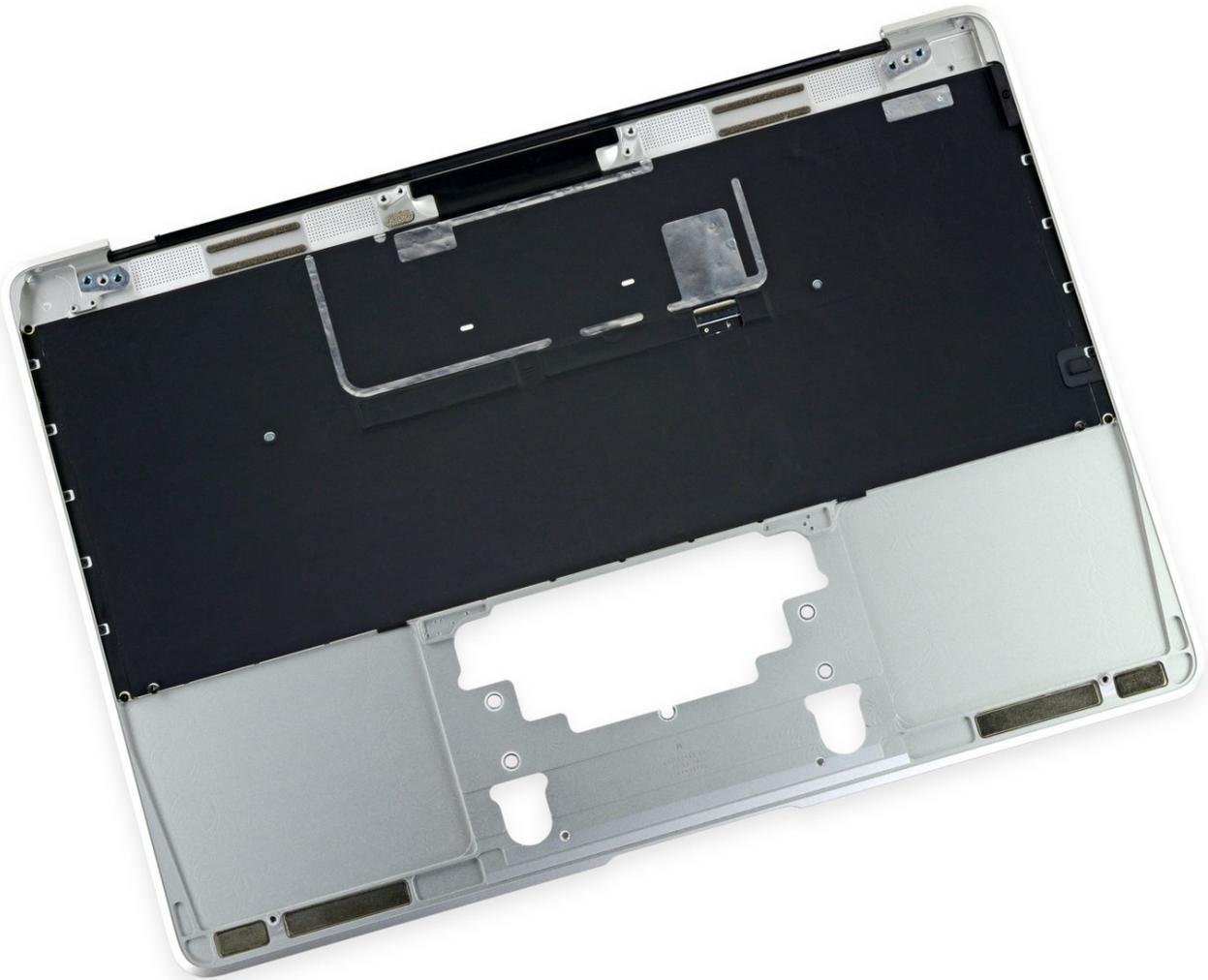




Retina MacBook 2015 Upper Case Assembly Replacement

The upper case assembly includes the keyboard....

Written By: Geoff Wacker



INTRODUCTION

The upper case assembly includes the keyboard. Use this guide to replace the entire case/keyboard assembly as a single unit.

To avoid logic board damage, when your MacBook repair is complete *but before powering it on*, [connect it to low-voltage power](#) using a 5-Watt iPhone charger and a USB-C to USB-A cable. These accessories are not included with your MacBook, so make sure you have them ready before you begin.

TOOLS:

Phillips #00 Screwdriver (1)
iOpener (1)
Battery Blocker (1)
P5 Pentalobe Screwdriver Retina MacBook Pro and Air (1)
Spudger (1)
T5 Torx Screwdriver (1)
Tweezers (1)
Probe and Pick Set (1)
T3 Torx Screwdriver (1)
Tri-point Y00 Screwdriver (1)

PARTS:

MacBook 12" Retina (Early 2015) Upper Case with Keyboard (1)
MacBook 12" Retina (Early 2015-2017) Keyboard Flex Cable (1)
MacBook 12" Retina (Early 2015-2017) Lower Case Screw Set (1)
USB Power Adapter for iPhone and iPod (1)
USB-C to USB-A 2.0 Cable (1)

Step 1 — Unfasten the lower case



⚠ Before proceeding, unplug and power down your MacBook. Close the display and flip it upside-down.

- Remove the following eight screws securing the lower case:
 - Two 1.8 mm P5 Pentalobe screws
 - Four 2.9 mm P5 Pentalobe screws
 - Two 6.1 mm P5 Pentalobe screws
- ☑ Note the orientation of the screws as you remove them—they need to be reinstalled at a slight angle.
- ☑ Throughout this repair, [keep track of each screw](#) and make sure it goes back exactly where it came from to avoid damaging your device.

Step 2



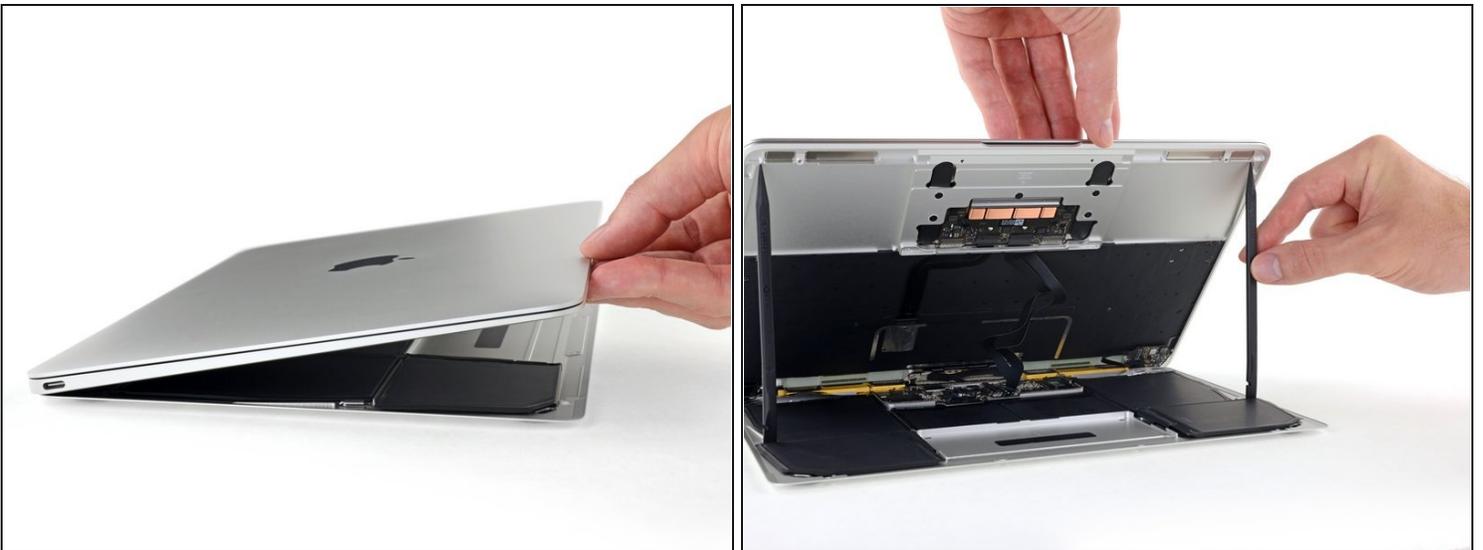
- Wedge your fingers between the upper case and the lower case, starting from the rear of the MacBook between the hinges.
- ⚠ Lift the lower case only slightly to avoid damaging the cables that connect the lower case to the upper case.
- Keeping a firm grip, lift steadily until the lower case separates slightly from the upper case.
- ⓘ You may experience a lot of resistance when lifting the lower case. If necessary, slide an opening pick or other ESD-safe pry tool down the side edges of the lower case to pop the two hidden retaining clips free.
- ☑ During reassembly, to re-engage the clips, press firmly near both side edges of the lower case (near where the pick is inserted in the third image) until you hear the clips snap into place.

