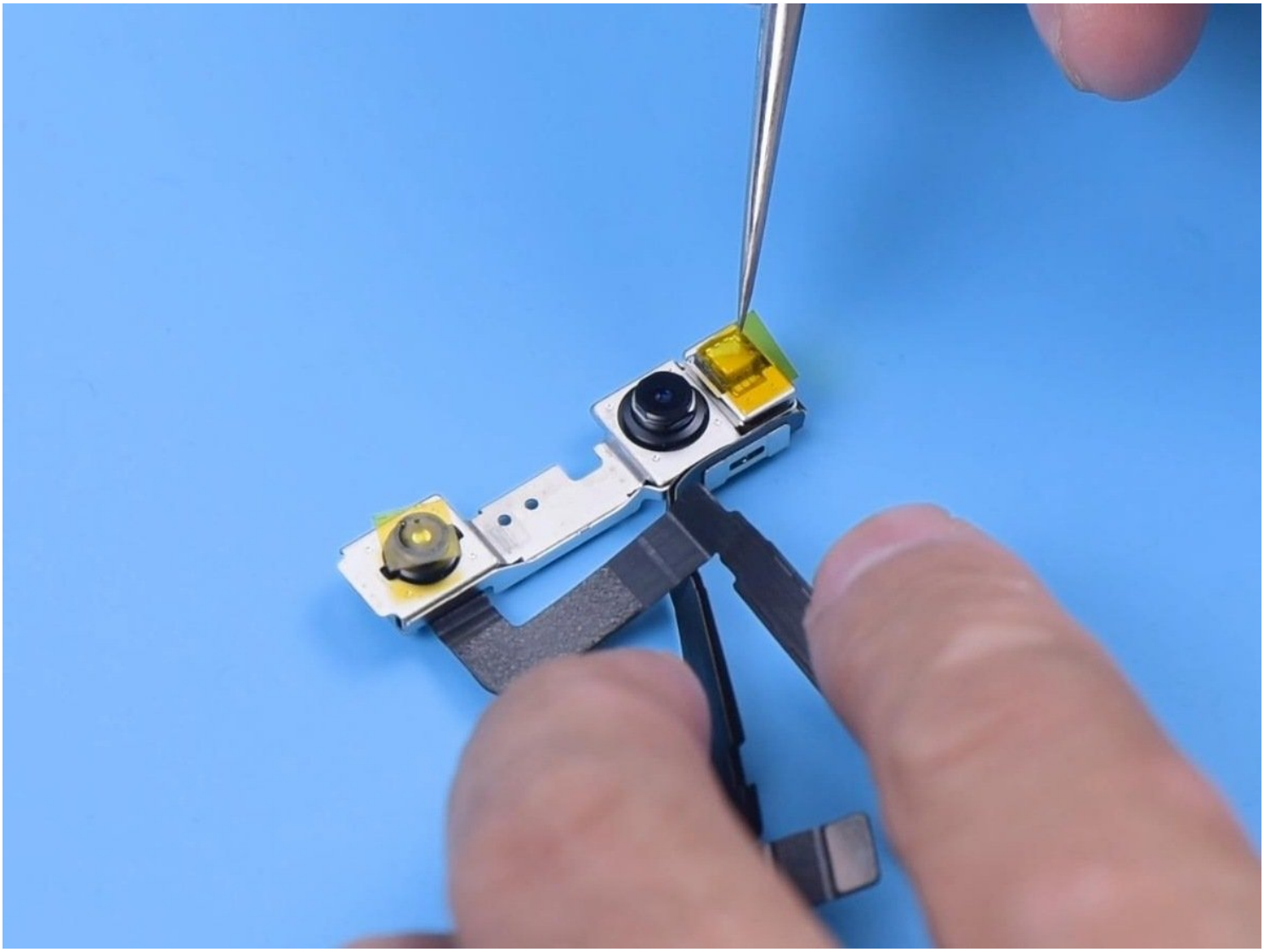
iPhone 11 Pro Front Camera Replacement Without Losing Face ID

In the case of a damaged or malfunctioning...

Written By: REWA



INTRODUCTION

In the case of a damaged or malfunctioning front camera, it is possible although difficult to replace only the front camera.

As the front camera is part of an assembly together with the infrared camera and dot projector, it is necessary to replace the front camera separately if Face ID functionality is to be retained.

Replacing the front camera alone does not affect the function of the Face ID, while Face ID will be disabled when replacing the full front camera assembly.

Before attempting the actual replacement, a new camera should be plugged in and tested in order to verify that this repair will fix the problem.

TOOLS:

iOpener (1)
iFixit Opening Picks (Set of 6) (1)
Suction Handle (1)
iSclack (1)
P2 Pentalobe Screwdriver iPhone (1)
Dremel (1)

PARTS:

iPhone 11 Pro Display Assembly Adhesive (1)
iPhone 11 Pro Front Camera (1)
High Temperature Kapton Tape (1)

Step 1 — Remove the pentalobe screws

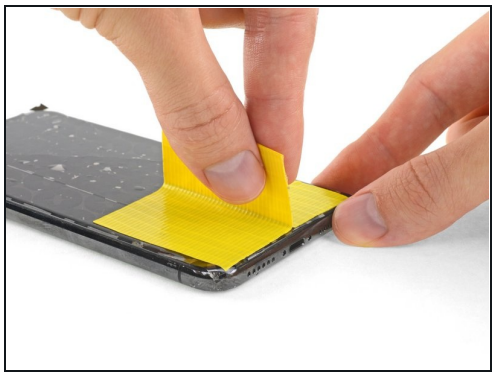
⚠ Before you begin, discharge your iPhone battery below 25%. A charged lithium-ion battery can catch fire and/or explode if accidentally punctured.

