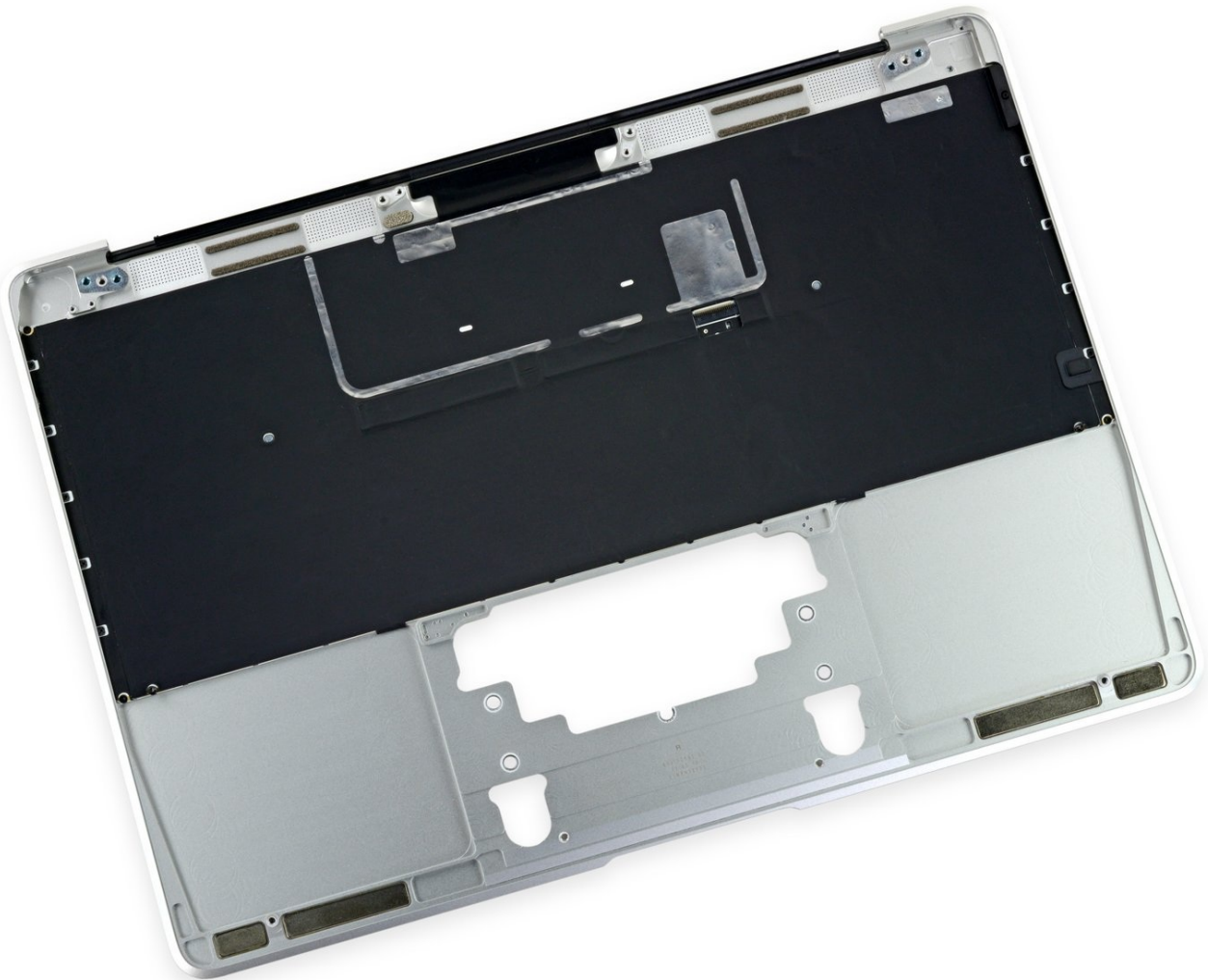




# Retina MacBook 2017 Upper Case Assembly Replacement

The upper case assembly includes the keyboard....

Written By: Tobias Isakeit



# INTRODUCTION

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

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## TOOLS:

[P5 Pentalobe Screwdriver Retina MacBook Pro and Air](#) (1)  
[Spudger](#) (1)  
[Tweezers](#) (1)  
[Battery Blocker](#) (1)  
[T5 Torx Screwdriver](#) (1)  
[Phillips #00 Screwdriver](#) (1)  
[iOpener](#) (1)  
[Probe and Pick Set](#) (1)  
[TR8 Torx Security Screwdriver](#) (1)  
[T3 Torx Screwdriver](#) (1)

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## PARTS:

[MacBook 12" Retina \(Early 2016-2017\) Upper Case with Keyboard](#) (1)  
[MacBook 12" Retina \(Early 2015-2017\) Lower Case Screw Set](#) (1)

## Step 1 — Disable Auto Boot



- ① Before starting this procedure, you must disable your Mac's **Auto Boot** feature. Auto Boot powers on your Mac when you open the lid, and may be accidentally triggered during disassembly. [Use this guide](#) or follow the abbreviated instructions below to disable Auto Boot. *This command may not work on all Macs.*
  - Power on your Mac and launch **Terminal**.
  - Copy and paste the following command (or type it exactly) into Terminal:
    - **sudo nvram AutoBoot=%00**
  - Press **[return]**. If prompted, enter your administrator password and press **[return]** again. *Note: Your return key may also be labeled ↵ or "enter."*
- ① You can now safely power down your Mac and open the bottom case, without it accidentally powering on.
- ★ When your repair is complete and your Mac is successfully reassembled, re-enable Auto Boot with the following command:
  - **sudo nvram AutoBoot=%03**

## Step 2 — Unfasten the lower case



**⚠ Before proceeding, unplug and power down your MacBook. Close the display and lay it on a soft surface, top-side 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 3



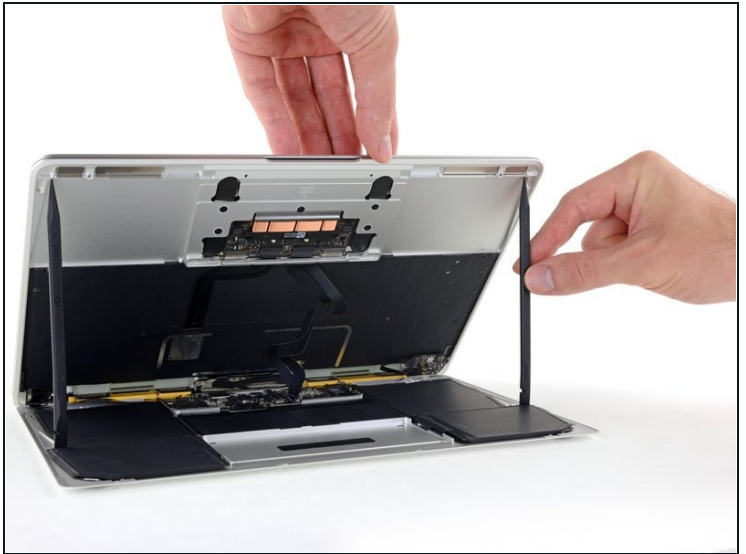
- Wedge your fingers between the upper case and the lower case, starting from the rear of the MacBook between the hinges.
- ⚠ Lift the lower case only slightly to avoid damaging the cables that connect the lower case to the upper case.
  - Keeping a firm grip, lift steadily until the lower case separates 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 4



