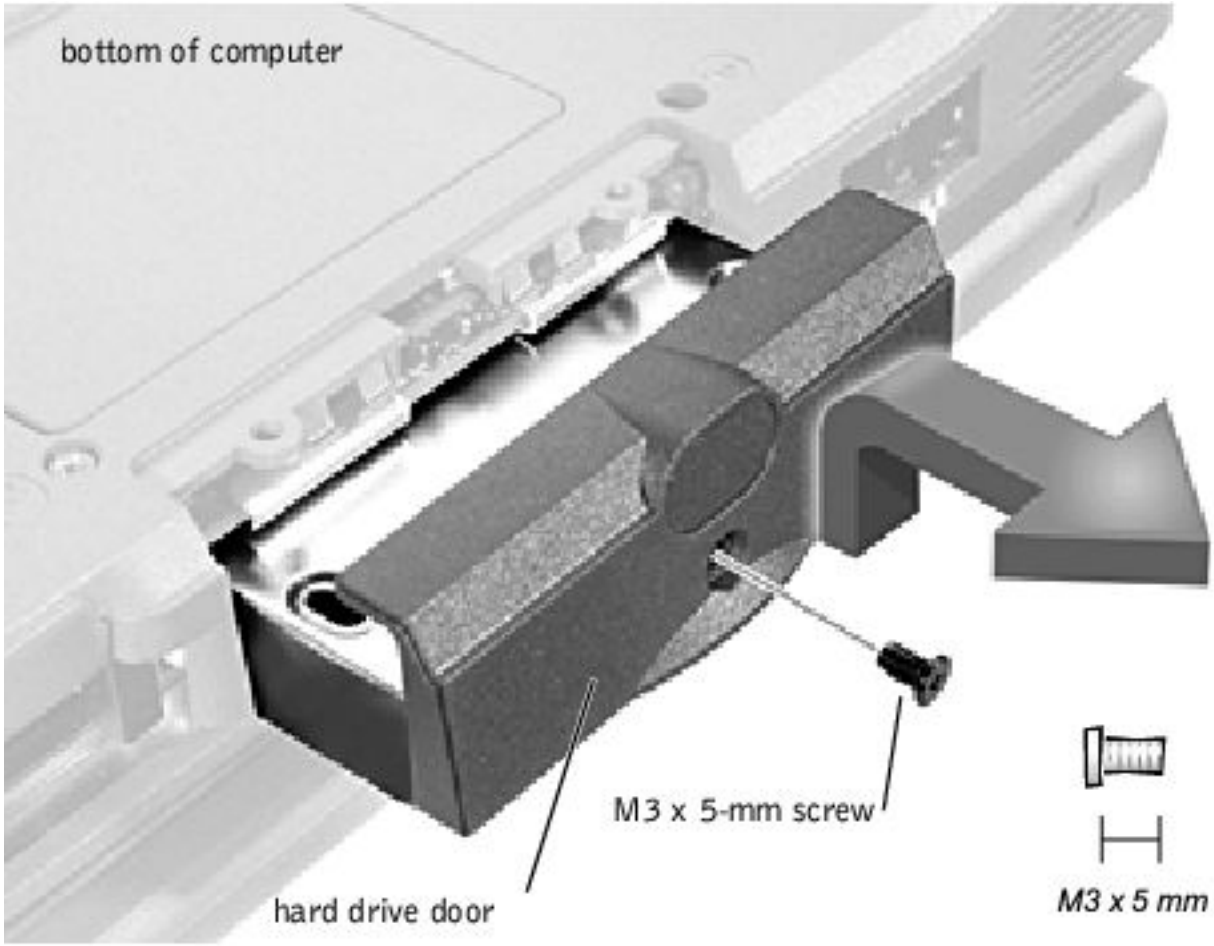
- Hard Drive
- Fixed Optical Drive

Hard Drive



NOTICE: Disconnect the computer and attached devices from electrical outlets and remove any installed battery.

NOTICE: To avoid ESD, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer.

Removing the Hard Drive

NOTICE: To avoid damaging the system board, you must remove the battery before you service the computer.

NOTICE: Make sure that the work surface is clean to prevent scratching the computer cover.

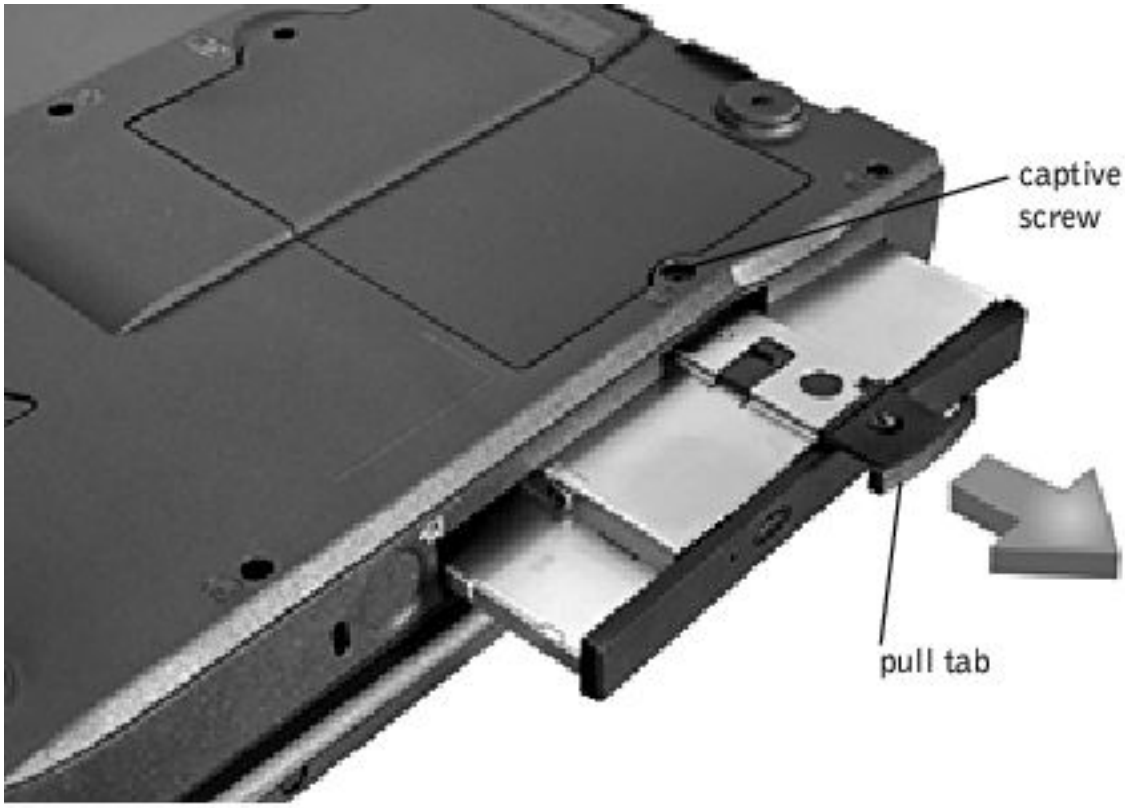
NOTICE: The disk drive is very sensitive to shock. Handle the assembly by its edges (do not squeeze the top of the hard drive case), and avoid dropping it.

1. Follow the instructions in "Preparing to Work Inside the Computer."
2. Close the display, turn the computer upside down on a flat work surface, and remove the battery.
3. Remove the M3 x 5-mm screw from the center of the hard drive door.
4. Slide the drive door up until the drive assembly tab disengages from the door slots in the bottom case assembly.
5. Carefully pull the drive assembly straight out of the bottom case assembly.

Replacing the Hard Drive

1. Push the drive assembly into the hard drive opening on the left side of the computer.
2. Align the drive assembly tabs with the bottom case assembly slots and push down until it clicks into place.
3. Replace the M3 x 5-mm screw in the drive door.

Fixed Optical Drive



NOTICE: Disconnect the computer and attached devices from electrical outlets and remove any installed battery.

NOTICE: To avoid ESD, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer.

Removing the Fixed Optical Drive

1. Follow the instructions in "Preparing to Work Inside the Computer."
2. Loosen the captive screw on the bottom of the computer.
3. Turn the computer over, loosen the captive screw marked "C," and pull out the pull tab to remove the fixed optical drive.

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Memory Modules and Mini PCI Card

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- Memory Modules
- Mini PCI Card

Memory Modules

NOTICE: Disconnect the computer and attached devices from electrical outlets and remove any installed battery.

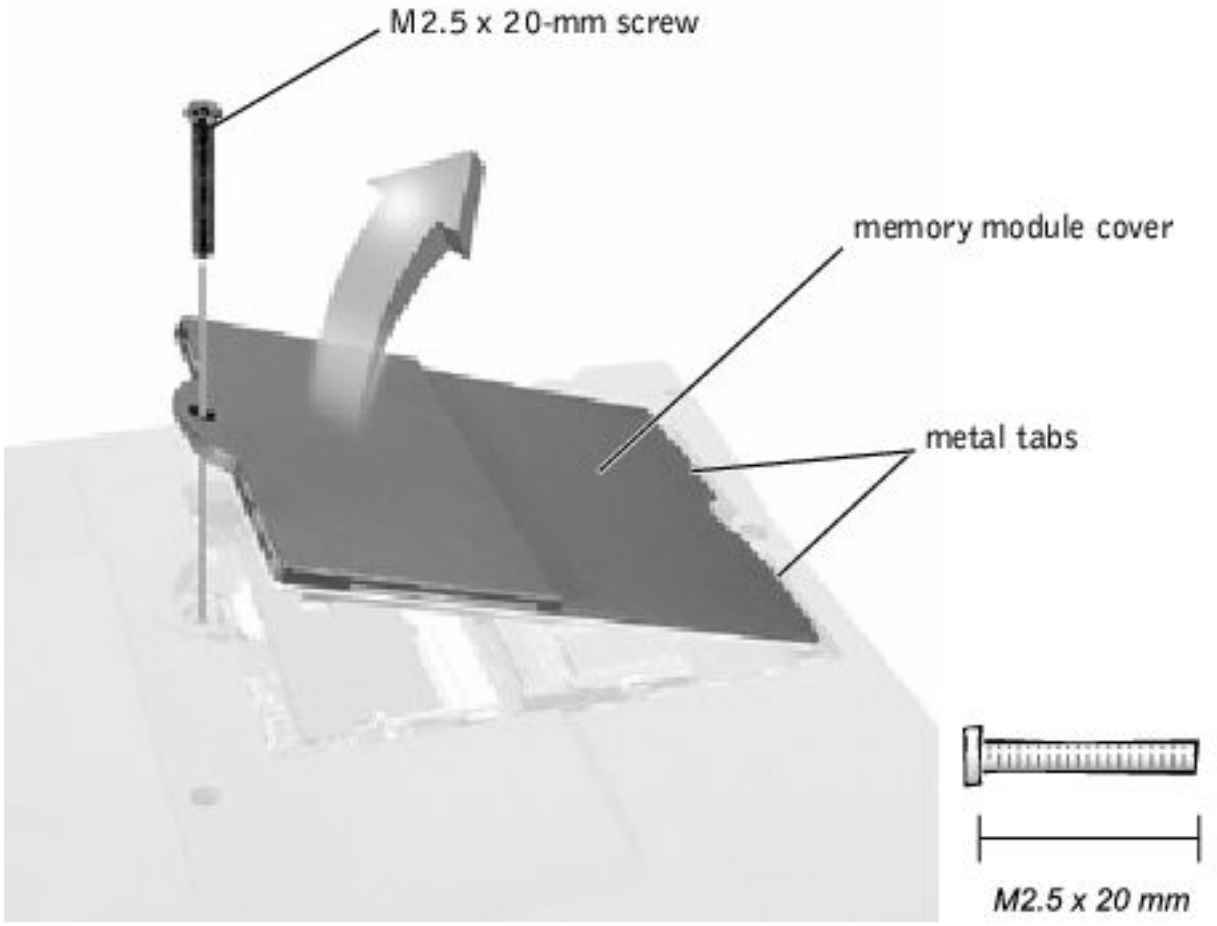
NOTICE: To avoid possible damage to the memory module from ESD, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer.

Removing the Memory Module Cover

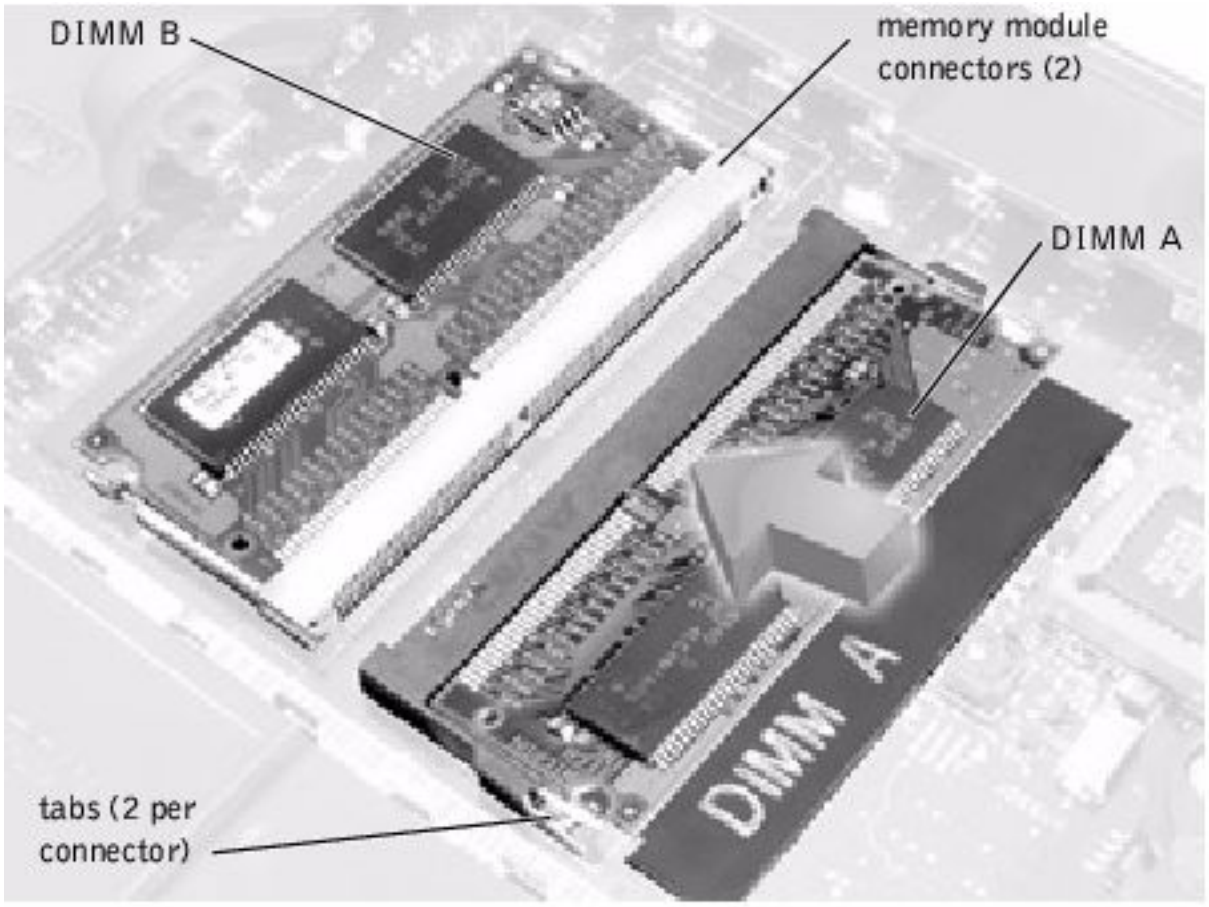
NOTICE: To avoid damaging the system board, you must remove the battery before you service the computer.