Step 3



- While holding the lower case in place, carefully flip the MacBook over so the Apple logo faces up.

Step 4



- Lift the upper case and display together from the front edge and raise it to about a 45° angle.
- ⓘ It may be helpful to prop the MacBook open in this position for the next step.

Step 5



- Use the flat end of a spudger to press and hold the small gold 'battery disconnect' button.
- If the power LED is lit up, continue holding the button until the LED goes dark, and then release. This may take up to 10 seconds.
- If the LED does not light, release the button after 5-10 seconds. Press and hold it again for 5-10 seconds, and release. Finally, press and hold it a third time for 5-10 seconds, and release.

ⓘ This step ensures the MacBook is fully powered down and safe to work on.

Step 6



- Close the MacBook and carefully flip it upside-down.

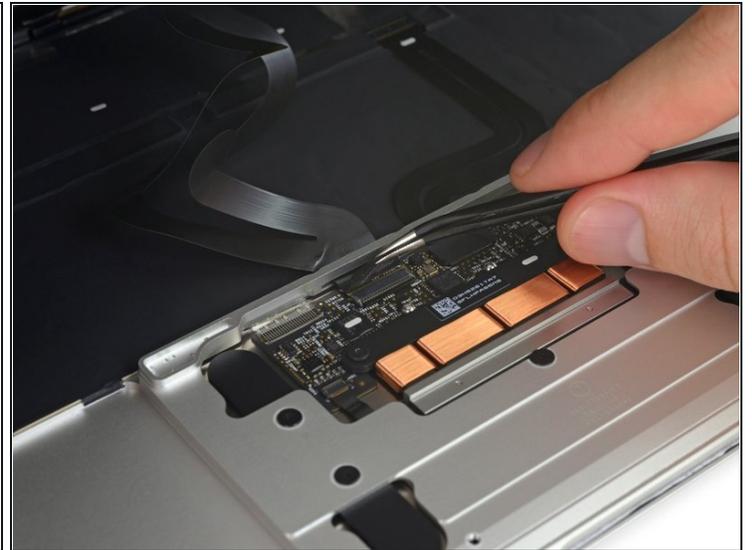
Step 7



- Lifting from the front edge, open the lower case to an angle of about 45°.

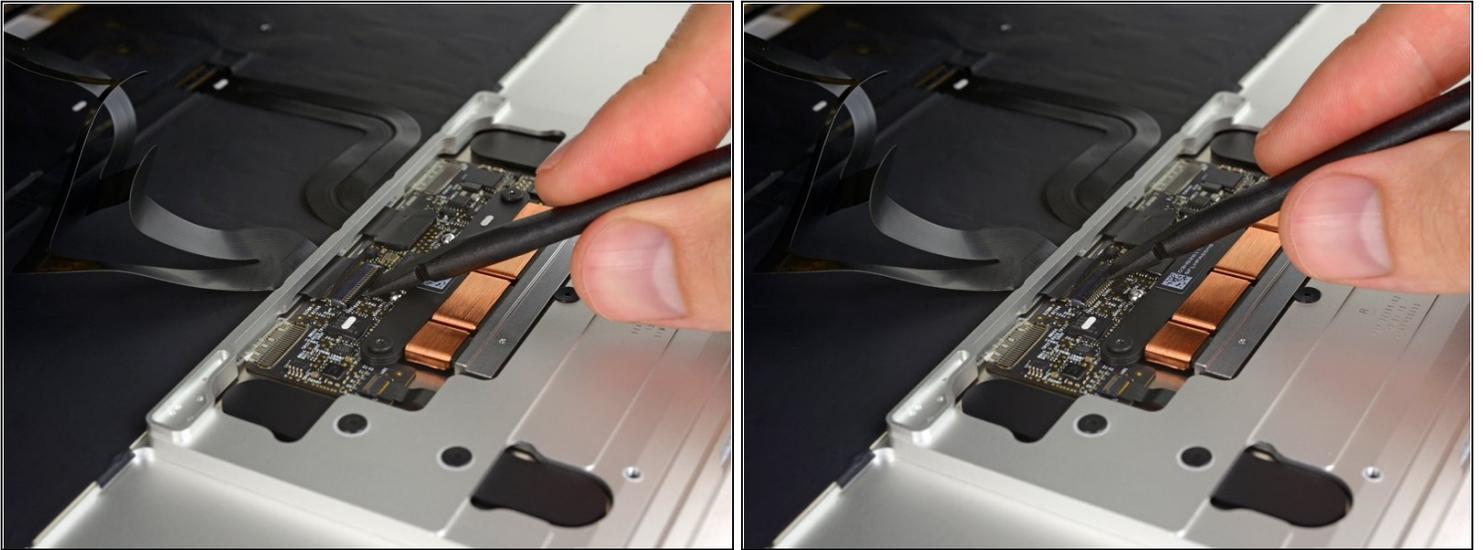
⚠ Take care not to damage the ribbon cables that still attach the lower case to the MacBook.

Step 8



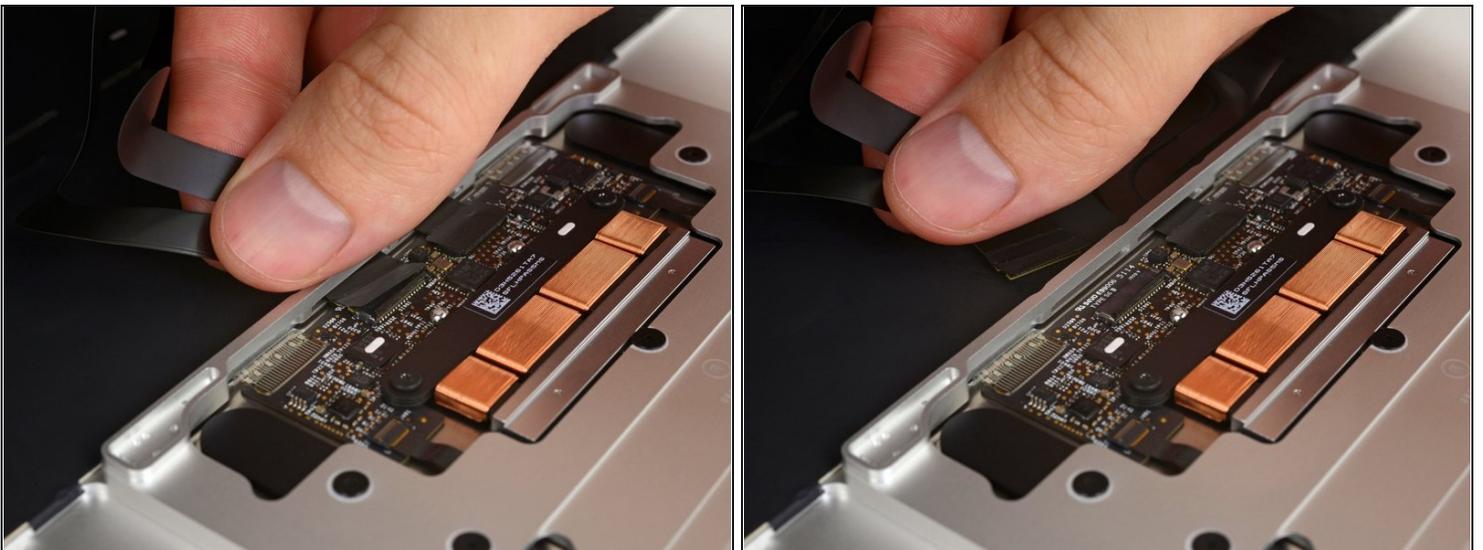
- Use [tweezers](#) to peel back the tape covering the trackpad cable ZIF connector.

