



# MacBook Pro 15" Retina Display Mid 2015

## Upper Case Assembly Replacement

Replace the Upper Case in your MacBook Pro 15" Retina Display Mid 2015.

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# INTRODUCTION

The battery, keyboard, trackpad, and upper case are all stuck together. If you break one of these components, you will need to replace the entire assembly. Follow this guide to do so.



## TOOLS:

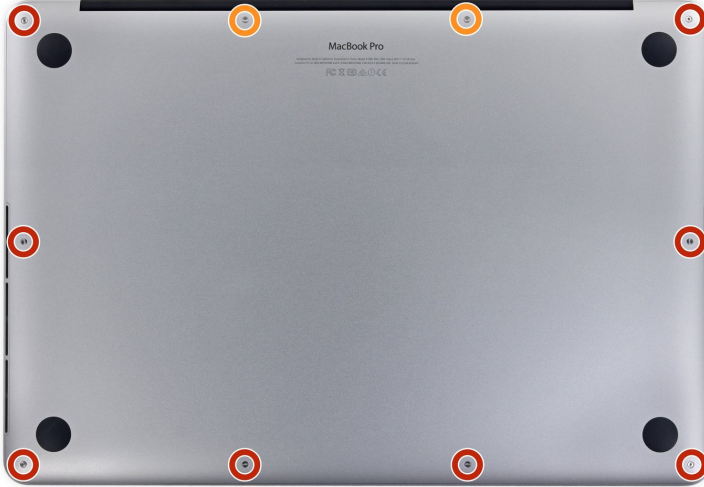
- [P5 Pentalobe Screwdriver Retina MacBook Pro and Air](#) (1)
- [Spudger](#) (1)
- [T5 Torx Screwdriver](#) (1)
- [TR8 Torx Security Screwdriver](#) (1)
- [Tweezers](#) (1)



## PARTS:

- [MacBook Pro 15" Retina \(Mid 2015\) Upper Case Assembly](#) (1)

## Step 1 — Lower Case



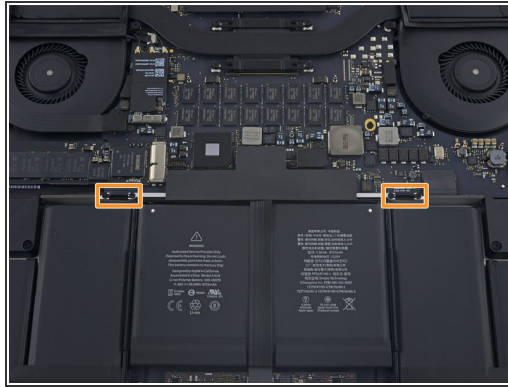
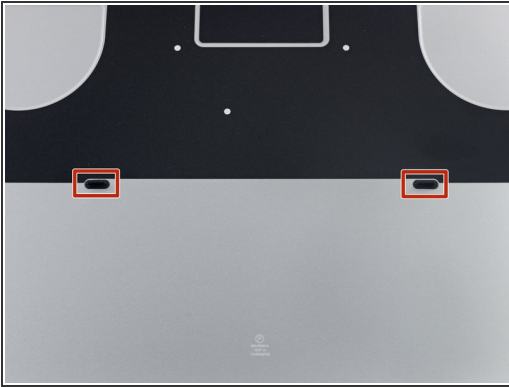
- Remove the following P5 pentalobe screws securing the lower case to the MacBook Pro:
  - Eight 3.1 mm
  - Two 2.3 mm



## Step 2



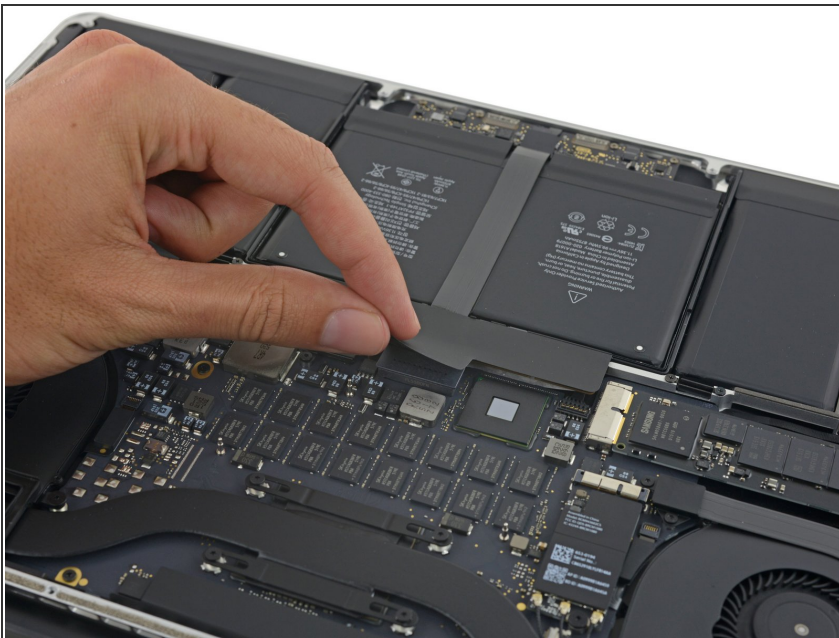
- Lifting from the edge nearest the clutch cover, lift the lower case off the MacBook Pro.

## Step 3



-  The lower case has two plastic pegs (red) that fit into plastic clips in the upper case (orange).
-  During reassembly, gently push down the center of the lower case to reattach the case to its two plastic clips.

## Step 4 — Battery Connector



- Peel back the sticker covering the battery connector.

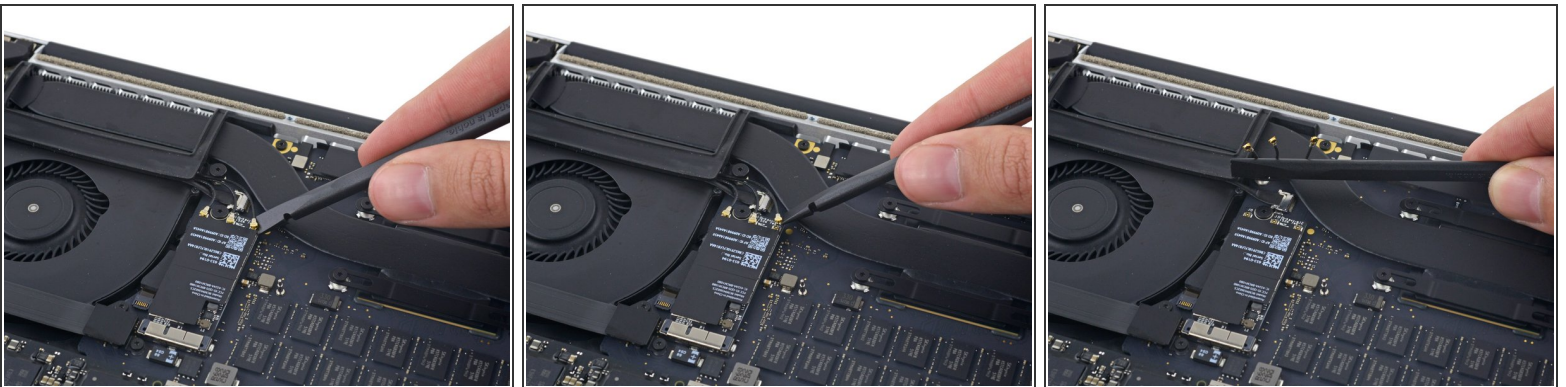


## Step 5





- Gently lift each side of the battery connector to pry the connector out of its socket on the logic board.
- Bend the connector back toward the battery, ensuring that the battery connector doesn't accidentally make contact with the logic board.

## Step 6 — AirPort/Camera Cables

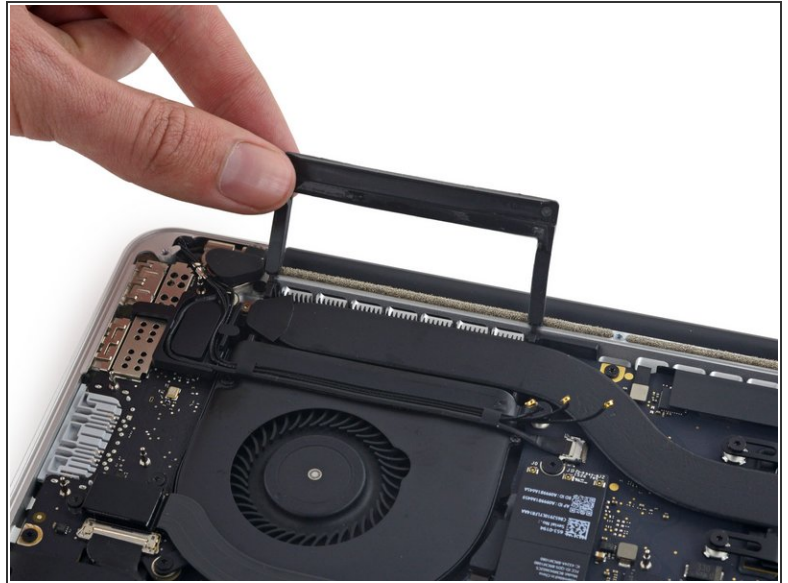
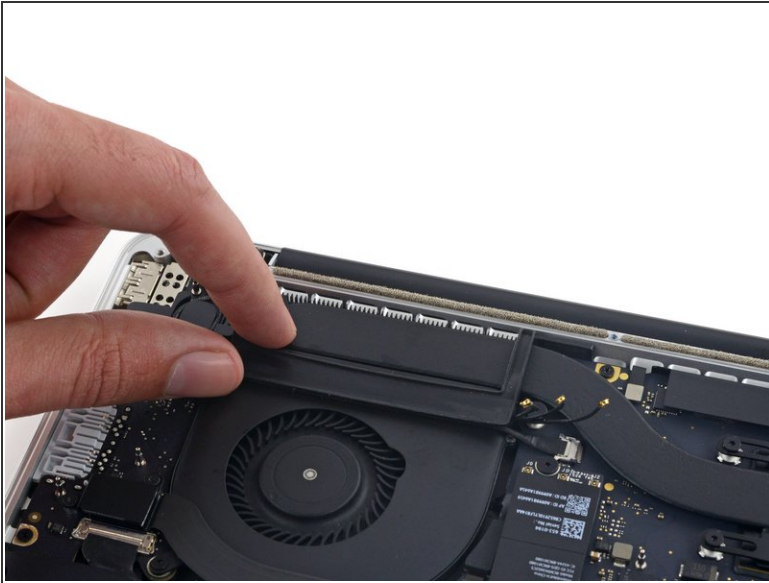


- Use a spudger or tweezers to pry the three AirPort antenna cables straight up off of their sockets on the AirPort board, and bend them up and out of the way.

 The cable connection points are **very** fragile. Be careful to lift only on the connector, and not on the socket or cable.