- Power off your iPhone before beginning disassembly.
- Remove the two 6.7 mm-long pentalobe 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 — 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 3 — Anti-Clamp instructions

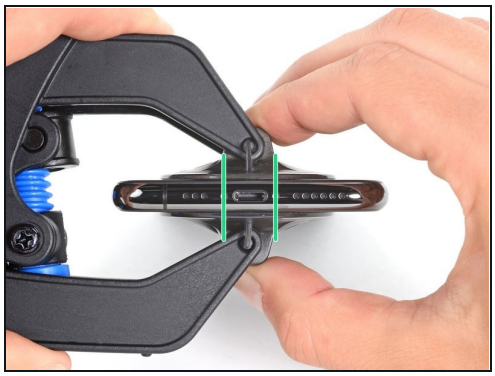
The next three steps demonstrate the Anti-Clamp, a tool we designed to make the opening procedure easier. **If you aren't using the Anti-Clamp, skip down three steps for an alternate method.**

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 4



- Pull the blue handle forward 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 5

- Heat an iOpener and thread it through the arms of the Anti-Clamp.
  - ⓘ You can also use a hair dryer, heat gun, or hot plate—but extreme heat can damage the display and/or internal battery, so proceed with care.
- Fold the iOpener so it lays on the bottom edge of the iPhone.
- Wait one minute to give the adhesive a chance to release and present an opening gap.
- Insert an opening pick into the gap under the screen and the plastic bezel, **not the screen itself.**
  - ⓘ 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 6 — Heat the lower edge of the phone

ⓘ Heating the lower edge of the iPhone helps soften the adhesive securing the display, making it easier to open.

- Use a hairdryer or heat gun or prepare an iOpener and apply it to the lower edge of the iPhone for about a minute in order to soften up the adhesive underneath.

Step 7

- If you're using a single suction handle, apply it to the bottom edge of the phone, while avoiding the curved portion of the glass.

Step 8 — Lift the display slightly

- Pull up on the suction cup with firm, constant pressure to create a slight gap between the front panel and rear case.
- Insert an opening pick into the gap under the screen and the plastic bezel, **not the screen itself.**

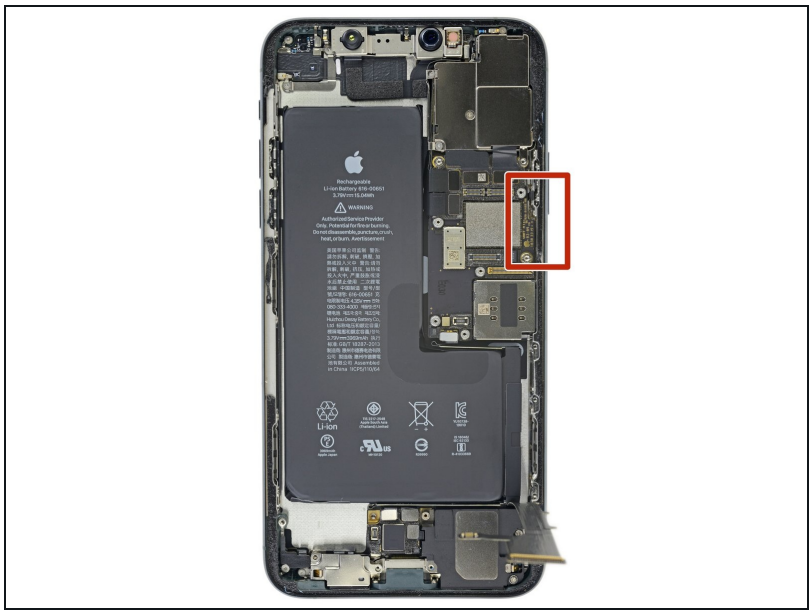
ⓘ The watertight adhesive holding the display in place is very strong; creating this initial gap takes a significant amount of force. If you're having a hard time opening a gap, apply more heat, and gently rock the screen up and down to weaken the adhesive until you create enough of a gap to insert your tool.

Step 9 — Separate the screen adhesive

- Slide the opening pick around the lower left corner and up the left edge of the iPhone, slicing through the adhesive holding the display in place.

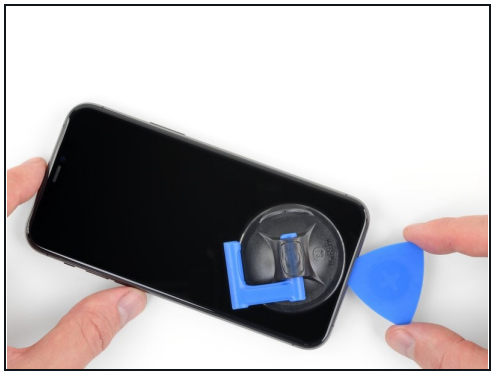
⚠ Don't insert your pick more than 3 mm, as you may damage internal components.

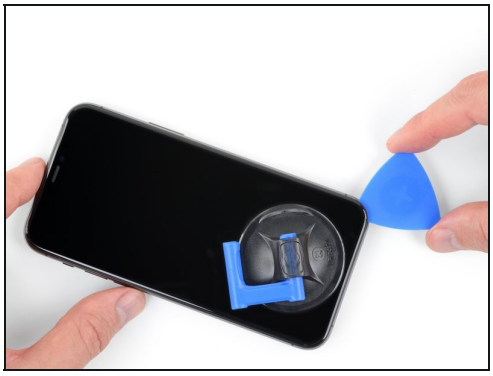
Step 10 — Screen information



⚠ There's a delicate cable along the right edge of your iPhone. **Don't insert your pick here**, as you may damage the cable.

Step 11





- Re-insert your pick at the bottom edge of the iPhone, and slide it up the right side to continue separating the adhesive.

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

Step 12



ⓘ The top edge of the display is secured with both glue and clips.

- Gently pull the right edge of the display ***down*** slightly (in the direction of the Lightning port).
- Insert your pick into the top-right corner of the phone.

Step 13


- Continue pulling the display down (toward the Lightning port) as needed in order to make a gap large enough for the pick.
- Slide the pick to the top left corner and cut any remaining adhesive securing the display.

⚠ Don't insert your pick more than 3 mm, as you may damage the front panel sensor array.

Step 14 — Remove the suction cup

- Pull on the small nub on the suction cup to remove it from the front panel.

