iPhone 12 Pro Max Battery Replacement

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Written By: Adam O'Camb



INTRODUCTION

iPhone batteries are rated to hold 80% of their capacity for up to 500 charge cycles, which lasts roughly 18-24 months for most users. After that, your iPhone may need to be charged far more frequently, and iOS may warn you that performance is affected (in other words, your phone will run slower). Use this guide to replace your battery and restore your iPhone to like-new performance.

If your battery is swollen, take appropriate precautions.

Note: On iOS 17.6 and earlier, your iPhone may display a warning about the “genuineness” of the battery after the repair, even when using original Apple parts. If your iPhone functions normally, you can safely ignore the warning. On iOS 18 and newer, authenticate your new battery using Apple's Repair Assistant.

For optimal performance, after completing this guide, calibrate your newly installed battery: Charge it to 100% and keep charging it for at least two more hours. Then use your iPhone until it shuts off due to low battery. Finally, charge it uninterrupted to 100%.

TOOLS:

- P2 Pentalobe Screwdriver iPhone (1)
- Clampy - Anti-Clamp (1)
- Hair Dryer (1)
- Heat Gun (1)
- iFixit Opening Picks (Set of 6) (1)
- Suction Handle (1)
- Tri-point Y000 Screwdriver (1)
- Spudger (1)
- Tweezers (1)
- Phillips #00 Screwdriver (1)
- Isopropyl Alcohol (1)
- Standoff Screwdriver for iPhones (1)

PARTS:

- iPhone 12 Pro Max Display Assembly Adhesive (1)
- iPhone 12 Pro Max Battery Adhesive Strips (1)
- iPhone 12 Pro Max Battery (1)

Step 1 — Remove the pentalobe screws

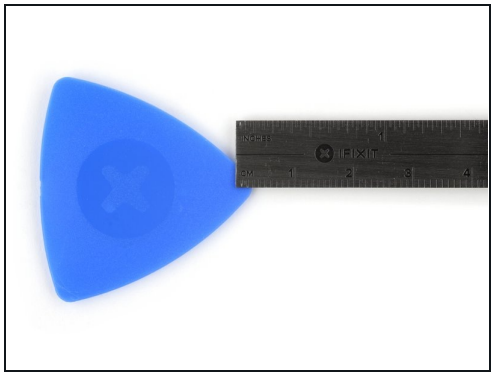
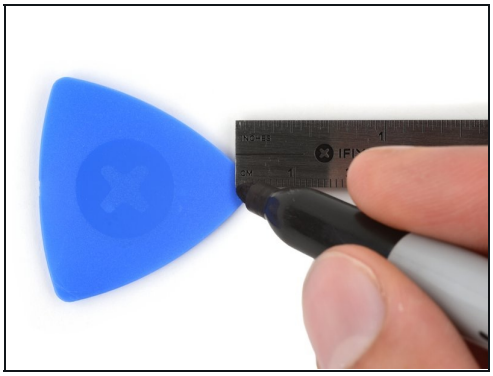
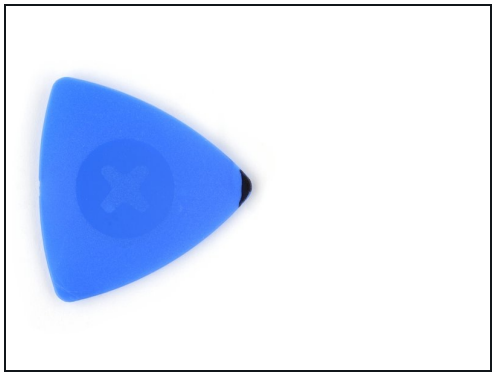


Caution: Before you begin, discharge your iPhone battery below 25%. A charged lithium-ion battery can catch fire and/or explode if accidentally punctured.

- Power off your iPhone before beginning disassembly.
- Remove the two 6.7 mm-long pentalobe P2 screws at the bottom edge of the iPhone.

Opening the iPhone's display will compromise its waterproof seals. Have replacement seals ready before you proceed past this step, or take care to avoid liquid exposure if you reassemble your iPhone without replacing the seals.

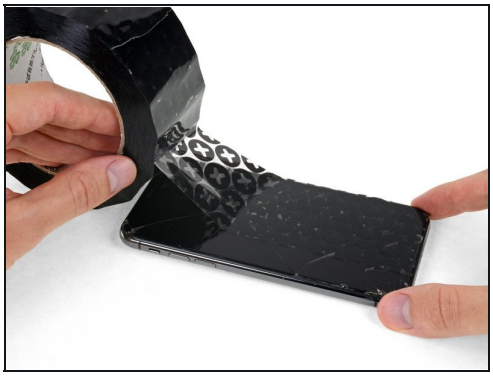
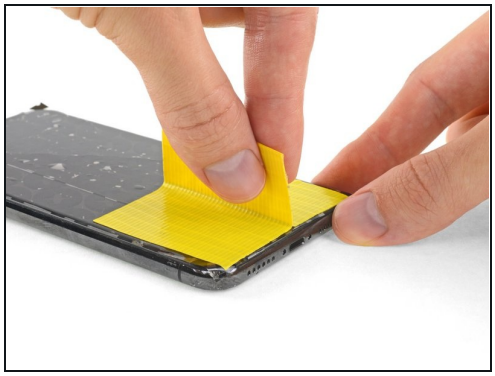
Step 2 — Mark your opening picks

If inserted too far, an opening pick can damage your device. Follow this step to mark your pick and prevent damage.

- Measure 3 mm from the tip and mark the opening pick with a permanent marker.
  - You can also mark the other corners of the pick with different measurements.
  - Alternatively, tape a coin to a pick 3 mm from the tip.

Step 3 — Tape over any cracks

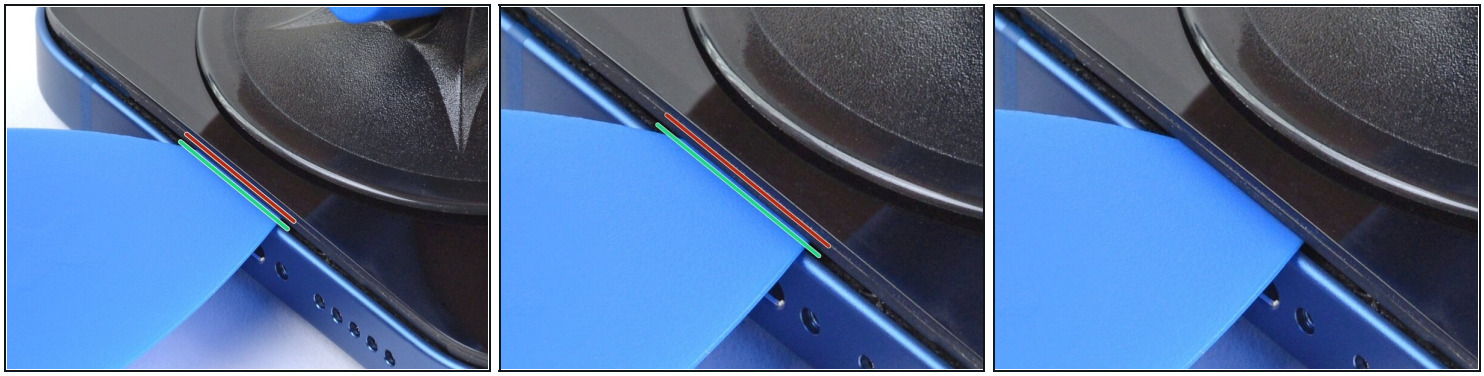
If your iPhone has a cracked screen, keep further breakage contained and prevent bodily harm during your repair by taping over the glass.

