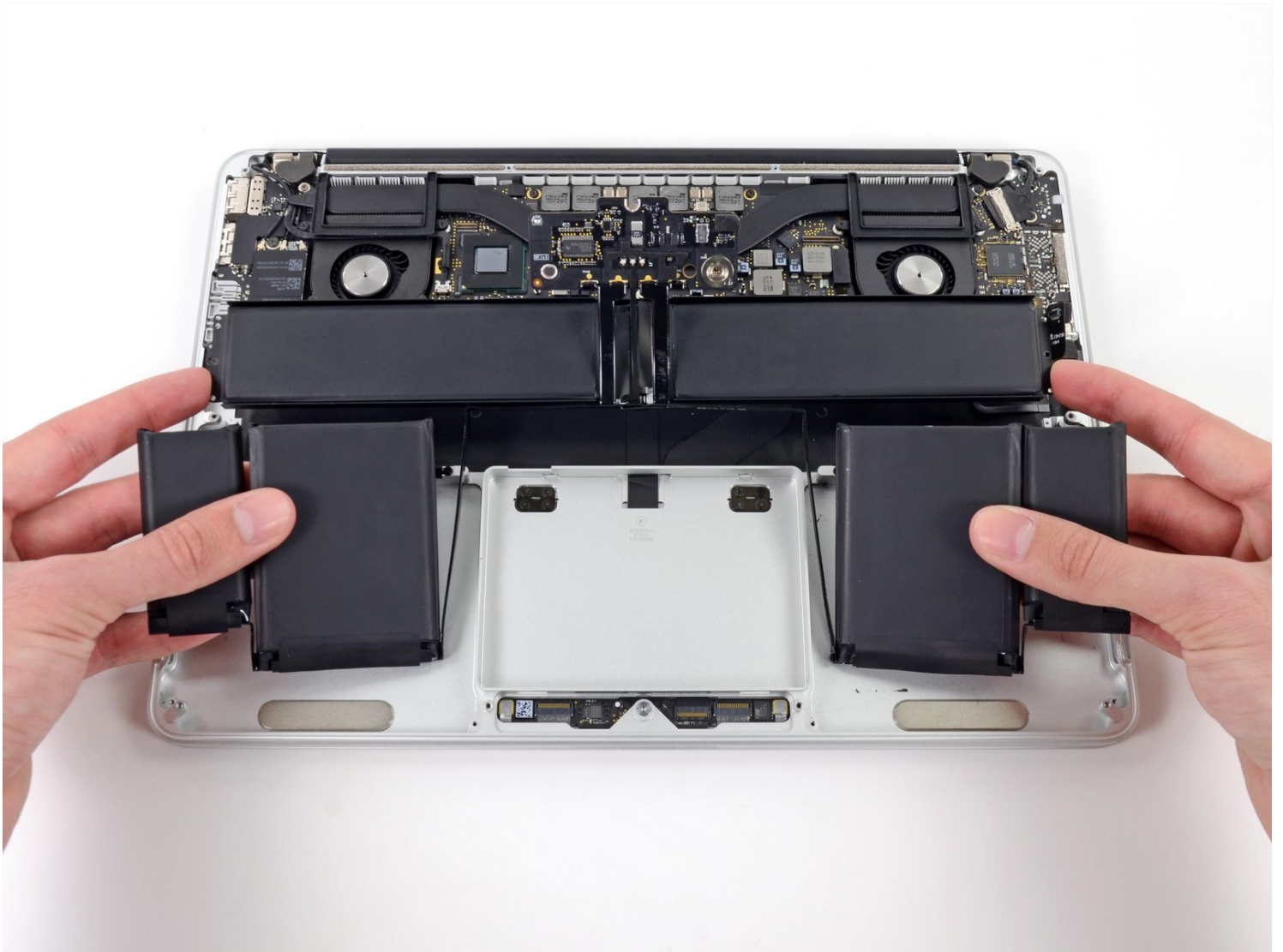




MacBook Pro 13" Retina Display Early 2013 Battery Replacement

Use this guide to safely remove the glued-in...

Written By: Sam Goldheart



INTRODUCTION

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. The battery is made up of six distinct cells, four of which are adhered to the upper case.

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.

To minimize risk of damage, turn on your MacBook and allow the battery to fully discharge before starting this procedure. A charged lithium-ion battery can create a dangerous and uncontrollable fire if accidentally punctured. If your battery is swollen, [take extra precautions](#).

Note: The solvent used to dissolve the battery adhesive can damage certain plastics, such as the MacBook Pro's plastic speaker enclosures. Take care when applying the solvent.

If you're using the old-style iFixit adhesive remover with separate bottle and syringe (no longer sold), [click here for a slightly modified set of instructions](#).



TOOLS:

[MacBook Pro and Air 5-Point Pentalobe Screwdriver](#) (1)

[iFixit Opening Tool](#) (1)

[Spudger](#) (1)

[T5 Torx Screwdriver](#) (1)

[T6 Torx Screwdriver](#) (1)

[Tweezers](#) (1)

[Scissors](#) (1)



PARTS:

[MacBook Pro 13" Retina \(Late 2012-Early 2013\) Battery](#) (1)

Step 1 — Lower Case



- Remove the following ten screws securing the lower case to the upper case:
 - Two 2.3 mm P5 Pentalobe screws
 - Eight 3.0 mm P5 Pentalobe screws
- ☑ 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.
- Gently pull the lower case away from the upper case.
- Remove the lower case and set it aside.

Step 3



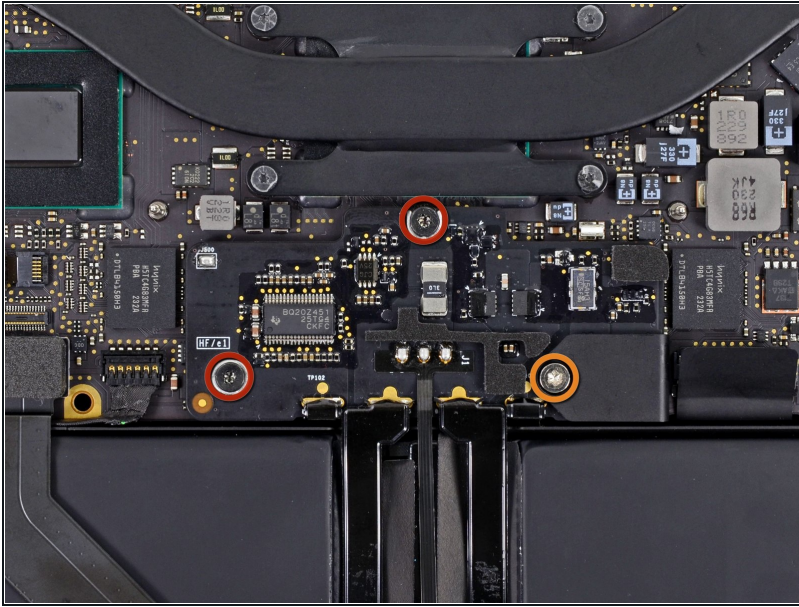
- ☑ During reassembly, gently push down the center of the lower case to reattach the two plastic clips.
 - The lower case is connected to the upper case at the center, with two plastic clips.