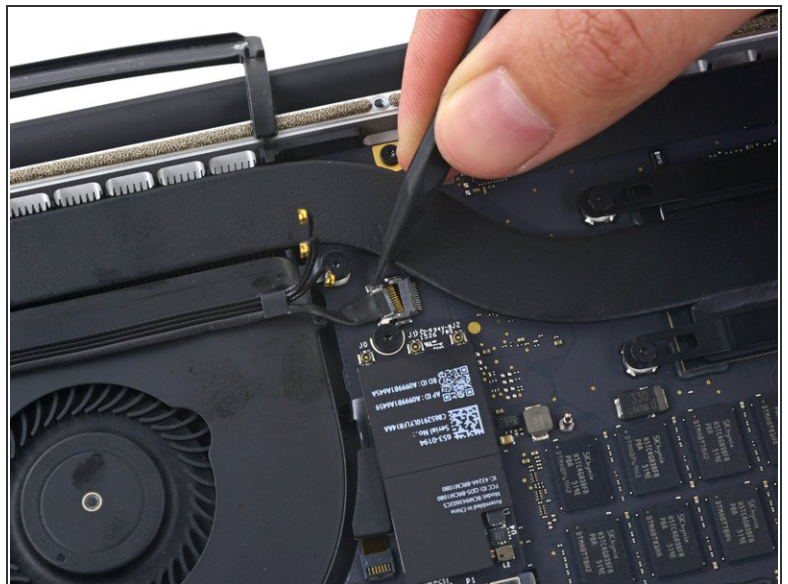
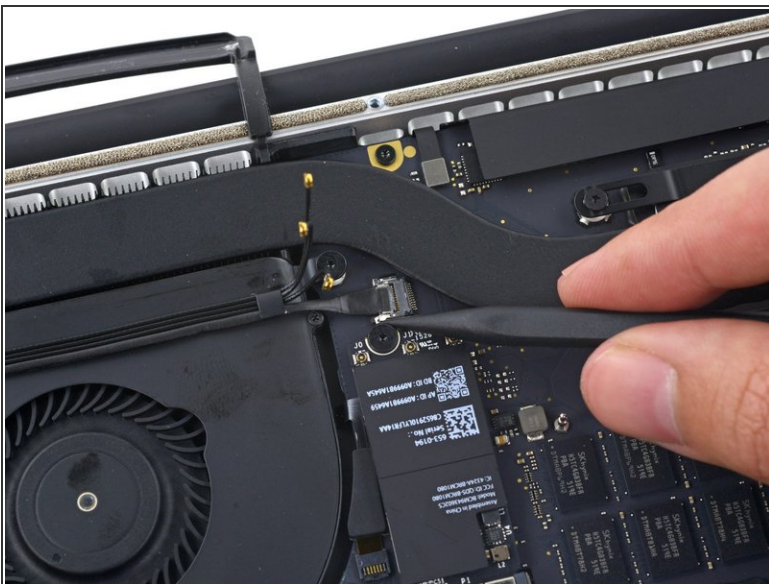
-  To reconnect, align the connector carefully into position over the socket, and press it down firmly with the flat of your spudger.

## Step 7



- Peel the right rubber cover up off the fan and fold it out of the way.

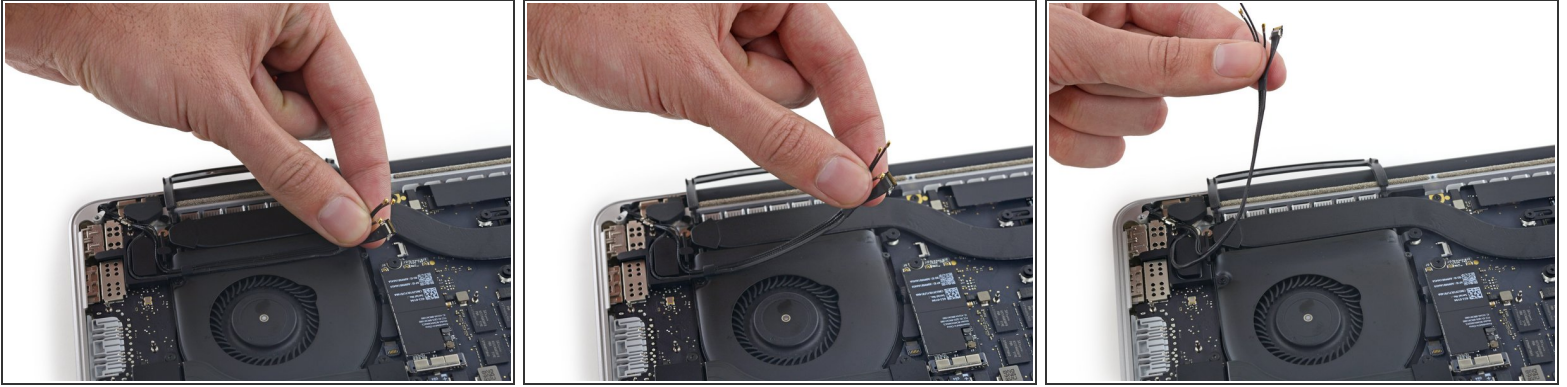
## Step 8



- Use the tip of a spudger to push the camera cable connector out of its socket on the logic board.
  - ⓘ Be sure to push parallel to the board, pushing first on one side, then the other to "walk" the connector out of its socket.

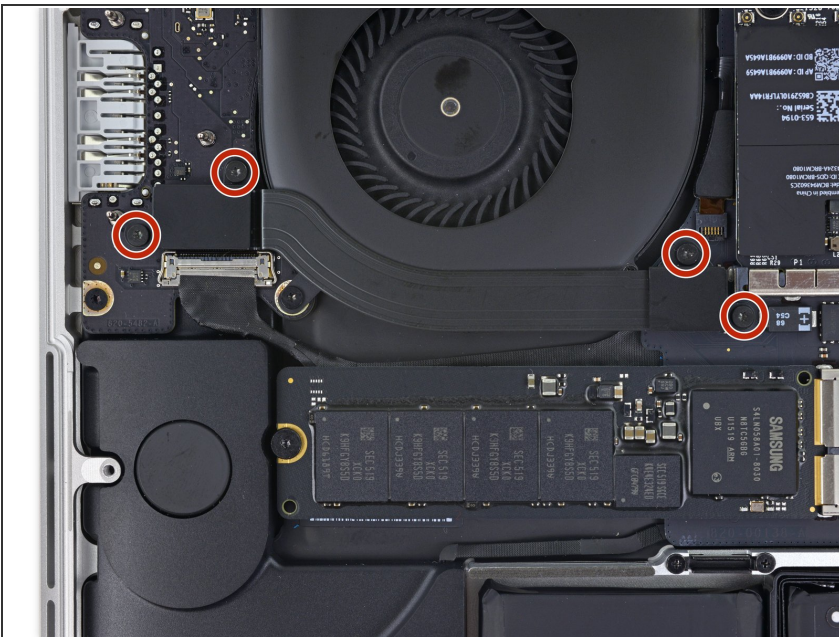


## Step 9



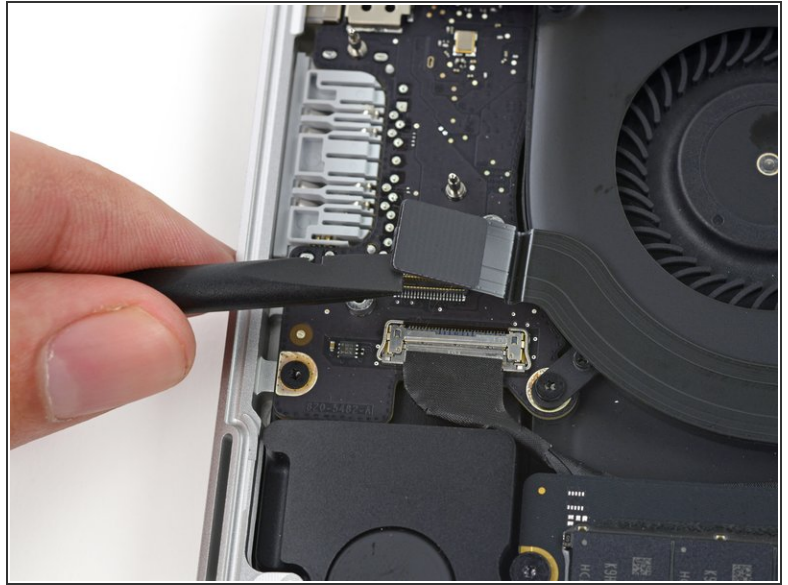
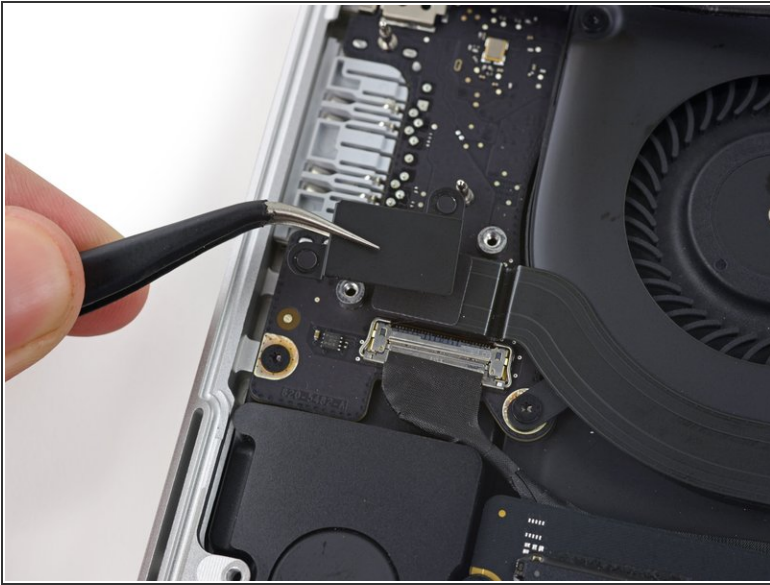
- Use your fingers to pull the AirPort/Camera cables up off the fan.
    - ❗ The cables are adhered to the fan, so peel them up carefully to avoid damaging them.
  - Carefully de-route the cables from the plastic cable guide.
- 🔧 On reassembly, there should be enough adhesive still on these cables to stick them back down to the fan.

## Step 10 — I/O Board Cable (Top)



- Remove the four 2.2 mm T5 Torx screws securing the I/O board cable connector covers.

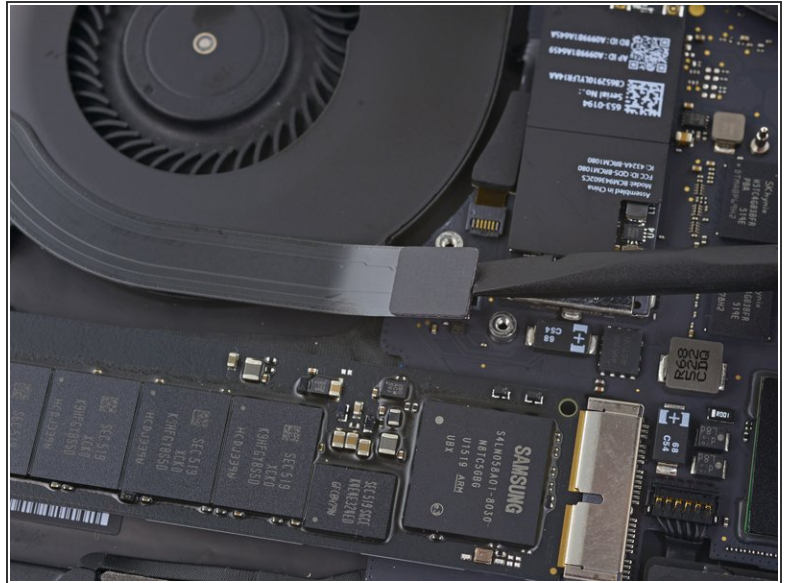
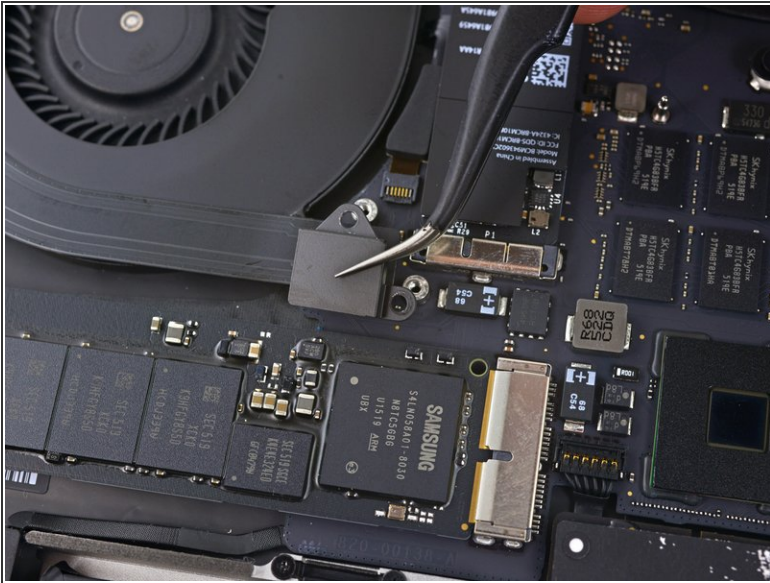
## Step 11



- Remove the left connector cover.
- Use the flat end of a spudger to pry the left end of the I/O board cable up from its socket on the logic board.

