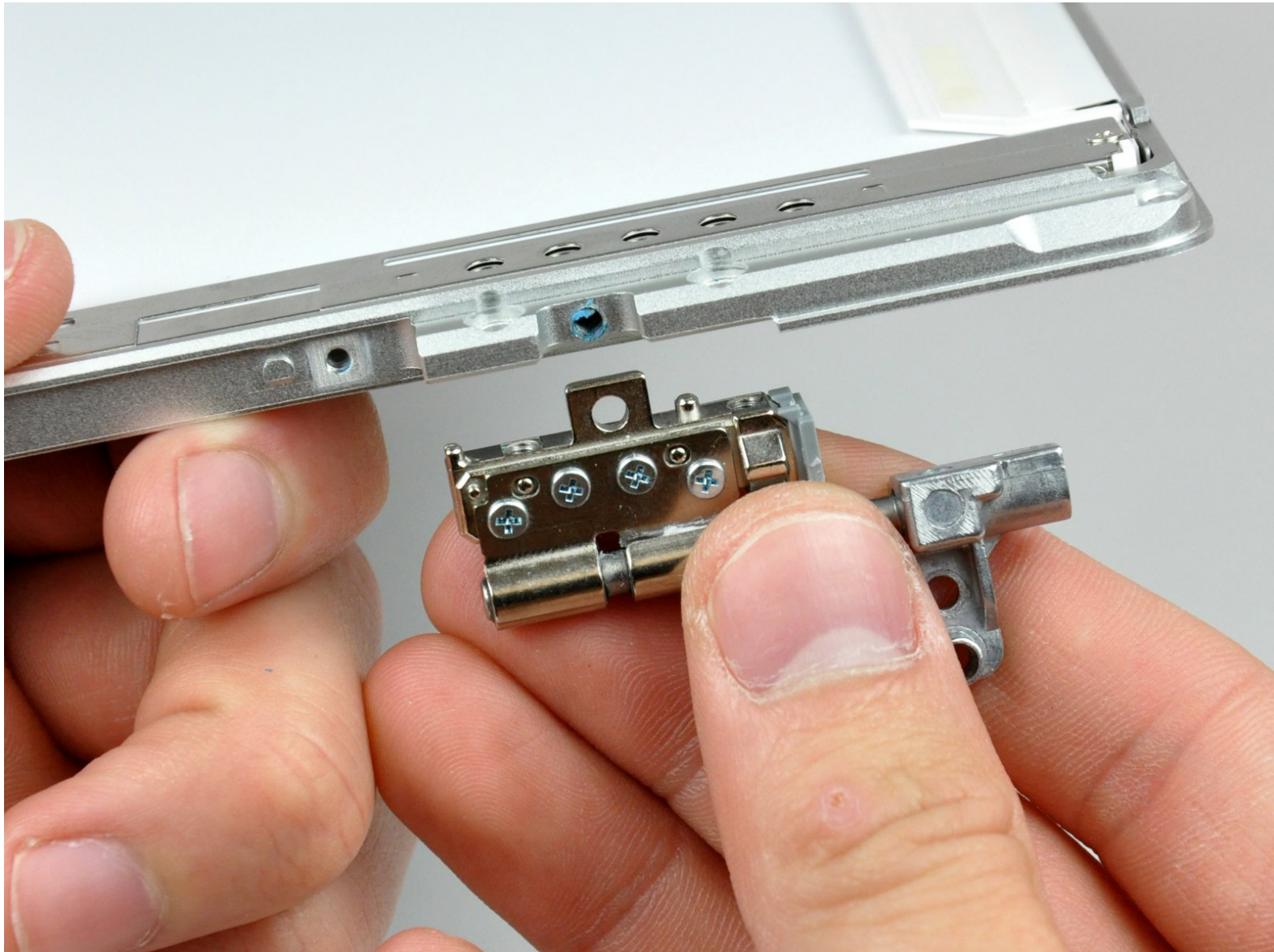




PowerBook G4 Aluminum 15" 1.67 GHz Left Clutch Hinge Replacement

Replace the left clutch hinge on your PowerBook G4 Aluminum 15" 1.67 GHz.

Written By: Walter Galan



INTRODUCTION

Replace a broken clutch hinge to make your display open silky smooth.



TOOLS:

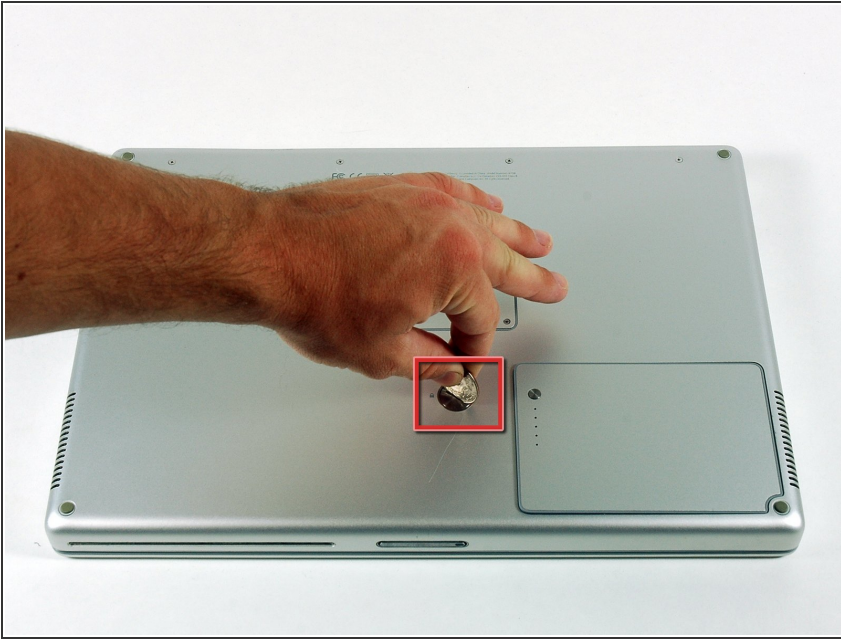
- [4mm Nut Driver](#) (1)
- [Coin](#) (1)
- [Phillips #00 Screwdriver](#) (1)
- [iFixit Opening Tools](#) (1)
- [Spudger](#) (1)
- [T6 Torx Screwdriver](#) (1)
- [T8 Torx Screwdriver](#) (1)



PARTS:

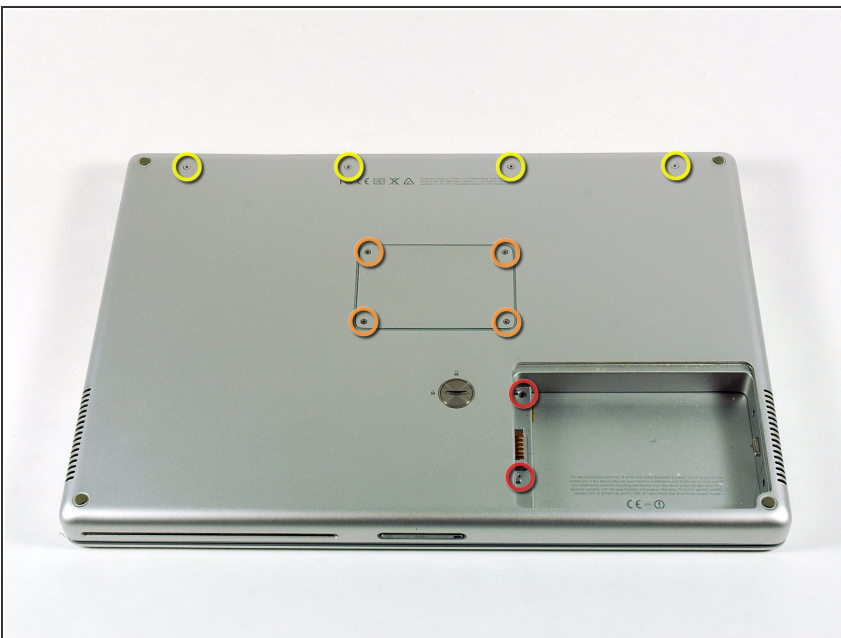
- [G4 Aluminum 15" Left Clutch Hinge](#) (1)

Step 1 — Battery



- Use a coin to turn the battery locking screw 90 degrees clockwise.
- Lift the battery out of the computer.

Step 2 — Upper Case



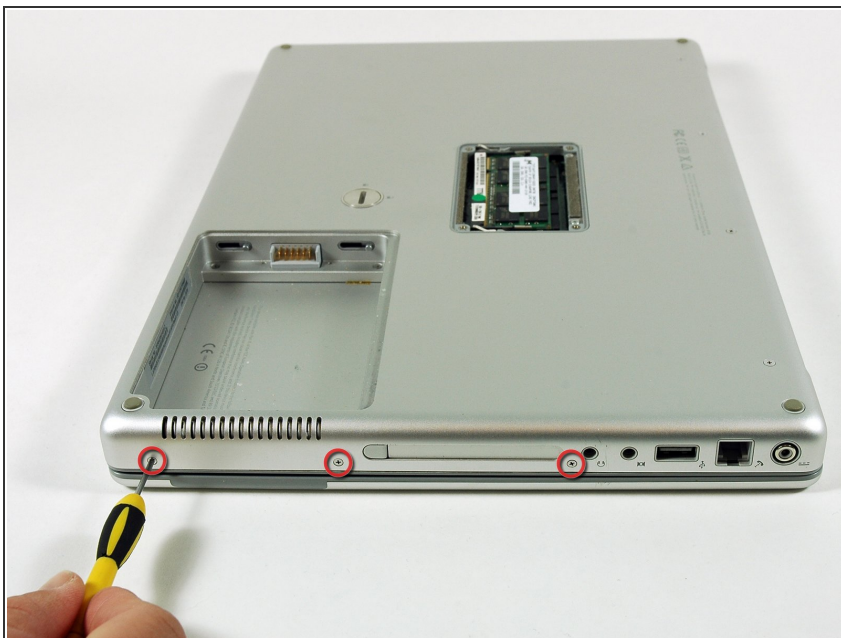
- Remove the following 10 screws:
 - Two 3 mm Phillips in the battery compartment, on either side of the battery contacts.
 - Four 3 mm Phillips around the memory compartment.
 - Four 16 mm Phillips along the hinge.

Step 3



- Remove the memory compartment cover.
- Remove the two 12 mm Phillips screws on the Aluminum bracket at the top of the memory compartment.

Step 4



- Rotate the computer 90 degrees clockwise so the power receptacle faces you.
- Remove the three 3 mm Phillips screws along the edge of the lower case.
- ⓘ When replacing these screws, you must install them in the correct order. Begin by installing the screw closest to the display hinge, then work your way toward the front of the computer.

Step 5



- Turn the computer 90 degrees clockwise so the hinge faces you.
- Remove the lower 5 mm Phillips screw on each side of the hinge (two total).

Step 6



- Rotate the computer 90 degrees clockwise so the ports face you.
- Remove the three 3 mm Phillips screws along the edge of the lower case.
- When replacing these screws, you must install them in the correct order. Begin by installing the screw closest to the display hinge, then work your way toward the front of the computer. Also, be careful not to put the screws in the two holes on either side of the video out port.

Step 7



- Turn the computer over and open the display.
- Remove the two 4.2 mm long, 1.5 mm hex screws at the top corners of the upper case (two total).
- ⓘ A T6 Torx driver will work, but repeated use will strip the screws.

Step 8



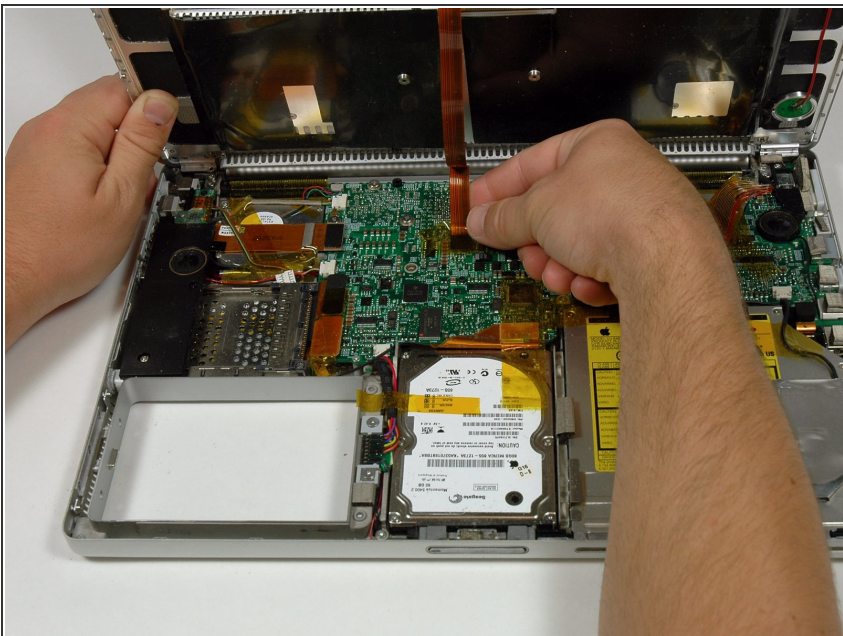
- Grasp the back corners of the upper case and pull up.
- ⚠ Do not pull the upper case off yet; you still need to disconnect the keyboard and trackpad cable.
- Lift the back of the case up and work your fingers along the sides, freeing the case as you go. Once you have freed the sides, you may need to rock the case up and down to free the front of the upper case.