Step 4 — Battery Connector



- Remove the plastic cover adhered to the battery contact board.

Step 5



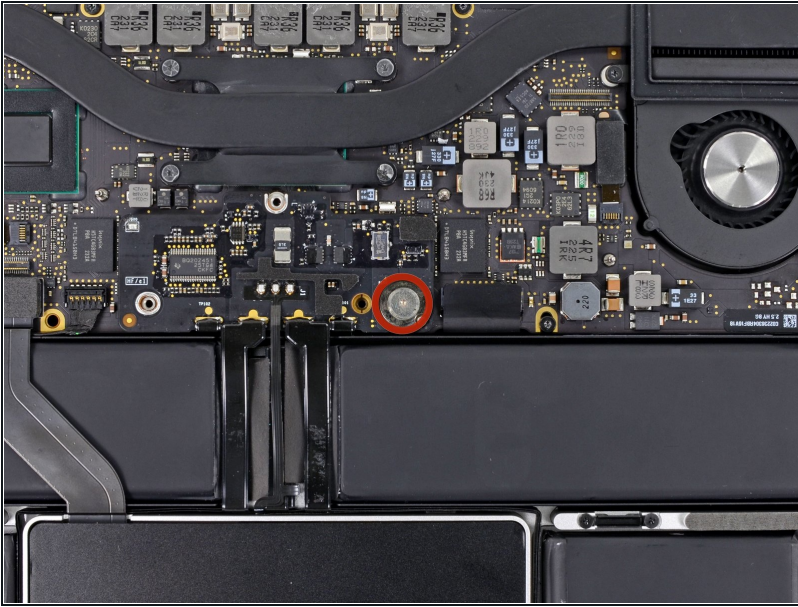
- Remove the following screws securing the battery connector board to the logic board:
 - Two 2.8 mm T6 Torx screws
 - One 7.0 mm T6 Torx shouldered screw

Step 6



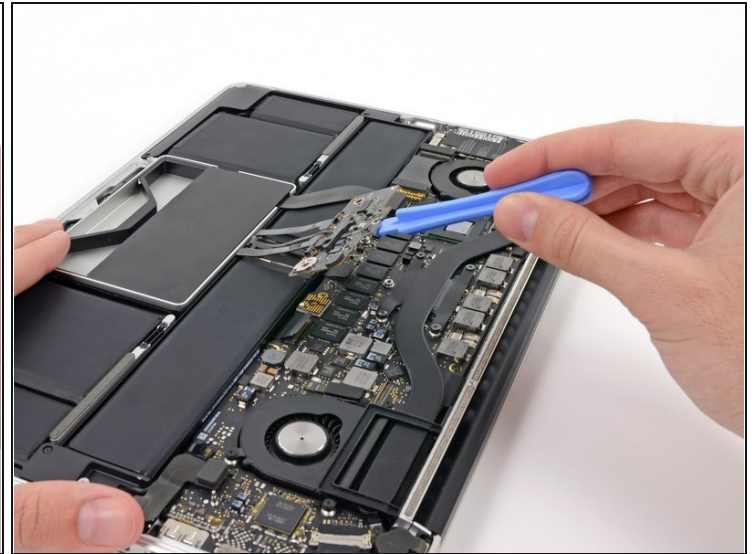
- Use [tweezers](#) to remove the small plastic cover located near the bottom right of the battery connector board.

Step 7



- Remove the wide head 6.4 mm T6 Torx screw securing the battery connector to the logic board assembly.

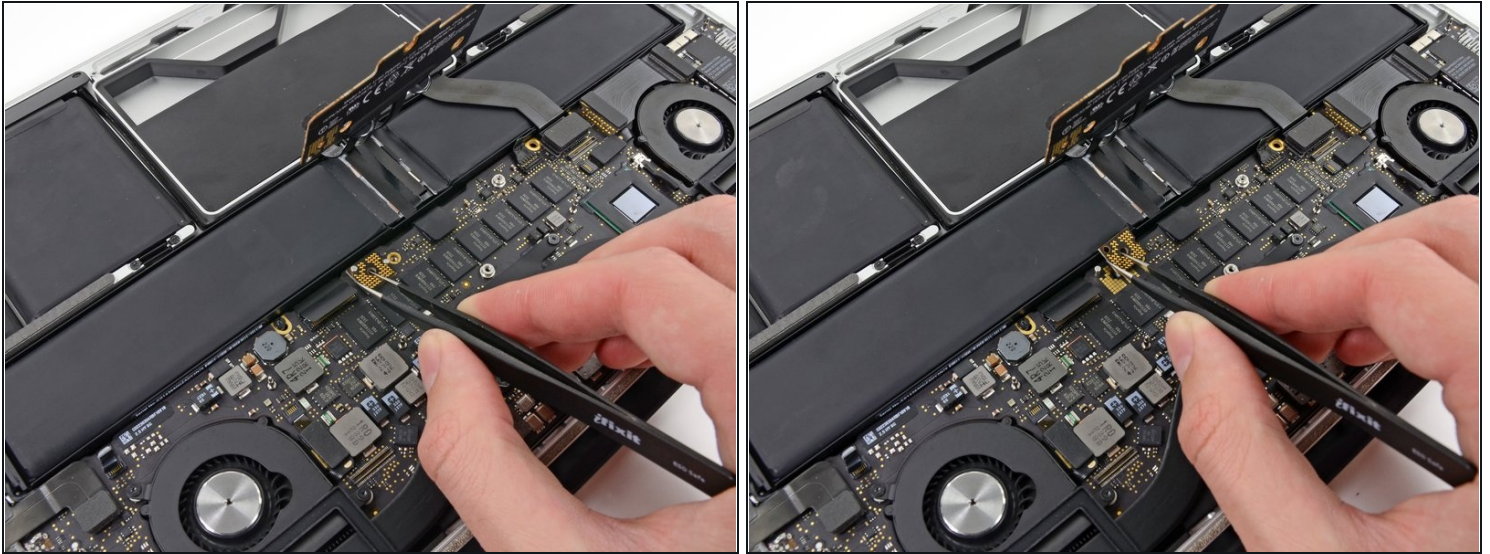
Step 8



- Carefully lift the battery connector board up off the logic board.
- It is recommended to bend the battery cables just slightly, to keep the board suspended up above the logic board and out of the way.