- Lay overlapping strips of clear packing tape over the iPhone's screen until the whole face is covered.

Wear safety glasses to protect your eyes from any glass shaken free during the repair.

- If you can't get the suction cup to stick in the next few steps, fold a strong piece of tape (such as duct tape) into a handle and lift the screen with that instead.
  - If all else fails, you can superglue the suction cup to the screen.

Step 4 — Screen damage warning



- To avoid damaging your screen in the next steps, note the following:
  - There's a plastic bezel on the underside of the screen. **Your opening pick will go underneath this bezel.**
  - There's a seam between the plastic bezel and the display panel. **Don't insert your pick here** or you'll damage the screen.

Sometimes the display panel separates from the bezel before you even get a chance to insert a pick. This may be unavoidable depending on the condition of the adhesive. In this case, you'll most likely need to replace your entire screen.

Step 5 — Anti-Clamp instructions







The next three steps demonstrate the Anti-Clamp, a tool we designed to make the opening procedure easier. **If you aren't using the Anti-Clamp, skip down three steps for an alternate method.**

For complete instructions on how to use the Anti-Clamp, check out this guide.

- Pull the blue handle backwards to unlock the Anti-Clamp's arms.
- Slide the arms over either the left or right edge of your iPhone.
- Position the suction cups near the bottom edge of the iPhone—one on the front, and one on the back.
- Squeeze the cups together to apply suction to the desired area.

If you find that the surface of your iPhone is too slippery for the Anti-Clamp to hold onto, you can use tape to create a grippier surface.

Step 6







- Pull the blue handle forwards to lock the arms.
- Turn the handle clockwise 360 degrees or until the cups start to stretch.
- Make sure the suction cups remain aligned with each other. If they begin to slip out of alignment, loosen the suction cups slightly and realign the arms.

Step 7







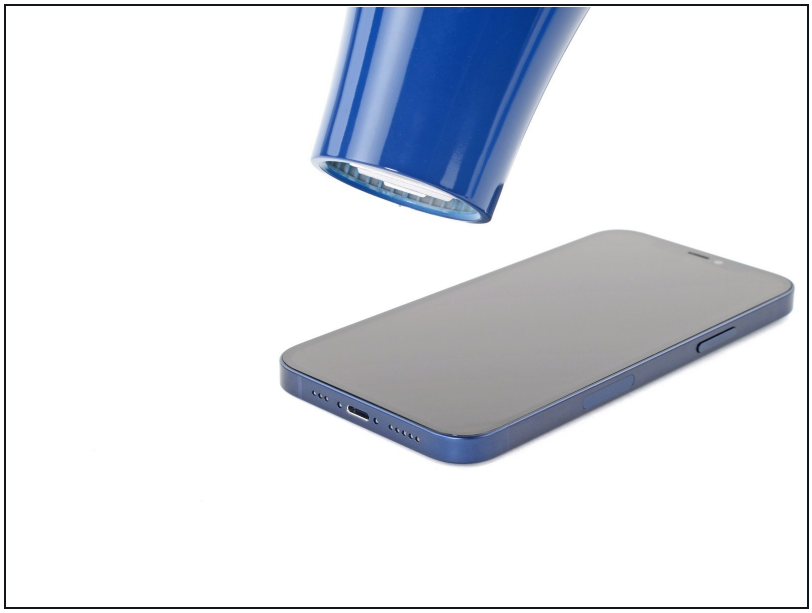
- Support your iPhone on something sturdy such as a hardcover book so it rests hands-free and parallel to the ground; this makes it easier to work with in the following steps.
- Use a hair dryer to heat along the bottom edge of the iPhone. The screen should feel slightly too hot to touch.

  For complete instructions on how to use a hair dryer, check out this guide.
- Wait one minute to give the adhesive a chance to release and present an opening gap.
- Insert an opening pick under the screen's plastic bezel when the Anti-Clamp creates a large enough gap.

  If the Anti-Clamp doesn't create a sufficient gap, apply more heat to the area and rotate the handle a quarter turn.

  Don't crank more than a quarter turn at a time, and wait one minute between turns. Let the Anti-Clamp and time do the work for you.
- **Skip the next three steps.**

Step 8 — Heat the bottom edge



- Use a hair dryer or heat gun to heat the bottom half of the screen until it's slightly too hot to touch. This softens the adhesive securing it.

⚠ Improper use of a heat gun can destroy the display and/or battery—review this guide for instructions. To prevent screen damage, keep your heat source moving rather than focused on one spot.

ⓘ For tips on using a hair dryer to soften adhesive, check out this guide.

Step 9 — Apply a suction cup





- If you're using a single suction handle, apply it to the bottom edge of the screen.

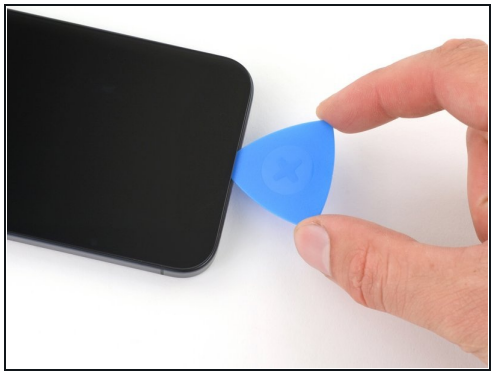
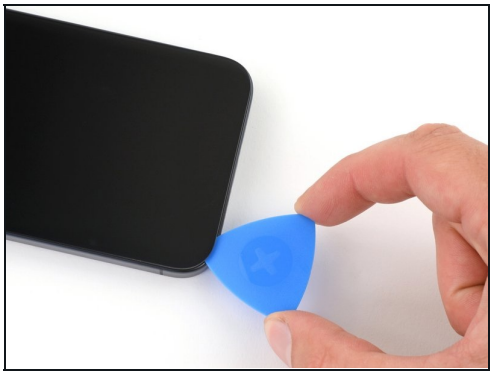
Step 10 — Lift the screen slightly





- Pull up on the suction cup with firm, constant pressure to create a slight gap between the screen and the frame.
- Insert an opening pick at a steep angle into the gap.
  - Remember to insert the opening pick **under the thick plastic bezel** to avoid damaging your screen.

