Memory (DIMMs)
Replacement Instructions

Follow the instructions in this document carefully. Failure to follow these instructions could damage your equipment and void its warranty.

Online instructions are available at http://www.apple.com/support/diy/.

Note: These instructions apply to different models of the MacBook (13-inch) portable computer. While some models may look slightly different from the one shown in the illustrations, the steps for all models are the same.

About MacBook (13-inch) Memory

This computer comes with a minimum of 512 MB of 667 GHz Double Data Rate 2 (DDR2) Synchronous Dynamic Random-Access Memory (SDRAM) installed. It has two slots that can accept SDRAM Small Outline Dual Inline Memory Modules (SO-DIMMs). The slots are side-by-side on the logic board behind the RAM door. For best performance, memory should be installed as pairs with an equal memory card in each slot. The maximum amount of memory for this computer is 2 GB, with a 1GB DIMM installed in each slot.
Memory cards must meet these requirements:
*   1.25 inch or smaller
*   256 MB, 512 MB, or 1 GB
*   200-pin
*   PC-5300 DDR2 667 MHz Type RAM
     Important: Memory from older portable computers is not compatible with your MacBook (13-inch) model.

Tools Required

The following tools are required:
*   Clean, soft, lint-free cloth
*   Coin
*   Phillips #00 screwdriver (preferably with a long handle)
*   Stiff, plastic, nonmagnetic card (such as a library card)

Opening the Computer

1. Shut down the computer.
   Warning: Always shut down the computer before opening it to avoid damaging its internal components or causing injury. After you shut down the computer, the internal components can be very hot. Let the computer cool down for 30 minutes before continuing.

2. Wait 30 minutes to allow the computer's internal components to cool.

3. Unplug all external cables from the computer except the power cord.

4. Unplug the power cord.
   Warning: The power supply in your computer is a high-voltage component and should not be opened for any reason, even when the computer is off. If the power supply needs service, contact your Apple reseller or Apple Authorized Service Provider.

5. Turn over the computer and place it on a soft cloth.

6. Use a coin to release the battery latch. Turn the coin a quarter-turn clockwise to unlock the battery.

7. Lift out the battery from the battery bay.

8. Touch a metal surface inside the battery bay to discharge any static electricity.
Important: Always discharge static before you touch any parts or install any components inside the computer. To avoid generating static electricity, do not walk around the room until you have finished working and closed the computer.

Removing the Installed DIMMs

Note: Before you can remove the hard drive, you must remove the battery and RAM door.

1. Loosen—but do not try to remove—the three captive screws along the RAM door.
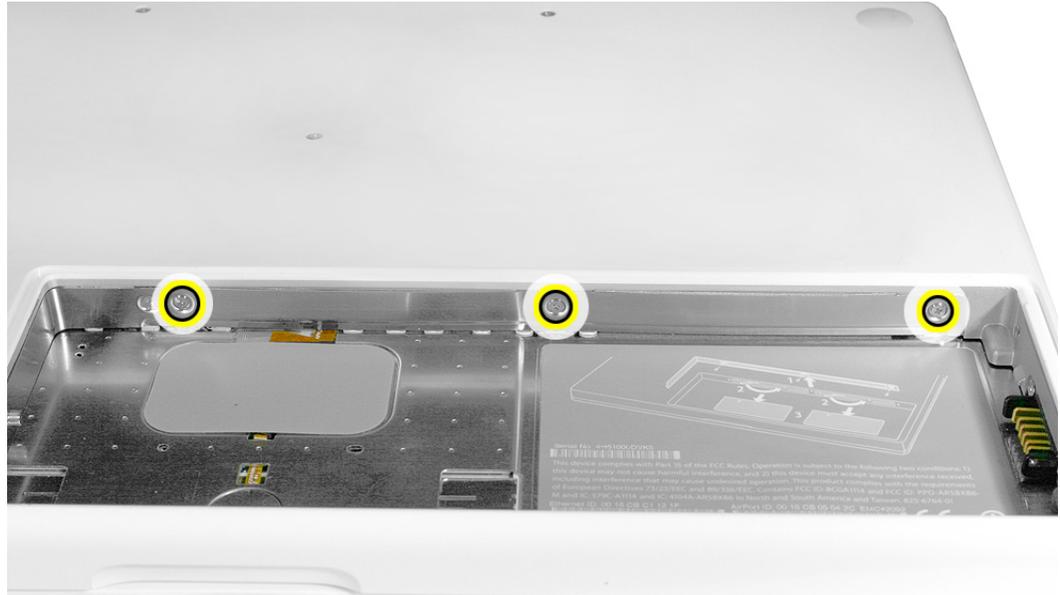
2. Holding the long end of the L-shaped RAM door, pivot it out from the battery bay. If necessary, use a nonmagnetic, plastic card (such as a library card) to tilt the RAM door up and out of the battery bay. Be careful not to bend the RAM door.

