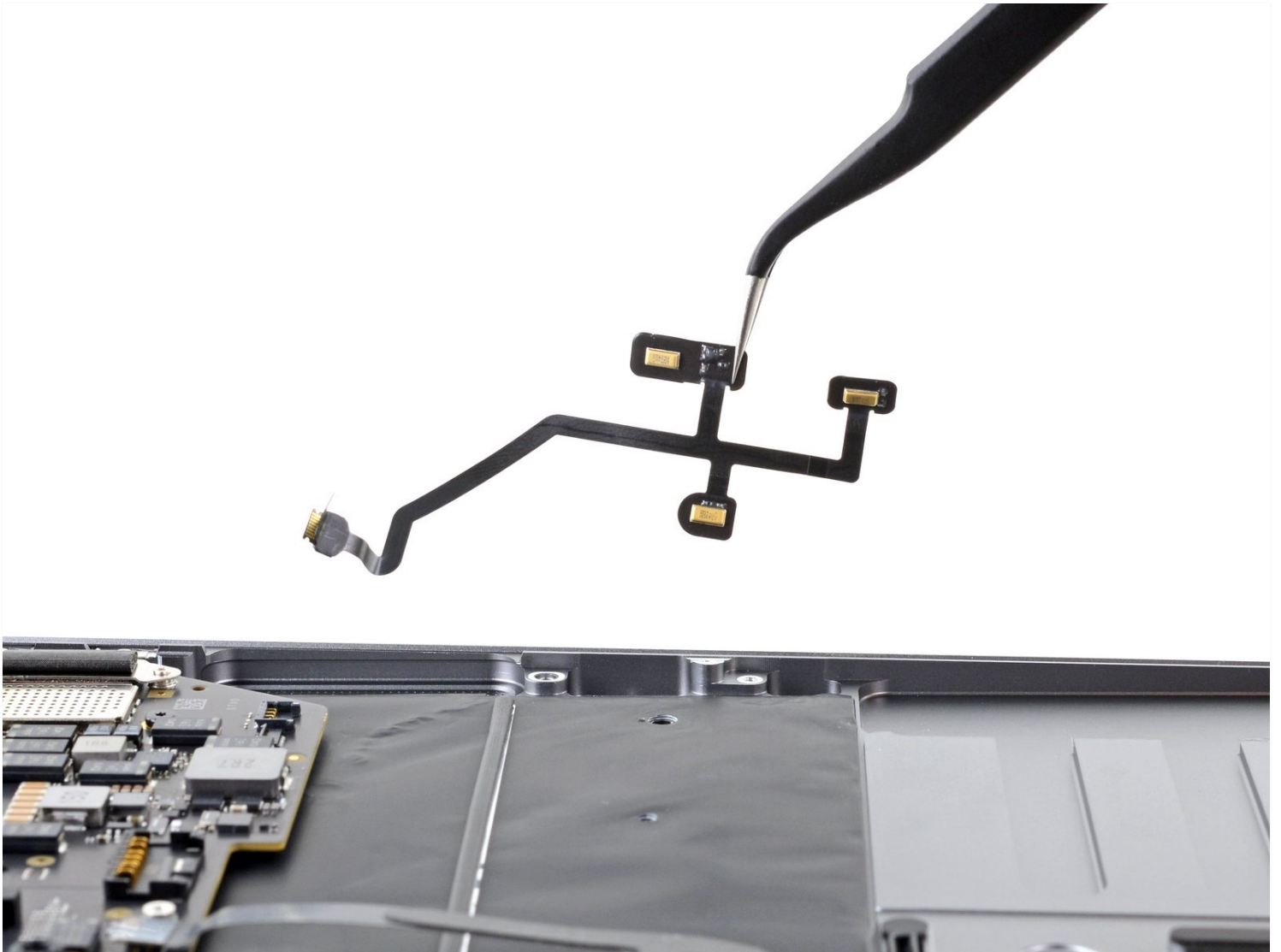




MacBook Air 13" Late 2020 Microphone Array Replacement

Use this guide to replace the microphone array...

Written By: Carsten Frauenheim



INTRODUCTION

Use this guide to replace the microphone array assembly in a Late 2020 MacBook Air (M1).

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 be very dangerous if accidentally punctured. [If your battery looks puffy or swollen, take extra precautions.](#)

Do not reuse the battery if it is swollen or was deformed in any way during the procedure. The battery is likely damaged and can be very dangerous to reuse—it should be replaced.

This guide involves removing the speakers and battery. You will need new adhesive to properly reinstall the speakers and battery.

TOOLS:


P5 Pentalobe Screwdriver Retina MacBook Pro and Air (1)
Spudger (1)
Tweezers (1)
T3 Torx Screwdriver (1)
T4 Torx Screwdriver (1)

PARTS:


MacBook Air 13" (A2179, A2337 2020)
Microphone (1)
Tesa 61395 Tape (1)

Step 1 — Remove the screws securing the lower case




 Before starting this procedure, you should 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](#) to disable Auto Boot.

- If your MacBook is running Big Sur v11.1 or later, disabling Auto Boot may not work. You can proceed normally, but make sure to disconnect the battery as soon as you're inside.

 Completely power off and unplug your MacBook before you start. Close the display and flip the entire laptop upside-down.