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

## Step 5



- 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 6



- 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 7



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

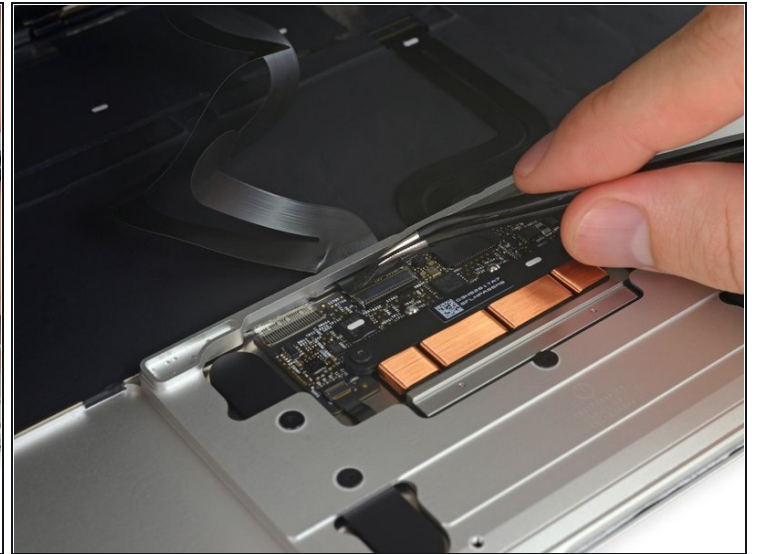
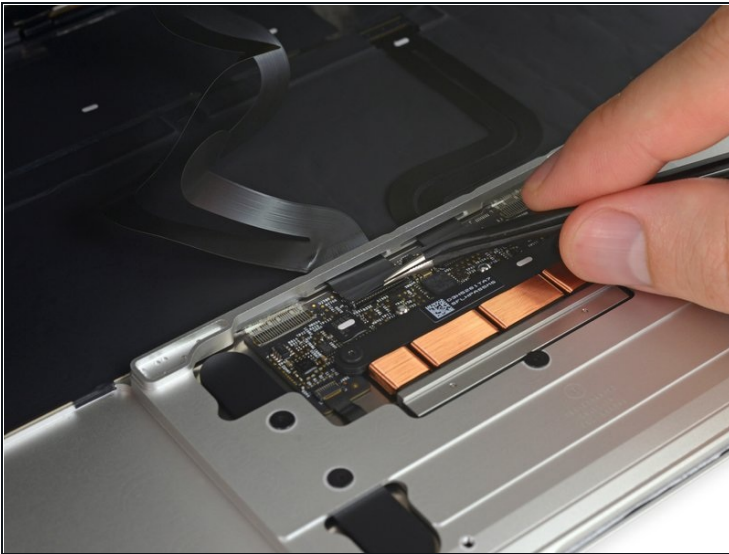
## Step 8



- 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.

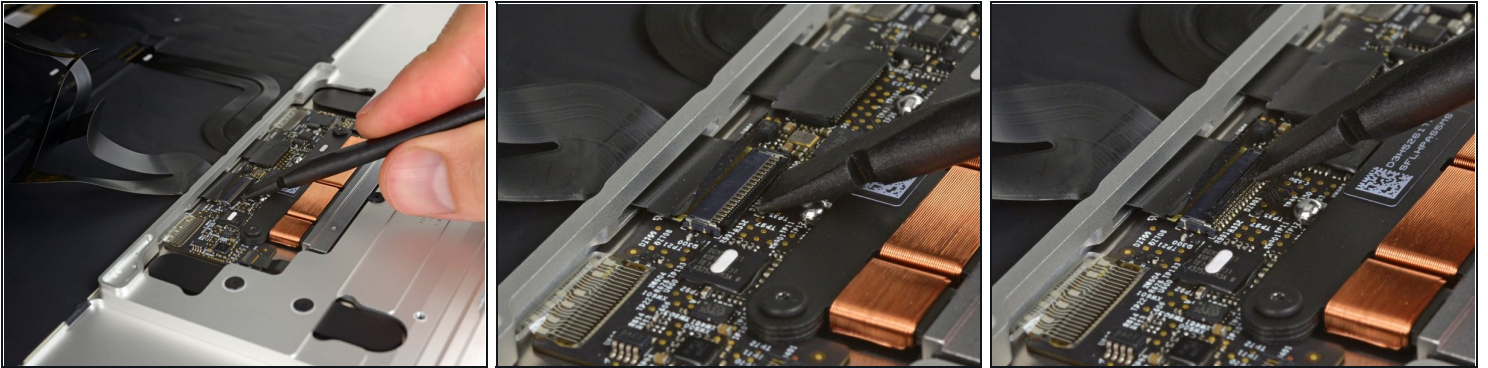
## Step 9



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

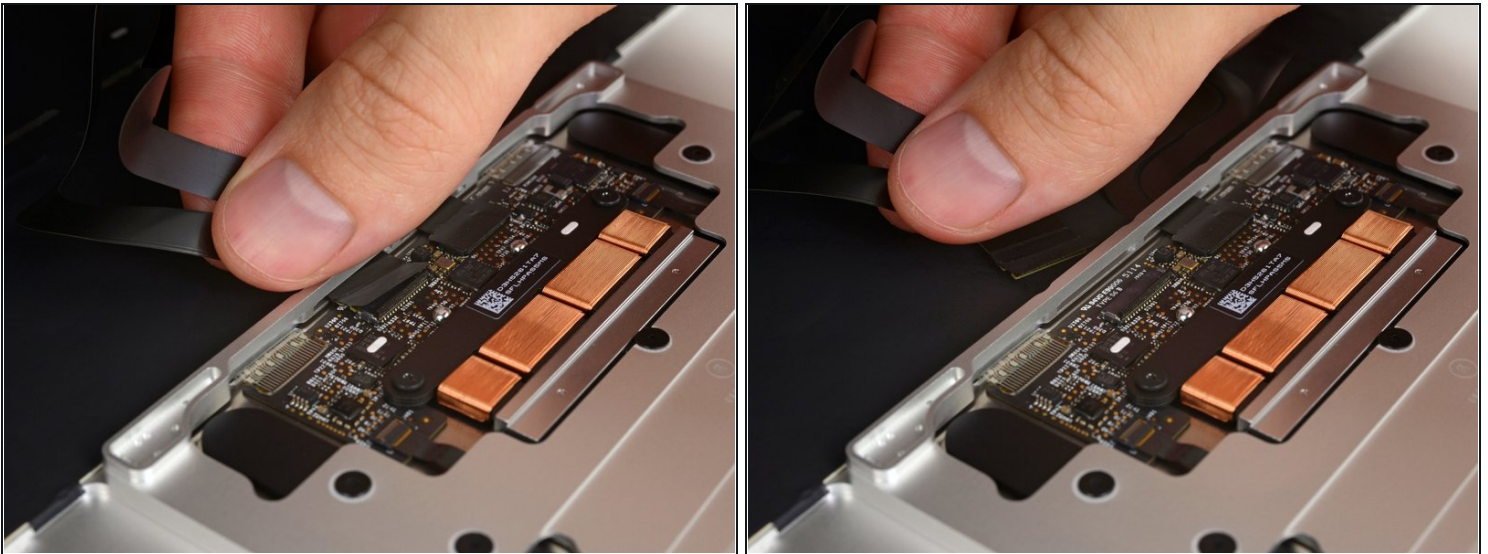


## Step 10



- Use a spudger to carefully flip up the retaining flap on the trackpad cable [ZIF connector](#).

