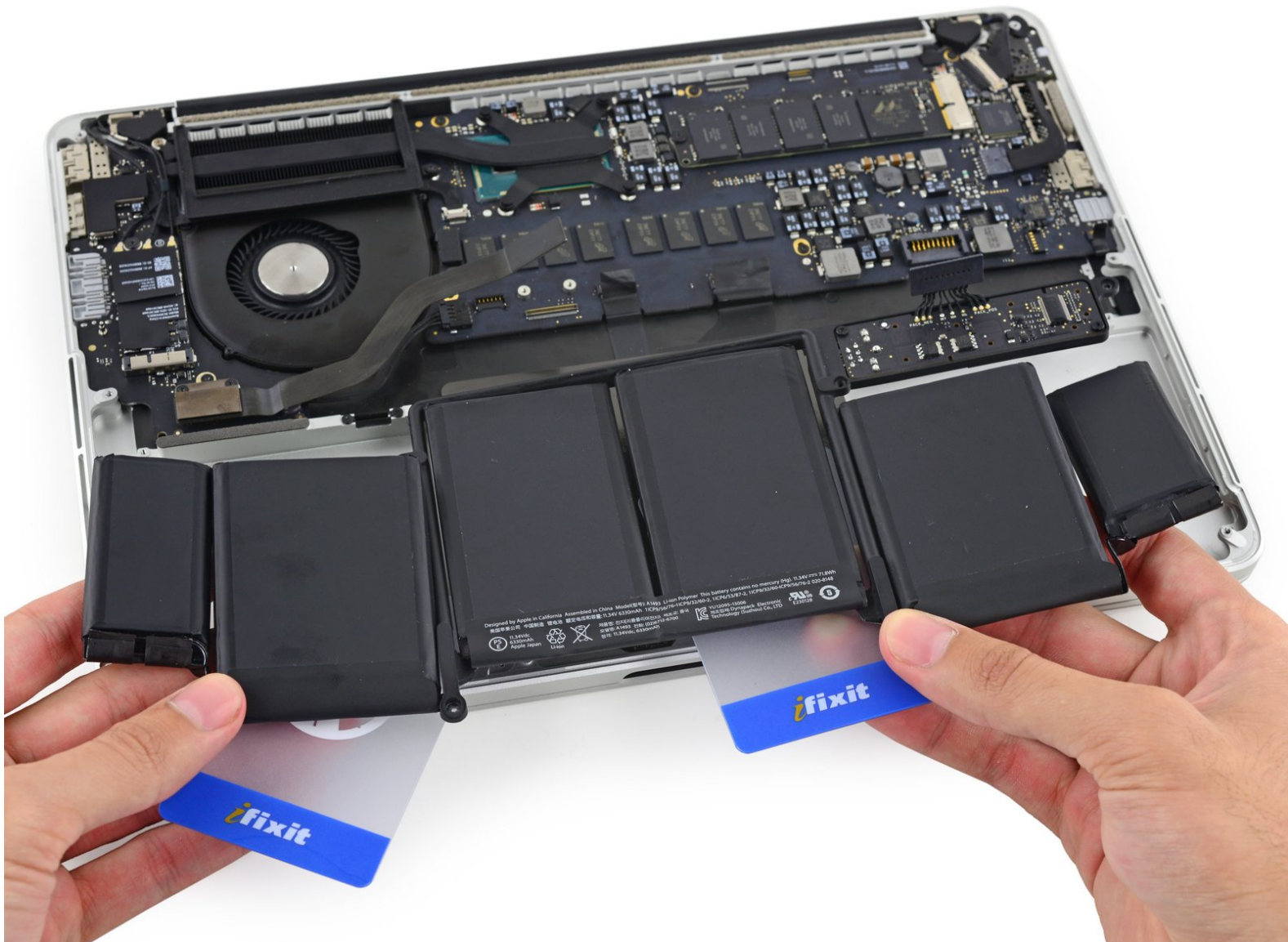


Written By: Sam Goldheart



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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 remove the glued-in battery from your MacBook Pro. This is best done with the help of an iFixit battery replacement kit; the liquid adhesive remover in your kit will dissolve the adhesive securing the battery, allowing you to remove it with ease. Alternatively, you can use an iOpener to apply a modest amount of heat in order to soften the adhesive before prying out the battery.

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 can damage certain plastics, such as the MacBook Pro's plastic speaker enclosures. Take care when applying the solvent.



TOOLS:

- [P5 Pentalobe Screwdriver Retina MacBook Pro and Air](#) (1)
- [Spudger](#) (1)
- [T5 Torx Screwdriver](#) (1)
- [iOpener](#) (1)
- [Plastic Cards](#) (1)

Comes in a set of two, a third card can be beneficial.



PARTS:

- [MacBook Pro 13" Retina \(Late 2013 Mid 2014\) Battery](#) (1)

Step 1 — Lower Case



- Remove the following ten screws securing the lower case to the upper case:
 - Two 2.3 mm Pentalobe screws
 - Eight 3.0 mm 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



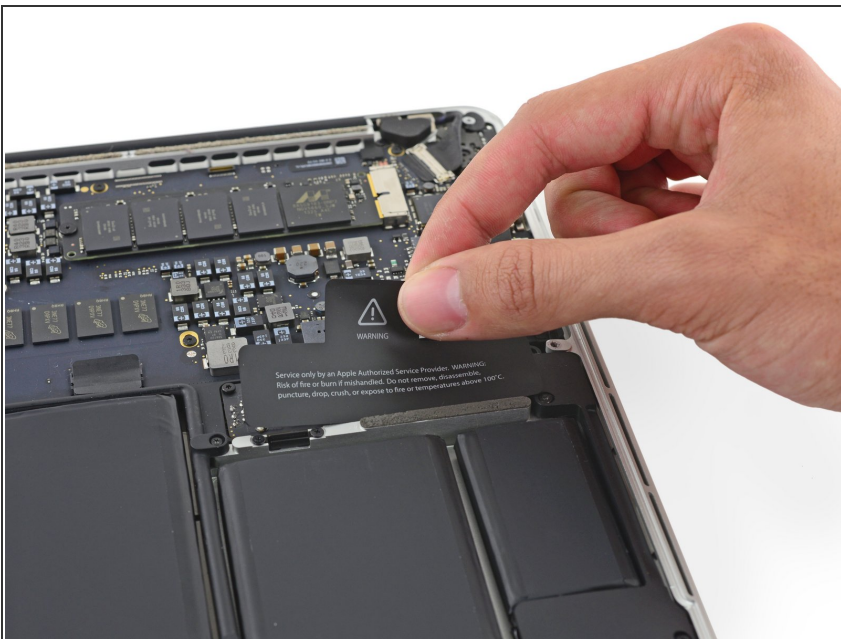
- Wedge your fingers between the upper case and the lower case.
- Gently pull the lower case away from the upper case to remove it.