- Use a P5 driver to remove the following screws:

- Two 7.9 mm screws
- Two 7.3 mm screws
- Six 2.6 mm screws

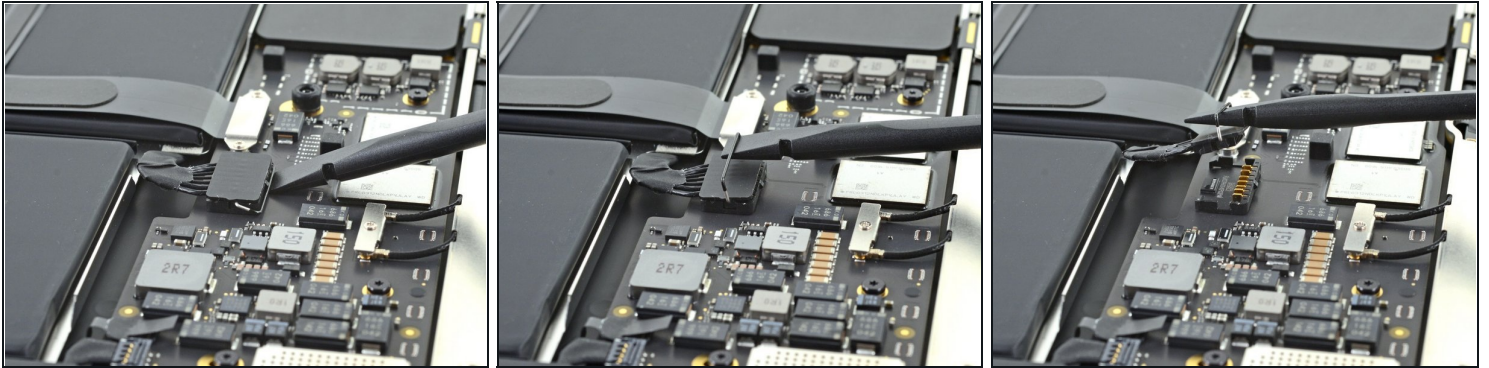
 Throughout this repair, [keep track of each screw](#) and make sure it goes back exactly where it came from to avoid damaging your MacBook.

Step 2 — Remove the lower case



- Wedge your fingers between the display and the lower case and pull upward to pop off the lower case.
 - Remove the lower case.
- ☑ To reinstall the lower case:
- Set it in place and press firmly to engage the two hidden clips underneath. You should feel and hear them snap into place.

Step 3 — Disconnect the battery



- Use the flat end of a spudger to pry up and unlatch the metal locking arm on the battery connector.
⚠ Make sure the metal arm is completely free of the locking tab before lifting the battery connector. The metal locking arm should easily unlatch.
- Lift straight up on the metal locking arm to pull the battery connector out of its socket on the logic board.
- ☑ During reassembly, press the battery connector straight down into its socket, making sure it sits flush within the socket.
 - If necessary, push the rear, wire side of the connector into place first, then rock the front of the connector into place.

Step 4 — Remove the audio board connector cover



- Use a T3 Torx driver to remove the three 1.4 mm screws securing the audio board connector cover.
- ⓘ If your T3 bit feels a bit too loose, you may need to use a T4.

Step 5



- Remove the audio board connector cover.

Step 6 — Disconnect the right speaker connector



- ❶ The **right** speaker will be on your **lefthand side** when working on the MacBook, as it's laying upside down.
- Slide the pointed end of a spudger underneath the right speaker cable and pry straight up to disconnect it from the audio board.

Step 7 — Remove the right speaker screw



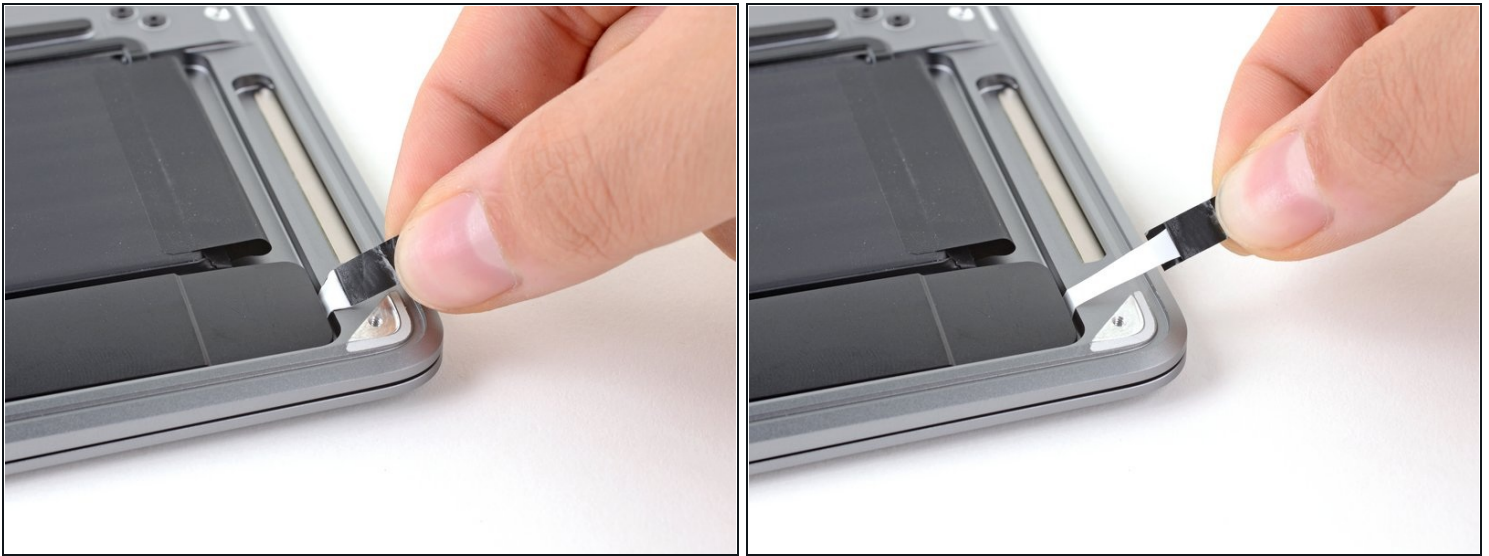
- Use a T3 Torx driver to remove the 4.2 mm screw securing the right speaker to the case.