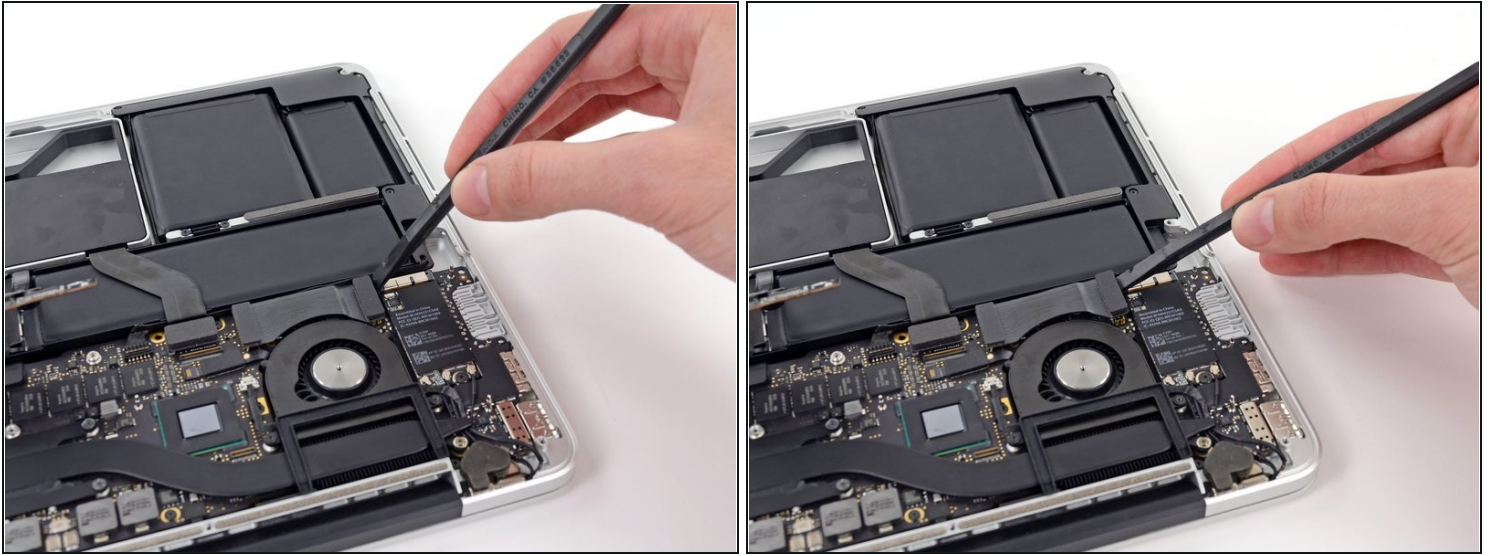
⚠ Do not fold the board completely over, or crease the cables, as this may damage the battery.

Step 9 — Battery Contact Board



- Grasp the Interposer with [tweezers](#).
 - ① An interposer is the name for an interface that links one electrical connection to another. In this repair, it is the board connecting the battery to logic board.
- Lift the Interposer off the logic board and remove it.
 - ⚠ Removing this board will ensure that the battery remains disconnected throughout your repair, preventing your computer from accidentally powering on. It's also a good idea to take it out so it doesn't fall out unexpectedly.

Step 10 — I/O Board Data Cable



- Use the flat end of a spudger to pry the right side of the I/O board data cable connector up off its socket on the I/O board.

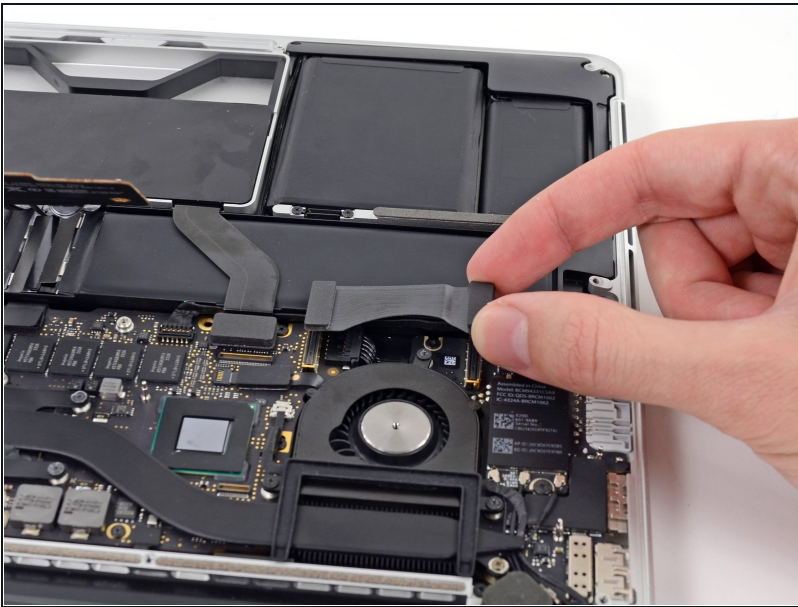
⚠ When prying the I/O board data cable connector from its socket, make sure to pry the connector itself and not the socket. Prying the socket may cause irreversible damage to the I/O board.

Step 11



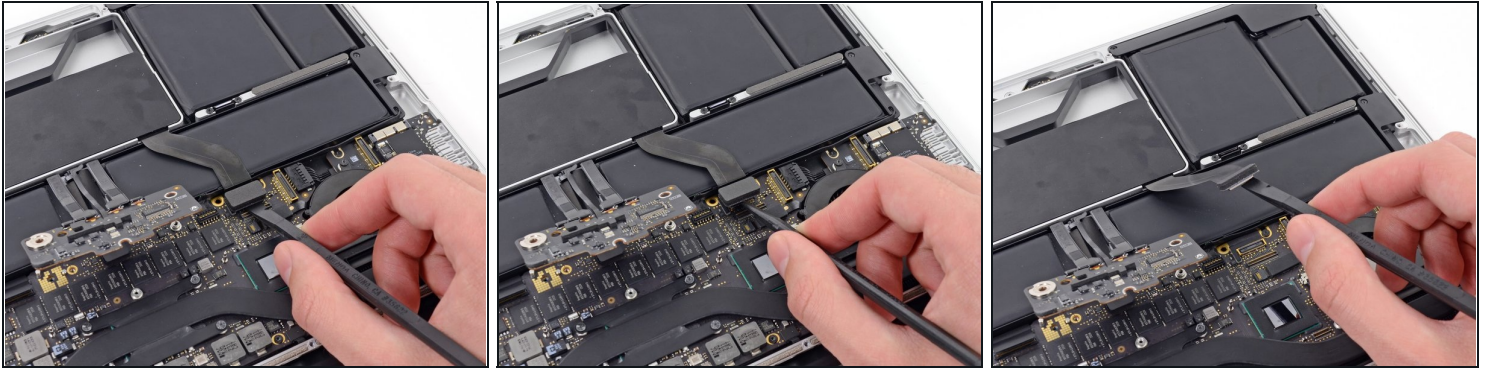
- Wedge the flat end of a spudger beneath the left side of the I/O board data cable connector.
- Gently twist the spudger to disconnect the I/O board data cable connector from its socket on the logic board.