Step 3



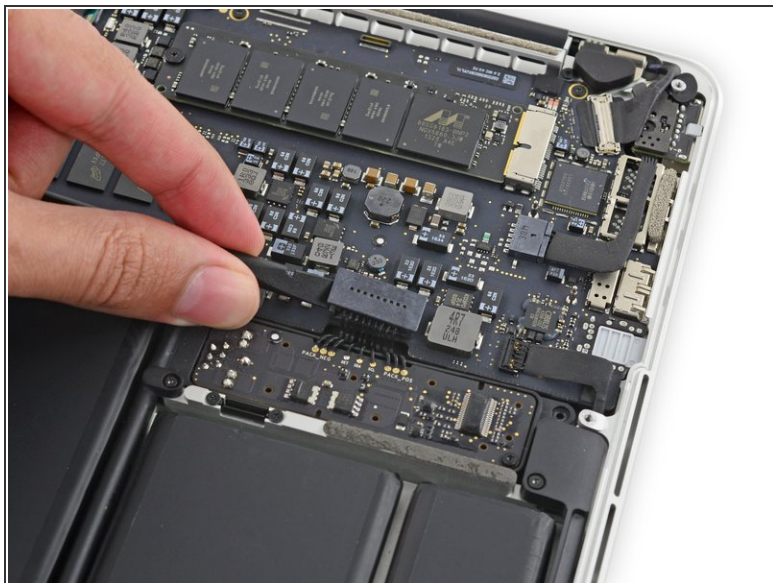
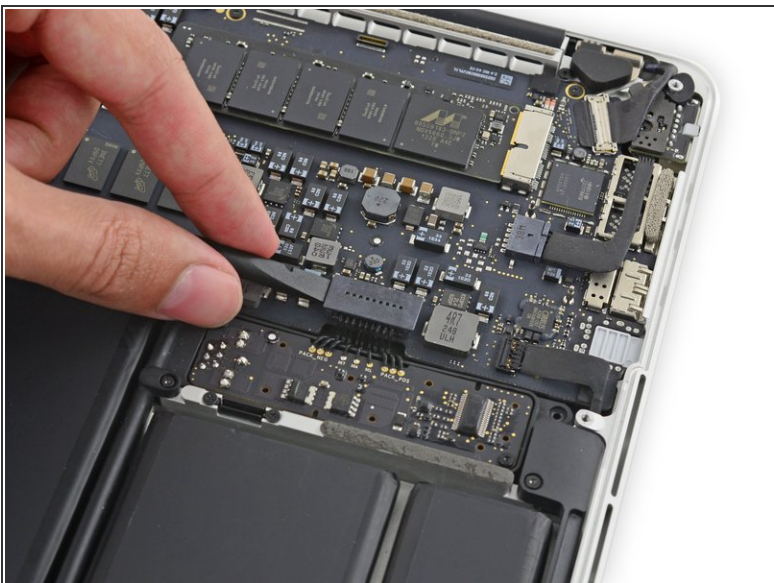
-  The lower case is connected to the upper case with two plastic clips near its center.
-  During reassembly, gently push down the center of the lower case to reattach the two plastic clips.

Step 4 — Battery Connector



-  If necessary, remove the plastic cover adhered to the battery contact board.

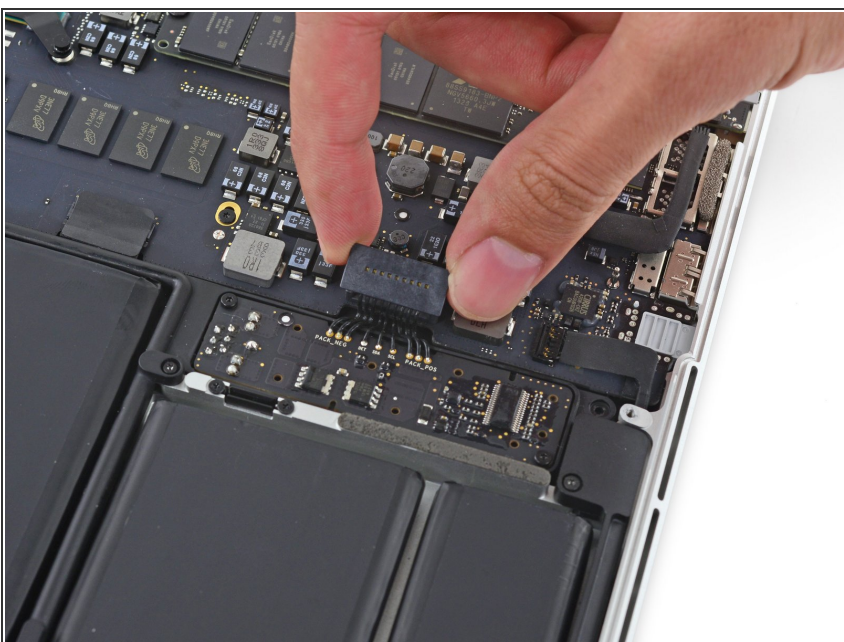
Step 5



- Use the flat end of a spudger to lift the battery connector straight up out of its socket on the logic board.

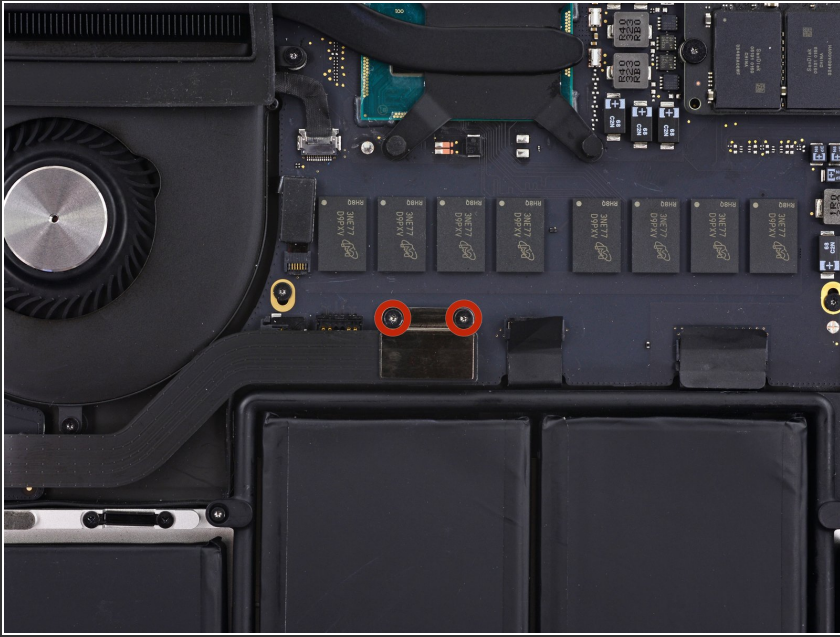
⚠ Be sure you lift up only on the connector itself, **not** the socket, or you risk permanent damage to the logic board.