Step 8 — Remove the speaker's stretch-release adhesive



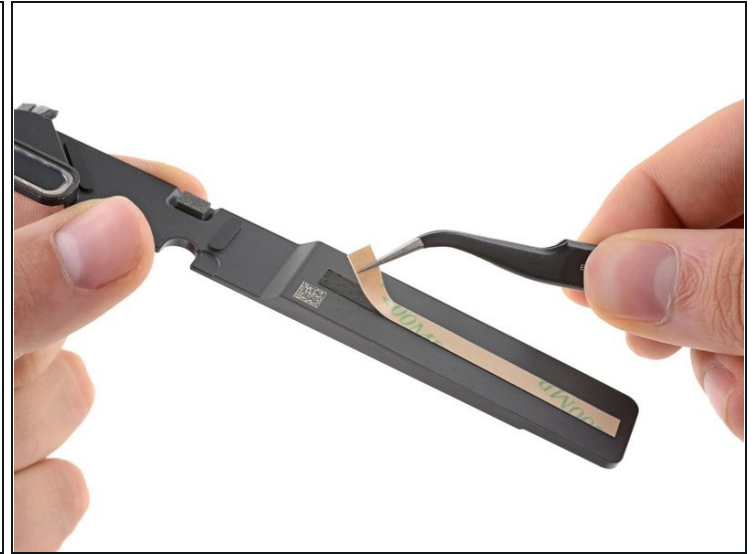
- Use a pair of [tweezers](#) to peel back the black pull tab on the speaker's stretch-release adhesive until you can grip it with your fingers.

Step 9



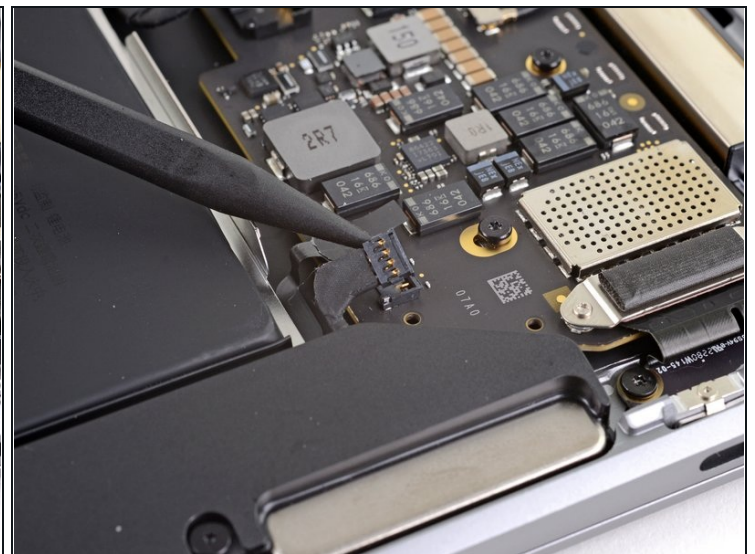
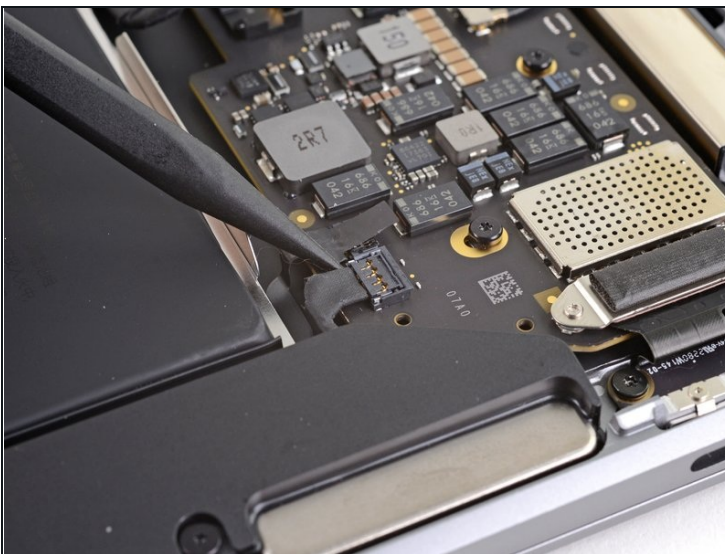
- Grab the adhesive strip's pull tab and slowly pull the adhesive strip out from underneath the speaker.
 - ① Keep the angle of the adhesive strip as parallel to the laptop as you can. Try to avoid dragging it across the inside of the case.
- Pull the adhesive strip until it's freed from under the speaker.
- ① If the adhesive strip breaks, use a [heated iOpener](#), a heat gun, or a hair dryer to help remove the adhesive:
 - Apply heat to the speaker to soften the adhesive underneath.
 - Carefully slide a spudger or opening pick underneath the speaker to separate the adhesive.

Step 10 — Remove the right speaker



- Remove the right speaker.
- ☑ During reassembly, to ensure the speaker performs as expected, install a strip of [replacement adhesive](#) on its underside before placing it back into the case.

Step 11 — Disconnect the left speaker connector



- ① The **left** speaker will be on your **righthand side** when working on the MacBook, as it's laying upside down.
- Slide the pointed end of a spudger underneath the left speaker cable and pry straight up to disconnect it from the logic board.

Step 12 — Remove the left speaker screw



- Use a T3 Torx driver to remove the 4.2 mm screw securing the left speaker to the case.
- ⓘ If your T3 bit feels a bit too loose, you may need to use a T4.

Step 13 — Remove the speaker's stretch-release adhesive



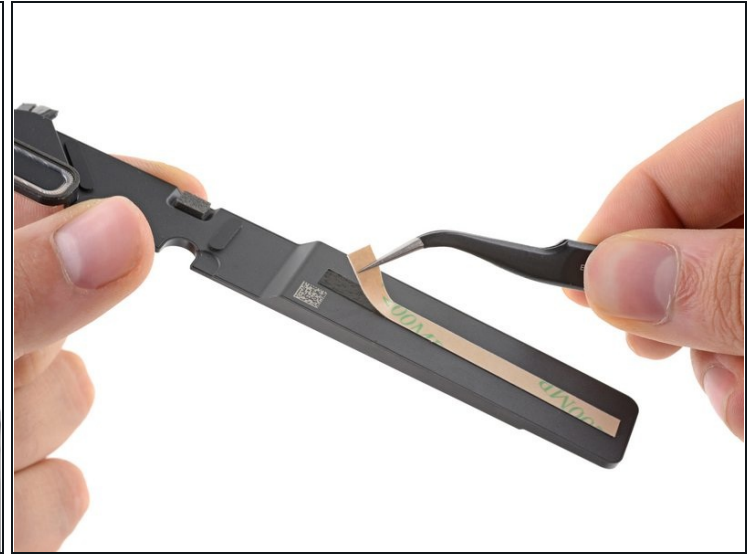
- Use a pair of [tweezers](#) to peel back the black pull tab on the speaker's stretch-release adhesive until you can grip it with your fingers.