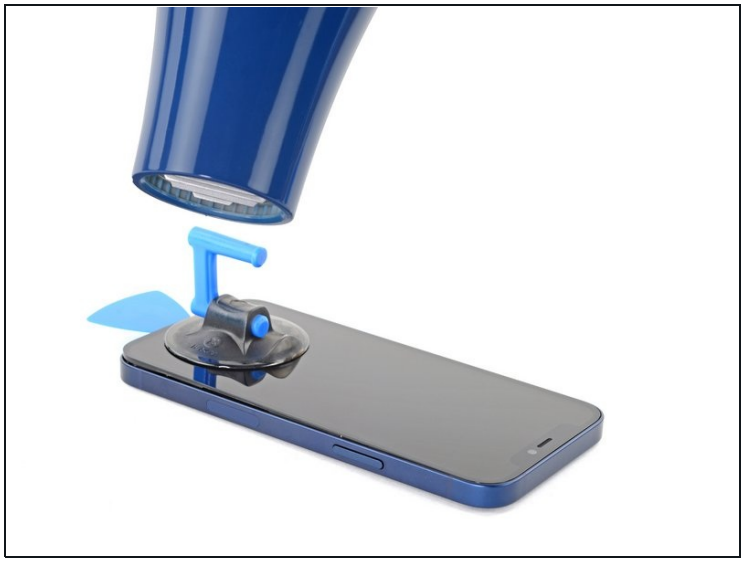
Step 11 — Separate the bottom edge adhesive

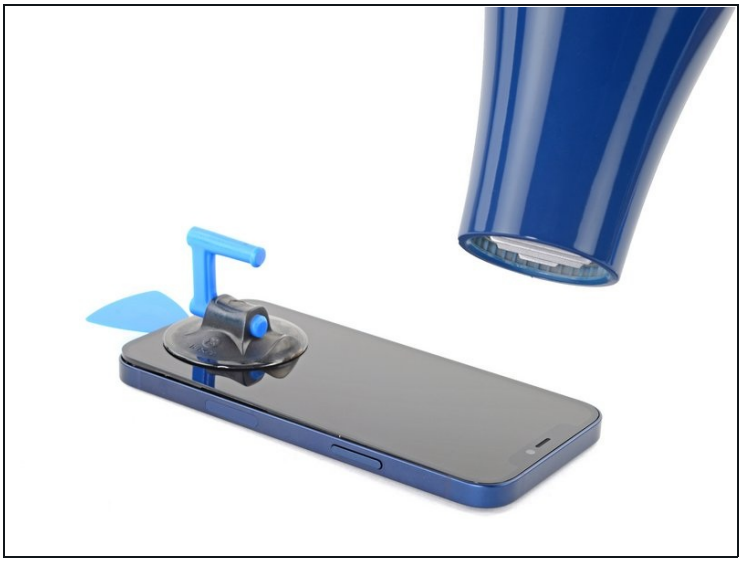




⚠ Don't insert your opening pick deeper than **3 mm** along the bottom edge.

- Slide your pick back and forth along the bottom edge to separate the adhesive.
- Leave your pick inserted in the bottom right corner to prevent the adhesive from re-sealing.

Step 12 — Heat the right edge

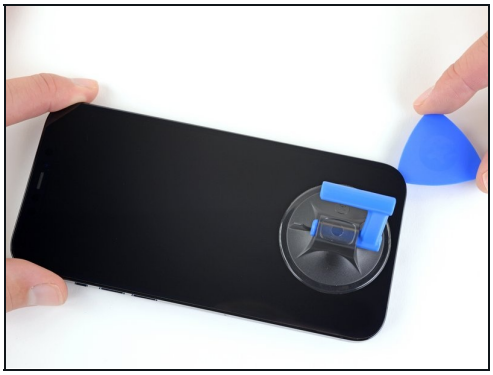




- Use a hair dryer to heat the right edge of the iPhone (the edge with the power button) until the screen is slightly too hot to touch.

Step 13







- Slide the opening pick around the bottom right corner of the iPhone to separate its adhesive.
- Continue sliding up the right edge of the iPhone until you reach the top right corner.

⚠ Don't insert your pick more than 3 mm, as you may damage internal components.

- Leave the pick in the top right corner before continuing.

Step 14 — Heat the top edge



- Use a hair dryer to heat the top edge of the iPhone until the screen is slightly too hot to touch.

Step 15 — Separate the top adhesive





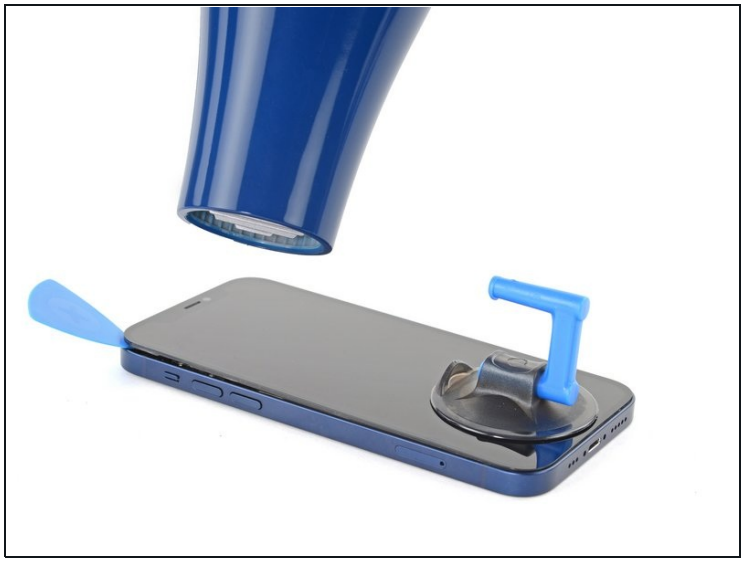


- Slide the opening pick around the top right corner of the iPhone to separate the top adhesive.

⚠ Don't insert your pick more than 3 mm, as you may damage the top sensors.

- Leave the pick in the top left corner before continuing.

Step 16 — Heat the left edge





- Use a hair dryer to heat the left edge of the iPhone until the screen is slightly too hot to touch.

Step 17 — Separate the left adhesive







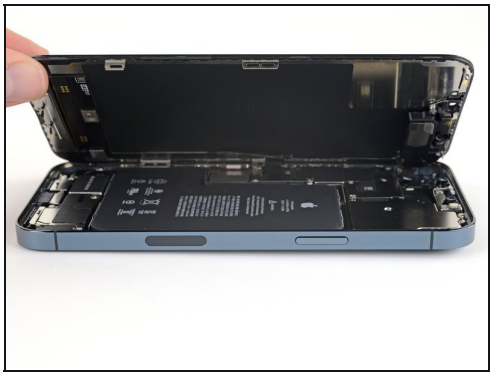
⚠ Don't insert your pick deeper than **2 mm** along the left edge to avoid the two cables connecting the screen to the phone.

- Rotate your pick around the top left corner of the screen.

- Slide your pick to the bottom left corner of the screen to separate the adhesive.

ⓘ If you're having trouble separating the adhesive, reheat the left edge.