## Step 11



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

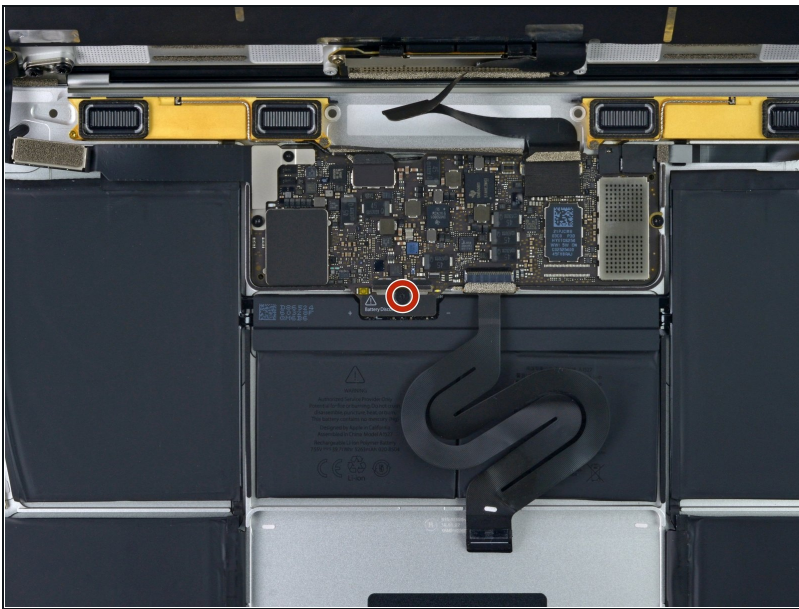
## Step 12



- Carefully close the MacBook and flip it over once again, so that the Apple logo faces up.
- Lifting from the front edge, 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 13



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

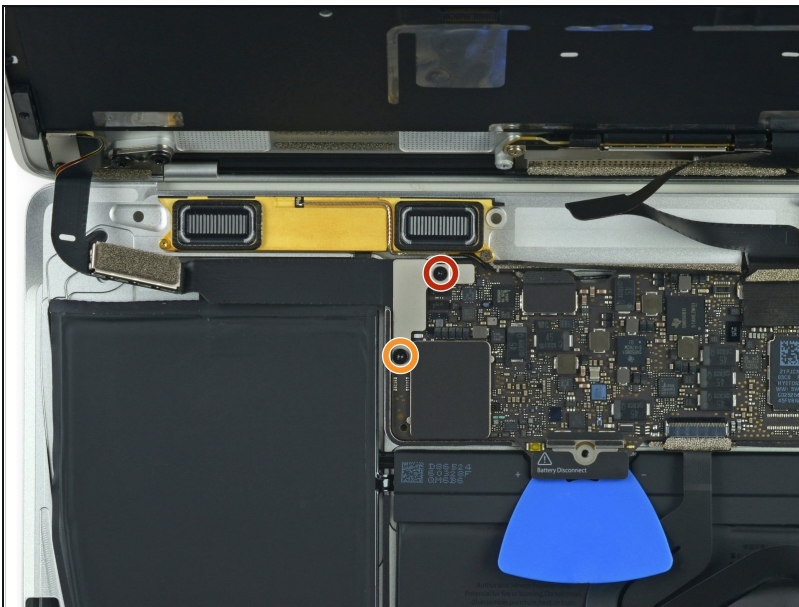


## Step 14



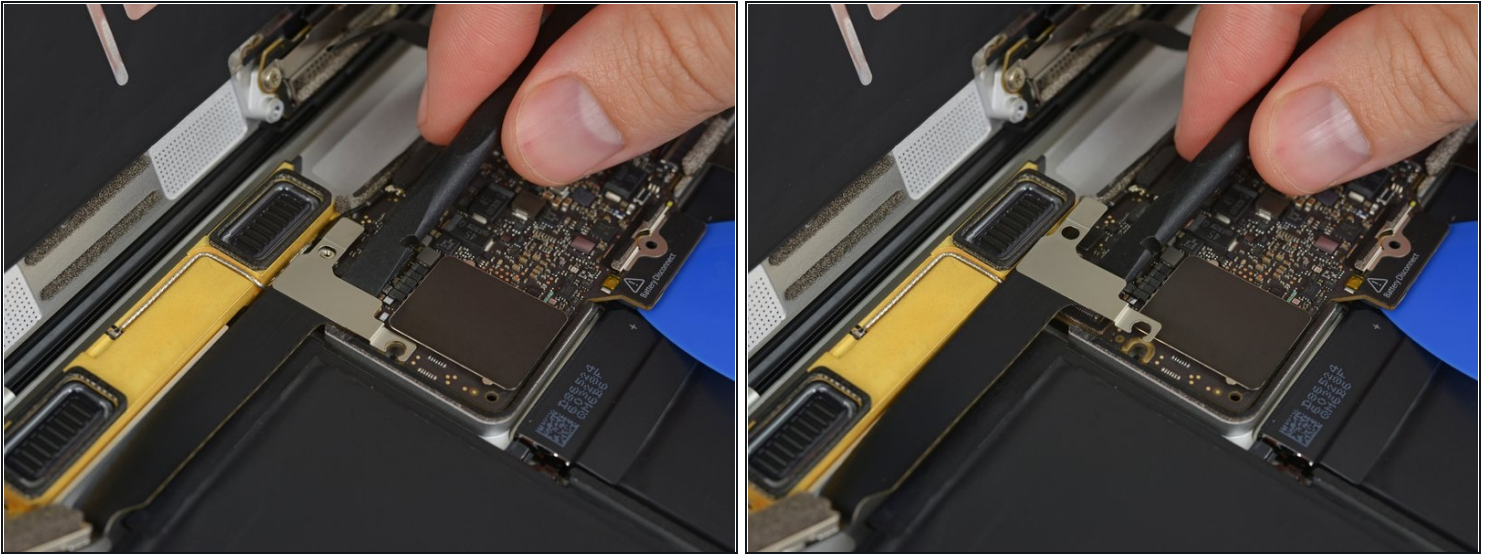
- As an added precaution, you may physically disconnect the battery by inserting a [battery isolation pick](#) between the logic board and the battery connector.

## Step 15 — USB-C and Audio Jack Disconnect



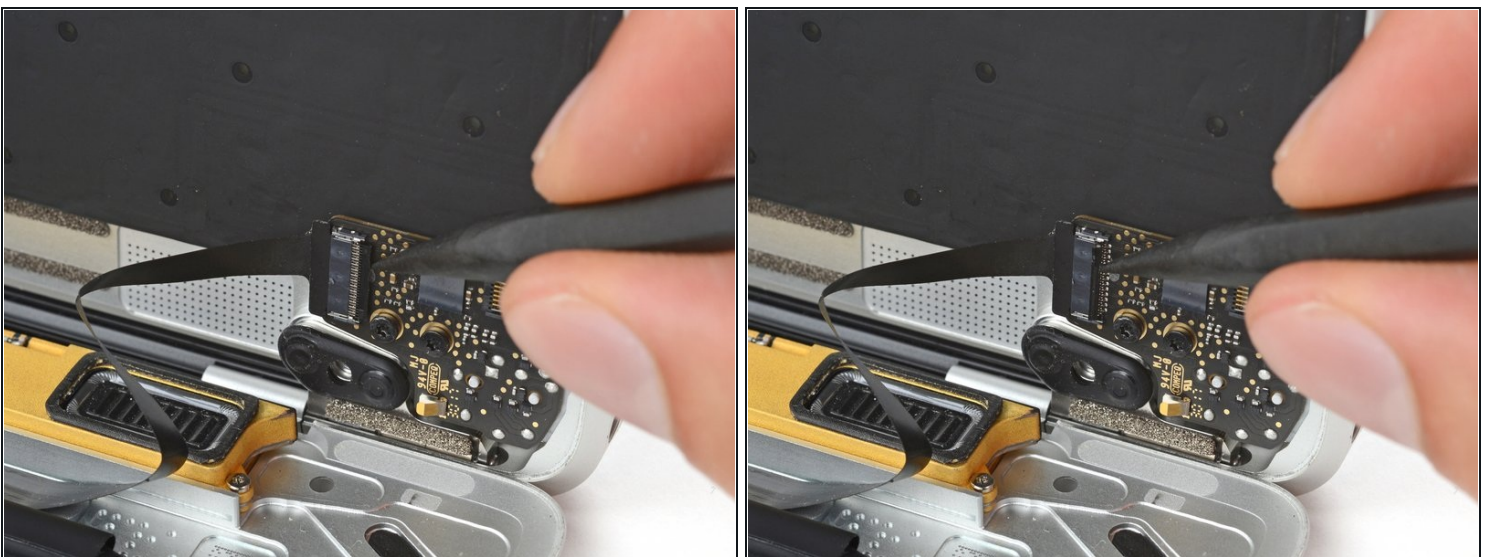
- Remove the two screws securing the USB-C port cable bracket:
  - 1.1 mm Phillips #00 screw
    - ⓘ Some variations of this model may use a Tri-point Y00 screw.
  - 3.5 mm T5 Torx screw

## Step 16



- 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.