Step 9



- Rotate the upper case up and toward the screen, so that the upper case rests against it.

Step 10



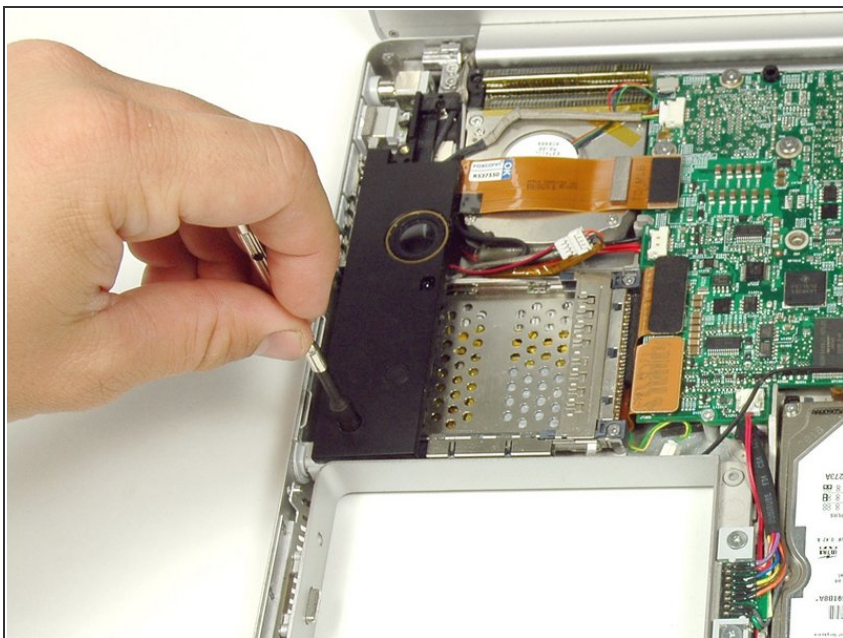
- Remove the amber tape securing the trackpad ribbon to the logic board.
- Disconnect the trackpad ribbon from the logic board by pulling up on the connector.
- Remove the upper case from the computer.

Step 11 — Left Ambient Light Sensor



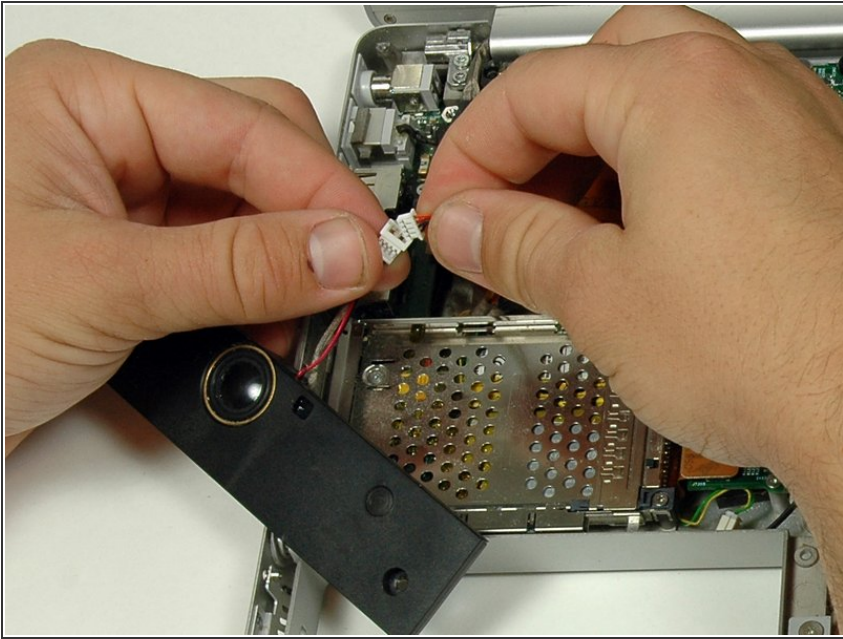
- Remove the two 3 mm Phillips screws securing the left ambient light sensor. One is silver and one is black, or both black.
- Disconnect the cable from the Logic board and remove the left ambient light sensor from your computer.

Step 12 — Left Speaker



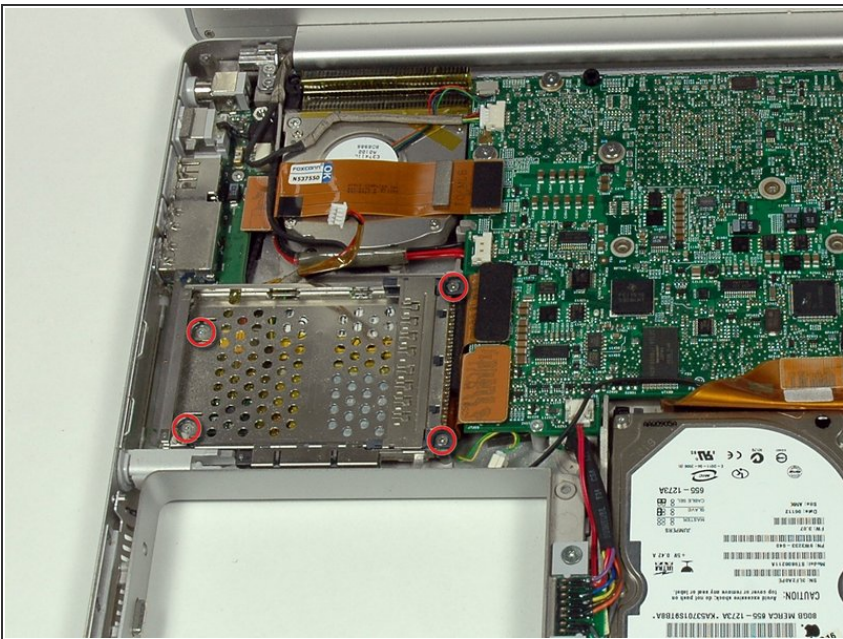
- Remove the 4 mm hex nut securing the left speaker.