Step 15 — Open the iPhone



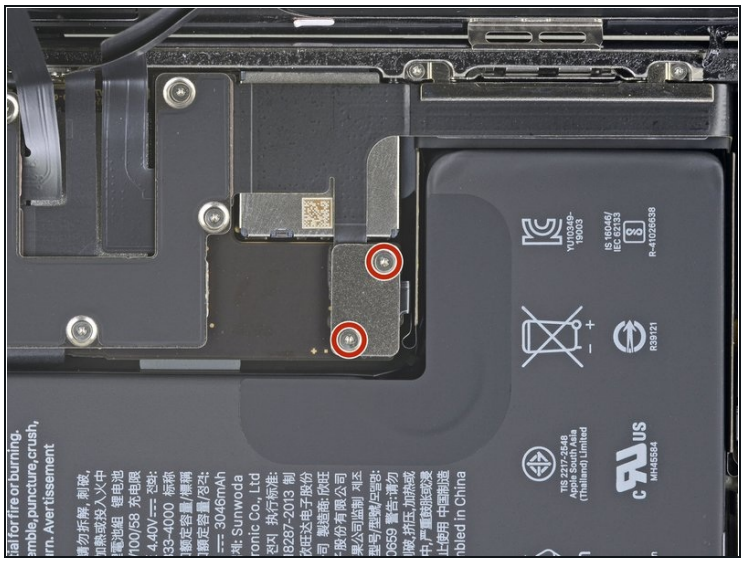
- Open the iPhone by swinging the display up from the left side, like the back cover of a book.

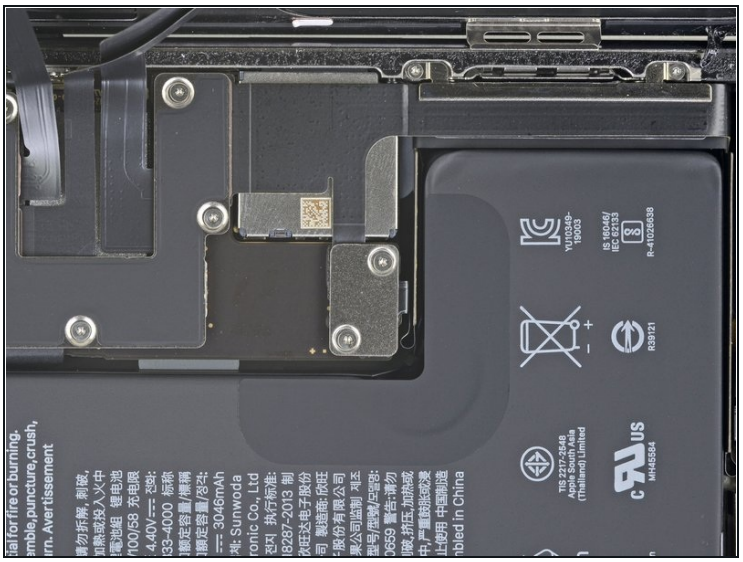
⚠ Don't try to fully separate the display yet, as several fragile ribbon cables still connect it to the iPhone's logic board.

- 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 16 — Unscrew the battery connector cover



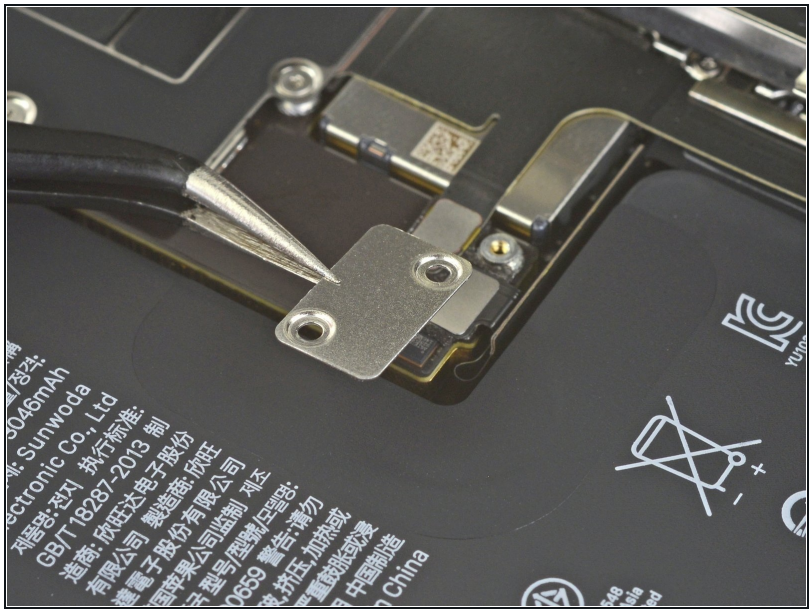


- Remove two 1.3 mm long Y000 screws securing the battery cover bracket.

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

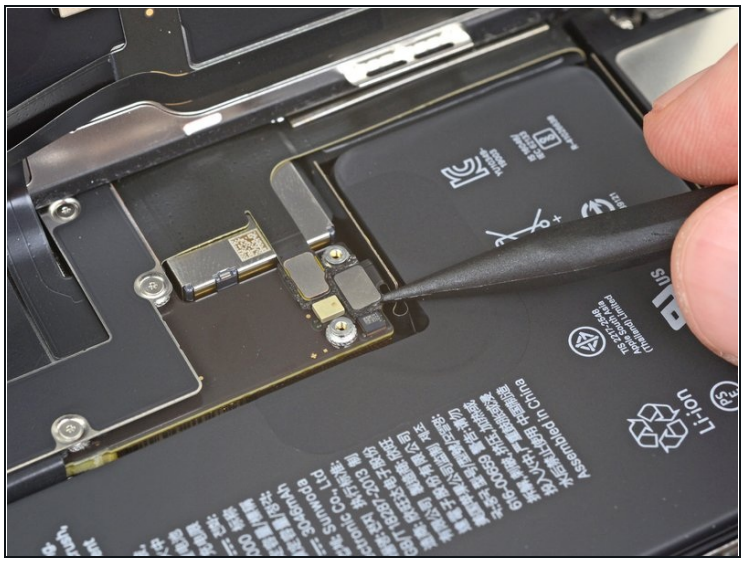
During reassembly, this is a good point to power on your iPhone and test all functions before you seal the display in place. Be sure to power your iPhone back down completely before you continue working.