Step 9



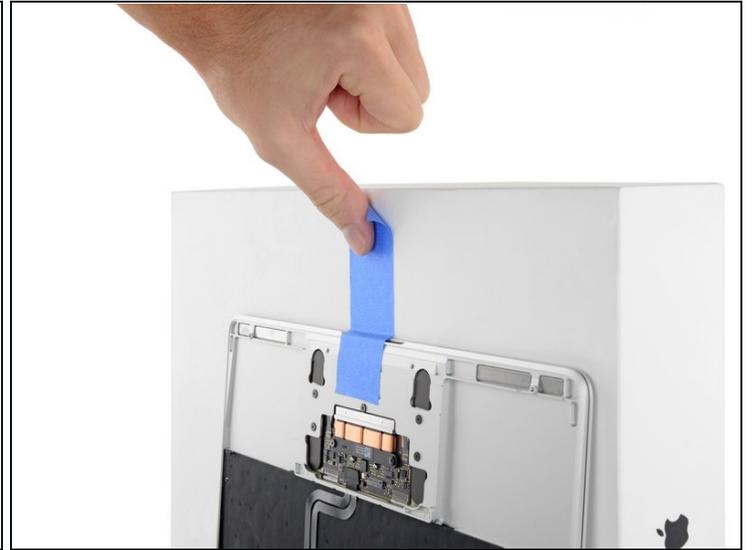
- Use a spudger to carefully flip up the retaining flap on the trackpad cable ZIF connector.

Step 10



- Disconnect the trackpad ribbon cable from the trackpad by pulling it gently through its slot in the frame.

Step 11



- Carefully turn the MacBook over, so that the lower case lays flat.
- Raise the upper case/display assembly to about a 90° angle, and prop it up against something sturdy so you don't have to hold it.
- Add a piece of tape near the track pad to secure the upper case and prevent accidental movement.

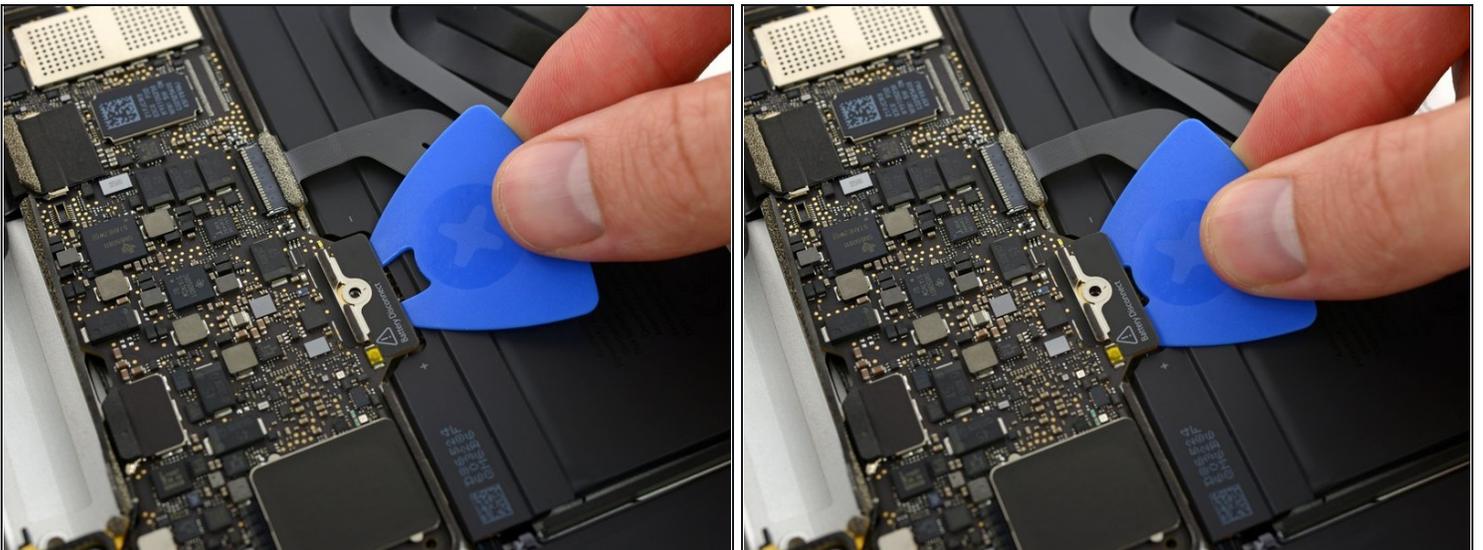
⚠ It's possible to open the MacBook all the way and lay both sides down flat, but this may damage the flex cables and is not recommended.

Step 12



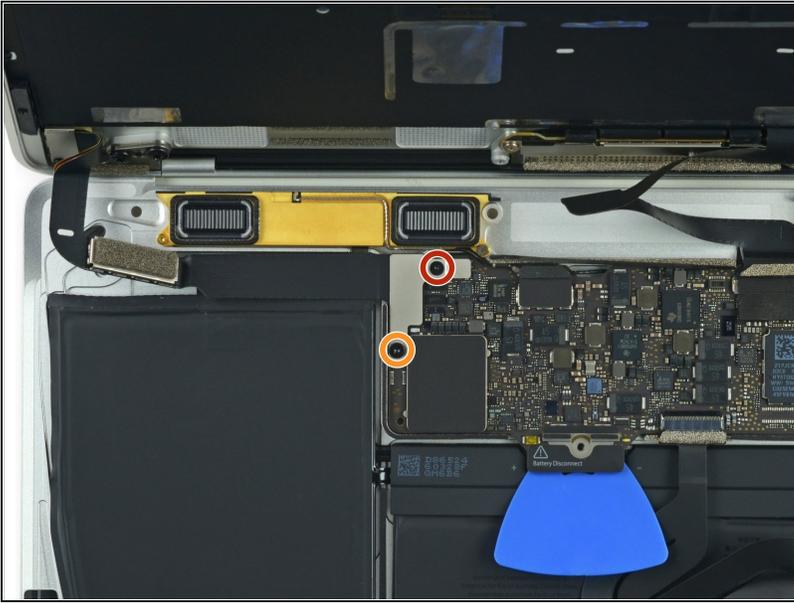
- Remove the single 2.9 mm T5 Torx screw securing the battery connector to the logic board.
 - ☑ 2015 models have a silver grounding clip with two foam pads directly under this screw, which may come loose. Be sure to reinstall it during reassembly.