Step 18 — Open the iPhone

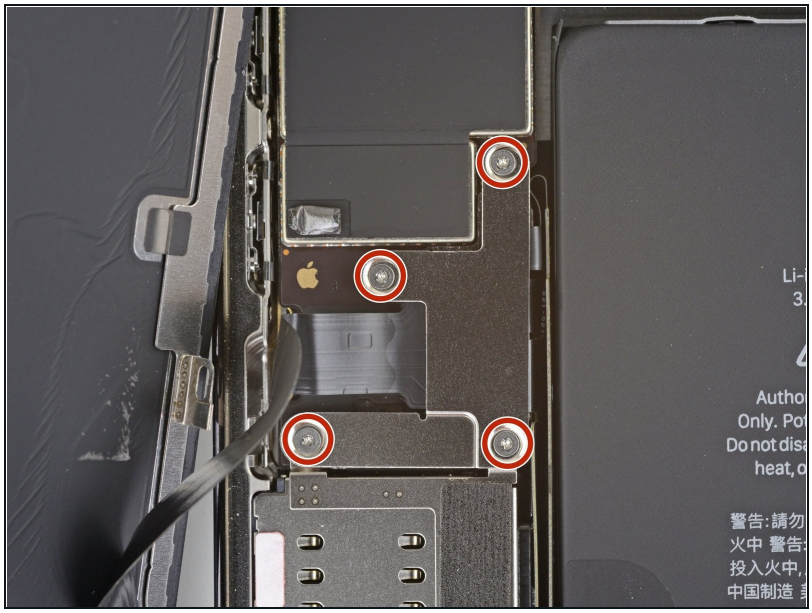

- Rotate your iPhone so the right edge faces you.
- Open the iPhone by swinging the display up from the right side, like the front cover of a book.

⚠ Don't try to fully separate the display yet, as several fragile ribbon cables still connect it to the iPhone's logic board.

- Lean the display against something to keep it propped up while you're working on the phone.

📌 During reassembly, lay the display in position, align the clips along the top edge, and carefully press the top edge into place before snapping the rest of the display down. If it doesn't click easily into place, check the condition of the clips around the perimeter of the display and make sure they aren't bent.

Step 19 — Unscrew the battery and display connector cover

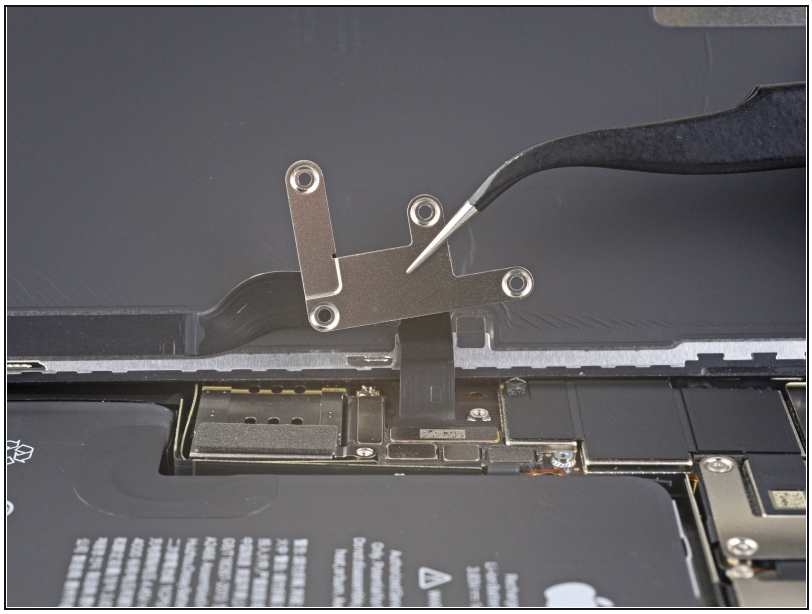


- Remove four 1.1 mm-long Y000 screws securing the battery and display connector cover.

Throughout this repair, keep track of each screw and make sure it goes back exactly where it came from to avoid damaging your iPhone.

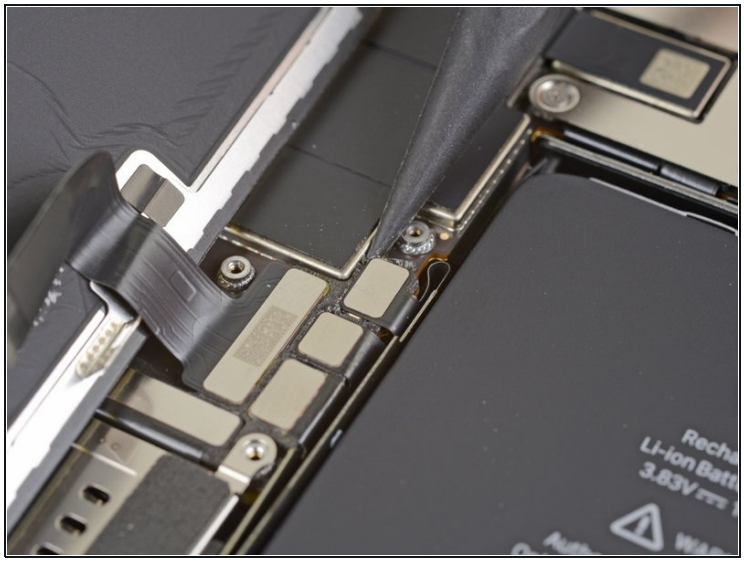
During reassembly, this is a good point to power on your iPhone and test all functions before you seal the display in place. Be sure to power your iPhone back down completely before you continue working.

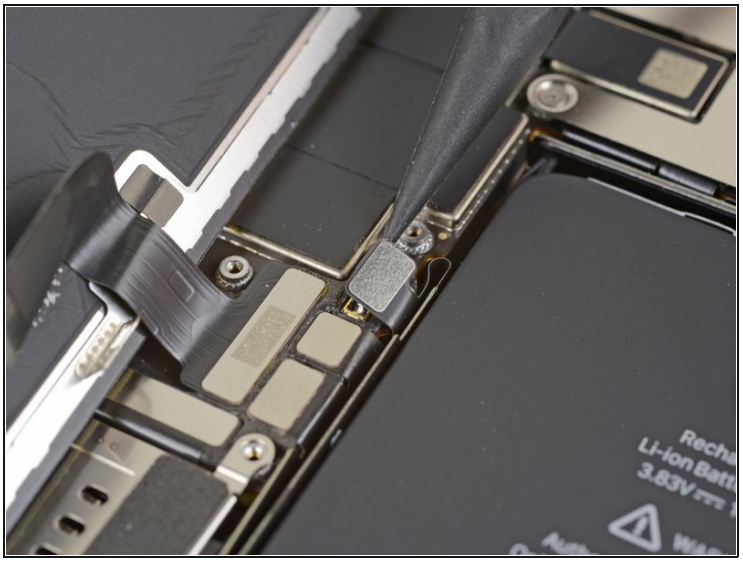
Step 20 — Remove the battery and display connector cover



- Remove the battery and display connector cover.