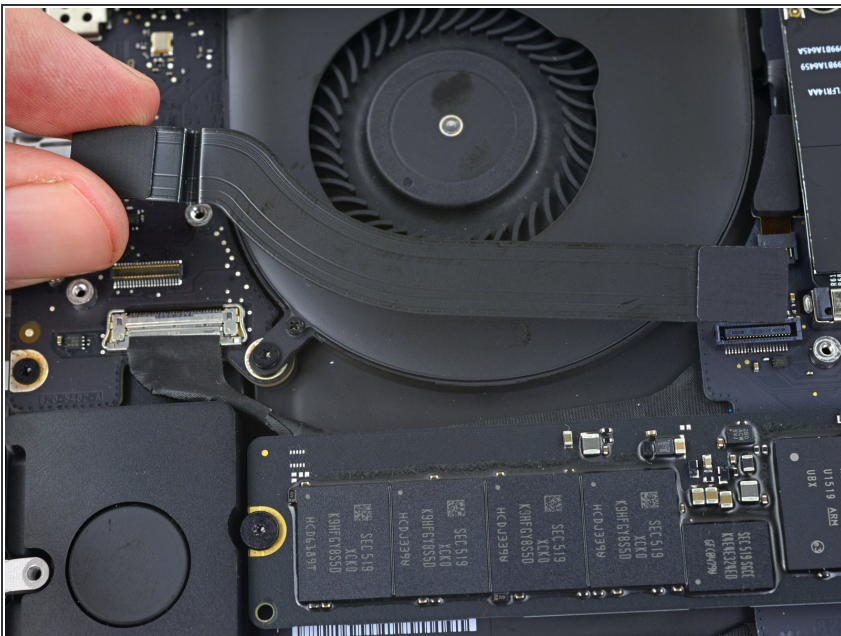


## Step 12



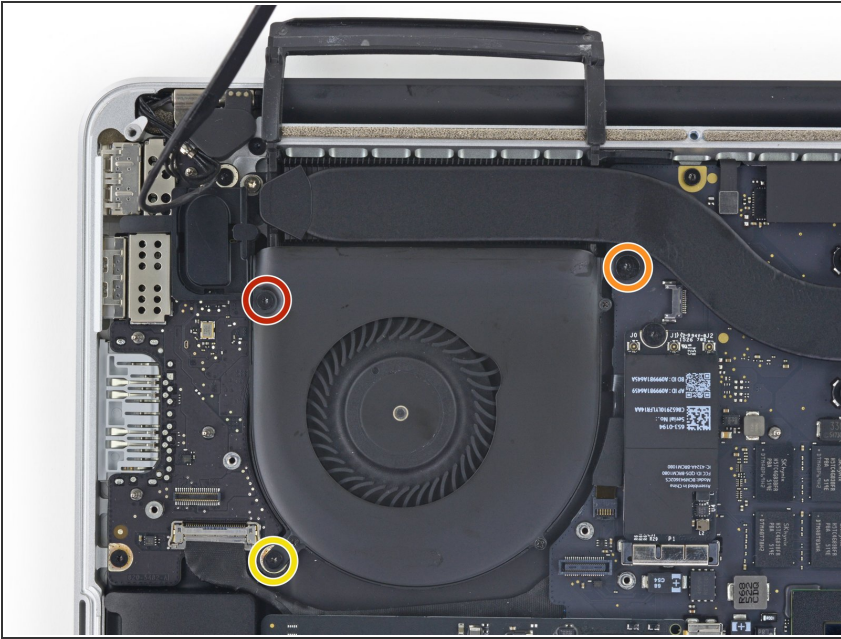
- Remove the right connector cover.
- Use the flat end of a spudger to pry the right end of the I/O board cable up from its socket on the logic board.

## Step 13



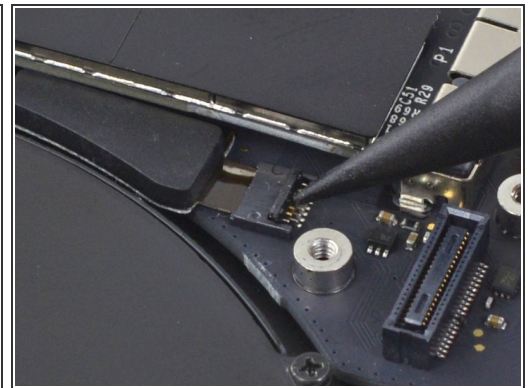
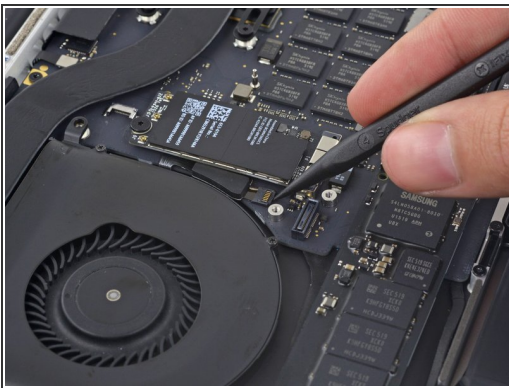
- Peel the I/O board cable up from the adhesive securing it to the fan.
- Remove the cable.

## Step 14 — Right Fan



- Use a T5 Torx driver to remove the following three screws securing the right fan to the logic board:
  - One 5.0 mm screw with a 2.0 mm long shoulder
  - One 4.0 mm screw with a wide head
  - One 4.4 mm screw

## Step 15

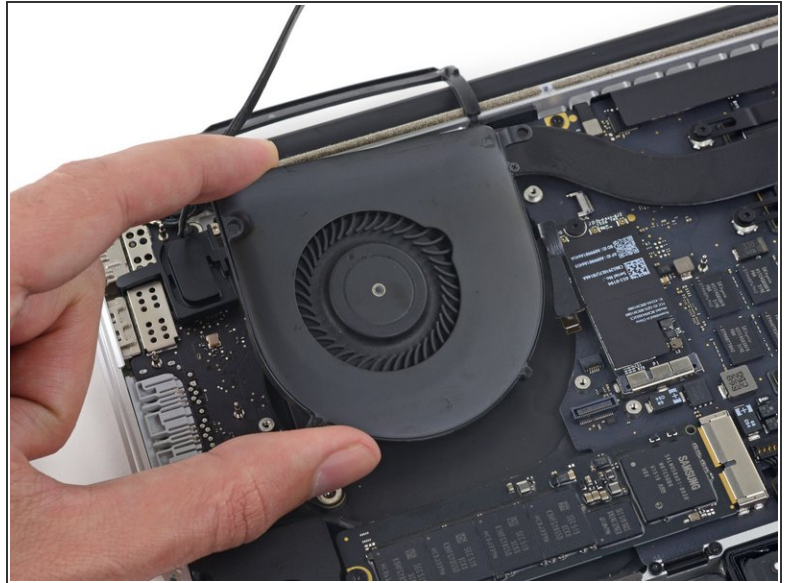
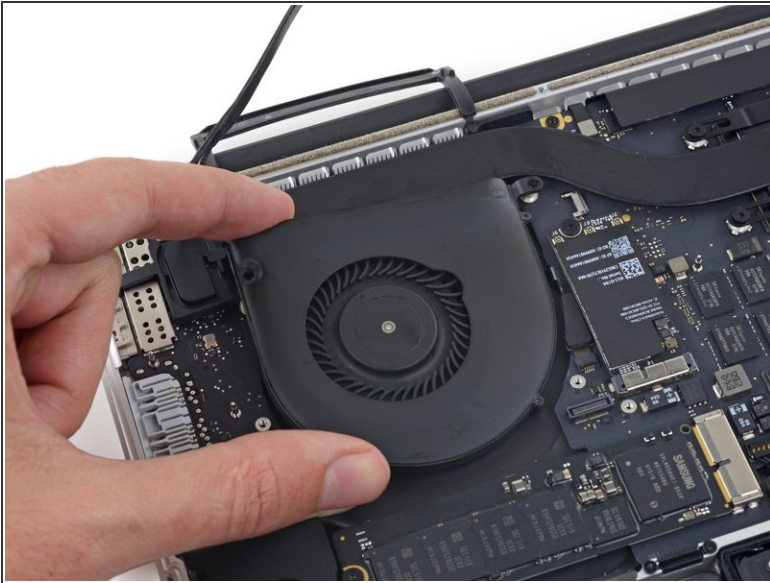


- Use the tip of a spudger to flip up the retaining flap on the right fan ribbon cable ZIF socket.

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



## Step 16

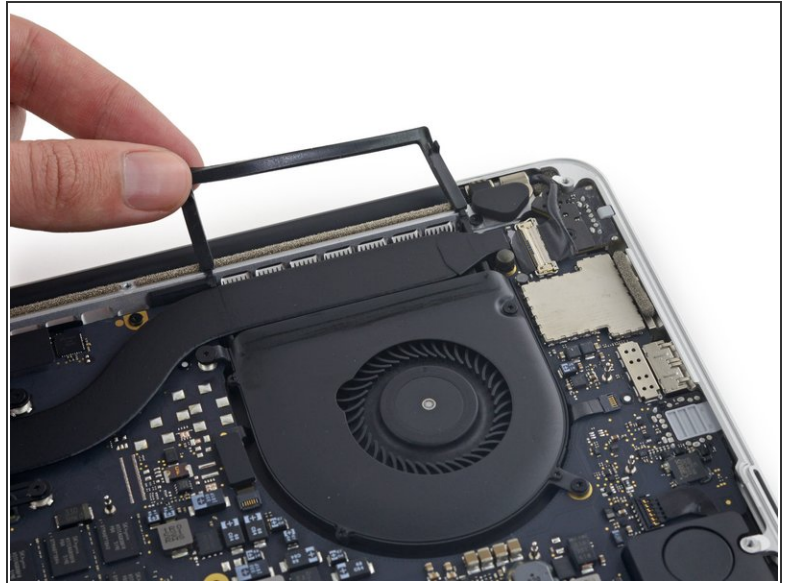
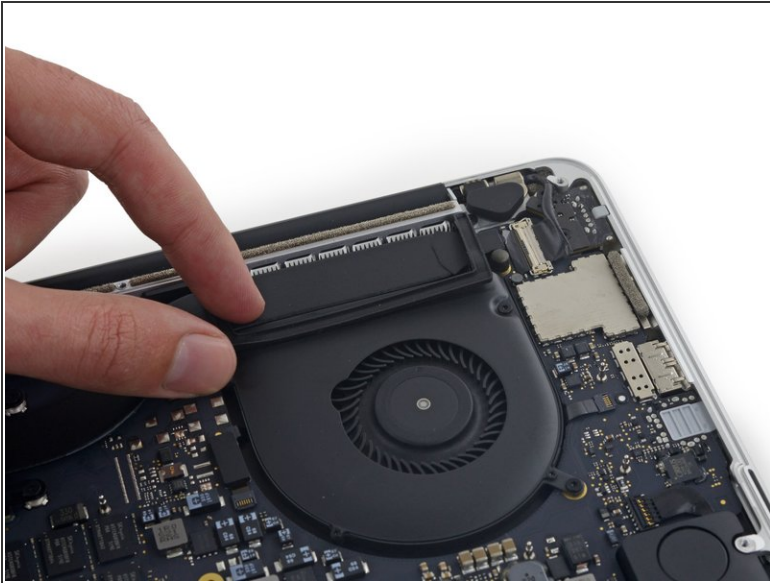


- Lift the fan and push it gently towards the back edge of the MacBook to free the fan cable from its socket.

**⚠** The fan cable may be adhered to the logic board—to avoid tearing the cable, gently peel it up while lifting the fan.