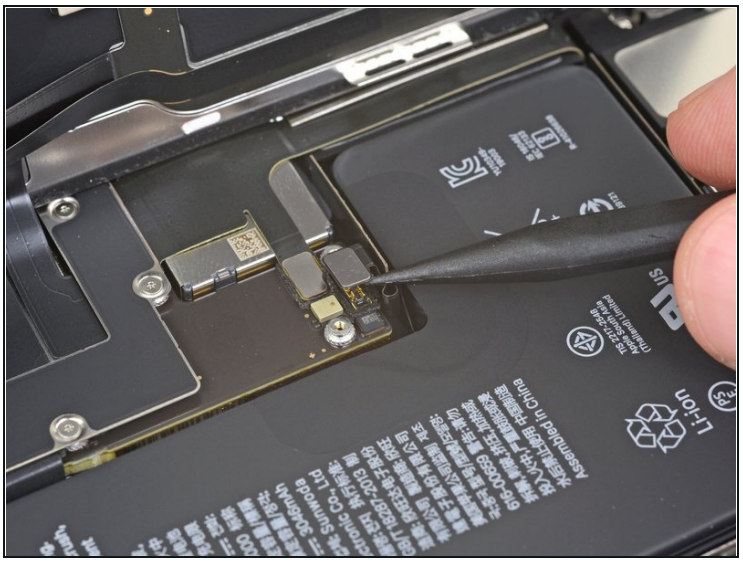
Step 17 — Remove the battery connector cover



- Remove the bracket.

Step 18 — Disconnect the battery



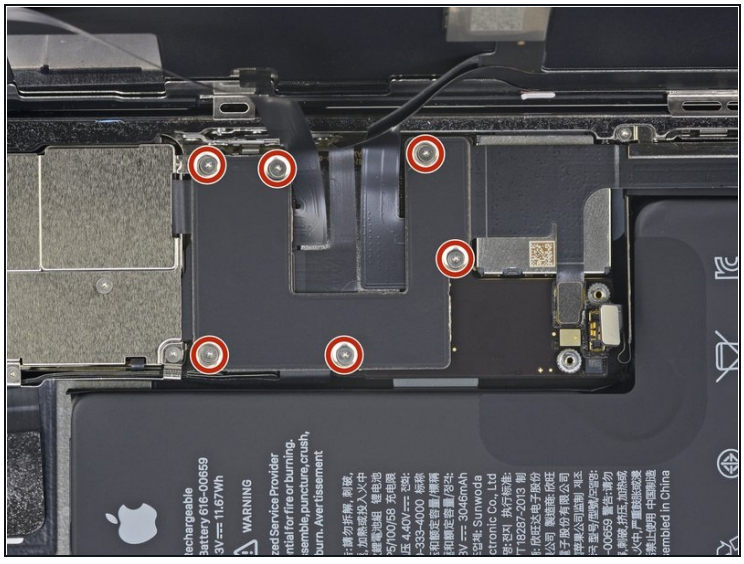


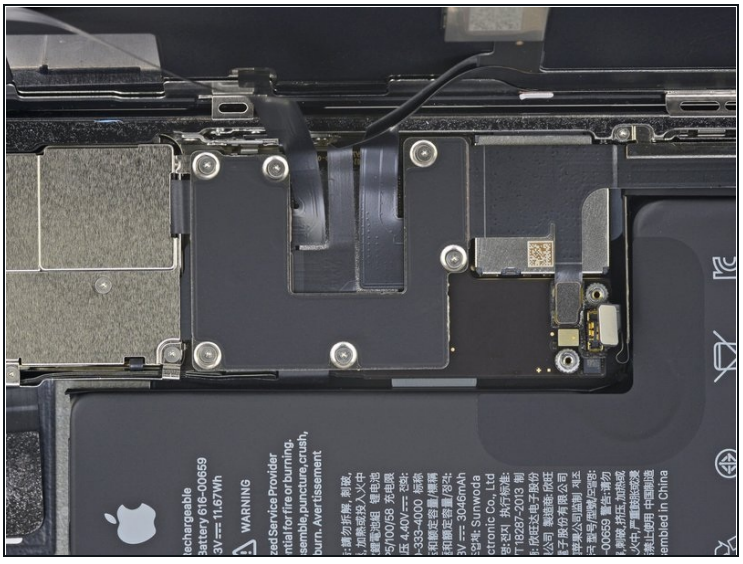
- Use a spudger or a clean fingernail to pry the battery connector up from its socket on the logic board.

  ⓘ 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.

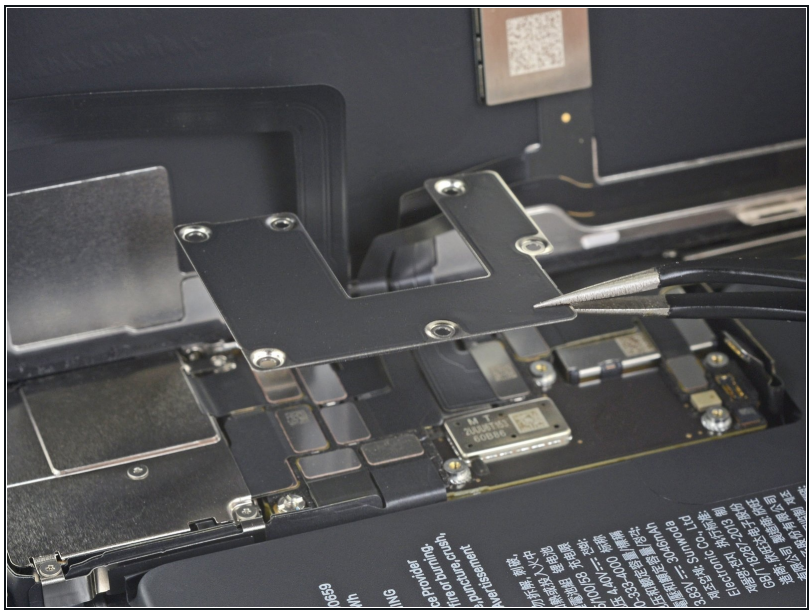
Step 19 — Unscrew the logic board cover screws





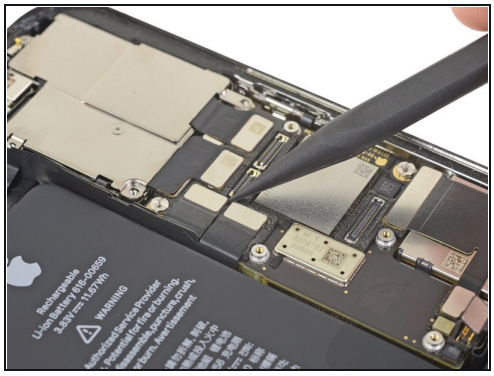
- Use a Y000 driver to remove six 1.3 mm screws securing the logic board cover bracket.