Step 13



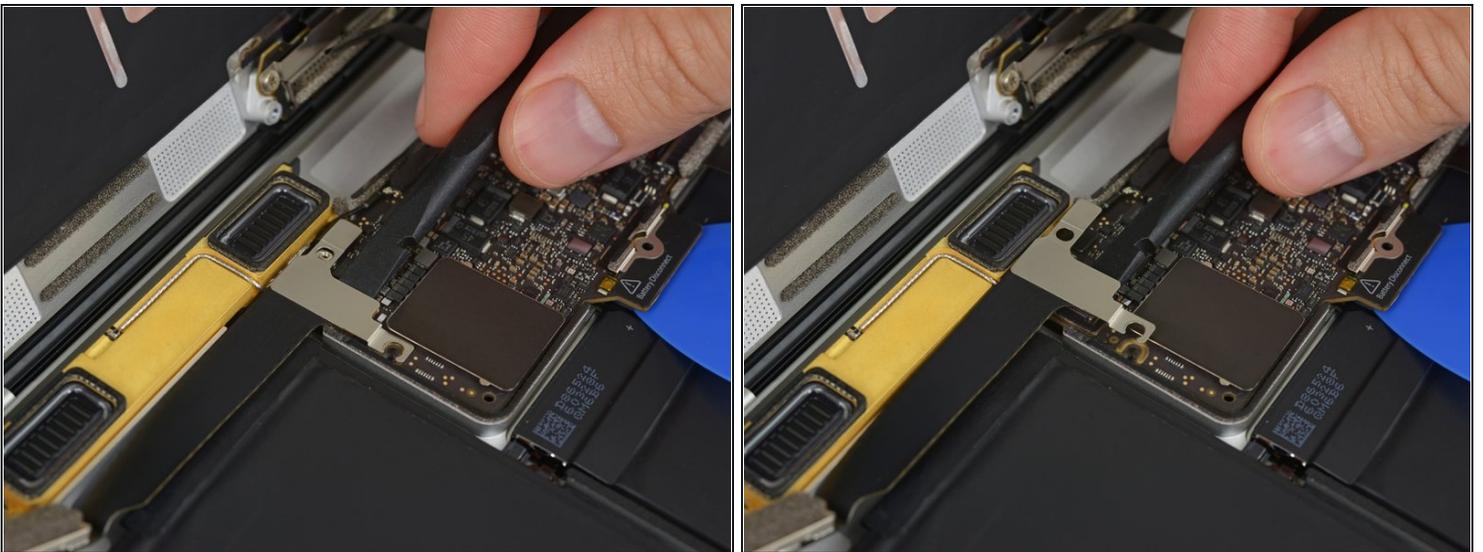
- As an added precaution, you may physically disconnect the battery by inserting a [battery isolation pick](#) between the logic board and the battery connector.

Step 14



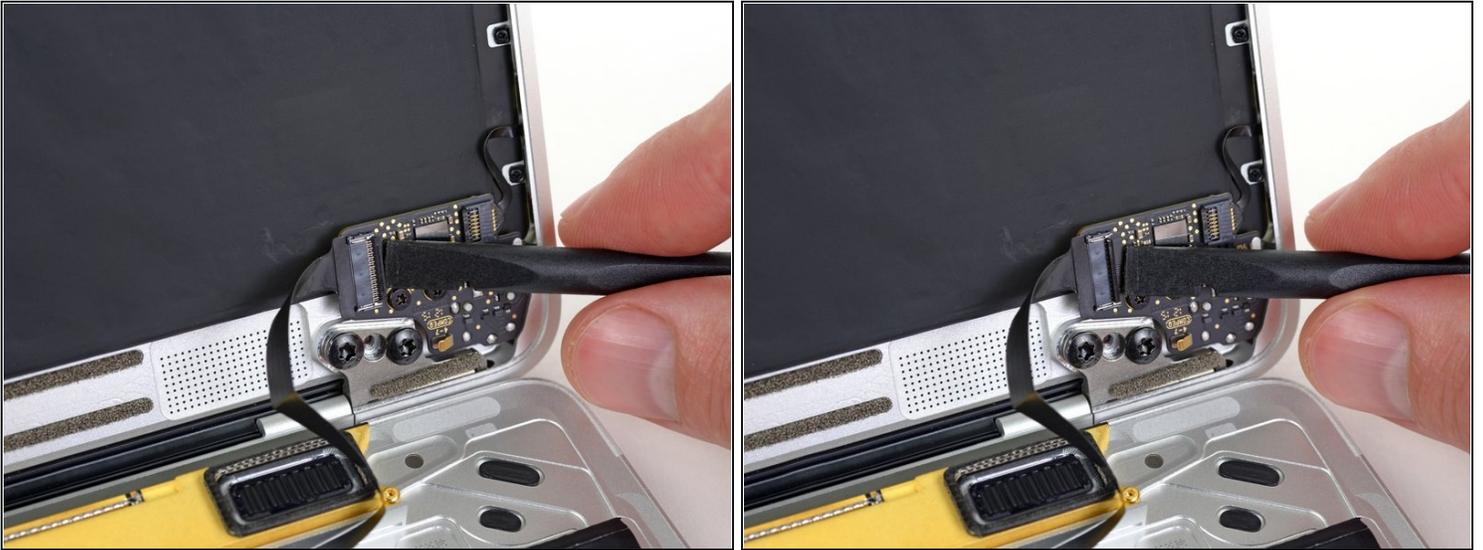
- Remove the two screws securing the USB-C port cable bracket:
 - 1.1 mm Tri-point Y00 screw
 - ⓘ Some variations of this model may use a Phillips #00 screw.
 - 3.5 mm T5 Torx screw

Step 15



- Use the flat end of a spudger to disconnect the USB-C port cable bracket by prying it straight up from the logic board.
- ☑ To reconnect this cable, first line up the metal bracket over the screw holes, then press down on the middle of the bracket. Make sure it's aligned correctly, or you may damage the connector.

Step 16



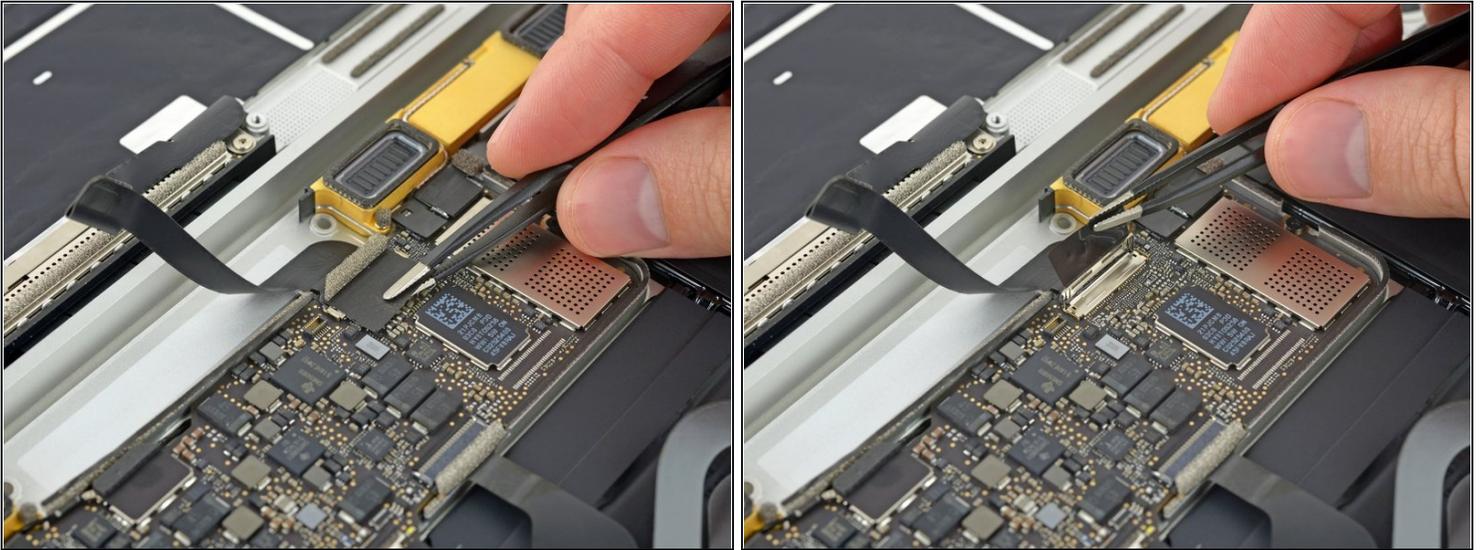
- Use a spudger to flip open the retaining flap on the audio jack board cable ZIF connector.