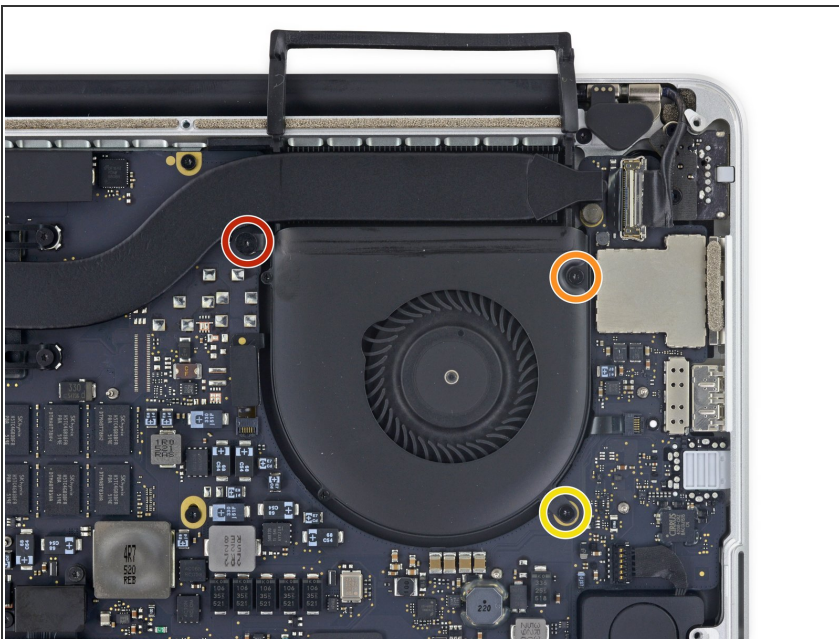
- Remove the fan.

## Step 17 — Left Fan



- Peel the left rubber cover up off the fan and fold it out of the way.

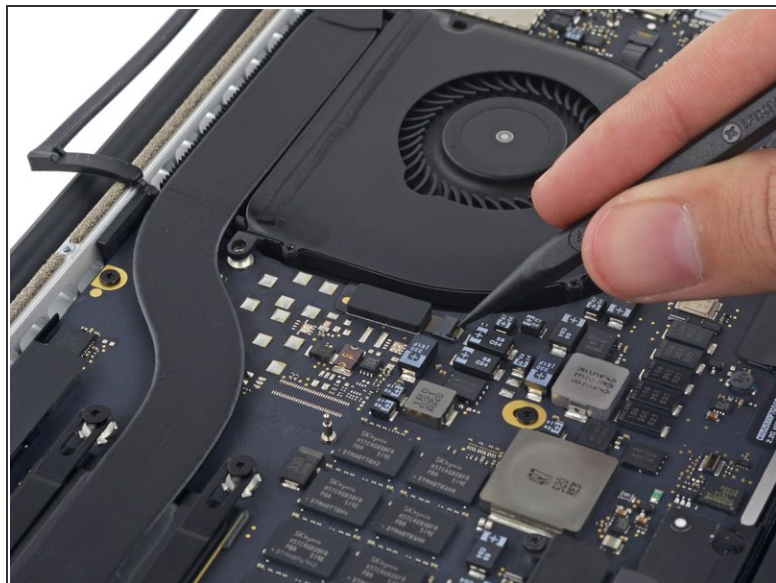
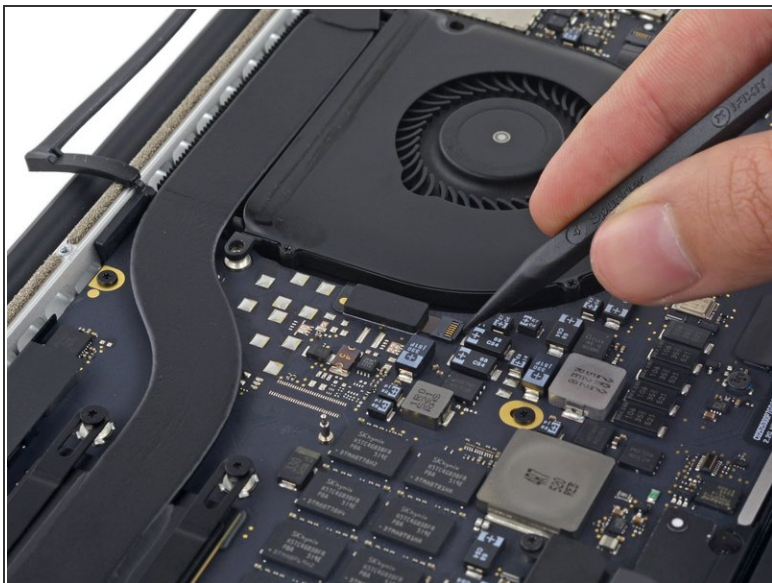
## Step 18



- Remove the following three screws securing the left fan to the logic board:
  - One 3.6 mm T5 Torx screw with a wide head
  - One 5.0 mm T5 Torx screw with a 2.0 mm long shoulder
  - One 4.4 mm T5 Torx screw



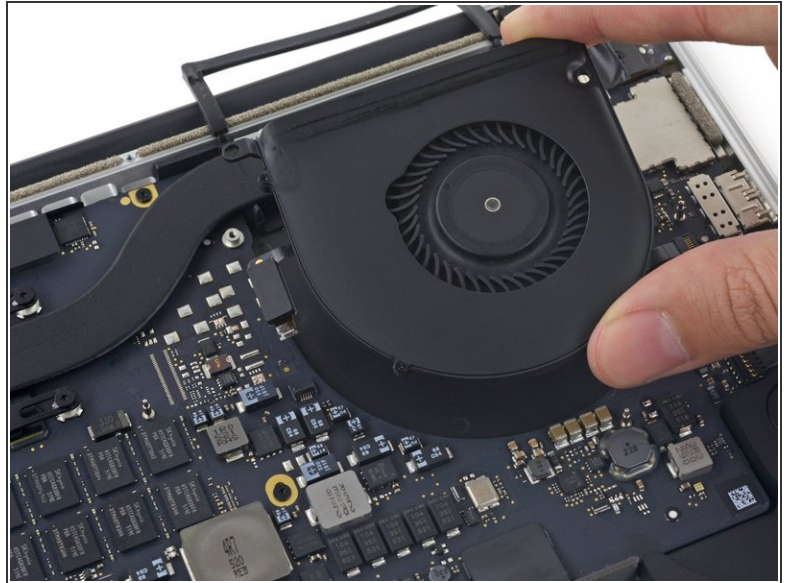
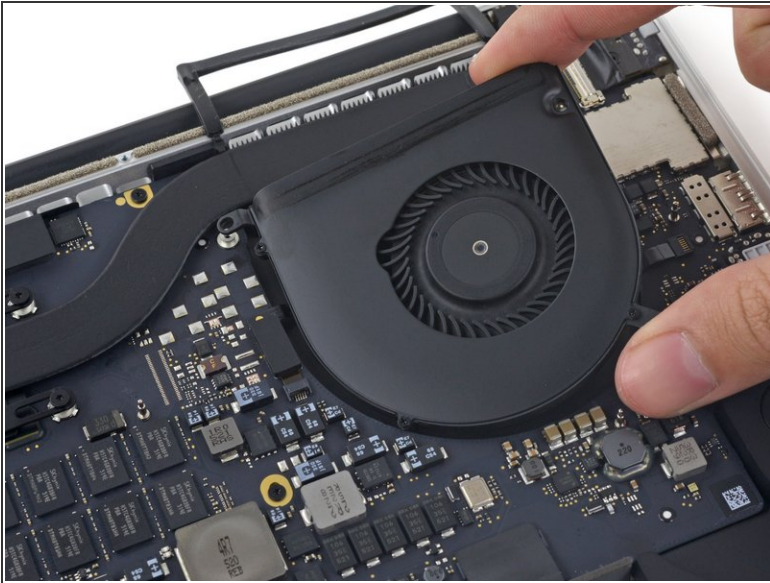
## Step 19



- Use the tip of a spudger to flip up the retaining flap on the left fan ribbon cable ZIF socket.

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

## Step 20

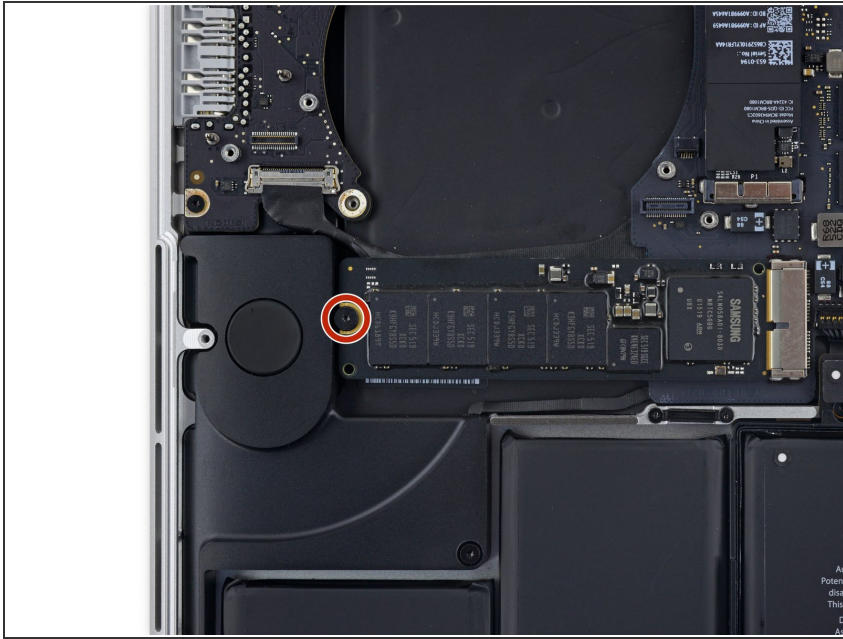


- Lift the fan and push it gently towards the back edge of the MacBook to free the fan cable from its socket.

**⚠** The fan cable may be adhered to the logic board—to avoid tearing the cable, gently peel it up while lifting the fan.

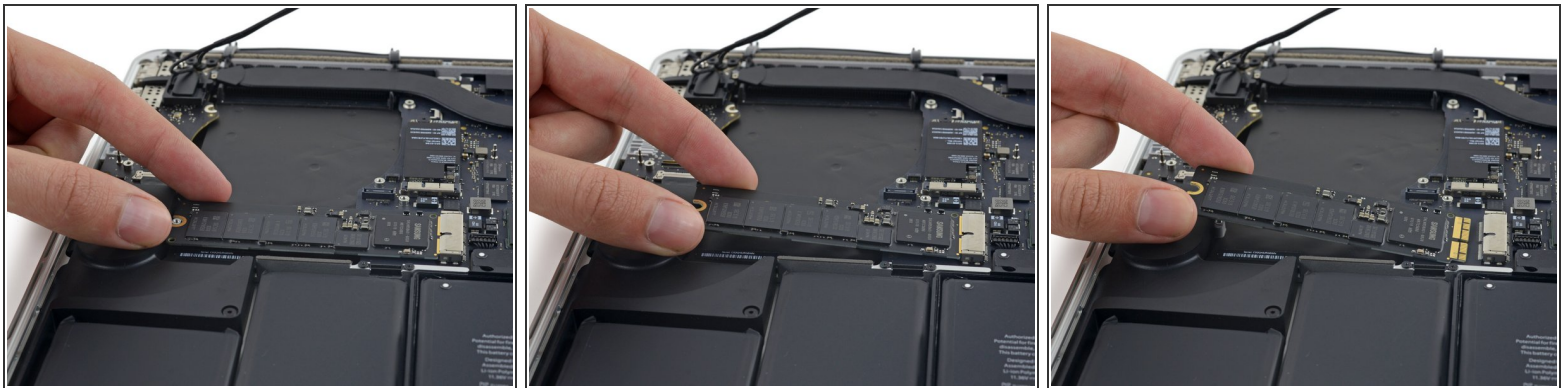
- Remove the fan.

## Step 21 — SSD



- Remove the single 2.9 mm T5 Torx screw securing the SSD to the logic board.

## Step 22



- Lift the end of the SSD up enough to pass over the speaker directly behind it.  
**⚠ Do not lift the SSD too high, or you could damage the contacts or socket.**
- Pull the SSD straight out of its socket on the logic board.