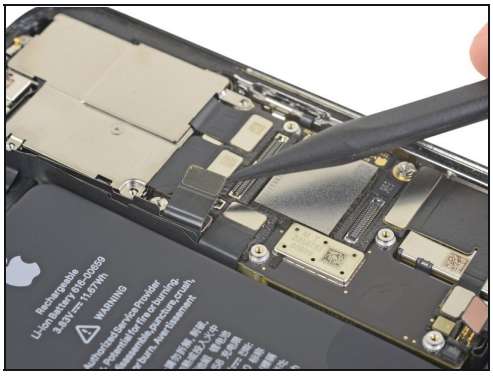
Step 20 — Remove the logic board cover bracket

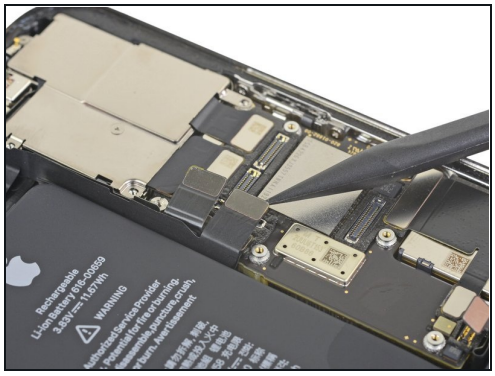


- Remove the bracket.

Step 21 — Disconnect the Face ID hardware





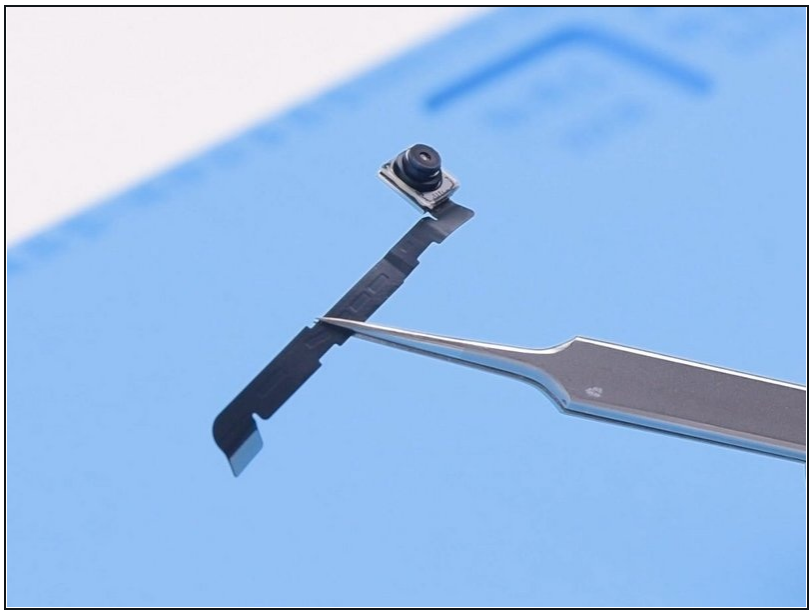


- Use a spudger or a fingernail to disconnect the Face ID dot projector and sensor cables from their sockets on the logic board.

Step 22 — Disconnect the selfie cam

- Gently push the Face ID cable connectors away from the logic board to access the selfie cam connector underneath.
- Disconnect the selfie cam by prying its connector straight up.

Step 23 — Test the replacement camera

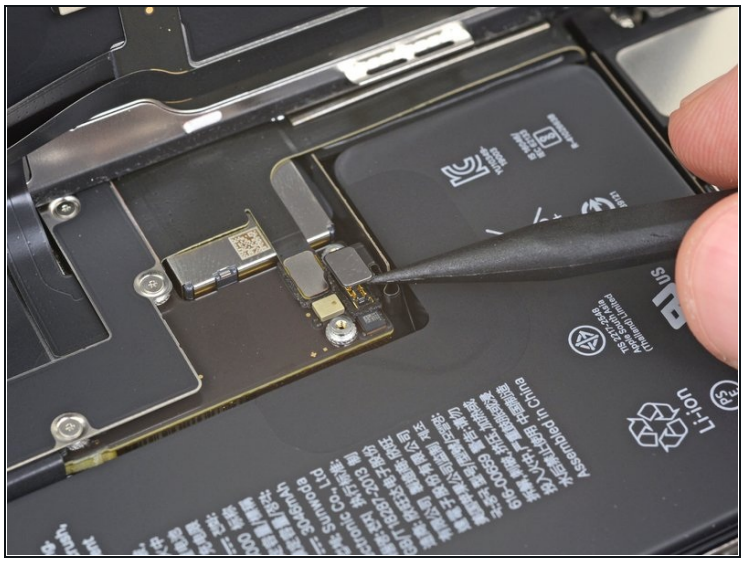


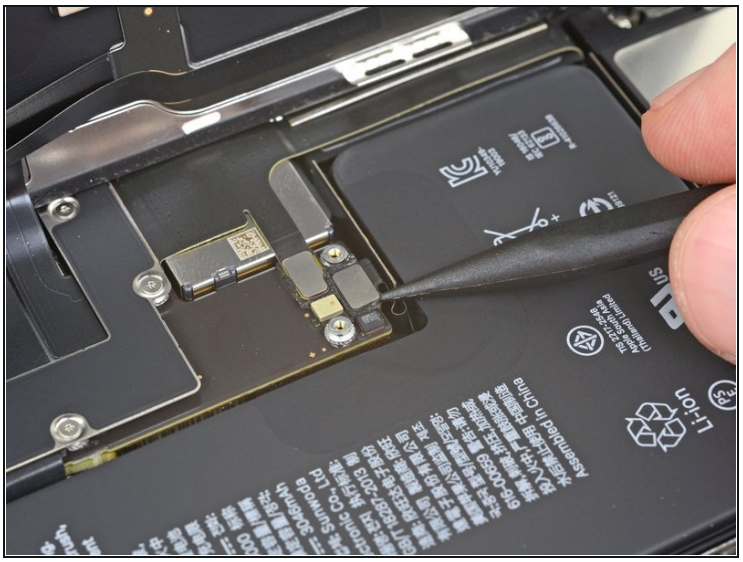
- In order to ensure replacing the camera will resolve the issue, it is strongly recommended that the replacement camera be tested first.

