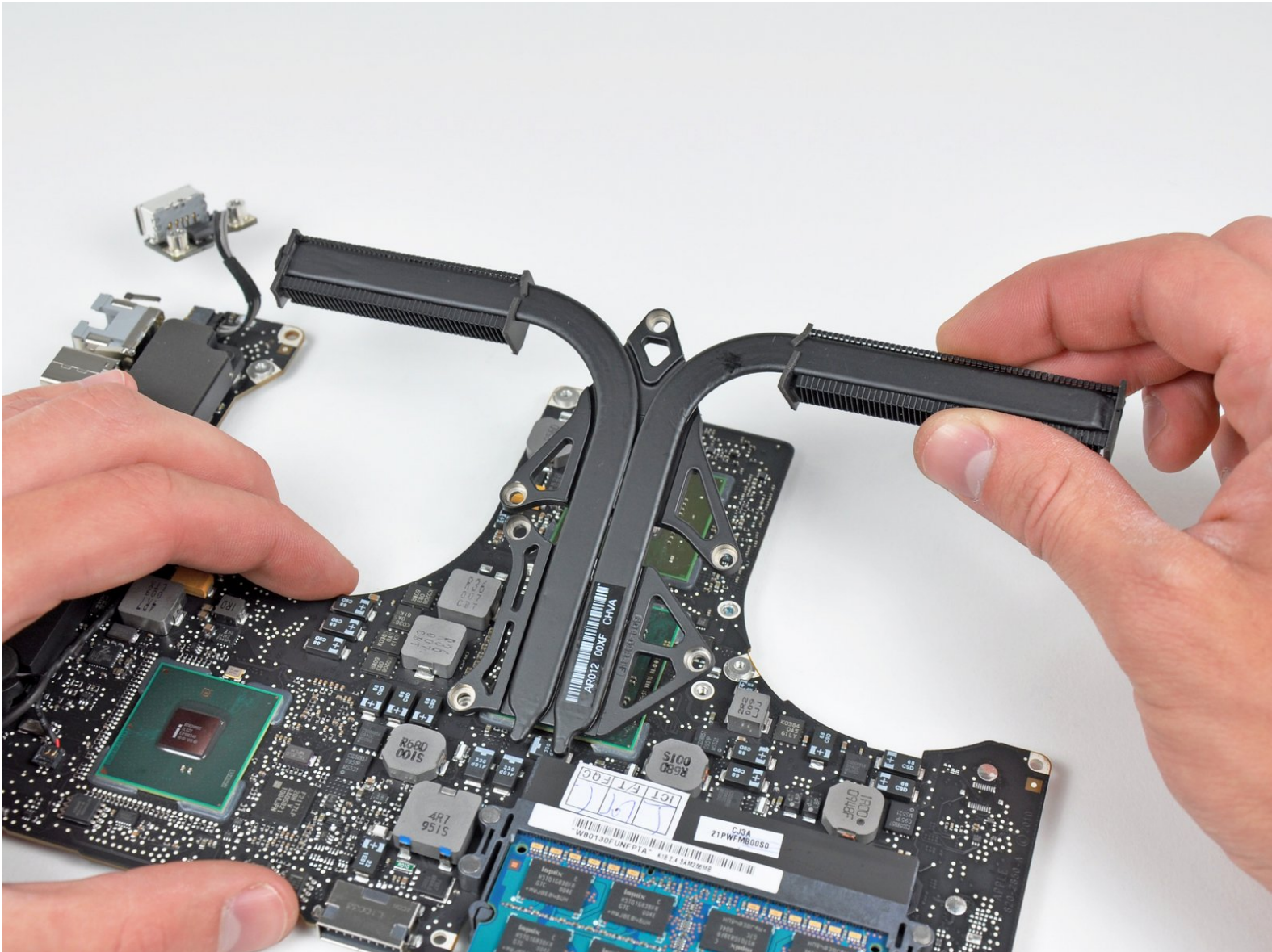




MacBook Pro 15" Unibody Mid 2010 Heat Sink Replacement

Replace your Mid 2010 MacBook Pro 15" Unibody's heat sink.

Written By: Andrew Bookholt



INTRODUCTION

Replacing the heat sink requires removal of the logic board and application of new thermal paste.



TOOLS:

- [Arctic Silver ArctiClean](#) (1)
- [Arctic Silver Thermal Paste](#) (1)
- [Phillips #00 Screwdriver](#) (1)
- [Spudger](#) (1)
- [T6 Torx Screwdriver](#) (1)
- [Tri-point Y0 Screwdriver](#) (1)



PARTS:

- [MacBook Pro 15" Unibody \(Mid 2010\) Heat Sink](#) (1)

Step 1 — Lower Case



- Remove the following ten screws securing the lower case to the upper case:
 - Three 13.5 mm (14.1 mm) Phillips screws.
 - Seven 3 mm Phillips screws.

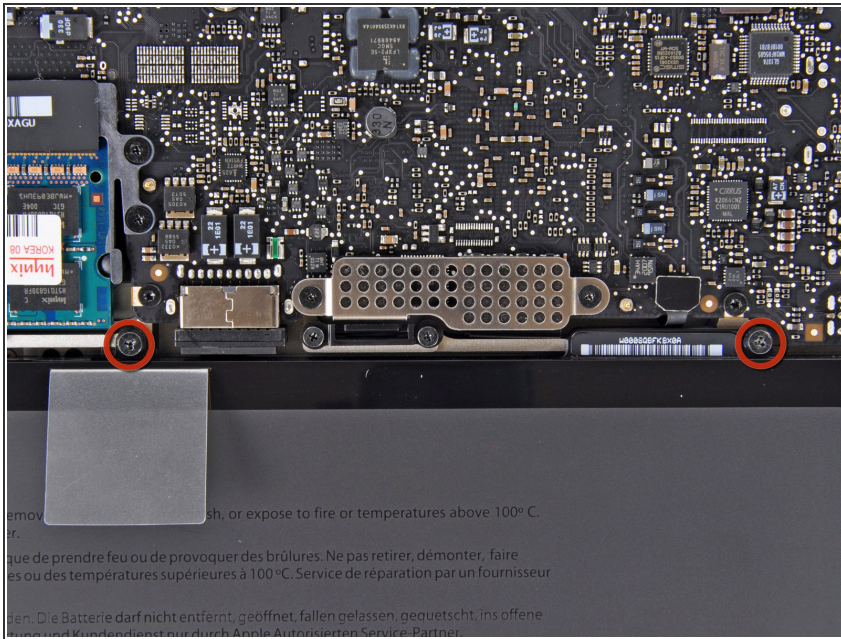
★ When removing these screws, note how they come out at a slight angle. They must be reinstalled the same way.