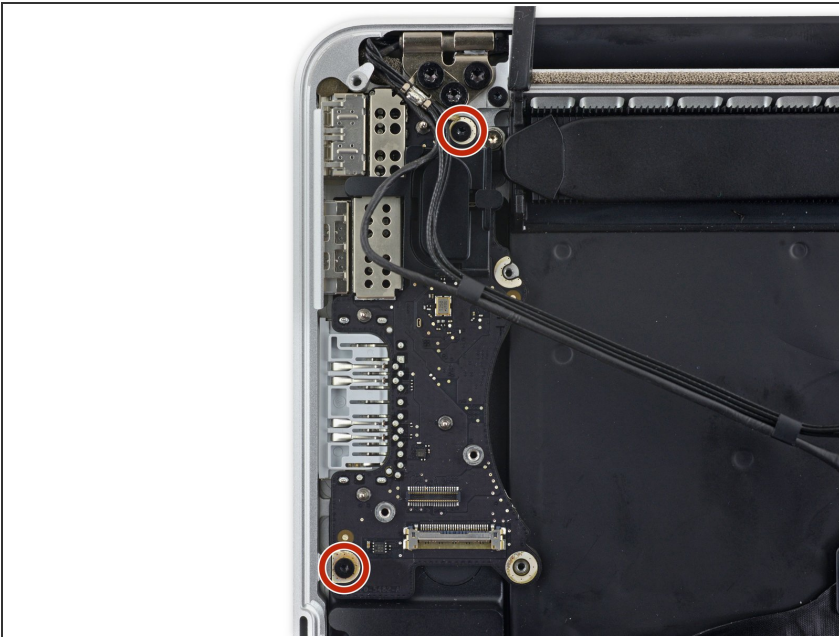


## Step 23



- Use the point of a spudger to flip up the locking mechanism on the I/O board connector.
- Flip the spudger around and use the flat end to slide the I/O cable out of the connector.
- ⓘ Push on the opened locking mechanism for an easy way to slide the I/O cable out of the connector. This could help prevent accidental damage to the cable or connector contacts.

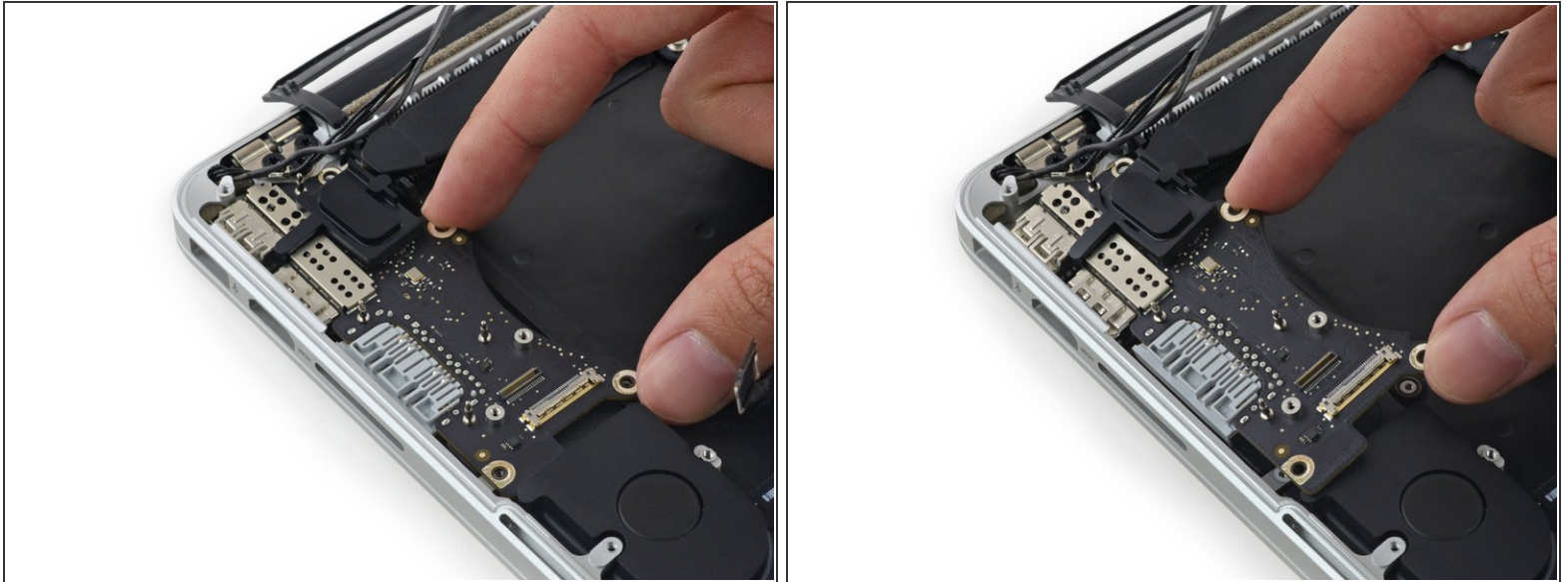
## Step 24



- Remove the two 3.1 mm T5 Torx screws from the I/O board.

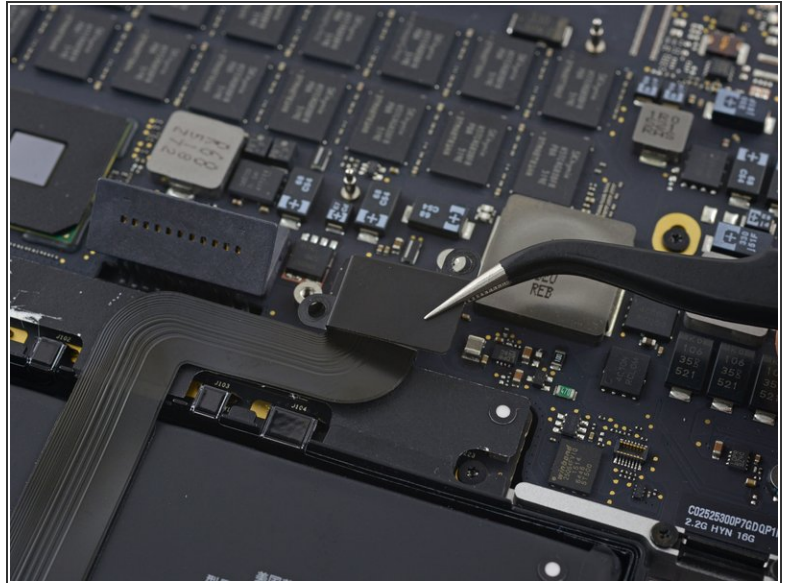
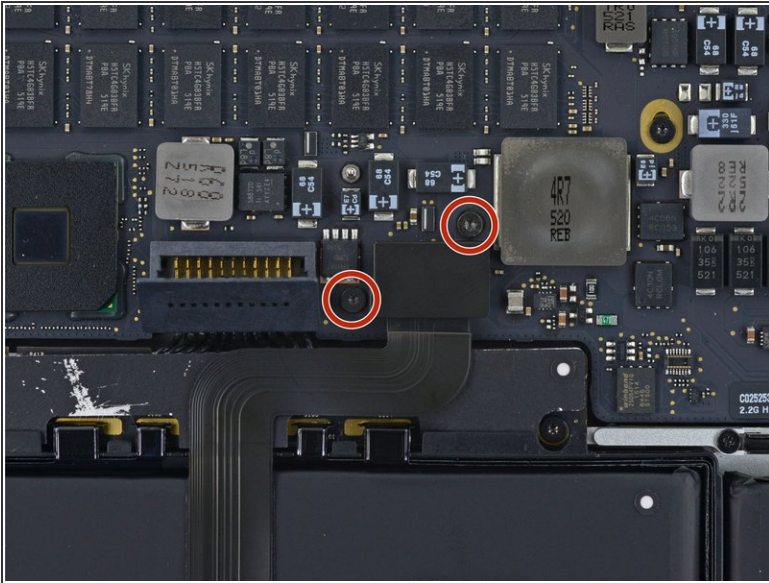


## Step 25



- Slightly lift the interior edge of the I/O board and pull it toward the center of the MacBook, away from the side of the case.
- Remove the I/O board.

## Step 26 — Logic Board Assembly



- Remove the two 2.2 mm Torx T5 screws securing the touchpad cable connector cover to the logic board.
- Remove the cover.

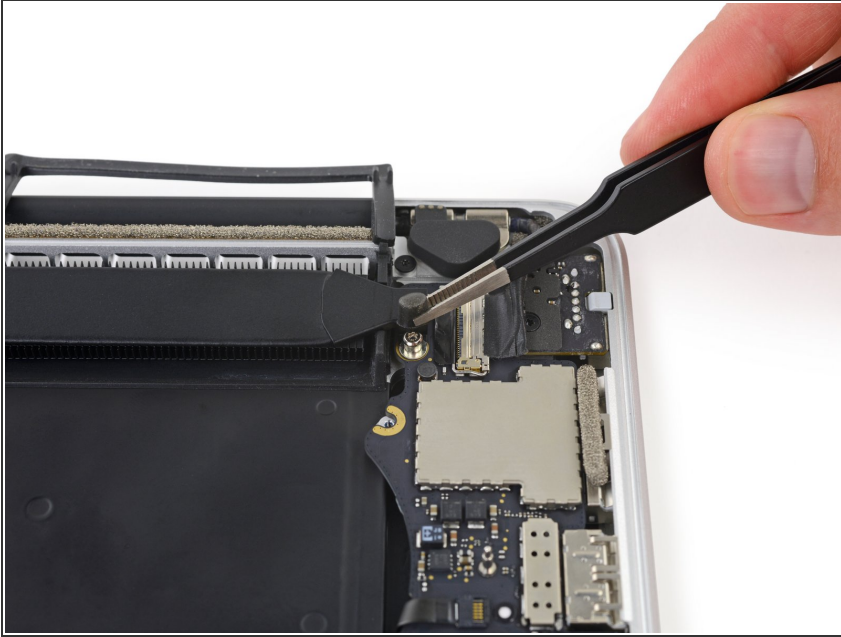
## Step 27



- Use the flat end of a spudger to disconnect the touchpad cable connector from its socket in the logic board.
- ⓘ Slightly twisting the flat end of a spudger is an easy way to pry up the cable connector from these types of sockets.

**⚠ Be careful to only pry up against the connector, and not the logic board socket.**

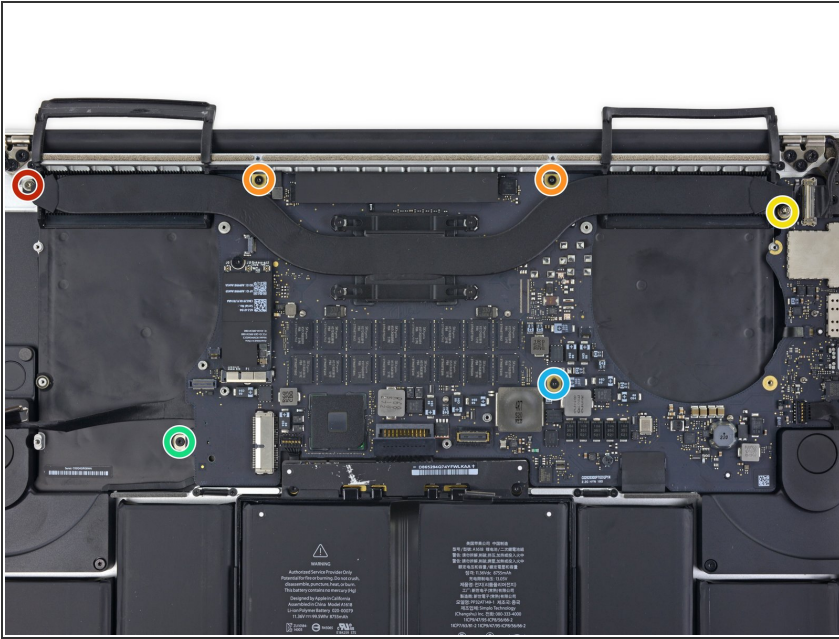
## Step 28



- Remove a small rubber cap off the screw at the end of the heat sink.