Step 21 — Disconnect the battery



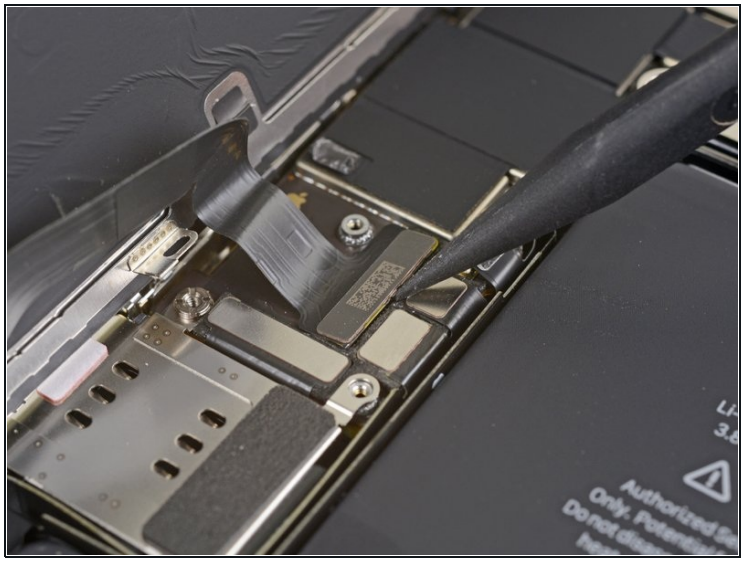


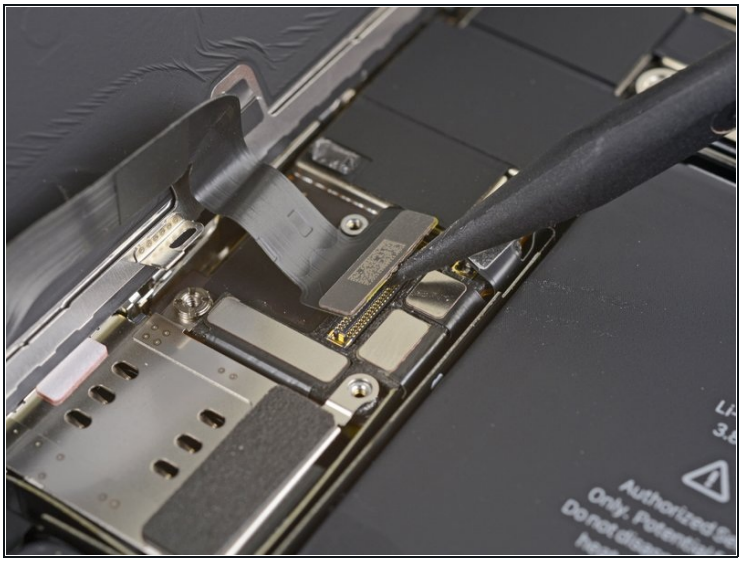
- Use a spudger or a clean fingernail to pry the battery connector up from its socket on the logic board.

  ⓘ Try not to damage the black silicone seal surrounding this and other board connections. These seals provide extra protection against water and dust intrusion.

- Bend the connector slightly away from the logic board to prevent it from accidentally making contact with the socket and providing power to the phone during your repair.

Step 22 — Disconnect the display cable

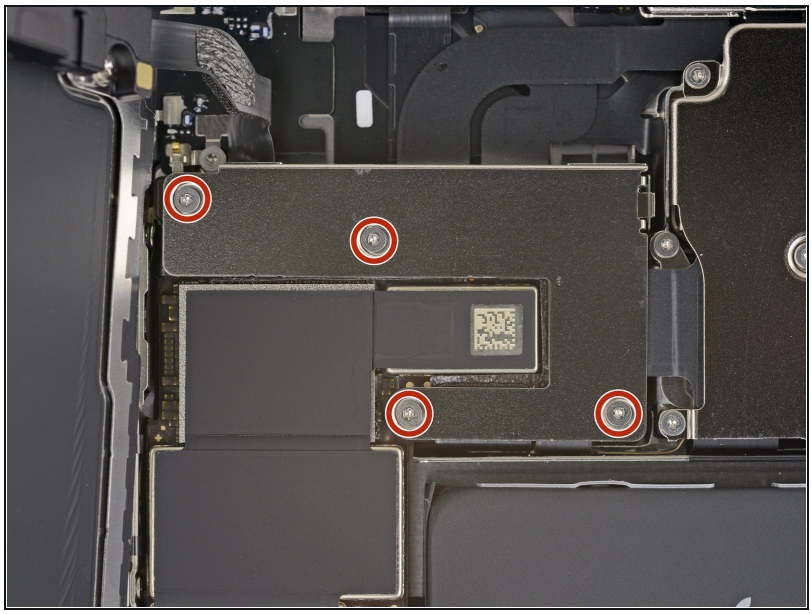




- Use a spudger or a fingernail to disconnect the display cable connector.

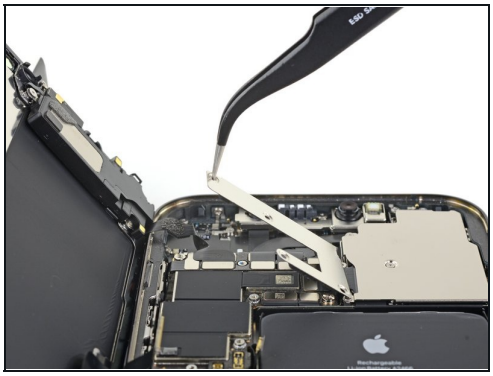
To re-attach press connectors like this one, carefully align and press down on one side until it clicks into place, then repeat on the other side. Do not press down on the middle. If the connector is misaligned, the pins can bend, causing permanent damage.

Step 23 — Unscrew the front sensor connector cover



- Use a Y000 driver to remove the four 1.1 mm-long screws securing the front sensor connector cover.

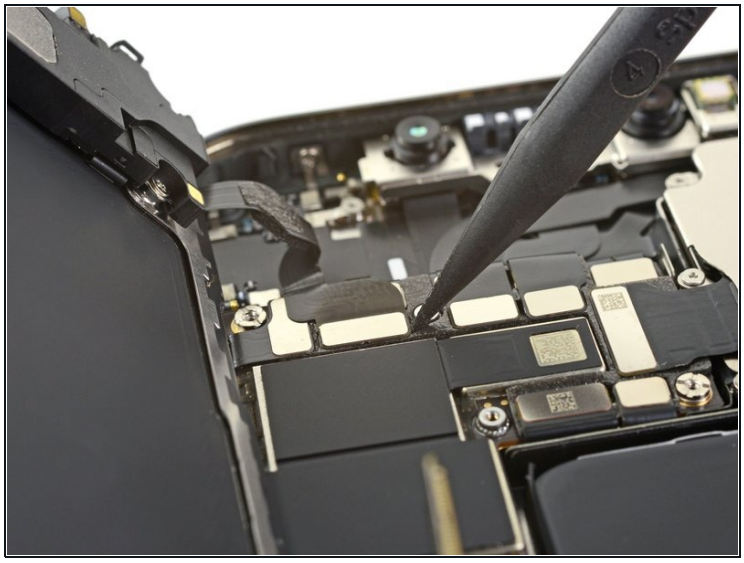
Step 24 — Remove the front sensor connector cover


- Swing the cover up from the left until the small clip on the right unhooks.
- Remove the cover.