3. **Important: Remember to replace the RAM door after you have finished working inside your computer. The computer will not function properly if the RAM door is not replaced.**

4. To eject the memory cards from the slots, move the levers all the way to the left.

5. Holding the memory cards by the corners, slide them out from the battery bay.
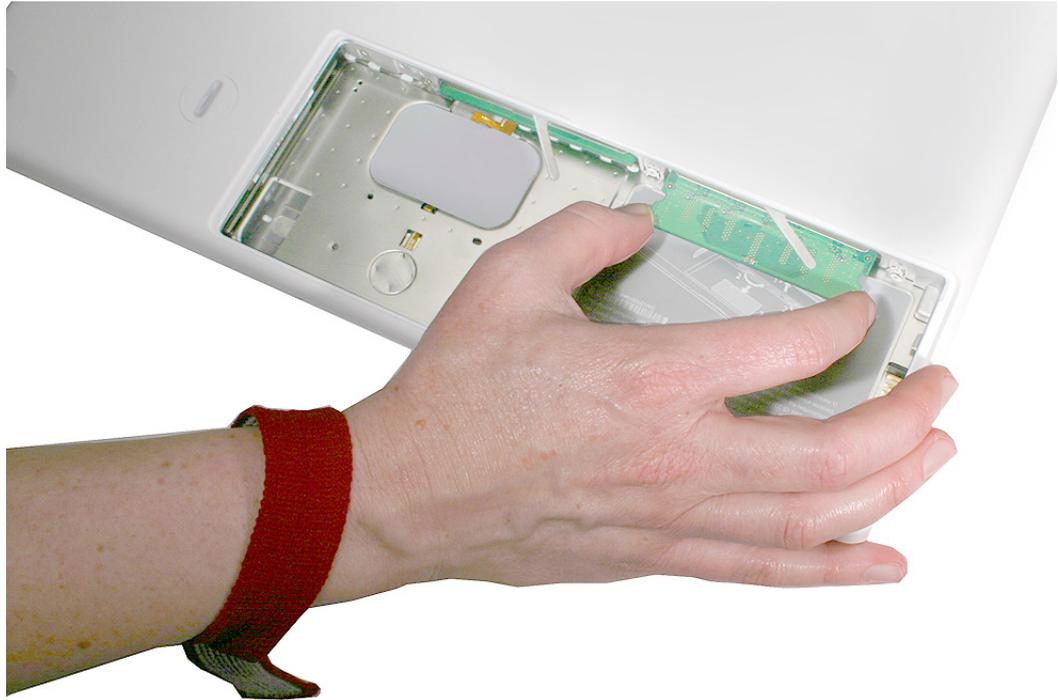
Important: Do not touch the gold connectors. Handle the card only by its edges.

Replacing the DIMMs

1. Align the memory card so that the gold connectors face the slot and the notch is on the left. (The chip side of the board faces down.)

2. Use two fingers to push firmly on the edge of the memory cards. If there is a tight fit, installing the cards may take some force to ensure that they are fully inserted.
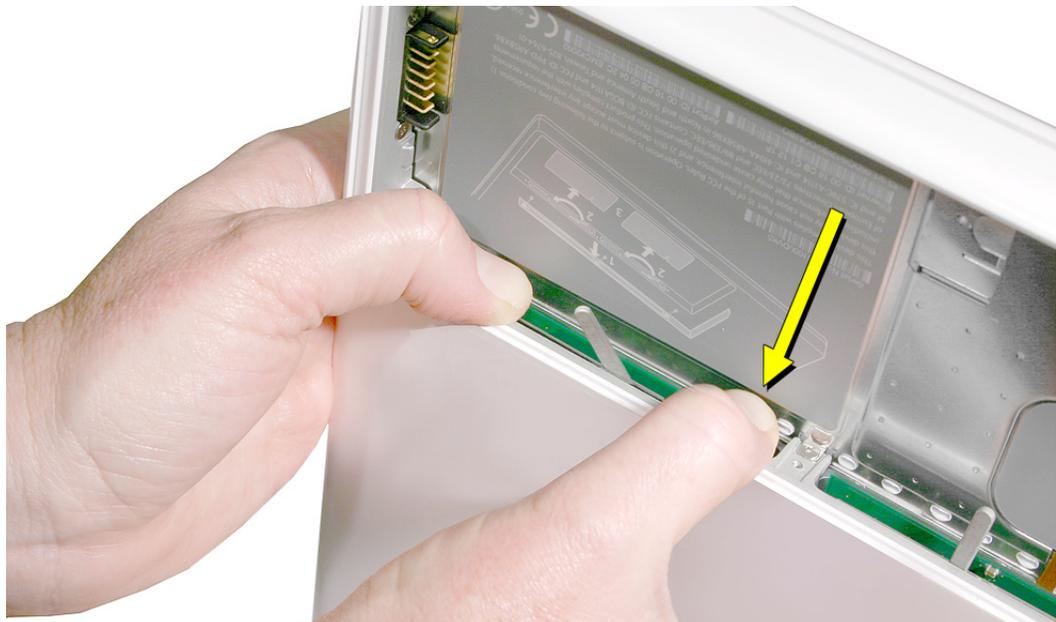
Important: When the cards are fully inserted, the edges of the cards are hidden, as shown by the recessed card on the left in the image below.

3. If the levers do not return to the closed position, move them to close them.

4. Install the replacement RAM door by first aligning the short end at the notch near the hard drive opening.

5. Use a plastic card, if necessary, to tuck in the EMI gaskets located on the RAM door so they do not protrude from the edge of the battery bay. Make sure the three screws align with the holes in the bottom case before tightening them.

Closing the Computer

1. Replace the battery by tilting the foot end of the battery into the battery bay first. Then press and hold down the other end of the battery as you turn the coin to lock it into place.

2. Connect the power cord.
   Warning: Never turn on the computer unless all of its internal and external parts are in place and it is closed. Operating the computer when it is open or missing parts can damage it or cause injury.

3. Restart your computer.

4. Make sure your computer recognizes the new memory by opening System Profiler, clicking More Info, and clicking Memory.

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