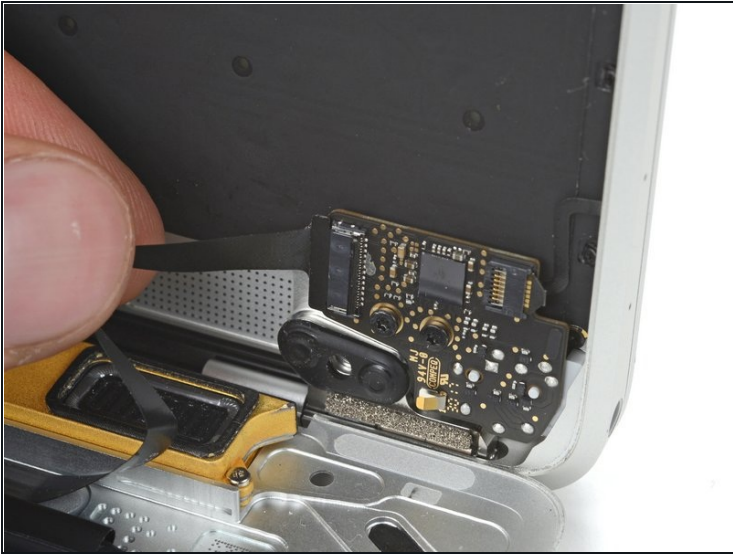
## Step 17



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

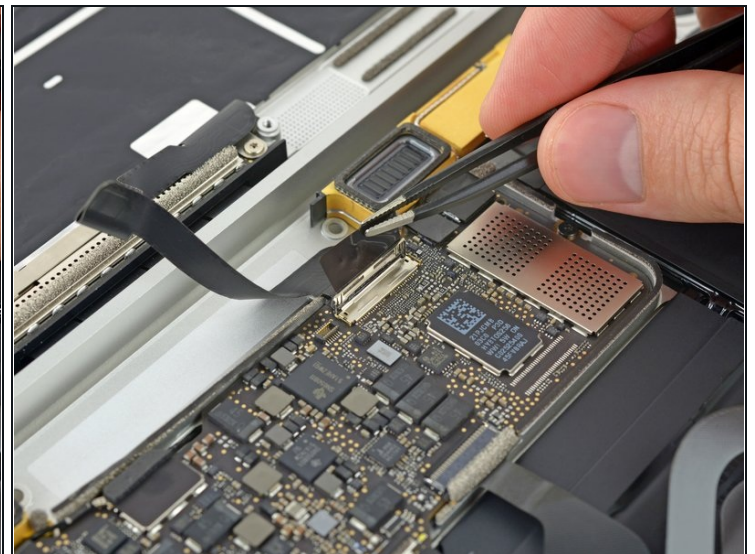
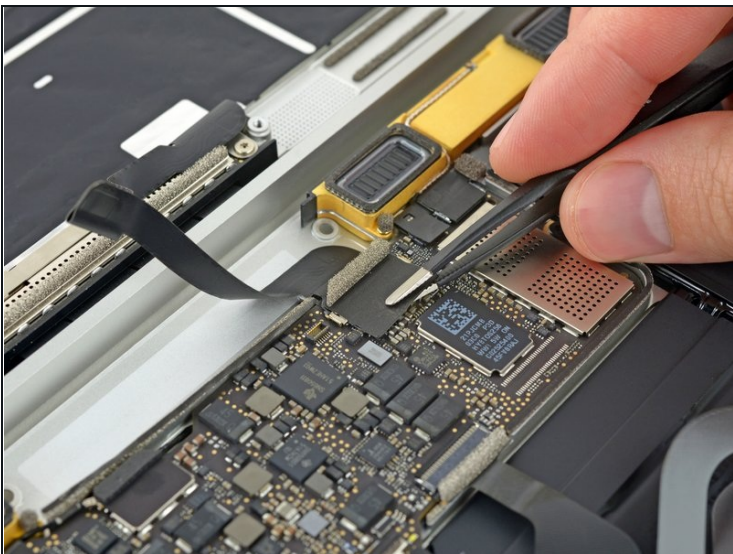


## Step 18



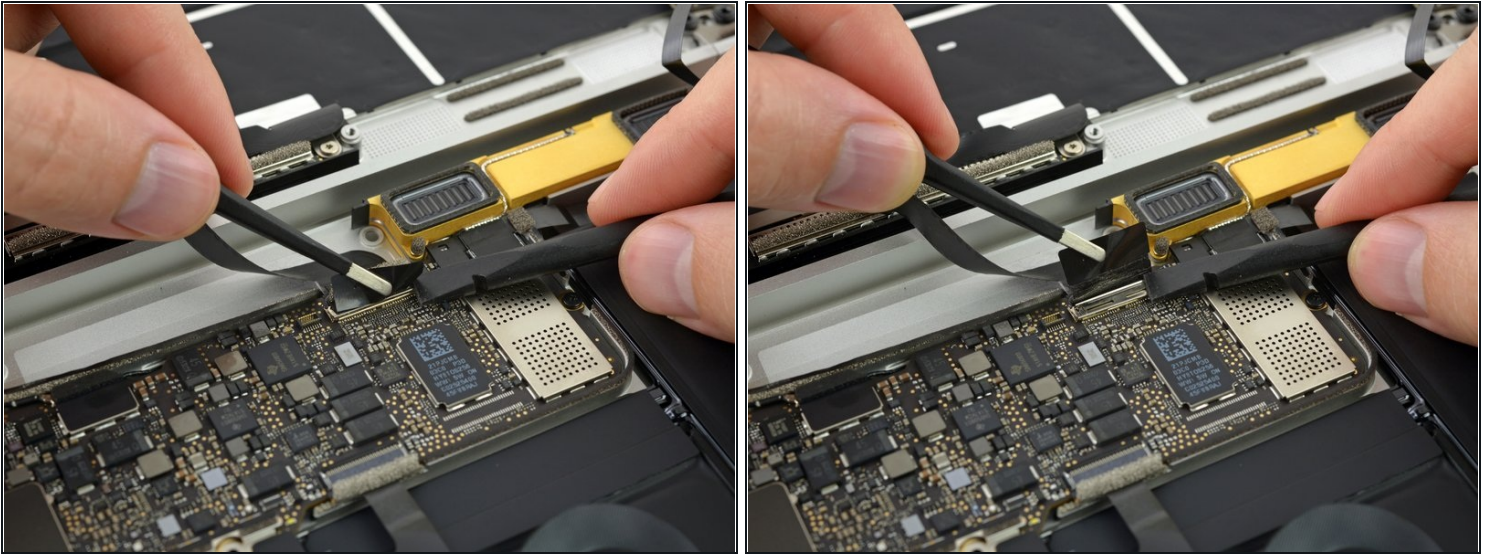
- Disconnect the audio jack board ribbon cable by pulling it straight back out of the ZIF connector.
- ☑ During reassembly, orient the ribbon cable so the white stripe faces you. Insert the cable until the white line disappears under the socket.
- ① At this point it is possible to open the macbook all the way and to lay it flat on a table without causing any damage to the flex cables.