## Step 29

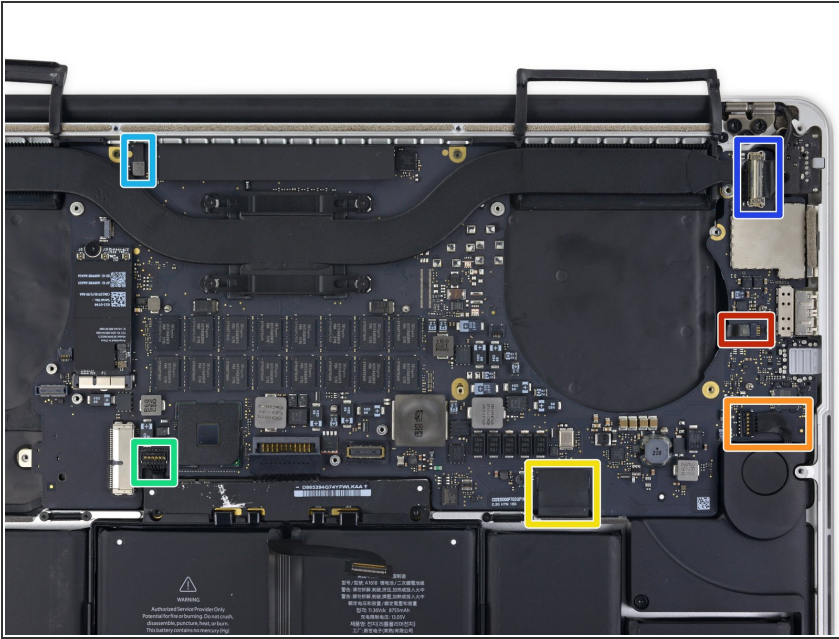


- Remove the following six screws securing the logic board assembly to the upper case.
  - One 3.8 mm T5 Torx screw
  - Two 5.7 mm T5 Torx screws
  - One 5.6 mm T5 Torx screw (this one is silver and has a taller head than the others)
  - One 2.6 mm T5 Torx screw
  - One 3.2 mm T5 Torx screw

- ☑ On reassembly, start all six screws but do not tighten any of them. Move the logic board around until all of the screws are centered in their holes and the ports are lined up with their openings in the side of the upper case. Then tighten all of the screws.



## Step 30

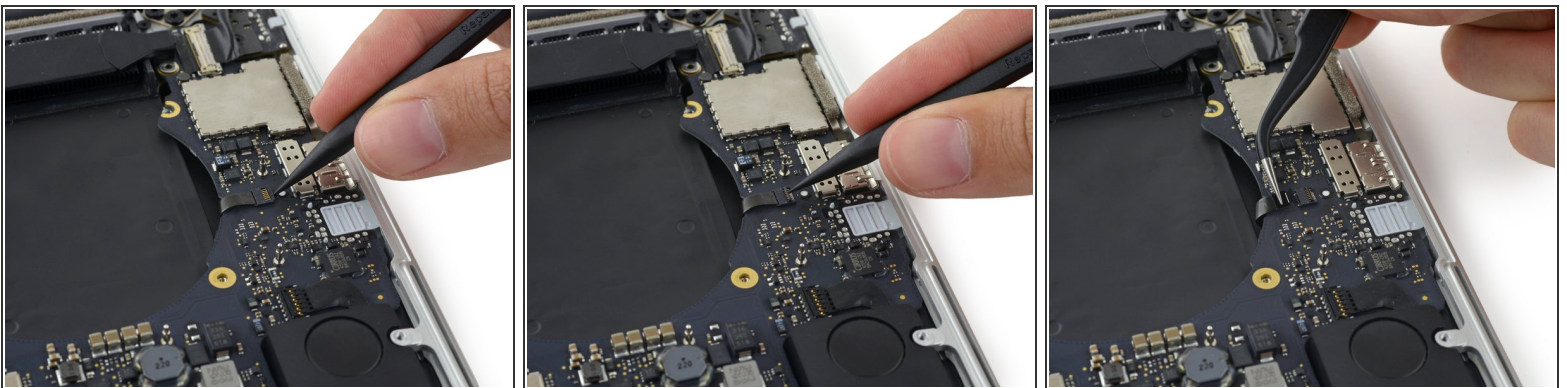


- The following steps will detail disconnecting these six connectors. **Be sure to read each step**, as these connectors come in different styles that disconnect differently.

- Microphone cable
- Left speaker cable
- Keyboard data cable
- Right speaker cable
- Keyboard backlight cable
- Display data cable

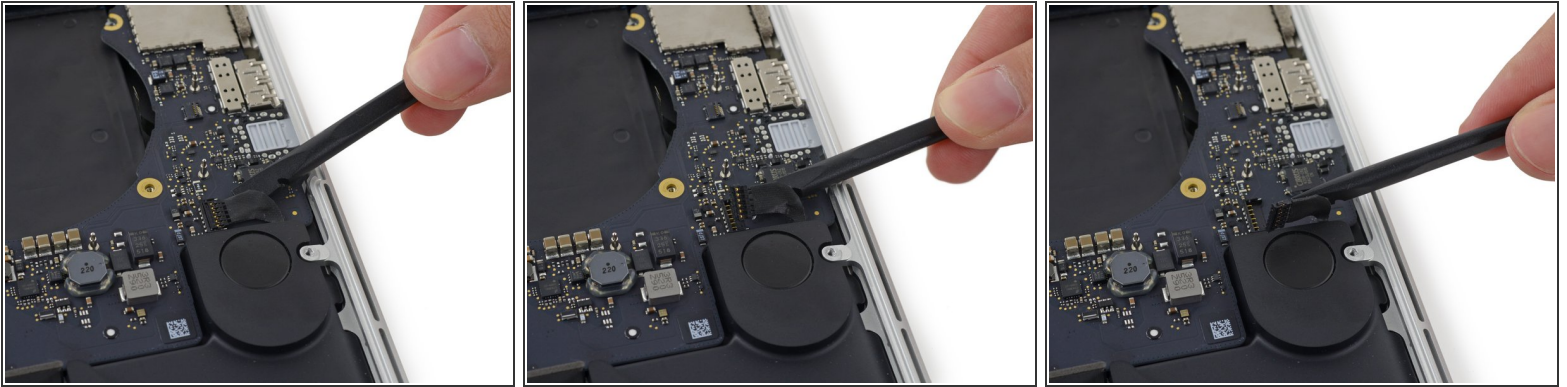
- ☑ On reassembly, check to make sure all of these connectors are connected and fully seated in their sockets.

## Step 31



- Use the tip of a spudger to flip up the retaining flap on the microphone ribbon cable ZIF socket.
- Pull the microphone ribbon cable out of its socket, parallel to the logic board.

## Step 32

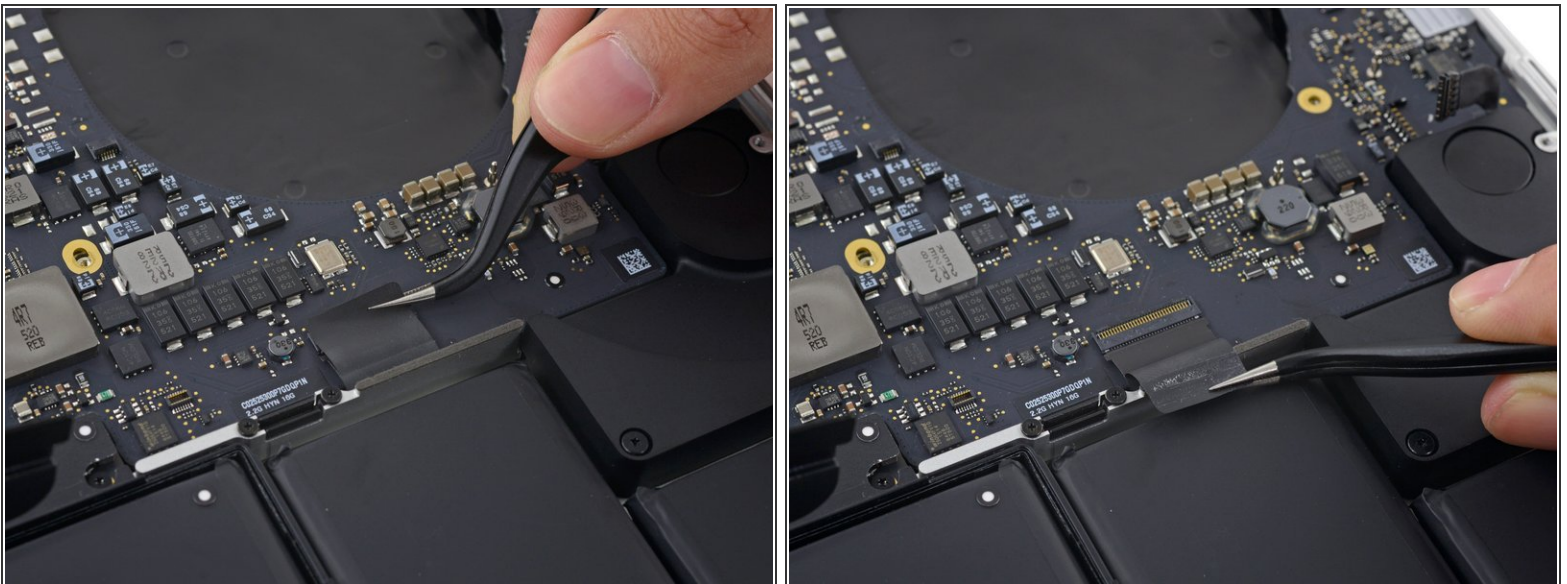


- Use the flat end of a spudger to pry the left speaker connector up and out of its socket on the logic board.

**⚠ Be sure to pry on the cable connector and not on the socket on the logic board. Prying on the socket may cause it to separate from the logic board.**

- Gently fold the cable up and out of the way of the logic board.

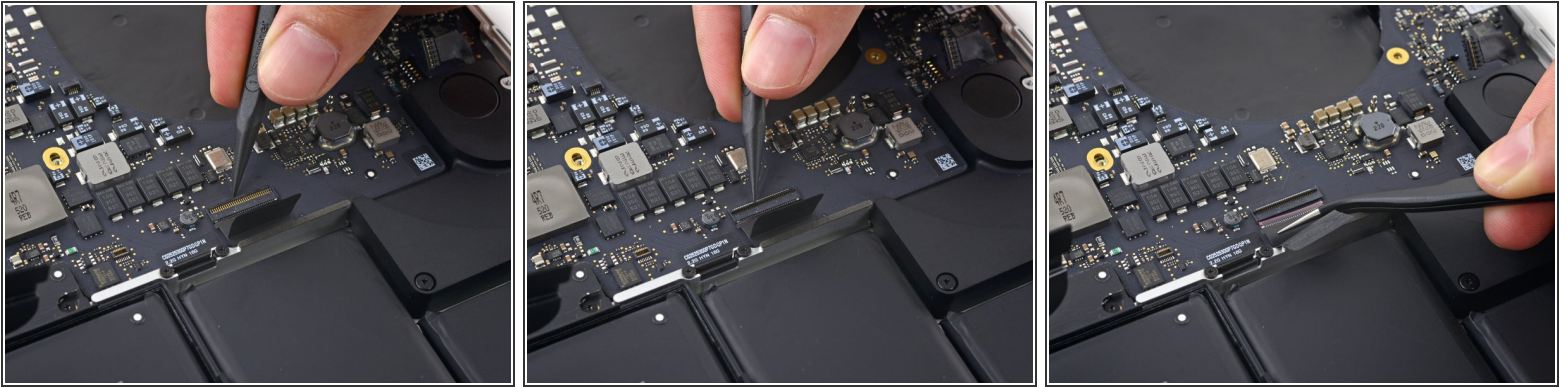
## Step 33



- Peel back the tape covering the top of the keyboard data cable connector.