Step 13



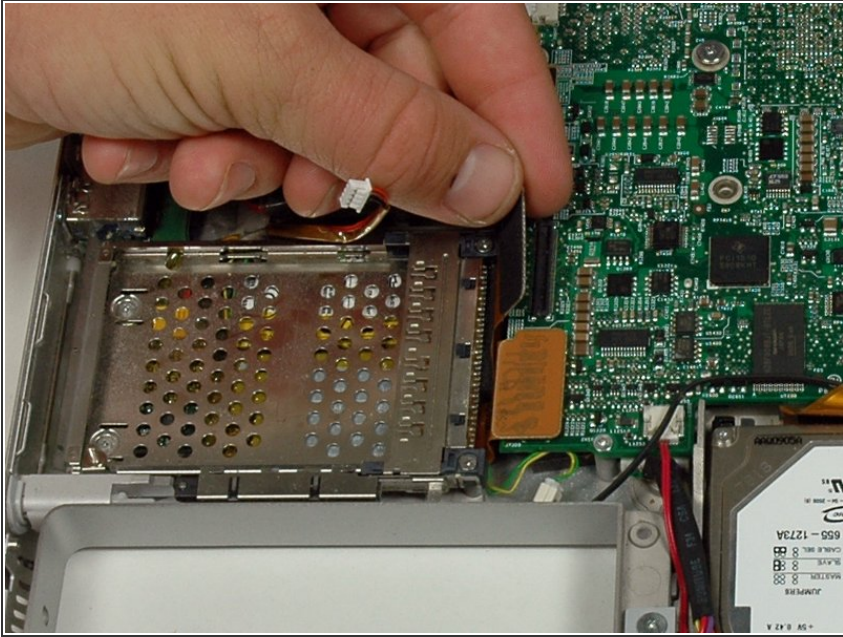
- Disconnect the left speaker cable.

Step 14 — PC Card Cage



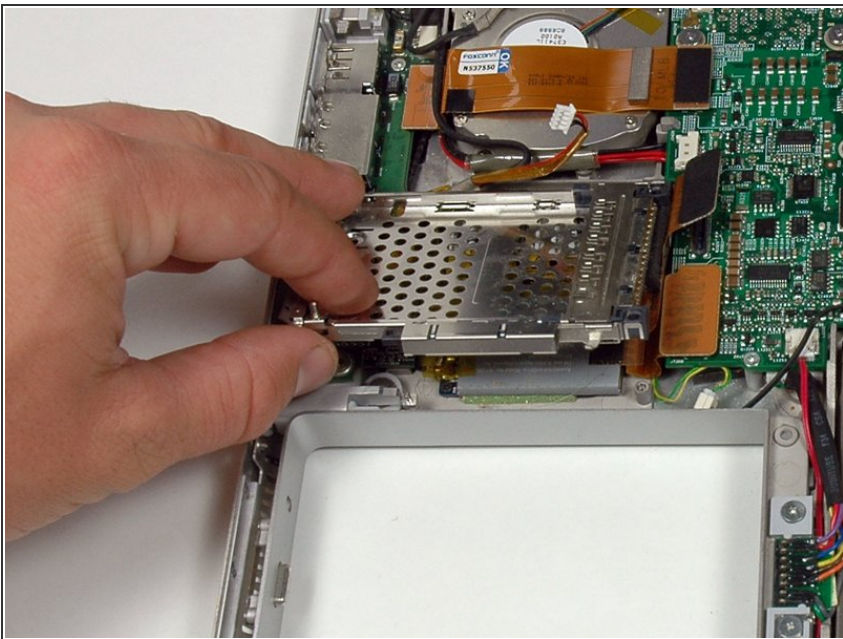
- Remove the four Phillips screws from the PC card cage.
- ☑ The two longer screws go on the right side of the card cage.

Step 15



- Disconnect the PC card cable from the logic board.

Step 16



- Lift the PC card cage up and remove it from the computer.
- ☑ When replacing the PC card cage, make sure you attach it to the post on the metal eject button.

Step 17 — Display Assembly



- Close the display and turn the hinge side of the computer to face you.
- Remove the remaining 5.2 mm Phillips screws on either side of the hinge (two screws total).

Step 18



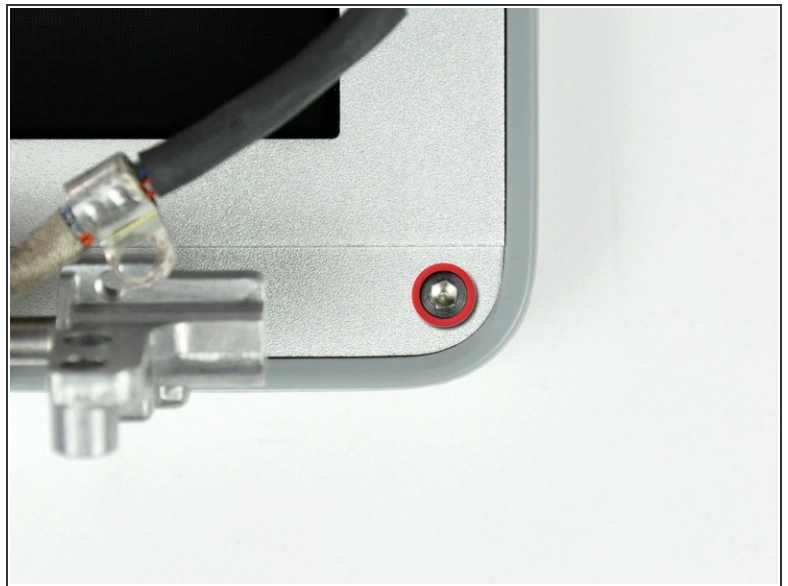
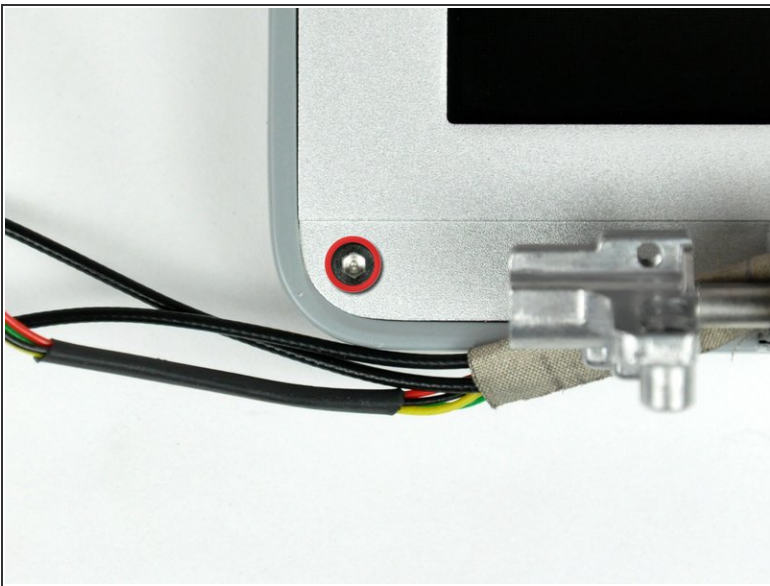
- i Support the display with one hand as you remove the remaining T8 screws.
- Remove the upper two full thread 10 mm T8 Torx screws from each side of the display, then the two lower shanked 13 mm screws (four screws total).
- ✦ When replacing the display, make sure that the correct screw pins down the ground loop from the display data cable.
- Disconnect the two antenna cables from the airport/bluetooth card (shown in yellow circles), as well as the display cable (wide connector right hand upper corner) and the cable on top left corner of the logic board (shown in blue square).