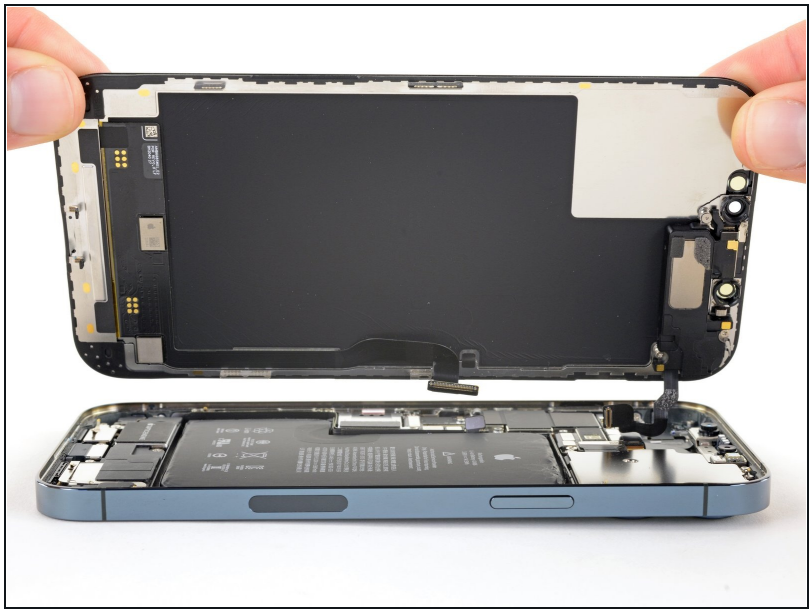
During reassembly, insert the clip on the right edge into its slot first, then hinge the rest of the cover into place.

Step 25 — Disconnect the front sensors




- Use a spudger or a fingernail to disconnect the front sensor assembly cable connector.

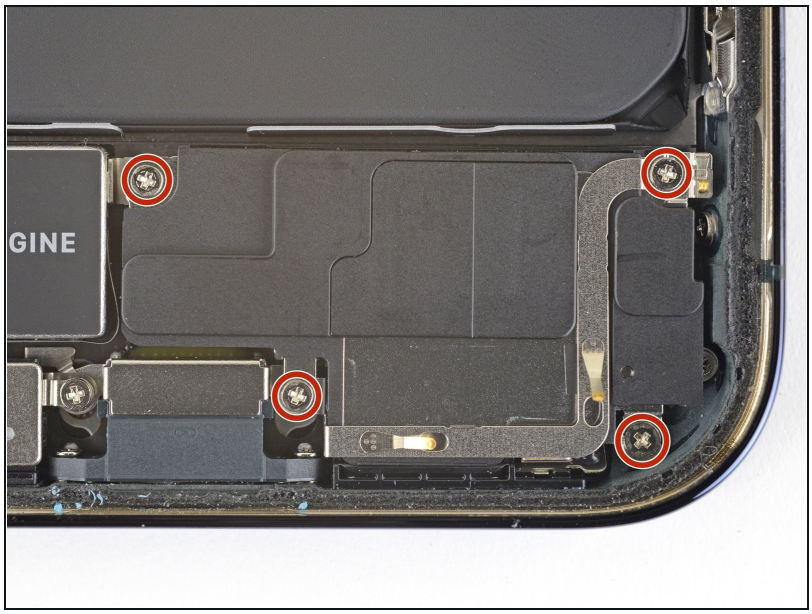
Step 26 — Remove the display assembly



- Remove the display assembly.

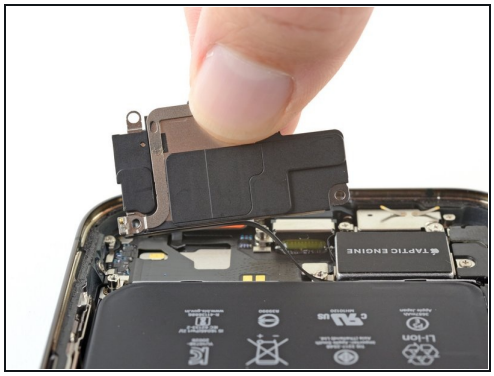
- During reassembly, pause here if you wish to replace the waterproof adhesive around the edges of the display.

Step 27 — Unscrew the loudspeaker



- Use a Phillips driver to remove the four 1.4 mm screws securing the loudspeaker.

Step 28 — Remove the loudspeaker





- Slowly lift the loudspeaker out of its recess while gently peeling it off of its adhesive strip. Reapply this strip to the new loudspeaker.
- Remove the loudspeaker.

Step 29 — Remove the Taptic Engine plastic cover



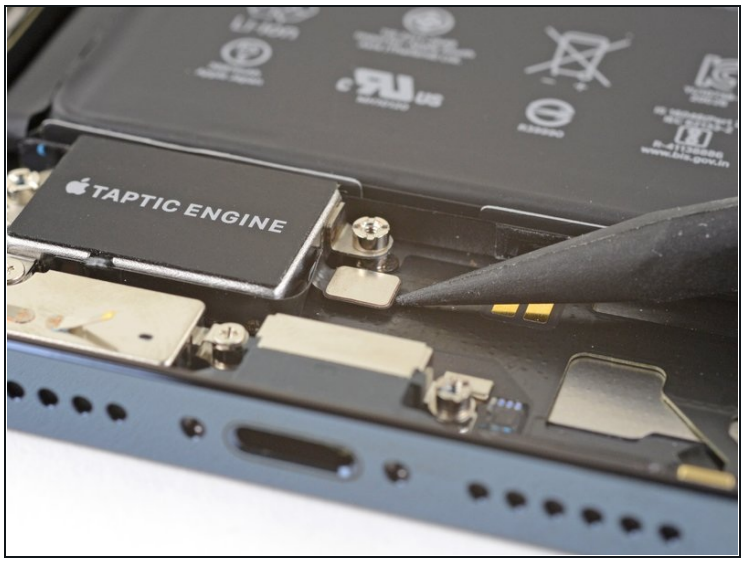
- Use a Phillips driver to remove the 1.4 mm screw securing the Taptic Engine plastic cover.