Step 12



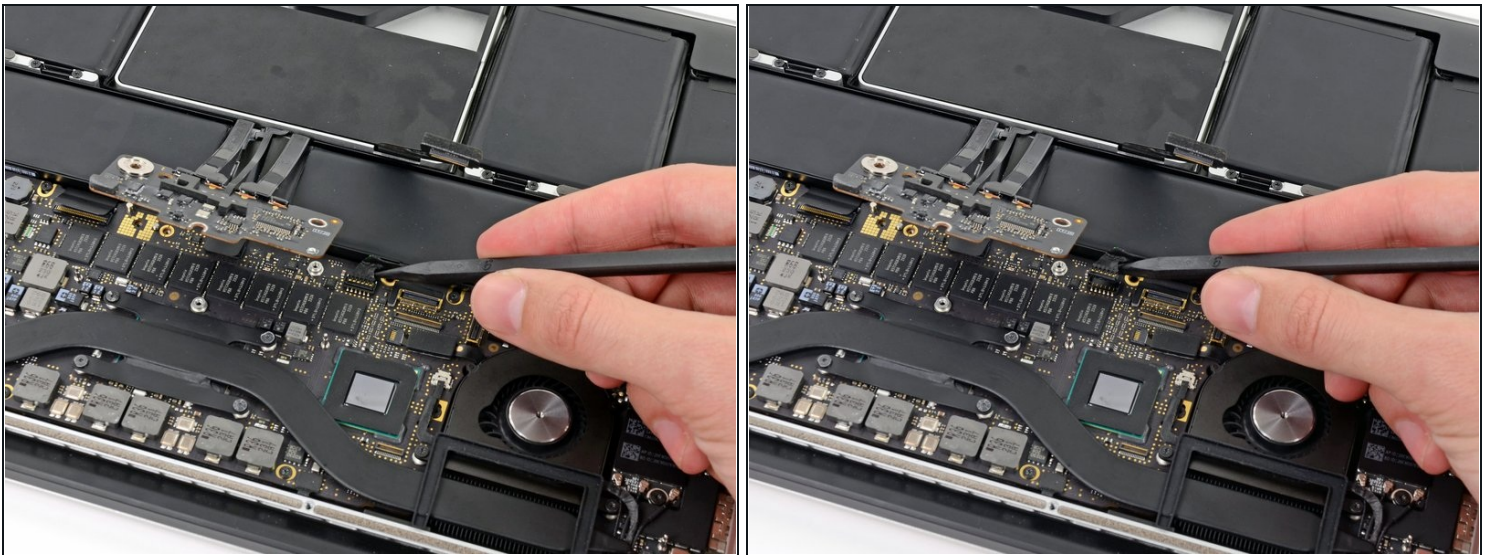
- Lift and remove the I/O board data cable from the MacBook Pro.

Step 13 — Right Speaker



- Use the flat end of a spudger to pry the SSD cable connector up from its socket on the logic board.
- Move the SSD cable connector out of the way.

Step 14



- Wedge the pointed end of a spudger beneath the right speaker cable connector.
- Gently pry the right speaker cable connector up off from its socket on the logic board.

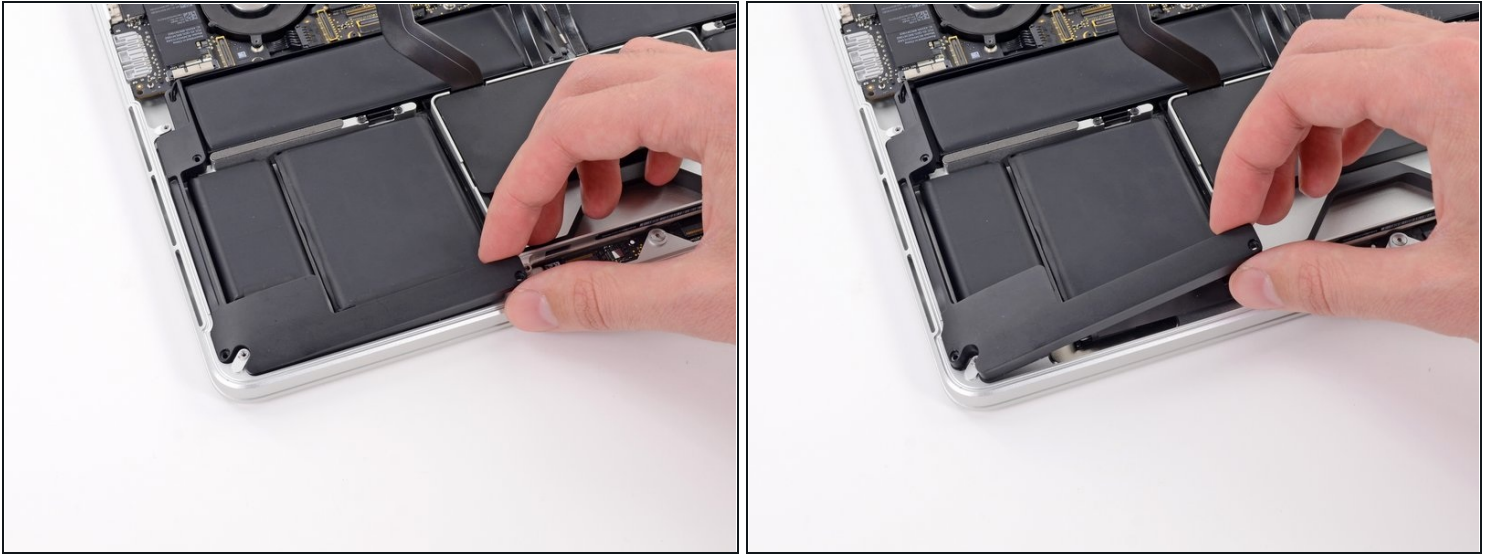
⚠ Be sure you are prying up on the connector, **not** the socket itself.