NOTICE: Handle memory modules with care. Don't touch the components on a module. Hold a module by its edges.

1. Follow the instructions in "Preparing to Work Inside the Computer."
2. Remove the M2.5 x 20-mm screw.
3. Disengage the metal tabs at the opposite end of the cover.



Removing Memory Modules



1. Remove the memory module cover.
2. To release a memory module from its connector, spread apart the tabs at each side of the module until the module pops up slightly.
3. Lift the memory module out of its connector.

Replacing Memory Modules

NOTE: Memory modules are keyed, or designed to fit into their connectors, in only one direction.

1. If you only have one memory module, install it in the connector labeled "DIMM A." If you have two memory modules, install the second module in the connector labeled "DIMM B."
2. Insert the memory module's edge connector with the slot at a 45- degree angle, and press the memory module firmly into the slot.

3. Pivot the memory module down until it clicks into place. If you do not hear a click, remove the module and reinstall it.
4. Insert the metal tabs on the memory module cover into the bottom case assembly. Rotate the cover down and replace the screw.

Mini PCI Card

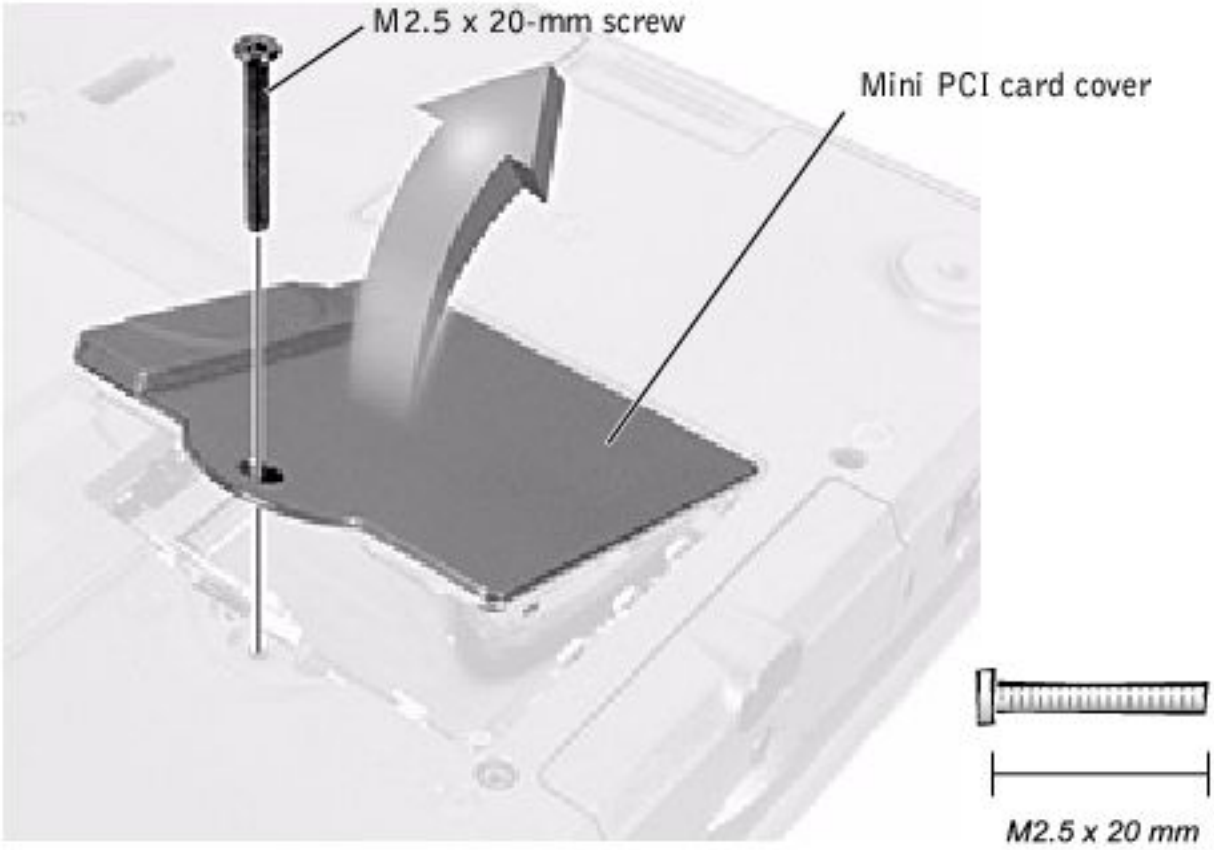
NOTICE: Disconnect the computer and attached devices from electrical outlets and remove any installed battery.

NOTICE: To avoid ESD, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer.

You must remove the optional Mini PCI card before the system board can be removed. A Mini PCI card may consist of a modem or a modem and network adapter combination. A modem or modem and network adapter combination must be connected to the wiring harness as appropriate.

Removing the Mini PCI Card

1. Follow the instructions in "Preparing to Work Inside the Computer."
2. Remove the M2.5 x 20-mm screw and lift out the Mini PCI card cover.

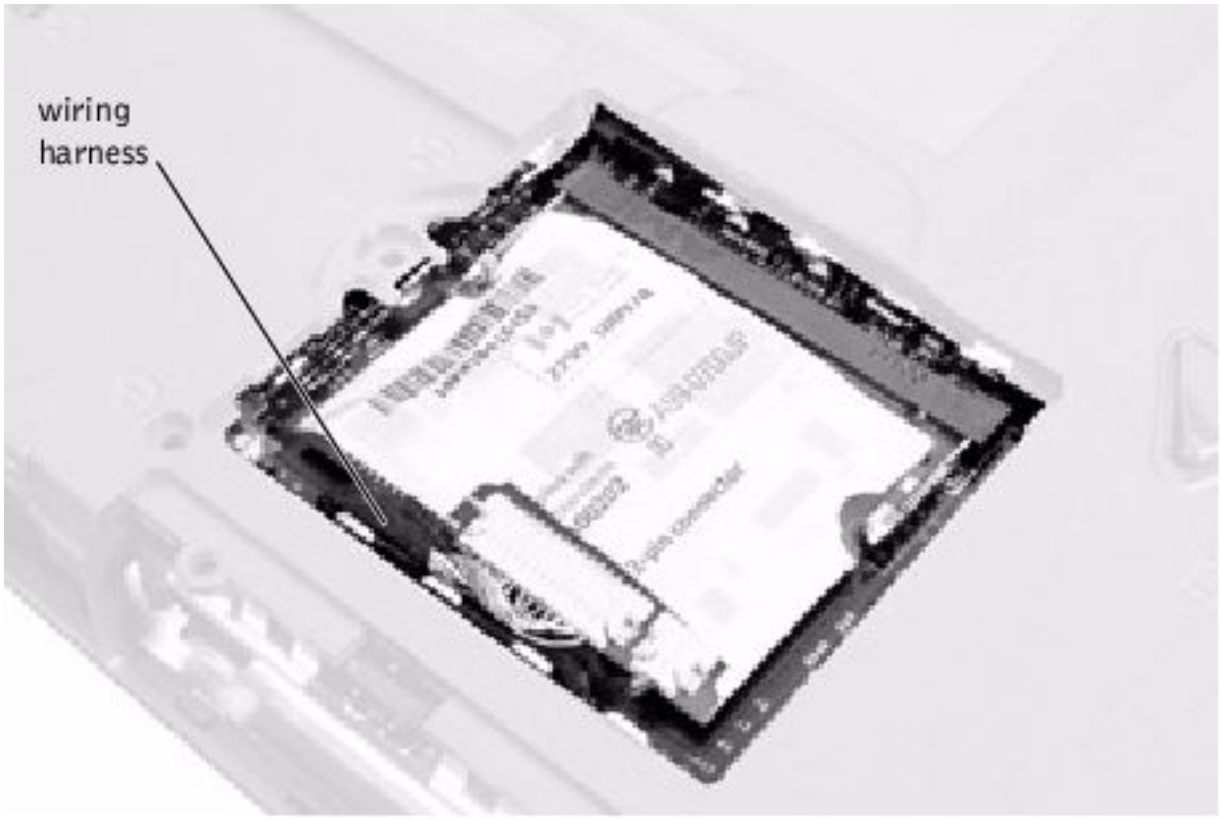


3. To release the Mini PCI card, spread the metal securing tabs until the card pops up slightly.
4. Disconnect the card from the wiring harness.
5. Lift out the card and disconnect any attached cables.

Replacing the Mini PCI Card

1. Align the Mini PCI card with the socket at a 45-degree angle, and press the Mini PCI card into the socket.
2. Connect the wiring harness to the Mini PCI card.

NOTICE: The connectors are keyed for correct insertion; do not force the connections.



NOTICE: If you are installing a modem card, fold and tuck the unused wiring harness under the card so that it does not interfere with the cover.

3. Pivot the Mini PCI card down until it clicks into place.
4. Replace the Mini PCI card cover.

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Keyboard

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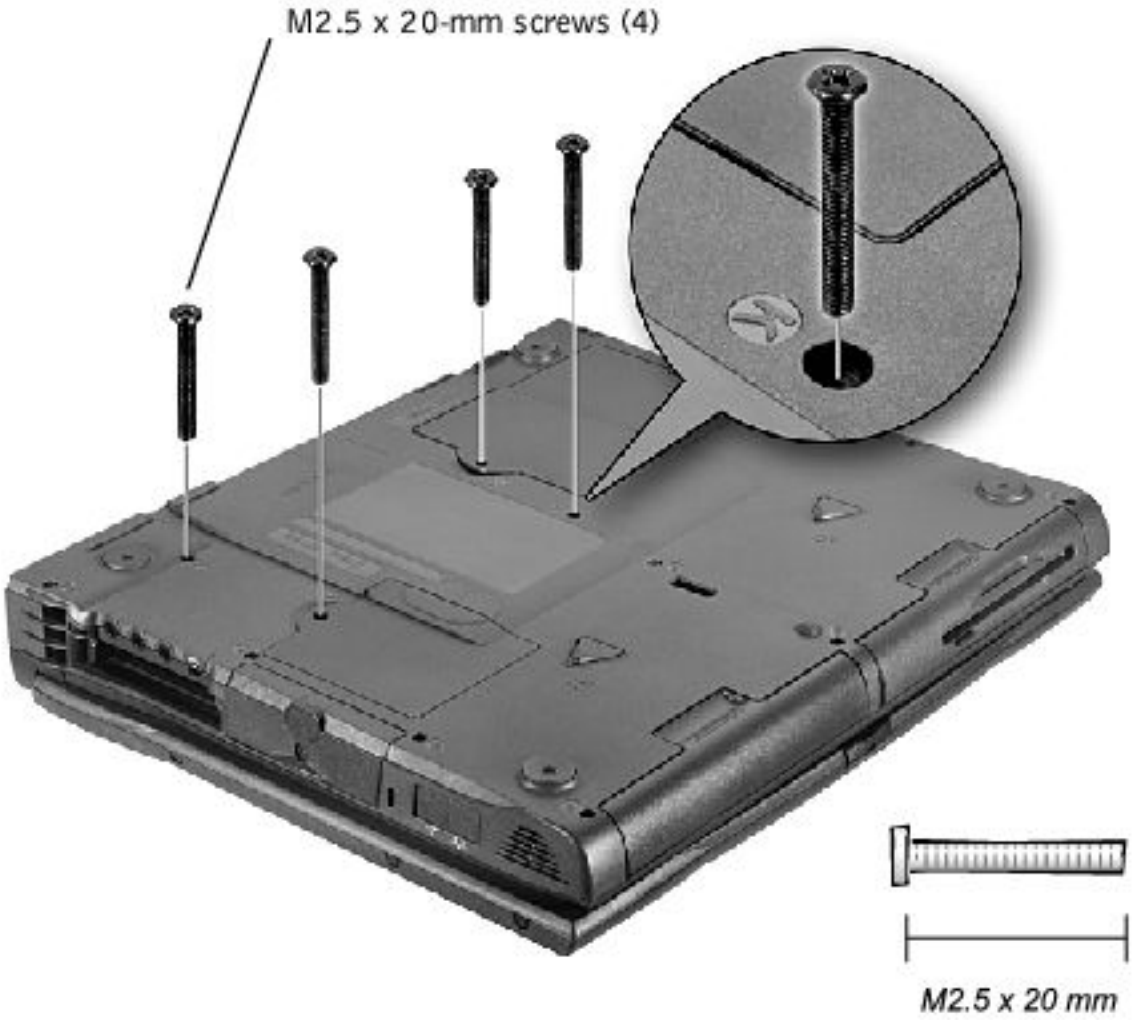
NOTICE: Disconnect the computer and attached devices from electrical outlets and remove any installed battery.

NOTICE: To avoid ESD, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer.

Removing the Keyboard

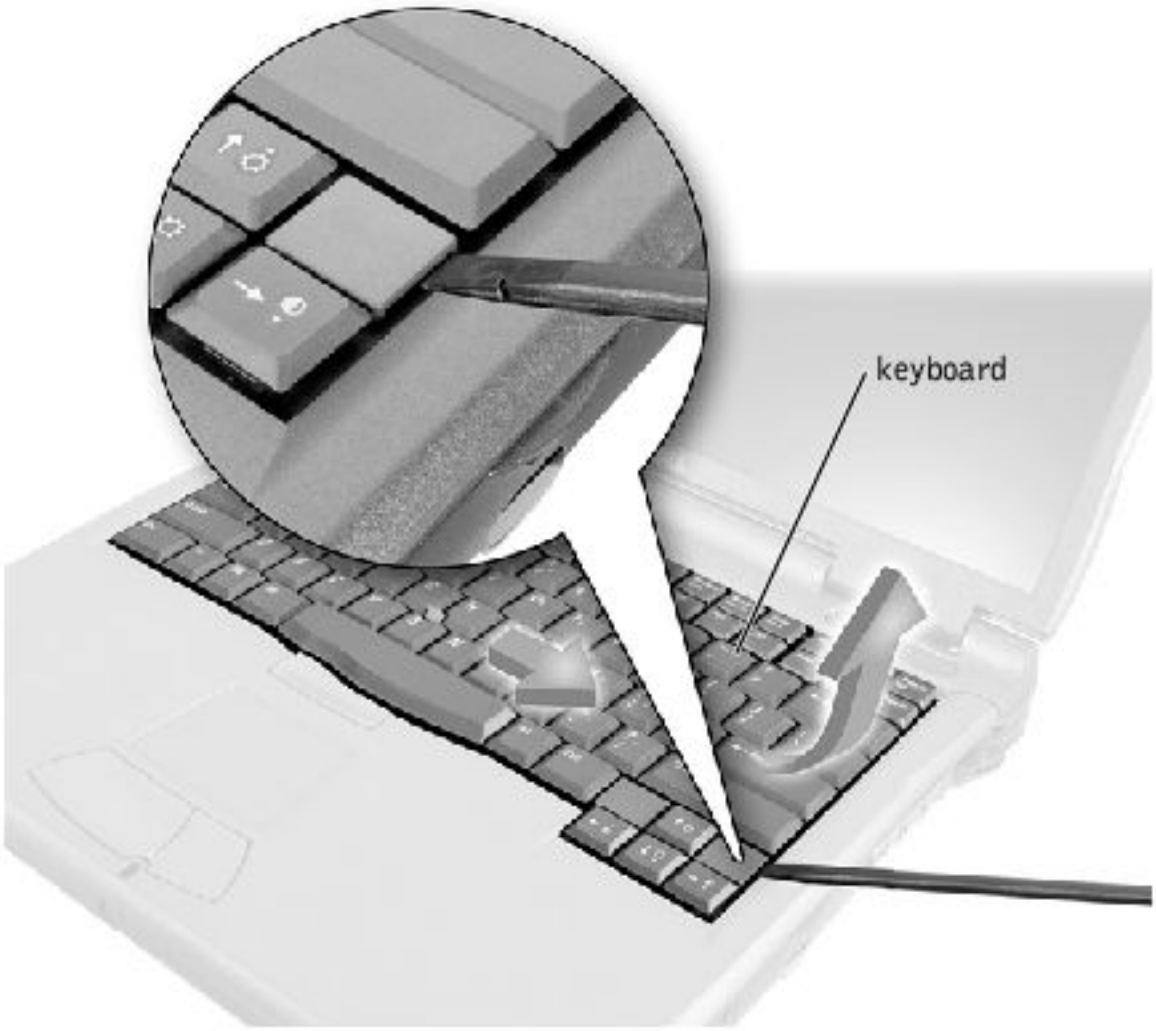
1. Follow the instructions in "Preparing to Work Inside the Computer."
2. Turn the computer over and remove the four screws labeled with a "circle K."