Step 6



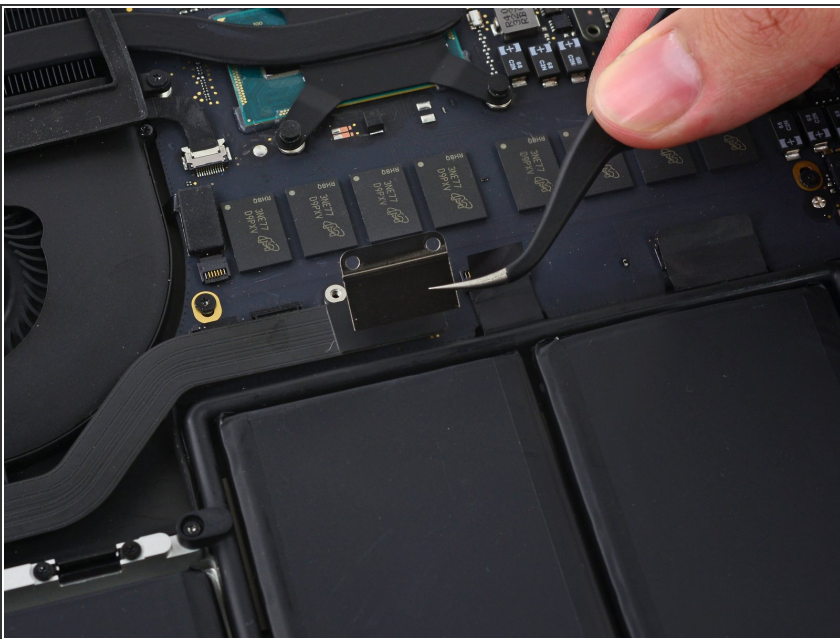
- ☑ Bend the battery connector up out of the way to prevent accidental contact with its socket during your repair.

Step 7 — Right Speaker



- Remove the two 2.1 mm T5 Torx screws securing the logic board end of the I/O board cable bracket.

Step 8



- Grasp the I/O board cable bracket with a pair of tweezers and remove it from the MacBook.

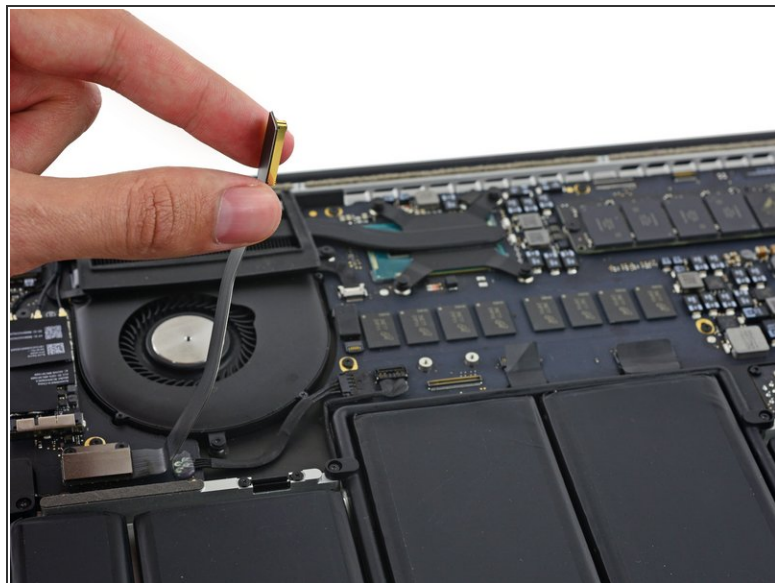
Step 9



- Use the flat end of a spudger to pop the I/O board connector straight up off its socket on the logic board.

⚠ Be careful to only pry up on the I/O board cable, **not** on the socket itself or you risk damaging your logic board.

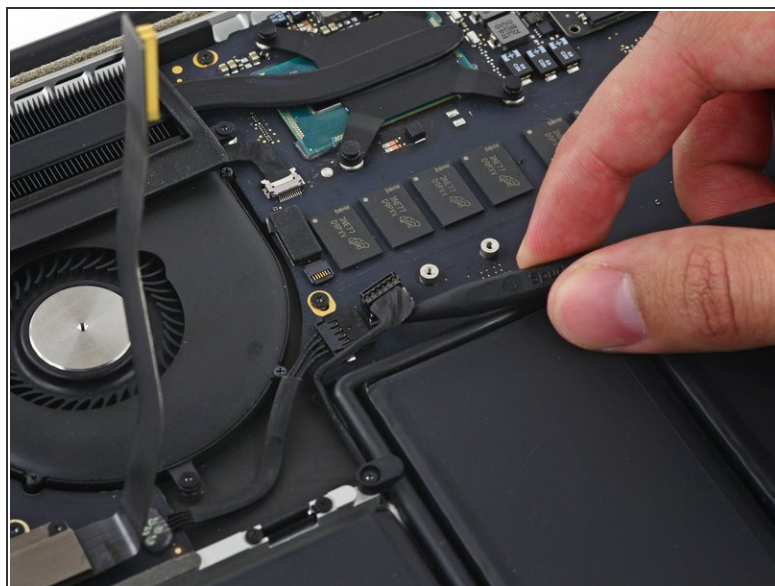
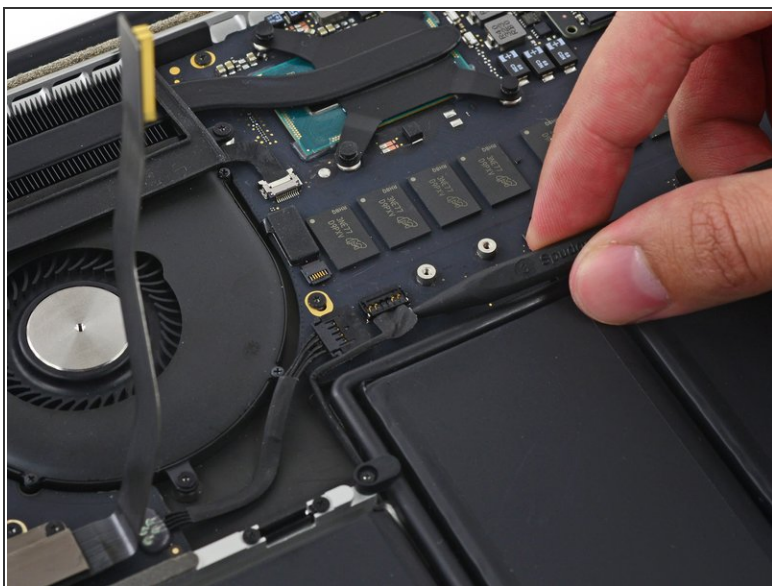
Step 10



- Lift the logic board end of the I/O board cable straight up to bend it out of the way.