Step 2



- Using both hands, lift the lower case near the vent to pop it off two clips securing it to the upper case.
- Remove the lower case and set it aside.

Step 3 — Battery



- Remove the two 7.4 mm Tri-point screws securing the battery to the upper case.
 - Note: For certain repairs (e.g. hard drive), removing the battery is not necessary but it prevents any accidental shorting of electronics on the motherboard. If you do not remove the battery, please be careful as parts of the motherboard might be electrified.
- ⓘ You do not necessarily have to follow steps 3-6 to remove the battery in order to replace the hard drive. However it is recommended to remove all power sources from electronics before working on them.

Step 4



- Use the tip of your finger to carefully peel back the corner of the warning label to reveal a hidden Tri-point screw.
- Remove the last 7.4 mm Tri-point screw securing the battery to the upper case.

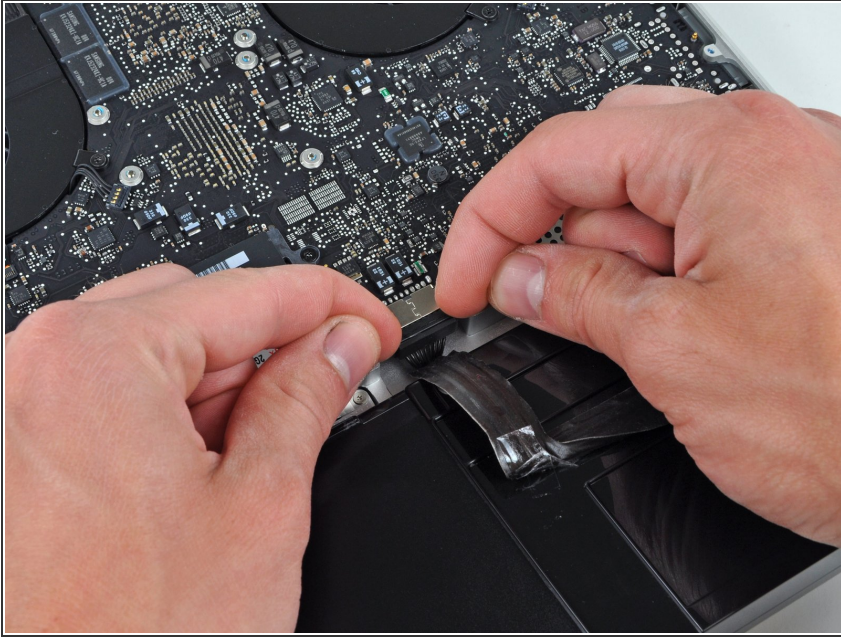
Step 5



- Lift the battery by its plastic pull tab and slide it away from the long edge of the upper case.

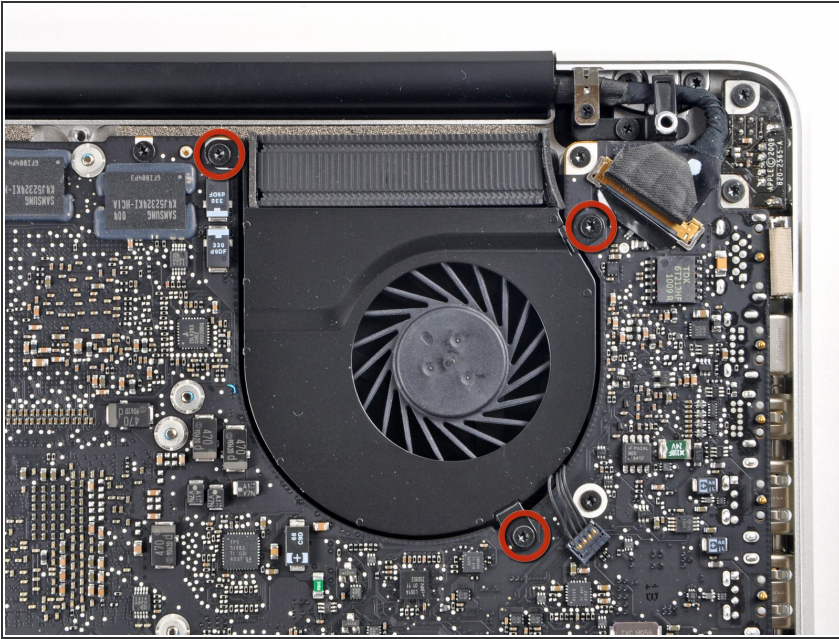
⚠ Do not try to completely remove the battery just yet.