Step 15



- Use a T5 Torx driver to remove the following screws securing the right speaker to the upper case:
 - One black 6.8 mm screw
 - One silver 6.3 mm screw
 - One black 4.9 mm screw
- ① The silver screw (in the corner) may be covered with a foam pad. If so, use your [tweezers](#) to peel it up and remove it.

Step 16



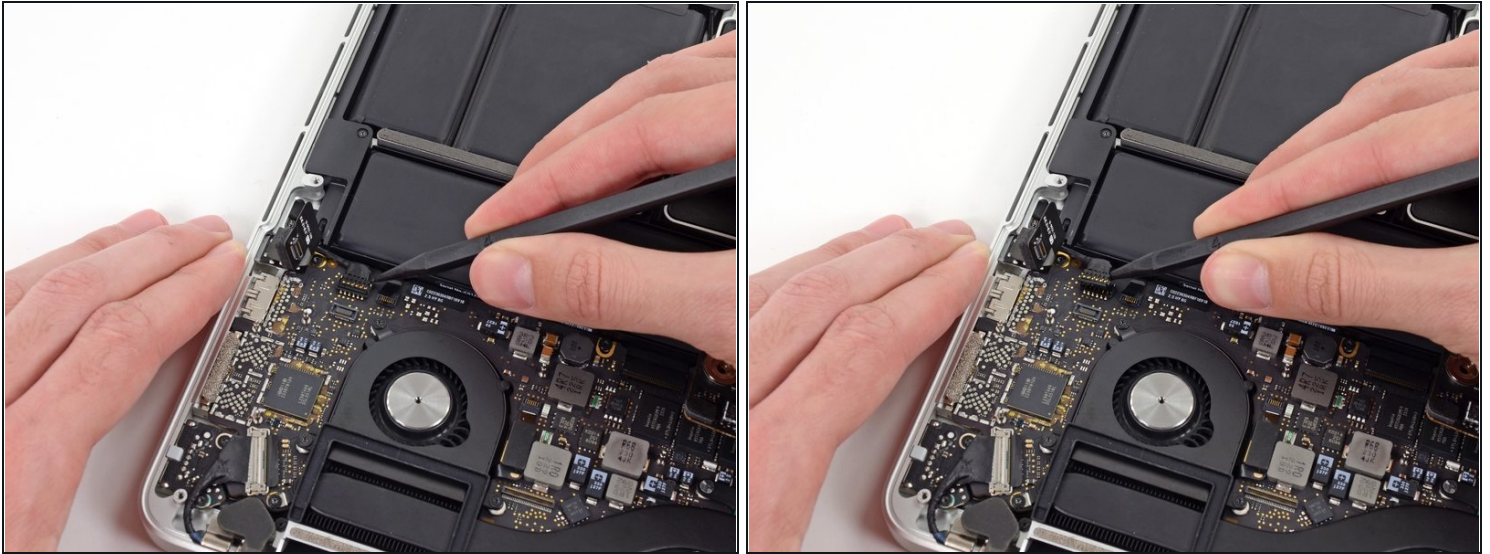
- Lift and remove the right speaker out of the upper case.
- ☑ If necessary, de-route the right speaker cable from its channel in the upper case.

Step 17 — Left Speaker



- Use the flat end of a spudger to pry the headphone jack cable connector straight up off its socket on the logic board.
- ⓘ Gently bend the headphone jack cable to 90° up from the logic board.
- ☑ Bending the headphone jack cable will allow you to disconnect the left speaker cable connector without having the headphone jack cable in the way.

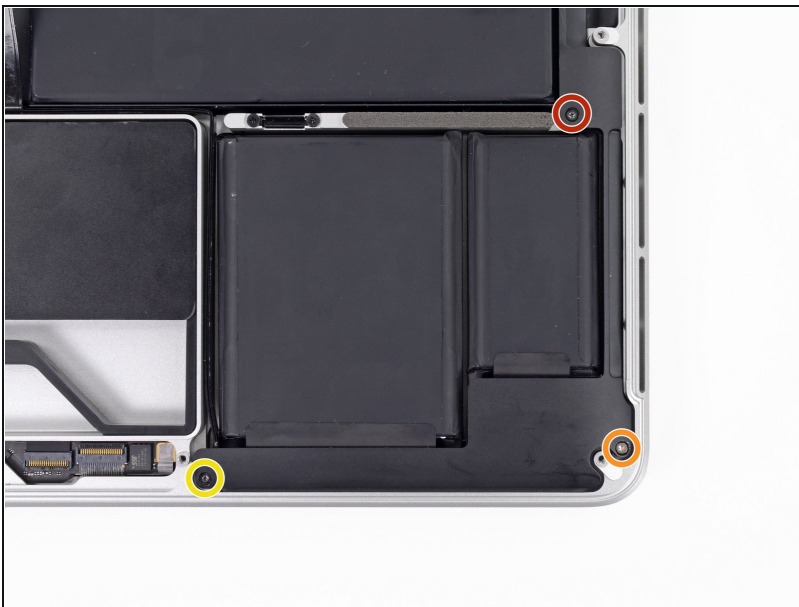
Step 18



- Wedge the tip of a spudger beneath the left speaker cable connector.
- Gently pry the left speaker cable connector up off from its socket on the logic board.

