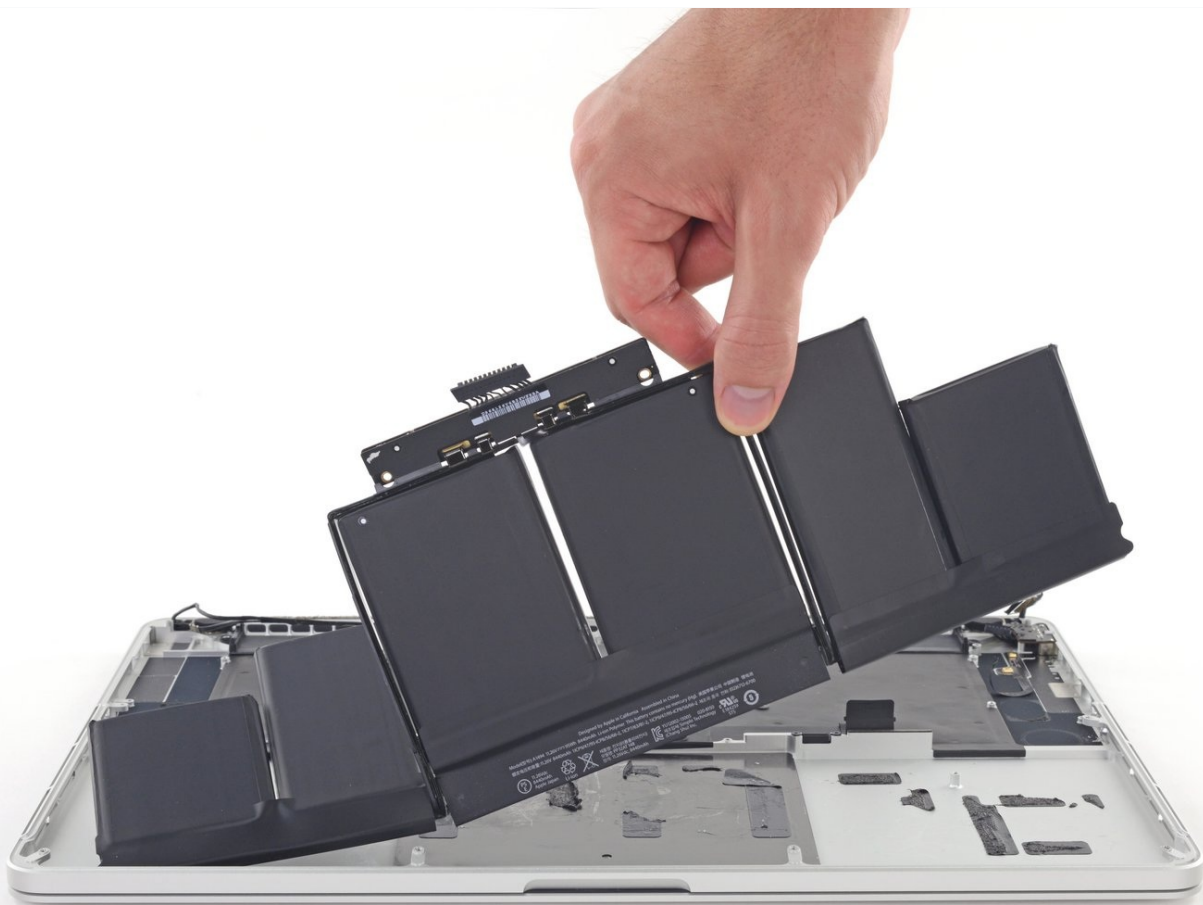# MacBook Pro 15" Retina Display Mid 2014 Battery Replacement (Legacy)

This guide contains instructions for using the...

Written By: Jeff Suovanen

INTRODUCTION

This guide contains instructions for using the old-style iFixit adhesive remover with separate bottle and syringe, which is no longer sold. [For the updated version, click here](#).

Use this guide to safely remove the glued-in battery from your MacBook Pro with the help of an iFixit battery replacement kit. The adhesive remover in your kit will dissolve the adhesive securing the battery, allowing you to remove it with ease.

iFixit adhesive remover is highly flammable. Perform this procedure in a well-ventilated area. Do not smoke or work near an open flame during this procedure.

For your safety, drain your MacBook Pro's battery before you begin this procedure. A charged lithium-ion battery can create a dangerous and uncontrollable fire if accidentally punctured.

Note: The solvent used to dissolve the battery adhesive will damage your speakers if it comes in contact with the plastic speaker enclosures. This guide instructs you to remove the speakers before proceeding to the battery.

TOOLS:

MacBook Pro and Air 5-Point Pentalobe Screwdriver (1)
Spudger (1)
T5 Torx Screwdriver (1)
iFixit Opening Tool (1)
Plastic Cards (1)

PARTS:

MacBook Pro 15" Retina (Late 2013-Mid 2014) Battery (1)
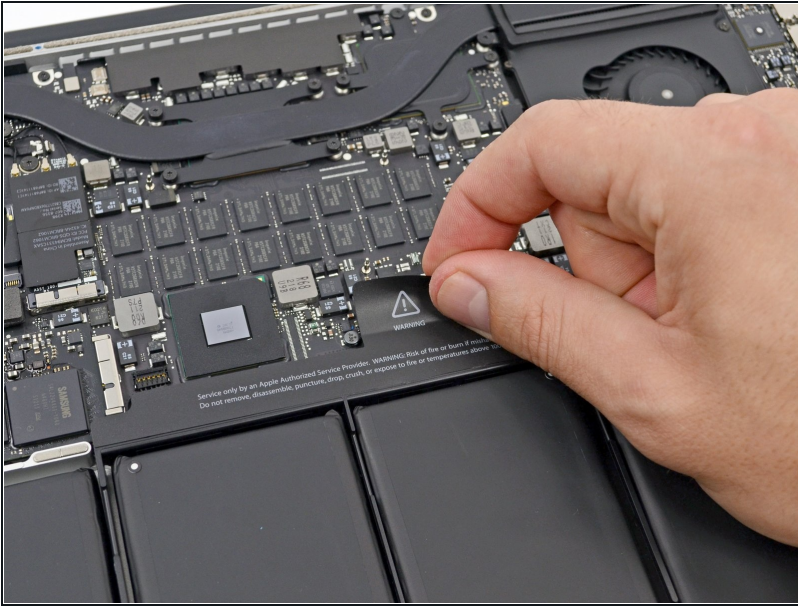
Step 1 — Lower Case

- Remove the following P5 pentalobe screws securing the lower case to the MacBook Pro:
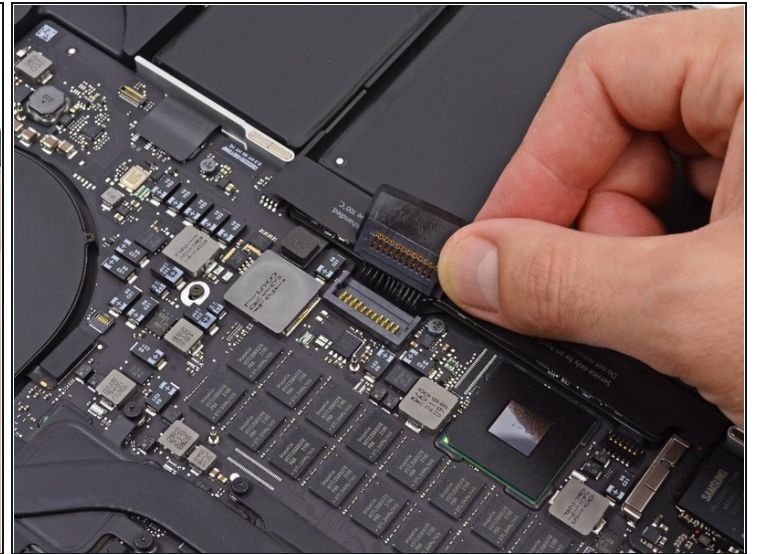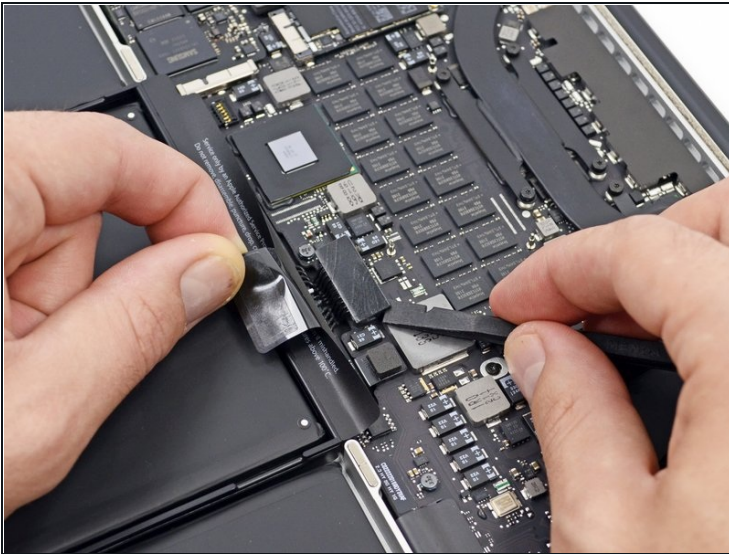 - Eight 3.0 mm
  - Two 2.3 mm

Step 2

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

- Set the lower case aside.

Step 3 — Battery Connector

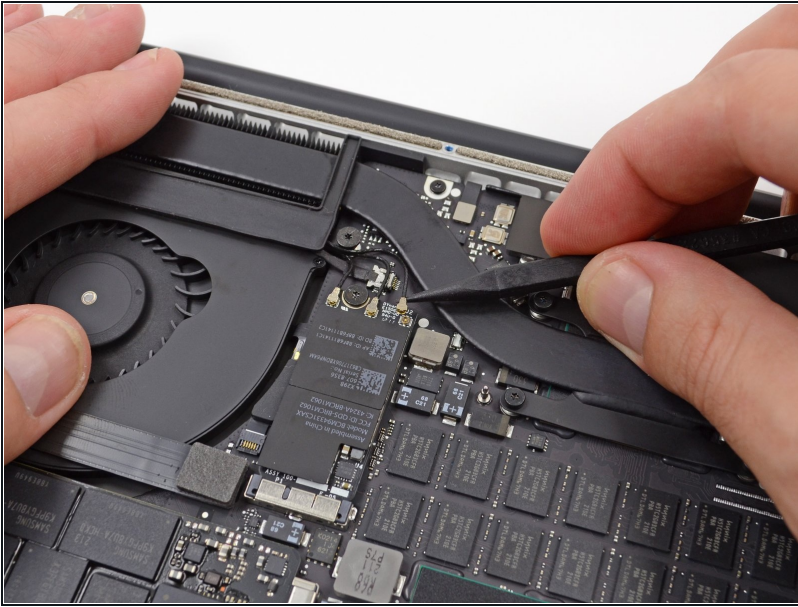- Peel back the warning label covering the battery connector.

Step 4

- Using the flat end of a spudger, gently pry the battery connector straight up out of its socket on the logic board.

- Bend the battery cables back and out of the way, ensuring that the battery connector doesn't accidentally make contact with the logic board.