Step 6



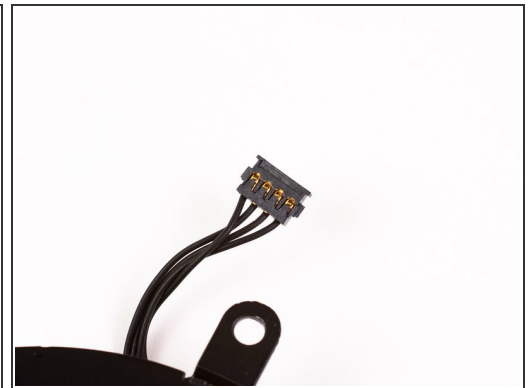
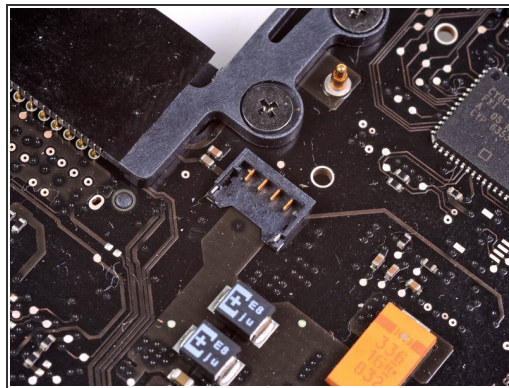
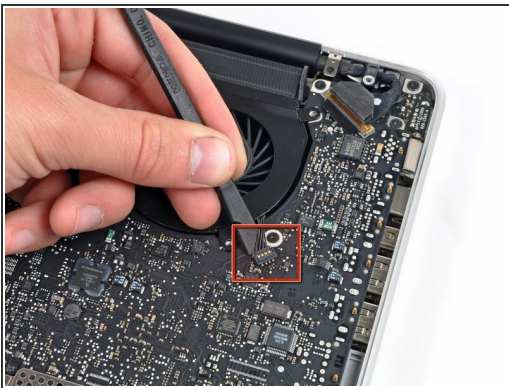
- Tilt the battery away from the logic board enough to access the battery cable connector.
- Pull the battery cable connector away from its socket on the logic board and remove the battery from the upper case.
- ⓘ Pull the battery cable connector away from the center of the logic board.
- ★ If you're installing a new battery, you should [calibrate](#) it after installation:
 - Charge it to 100%, and then keep charging it for at least 2 more hours. Next, unplug and use it normally to drain the battery. When you see the low battery warning, save your work, and keep your laptop on until it goes to sleep due to low battery. Wait at least 5 hours, then charge your laptop uninterrupted to 100%.
 - If you notice any unusual behavior or problems after installing your new battery, you may need to [reset your MacBook's SMC](#).

Step 7 — Left Fan



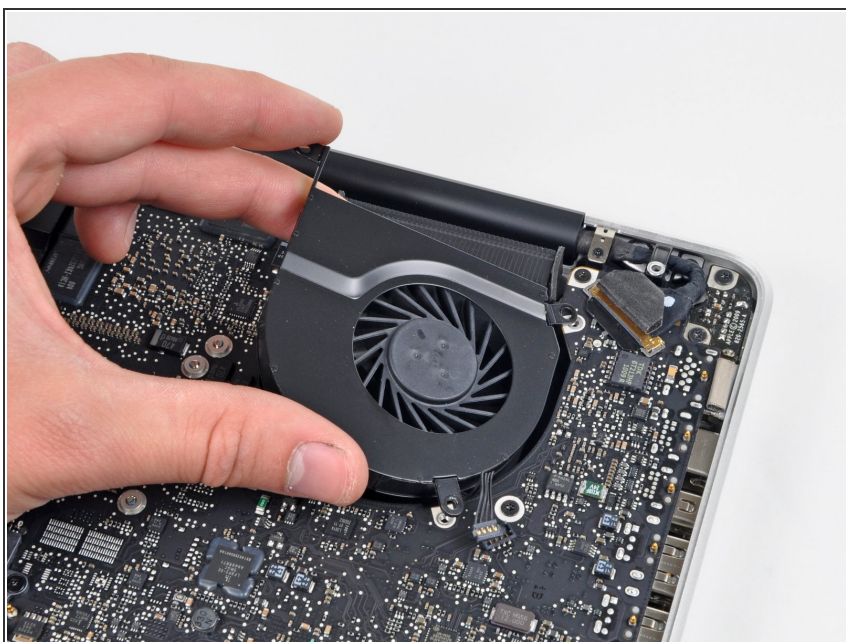
- Remove the three 3.4 mm T6 Torx screws securing the left fan to the logic board.
- ⓘ In some models, these T6 Torx screws may be 3.1 mm long.

Step 8



- Use the flat end of a spudger to disconnect the left fan connector from the logic board.
- ⓘ It is useful to twist the spudger axially from beneath the fan cable wires to release the connector.
- ⚠ The fan socket and the fan connector can be seen in the second and third pictures. Be careful not to break the plastic fan socket off the logic board as you use your spudger to lift the fan connector straight up and out of its socket. The layout of the logic board shown in the second picture may look slightly different than your machine but the fan socket is the same.

Step 9



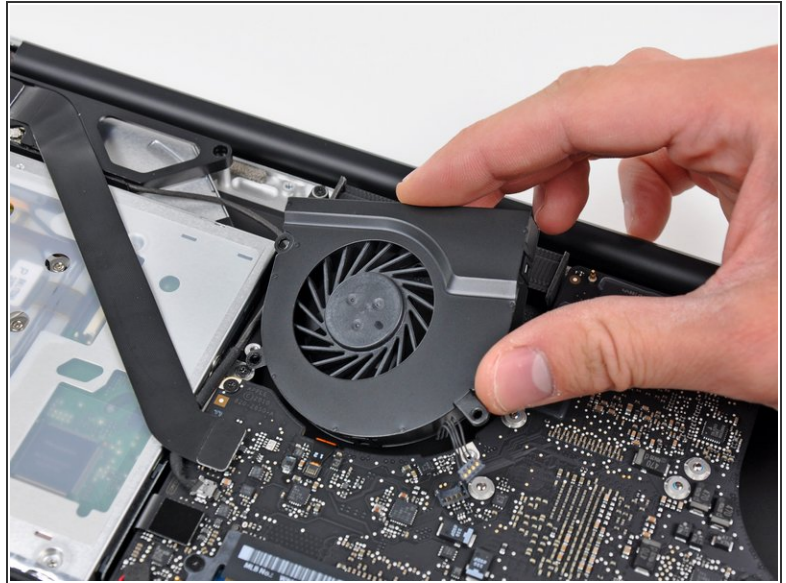
- Lift the left fan out of the upper case.