## Step 34



- Use the tip of a spudger to flip up the retaining flap on the keyboard data cable ZIF socket.  
**⚠ Be sure you are prying up on the hinged retaining flap, not the socket itself.**
- Pull the keyboard data cable out of its ZIF socket. Be sure to pull parallel to the logic board, and not straight up.

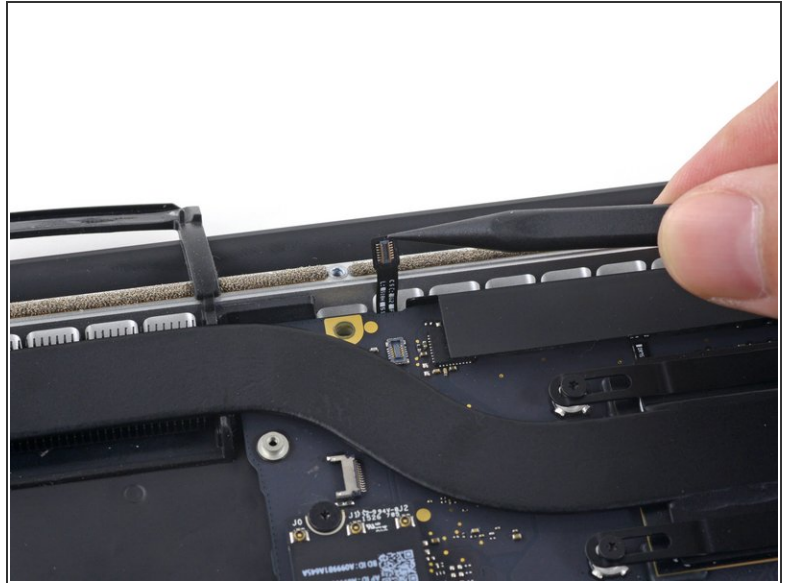
## Step 35



- Use the tip of a spudger to pry the right speaker connector up and out of its socket on the logic board.  
**⚠ Be sure to pry on the cable connector and not on the socket on the logic board. Prying on the socket may cause it to separate from the logic board.**
- Gently fold the cable up and out of the way of the logic board.

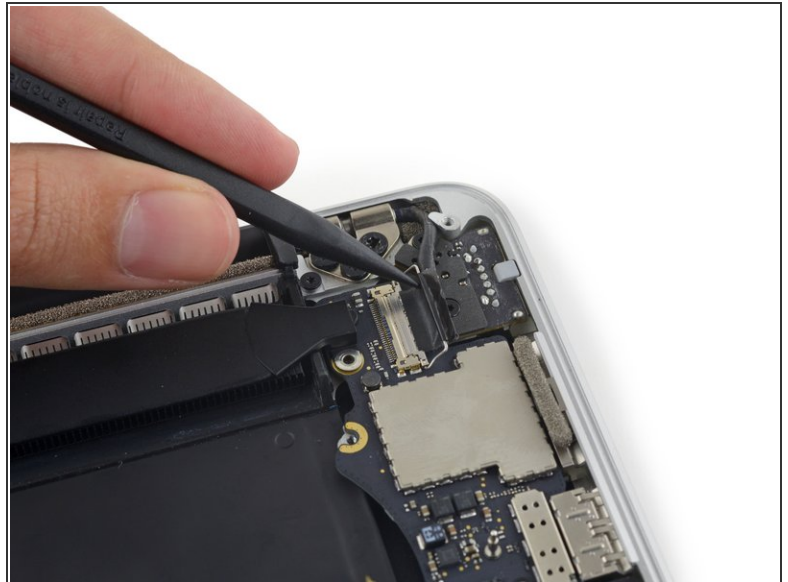


## Step 36



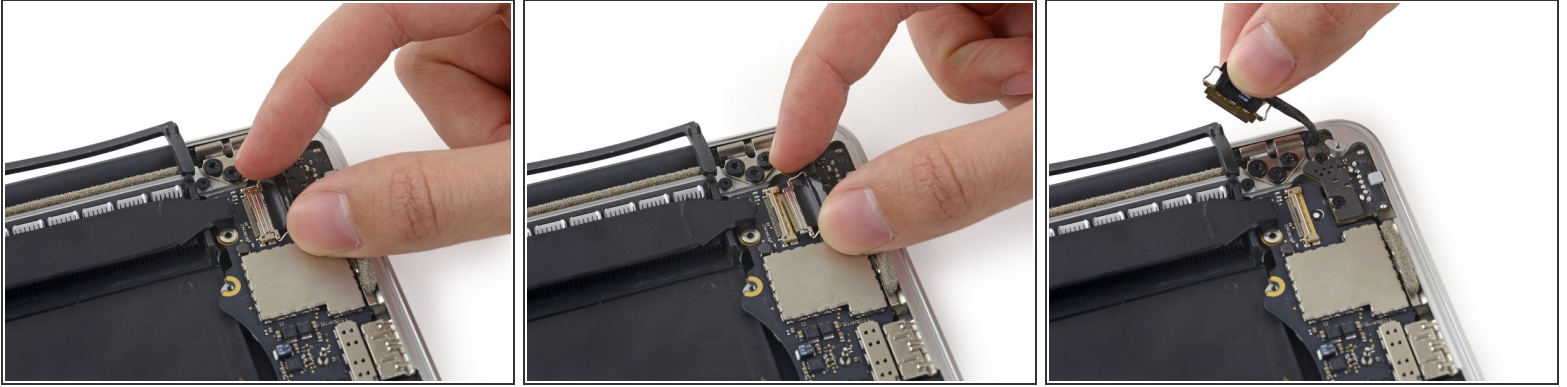
- Use the point of a spudger to pry the keyboard backlight connector up from its socket on the logic board.

## Step 37



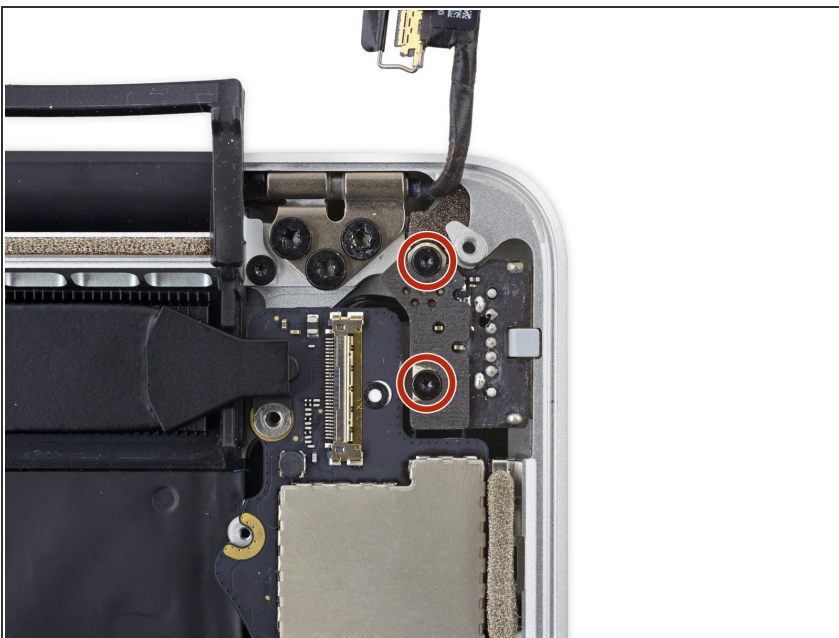
- Use the tip of a spudger to flip up the display data cable lock and rotate it toward the MagSafe 2 power port side of the computer.

## Step 38



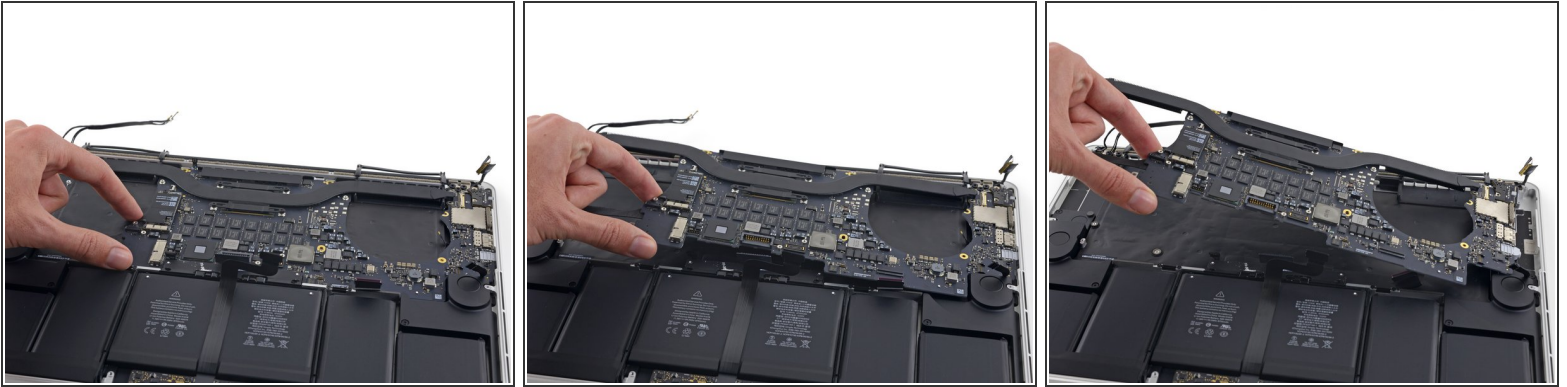
- Pull the display data cable straight out of its socket on the logic board.
  - ⚠ Do not lift up on the display data cable, as its socket is very fragile. Pull the cable parallel to the face of the logic board.
  - ⚠ Do not touch the contacts on the data connector or its socket with your fingers or any tools, as you may deposit oils or damage the pins.
- Gently bend the display data cable toward the display hinge, to expose the screws on the MagSafe 2 board.

## Step 39



- Remove the two 4.0 mm T5 Torx screws from the MagSafe 2 board.

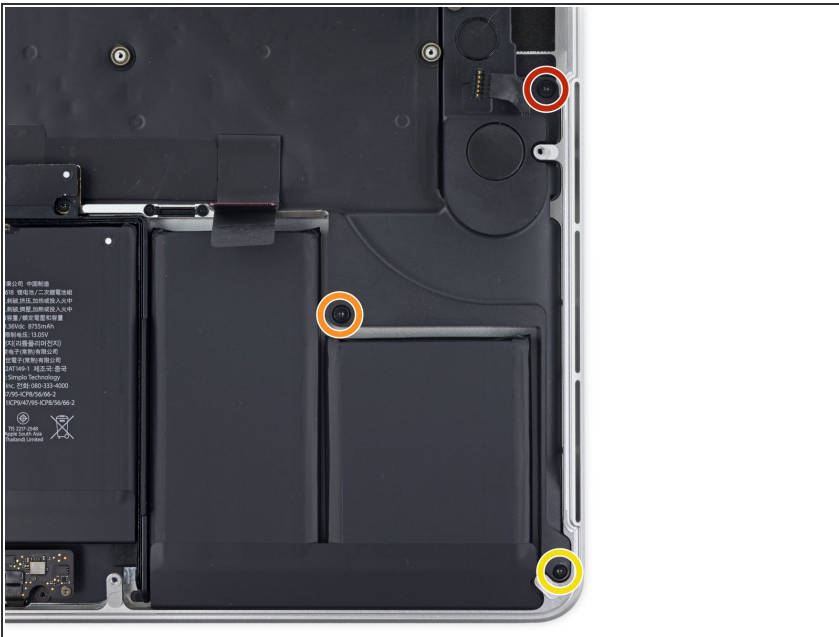
## Step 40



- Lift and pull the entire logic board assembly away from the wall of the upper case.

☑ When reassembling, be sure to line up the ports with their cutouts in the upper case.