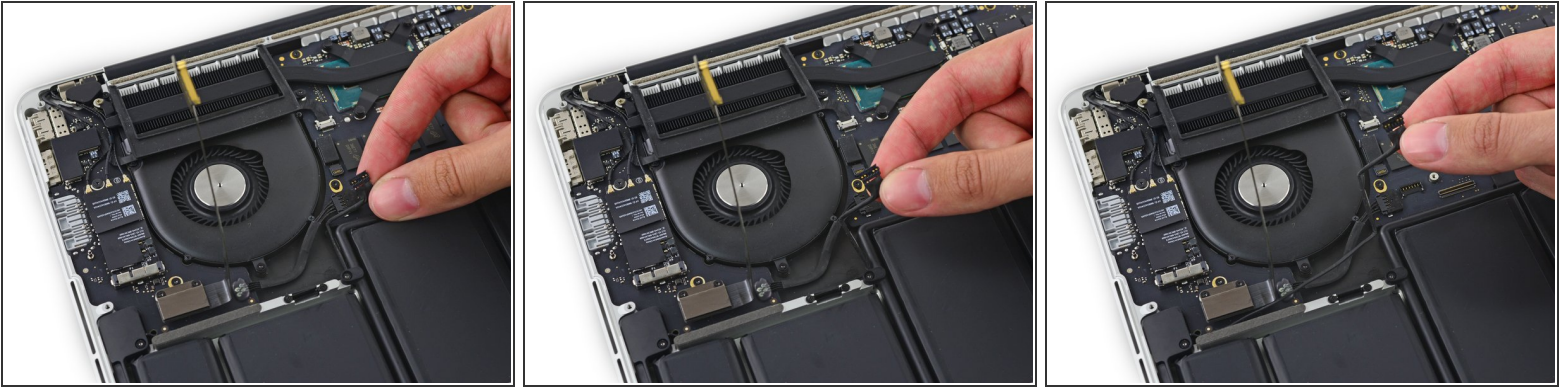
⚠ To avoid damage to the cable, fold only at the bend in the I/O board end of the cable.

Step 11



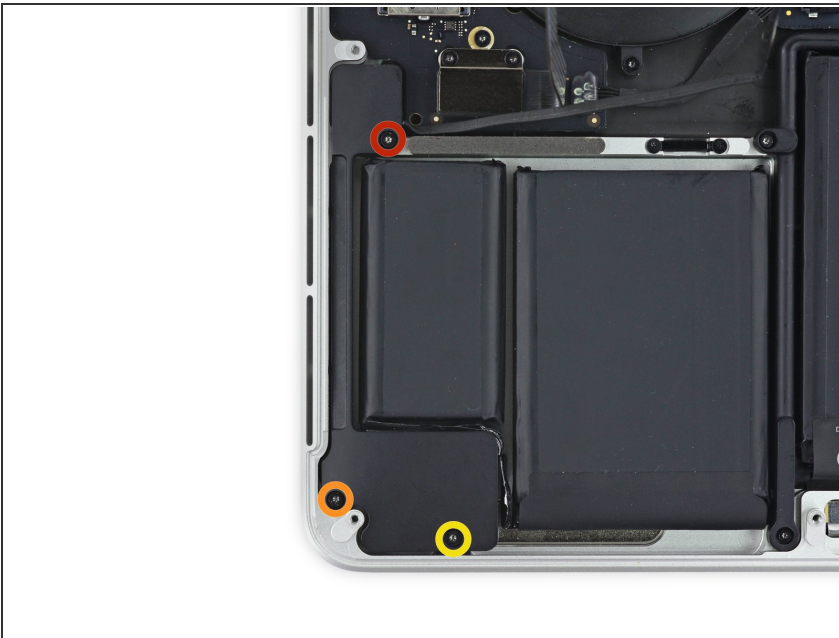
- Carefully tuck the tip of a spudger under the right speaker cable near the connector and lift it up out of its socket on the logic board.

Step 12



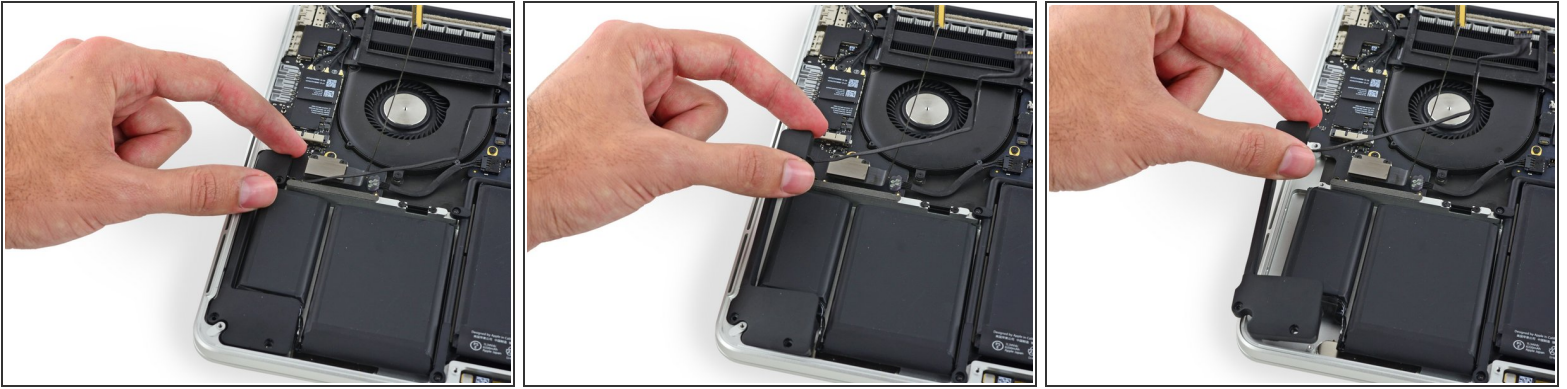
- Carefully peel the right speaker cable off the upper case.