Step 24 — Install the new front camera flex cable

- Connect the replacement camera by pressing the connector into its socket.

Step 25 — Reconnect the battery



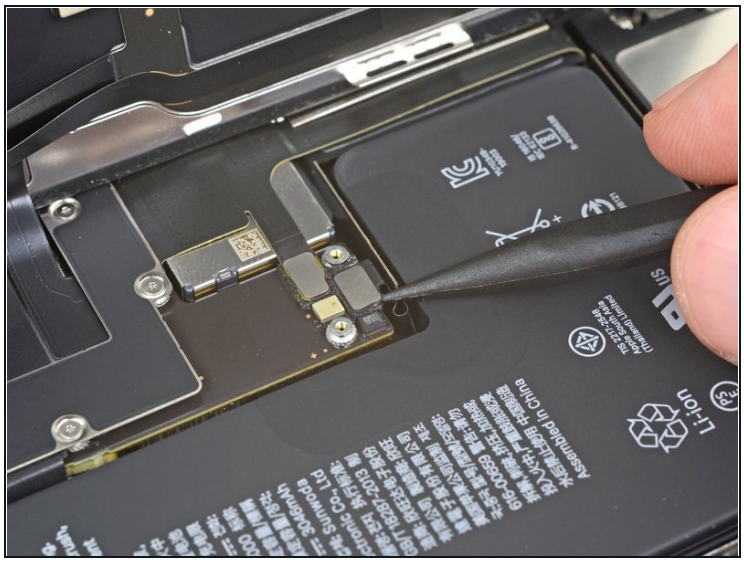


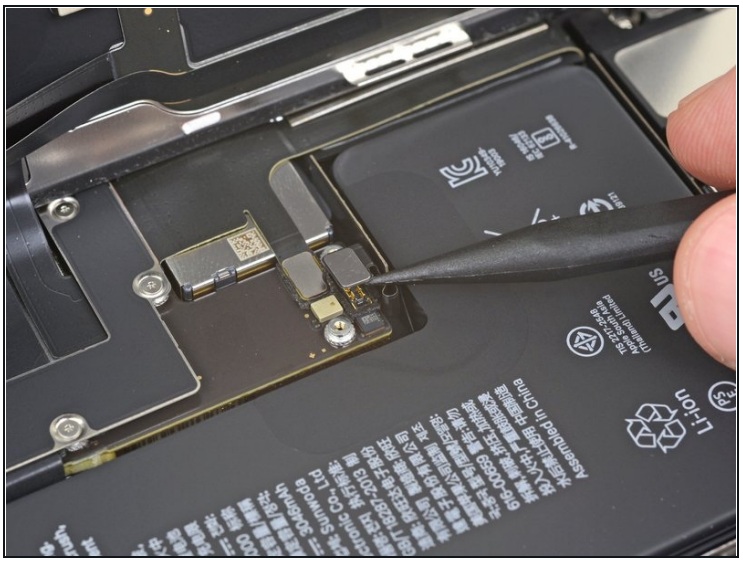
- Press the battery connector into its socket.

Step 26

- Turn on the phone and open the camera.
- Verify that the front and rear cameras work correctly.
- If they do, we can conclude that replacing the damaged front camera will resolve the issue and can proceed with this repair.
- If the new camera does not fix the problem then the rest of this procedure will be of no help. Stop here and reassemble your phone.

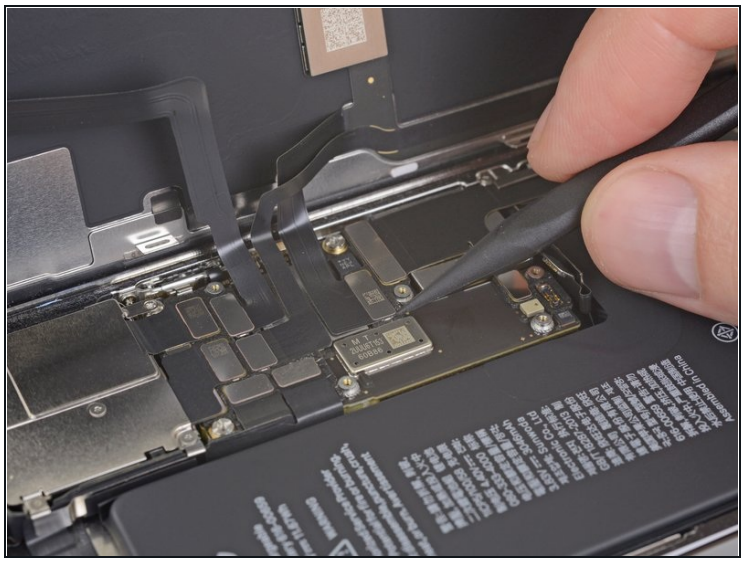
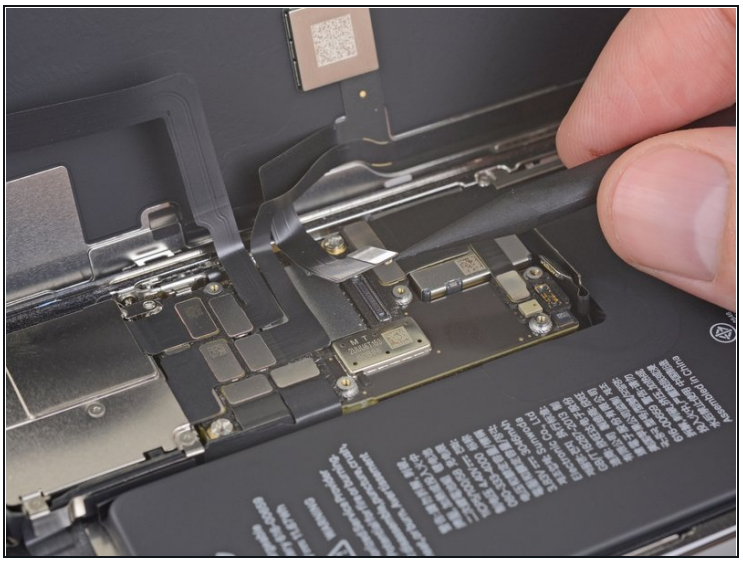
Step 27 — Disconnect the battery