Step 10 — Logic Board



- Remove the three T6 Torx screws securing the right fan to the upper case.

Step 11



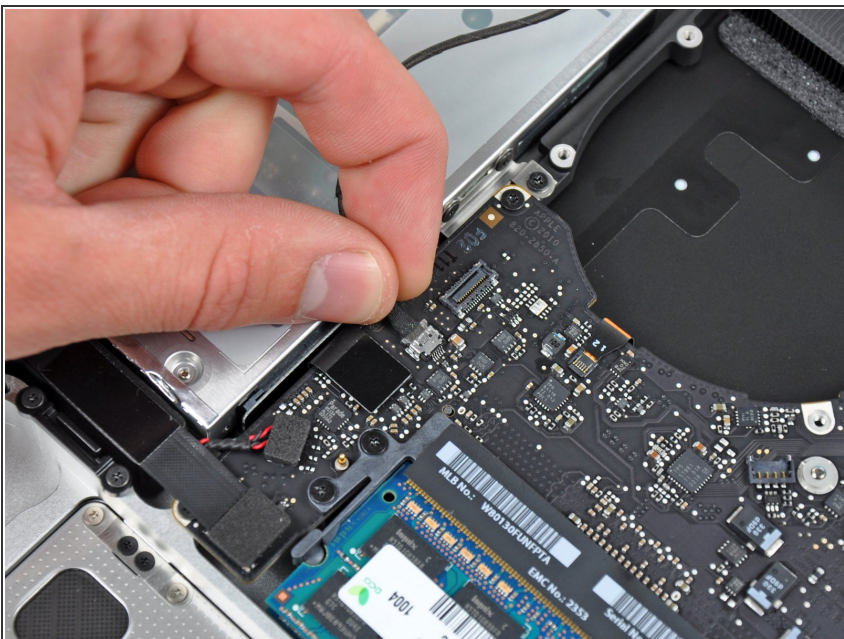
- Use the flat end of a spudger to pry the right fan connector up out of its socket on the logic board.
- ⓘ It is useful to twist the spudger axially from beneath the fan cable wires to release the connector.
- Remove the right fan from the upper case.

Step 12



- Use the flat end of a spudger to pry the AirPort / Bluetooth ribbon cable up off its socket on the logic board.
- ⓘ Fold the AirPort / Bluetooth ribbon cable back to keep it out of the way of the logic board.

Step 13



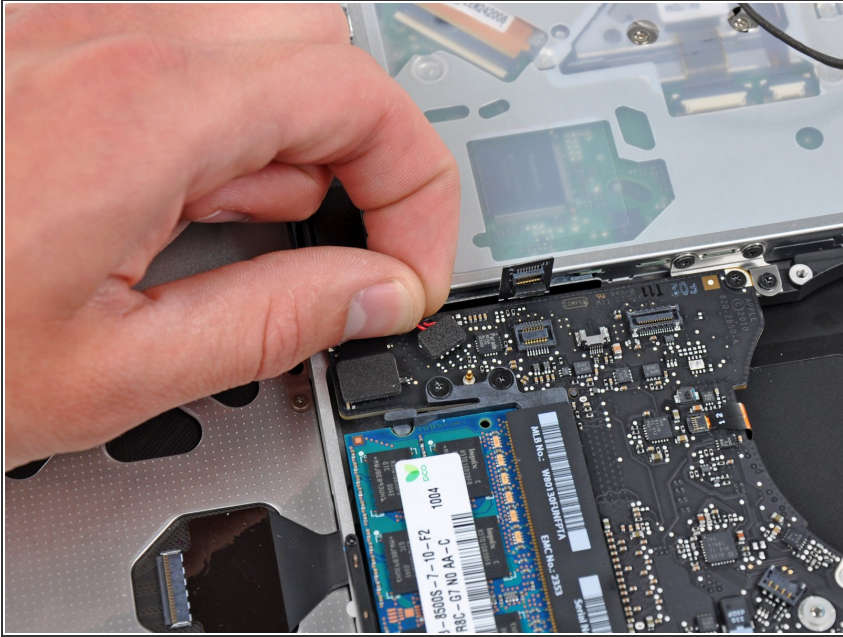
- Disconnect the iSight cable by pulling its connector toward the optical drive opening.

Step 14



- Use the flat end of a spudger to pry the optical drive cable connector up from the logic board.
- ⓘ Fold the optical drive cable back to keep it out of the way of the logic board.