Step 5 — AirPort/Camera Cable

- Use a spudger or tweezers to pry the three AirPort antenna cables straight up off of their sockets on the AirPort board.
  - ⚠ The cable connection points are 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 6
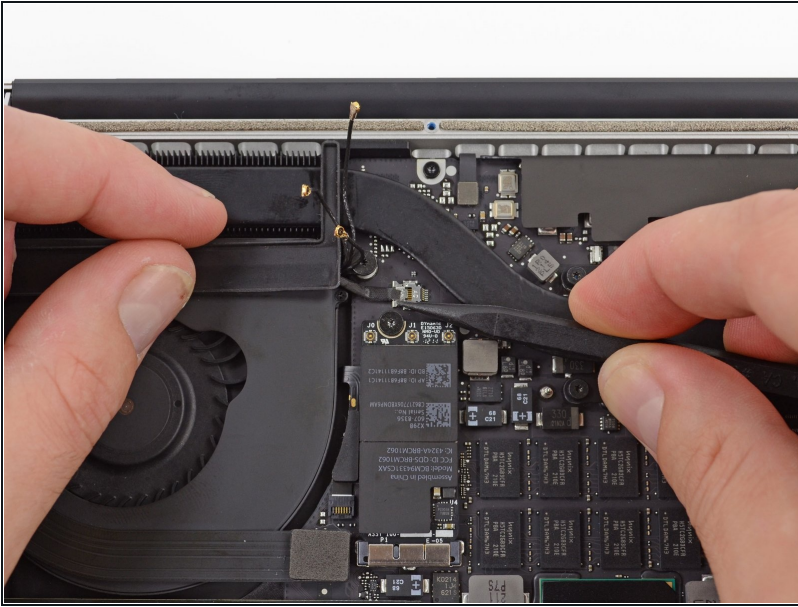
- Use the tip of a spudger to push the camera cable's plug toward the fan and out of its socket on the logic board.
  - ⓘ The plug in the photo has six connections, but some models have twelve connections. The process of removing the plug from its socket is the same for both.

  - ⓘ If the camera cable's plug won't come easily out of its socket on the logic board, fold back the rubber cover over the fan to gain access to the cable, then gently pull on the cable while using the spudger to gently push the plug out of its socket.

  - ⚠ Be sure to push parallel to the board, first on one side, then the other, to slowly "walk" the plug out of its socket. Do not pry up, or you will damage the socket.

Step 7
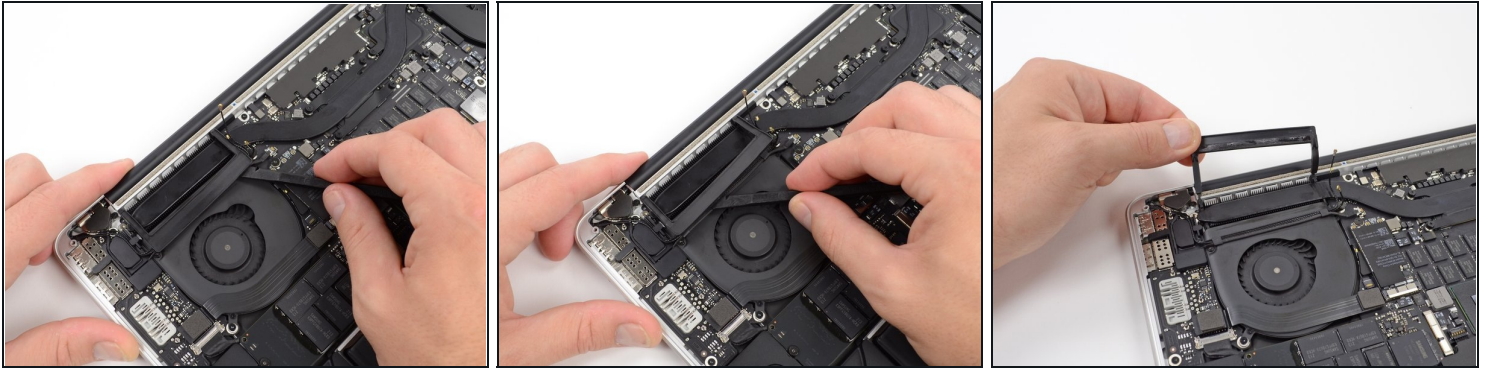
- Insert the flat end of a spudger underneath the rubber heat sink cover on the right fan.

- Slide the spudger underneath the length of the cover, releasing the adhesive.

- Lift the cover and flip it back so that you can access the cables underneath.
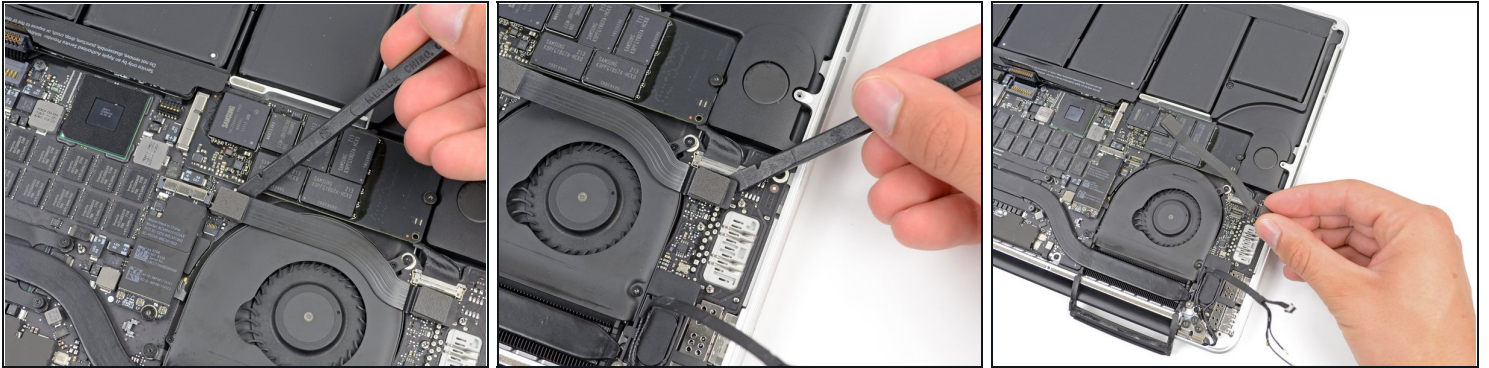
Step 8
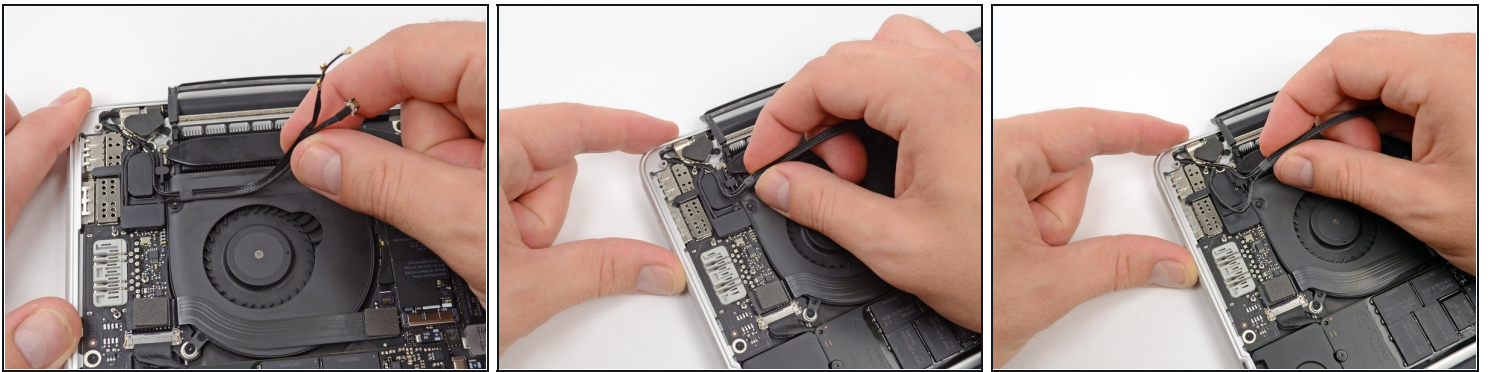
- Use your fingers to pull the AirPort/Camera cables up off the fan.
  - ⓘ The cables are adhered to the fan, so peel them up carefully to avoid damaging them.

- Carefully de-route the cables from the plastic cable guide.

Step 9 — I/O Board Cable

ⓘ If your I/O Board cable's connectors have [notches in the padding](#), you will need to **release a locking lever underneath the notch** in order to remove the cable. If this is the case, **don't pry up on the connector until the levers are unlatched**.

- Using the flat end of a spudger, pry the I/O Board connector straight up out of its socket on the logic board.

  📌 During reassembly, connect this end first, as it does not flex.

- In a similar fashion, remove the I/O Board cable connector from its socket on the I/O Board.

- Remove the I/O Board cable from the MacBook Pro.

Step 10 — Airport Card
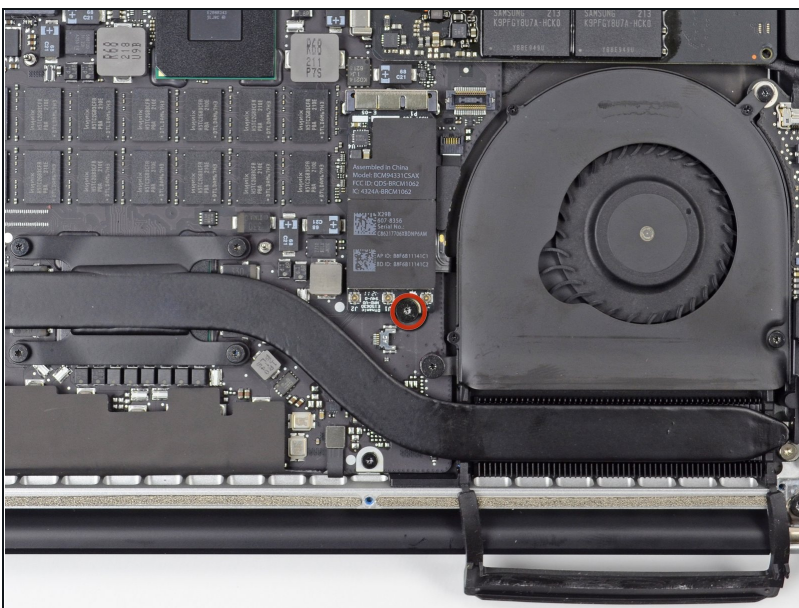
- Remove the single 2.9 mm T5 Torx screw securing the AirPort card to the logic board.
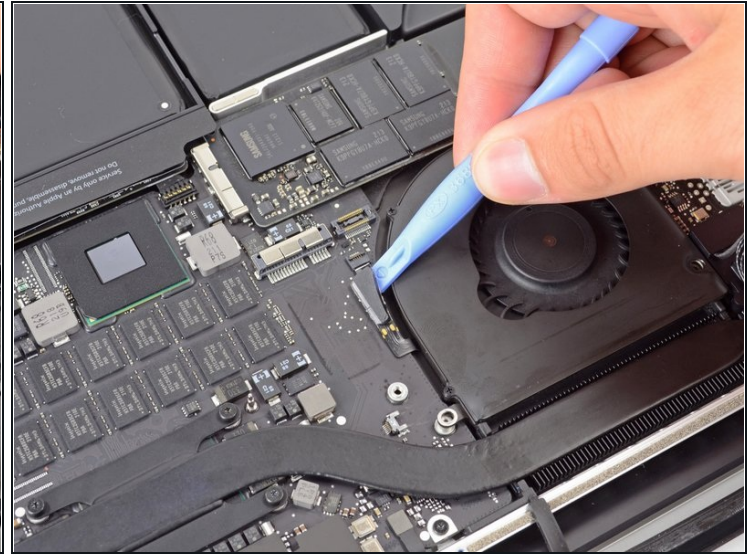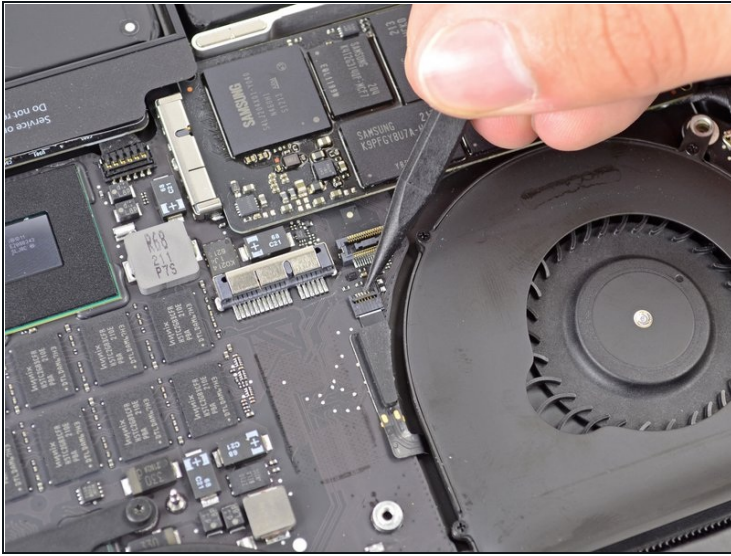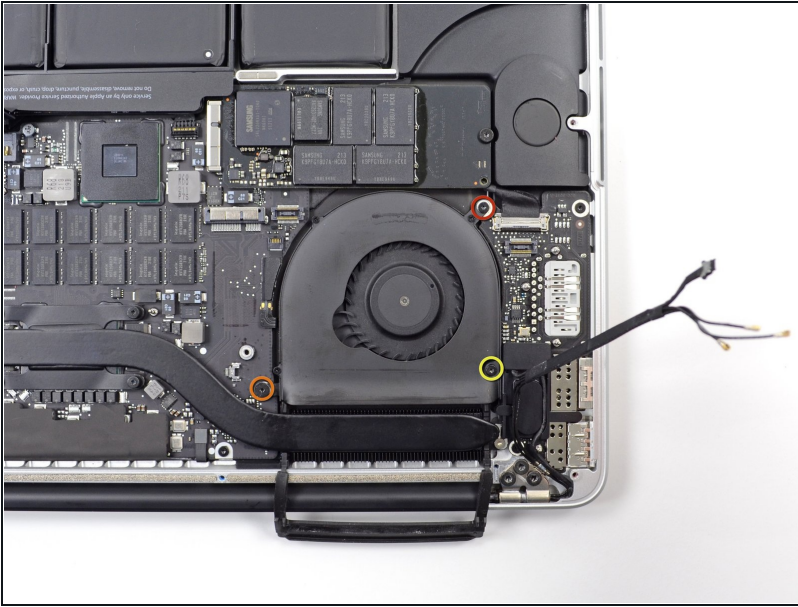
Step 11