## Step 19 — Lower Case Assembly Removal



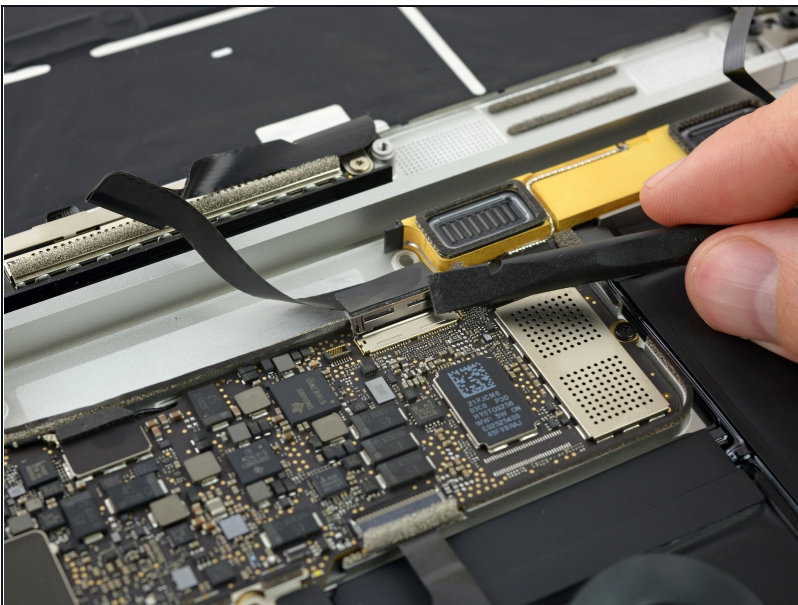
- Use [tweezers](#) to peel back the tape covering the display cable connector.

## Step 20



- ⓘ 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.

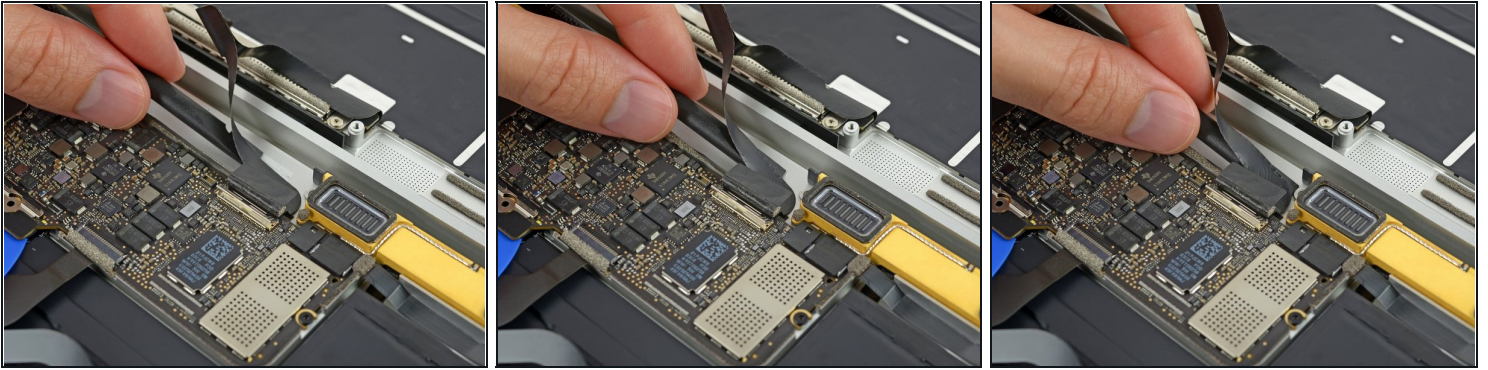
## Step 21



- 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.

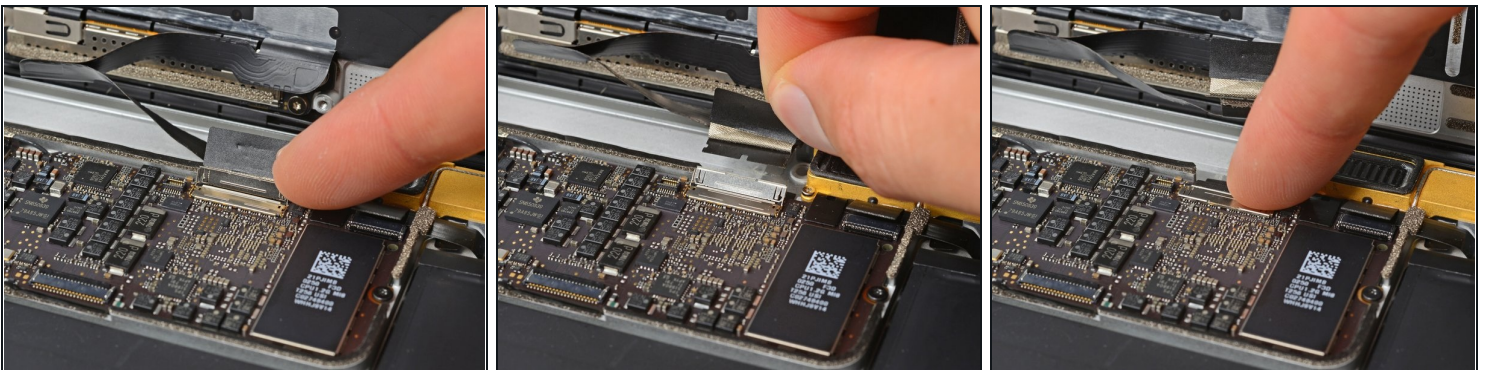


## Step 22



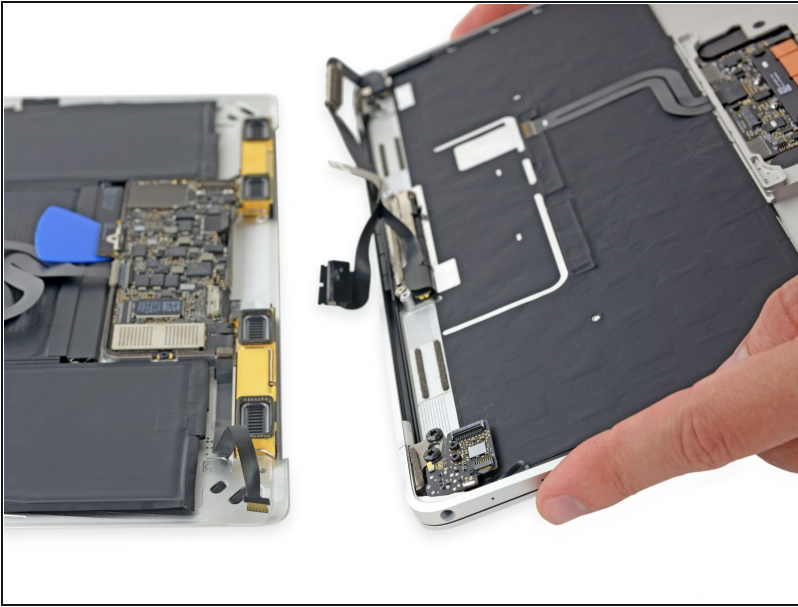
- Carefully slide the flat end of a spudger underneath the display cable to separate the adhesive holding it to the lower case.
  - ⚠ Take care not to damage the cable. If the adhesive is very strong, heat the case directly beneath the cable with an [iOpener](#) to soften the adhesive, and then try again.