Step 13



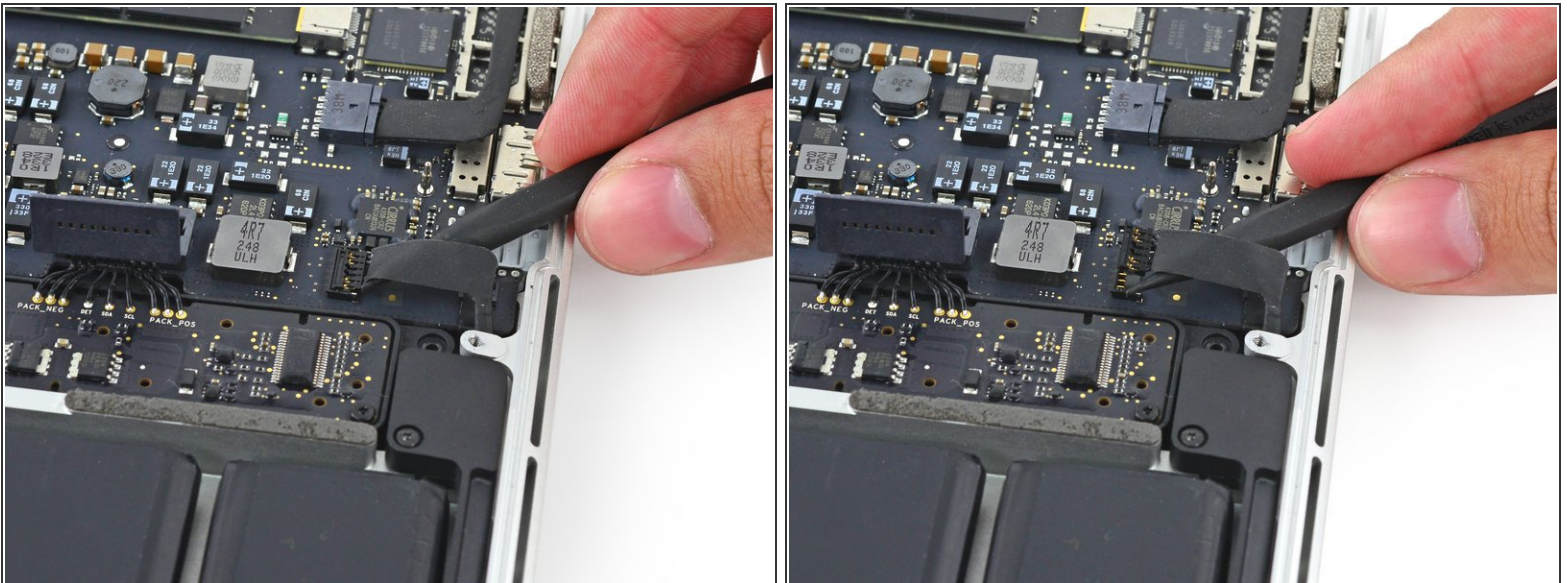
- Remove the following screws securing the right speaker to the upper case:
 - One 5.7 mm T5 Torx screw
 - One 6.5 mm T5 Torx screw
 - One 3.8 mm T5 Torx screw

Step 14



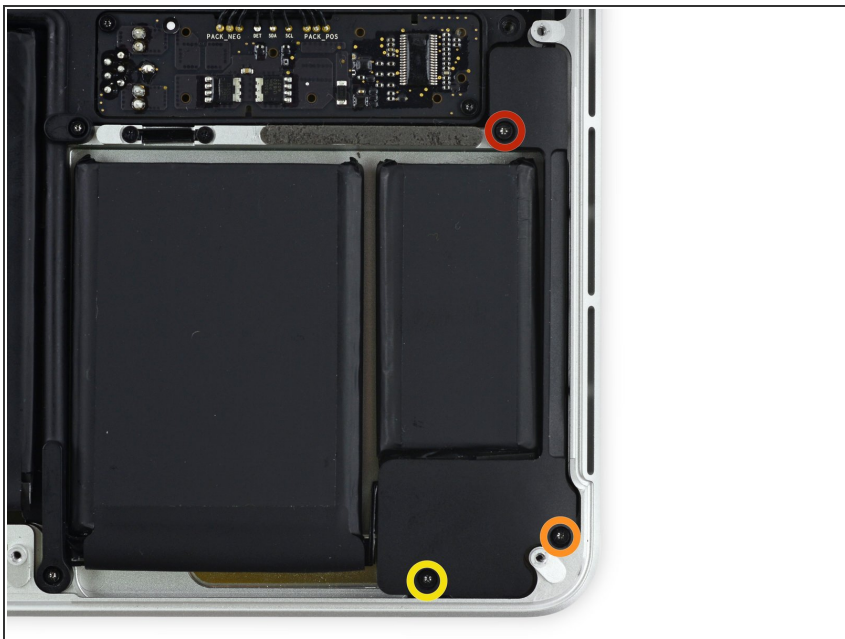
- Lift the right speaker from the cable end and pull it free from the case.

Step 15 — Left Speaker



- Insert the tip of a spudger under the left speaker cable near the connector and lift it up out of its socket on the logic board.

Step 16



- Remove the following screws securing the left speaker to the upper case:
 - One 5.7 mm T5 Torx screw
 - One 6.5 mm T5 Torx screw
 - One 3.8 mm T5 Torx screw

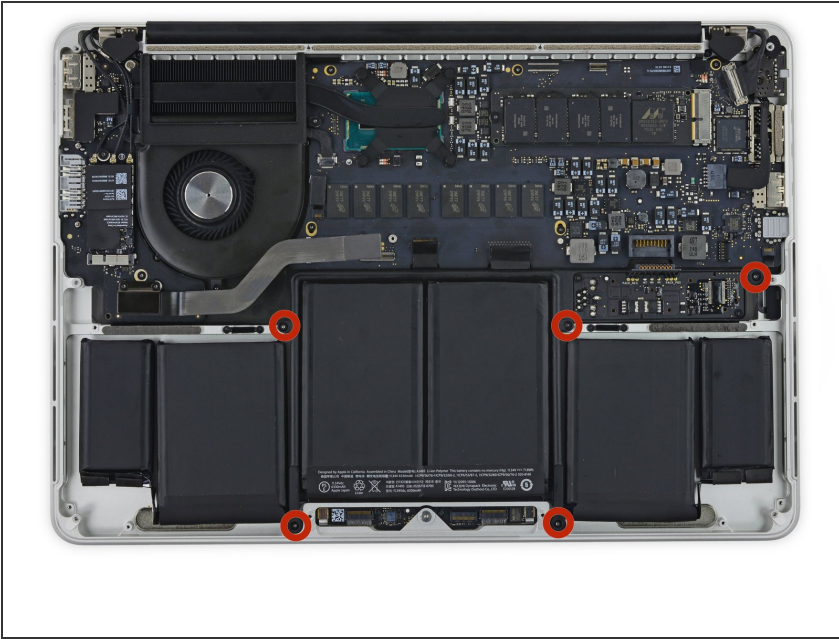
Step 17



- Lift the corner of the left speaker up and slide it out the battery to remove it from the upper case.

⚠ Be careful **not** to snag the speaker cable on the screw hole post in the side of the case.

Step 18 — Battery



- Remove the five 3.7 mm T5 Torx screws securing the battery to the upper case.

Step 19



- ❗ The liquid adhesive remover provided in your iFixit battery replacement 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 20



 If you have an iFixit battery kit with liquid adhesive remover, it's time to get it prepped.