- Grasp the sides of the AirPort card and lift it up to a shallow angle (5-10˚) to separate the light adhesive adhering it to the logic board.

- Pull the AirPort card parallel out of its connector on the logic board to remove it.

Step 12

- 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.

- Starting at the top of the cable, slide a plastic opening tool under the right fan cable to free it from the logic board.

⚠ Use caution when freeing the cable, as it is strongly adhered to the logic board.

Step 13

- Remove the following three screws securing the right fan to the logic board:
  - One 4.4 mm T5 Torx screw
  - One 3.9 mm T5 Wide Head Torx screw
  - One 5.0 mm T5 Torx screw with 2 mm collar
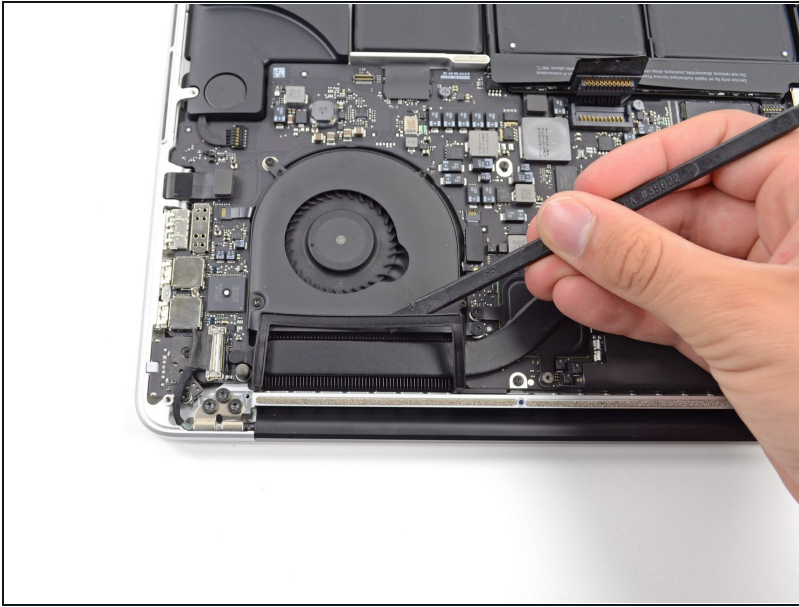
Step 14
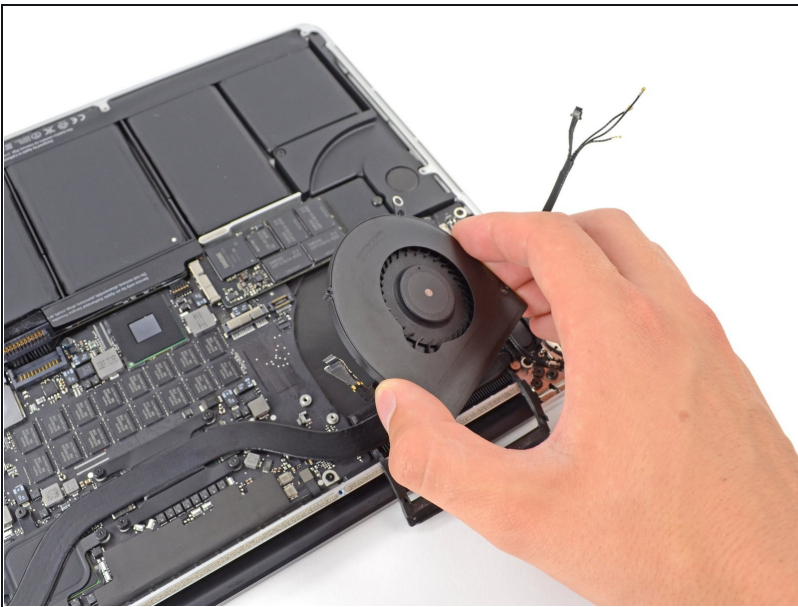
- Lift and remove the right fan out from the MacBook Pro.

- 📌 When reinstalling the fan, it's easiest connect the fan ribbon cable as you drop the fan in place, rather than after you've installed the three fan screws.
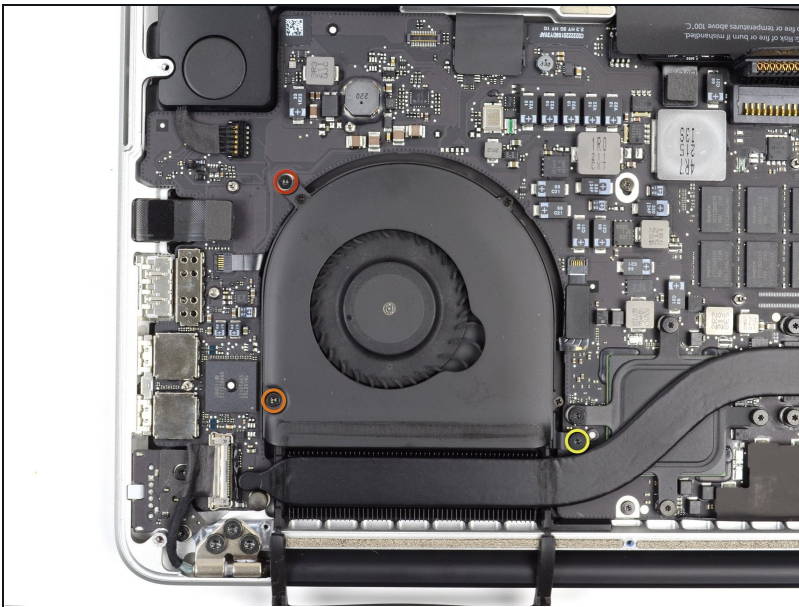
Step 15 — Left Fan

- Use the flat end of a spudger to lift the rubber heat sink cover up off the left fan.

Step 16

- Remove the following three screws securing the left fan to the logic board:
  - One 4.4 mm T5 Torx screw with 2 mm collar
  - One 5.0 mm T5 Torx screw with 2 mm collar
  - One 3.9 mm T5 Wide Head Torx screw

- (i) When reinstalling the fan and its screws, don't fully torque the screws until you've first installed all of them loosely, so that the fan can move a little and position itself properly as you insert the screws into their threaded standoffs.
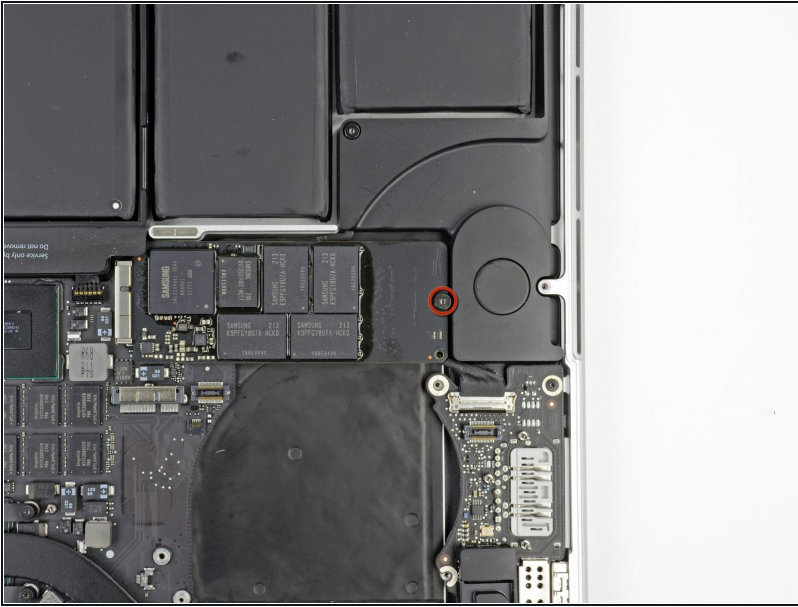
Step 17
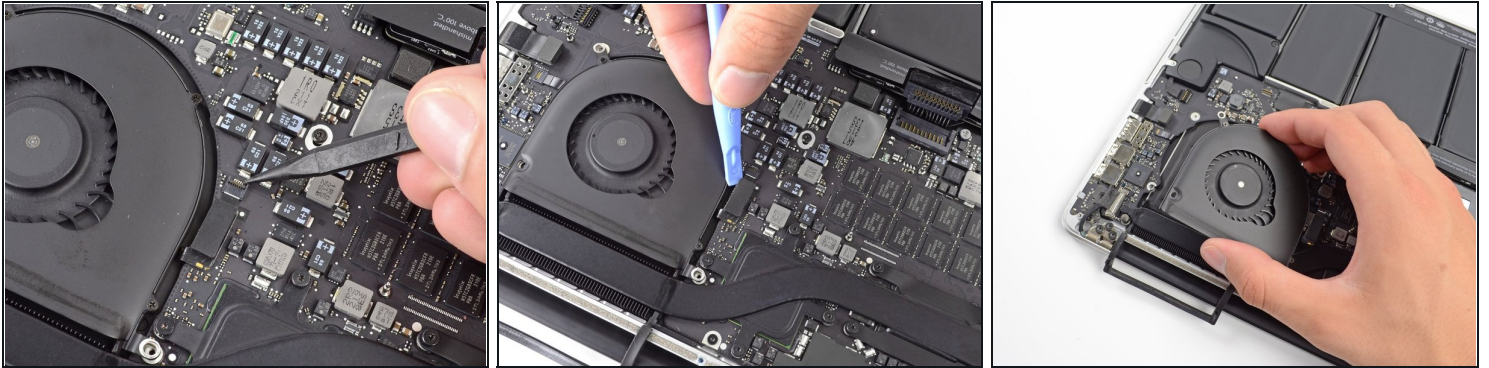
- Use the tip of a spudger to flip up the retaining flap on the left fan ribbon cable ZIF socket.