3. Turn the computer over and open the display.

NOTICE: Be careful when handling the keyboard. The keycaps are fragile, easily dislodged, and time-consuming to replace.

4. Insert a pry stick under the blank key to pry up the keyboard.



5. Lift the right end of the keyboard, and slide it slightly to the right to disengage the tabs at the left end.
6. Pivot the keyboard and balance it upright on the left side of the computer.

7. Disconnect the keyboard flex cable and lay the keyboard aside.

Replacing the Keyboard

NOTE: The cable connector the cable connector on the system board is outlined in white to help you orient.

1. While bracing the keyboard upright on its left end, connect the keyboard flex cable to the interface connector on the system board.

NOTICE: Position the keyboard flex cable so that it is not pinched when you replace the keyboard in the bottom case assembly.

2. Insert the metal tabs at the left end of the keyboard under the edge of the bottom case assembly, and fit the keyboard into place.

3. Check that the keyboard is correctly installed. The keys should be flush with the left and right surfaces of the palm rest.

4. Reinstall the four screws in the holes labeled "K."

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Display

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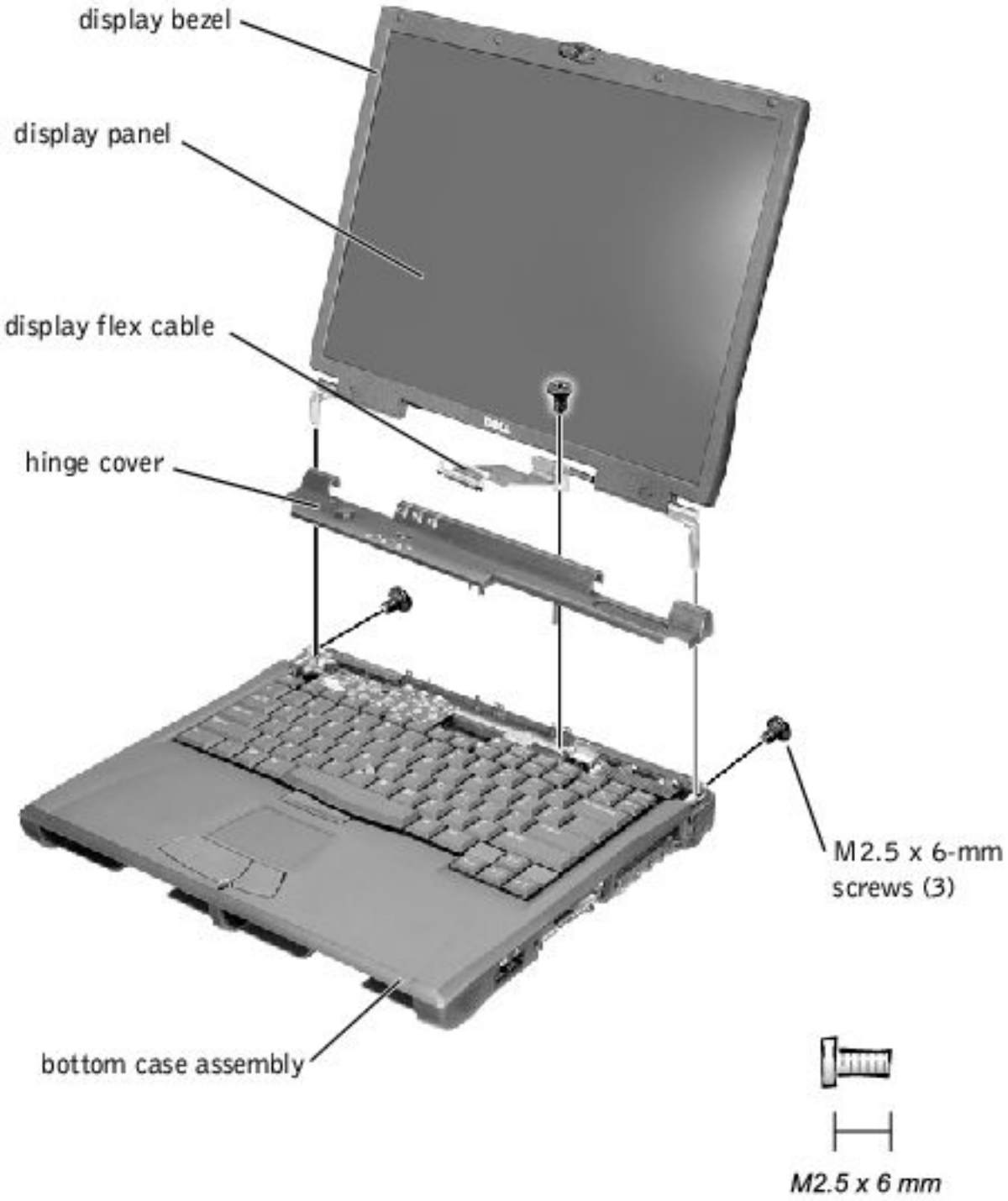
- Display Bezel and Panel
- Display Latch

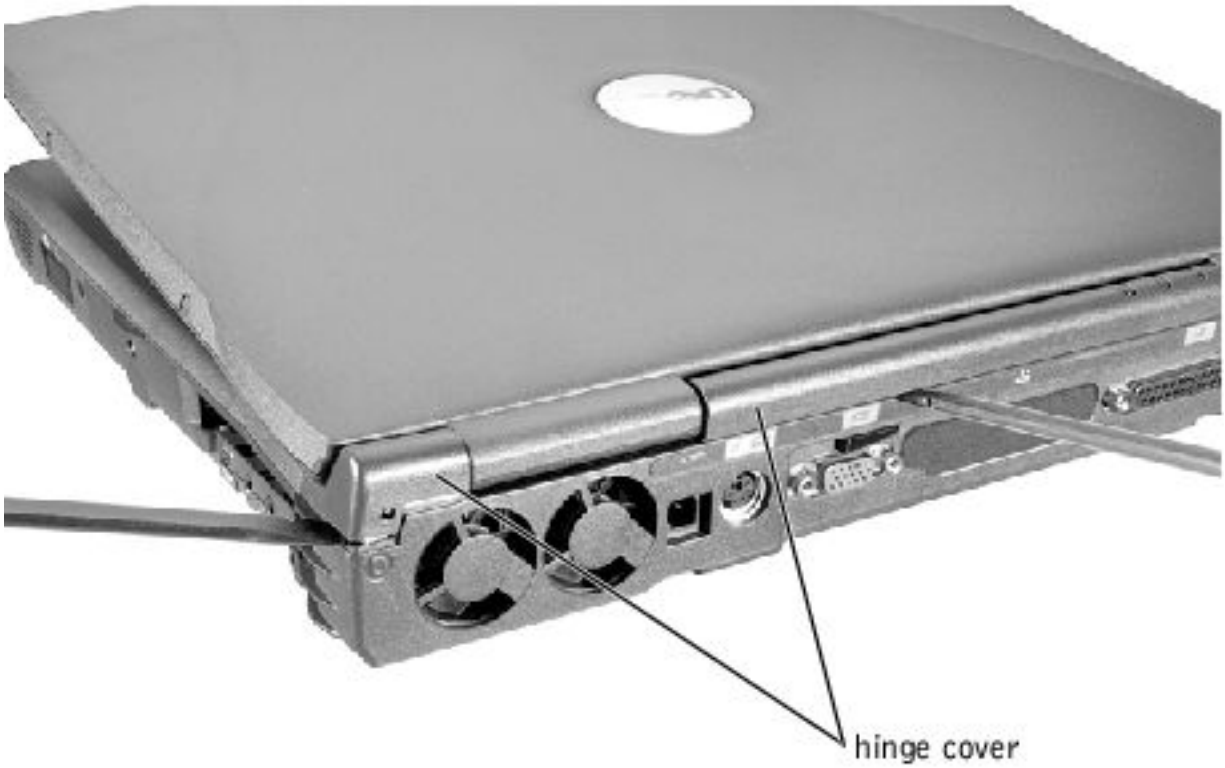
Display and Bezel Assembly



NOTICE: Disconnect the computer and attached devices from electrical outlets and remove any installed battery.

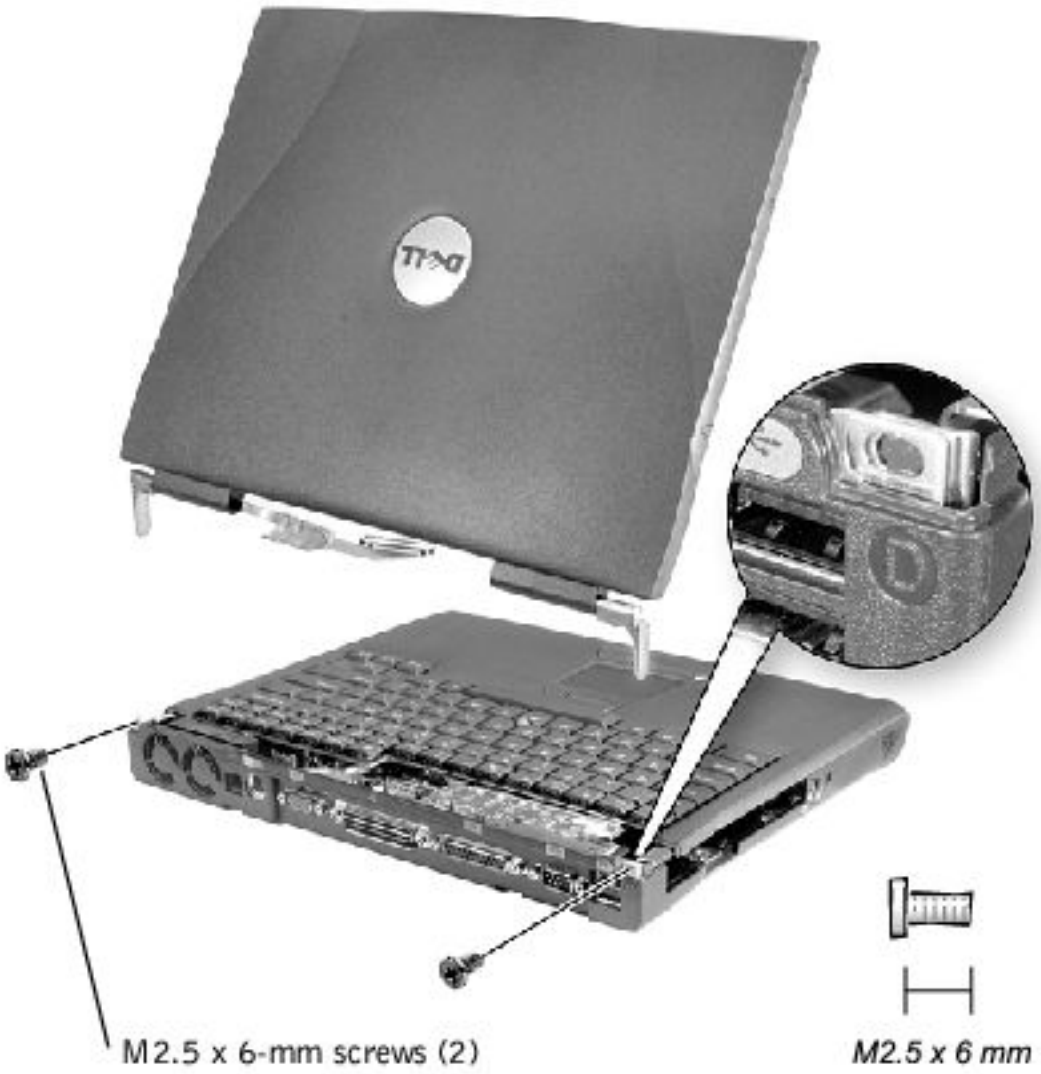
NOTICE: To avoid ESD, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer.

Removing the Hinge Cover



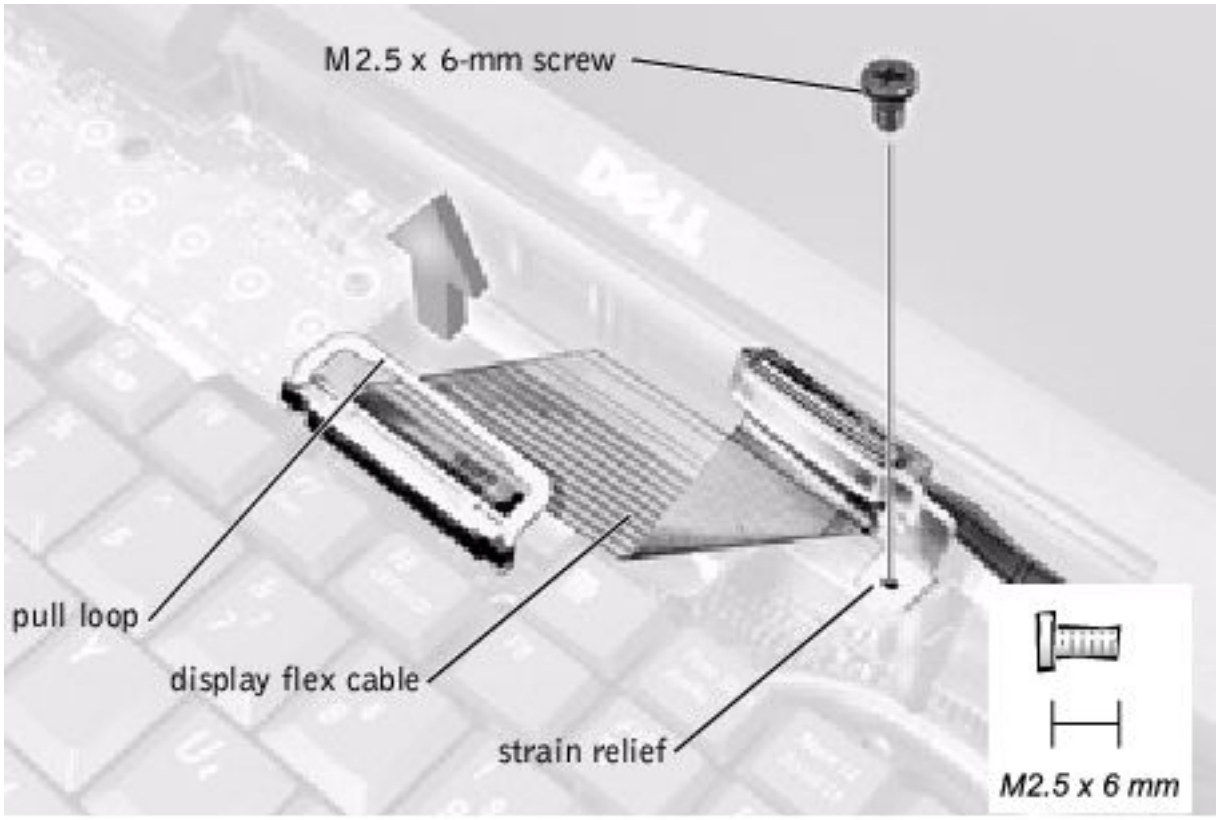
1. Follow the instructions in "Preparing to Work Inside the Computer."
2. Use a nonmarring tool to loosen the hinge cover at the back and at each side of the computer.
3. Open the display and lift off the hinge cover.