Step 17



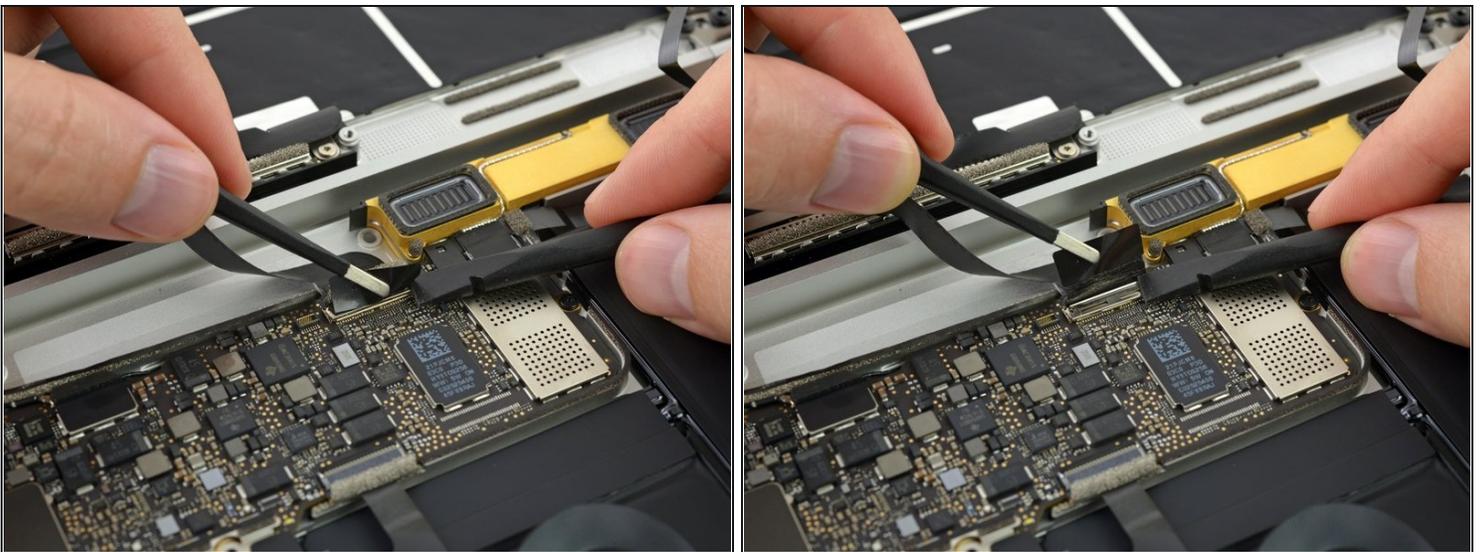
- Disconnect the audio jack board ribbon cable by pulling it straight back out of the ZIF connector.
- ☑ During reassembly, orient the ribbon cable so that the side with the white stripe faces you, as shown.

Step 18 — Retina MacBook 2015 Lower Case Assembly Removal



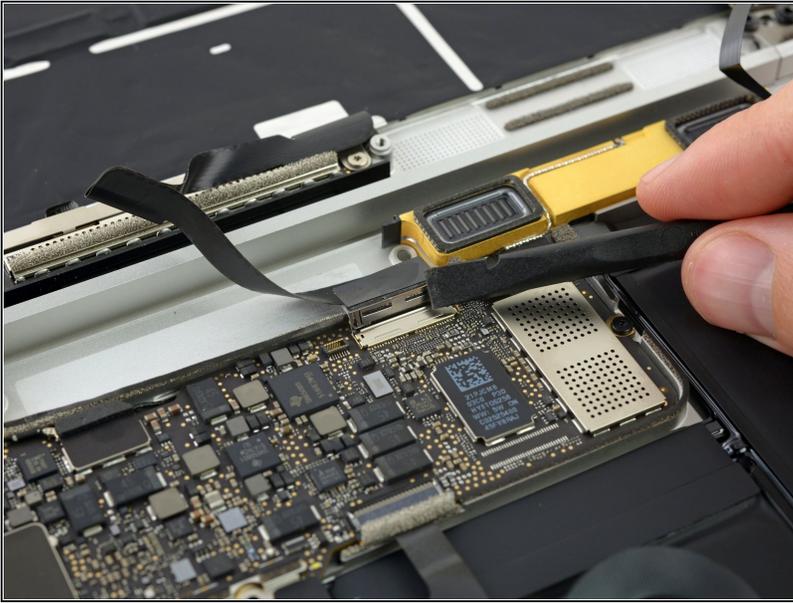
- Use [tweezers](#) to peel back the tape covering the display cable connector.

Step 19



- ⓘ It's possible the metal retaining flap on the display cable connector may flip open, remaining stuck to the tape.
 - If so, use the flat end of a spudger to hold down the retaining flap while peeling the tape away with the tweezers.

Step 20



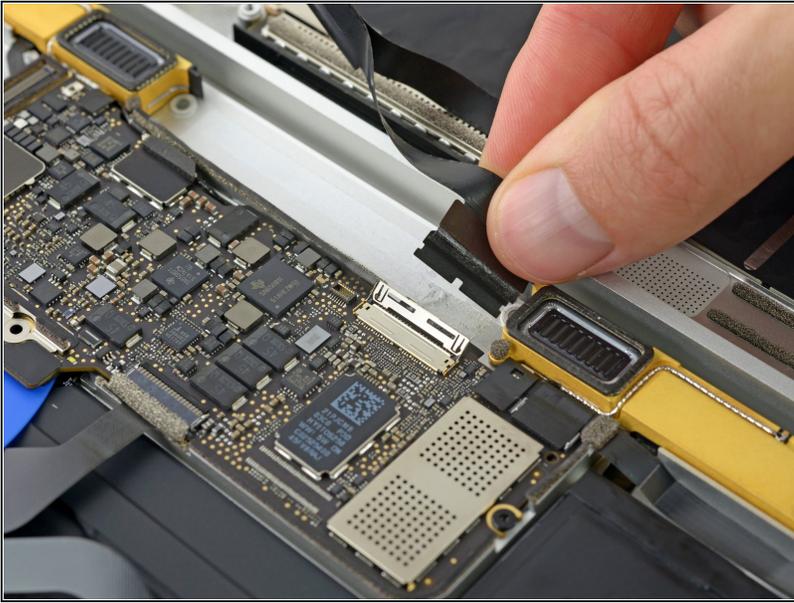
- Use the flat end of a spudger to flip open the retaining flap on the display cable connector.
- Try to keep it clear of the tape, or it may re-adhere and make cable removal difficult.

Step 21



- Carefully slide the flat end of a spudger underneath the display cable to separate the adhesive holding it to the lower case.
⚠ Take care not to damage the cable. If it doesn't separate easily, heat the cable and/or the case directly beneath it with a hair dryer or [iOpener](#) to soften the adhesive, and try again.