## Step 23



- Hold the retaining flap open.
- Disconnect the display cable by gently pulling it straight out of its connector.
- ⚠ Immediately close the retaining flap. Keep it closed throughout your repair.
  - 🔖 During reassembly, **keep the flap closed** while you insert the display cable. Remember to orient the cable so its gold contacts face down, making sure not to crimp or fold it—it'll click into place when it's connected.

## Step 24



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

## Step 25 — Audio Jack Board



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



## Step 26



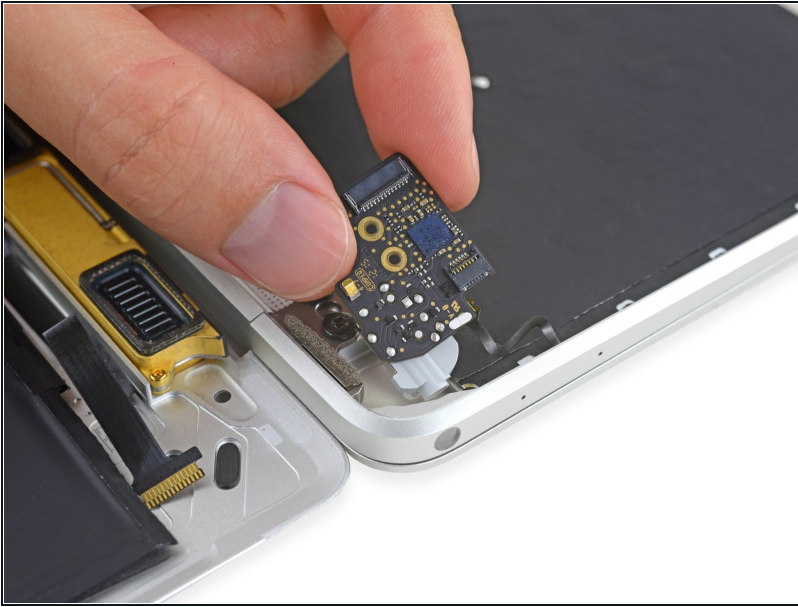
- Disconnect the microphone assembly ribbon cable by pulling it straight out of its connector.

## Step 27



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

## Step 28



- Remove the audio jack board.

## Step 29 — Dual Microphone Assembly



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

## Step 30



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

## Step 31



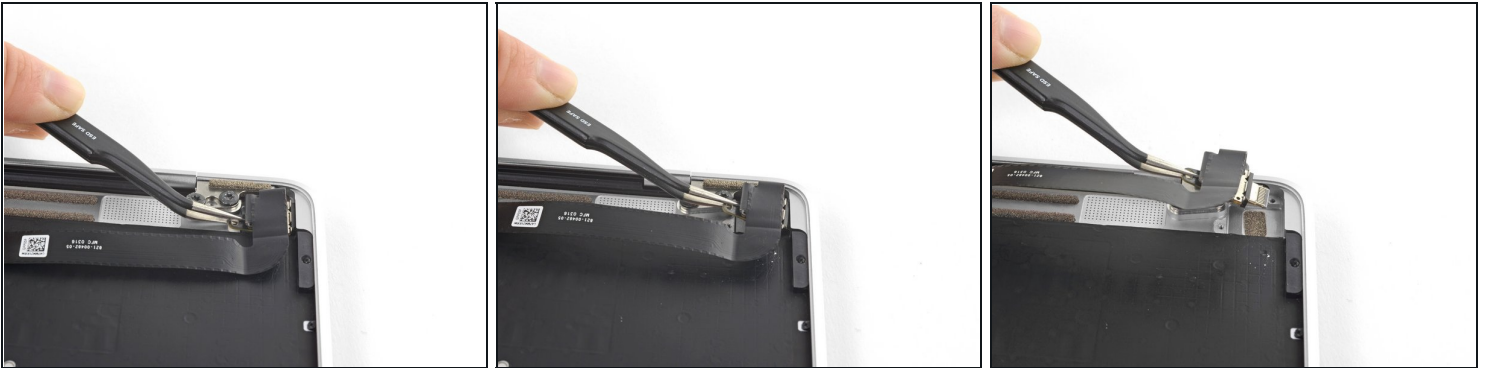
- Remove the dual microphone assembly.

## Step 32 — USB-C Port



- Remove two 2.5 mm Phillips #00 screws securing the USB-C port.

## Step 33



- Use [tweezers](#) to lift the USB-C port just over the hinge screws.
- Slide the port out and up over the display hinge to remove it.

⚠ There's very little clearance when removing and installing the USB-C port. If there's not enough room, don't force it. Try [removing the display hinge screws](#) and moving the hinges for additional clearance, if necessary.

## Step 34 — Display Assembly



- Remove the two 3.3 mm T5 Torx screws securing the display cable assembly.
- ☑ Take care not to lose the small retaining bracket located under the right screw. If it comes loose, note the orientation shown here for reassembly. The small tab on the outer left edge should be hooked under the perforated metal shield.

## Step 35



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

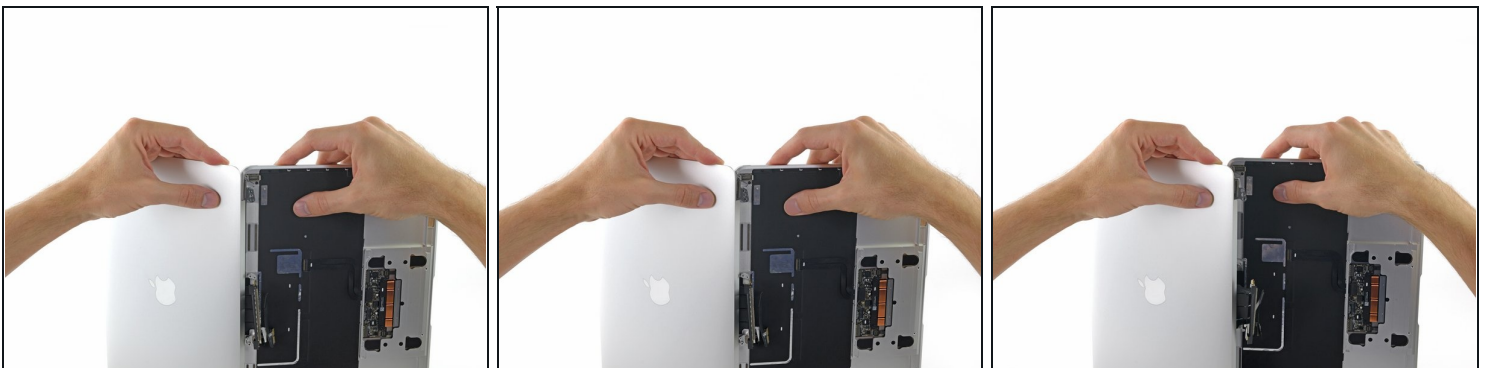


## Step 36



- Remove the four 4.8 mm T8 Torx screws securing the display hinges.
- ⓘ There may be a rubber cover on the hinge screws. [Remove this](#) before removing the screws and replace it during reassembly.