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

- Starting at the top of the cable, slide a plastic opening tool under the left fan cable to free it from the logic board.

  ⚠ Use caution when freeing the cable, as it is strongly adhered to the logic board. If necessary, use an iOpener or hair dryer to heat the cable in order to soften the adhesive and make it easier to remove.

- Lift the left fan out of the device.

⊡ When reinstalling the fan, it's easier to connect the fan ribbon cable as you drop the fan in place, rather than after you've installed the three fan screws.
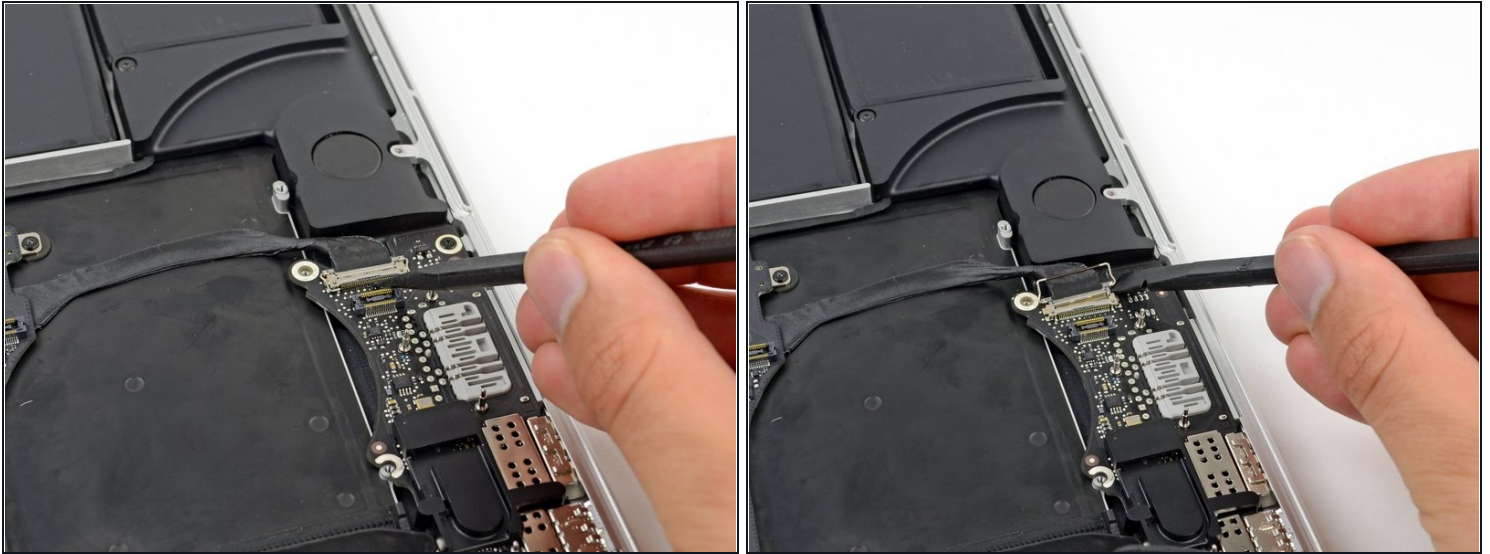
Step 18 — SSD

- Remove the single 3.1 mm T5 Torx screw securing the SSD to the logic board.

Step 19
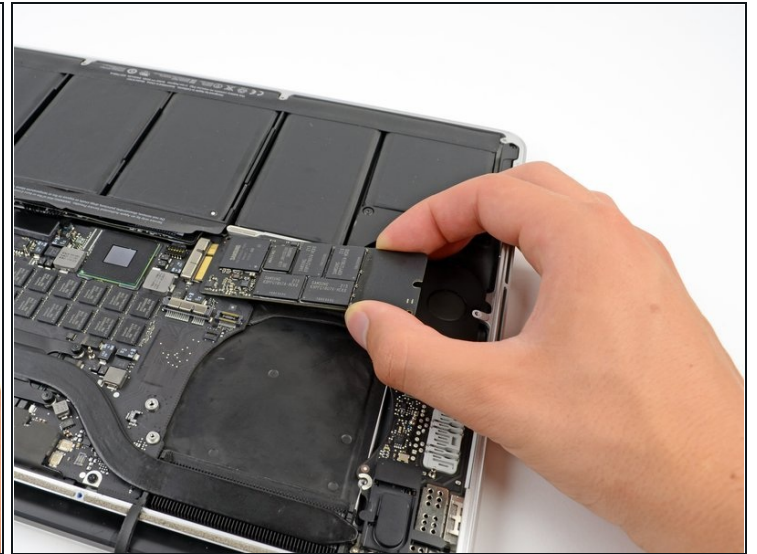
- Slightly lift the rightmost side of the SSD and firmly slide it straight away out of its socket on the logic board.

Step 20 — I/O Board

- Use the tip of a spudger to flip up the I/O board data cable lock and rotate it toward the battery side of the computer.

- Use the flat end of a spudger to slide the I/O board data cable straight out of its socket on the logic board.
  ⚠️ Do not lift up on the I/O board data cable, as its socket is very fragile. Pull the cable parallel to the face of the logic board.

Step 21
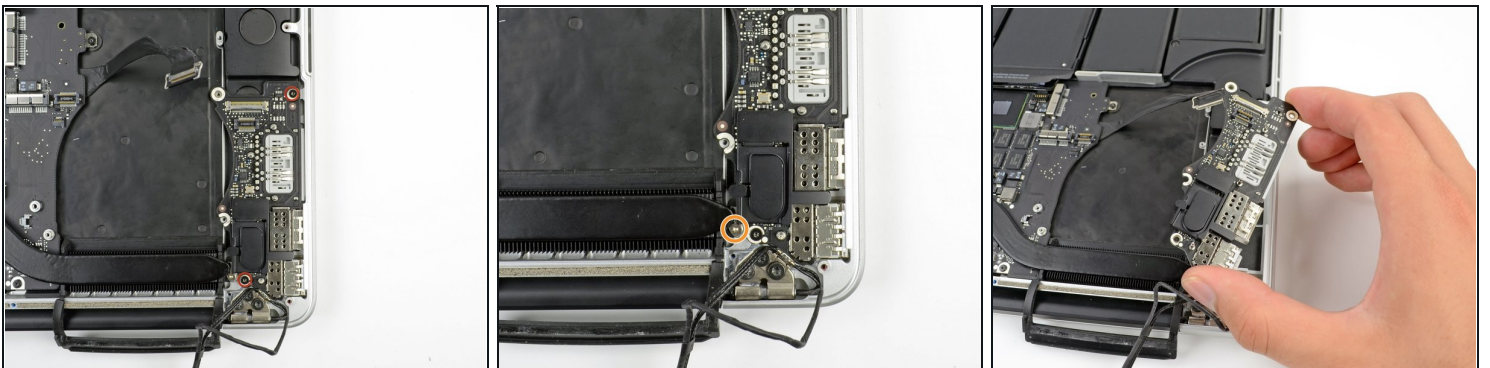
- Remove the two 3.1 mm T5 Torx screws securing the I/O board to the logic board.
  - On some models, also removing the silver 3.5 mm T5 Torx screw from the heatsink can aid in I/O board removal.

- Carefully lift the I/O board and remove it from the lower case.

Step 22 — Logic Board Removal
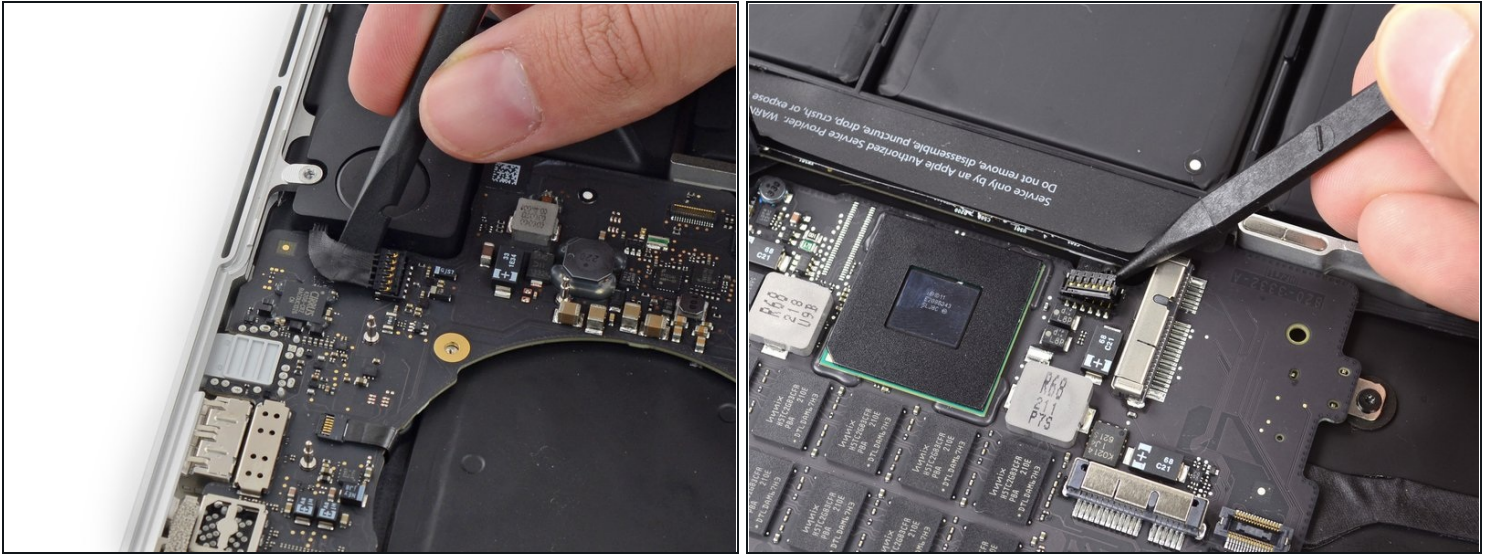
- Use the flat end of a spudger to pry the left speaker connector up and out of its socket on the logic board.

- 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 head, and not on the socket itself. Prying on the socket may cause it to separate from the logic board.

Step 23

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

- Use the flat end of a spudger to flip up the retaining flap on the keyboard ribbon cable [ZIF socket](#).
  ⚠ Be sure you are prying up on the hinged retaining flap, **not** the socket itself.

- Use the flat end of a spudger to push the keyboard ribbon cable out of its socket.