Step 15



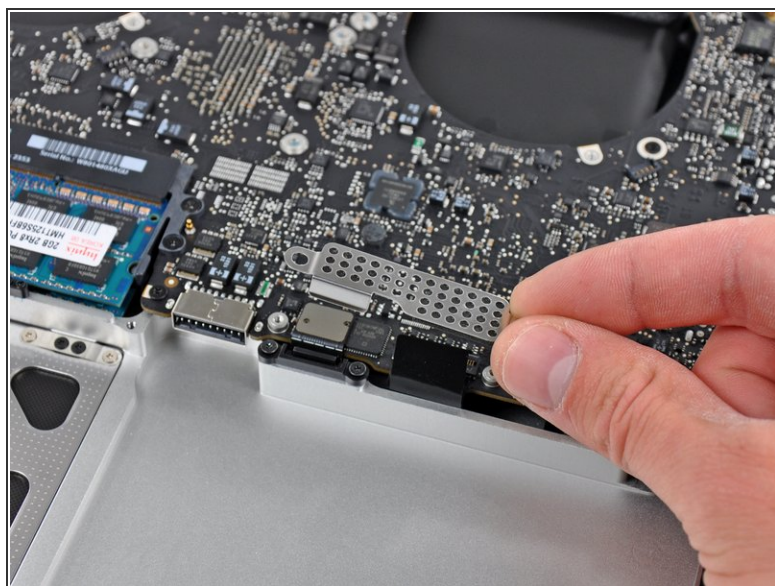
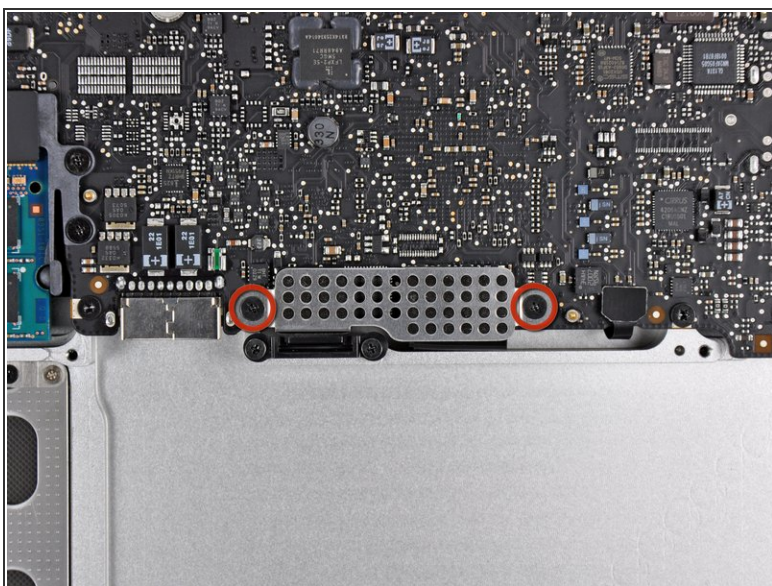
- Carefully pull the subwoofer/right speaker cable up to lift its connector out of its socket on the logic board.

Step 16



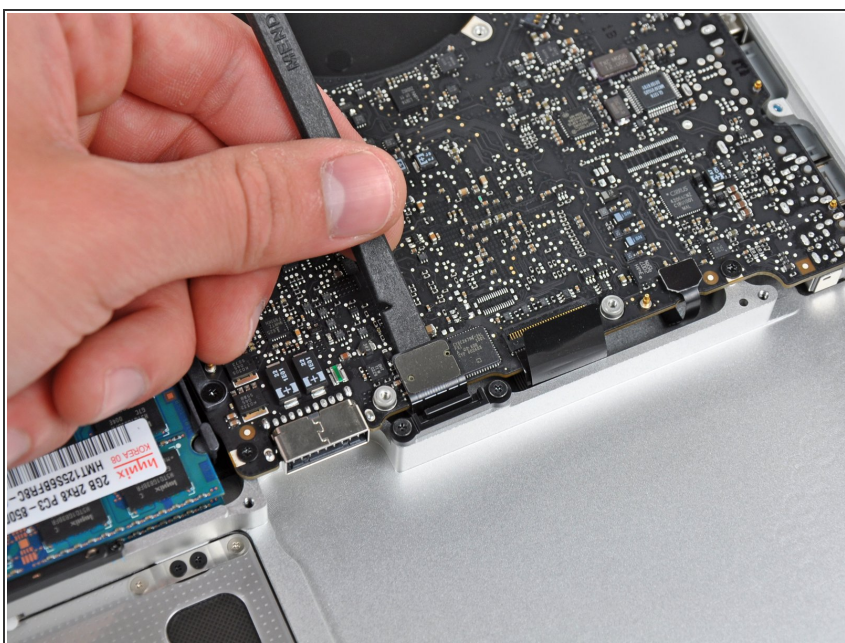
- Use the flat end of a spudger to pry the hard drive cable connector up out of its socket on the logic board.

Step 17



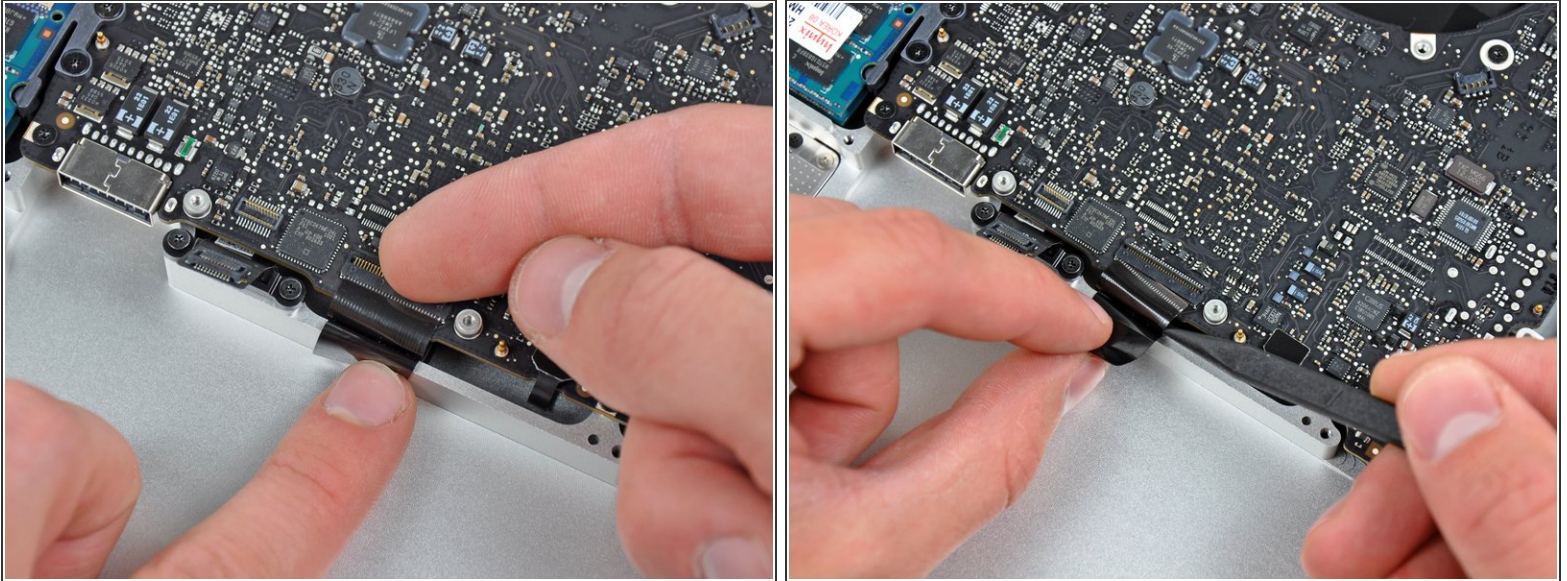
- Remove the two short Phillips screws securing the small EMI shield to the logic board.
- Remove the EMI shield from the logic board.