Step 14



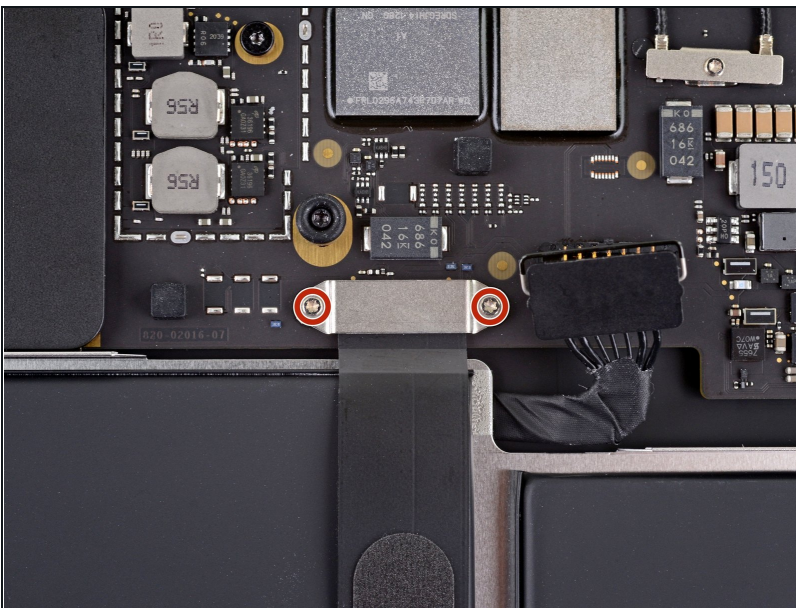
- Grab the adhesive strip's pull tab and slowly pull the adhesive strip out from underneath the speaker.
- ① Keep the angle of the adhesive strip as parallel to the laptop as you can. Try to avoid dragging it across the inside of the case.
- Pull the adhesive strip until it's freed from under the speaker.
- ① If the adhesive strip breaks, use a [heated iOpener](#), a heat gun, or a hair dryer to help remove the adhesive:
 - Apply heat to the speaker to soften the adhesive underneath.
 - Carefully slide a spudger or opening pick underneath the speaker to separate the adhesive.

Step 15 — Remove the left speaker



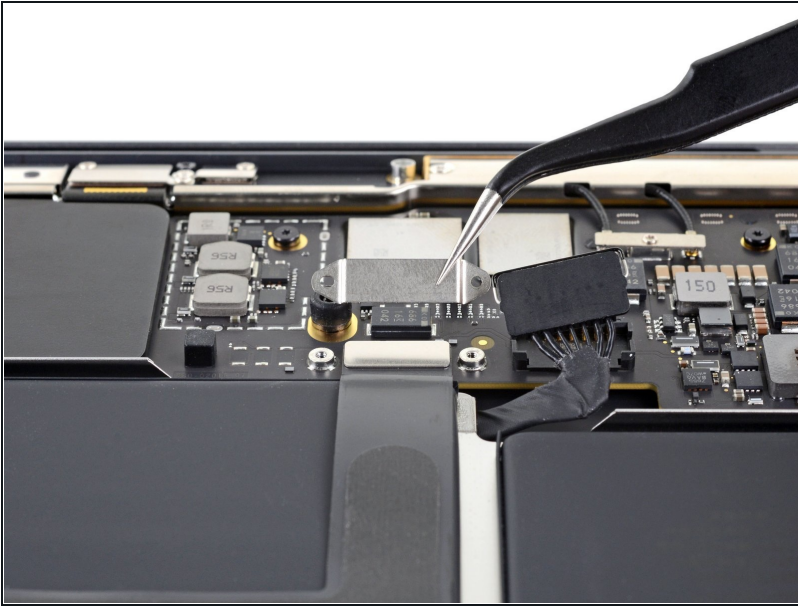
- Remove the left speaker.
- ☑ During reassembly, to ensure the speaker performs as expected, install a strip of [replacement adhesive](#) on its underside before placing it back into the case.

Step 16 — Remove the trackpad cable cover



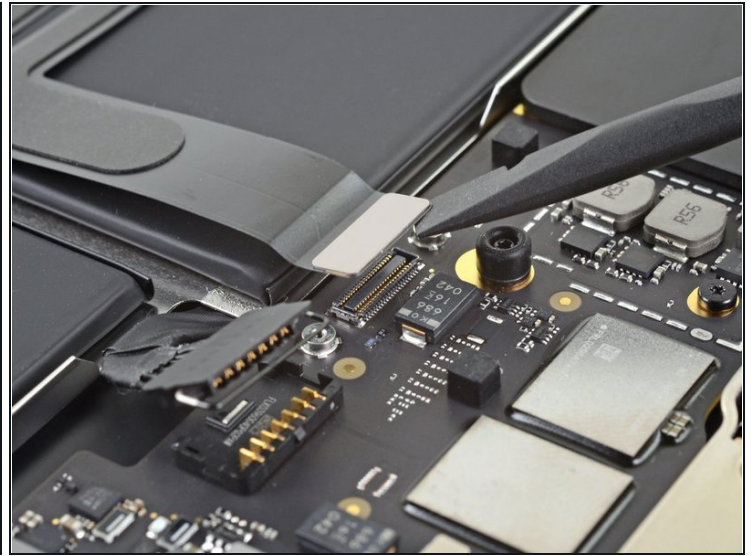
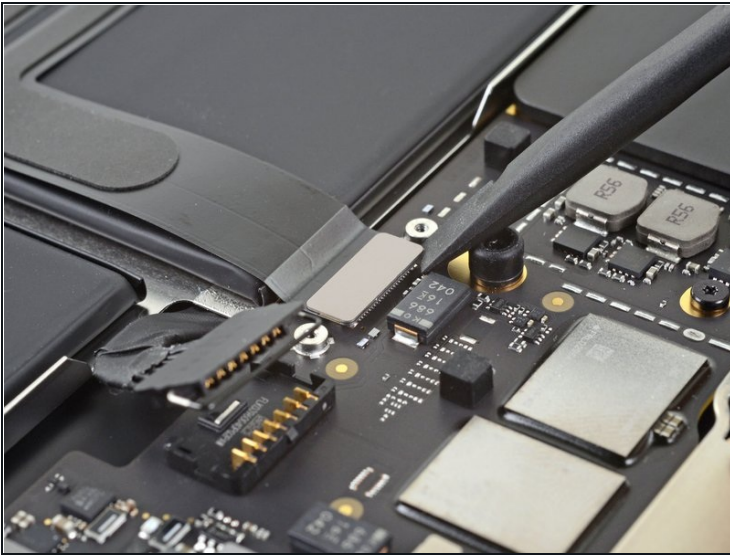
- Use a T3 Torx driver to remove the two 1.4 mm screws securing the trackpad cable cover.