Removing the Display Assembly



1. Remove the hinge cover.

2. Remove the M2.5 x 6-mm screw that secures the display flex cable to the strain relief, and then use the pull loop to remove the flex cable from the system board.

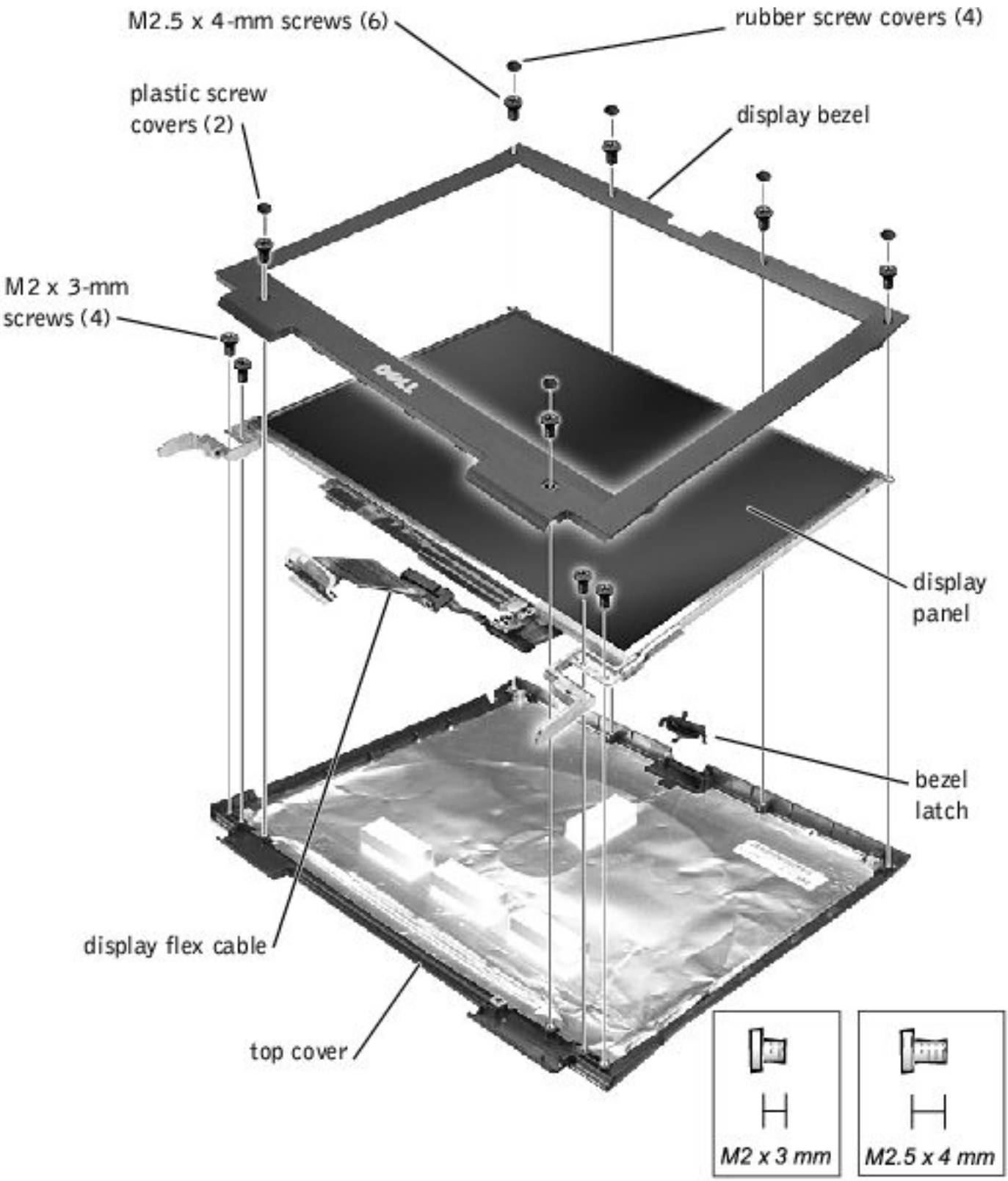


NOTICE: When reconnecting the display flex cable, press down on both ends of the connector, not in the middle. Pressing the middle of the connector can damage fragile components.

3. Open the display and remove the two screws (marked with a "circle D") that secure the display assembly to the bottom case assembly.
4. With the display in an upright position, lift the display assembly from the bottom case assembly.

Display Bezel and Panel

Display Bezel



NOTICE: Disconnect the computer and attached devices from electrical outlets and remove any installed battery.

NOTICE: To avoid ESD, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer.

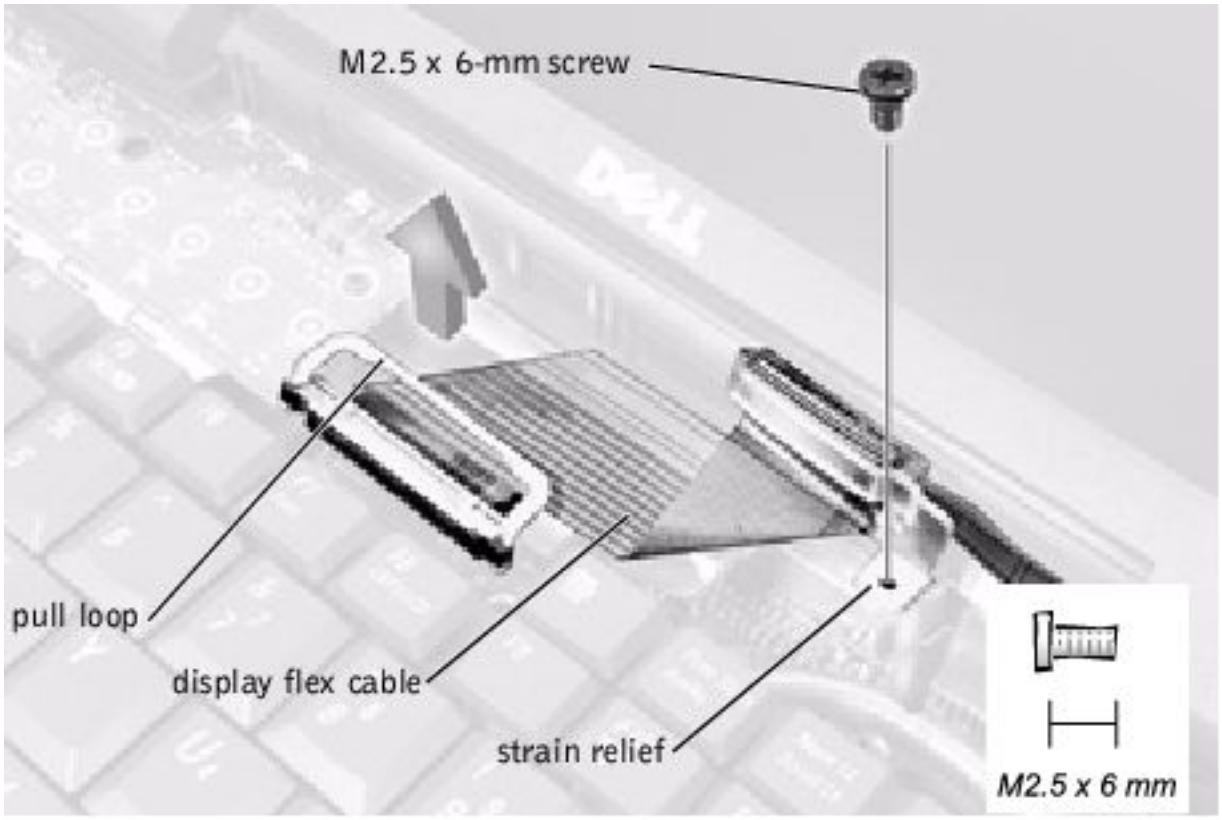
Removing the Display Bezel

1. Follow the instructions in "Preparing to Work Inside the Computer."
2. Use a scribe to pry loose the four rubber screw covers located across the top of the bezel.
3. Remove the four M2.5 x 4-mm screws located across the top of the bezel.
4. Use a scribe at the indentations to pry loose the plastic screw covers located at the bottom of the bezel.
5. Remove the two M2.5 x 4-mm screws located at the bottom of the bezel.
6. Separate the bezel from the display-assembly top cover.

The bezel is secured to the display-assembly top cover with plastic tabs around the sides. Use a plastic scribe to help separate the bezel from the top cover.

Removing the Display Panel

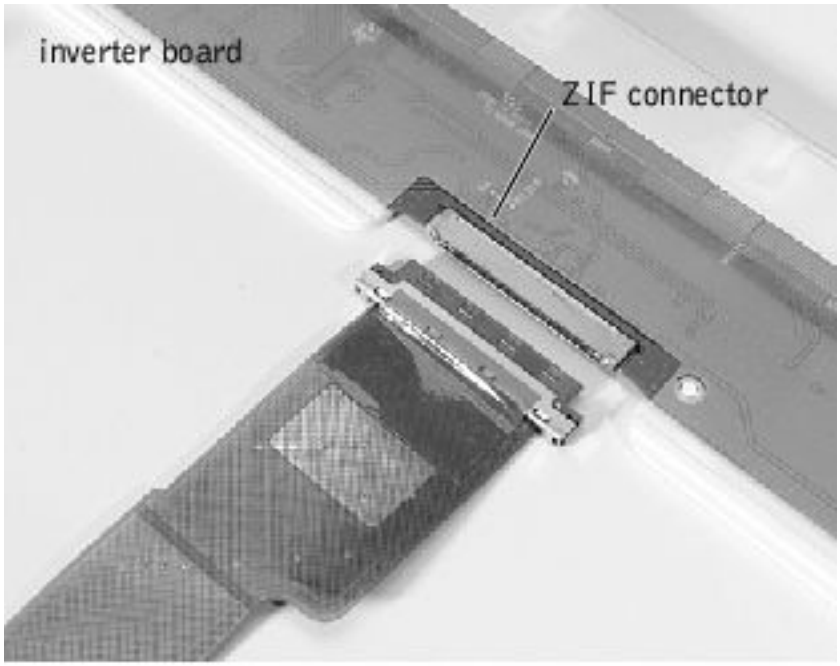
1. Remove the hinge cover.
2. Remove the screw securing the display flex cable to its strain relief, and then use the pull loop to remove the flex cable from the system board.

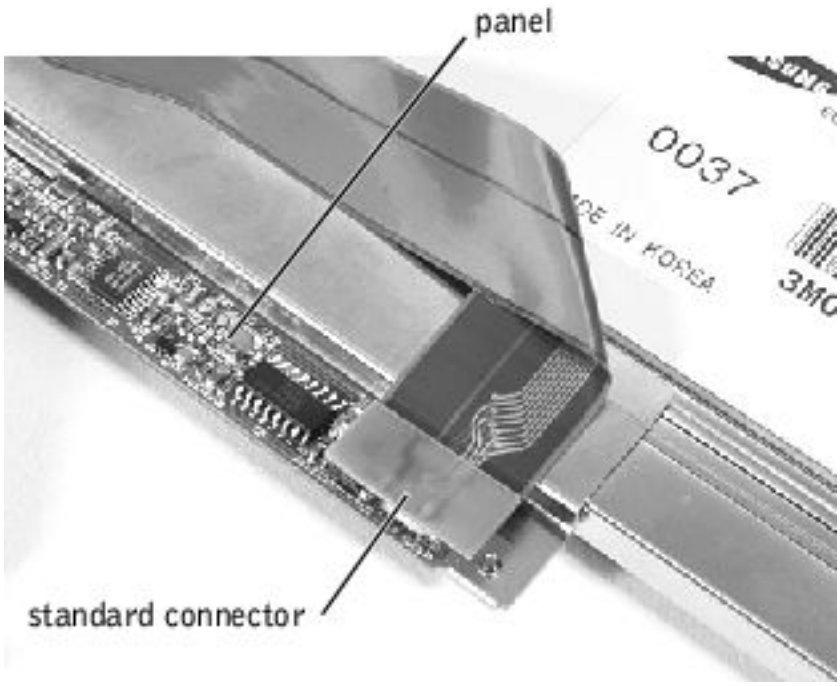


NOTICE: When reconnecting the display flex cable, press down on both ends of the connector, not in the middle. Pressing the middle of the connector can damage fragile components.

3. Remove the display bezel.
4. Remove the M2.5 x 6-mm screw securing the display flex-cable mounting bracket to the top cover assembly.
5. Remove the four M2 x 3-mm screws (two on each side) from the right and left sides of the panel.
6. Lift the display panel and flex cable out of the top cover assembly.
7. Disconnect the display flex cable from the two connectors (a ZIF and a standard connector) on the display panel.

NOTE: If you find a kaption tape on the standard connector, remove it.





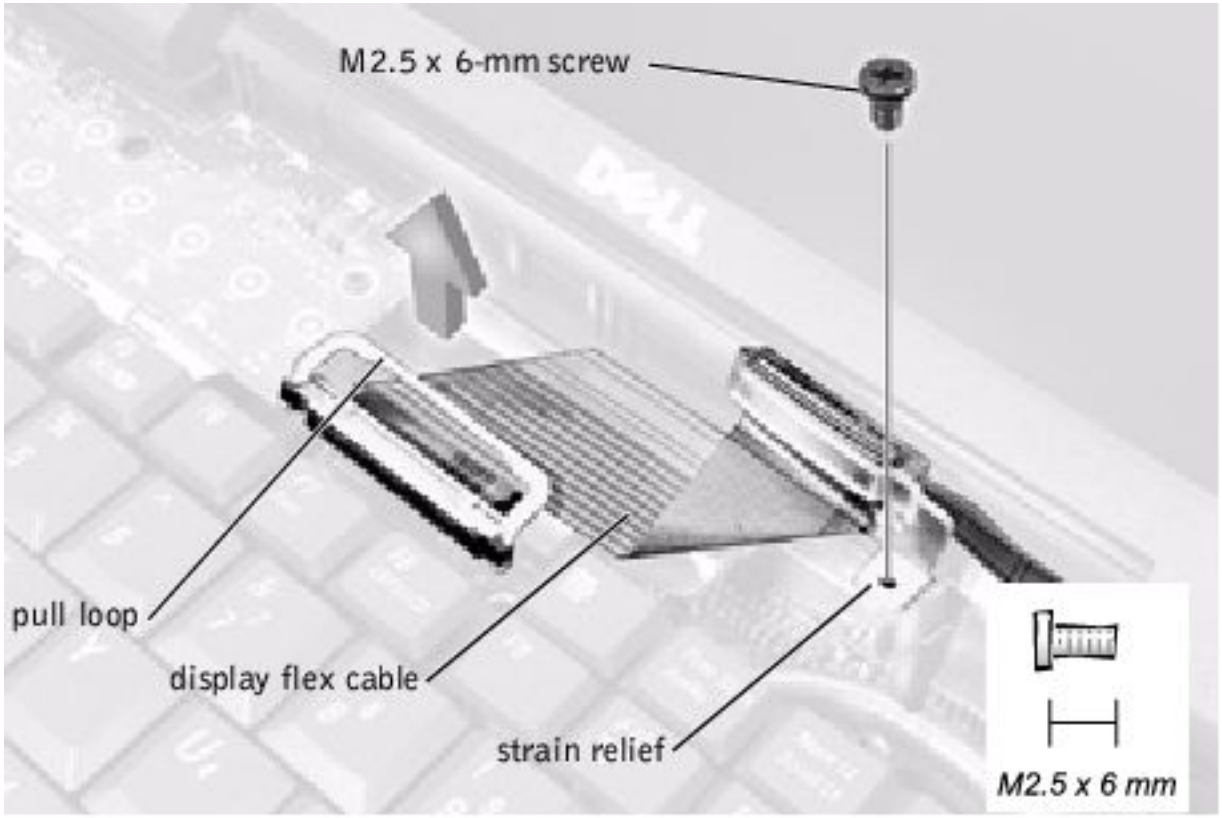
Replacing the Display Panel

NOTE: Use a magnetic screwdriver to reassemble the display panel in the display.