Step 18



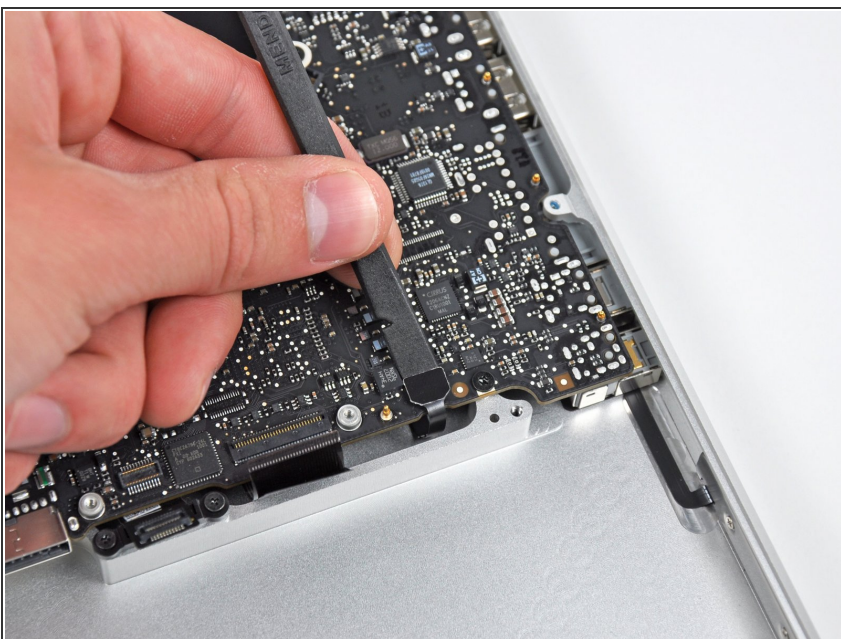
- Use the flat end of a spudger to pry the trackpad cable connector up out of its socket on the logic board.

Step 19



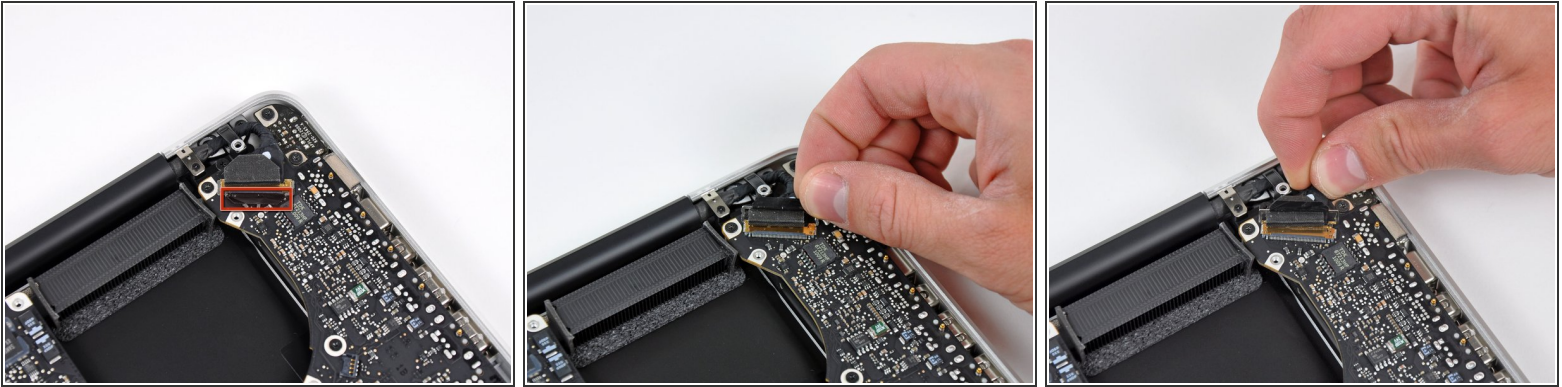
- Use your fingernail to carefully flip up the keyboard ribbon cable retaining flap.
- ⚠ Make sure you are flipping up the retaining flap, **not** the socket itself.
- Use the tip of a spudger to pull the keyboard ribbon cable straight out of its socket.