Step 19



- Lift the display assembly off the lower case.

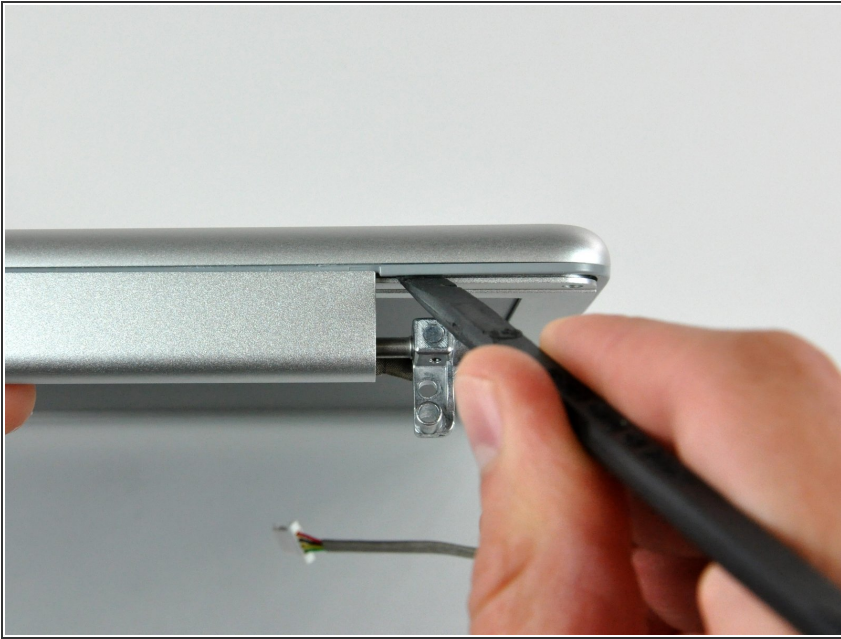
Step 20 — Rear Display Bezel



- Remove the two 6mm long, 1.5 mm hex screws near the lower left and right corners of the display.

 A T6 Torx screwdriver works just fine.

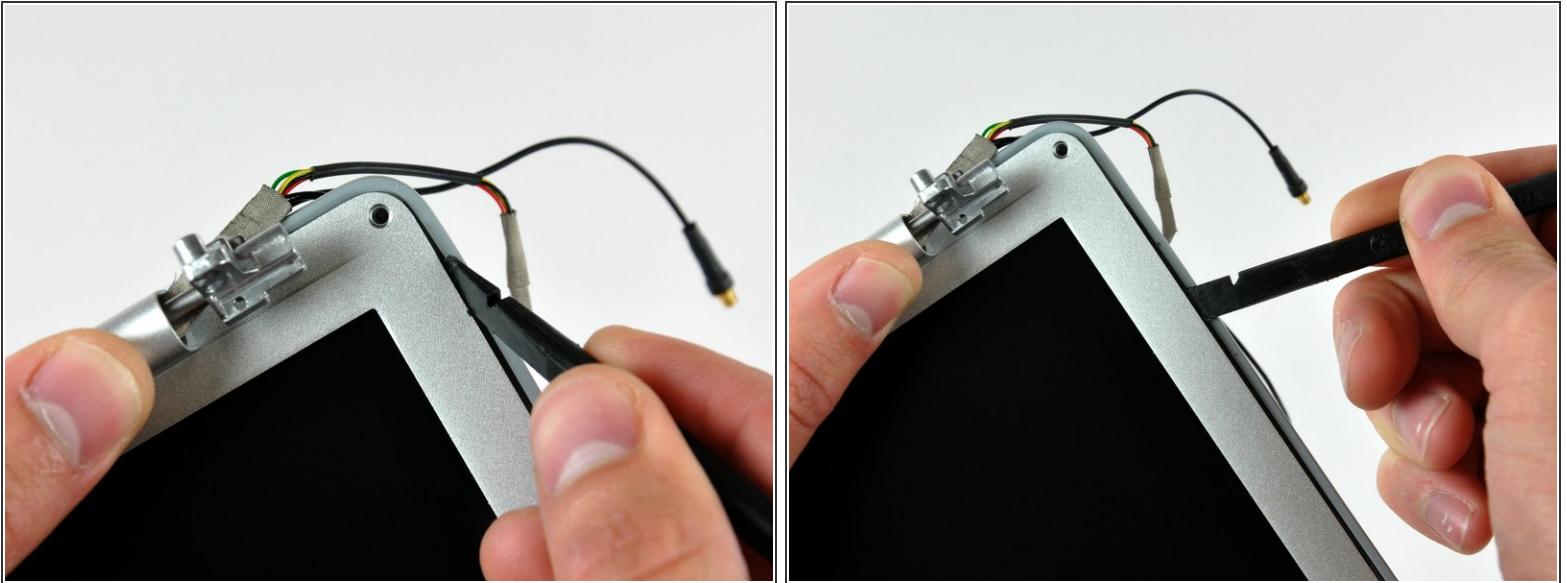
Step 21



- Insert the flat end of a spudger between the front display bezel and the plastic rim attached to the rear bezel near the lower left corner of the display.

⚠ Do not insert the spudger between the plastic rim of the rear display bezel and the aluminum rear display bezel plate.