Step 24
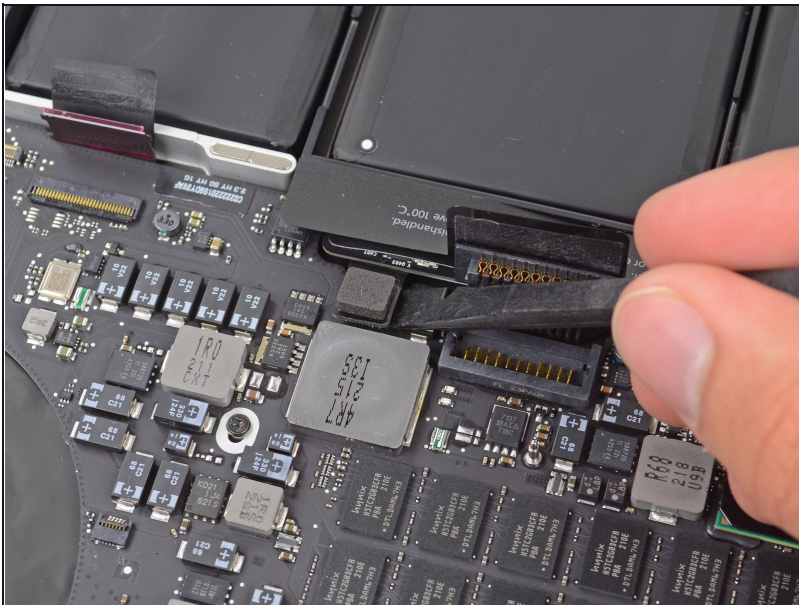
- Use the flat end of a spudger to pry the trackpad ribbon cable connector up out of its socket.

Step 25
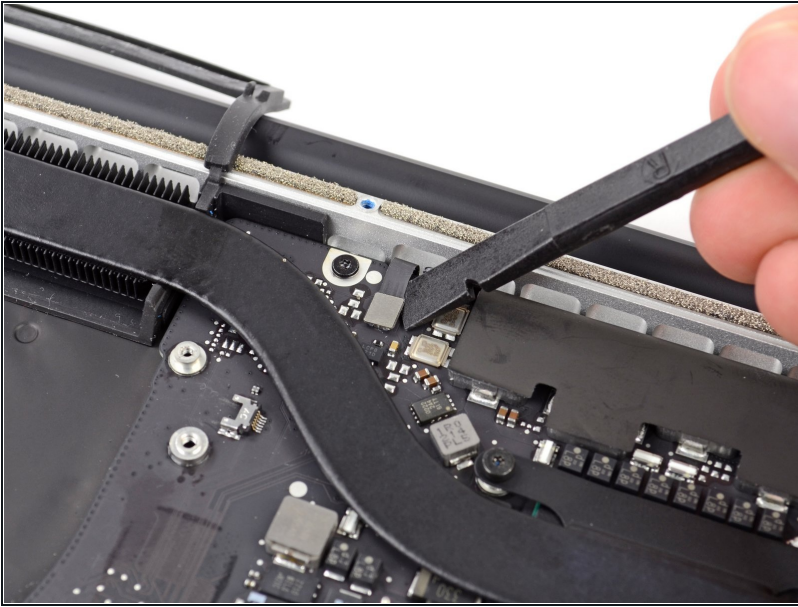
- Use the flat end of a spudger to pry the keyboard backlight connector up from its socket on the logic board.

Step 26

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

⚠ Be sure you are prying up on the hinged retaining flap, **not** the socket itself.
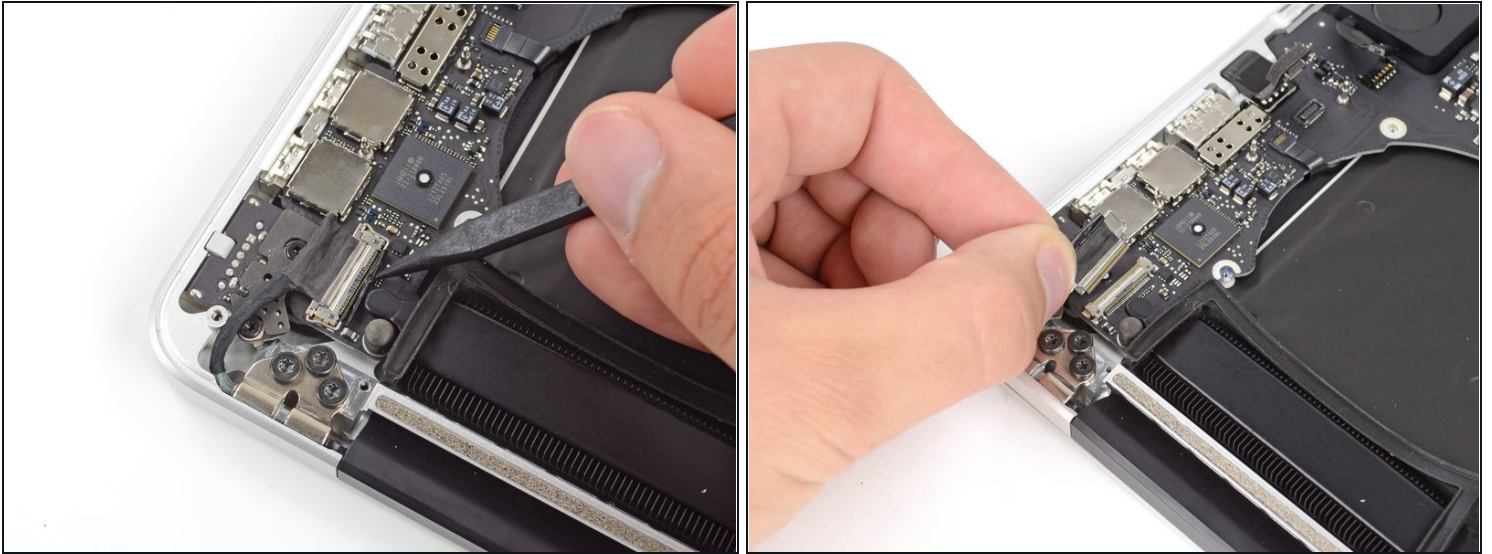
- Pull the microphone ribbon cable out of its socket.

Step 27

- Use the tip of a spudger to flip up 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 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.

Step 28
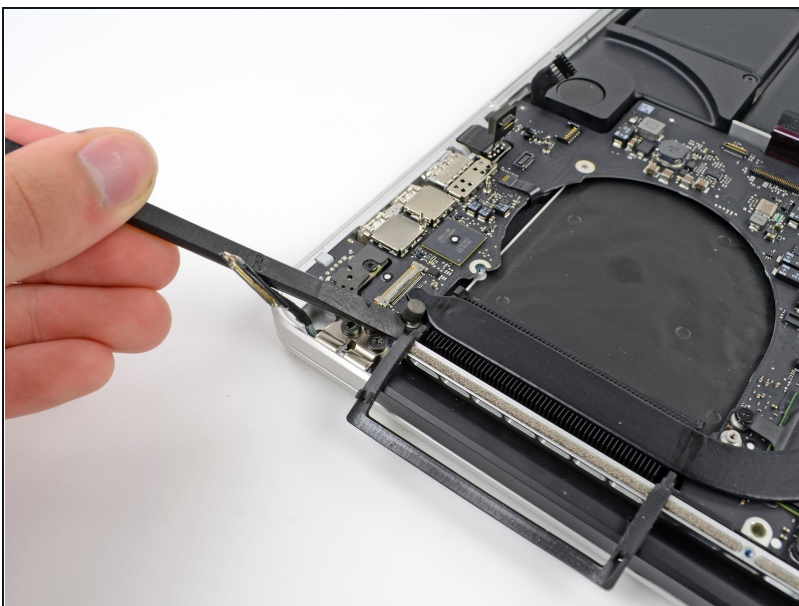
- Use the flat end of a spudger to carefully pry off the rubber screw cap on the raised screw head near the MagSafe 2 connector.
  ⓘ The location of this screw may vary between models.

Step 29
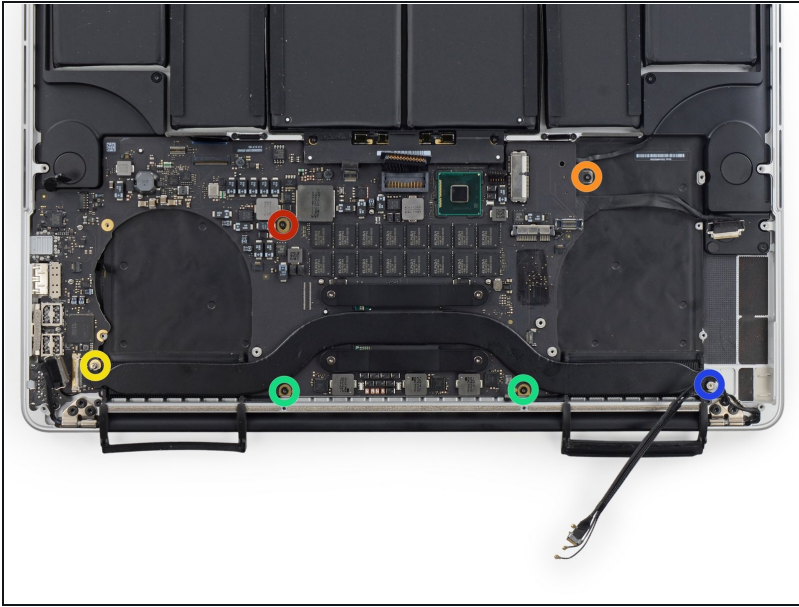
- Remove the following six screws securing the logic board to to the upper case:
  - One 3.1 mm T5 Torx screw
  - One 2.5 mm T5 Torx screw
  - One 5.5 mm silver, raised-head T5 Torx screw
  - Two 5.7 mm T5 Torx screws
  - One 3.8 mm silver T5 Torx screw

Step 30

- Lifting from the side nearest the battery, rotate the logic board toward the top of the MacBook Pro.
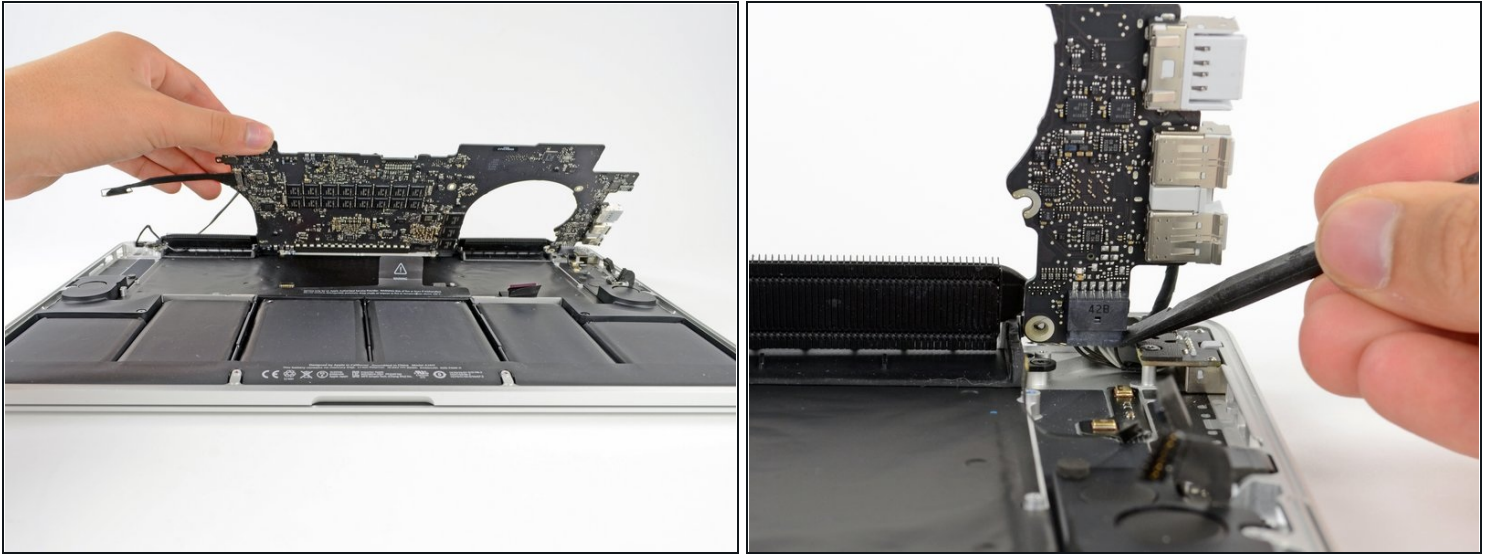 - ⓘ You may need to slide the logic board a few millimeters to the left in order to get clearance for the ports along the right edge of the board.