1. Connect the display flex cable to the two connectors (ensure that the ZIF connector is locked into place) on the back of the display panel.
2. Place the display panel in the top cover, taking care that the display flex cable is in place and is not crushed or crimped.

3. Reinstall the M2.5 x 4-mm screw that secures the flex-cable mounting bracket to the top cover.
4. Starting on the left side, use a magnetic screwdriver to reinstall the four M2 x 3-mm screws that secure the display panel in the top cover.
5. Reinstall the display bezel.

Display Latch



1. Remove the hinge cover.
2. Remove the screw securing the display flex cable to its strain relief, and then use the pull loop to remove the flex cable from the system board memory cache card.

NOTICE: When reconnecting the display flex cable, press down on both ends of the connector, not in the middle. Pressing the middle of the connector can damage fragile components.

3. Remove the display bezel.
4. Remove the display panel from the top cover.
5. Remove the display latch by unsnapping the latch and captive spring.

NOTICE: When replacing the display latch, it may help to flex the cover slightly to allow more space while seating the latch.

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Microprocessor Thermal Cooling Assembly

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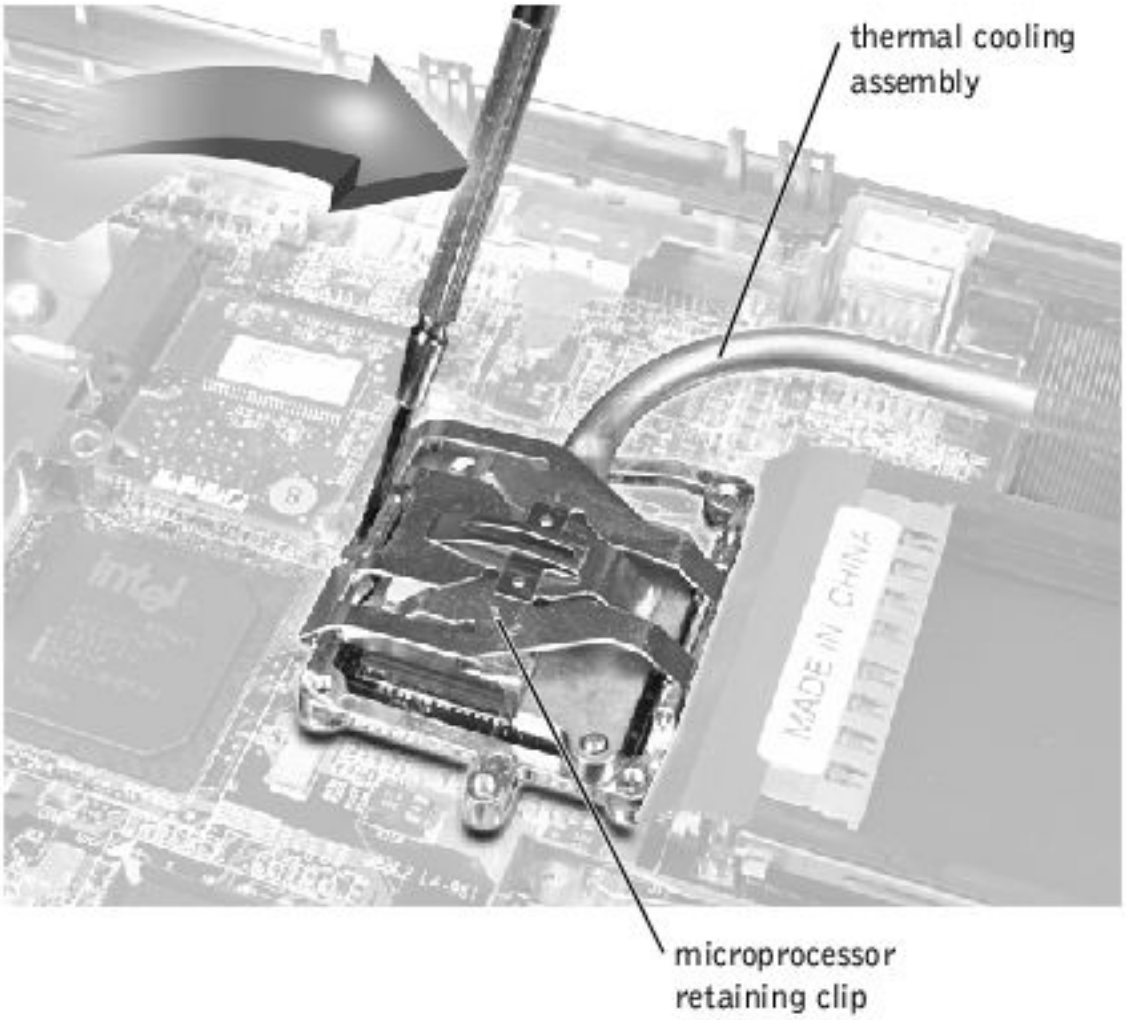
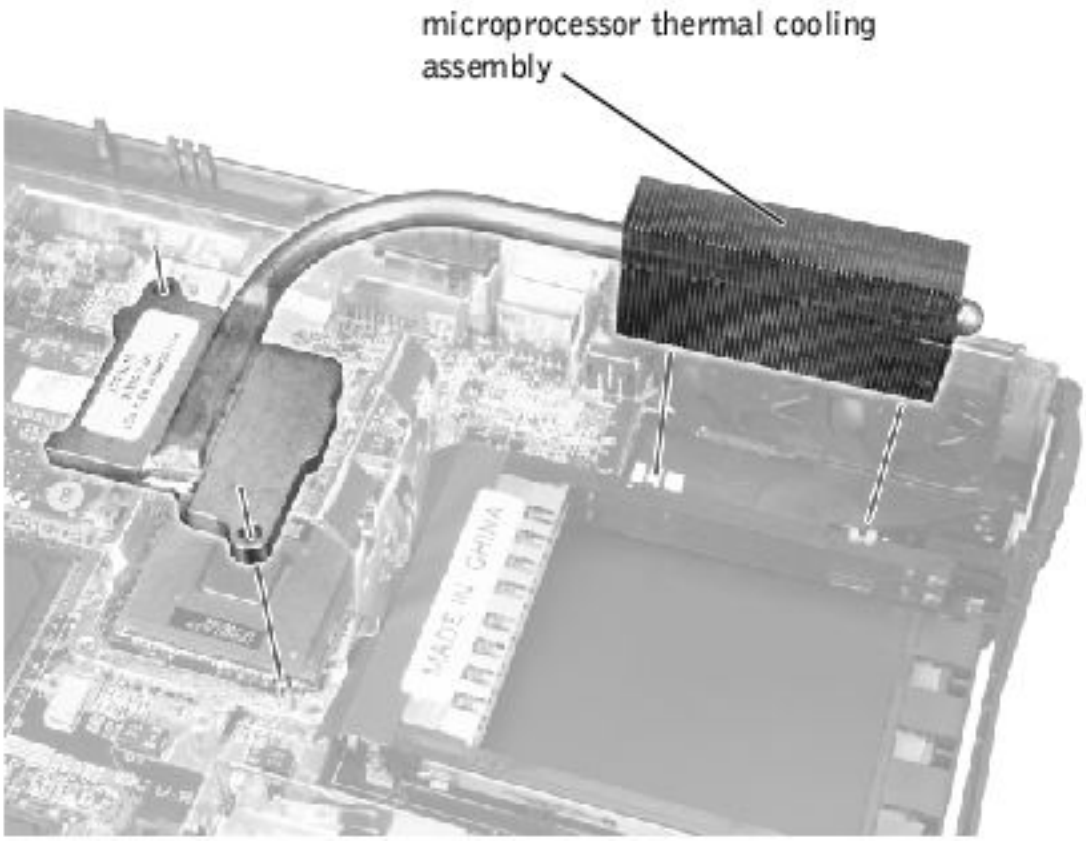


NOTICE: Disconnect the computer and attached devices from electrical outlets and remove any installed battery.

NOTICE: To avoid ESD, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer.

Removing the Microprocessor Thermal Cooling Assembly



1. Follow the instructions in "Preparing to Work Inside the Computer."
2. Remove the keyboard.
3. Remove the hinge cover.

NOTICE: To ensure maximum cooling for the microprocessor, do not touch the heat transfer areas on the thermal cooling assembly. The oils in your skin reduce the heat transfer capability of the thermal pads.

4. Insert a pry stick into the latch mechanism at the left side of the microprocessor retaining clip, and pry open the clip.
5. Lift out the thermal cooling assembly.

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Microprocessor Module

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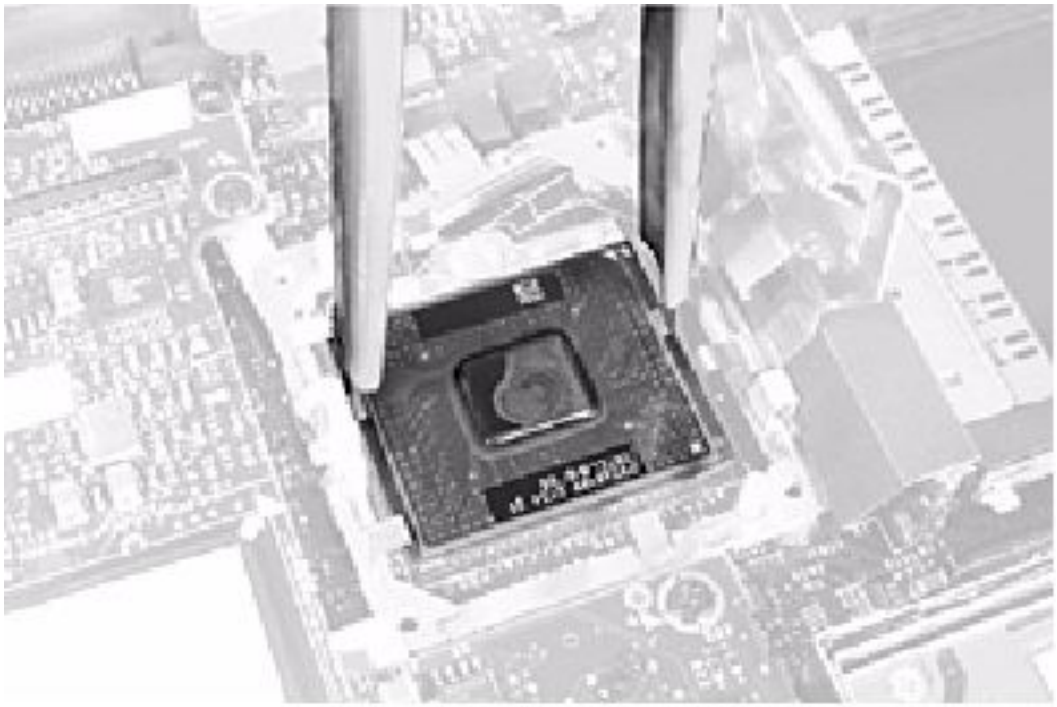


NOTICE: Disconnect the computer and attached devices from electrical outlets and remove any installed battery.

NOTICE: To avoid ESD, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer.

Removing the Microprocessor Module

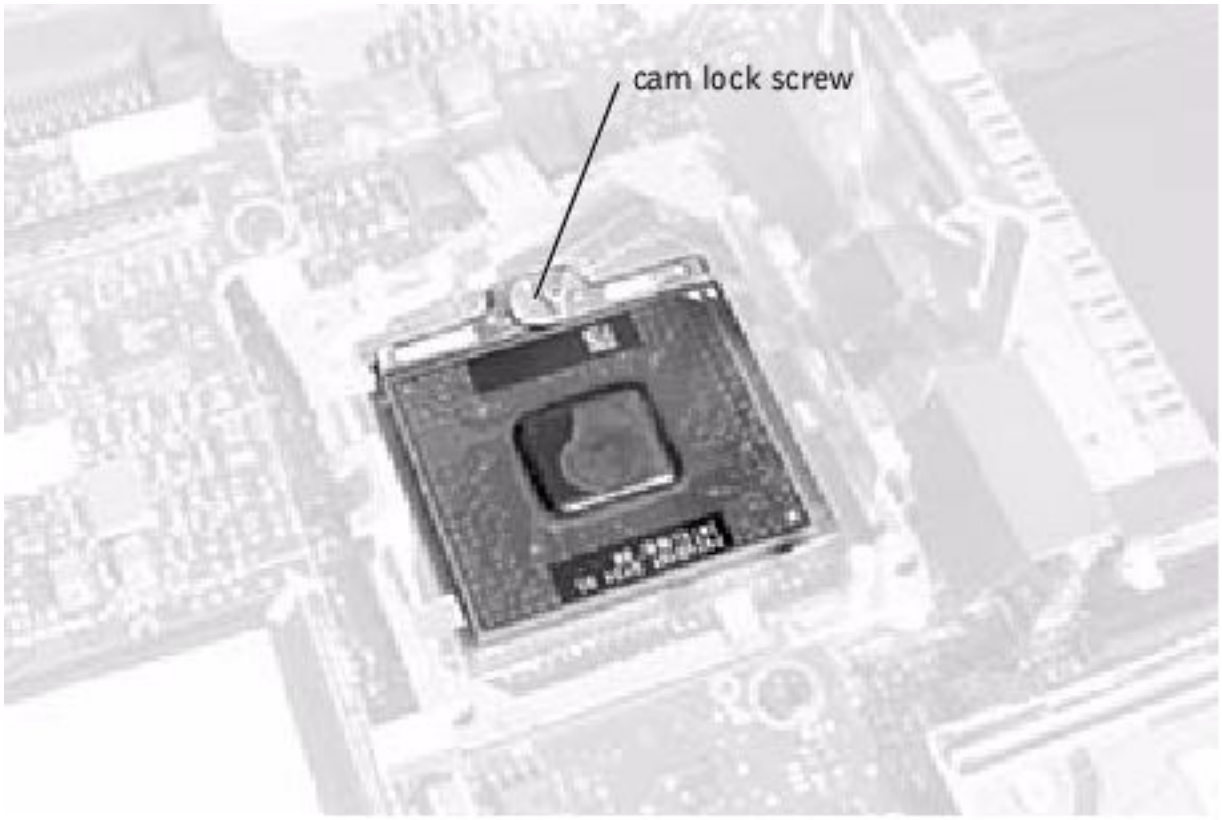
1. Follow the instructions in "Preparing to Work Inside the Computer."
2. Remove the keyboard.
3. Remove the hinge cover.
4. Remove the microprocessor thermal cooling assembly.