Step 22



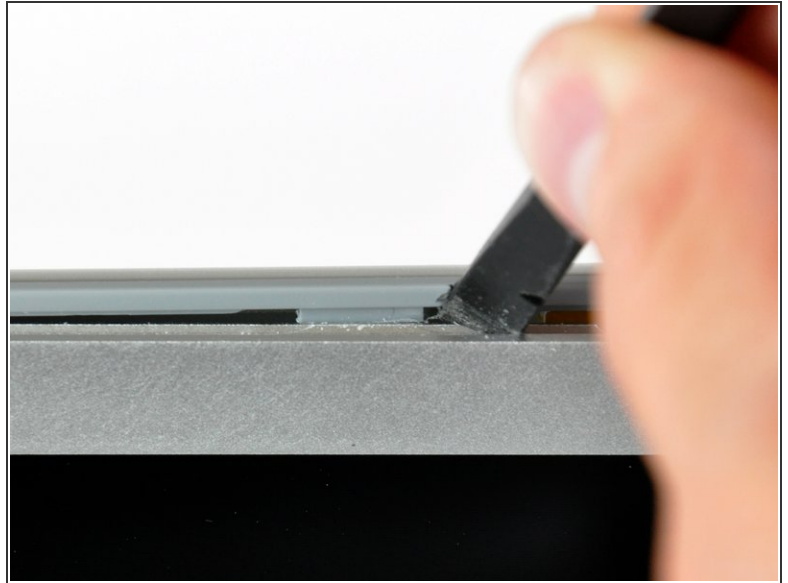
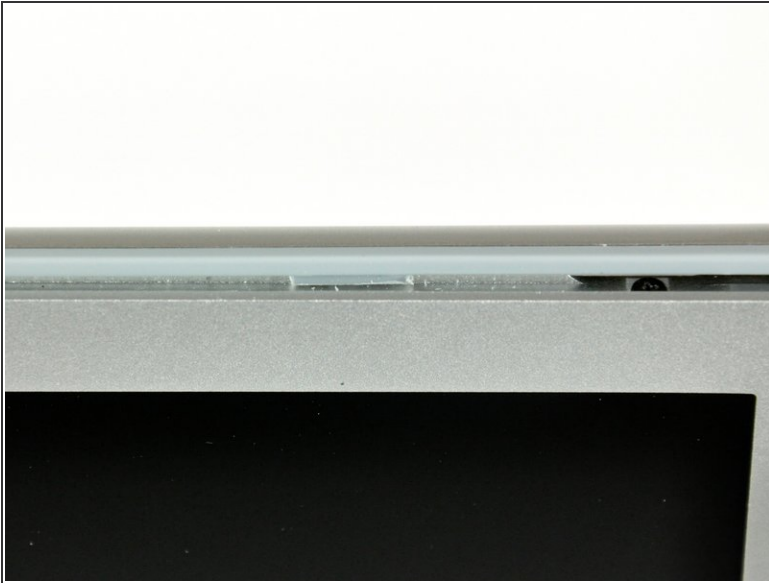
- With your spudger still inserted under the front display bezel, run it around the lower left corner of the display.
- Rotate the spudger away from yourself to pry the rear display bezel off the aluminum tabs on the front display bezel.
- Work your way down the side of the display until the rear display bezel has been separated from the front display bezel.

Step 23



- Insert the flat end of a spudger between the rear display bezel and the clutch cover.
- Twist the spudger to unclip the rear bezel from the clutch cover.

Step 24



- Repeat the previous steps to separate the right side of the rear display bezel from the display.
- Use your spudger to pry the plastic retaining clips on the rear display bezel over the raised aluminum tabs on the front display bezel.
- At this point, the clips on the left and right edges of the rear display bezel should be free from the raised aluminum tabs on the front display bezel. If they are not, use a spudger to pry them past the front display bezel.

Step 25



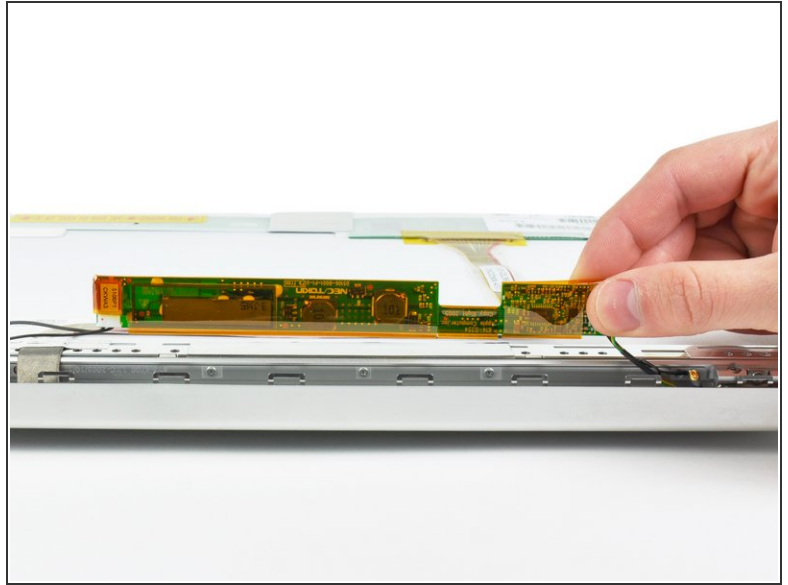
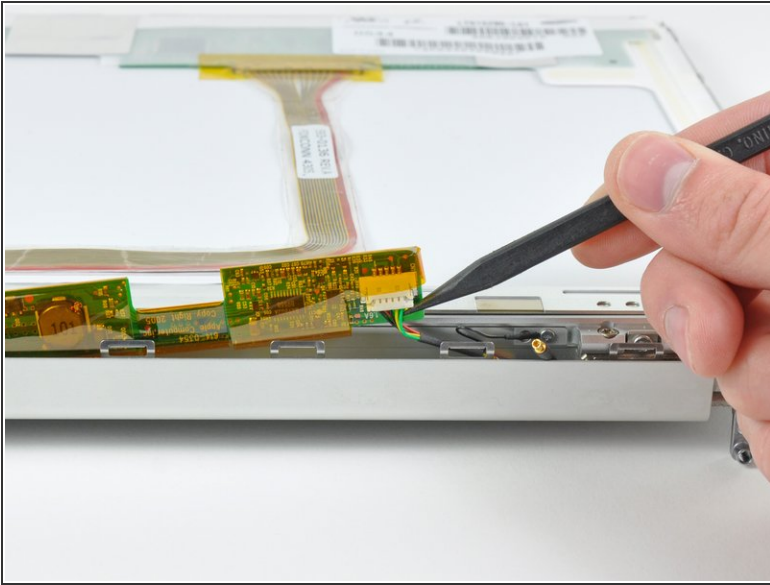
- Slightly lift the lower edge of the rear display bezel and push it toward the top edge of the display, releasing the clips along the top edge of the rear display bezel.
- Rotate the rear display bezel toward yourself and lay it flat on the table.

Step 26



- Disconnect both antenna cables from the rear display bezel.
- Remove the rear display bezel and set it aside.