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

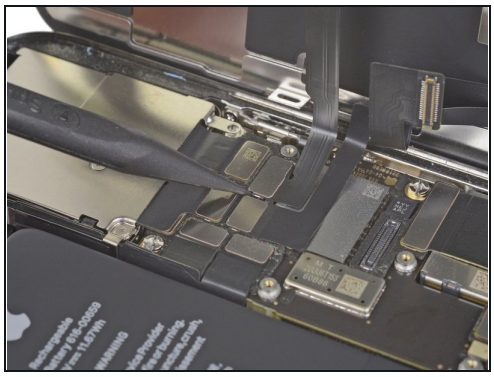
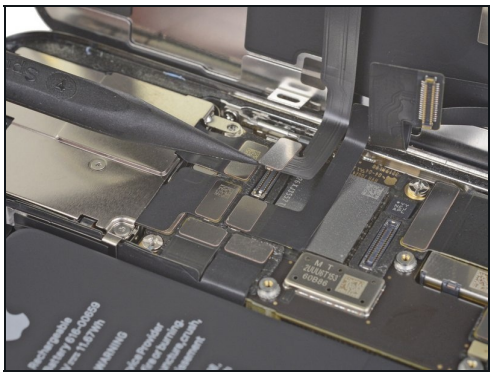
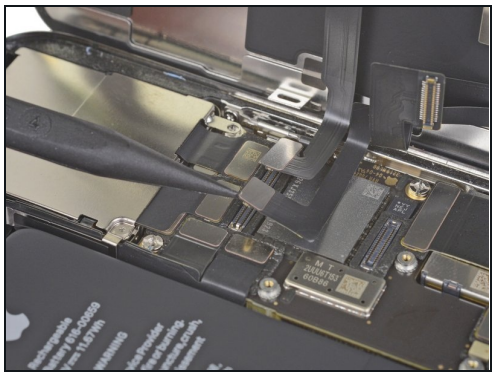
Step 28 — Disconnect the OLED display cable

- Use a spudger or a fingernail to disconnect the OLED panel 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 29 — Disconnect the front sensors + digitizer

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

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

  If any part of your screen doesn't respond to touch after your repair, disconnect the battery and then re-seat this connector, making sure it clicks fully into place and that there's no dust or other obstruction in the socket.

Step 30 — 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 31 — Disconnect the selfie cam

- Gently push the Face ID cable connectors away from the logic board to access the selfie cam connector underneath.

- Disconnect the selfie cam by prying its connector straight up.

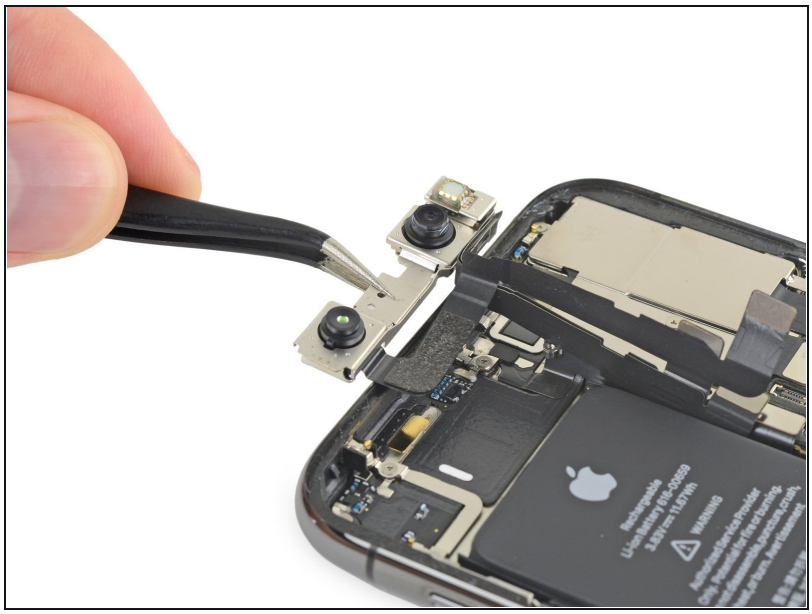
Step 32



⚠ Grasp the front camera assembly with tweezers, being careful not to get fingerprints on the sensors.

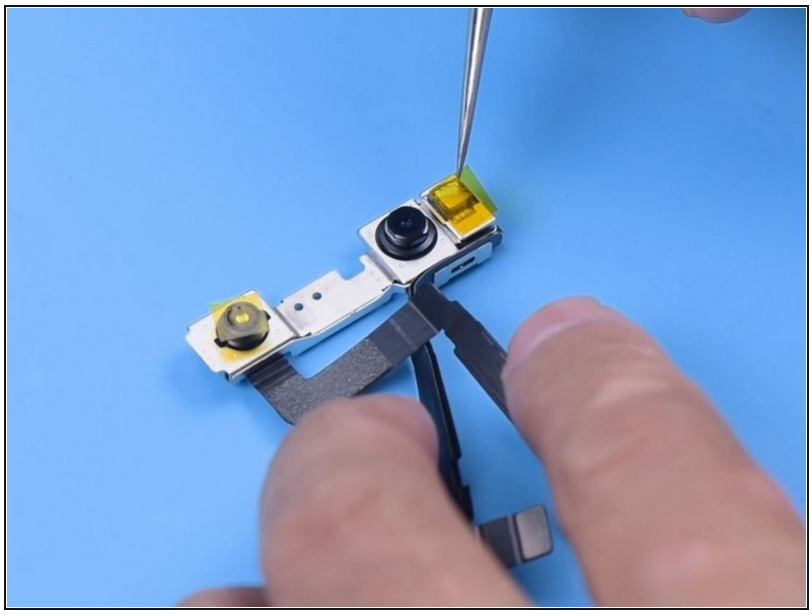
- Slide the front camera assembly slightly down and to the left to free it from the enclosure.