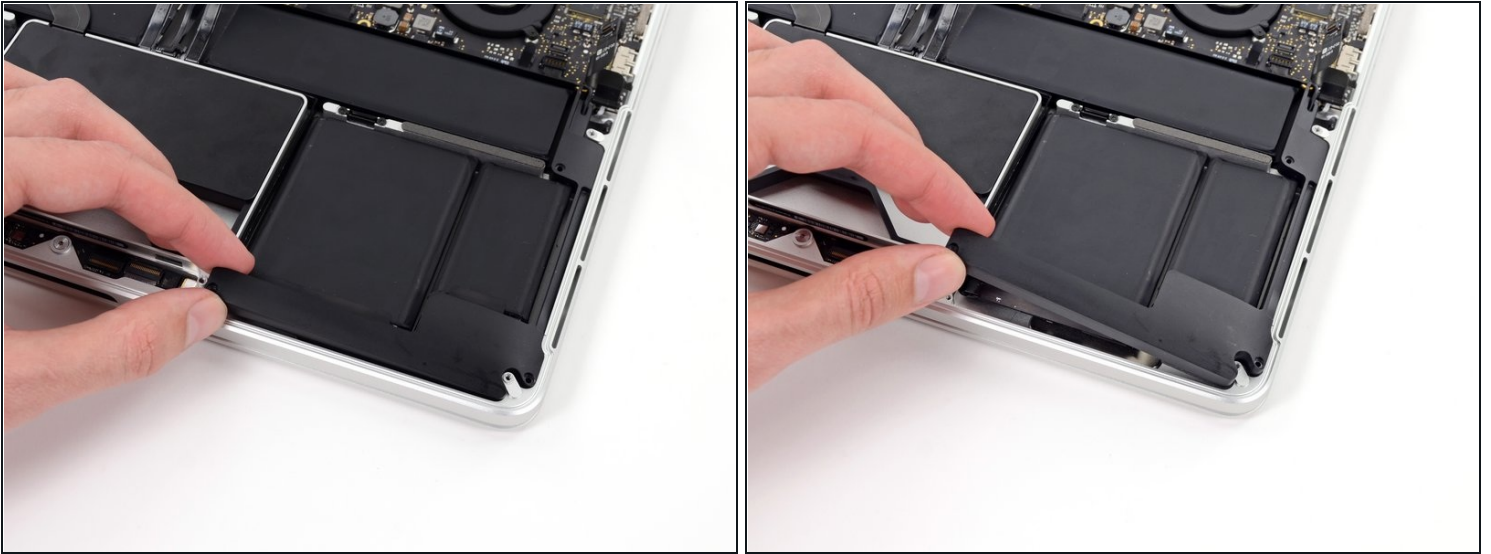
⚠ Be sure you are prying up on the connector, **not** the socket itself.

Step 19



- Use a T5 Torx driver to remove the following screws securing the left speaker to the upper case:
 - One black 6.8 mm screw
 - One silver 6.3 mm screw
 - One black 4.9 mm screw
- ① The silver screw (in the corner) may be covered with a foam pad. If so, use your [tweezers](#) to peel it up and remove it.

Step 20



- Lift and remove the left speaker out of the upper case.

Step 21 — SSD Assembly



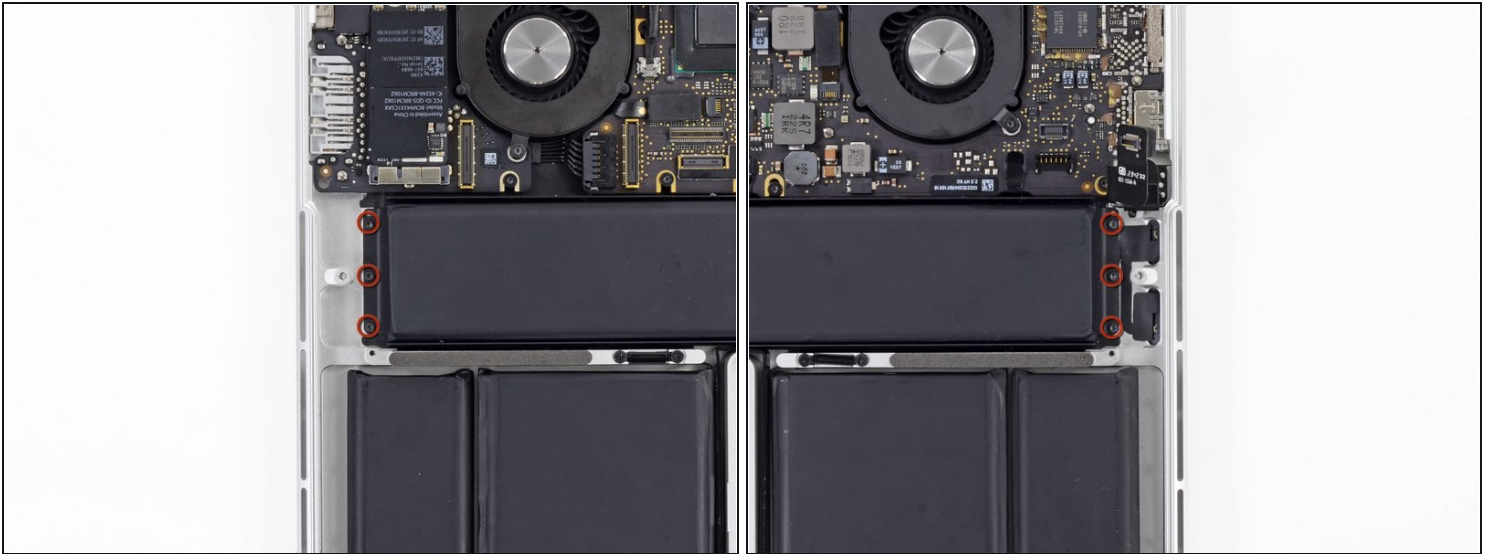
- Use your thumb or finger to bend the plastic spring bar on the SSD tray, freeing the two clips at the front side of the device.
- While holding the spring bar depressed, tilt the SSD assembly up out of its cavity.

Step 22



- Remove the SSD assembly from the upper case.

Step 23 — Battery



- Remove three 2.2 mm T5 Torx screws from each side of the battery (six screws total).

Step 24



- ❗ 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 25

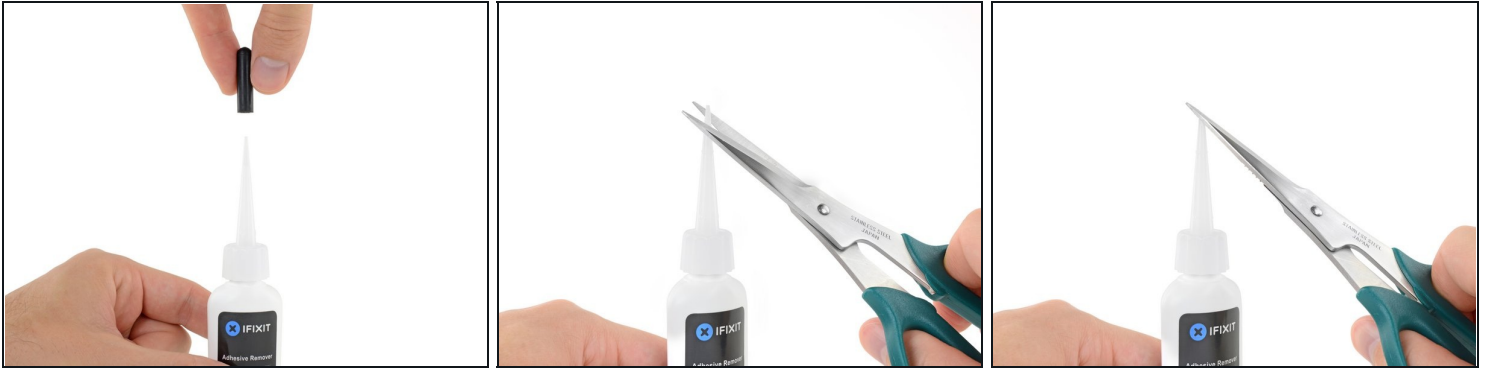


- Now that your MacBook Pro is fully prepped, it's time to prep yourself.