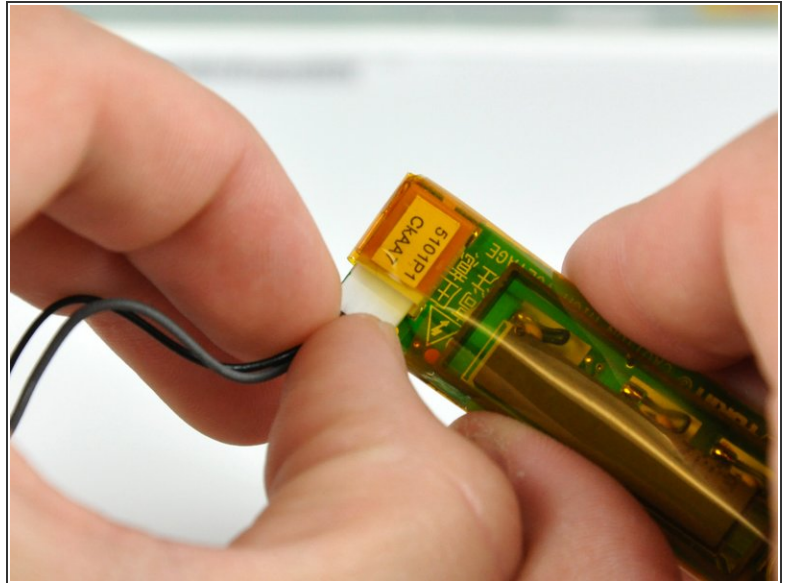
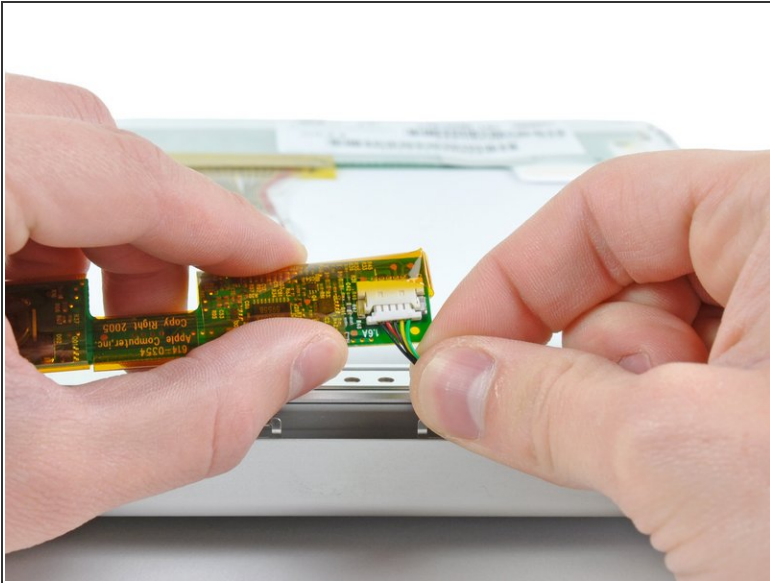
Step 27 — Clutch Cover



 The inverter is an extremely thin circuit board that is very delicate and easily cracked. Take care when handling.

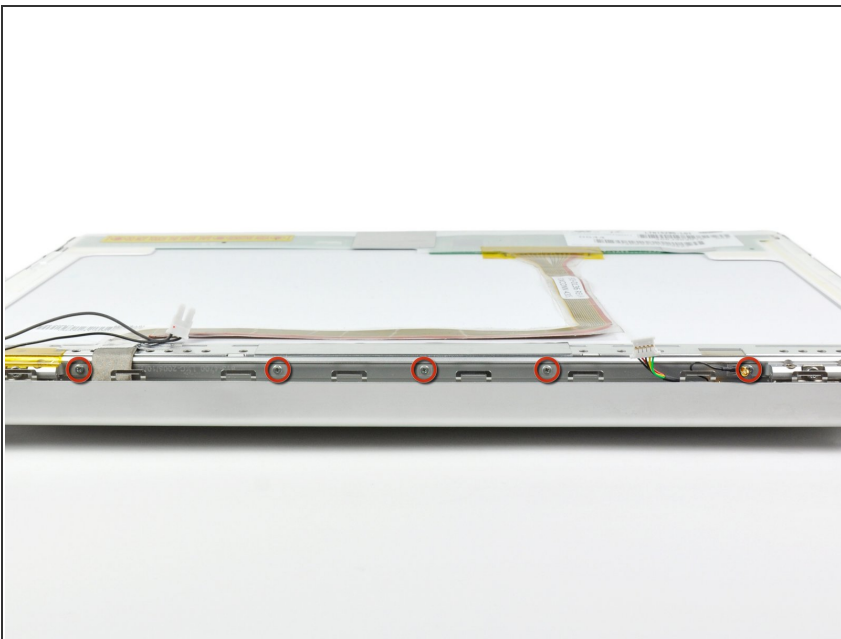
- Use a spudger to raise the end of the inverter out from the clutch cover.
- Lift the inverter enough to access both cable connectors.

Step 28



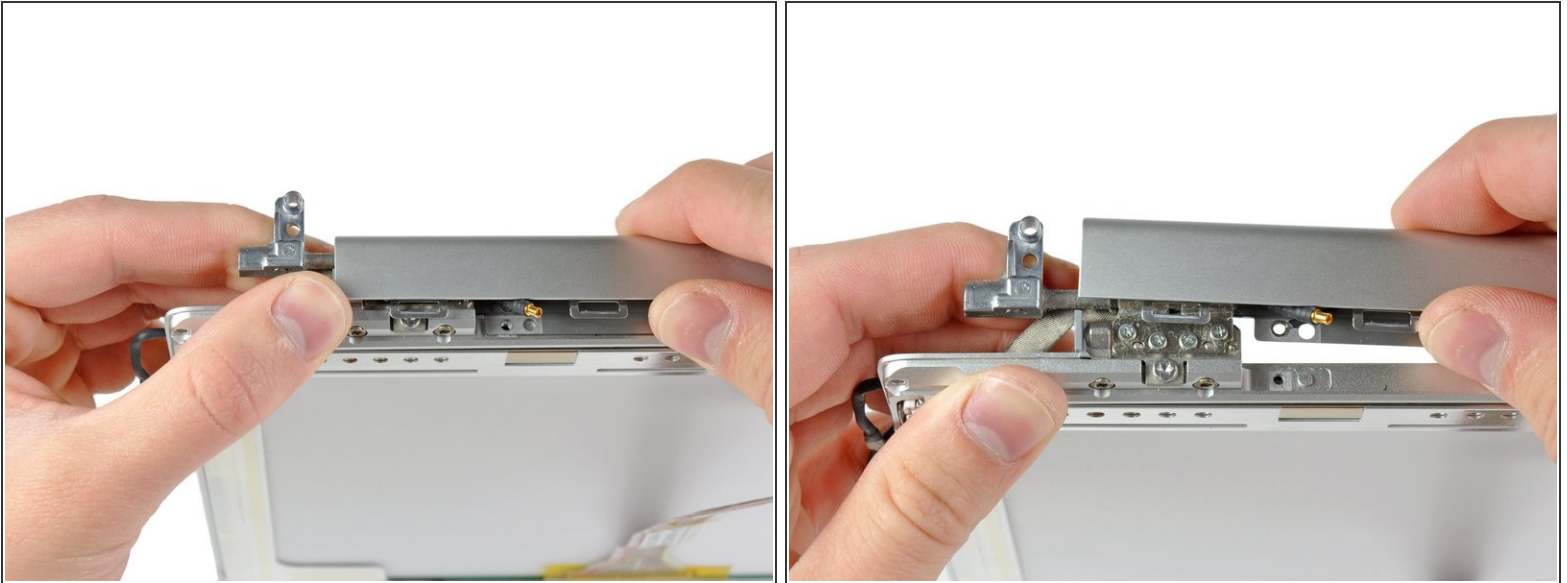
- Disconnect both inverter cables by pulling their connectors away from the sockets on the inverter.
- Remove the inverter from your display and set it aside.