- Alternatively, if you are using the hot iOpener method, skip the following three steps.

 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 21



- Open your container of adhesive remover.
- Fill the syringe included in your kit with a small amount (approximately 1-2 milliliters) of adhesive remover.
- ❗ 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 22



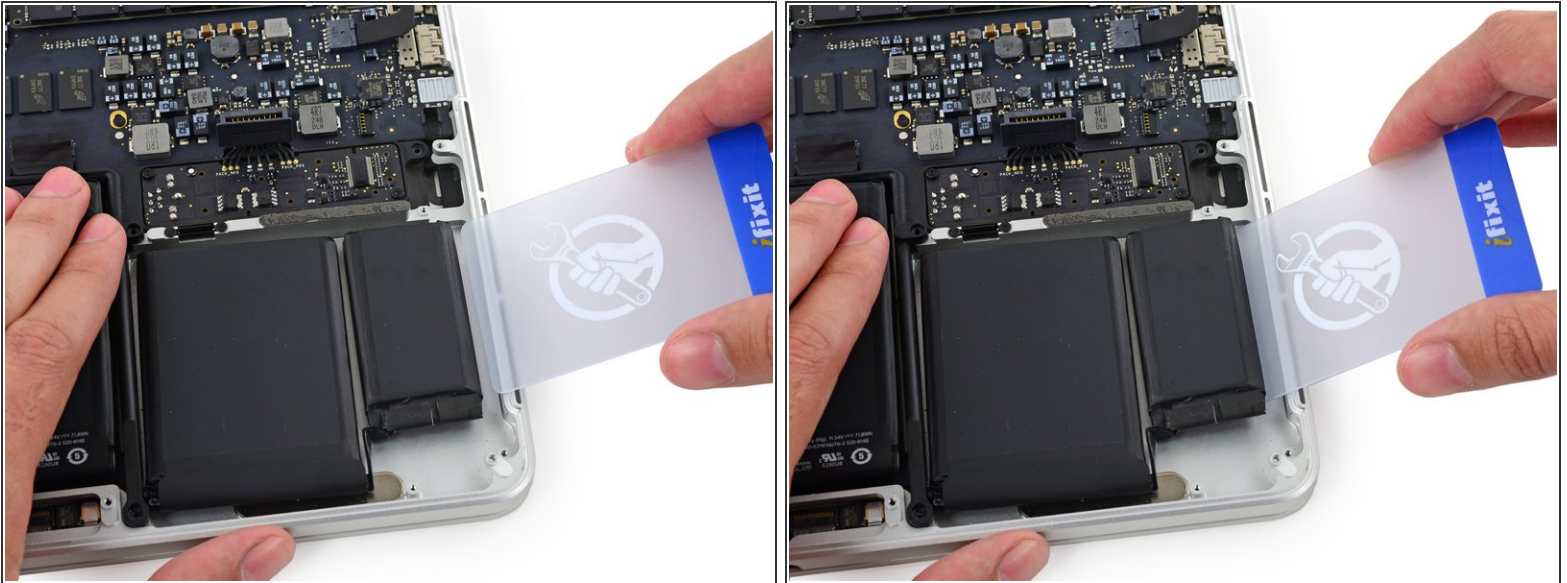
- Apply a small amount of adhesive remover (approximately 1 ml) evenly under the edge of the rightmost battery cell.
 - Wait 2-3 minutes for the liquid adhesive remover to penetrate underneath the battery cell before you proceed to the next step.
- ⚠ Do not apply more than 1 ml of the adhesive remover at a time. Using too much can allow the adhesive remover to make its way to the backside of your keyboard and potentially damage it.

Step 23



- i** If you don't have a liquid adhesive remover, you'll be using a [hot iOpener](#) to warm and soften a section of the adhesive securing the battery to the upper case, and then carefully prying at that point.
- Use the hot iOpener to cover half of the two right-most battery cells.
 - After about a minute, reheat the iOpener and move it to cover the other half of the right-most battery cells.

Step 24



- Push a plastic card between the right-most battery cell and the upper case, cutting the adhesive between the two.

 Throughout this procedure, be careful not to damage any of the battery cells with your tools. A damaged lithium-ion battery may leak dangerous chemicals and/or catch fire. Use only plastic pry tools.

- When using the hot iOpener method, if you encounter significant resistance to prying, stop and use the iOpener to reheat the section you're working on.

Step 25



- Use the plastic card to pry the right-most battery cell up from the rear case.

Step 26



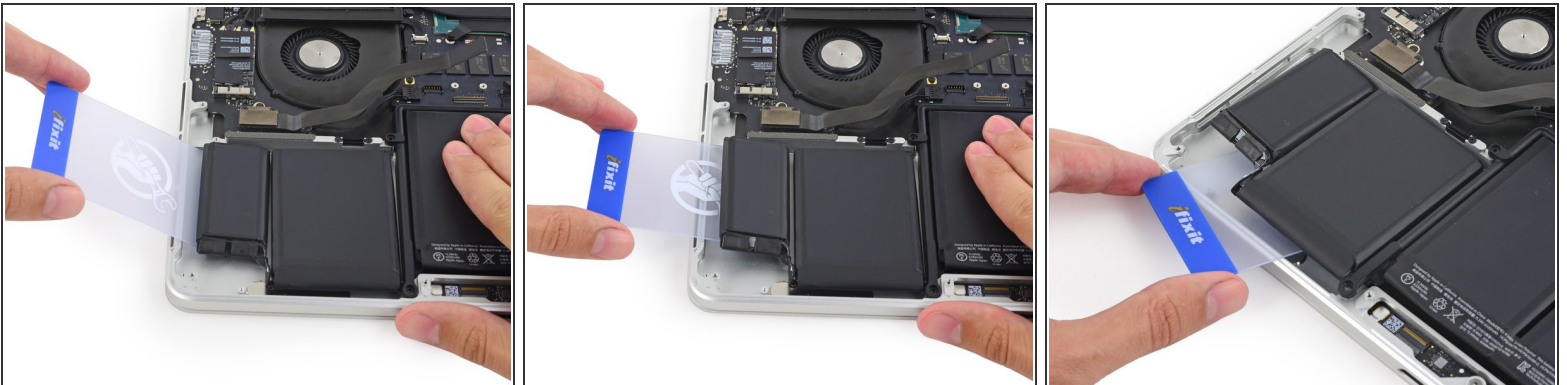
- Repeat this procedure with the adjacent battery cell:
 - Apply a small amount (about 1 ml) of liquid adhesive remover under the battery cell, and wait 2-3 minutes for it to penetrate and soften the adhesive.
 - Alternatively, re-heat this section with your iOpener if needed.
 - Push a plastic card about an inch between the battery cell and the upper case, and slowly pry the cell up to separate all of the adhesive.