NOTICE: To ensure maximum cooling for the microprocessor, do not touch the heat transfer areas on the thermal cooling assembly. The oils in your skin reduce the heat transfer capability of the thermal pads.

5. Remove the microprocessor module.

NOTICE: When removing the microprocessor module, pull the module straight up. Do not bend the pins.

a. Loosen the microprocessor socket cam lock screw. The location of the screw and the rotation direction may vary with the socket manufacturer; look for small icons indicating open and locked positions.



b. Use the microprocessor extraction tool to remove the microprocessor module.

c. To remove the microprocessor module, pull the module straight up. Do not

bend the pins.

Replacing the Microprocessor Module

NOTICE: After replacing the microprocessor module, update the BIOS using a flash BIOS update program floppy disk or CD that came with the replacement microprocessor.

NOTICE: Proper seating of the microprocessor module does not require force.

NOTICE: A microprocessor module that is not properly seated can result in an intermittent connection and subsequent failures.

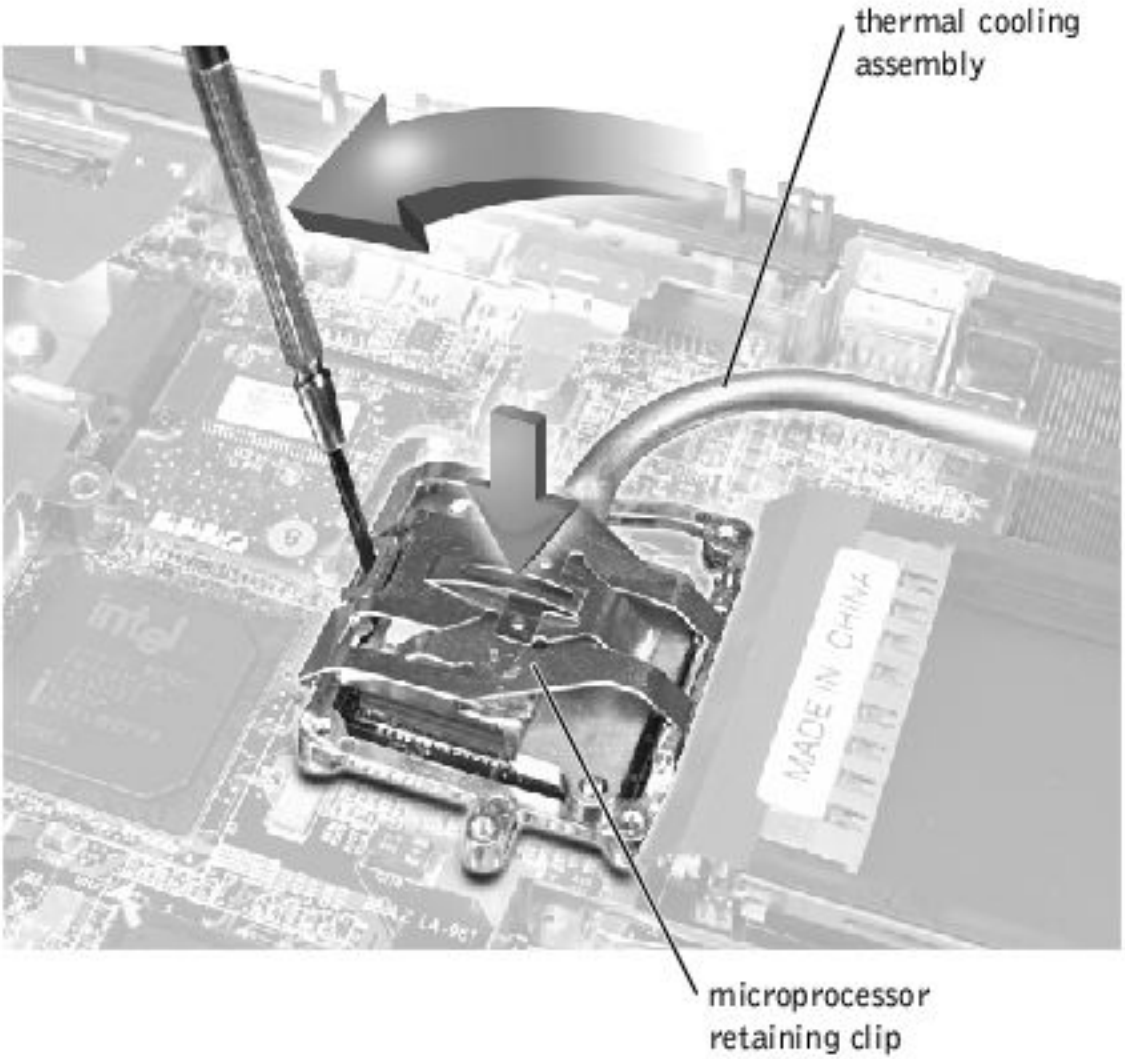
1. Align the pin-1 triangle on the microprocessor toward the pin-1 triangle in the socket, insert the microprocessor into the socket, and move it around slightly until you feel it settle into the socket.

When the microprocessor module is correctly seated, all four corners are aligned to the same height. If one or more corners of the module are higher than the others, the module is not seated correctly.

2. Tighten the cam lock screw.

NOTICE: Do not over or under tighten the screw. Tighten it until the screw indicator points to the "closed" or "locked" indicator on the socket.

3. Replace the microprocessor thermal cooling assembly.
4. While pressing lightly down on the center of the retaining clip, insert a pry stick into the latch mechanism and pivot the top of the pry stick away from the clip to close the latch.



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Video Memory Cache Card (Optional)

Dell™ Latitude™ V700 Service Manual

NOTICE: Disconnect the computer and attached devices from electrical outlets and remove any installed battery.

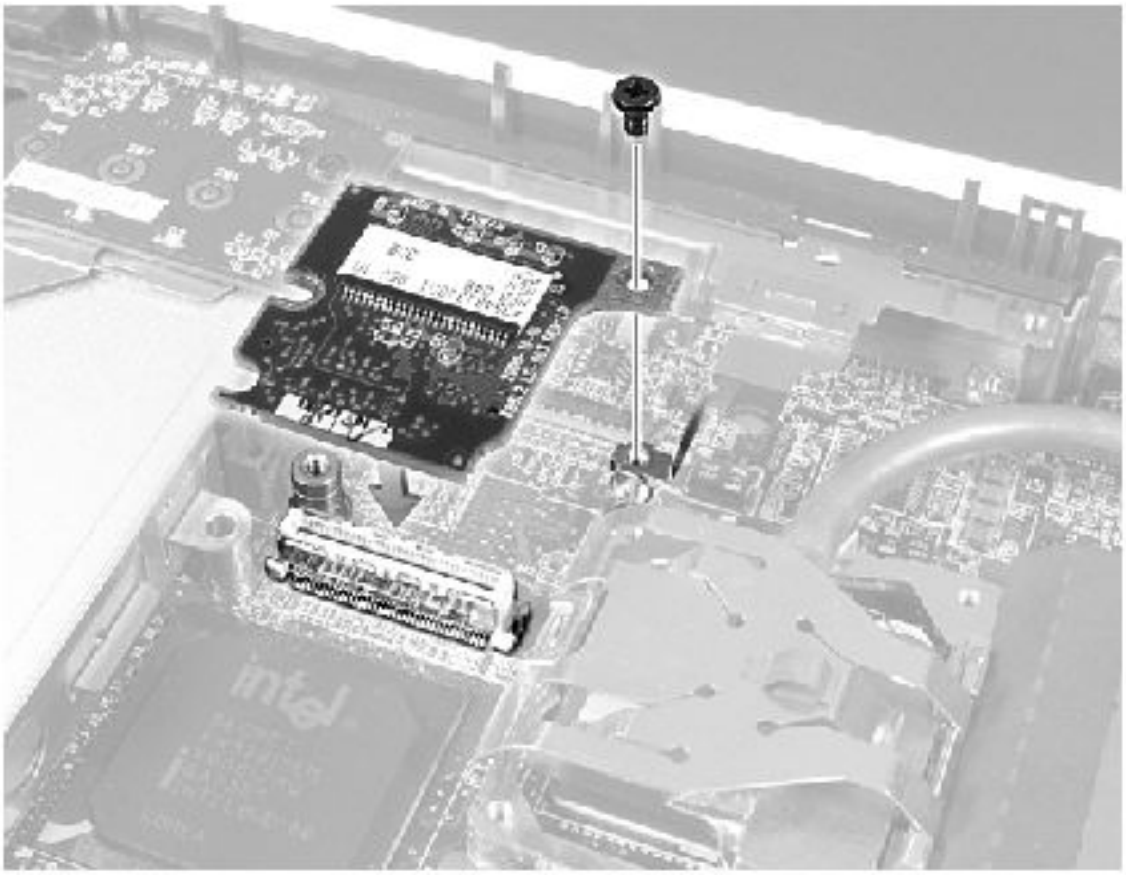
NOTICE: To avoid ESD, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer.

Removing the Video Memory Cache Card

1. Follow the instructions in "Preparing to Work Inside the Computer."
2. Remove the keyboard.
3. Remove the hinge cover.
4. Remove the two M2.5 x 4-mm screws that secure the video memory cache card.
5. Lift the video memory cache card out of the system board connector.

Replacing the Video Memory Cache Card

1. Align the two screw holes and press down firmly to seat the card in its connector.
2. Replace the two screws.



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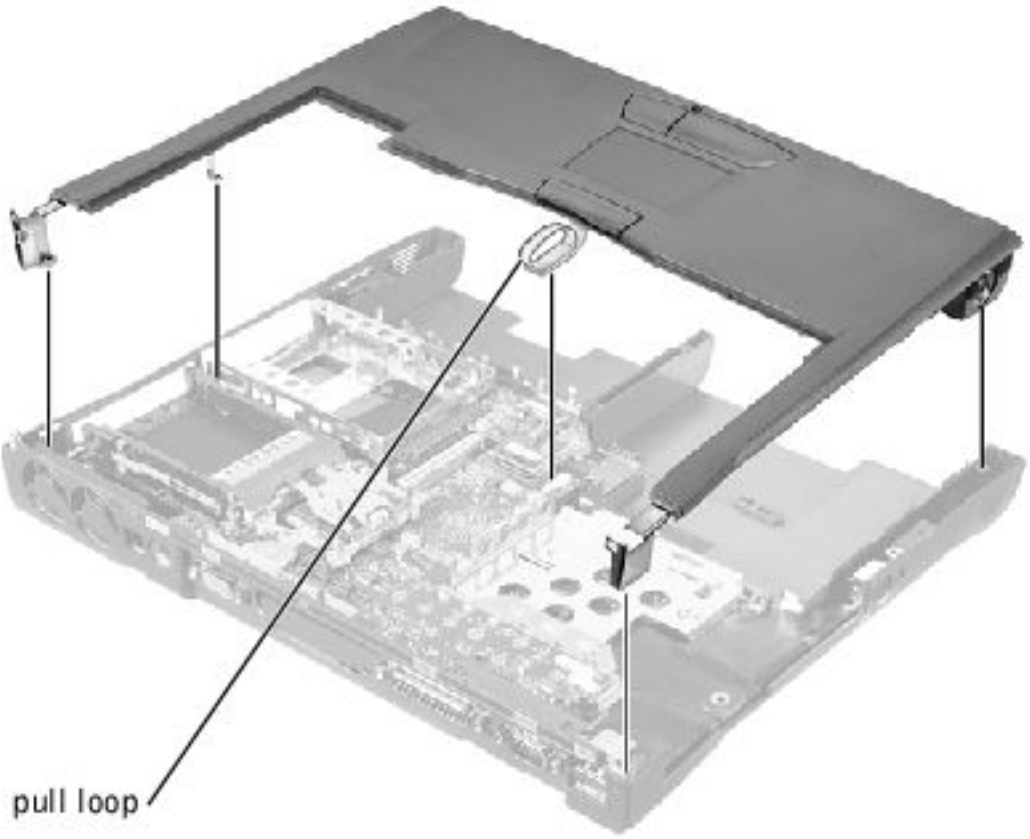
Palm Rest

Dell™ Latitude™ V700 Service Manual

Removing the Palm Rest



NOTICE: Disconnect the computer and attached devices from electrical outlets and remove any installed battery.

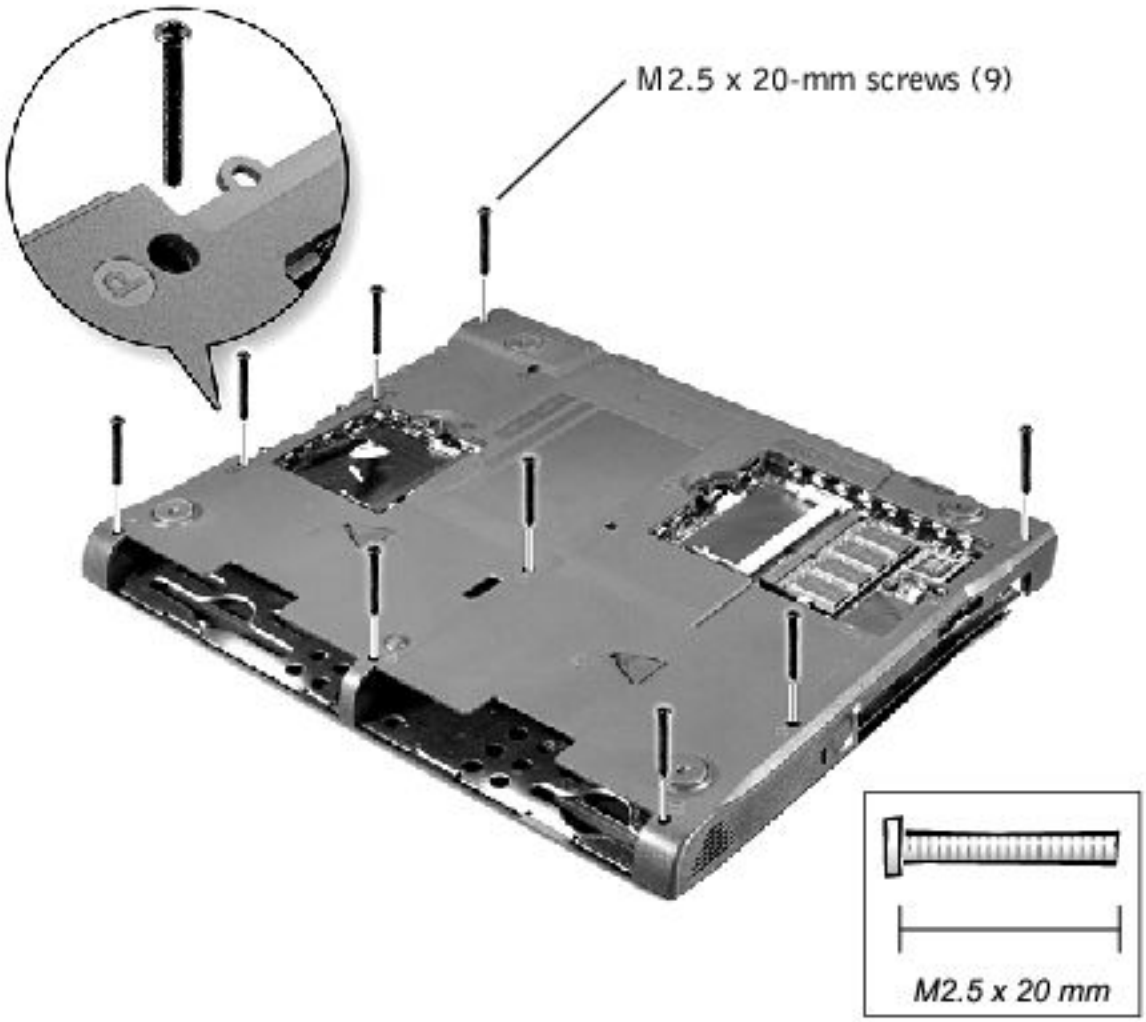
NOTICE: To avoid ESD, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer.