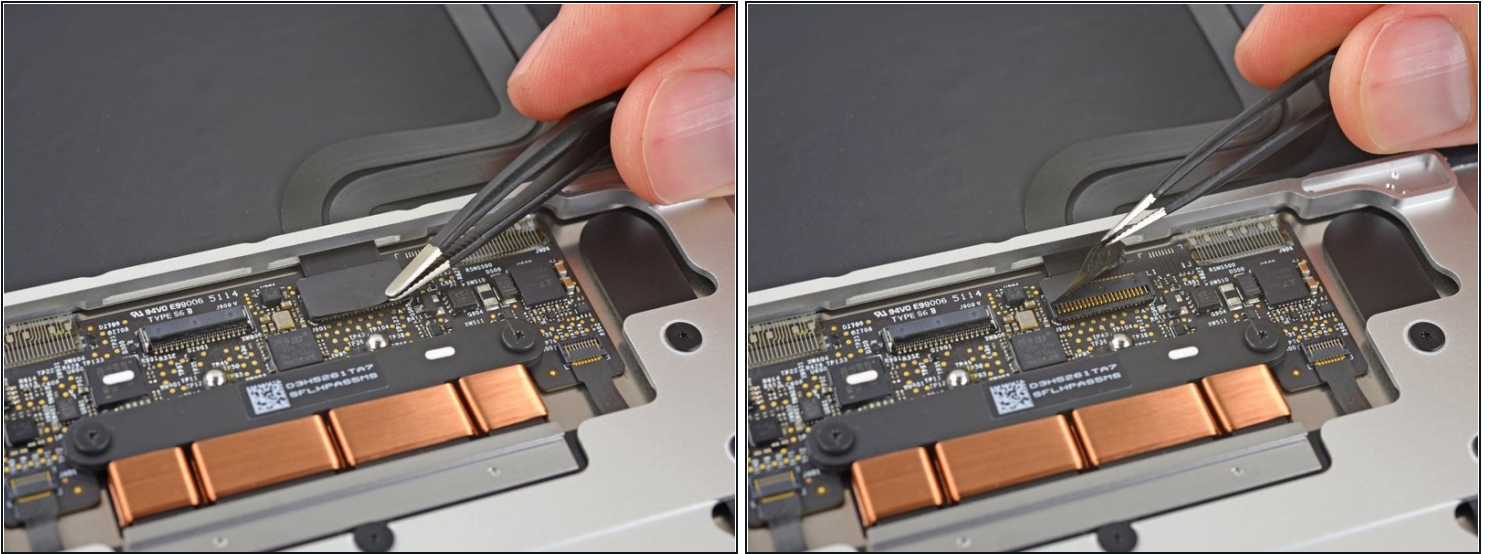
## Step 37



- 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.

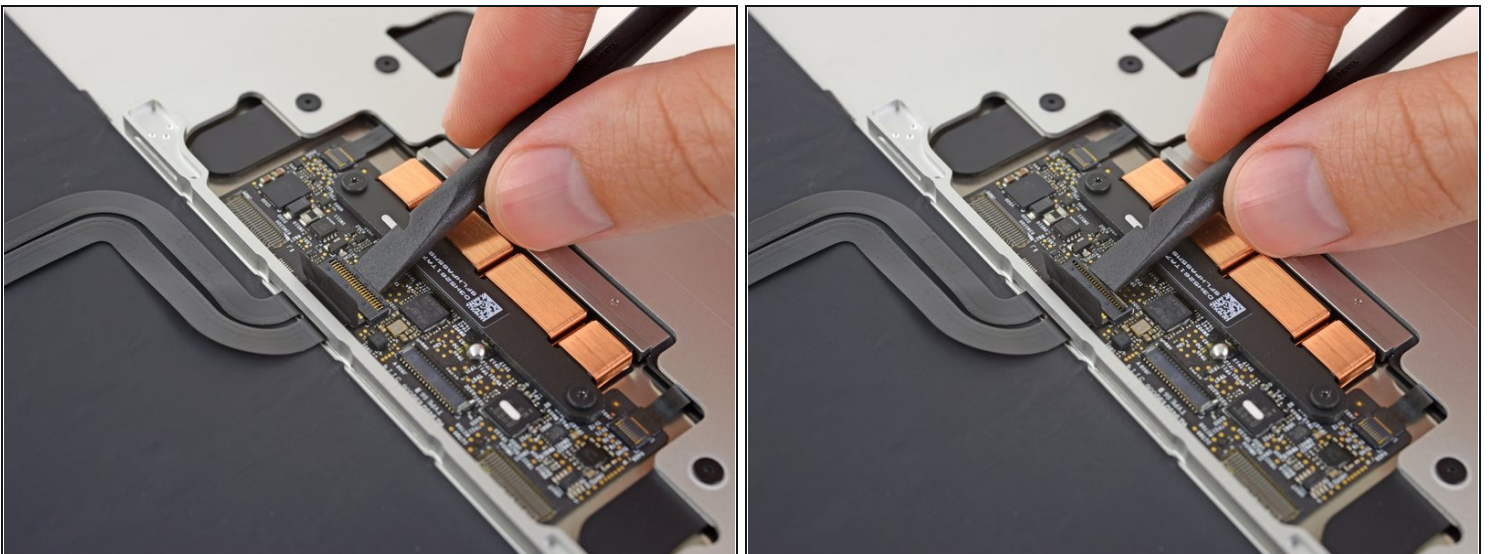


## Step 38 — Trackpad Assembly



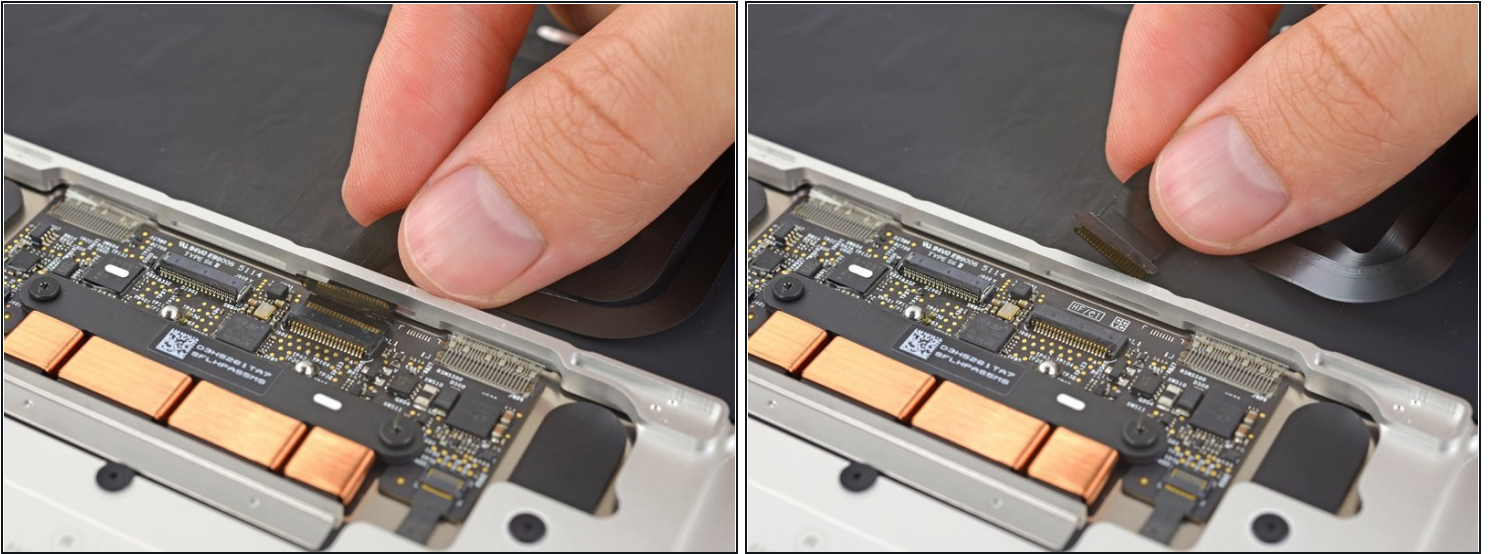
- Use a pair of [tweezers](#) to remove the tape covering the keyboard ribbon cable connector on the trackpad.