Step 22

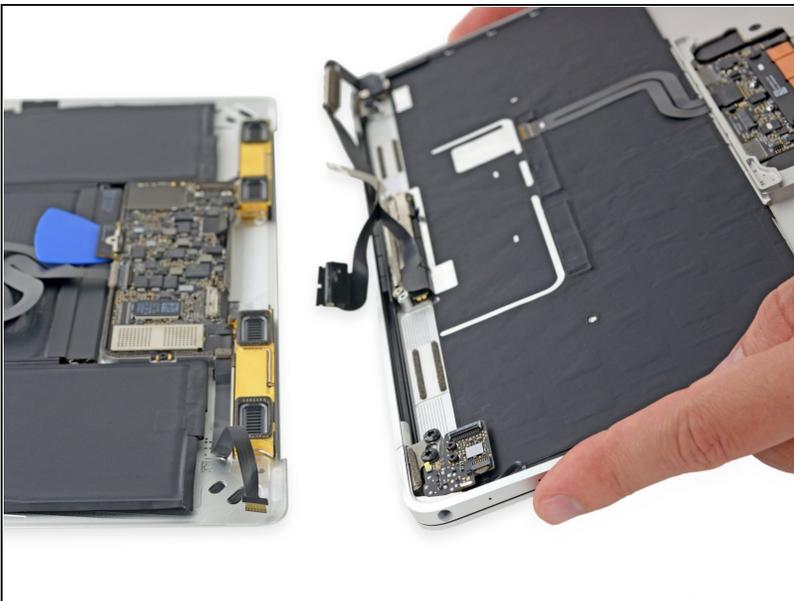


- Disconnect the display cable by gently pulling it straight out of its connector.

⚠ **Immediately close the retaining flap.**

- ☑ The flap must remain **closed** when the cable is reinserted during reassembly. Carefully line up the cable with the gold contacts facing down, and gently slide it into the connector. Take care not to crimp or damage the cable. When fully inserted, the indentations on the sides should not be visible.

Step 23



- Separate the upper case assembly from the lower case assembly.

Step 24 — Audio Jack Board



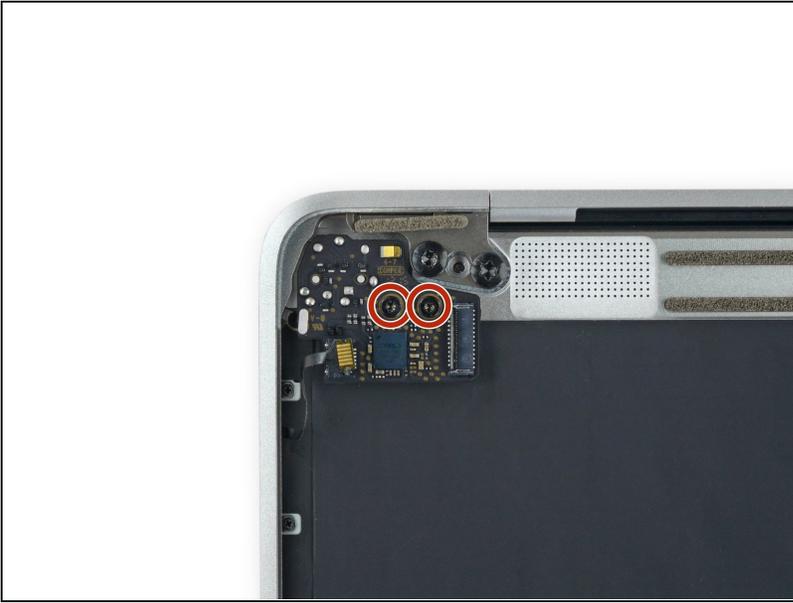
- Use a spudger to flip open the ZIF connector retaining flap for the dual microphone assembly ribbon cable.

Step 25



- Use [tweezers](#) to pull the microphone assembly ribbon cable free of its connector.

Step 26



- Remove the two 3.2 mm T5 Torx screws securing the audio jack board to the case.

Step 27



- Remove the audio jack board.

Step 28 — Dual Microphone Assembly



- [Prepare an iOpener](#) and apply heat to the upper case directly behind the microphone assembly.

Step 29



- Use a fine-tip probe or pick to gently peel the dual microphone assembly away from the case.

Step 30



- Remove the dual microphone assembly.

Step 31 — Display Assembly



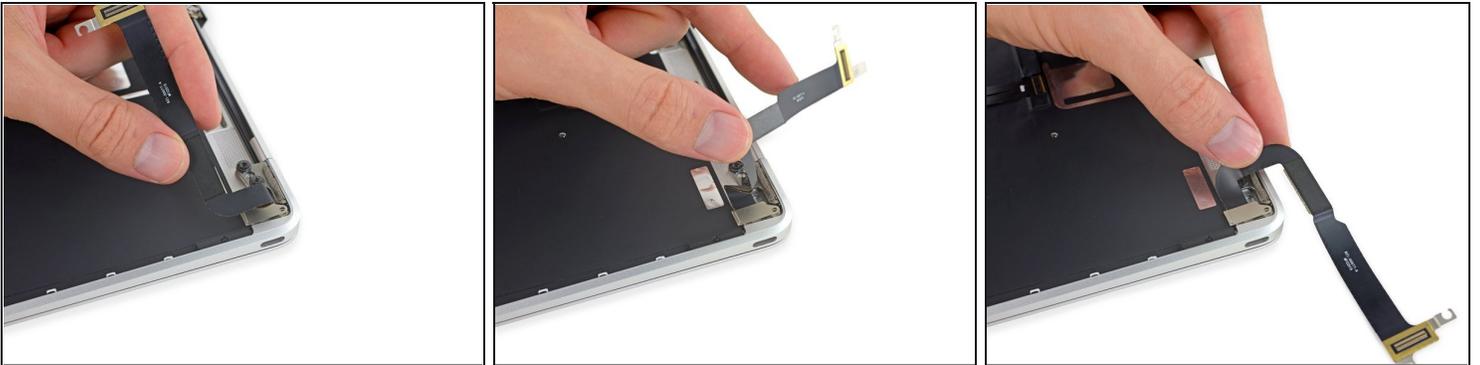
- Remove the two 3.3 mm T5 Torx screws securing the display cable assembly.

Step 32



- Remove the single 4.3 mm Phillips #00 screw securing the USB-C port ribbon cable.

Step 33



- Unfold the USB-C port ribbon cable until it lays flat, allowing access to the bracket beneath.

Step 34



- Lift and remove the metal bracket securing the USB-C port ribbon cable connector.
- ☑ During reassembly, be sure the metal tab on the USB-C connector board slides through the slit on the metal bracket.

Step 35



- Use a spudger to disconnect the USB-C port ribbon cable by prying the connector straight up.
 - Pry from the side nearest the back edge of the MacBook.
- Remove the ribbon cable.

Step 36



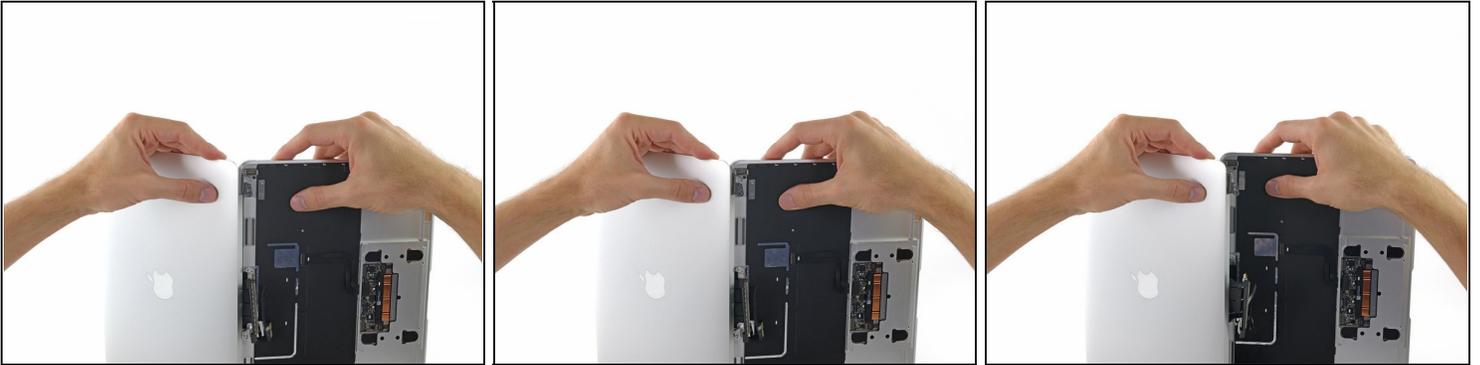
- Fully open the display.
- Set the MacBook down on its right edge with the display facing away from you, as shown.