⚠ 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 skin irritation, put your gloves on now.

Step 26



- Pull off the black rubber stopper from your bottle of adhesive remover.

⚠ Twist to loosen or remove the bottle cap before you cut the applicator tip.

- ① This unseals the bottle and allows the pressure to equalize before you cut the applicator tip. **If you skip this step, the adhesive remover may spray out unexpectedly when the tip is cut.**

- Use scissors to cut off the sealed tip of the applicator.

- ① Cutting close to the narrow tip will give you better control so you can apply the adhesive remover in small amounts.

⚠ Twist and close the bottle cap securely before you proceed further.

Step 27



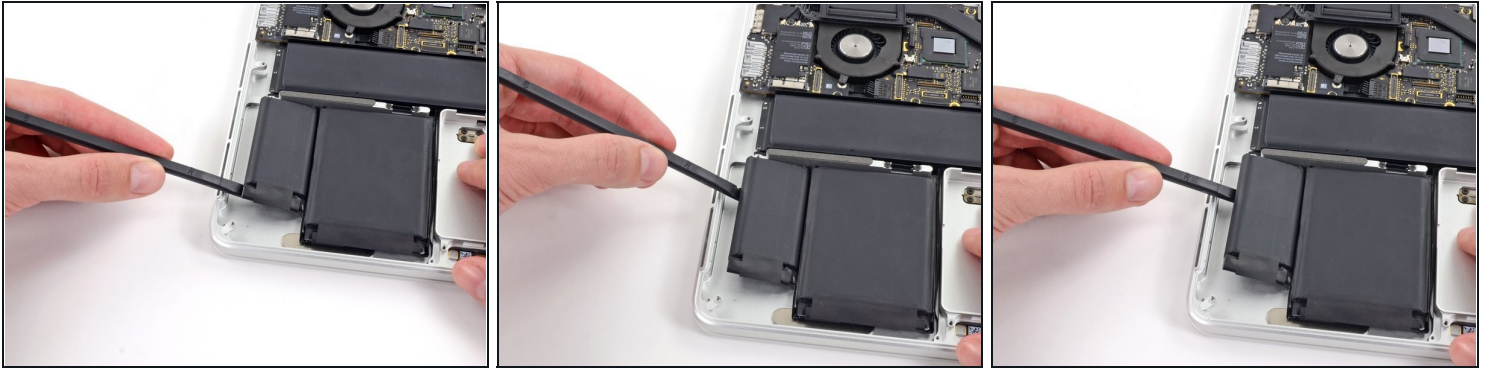
- Apply a few drops of adhesive remover evenly under the edge of the leftmost battery cell.
 - ① You don't need to use very much. The small bottle contains more than twice the amount of solvent needed to remove all the battery cells.
- Wait 2-3 minutes for the liquid adhesive remover to penetrate underneath the battery cell before you proceed to the next step.

Step 28



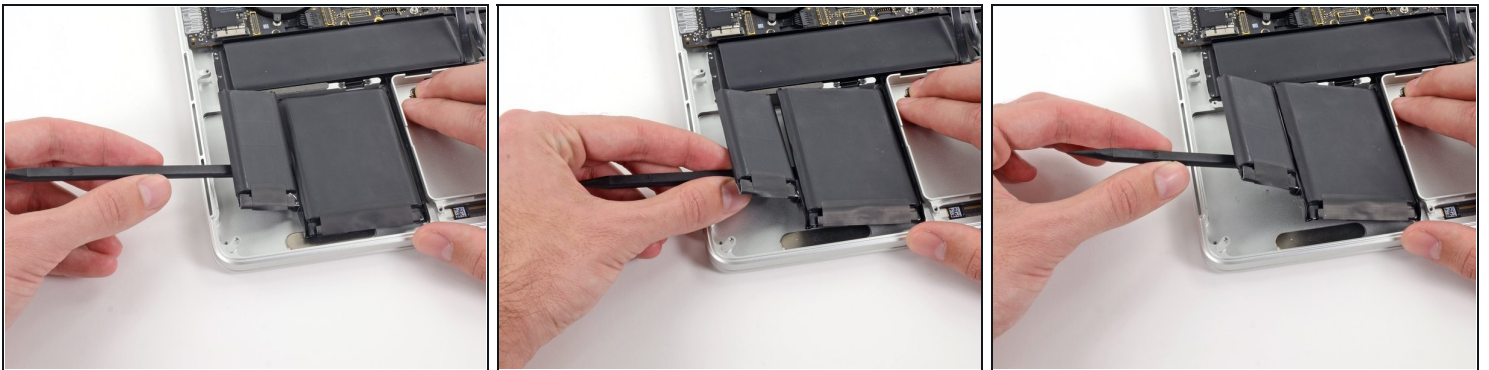
- Insert the flat edge of a spudger or [plastic card](#) underneath the leftmost battery cell.
- Run your tool along the bottom perimeter of the battery cell and lift to begin separating the adhesive.