## Step 39



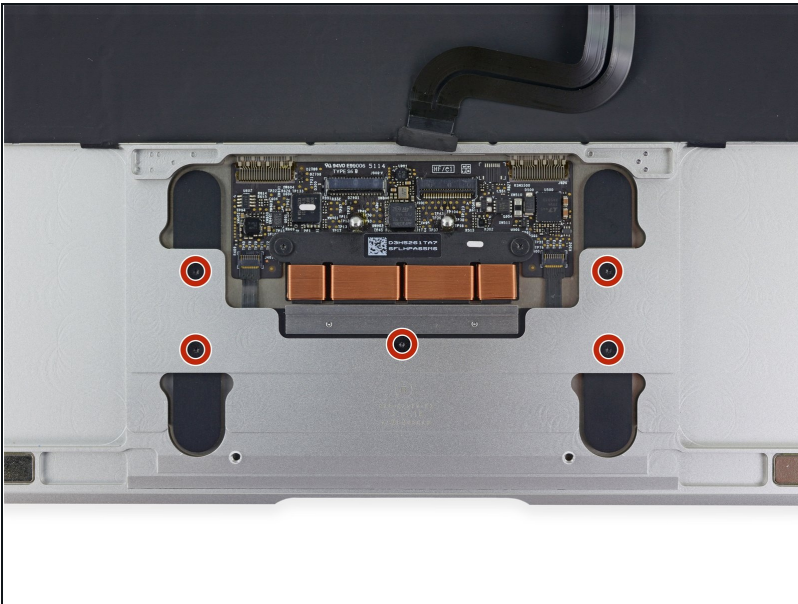
- Using a spudger, flip open the retaining flap on the keyboard ribbon cable ZIF connector.

## Step 40



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

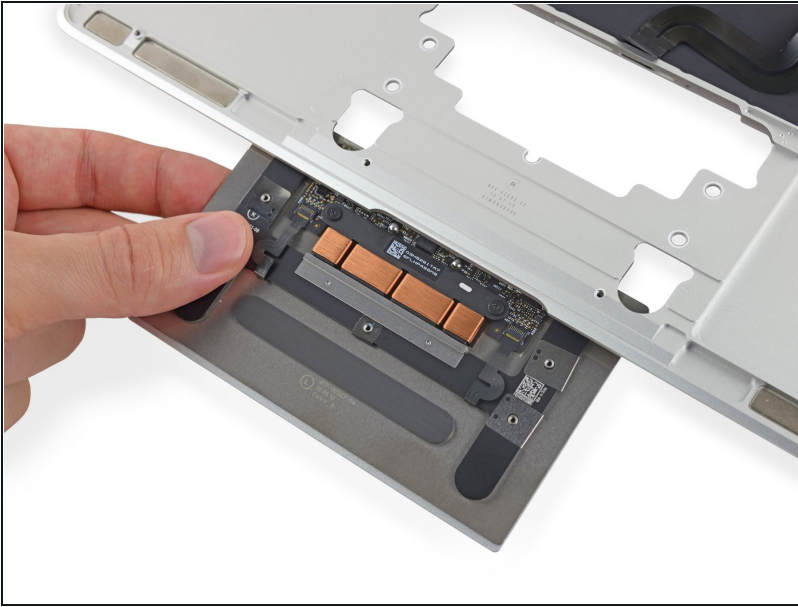
## Step 41



- Remove the five 2.5 mm T3 Torx screws securing the trackpad to the case.
  - ① On some driver sets, a T4 driver may fit better.

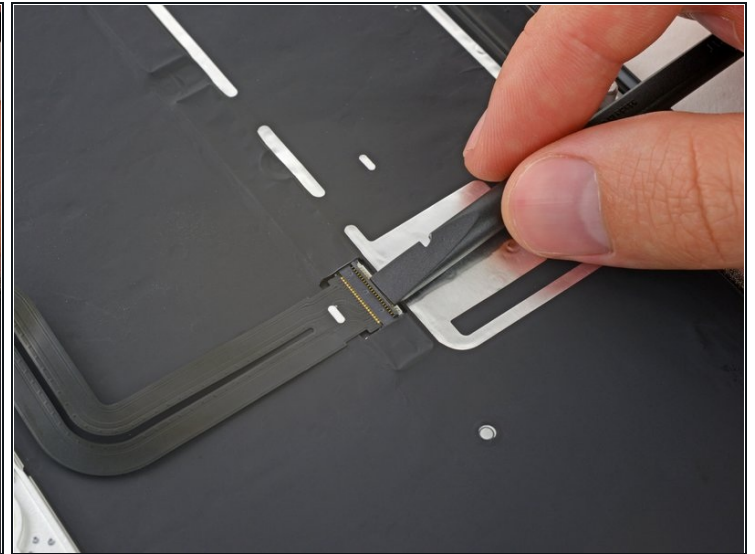
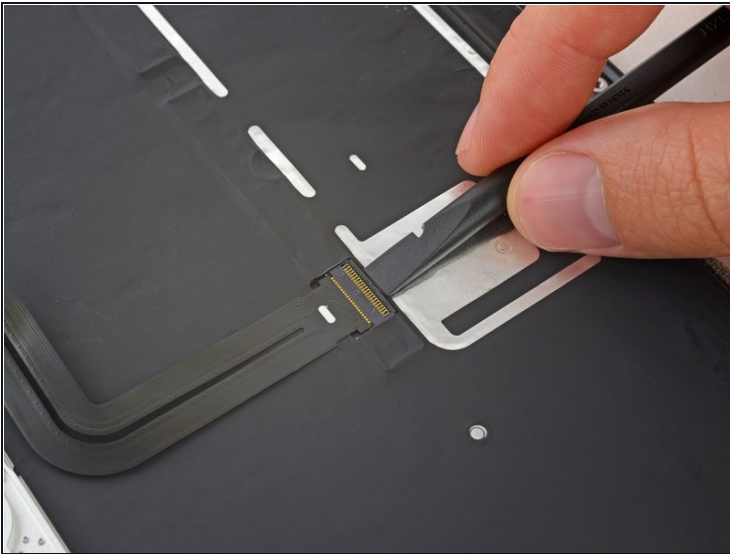


## Step 42



- 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 43



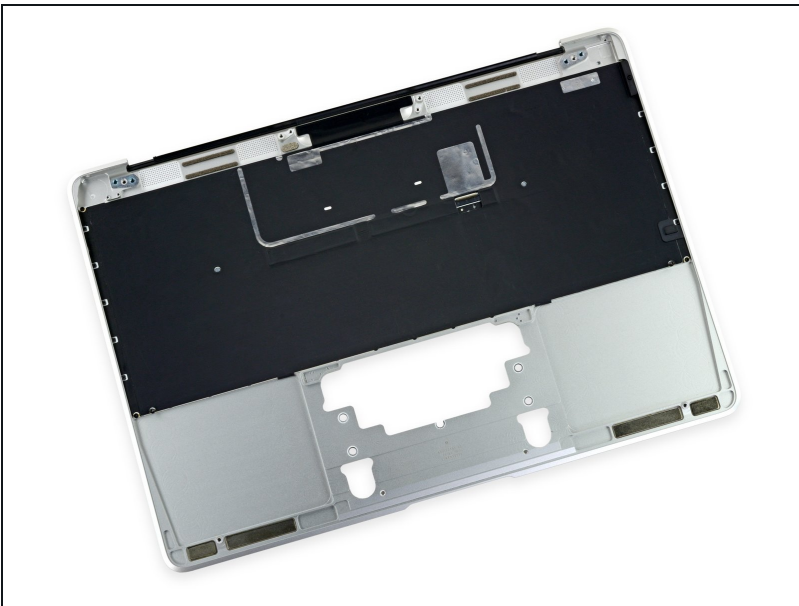
- Use a spudger to flip up the retaining flap on the keyboard ribbon cable ZIF connector.

## Step 44



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

## Step 45



- The upper case remains.

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