- Using the flat end of a spudger, carefully push the MagSafe 2 connector out of its socket on the bottom of the logic board.
  - ⓘ Disconnecting the MagSafe 2 connector can be difficult. If you are only removing the logic board to temporarily get it out of the way, such as for a battery replacement, you may find it easier to simply remove the two 2.5 mm T5 Torx screws securing the MagSafe DC-In board, and then remove the logic board and MagSafe board together.

Step 31
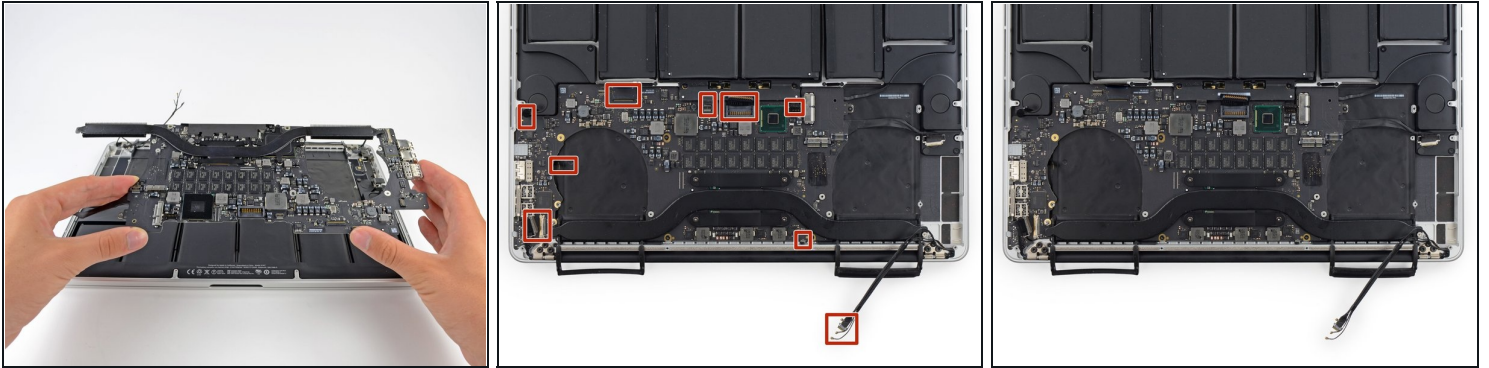
- Remove the logic board assembly from the MacBook Pro.

ⓘ While the logic board and fans are removed, use a can of compressed air and a soft, non-static brush to remove dust and other debris from the upper case and the logic board, particularly from the fan exhaust openings along the rear edge of the upper case.

⊡ When reinstalling the motherboard, make sure all cables, and the two rubber heat sink/fan covers, are visible and not trapped under the motherboard.

  - Second photo, clockwise from top: battery, right speaker, keyboard backlight, AirPort/camera, display, microphone, left speaker, keyboard, and trackpad.

Step 32 — Speakers
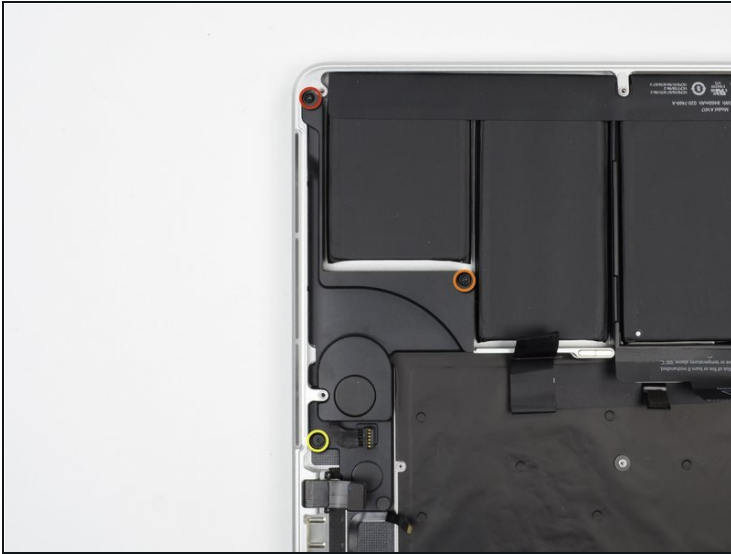
- Remove the following three screws securing the left speaker to the upper case:
  - One 5.6 mm T5 Torx screw

  - One 6.9 mm T5 Torx screw

  - One 2.6 mm T5 Torx screw

- Lift the left speaker out of the upper case and set it aside.
  - ⓘ The speaker is secured to the case with some light adhesive.

Step 33

- Remove the following three screws securing the right speaker to the upper case:
  - One 5.6 mm T5 Torx screw

  - One 6.9 mm T5 Torx screw

  - One 2.6 mm T5 Torx screw

- Remove the right speaker from the MacBook Pro.
  - ⓘ The speaker is secured to the case with some light adhesive.

Step 34 — Battery

- Remove the two 3.2 mm T5 Torx screws securing the battery board.

Step 35

- ⓘ The liquid adhesive remover provided in your kit can affect the antireflective coating on your MacBook Pro's display.

- To protect your display, place a sheet of aluminum foil between the display and keyboard and leave it there while you work.

Step 36
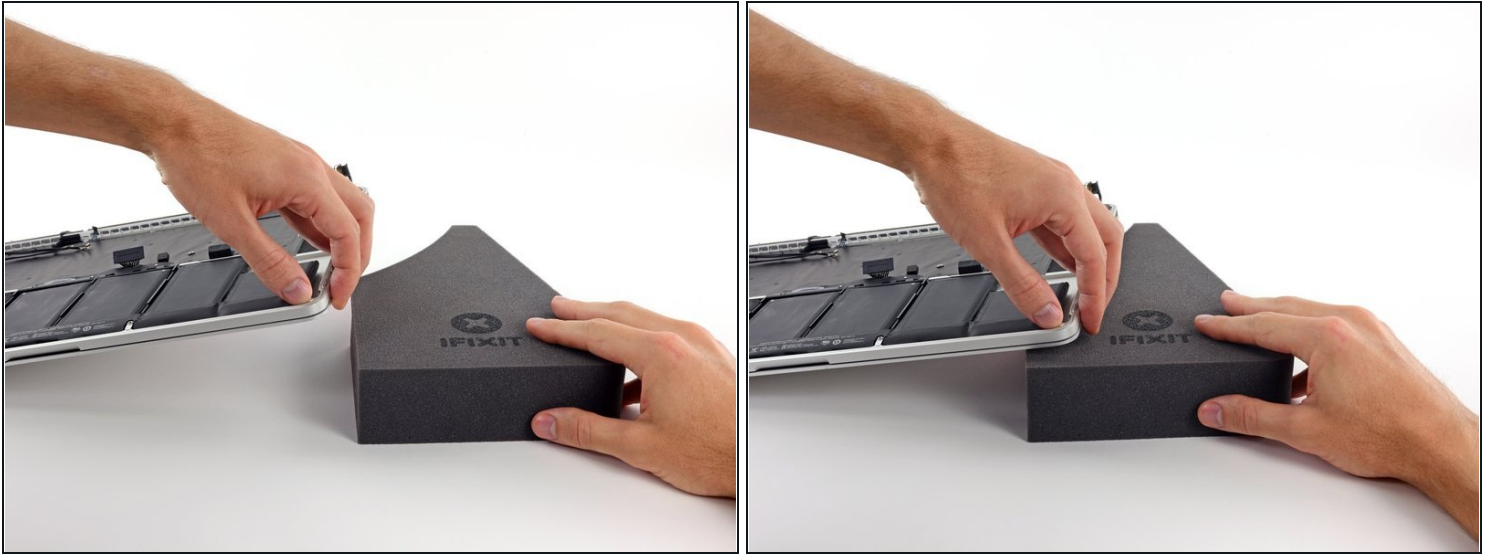
- With the front edge of the MacBook Pro facing you, lift the right side and prop it up at a slight angle, using a sturdy foam block or book.
  - ⓘ In the following steps, you'll apply liquid adhesive remover to the right (outer) edge of the battery. Keeping this side of the MacBook Pro elevated will help the adhesive remover flow underneath the battery.

Step 37

- Now that your MacBook Pro is fully prepped, it's time to prep yourself.

⚠ iFixit adhesive remover contains acetone, a mild skin and eye irritant.

  - Wear eye protection when handling and applying the adhesive remover. (Eye protection is included in your kit.)

  - **Do not** wear contact lenses without eye protection.

  - Protective gloves are also included in your kit. If you are concerned about possible skin irritation, put your gloves on now.

Step 38

- Open your container of adhesive remover.

- Fill the syringe included in your kit with a small amount (approximately 1-2 milliliters) of adhesive remover.
  - (i) It's best to fill the syringe with no more than about 1-2 milliliters of adhesive remover at a time, so as to avoid accidentally applying too much.

  - Refill your syringe as needed throughout the rest of this procedure.

Step 39
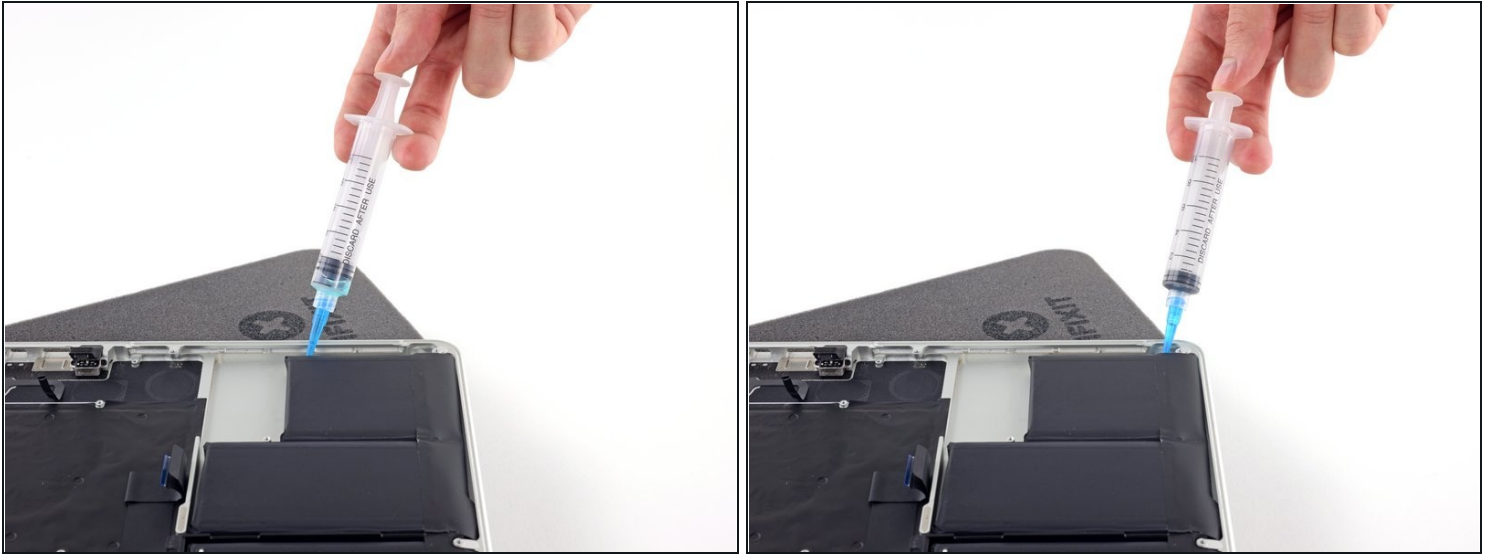
- Apply a small amount of adhesive remover (approximately 1 ml) evenly along the elevated edge of the outer right battery cell.