Step 17



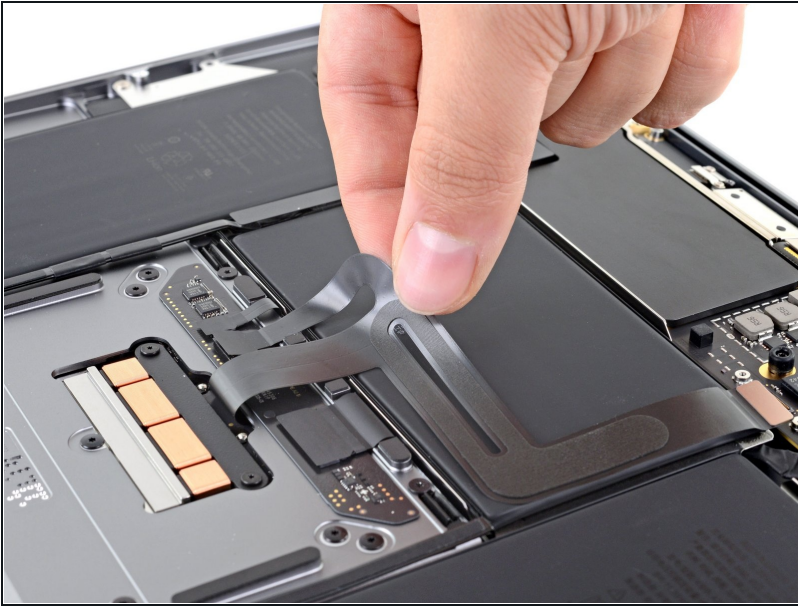
- Remove the trackpad cable cover.

Step 18 — Disconnect the trackpad cable



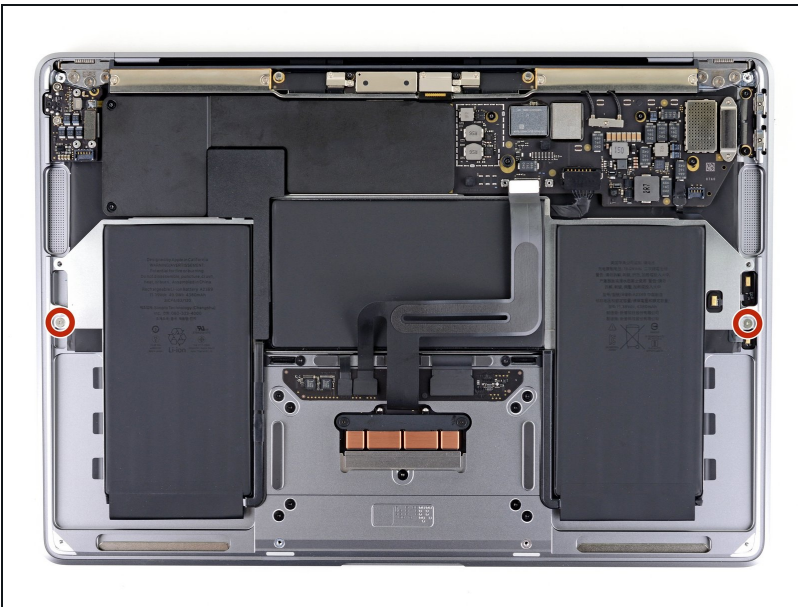
- Use the flat end of a spudger to pry the trackpad cable connector up and out of its socket.

Step 19



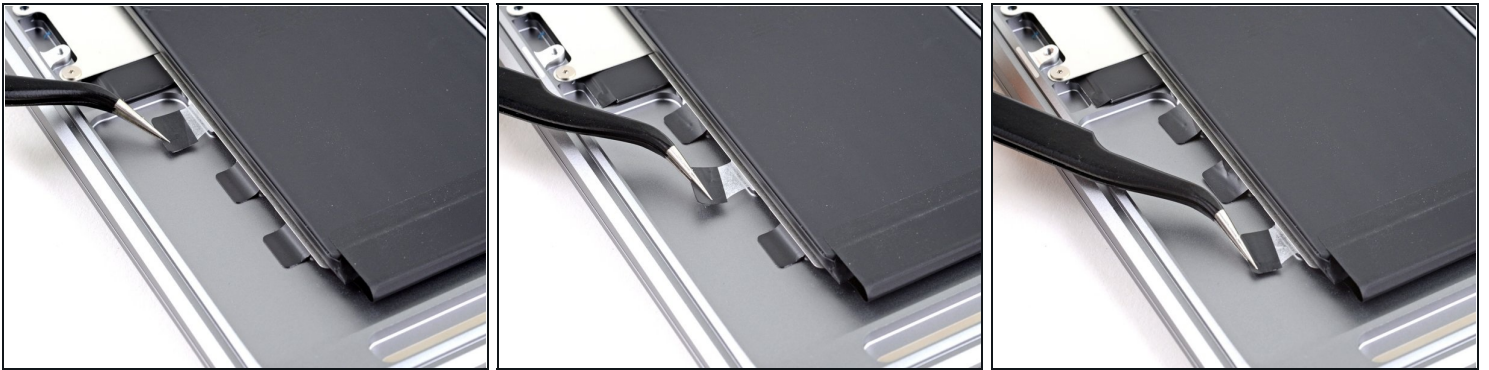
- Carefully peel the trackpad cable off of the battery.
- ① The trackpad cable is secured to the battery with some light adhesive.