Step 20



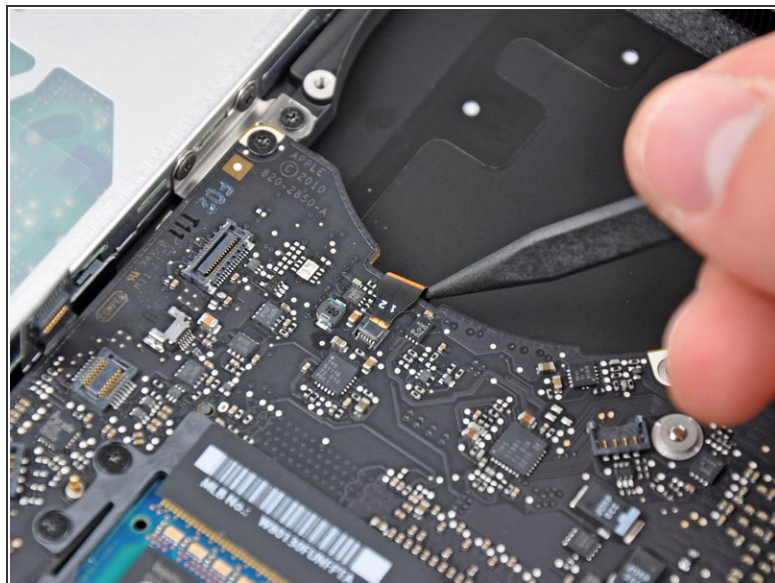
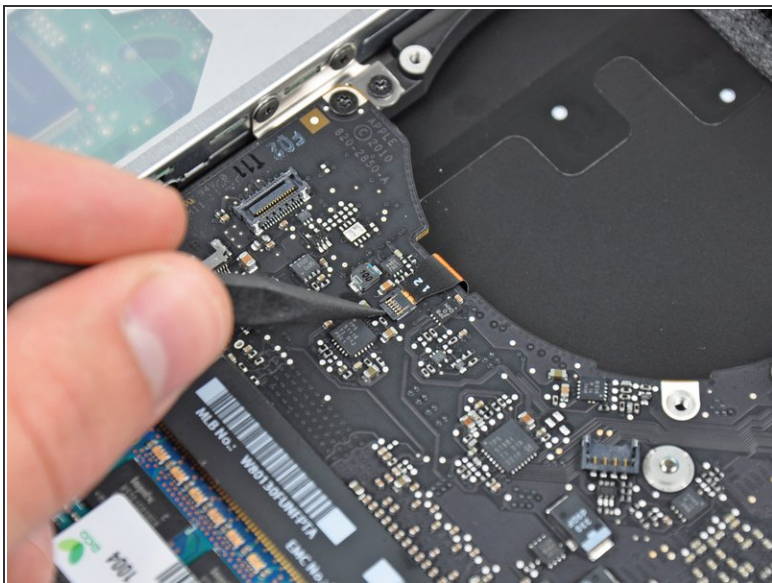
- Use the flat end of a spudger to pry the battery indicator cable connector up out of its socket on the logic board.

Step 21



- Grab the plastic pull tab secured to the display data cable lock and rotate it toward the DC-In side of the computer.
 - Pull the display data cable straight out of its socket.
- ⚠ Do not pull the cable upward, as the socket is very fragile. Pull the cable parallel to the face of the logic board toward the corner of the upper case.

Step 22

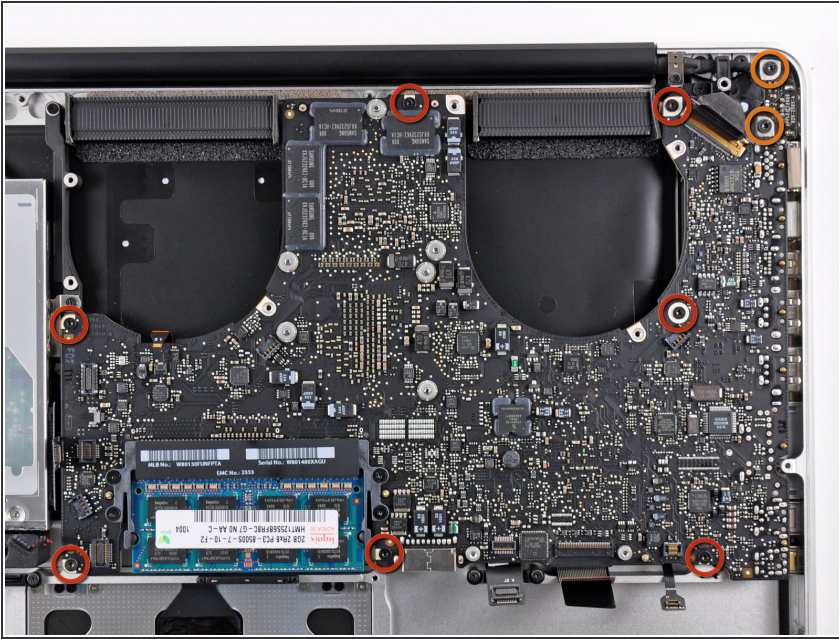


- Use the tip of a spudger or your fingernail to flip up the retaining flap on the keyboard backlight ribbon cable socket.

⚠ Be sure you are prying up on the retaining flap, **not** the socket itself.

- Pull the keyboard ribbon cable straight out of its socket.

Step 23



- Remove the following screws:
 - Seven 3.3 mm T6 Torx screws securing the logic board to the upper case.
 - Two 8 mm T6 Torx screws securing the DC-In board to the upper case.

⚠ Do not remove the logic board yet! There are components on the underside of the logic board attached to the the upper case that must first be disconnected.

Step 24



- Carefully lift the logic board assembly from the left side and work it out of the upper case, minding the

port side that may get caught during removal.