Step 27



- Temporarily leave your plastic card underneath the two rightmost battery cells to prevent them from re-adhering to the upper case.
- If using an iOpener, reheat it and reapply it, this time to the left-most battery cells.
- ❗ Again, leave the iOpener in each position for about a minute, reheating in between, to heat each half of the left-most battery cells.

Step 28



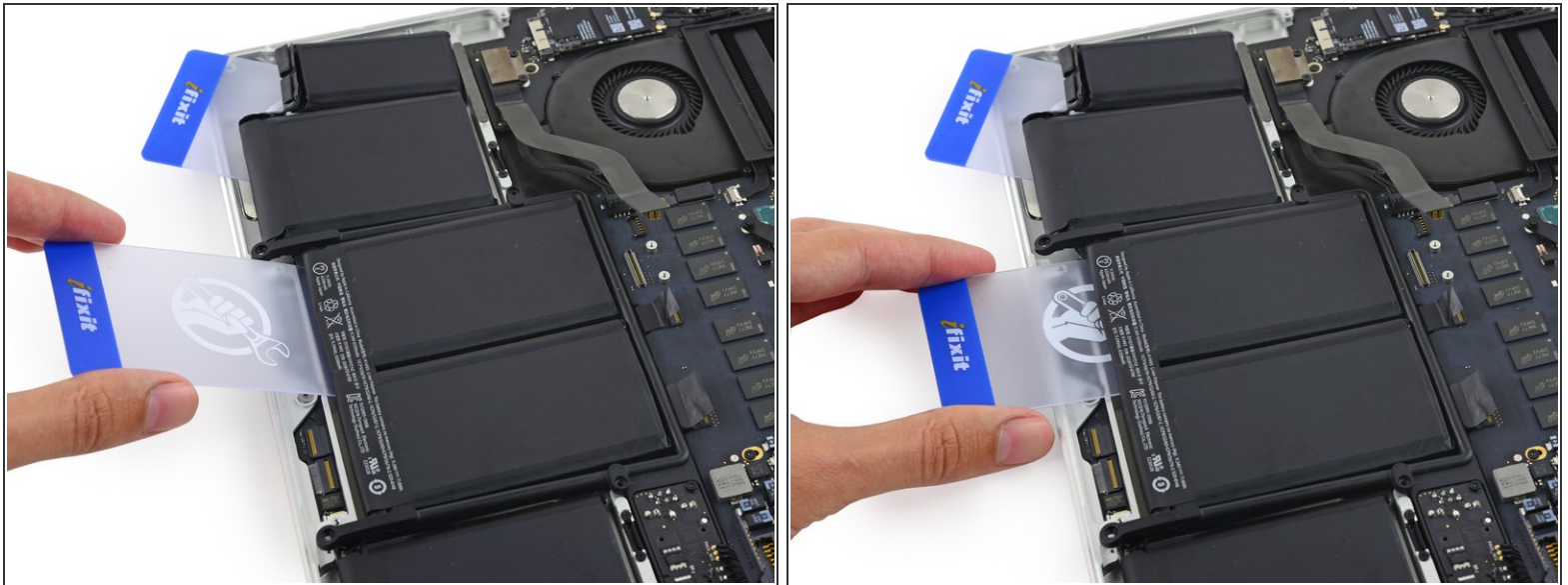
- Repeat the above procedure to separate the two leftmost battery cells from the upper case.
- Remember to apply a small amount (about 1 ml) of adhesive remover to each battery cell, and wait 2-3 minutes for it to penetrate and soften the adhesive.
- Use a second plastic card to separate the two leftmost battery cells from the upper case.

Step 29



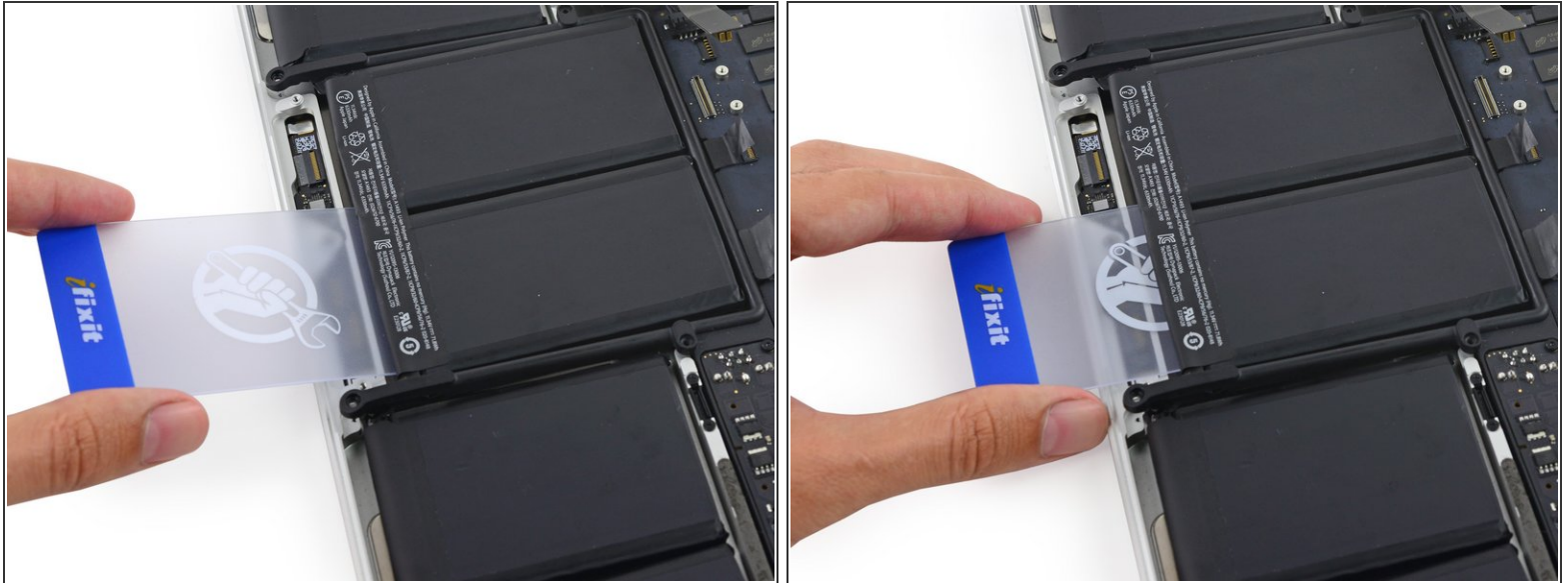
- Leave the second card in the corner between the two left cells.
- ⓘ In the following steps, you can either use a third card, or the card from the right corner. The right corner adhesive should be dry/cool enough that the cells can easily be pulled up again when needed.