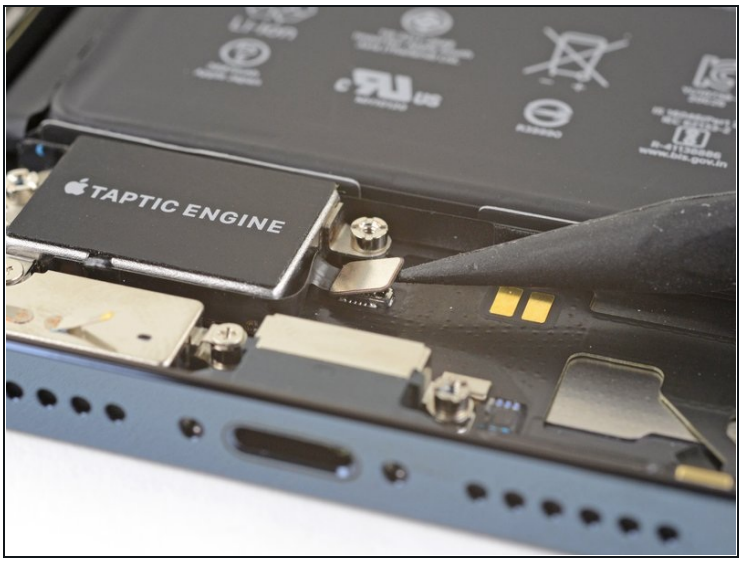
Step 30



- Remove the plastic cover

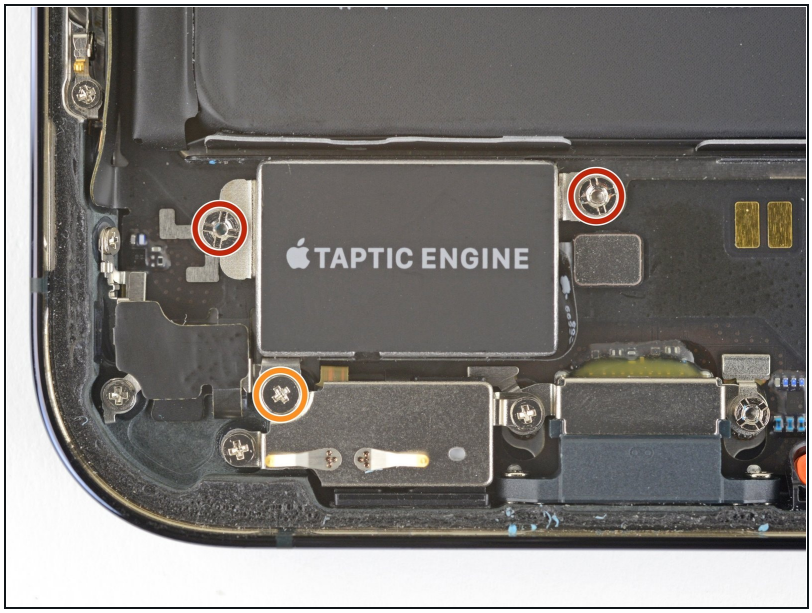
Step 31 — Remove the Taptic Engine





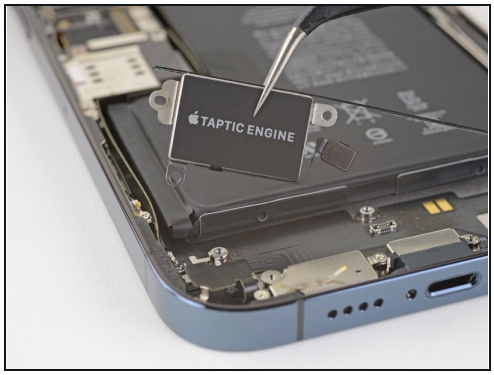
- Use the point of a spudger to pry the Taptic Engine connector straight up and out of its socket.

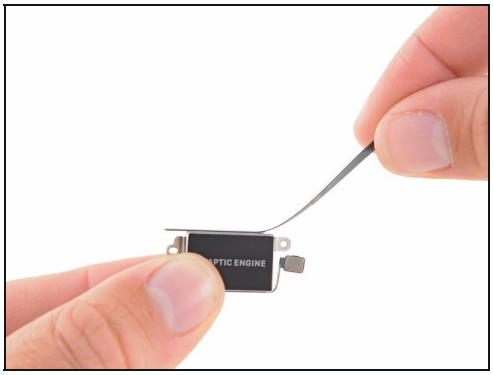
Step 32

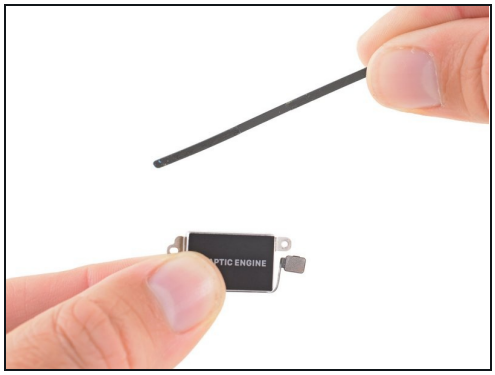


- Remove the three screws securing the Taptic Engine:
  - Two 2.8 mm **standoff** screws
    - Standoff screws are best removed using a standoff screwdriver or bit.
    - ⚠ In a pinch, a small flathead screwdriver will do the job—but use extra caution to ensure it doesn't slip and damage surrounding components.
  - One 1.6 mm Phillips screw

Step 33 — Remove the Taptic Engine

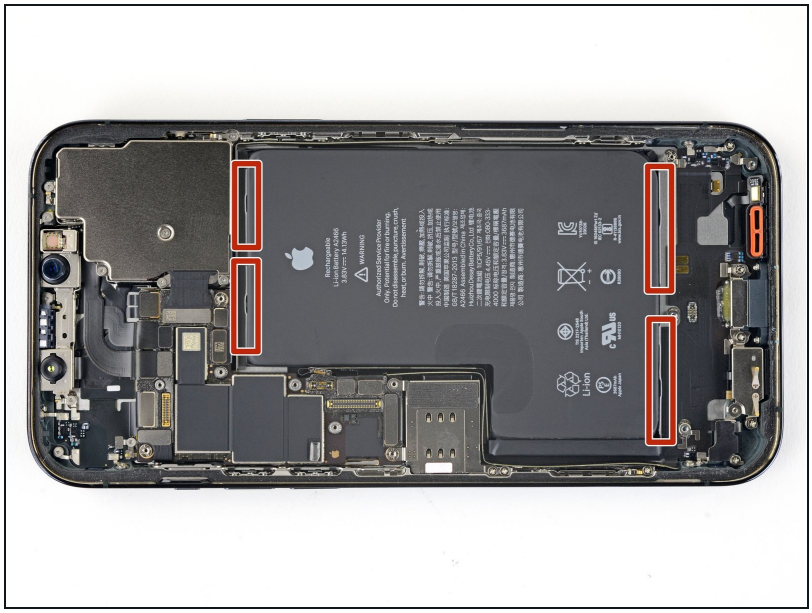






- Remove the Taptic Engine.
- If you are replacing the Taptic Engine, remove the adhesive strip and transfer it to the new Taptic Engine before beginning reassembly.

Step 34 — Locate the adhesive strips



The battery is secured to the rear case with four pieces of stretch-release adhesive—two on the bottom edge of the battery, and two on the top edge.

- Each piece of adhesive has a black pull-tab at the end, which is lightly adhered to the edge of the battery.

In the following steps, you'll pull each tab to slowly stretch out the adhesive underneath the battery. These "command-strip" style adhesives lose their stick when stretched, so you can remove the battery with ease.

If the strips break, don't panic! They don't always work as intended. Keep reading for tips on removing broken strips.

Step 35 — Remove the stretch-release adhesive





- Peel down the first battery adhesive pull-tab to un-stick it from the bottom edge of the battery.

ⓘ Space is tight around some parts of the battery. It may help to slide an opening pick between the battery and its adhesive to help separate the adhesive.

⚠ **Caution:** Don't jab the battery with any sharp tools. A punctured battery may leak dangerous chemicals or catch fire.

Step 36





- Peel down the second battery adhesive pull-tab to un-stick it from the bottom edge of the battery.

Step 37





- Grab the first pull-tab with your fingers and *slowly* pull it away from the battery, toward the bottom of the iPhone.
  - Pull hard enough to maintain tension on the strip, but don't force it. Give it plenty of time to stretch and un-stick from under the battery.
  - Don't press down on the battery. Hold the iPhone firmly by its sides.
  - Keep the strip flat and unwrinkled. Try to pull evenly on the whole strip, rather than pulling mainly in the middle or on one side.
  - Pull at a low angle so the strip doesn't snag on the edge of the battery.
- If the adhesive strip breaks off, try to retrieve it using your fingers or blunt tweezers, and continue pulling—but **do not** pry under the battery.
- If any of the adhesive strips break off underneath the battery and can't be retrieved, try to remove the other strips, and then proceed as instructed below.