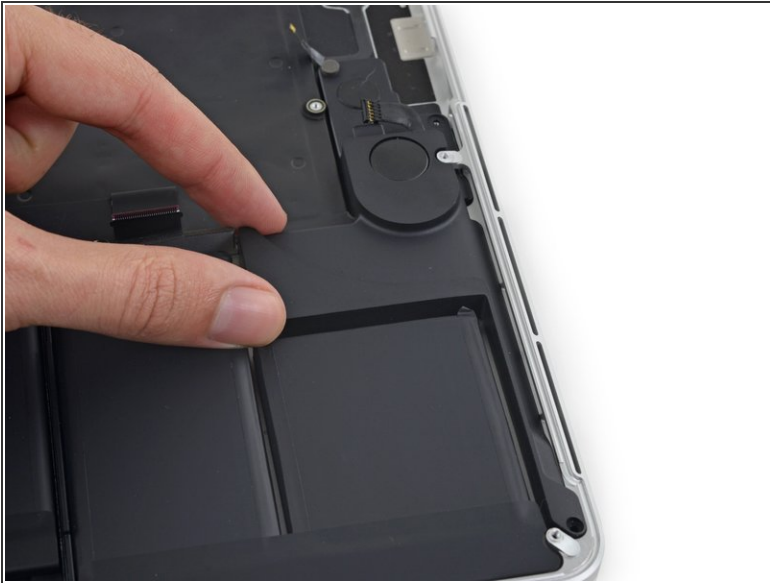
## Step 41 — Left Speaker



- Remove the following screws securing the left speaker to the upper case:
  - 2.7 mm T5 Torx screw
  - 6.9 mm T5 Torx screw (with 4.5 mm shoulder)
  - 5.6 mm T5 Torx screw



## Step 42



- Remove the left speaker by pulling it slightly away from the side of the upper case, and out from under the aluminum tab blocking it in.

## Step 43 — Right Speaker



- Remove the following screws securing the right speaker to the upper case:
  - 2.7 mm T5 Torx screw
  - 6.9 mm T5 Torx screw (with 4.5 mm shoulder)
  - 5.6 mm T5 Torx screw

## Step 44



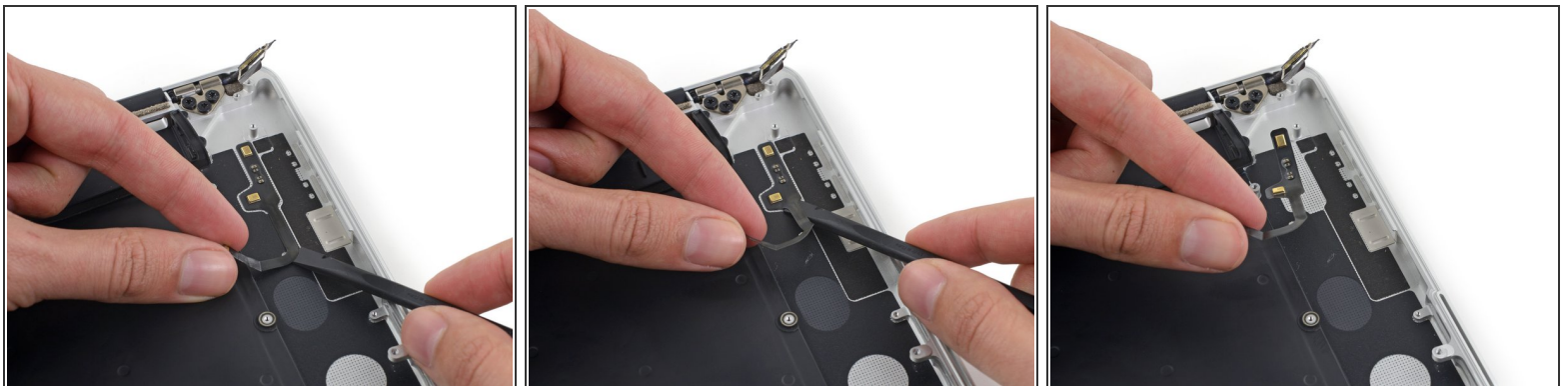
- i The right speaker cable is lightly adhered to the upper case.
- Peel the right speaker cable up to free it from the upper case.
- ✦ On reassembly, tuck the cable up against the aluminum frame above the battery.

## Step 45



- Remove the right speaker by pulling it slightly away from the side of the upper case, and out from under the aluminum tab blocking it in.

## Step 46 — Microphones



- While gently pulling up on the microphone cable, push the flat end of a spudger underneath the cable, to cut the adhesive securing it to the upper case.
- Remove the microphone cable.



## Step 47 — Upper Case Assembly



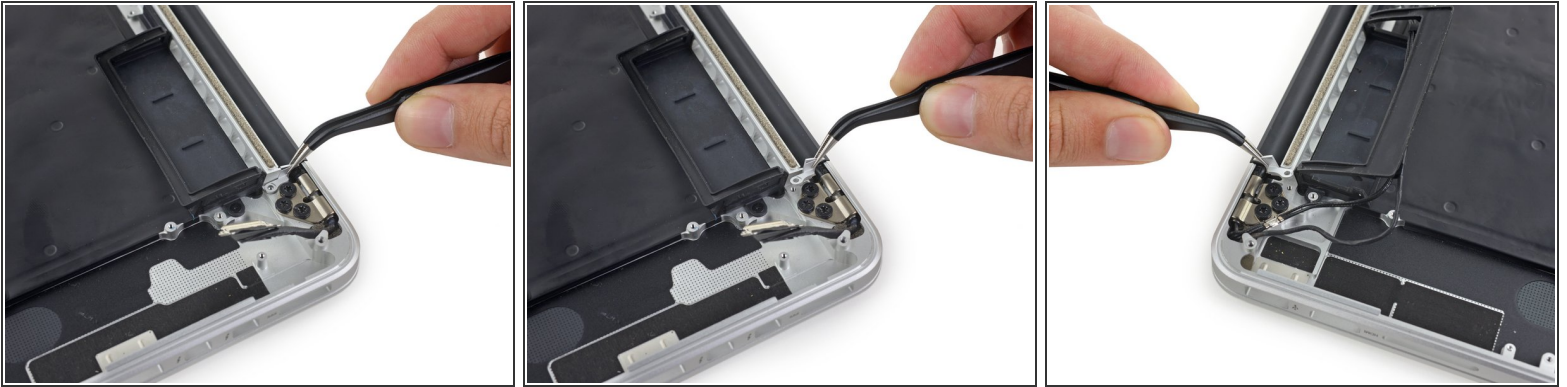
- Remove the two rubber hinge covers.

## Step 48



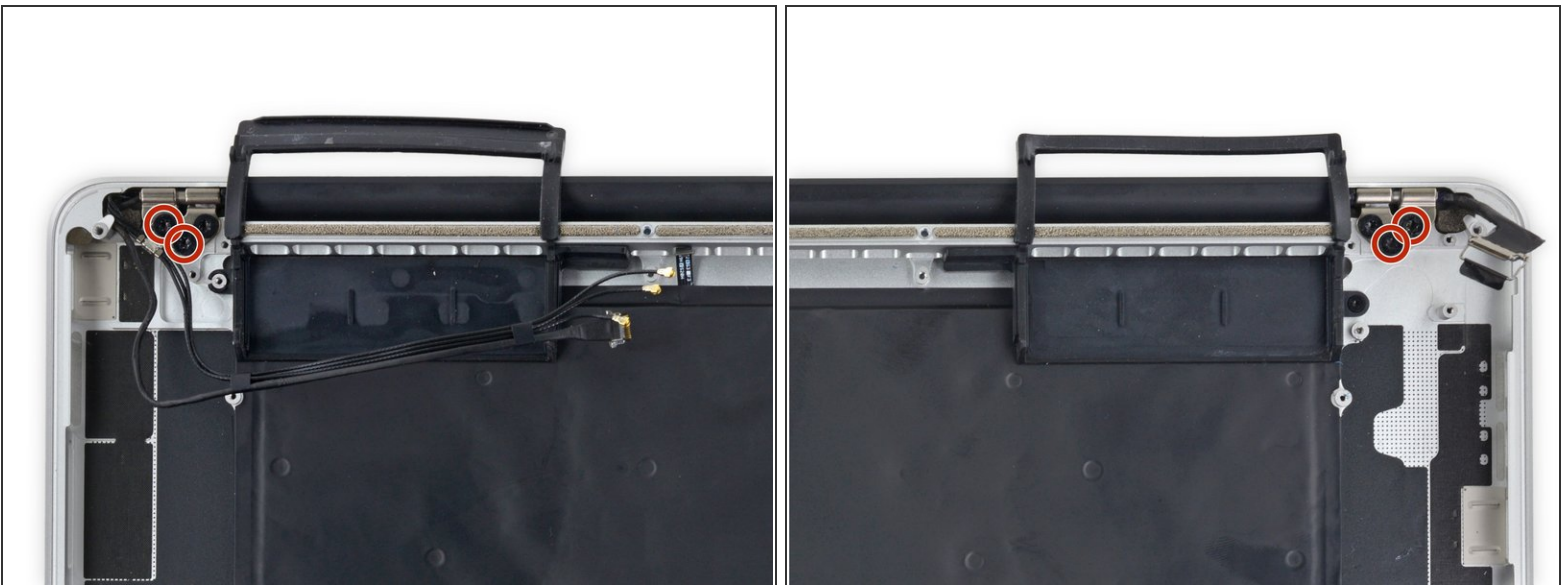
- Remove the two 3.2 mm T5 Torx screws securing the aluminum hinge covers to the upper case.

## Step 49



- Remove the two aluminum hinge covers from the MacBook Pro.

## Step 50



- Remove four out of the six 5.3 mm T8 Torx screws securing the display to the upper case.
  - Leave the innermost screws (one from each hinge) in place.
- ✦ When reassembling, be sure the two screws going back into the hinge on the left go back through the webcam/AirPort cable bracket.

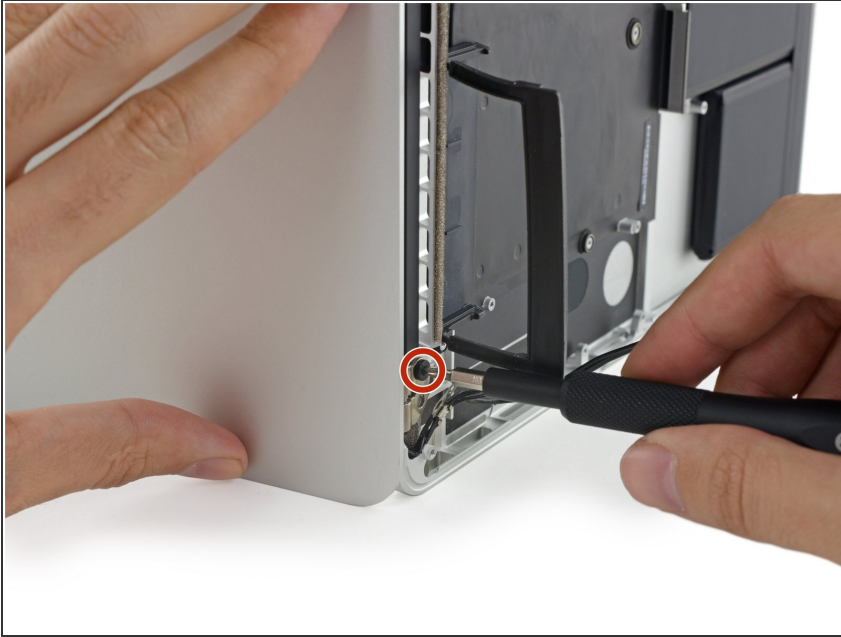
## Step 51



- Open the MacBook Pro approximately 110 degrees, and place it sideways on the table, as shown.



## Step 52



- While holding the display and upper case together with your left hand, remove the remaining T8 Torx screw from the lower (closer to the table) display bracket.

## Step 53



**⚠** Be sure to hold the display and upper case together with your left hand. Failure to do so may cause the freed display/upper case to fall, potentially damaging each component.

- While holding the display and upper case together with your left hand, remove the remaining T8 Torx screw from the upper display bracket.

## Step 54



- Grip both halves of the device, one in each hand.
- Gently push forward on the bottom half of the device to detach it from the display assembly.
- Carefully set each component aside, making sure to set down the bottom half keyboard-side down to avoid damaging internal components.

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