1. Follow the instructions in "Preparing to Work Inside the Computer."
2. Remove the hard drive and the fixed optical drive.

3. Remove the keyboard.
4. Remove the hinge cover.
5. Remove the display.

NOTICE: To avoid damaging the palm rest, you must first remove the display assembly.

6. Turn the computer over.
7. Remove the nine M2.5 x 20-mm screws (labeled with a "circle P") that secure the palm rest to the computer.



8. Turn the computer over.
9. Use the pull loop to disconnect the palm rest flex cable from the touch-pad connector on the system board.
10. Carefully lift out the palm rest.

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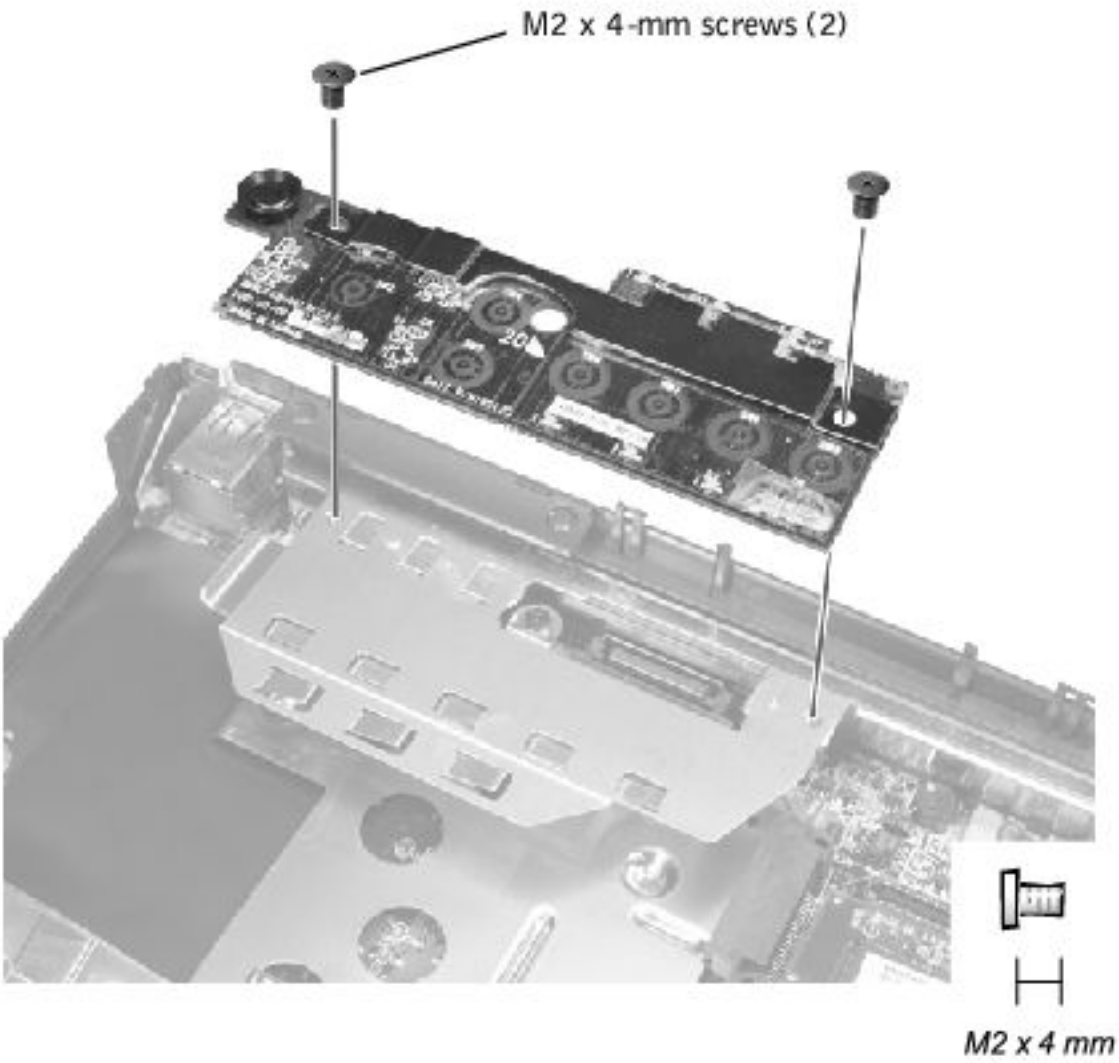
LED Board

Dell™ Latitude™ V700 Service Manual



NOTICE: Disconnect the computer and attached devices from electrical outlets and remove any installed battery.

NOTICE: To avoid ESD, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer.

Removing the LED Board

1. Follow the instructions in "Preparing to Work Inside the Computer."
2. Remove the hinge cover.
3. Remove the two M2 x 4-mm screws.
4. Lift the LED board out of connector.

Replacing the LED Board

1. Align the two screw holes with the two mounting holes on the bottom case assembly, and press the board into its connector.
2. Replace the two M2 x 4-mm screws.

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System Board

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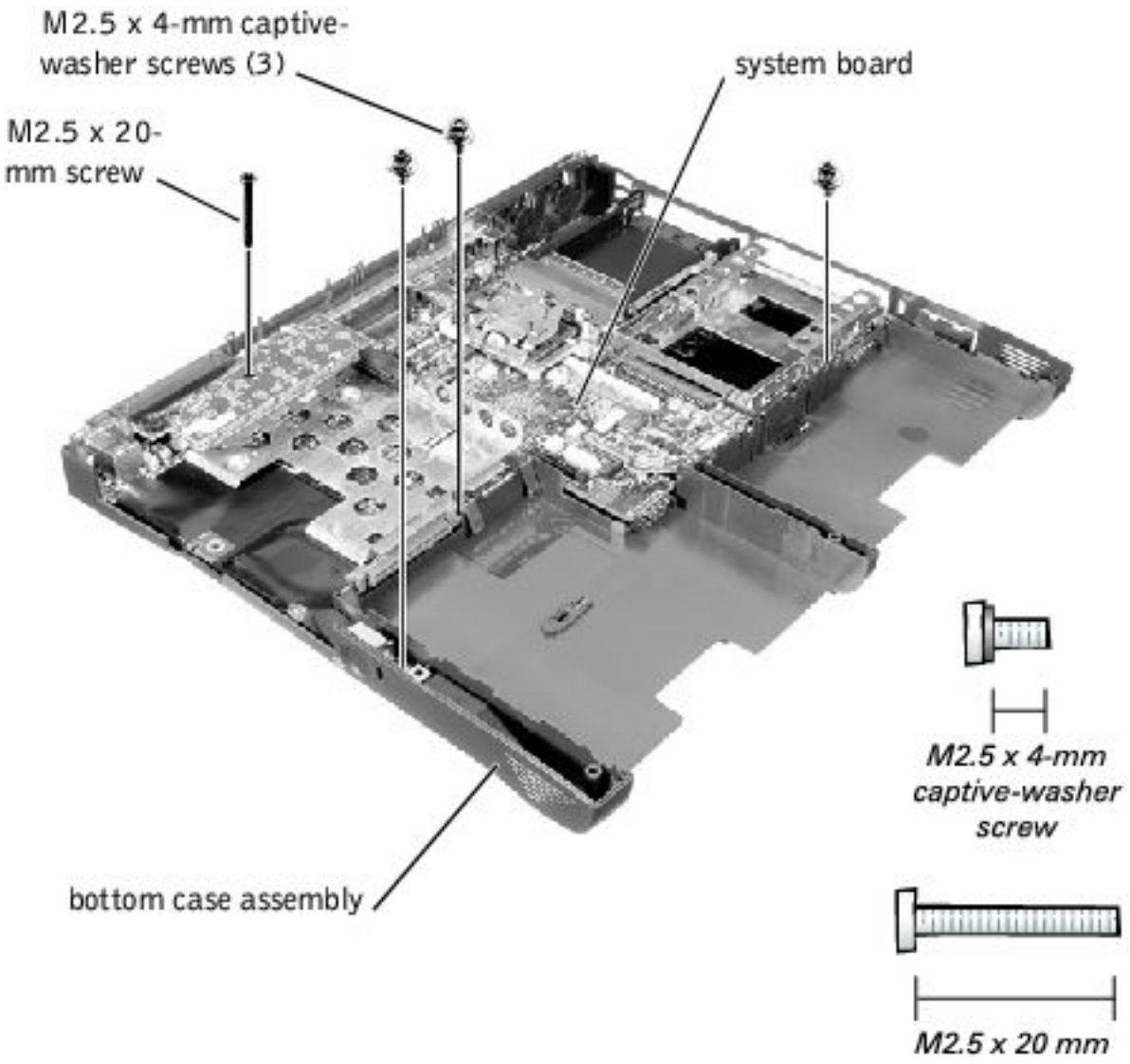


NOTICE: Disconnect the computer and attached devices from electrical outlets and remove any installed battery.

NOTICE: To avoid ESD, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer.

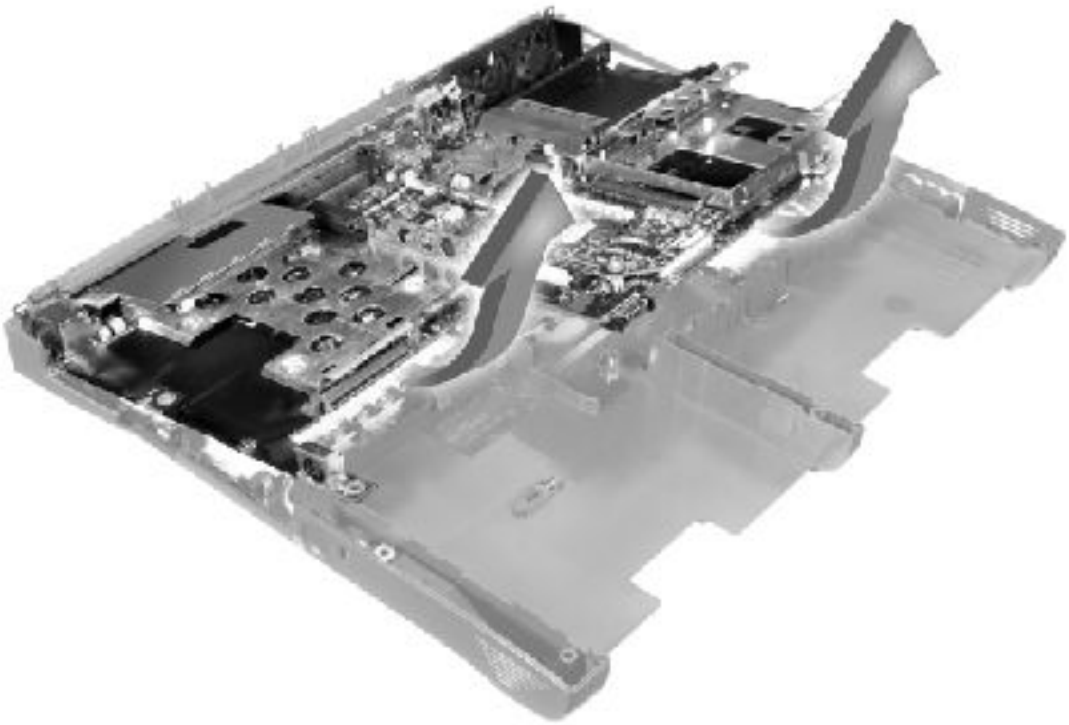
The system board's BIOS contains the system service tag number, which is also visible on a bar-code label on the bottom of the computer. The replacement kit for the

system board includes a floppy disk or CD that provides a utility for transferring the service tag number to the replacement system board.

NOTICE: After replacing the microprocessor module, update the BIOS using a flash BIOS update program floppy disk or CD that came with the replacement microprocessor.

Removing the System Board

1. Follow the instructions in "Preparing to Work Inside the Computer."
2. Remove the hard drive and fixed optical drive.
3. Remove any installed Mini PCI cards.
4. If migrating the memory, remove all installed memory modules.
5. Remove the keyboard.
6. Remove the hinge cover.
7. Remove the display assembly.
8. Remove the palm rest.
9. Remove the video memory cache card, if present.
10. Remove the microprocessor thermal cooling assembly.
11. If migrating the microprocessor, remove the microprocessor module.
12. Remove the three M2.5 x 4-mm captive-washer screws from the system board.
13. Remove the M2.5 x 20-mm screw from the center of the LED board.
14. If migrating the LED board, remove it.
15. Lift the front of the system board and work it out of the back panel.



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Battery and Media Bay Latches

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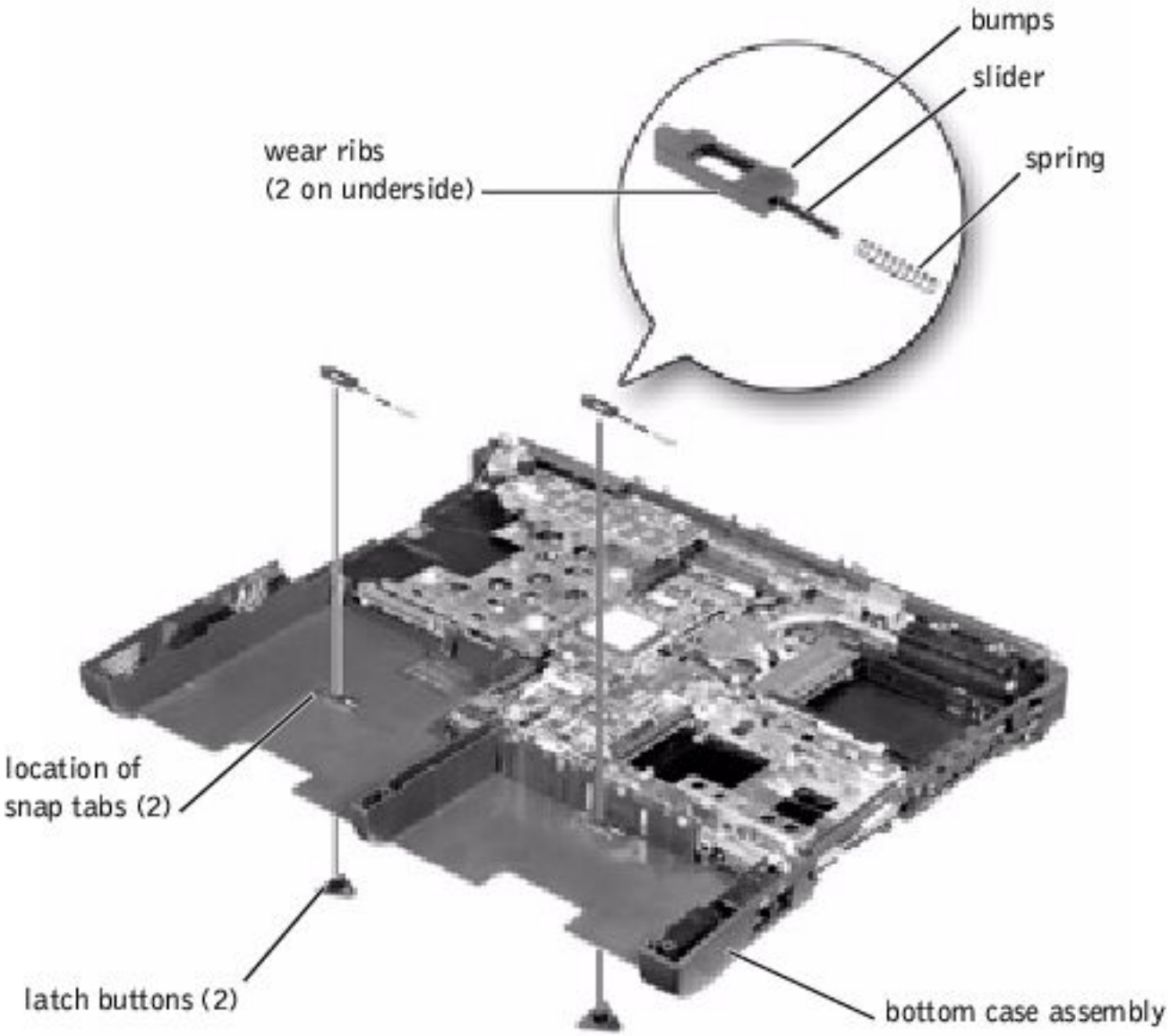

NOTICE: Disconnect the computer and attached devices from electrical outlets and remove any installed battery.