Step 29



- Remove the five 2 mm Phillips screws securing the LCD retaining bracket to the front display bezel.
- Lift the LCD retaining bracket off the front display bezel.
- ❗ Some machines do not have this bracket. If your machine is missing the bracket, remove the five screws and proceed to the next step.

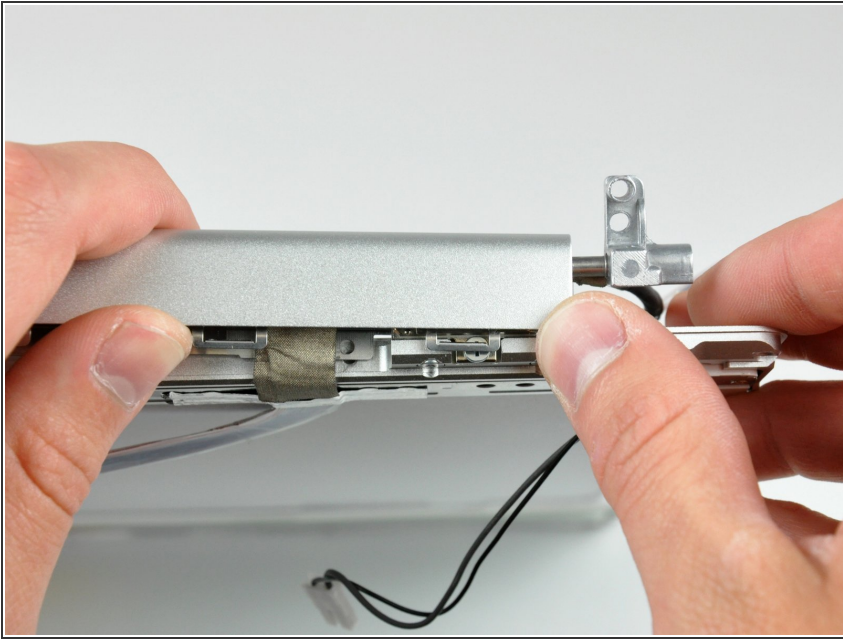
Step 30



 The clutch cover is constructed from aluminum and is held on to the clutch hinges with metal clips that require a good deal of force to remove. Proceed with caution.

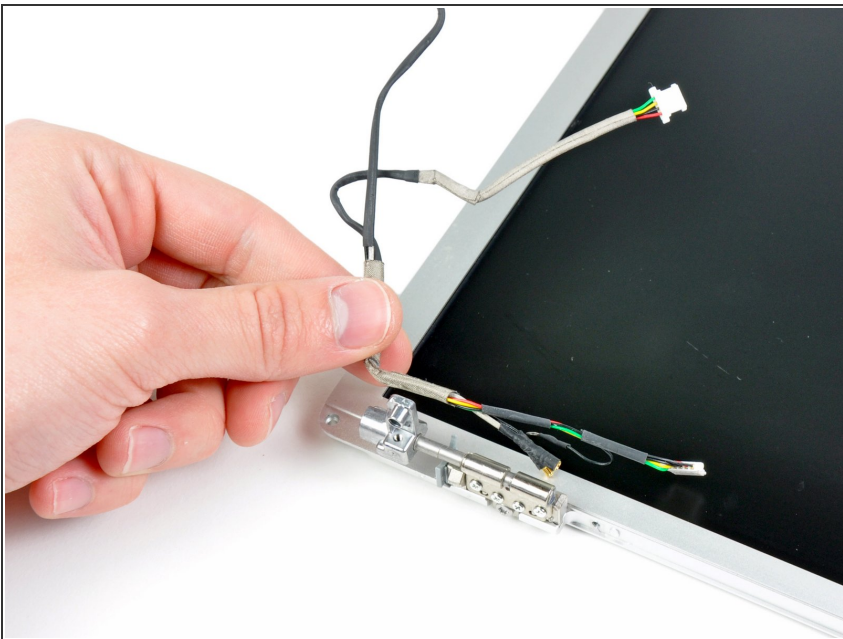
- Use your thumbs to push the clutch cover away from the clutch hinges.
- While pressing with your thumbs, rotate the clutch cover toward yourself about its long edge to pop it off the clutch hinge.
-  It may be necessary to wiggle the clutch cover while pressing it away from the clutch hinges to release the retaining clips.

Step 31



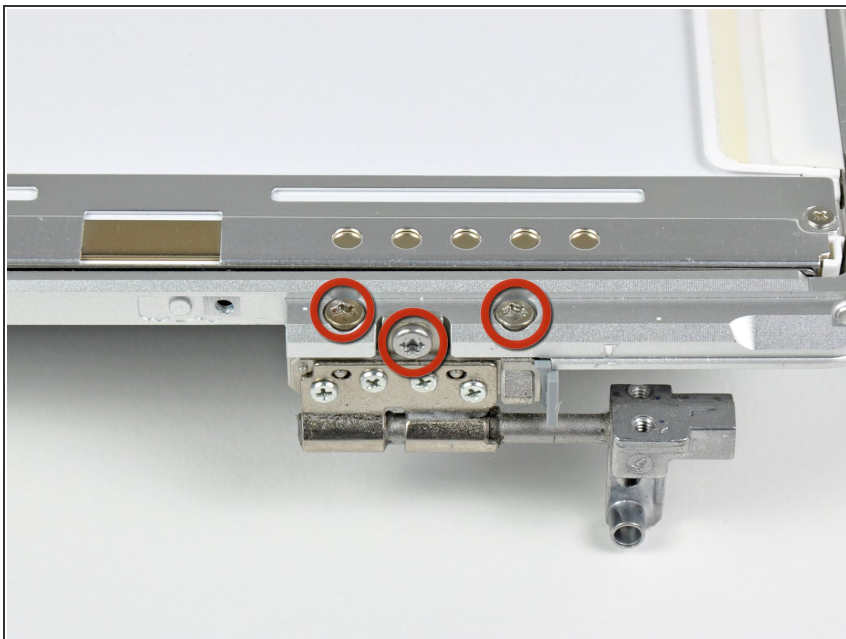
- Repeat this process for the other side of the clutch cover. Once the clutch cover is completely free from the clutch hinges, lift it off the front display bezel.

Step 32 — Inverter/Antenna Cables



- De-route the inverter/antenna cables from the left clutch hinge and lift them out of your display.

Step 33 — Left Clutch Hinge



- Remove the three 5.7 mm T8 Torx screws securing the left clutch hinge to the front bezel.

Step 34



- Remove the left clutch hinge from the front bezel.

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