Step 20 — Remove the battery tray screws



- Use a T3 Torx driver to remove the two 2.6 mm screws securing the battery tray to the case.

Step 21 — Remove the battery tray adhesive strips

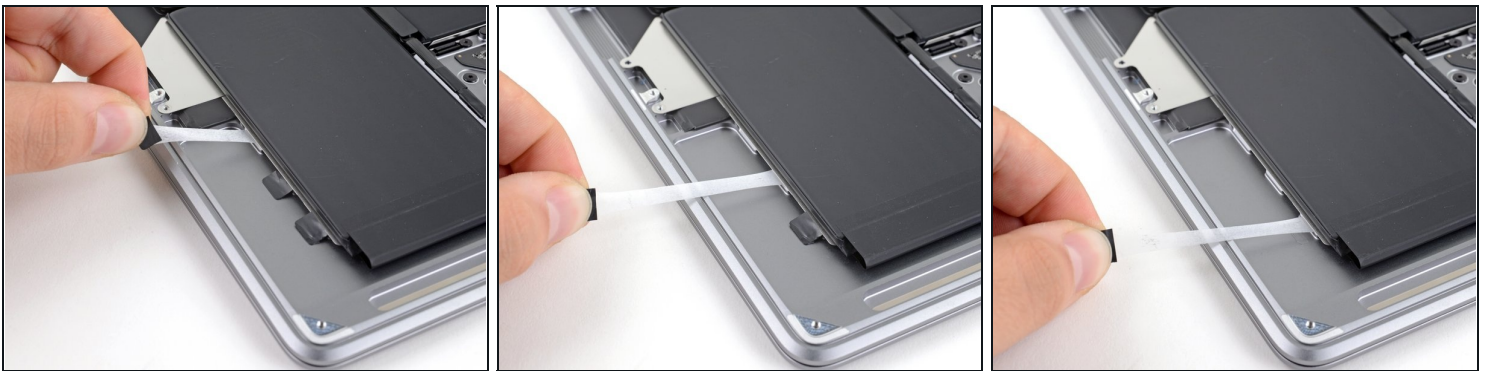


ⓘ The MacBook's battery cells are attached to a metal tray as a complete assembly, which is adhered to the case with a total of six stretch-release adhesive strips.

⚠ Don't attempt to remove the battery cells from their metal backing tray.

- On the left side of the MacBook, use a pair of [tweezers](#) to peel back the three black pull tabs on the battery's stretch-release adhesive strips until you can grip them with your fingers.

Step 22



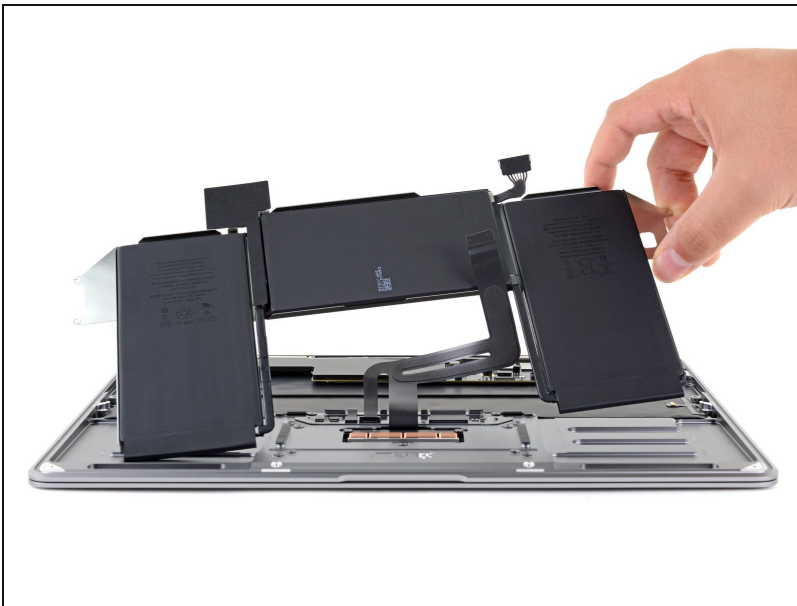
- Grab an adhesive strip's pull tab and slowly pull it out from underneath the battery.
 - ⓘ Keep the angle of the adhesive strip as parallel to the laptop as you can. Try to avoid dragging it across the inside of the case.
- Pull the adhesive strip until it's freed from under the battery.
- Repeat for the two remaining adhesive strips on the battery's left side.