Step 38



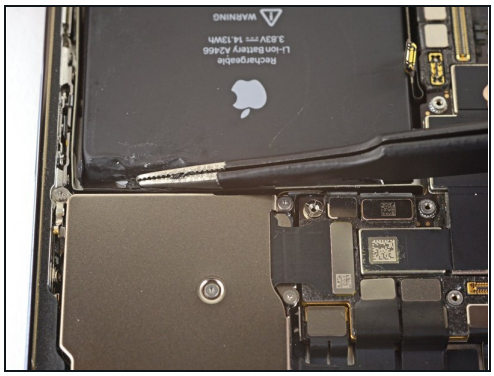
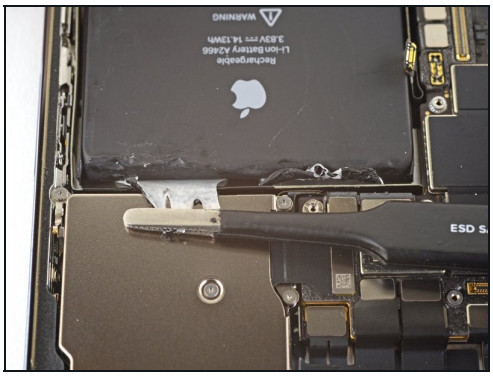
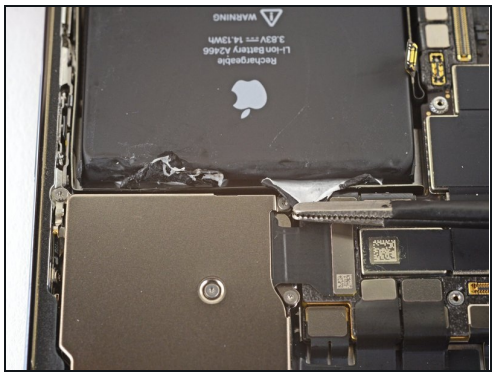


- Grab the second pull-tab with your fingers and pull it away from the battery, toward the bottom of the iPhone.
  - Follow the same procedure as with the previous strip: don't press down on the battery, keep the strip flat and unwrinkled, and pull at a low angle.

- If the adhesive strip breaks off, try to retrieve it using your fingers or blunt tweezers, and continue pulling—but **do not** pry under the battery.

⚠ If the adhesive breaks off underneath the battery and can't be retrieved, continue with the next step.

Step 39

- Peel up the two remaining battery adhesive pull-tabs to un-stick them from the top edge of the battery.
  - ⓘ There's not a lot of space to grab these adhesive strips—using an opening pick to separate them from the battery before grabbing them with tweezers may help.

Step 40



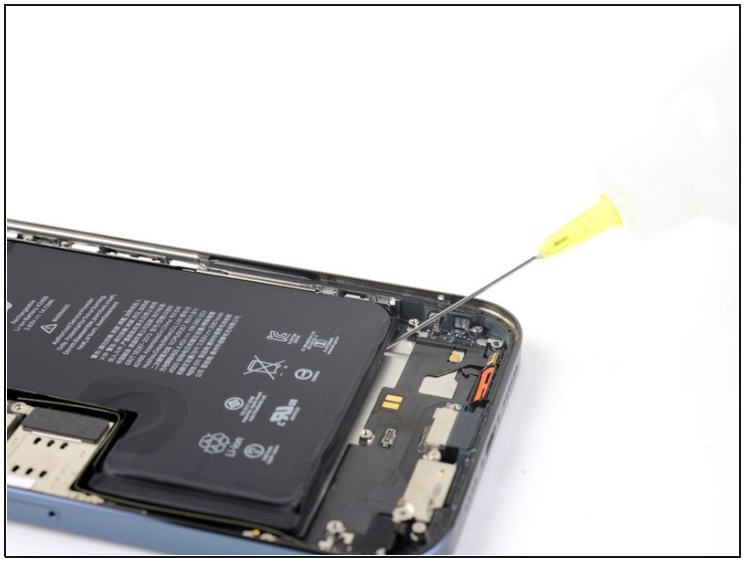


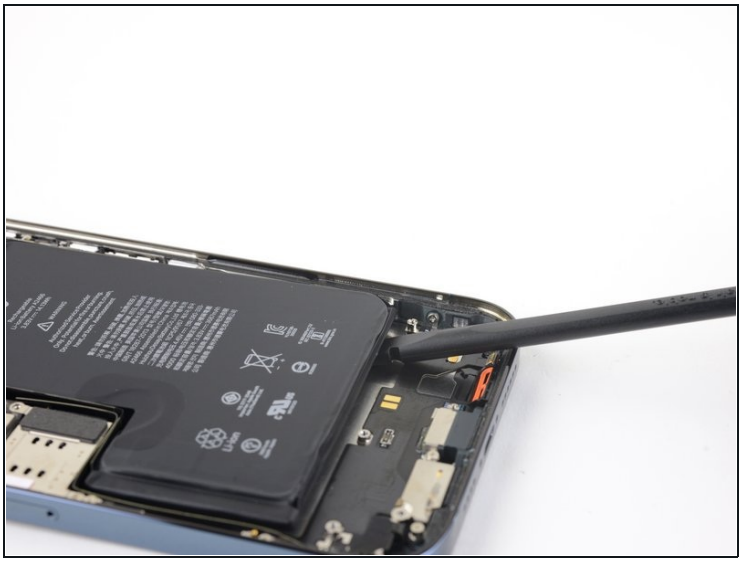
- Using the same procedure as before, pull the remaining two tabs, one at a time, to stretch and remove the remaining adhesive strip holding the battery in place. Try not to snag the adhesive on anything.

⚠ Be careful not to fling the battery from the iPhone as the final adhesive strip comes out.

- **If you removed all the adhesive strips successfully, skip the next step.**
- Otherwise, **continue with the next step below.**

Step 41 — How to remove a stuck battery





- If you're still having trouble removing the battery, apply a few drops of high concentration (over 90%) isopropyl alcohol under the edge of the battery in the area of the broken adhesive strip(s).
- Wait about one minute for the alcohol solution to weaken the adhesive.
- Use an opening pick or the flat end of a spudger to gently lift the battery.

⚠ Don't try to forcefully lever the battery out. If needed, apply a few more drops of alcohol to further weaken the adhesive. Never deform or puncture the battery with your pry tool.

Step 42 — Remove the battery



- Remove the battery.
- If there's any alcohol solution remaining in the phone, carefully wipe it off or allow it to air dry before installing your new battery.
- If your new battery didn't come with adhesive preinstalled, refer to this guide for help replacing the adhesive strips.
- Perform a force restart after reassembly. This can prevent several issues and simplify troubleshooting.

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.

After your repair, depending on the replacement part, you may be able to calibrate it using Apple's Repair Assistant, available as of iOS 18. Update your device, navigate to Settings → General →About → Parts & Service History, tap Restart & Finish Repair, and follow the onscreen prompts.

Take your e-waste to an R2 or e-Stewards certified recycler.

Repair didn’t go as planned? Try some basic troubleshooting, or ask our iPhone 12 Pro Max Answers community for help.