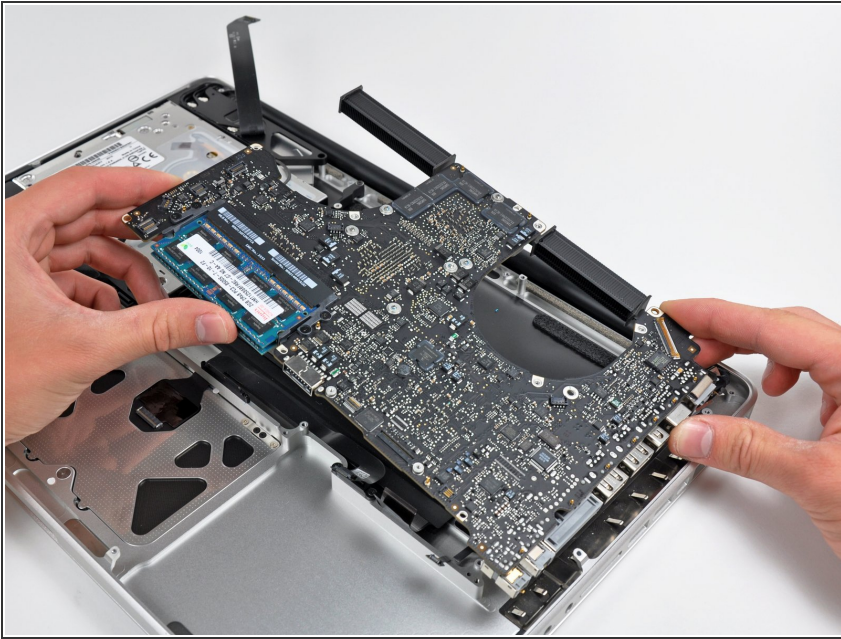
Do not entirely remove the logic board yet!

Step 25



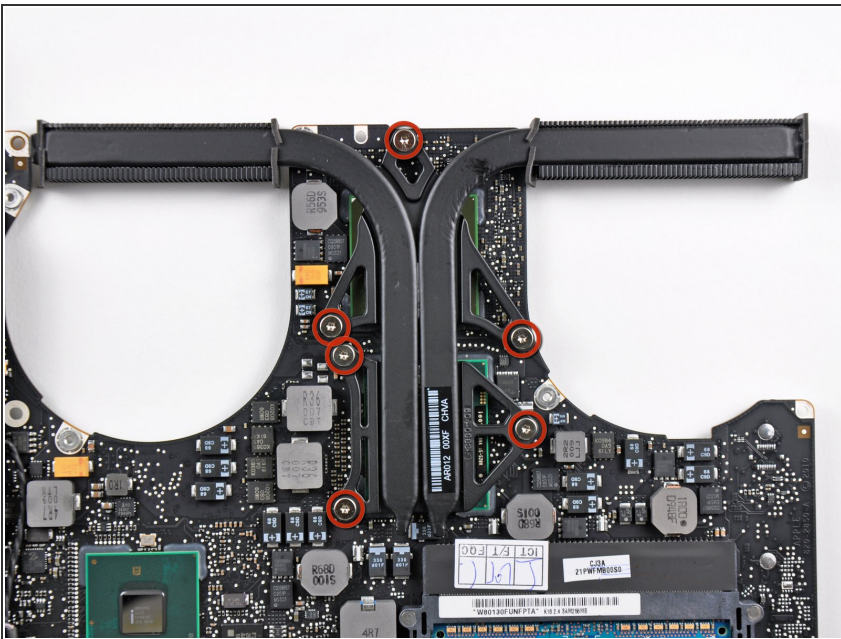
- Lift the logic board enough to gain clearance and use a spudger to pry the microphone up off the upper case.

Step 26



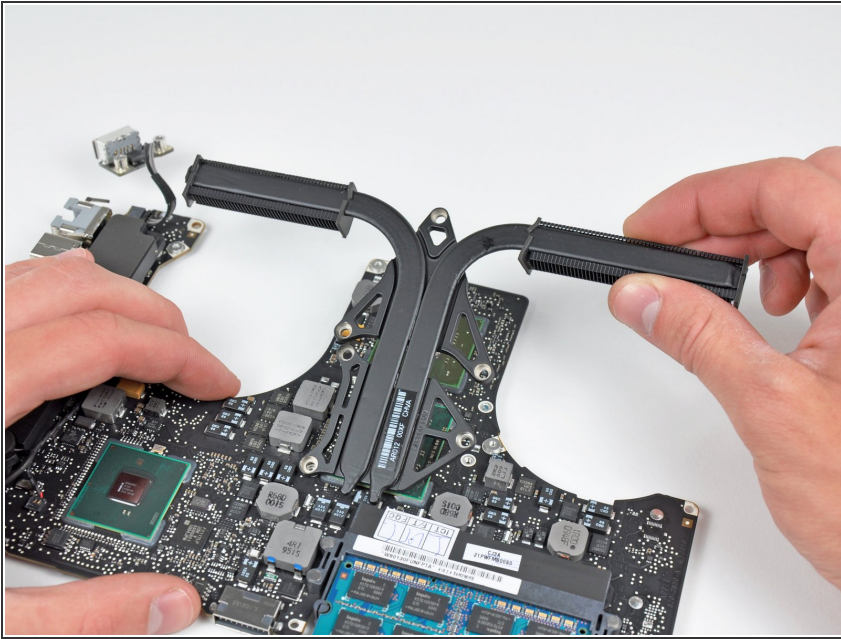
- Slide the logic board away from the port openings and lift the assembly out of the upper case.
- ✦ Before reinstalling the logic board, it is easiest to press the microphone down into its housing in the left speaker to keep it in place.
- ⓘ To avoid ESD damage, be sure to lay your logic board on a soft, static free surface during service.

Step 27 — Heat Sink



- ⓘ Lay the logic board down on a soft flat surface with the heat sink facing up.
- Remove the six T6 Torx screws securing the heat sink to the logic board.
- ⚠ Keep track of the small springs housed under each screw.

Step 28



- Remove the heat sink from the logic board.
- ⓘ If the heat sink appears to be stuck to the logic board after removing all six screws, it may be helpful to use a spudger to separate the two components.
- ★ If you need to mount the heat sink back onto the logic board, we have a [thermal paste guide](#) that makes replacing the thermal compound easy.

To reassemble your device, follow these instructions in reverse order.