Step 37



- Remove the four 4.8 mm T8 Torx screws securing the display hinges.

Step 38



- Holding the display assembly with one hand and the upper case with the other, push them together slightly to move the hinges out of their recesses in the the upper case.
 - ⓘ There are only a few millimeters of play between the hinges and the case, so you won't need to push far.
- Push the upper case forward while pulling back gently on the display.
- Once the two display hinges have cleared the upper case, remove the display and set it aside.

Step 39 — USB-C Port



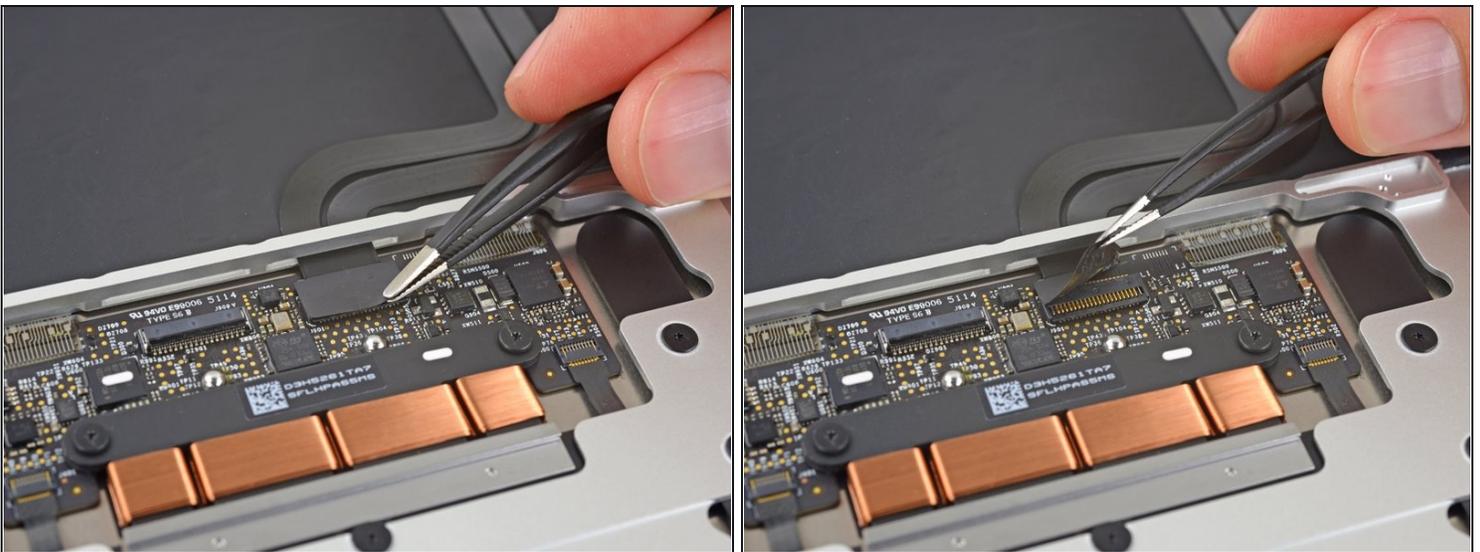
- Remove the single 2.9 mm T3 Torx screw securing the USB-C port to the upper case.

Step 40



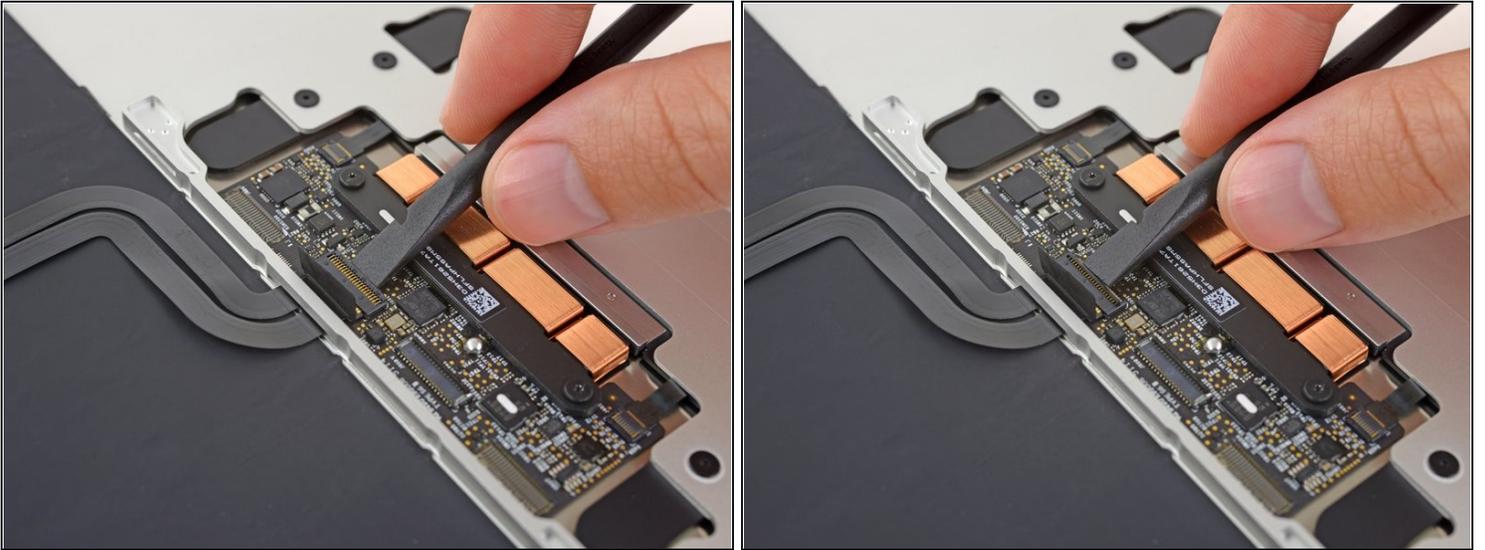
- Slide the USB-C port out of its recess in the upper case, and remove the USB-C port.