- Wait 2-3 minutes for the liquid adhesive remover to penetrate underneath the battery cell before you proceed to the next step.

Step 40

- Slide one corner of a plastic card under the outer edge of the battery cell.
  - ⓘ It may help to gently twist the card to open up a slight gap between the battery cell and the MacBook Pro's case.

- Slide the card farther underneath the battery cell to separate it from the adhesive securing it to the MacBook Pro's upper case.

Step 41

- Lift the battery cell to separate it from the MacBook Pro's upper case, but don't try to remove it.

- Leave the plastic card underneath the battery cell to prevent it from re-adhering as you proceed to the next step.

Step 42

- Apply a small amount of adhesive remover (approximately 1 ml) evenly along the elevated edge of the next battery cell.

- Wait 2-3 minutes for the liquid adhesive remover to penetrate underneath the battery cell before you proceed to the next step.

Step 43

- Slide one corner of your plastic card underneath the second battery cell.

- Push the card underneath the second battery cell, and slide it side to side to separate the adhesive underneath.

- Leave the plastic card underneath both battery cells (or [flip them over](#)) to prevent them from re-adhering as you proceed to the next step.

Step 44
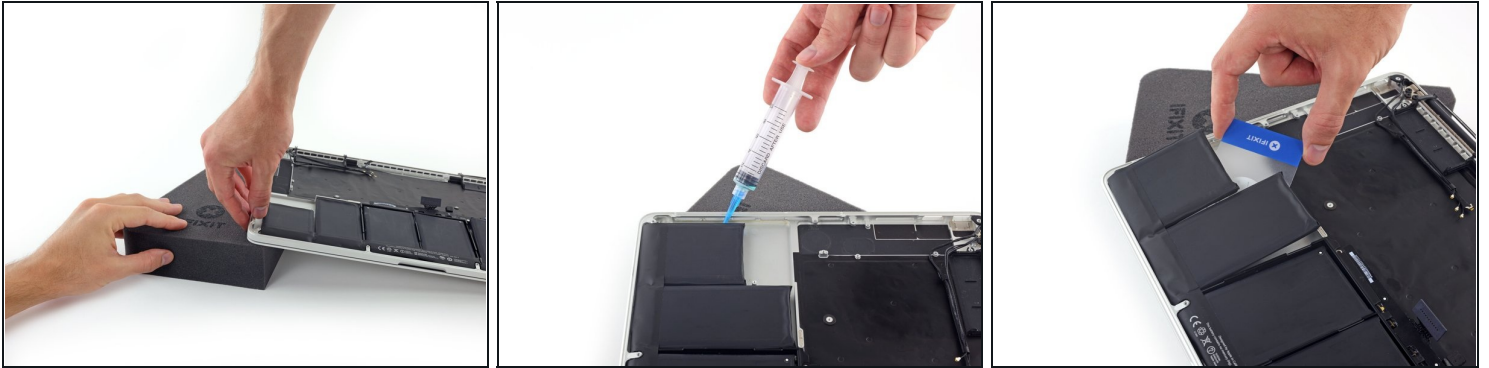
- It's time to switch sides. Remove your book or foam block and place it under the opposite side of your MacBook Pro.

- Repeat the procedure from the prior steps to separate the two battery cells on this side:
  - Apply your adhesive remover to the elevated edge of the outer battery cell, and wait 2-3 minutes for it to penetrate.

  - Work one corner of a plastic card underneath the battery cell, and slide the card fully underneath the battery cell to separate it.

  - Do the same for the adjacent cell.

  - Leave your plastic card in place or flip the battery cells over to prevent them from re-adhering during the following steps.
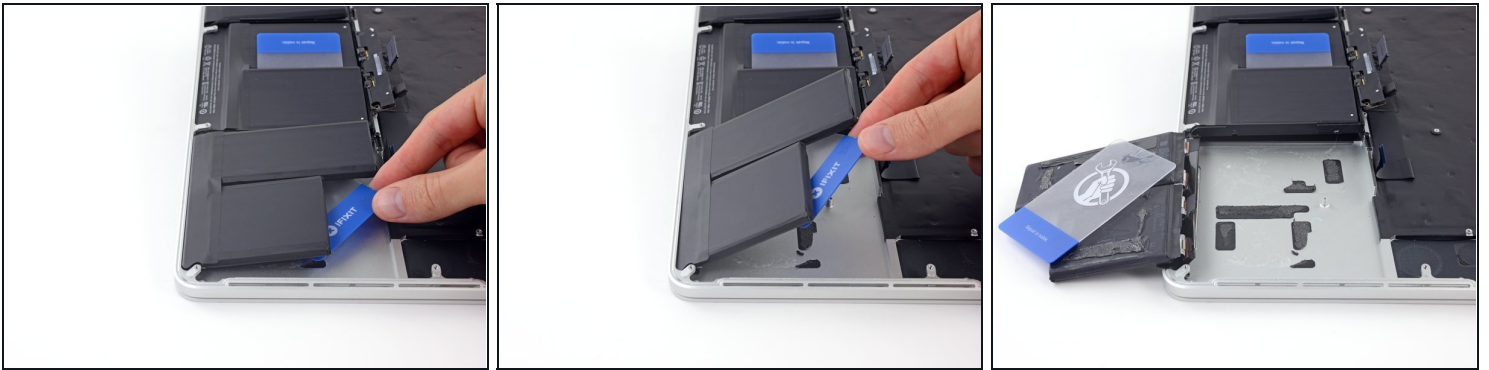
Step 45
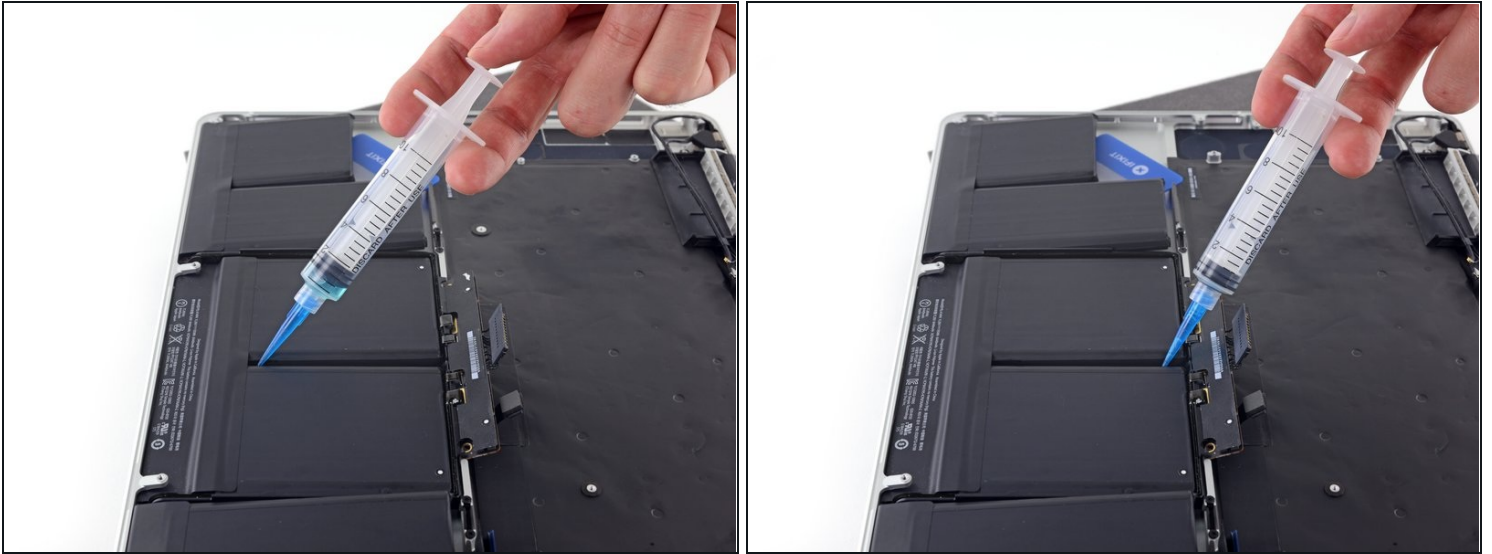
- With the left edge of your MacBook Pro still propped up, apply a small amount (about 1 ml) of adhesive remover down the center line between the two middle battery cells.

- Wait 2-3 minutes for the adhesive remover to penetrate before you continue.

Step 46

- Slide one corner of a plastic card between the middle two cells, and under the elevated edge of the center-right battery cell.

- Slide the card farther underneath the battery cell to slice through the adhesive securing it in place.

- Don't try to fully separate this battery cell yet. Leave your plastic card in place to prevent it from re-adhering.

Step 47

- Flip the two de-adhered right-hand battery cells over the front edge of the MacBook Pro, if you haven't already. This will allow access to the outside edge of the center cell.

Step 48
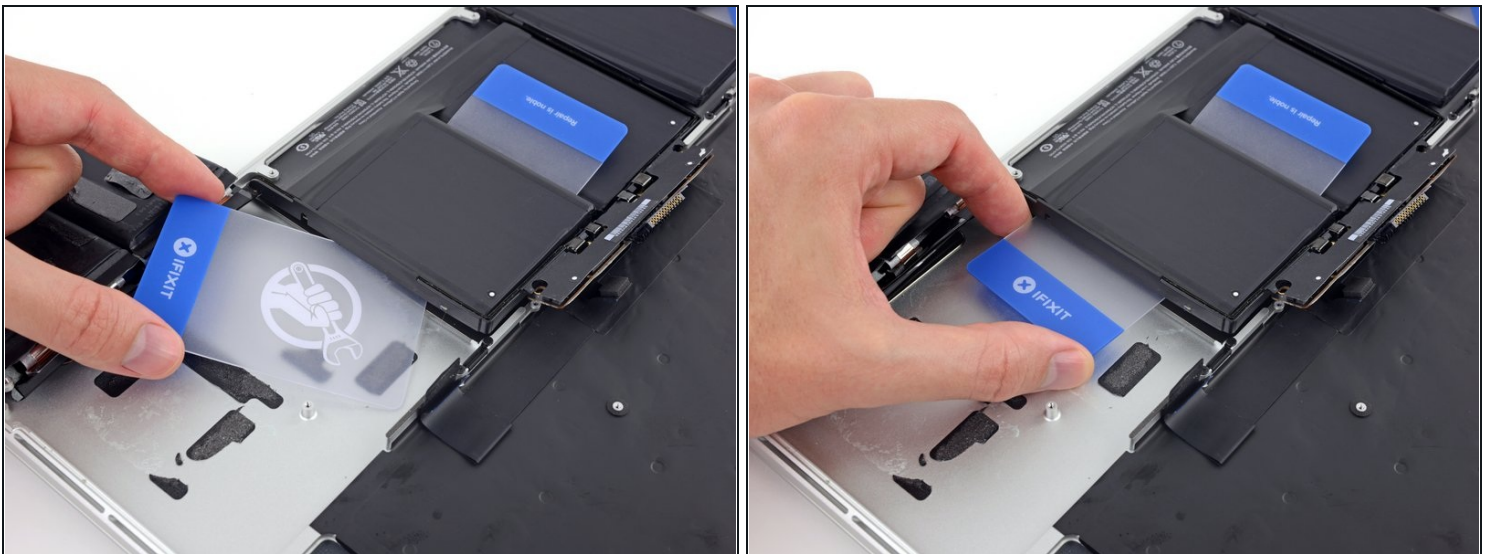
- Push one corner of a plastic card below the plastic battery frame and underneath the remaining adhered edge of the lower center cell.