Step 29



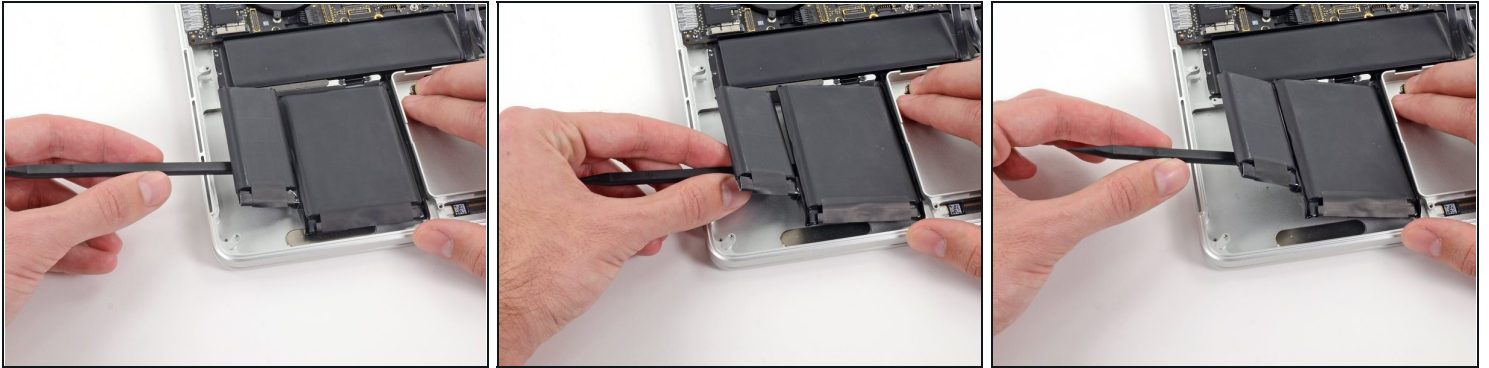
- Insert the spudger along the left-hand side of the leftmost battery cell.
- Run the spudger up along the left side of the leftmost battery cell.
- Slightly pry the leftmost battery cell to release it from the adhesive.

Step 30



- Repeat the above steps to separate the adjacent battery cell from its adhesive:
 - Apply a few drops of liquid adhesive remover under the battery cell.
 - Wait 2-3 minutes for the adhesive remover to penetrate and soften the adhesive.
 - Carefully wedge a spudger or plastic card inwards, being careful to not damage the battery, and separate the battery cell from the adhesive securing it to your MacBook Pro.

Step 31



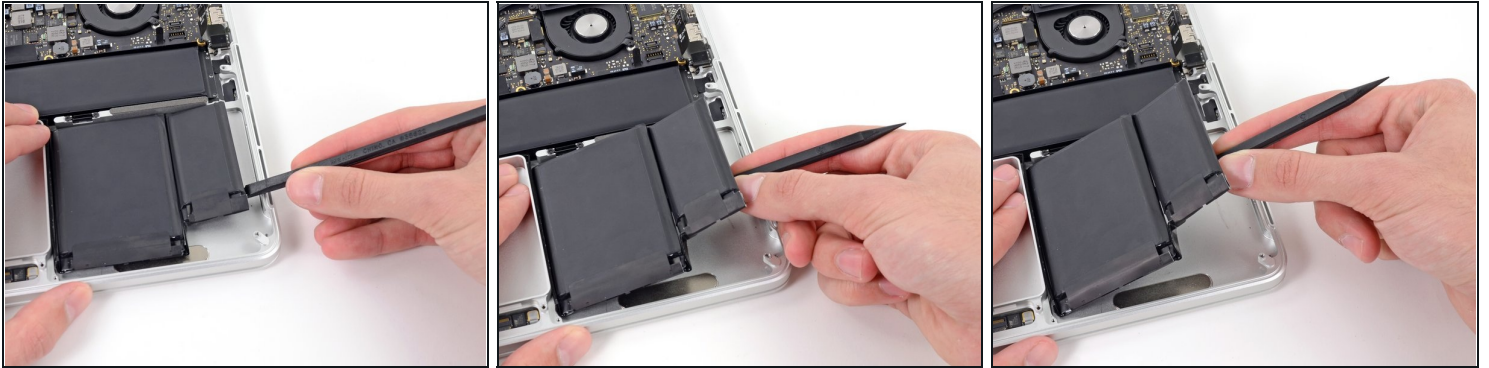
- Insert the flat end of a spudger underneath the larger leftmost battery cell.
- Carefully wedge the spudger inwards, being careful to not damage the battery cells.
- Pry the larger leftmost battery cell up off the upper case.

Step 32



- Grasp the battery cells and gently move (but do not remove) them from their recess in the upper case.
- Leave the battery cells resting on top of the upper case as shown in the third picture.

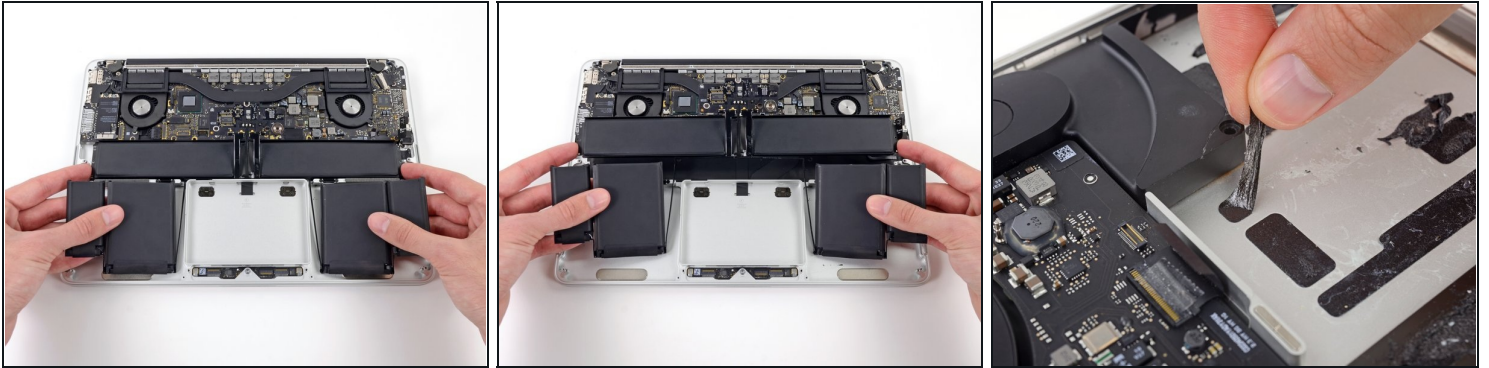
Step 33



- Switch sides and repeat the above procedure for the two battery cells on the right-hand side of the MacBook Pro.
- Remember to add a small amount of liquid adhesive remover under each battery cell, and wait 2-3 minutes for it to penetrate before prying up the cell.

⚠ Be careful not to puncture or otherwise damage the battery cells.

Step 34



- Lift the battery as a whole up out of the upper case, and remove the battery.
 - ✦ Before installing a 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 section of adhesive with a bit of adhesive remover for 2-3 minutes, and then scrape it out with an opening pick or one of the other tools in your kit. 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 newly installed battery: charge it to 100%, and keep charging it for at least 2 more hours. Unplug and use it normally to drain the battery. When you see the low battery warning, save your work, and keep your laptop on until it goes to sleep due to low battery. Wait at least 5 hours, then charge your laptop uninterrupted to 100%.
- ⚠ 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.