Step 30



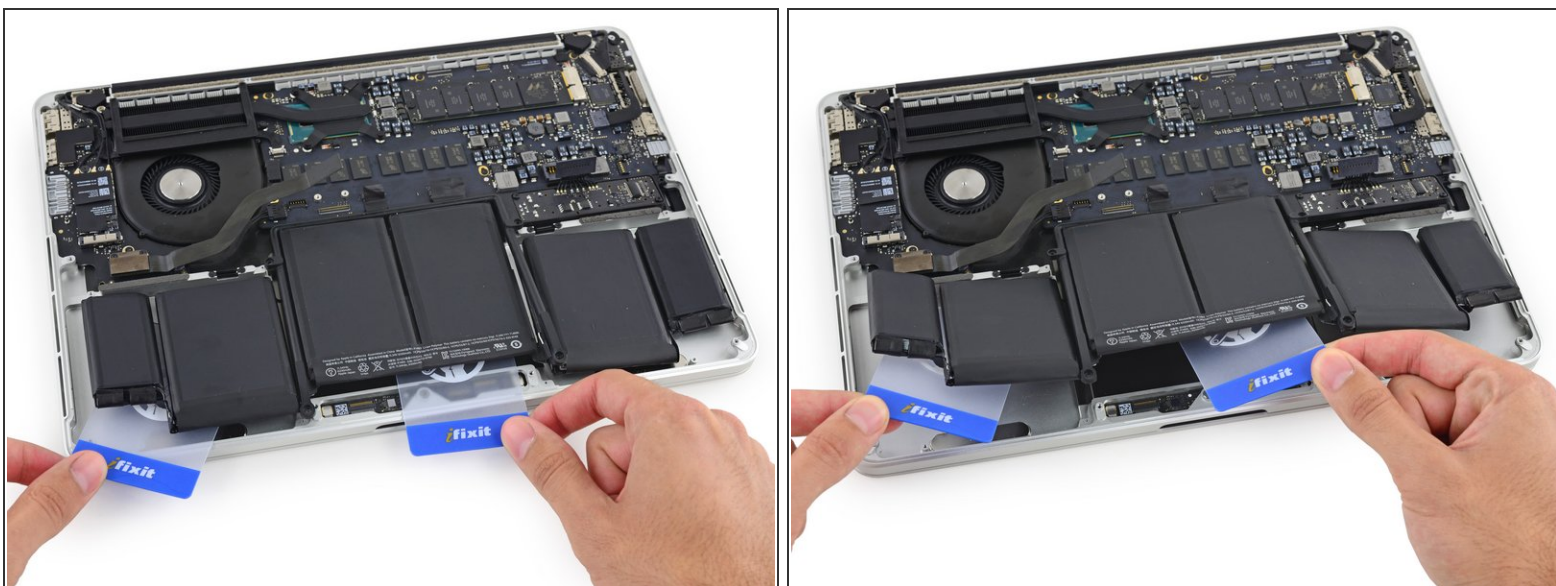
- To separate the adhesive securing the final two, middle battery cells, apply another 1 milliliter or so of liquid adhesive remover (or your iOpener) to each cell.
- It may help to elevate one side of your MacBook Pro a few inches so that the adhesive remover flows in the correct direction, underneath the battery cells. You can use a sturdy book or foam block to prop up one side of your MacBook Pro while you work.
- Insert the card about an inch between the left-center battery cell and the upper case, separating the adhesive between the cell and the case.

Step 31



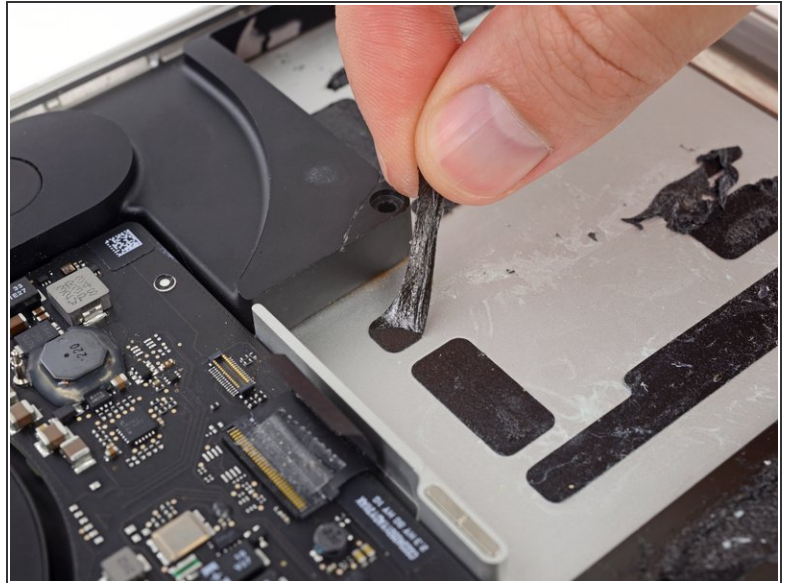
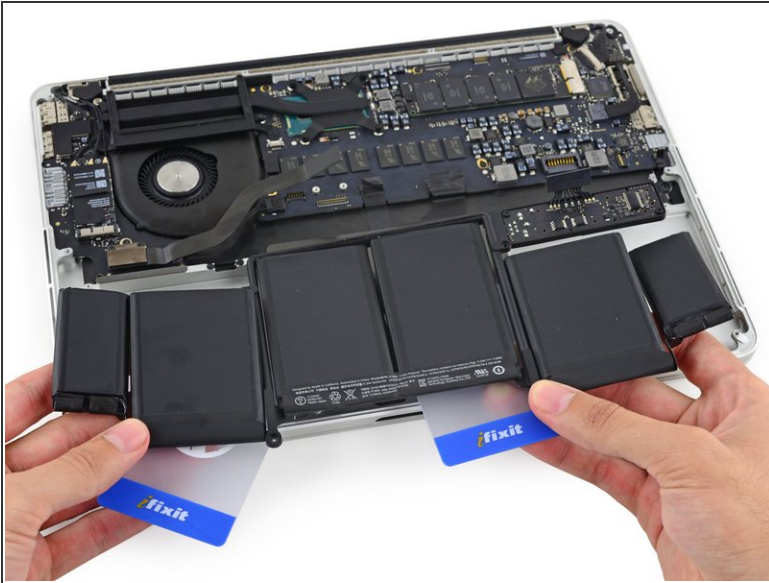
- Pull the card back out and insert it about an inch between the right-center battery cell and the upper case, separating the adhesive between the cell and case.

Step 32



- i** By this point, the outer cells should be free, and you should only encounter resistance from the two center cells. If this is not the case, go back and completely loosen the four outer-most cells from the upper case.
- Pry up on the two center cells to separate the last of the adhesive and lift the battery from the device.

Step 33



- 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 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 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.