⚠ Do not pry along the edge nearest the battery connector, or you risk damaging the keyboard ribbon cable.

- Slide your card all the way under the battery cell, and leave it to prevent the battery cell from re-adhering.

Step 49

- Remove the first plastic card that you inserted under the center-right battery cell.
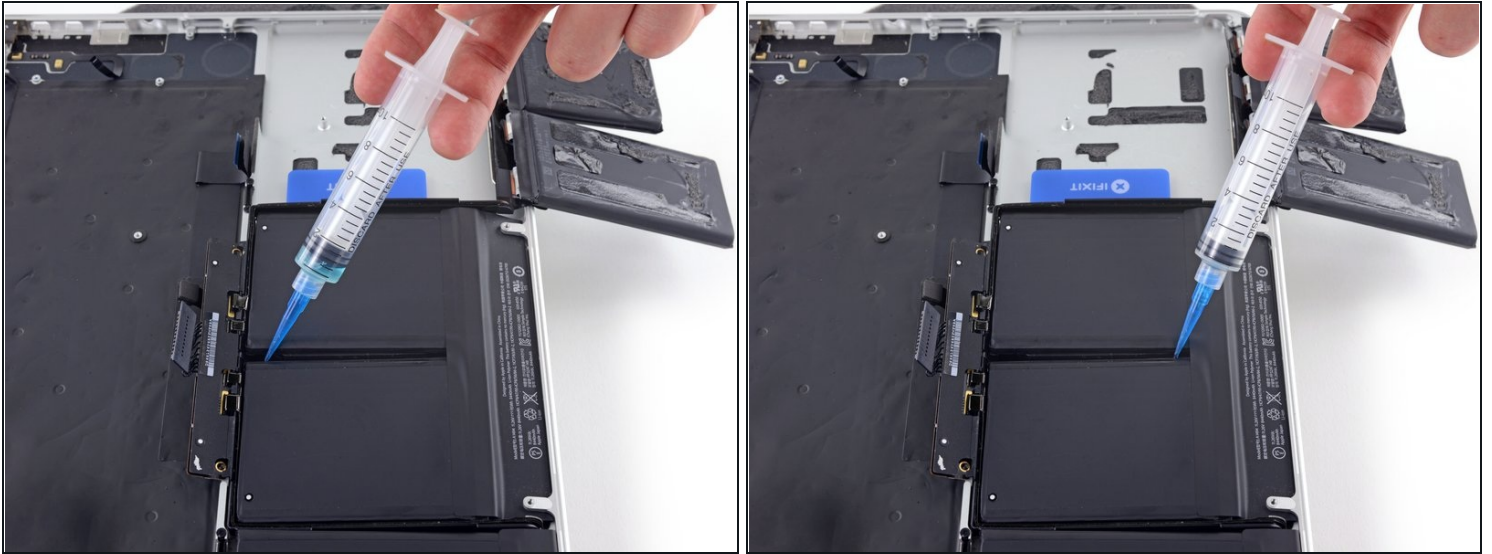
Step 50

- Remove your book or foam block.

- With the front edge of the MacBook Pro facing you, lift the right side and prop it up once again.

Step 51

- Apply a small amount (about 1 ml) of adhesive remover between the two center battery cells, so that it flows underneath the remaining battery cell.

- Wait 2-3 minutes for the adhesive remover to penetrate before you continue.

Step 52

- Slide one corner of a plastic card under the elevated edge of the final battery cell.

- Push the card farther underneath the battery cell to slice through the adhesive securing it in place.

- Don't try to fully separate this battery cell yet. Leave your plastic card in place to prevent it from re-adhering.

Step 53

- Repeat the process you used on the center-right battery cell to finish separating the adhesive on the center-left cell:
  - Lift and flip the two outer battery cells to clear access to the remaining adhered edge of the center-left battery cell.
  - Slide your card all the way underneath the battery cell, and leave it to prevent the battery cell from re-adhering.
  - Remove the first card that you inserted under this battery cell in the previous step.

Step 54
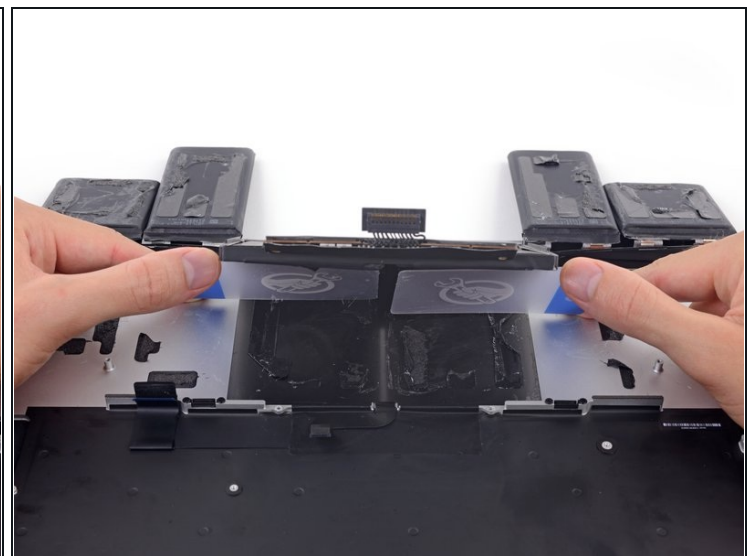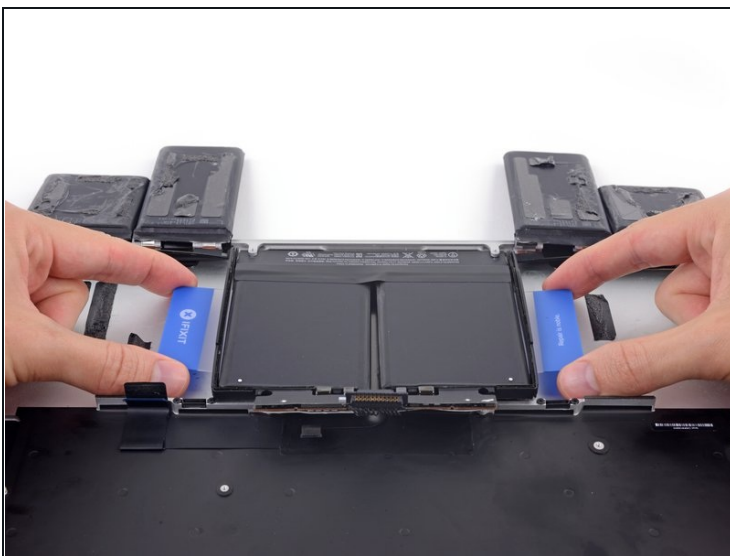
- With one plastic card underneath each of the two center battery cells, twist and lift both cards to fully separate the battery cells, together with the plastic frame and battery board, from the MacBook Pro.

Step 55
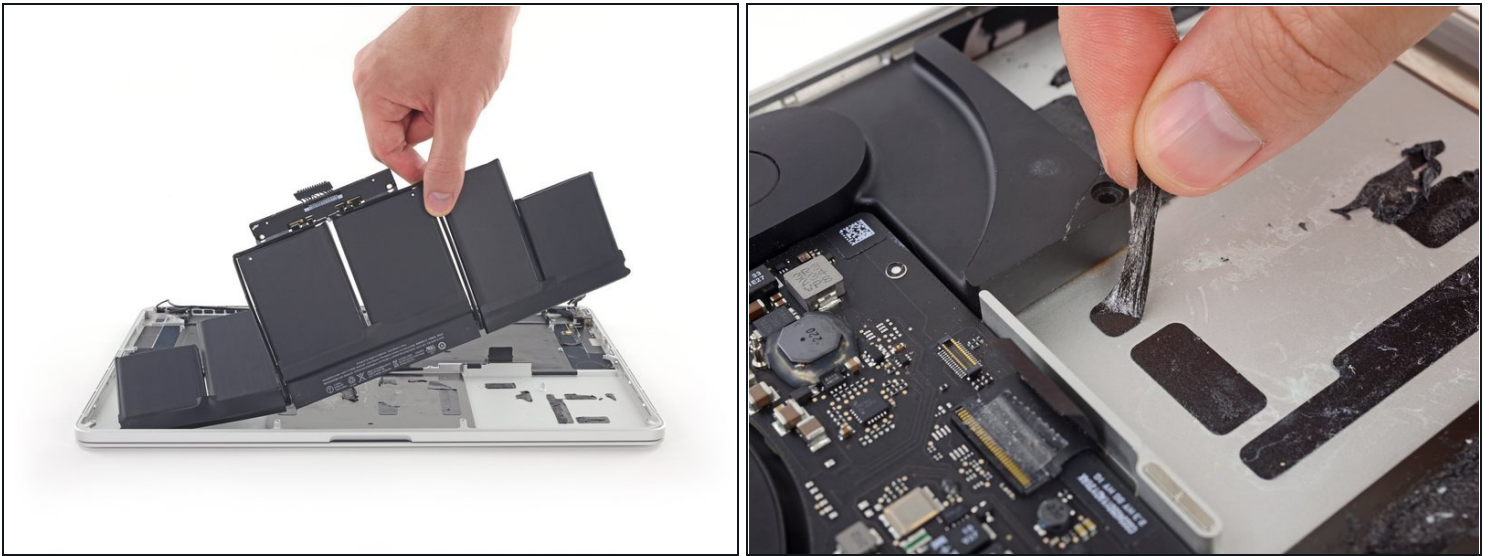
- Lift and remove the battery.

- ⬒ Before installing your new battery, remove all the old adhesive from the MacBook Pro's case.
  - With a little luck, you can slowly pull out each strip of adhesive with your fingers.

  - Otherwise, soak each strip of adhesive with a bit of adhesive remover for 2-3 minutes, and then scrape it out with a plastic tool. This can take quite a bit of work, so be patient.

  - Mop up any remaining adhesive remover and give your MacBook Pro a few minutes to air dry.

- ⬒ The replacement battery included in your iFixit kit comes with adhesive pre-installed. Test the battery's fit and alignment carefully before peeling off the film covering the adhesive, and then press each cell firmly into place. If any additional films/liners are present that weren't on your original battery, remove them now.

- Calibrate your battery before using it: allow it to drain overnight, then charge it to 100% and drain it again until your MacBook Pro shuts down automatically. Charge it again and use it normally.

- ⚠ If you notice any unusual behavior or problems after installing your new battery, you may need to [reset your MacBook Pro's SMC](#).

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