Step 23



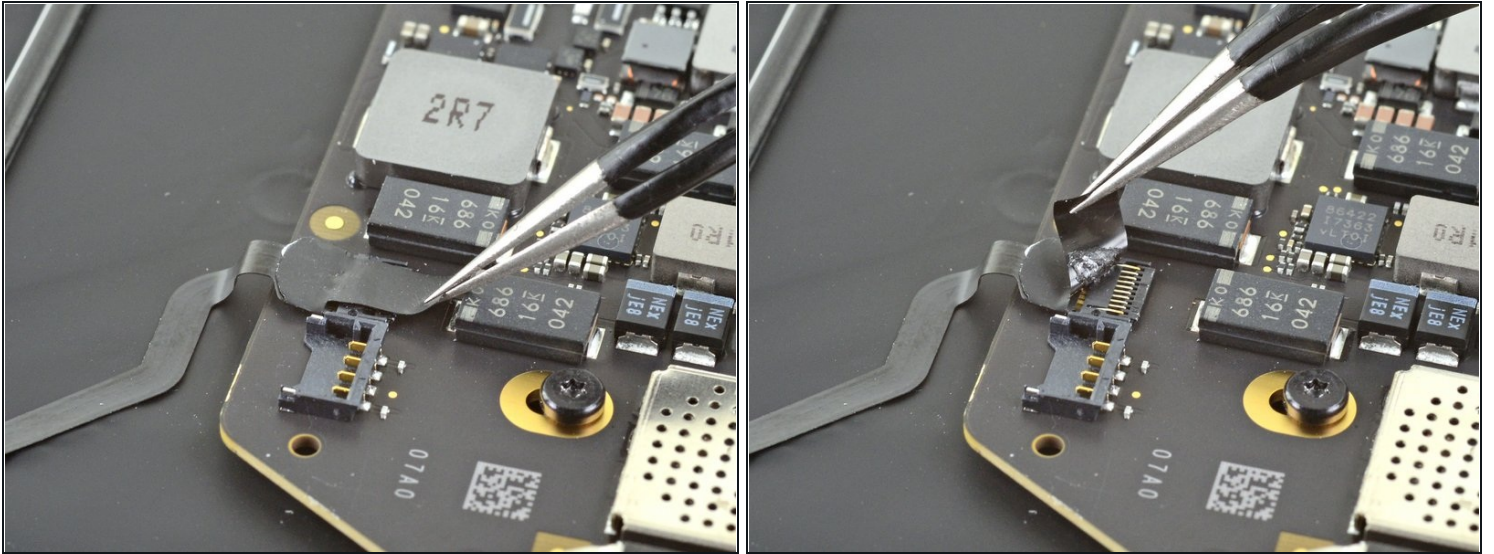
- Repeat and remove the three adhesive strips from the right side of the battery.
- ① If any of the six adhesive strips broke during removal, you can use a [plastic card](#) to finish separating the battery tray from the case.

Step 24 — Remove the battery



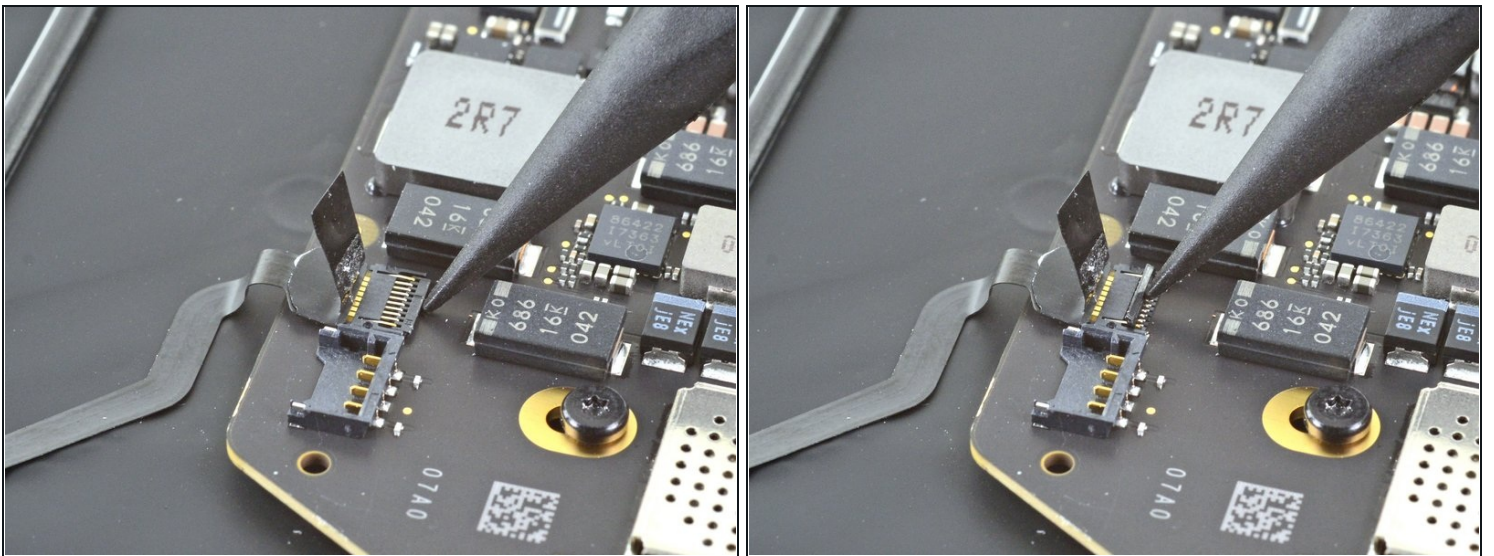
- Remove the battery assembly.
- ★ If you're installing a new battery, follow the [calibration](#) procedure:
 - Charge it to 100%, and keep charging it for at least 2 more hours.
 - Unplug and use it normally to drain the battery.
 - When you see the low battery warning, save your work, and keep your laptop on until it goes to sleep due to low battery.
 - Wait at least 5 hours, then charge your laptop uninterrupted to 100%.