Step 41 — Trackpad Assembly



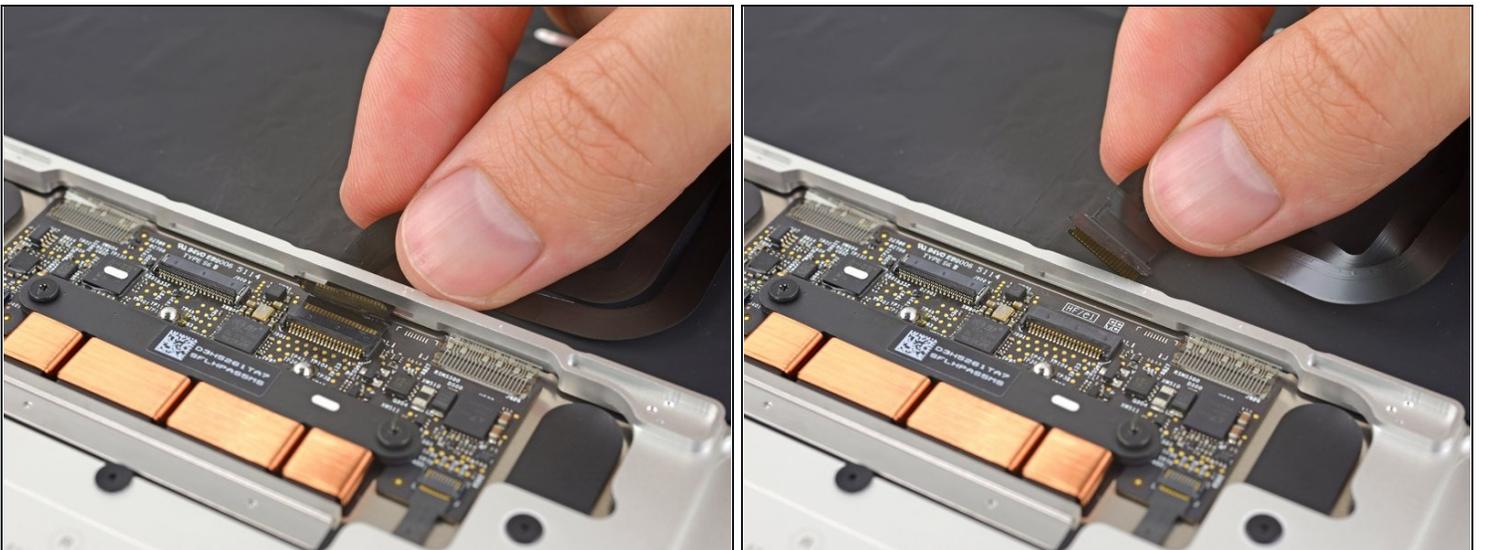
- Use a pair of [tweezers](#) to remove the tape covering the keyboard ribbon cable connector on the trackpad.

Step 42



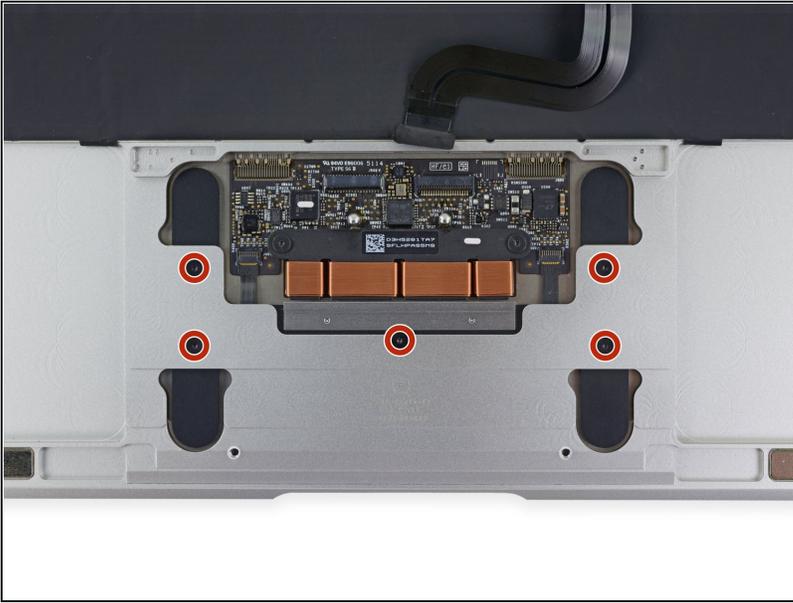
- Using a spudger, flip open the retaining flap on the keyboard ribbon cable ZIF connector.

Step 43



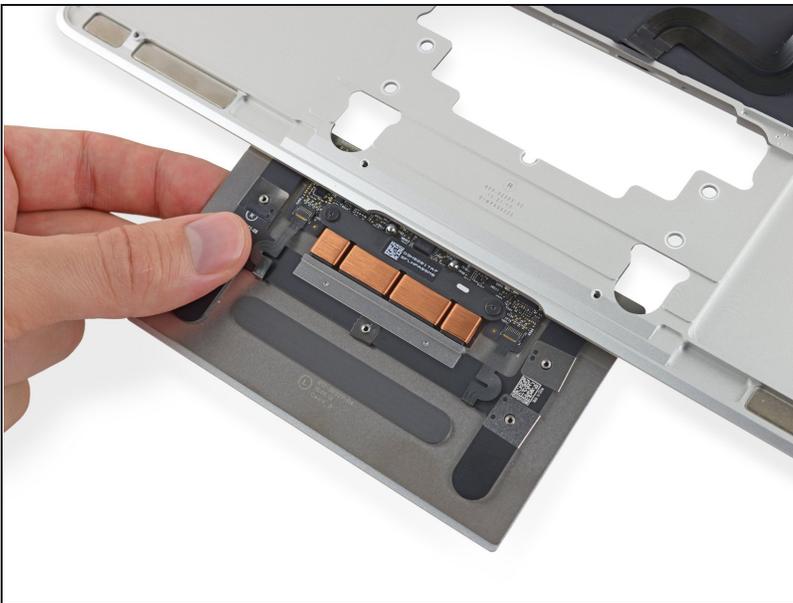
- Gently pull the keyboard ribbon cable out of its slot in the frame.

Step 44



- Remove the five 2.5 mm T3 Torx screws securing the trackpad to the case.
- ⓘ Depending on which bit set you use, a T4 driver may fit better. Try both sizes, and use the largest driver that fits fully into the screw head.

Step 45



- Remove the trackpad assembly.
- ☑ Metal brackets on each side of the trackpad may fall away during removal. Be sure to position them as shown in the photo during reassembly.

Step 46



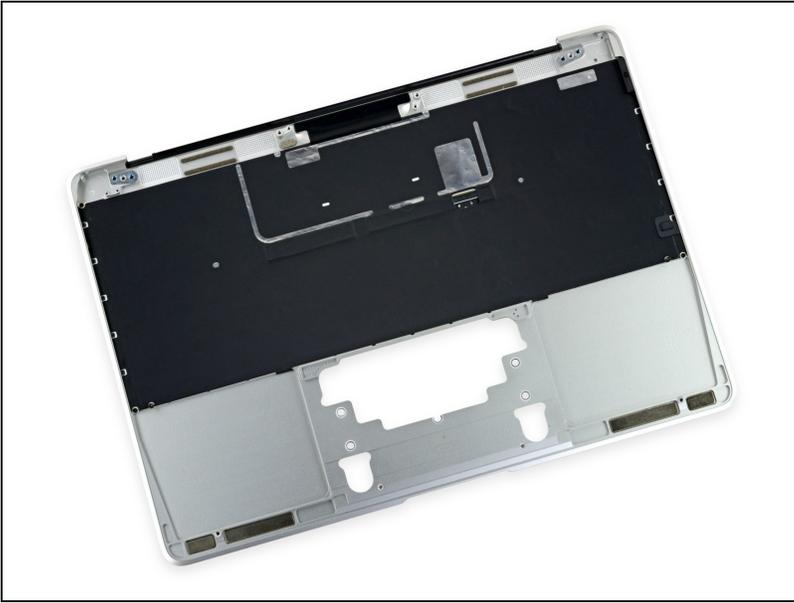
- Use a spudger to flip up the retaining flap on the keyboard ribbon cable ZIF connector.

Step 47



- Gently peel the keyboard ribbon cable up from the case, and remove the cable.

Step 48



- The upper case remains.

To reassemble your device, follow these instructions in reverse order. To avoid logic board damage, when your MacBook repair is complete *but before powering it on*, [connect it to low-voltage power](#) using a 5-Watt iPhone charger and a USB-C to USB-A cable.