NOTICE: To avoid ESD, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer.

Removing and Replacing the Battery and Media Bay Latches

1. Follow the instructions in "Preparing to Work Inside the Computer."
2. Remove the keyboard.
3. Remove the hinge cover.
4. Remove the display assembly.
5. Remove the palm rest.
6. Remove a latch button from the bottom case assembly by squeezing the snap tabs in the center of the latch.

   Apply downward pressure to the tabs while squeezing them together (tweezers work well) to eject the latch button from the bottom of the case without loosening the upper latch (spring and slider). If the upper latch does come loose:

   a. Reinsert the spring onto the slider, and reinstall both pieces in the latch housing on the inside of the case.

   b. Ensure that the slider is inserted so that the side with the two bumps is facing the back of the case, and the surface with the wear ribs is facing the bottom of the case.

7. Hold the upper latch in place while you snap the new latch button in from underneath the base, making certain the snap tabs are fully engaged in the slider.
8. Ensure that the newly installed latch moves smoothly and freely when pushed and released.

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Fan

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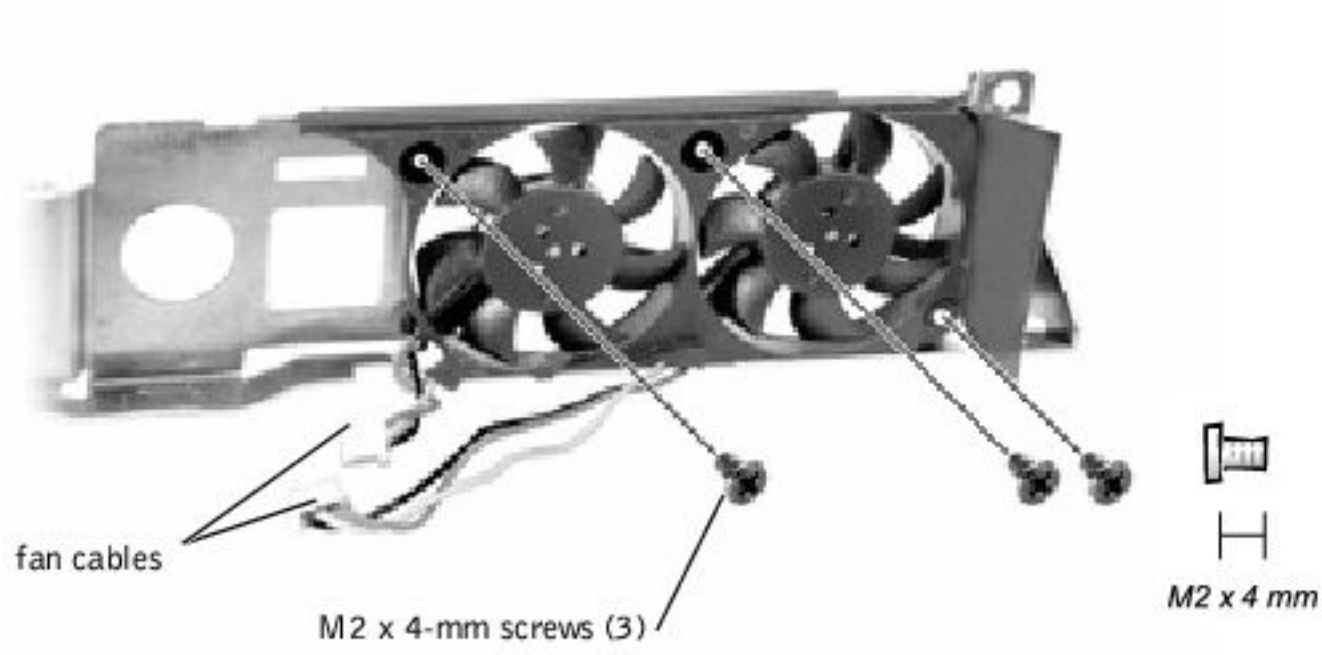

NOTICE: Disconnect the computer and attached devices from electrical outlets and remove any installed battery.

NOTICE: To avoid ESD, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer.

Removing the Fan

1. Follow the instructions in "Preparing to Work Inside the Computer."
2. Remove the system board.
3. Remove the three M2 x 4-mm screws from the fan.
4. Disconnect the two fan cables from the system board.

5. Pull the fan away from the back-panel bracket.

NOTICE: When reconnecting the fan cables, connect the shorter cable to the connector closest to the fan. Route both cables so that they will not be pinched by the thermal cooling assembly.

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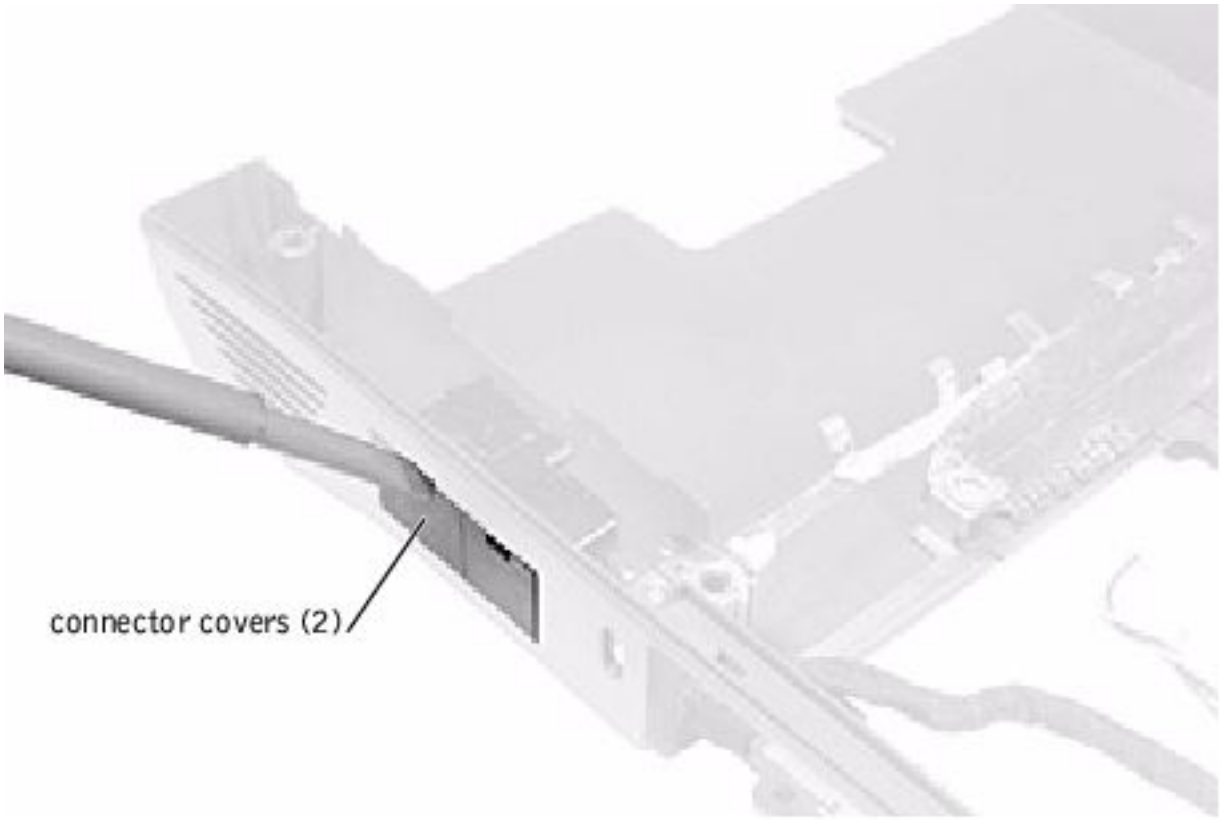
RJ-11/RJ-45 Board

Dell™ Latitude™ V700 Service Manual

NOTICE: Disconnect the computer and attached devices from electrical outlets and remove any installed battery.

NOTICE: To avoid ESD, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface on the computer.

Removing the Protective Covers From the RJ-11 and RJ-45 Connectors

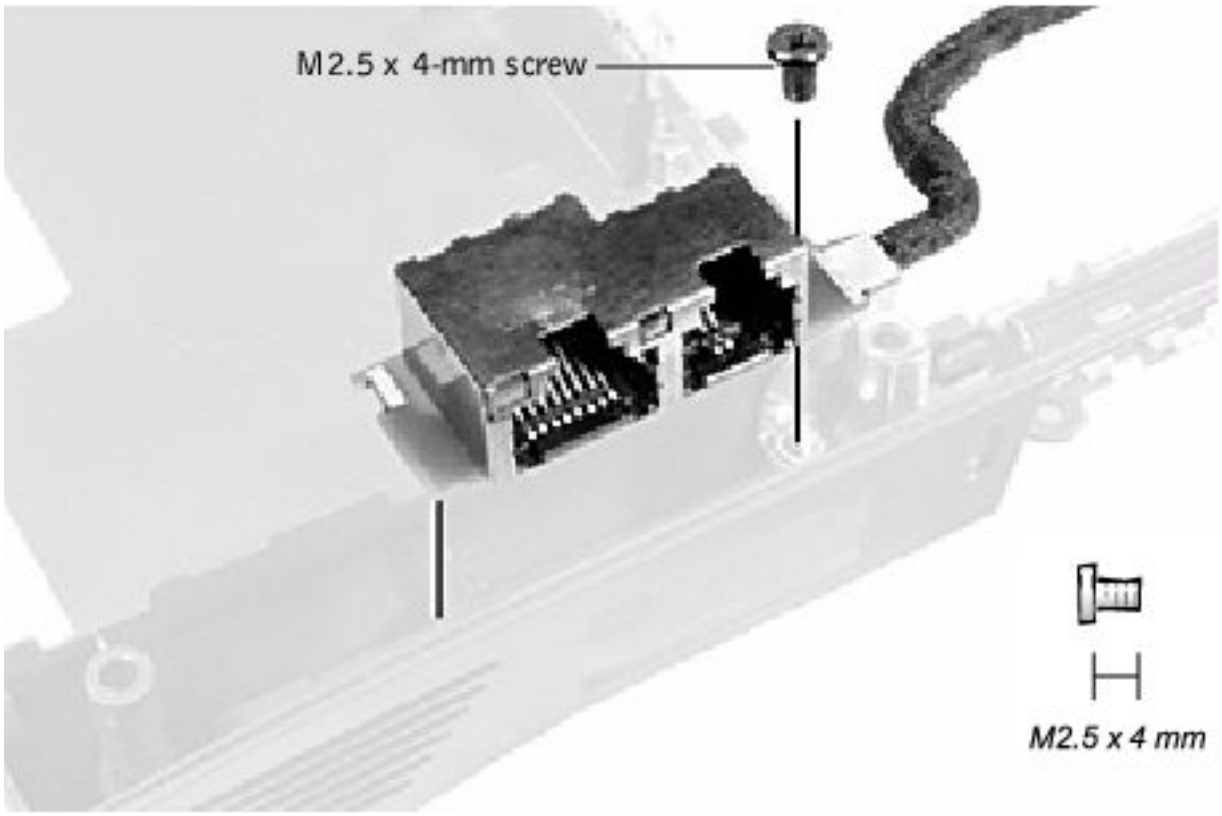


1. Follow the instructions in "Preparing to Work Inside the Computer."
2. Remove one or both of the plastic connector covers (one or both of the covers may be installed) by slipping a nonmarring tool into the cutout at the top and

pivoting the tool up to disengage the inner securing tab.

To replace a connector cover, orient the cover notch-side-up and snap it into the connector cutout.

Removing the RJ-11/RJ-45 Board

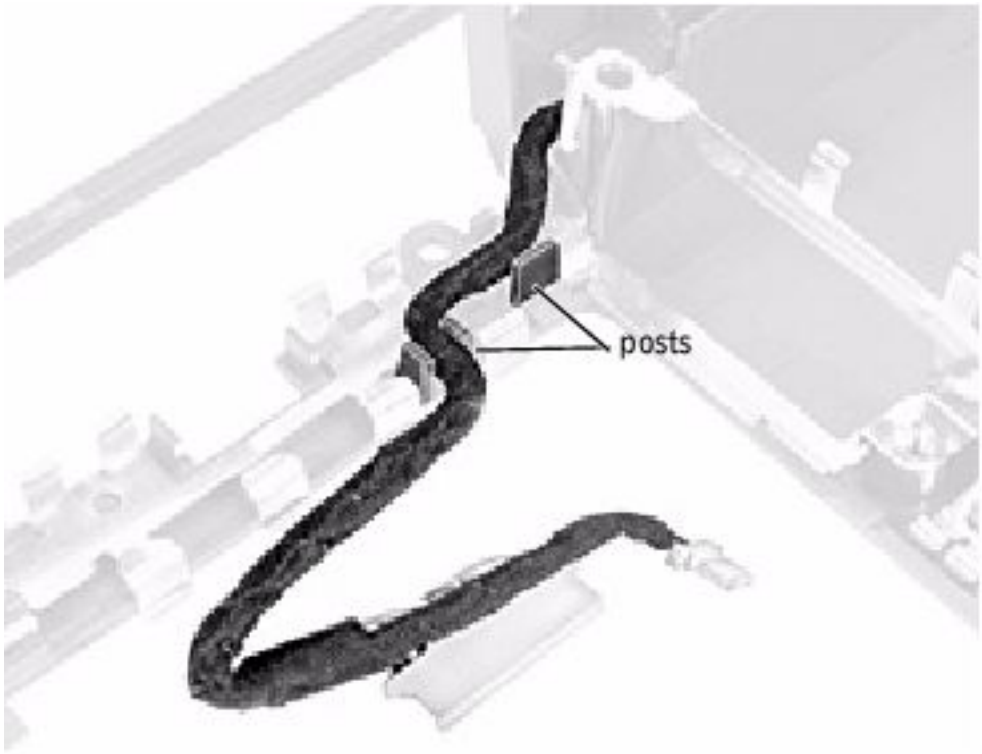


1. Follow the instructions in "Preparing to Work Inside the Computer."
2. Remove the system board.
3. Remove the M2.5 x 4-mm screw from the RJ-11/RJ-45 board.

NOTICE: The plastic tab is fragile; pull it back only far enough to remove the board.

4. Reach into the enclosure and, while pulling the tall plastic tab away from the board to release it, lift out the board.

When replacing the RJ-11/RJ-45 board, protect the wiring harness by routing it between the plastic posts as shown in the following figure.



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