Step 25 — Disconnect the microphone cable



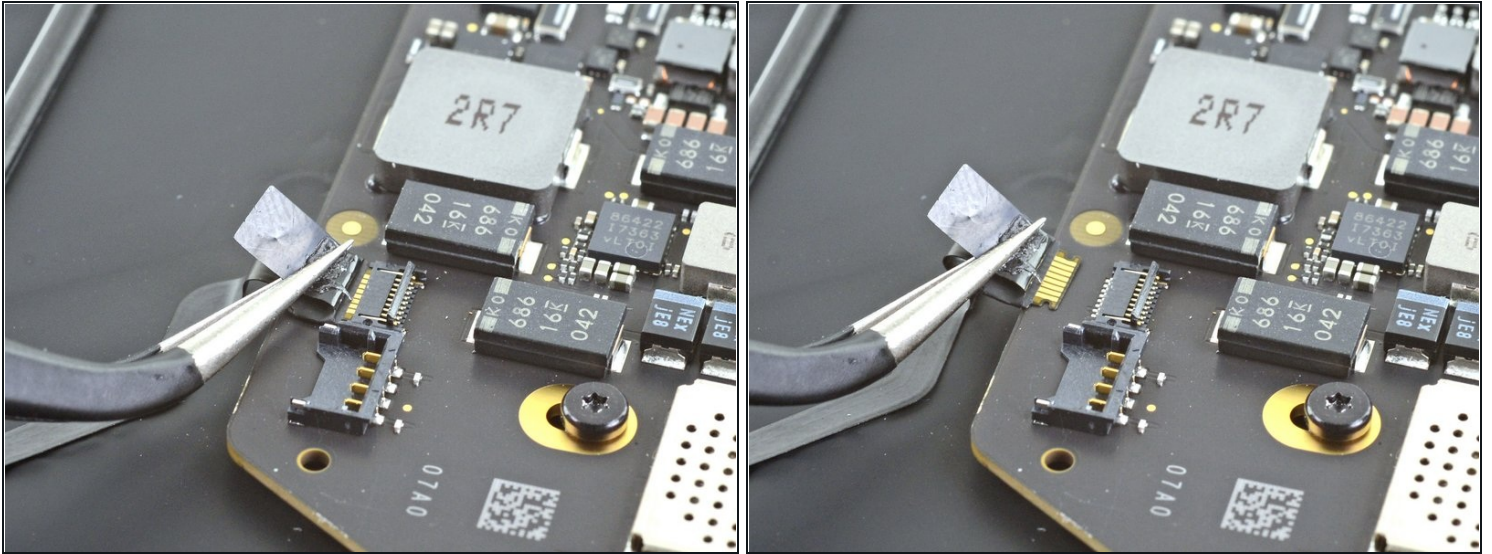
- Use a pair of [tweezers](#) to peel back the tape covering the microphone cable connector.

Step 26



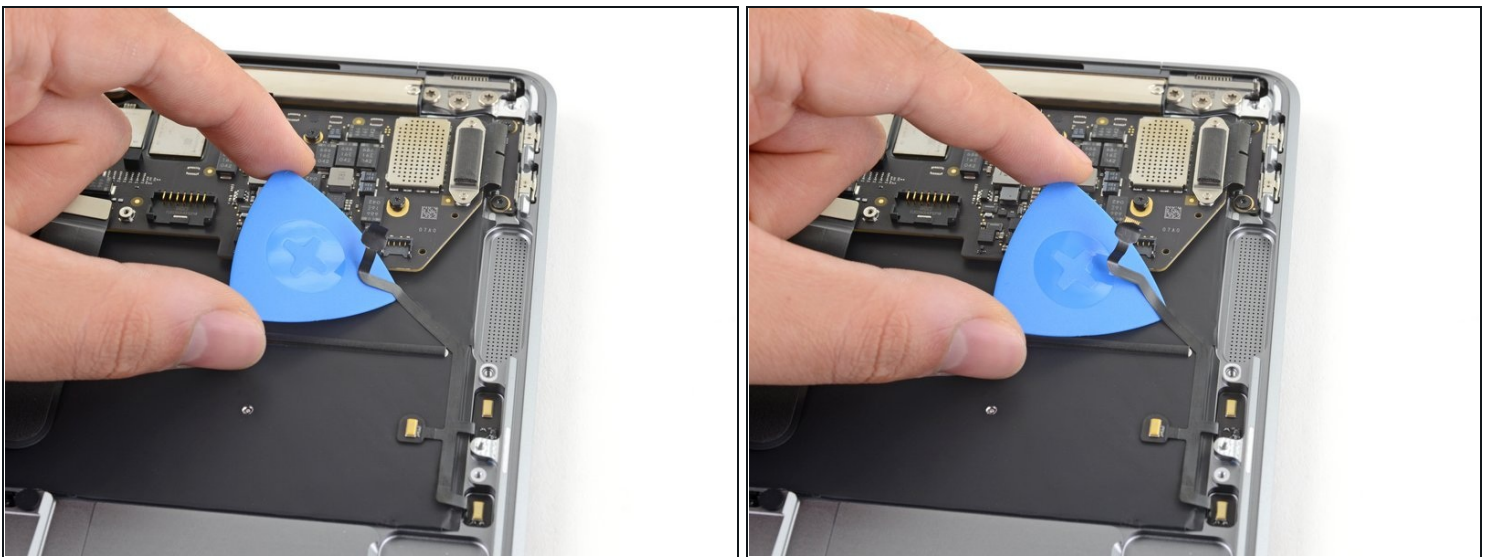
- Use the pointed end of a spudger to lift up the small locking flap on the microphone cable's [ZIF connector](#).

Step 27



- Slide the microphone cable out of its connector.
 - ① If possible, grip the cable by the tape, not by the cable itself.

Step 28



- Slide an opening pick underneath the microphone cable to separate it from the upper case.
 - ① The cable is secured with some light adhesive.
 - ① If the adhesive is stubborn, don't force the pick. Lightly heat the microphone assembly using an iOpener or a hair dryer to soften the adhesive.

Step 29



- Slide an opening pick underneath the microphone closest to the center of the MacBook to slice through the adhesive securing it to the upper case.
- Lift up to pry the microphone out of its recess in the case.

Step 30



- Use the pointed end of a spudger to carefully pry one of the remaining microphones out of its recess in the upper case.
 - ⓘ If the adhesive is stubborn, apply heat to the microphone to soften the adhesive.
- ⚠ **Don't force the spudger under the microphone or you risk ripping the cable.**
- Remove the third and final microphone from the case.

Step 31



- Remove the microphone array.

Compare your new replacement part to the original part—you may need to transfer remaining components or remove adhesive backings from the new part before installing.

To reassemble your device, follow the above steps in reverse order.

Once you've completed your repair, your laptop may not power back on until connected to power.

Take your e-waste to an [R2 or e-Stewards certified recycler](#).

Repair didn't go as planned? Check out our [Answers community](#) for troubleshooting help.