Step 33 — Remove the front-facing cameras



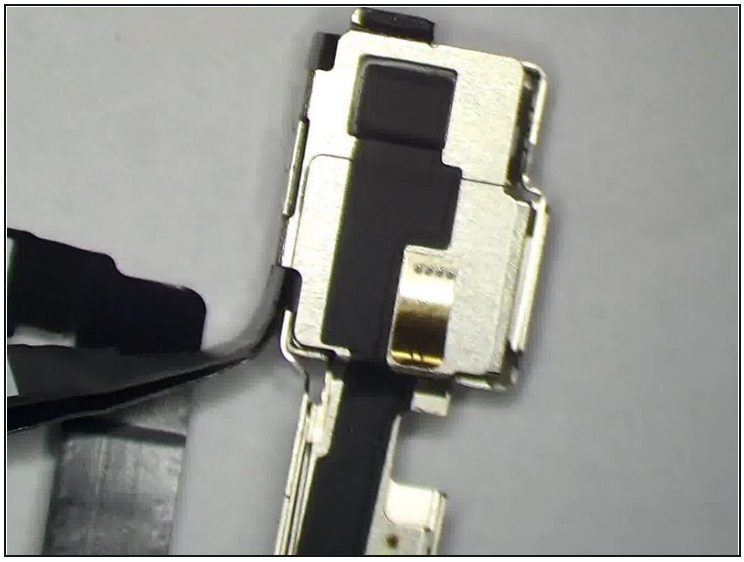
- Remove the front-facing cameras.

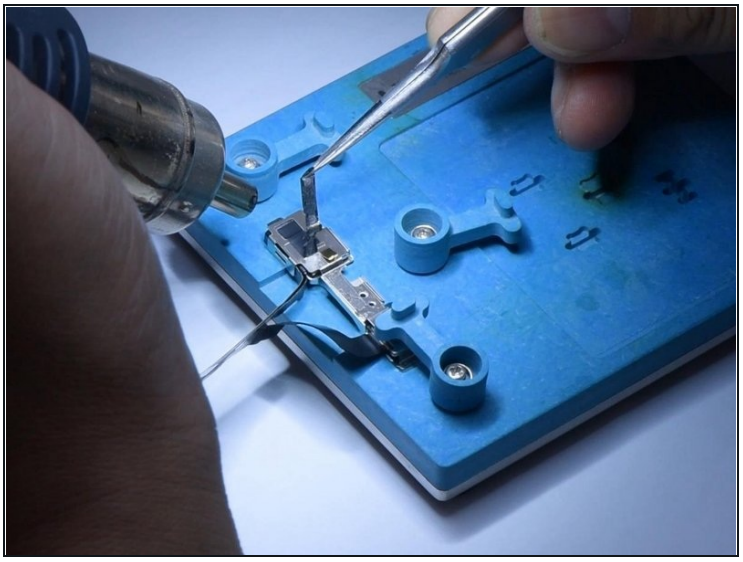
Step 34



- In order to prevent damage the infrared camera and dot projector, apply Kapton tape to both parts.

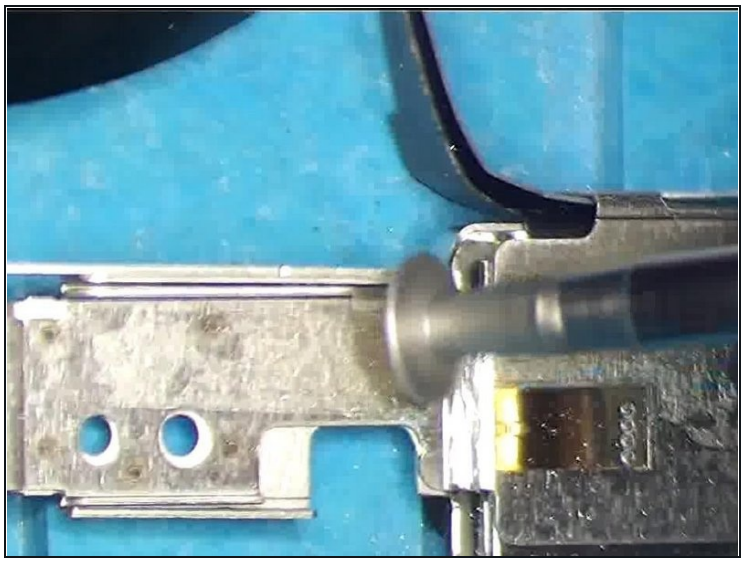
Step 35

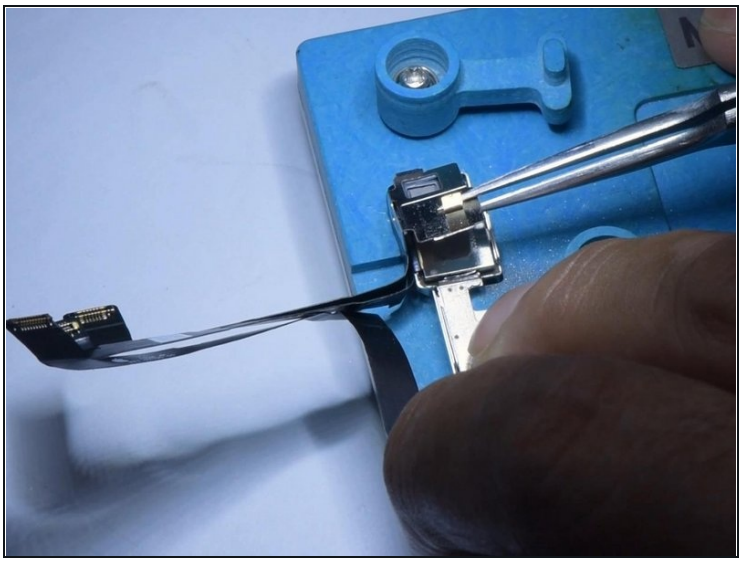




- Turn the front camera module over and attach the assembly to a holder. Heat with a hot air gun at 100 °C to remove the tape.

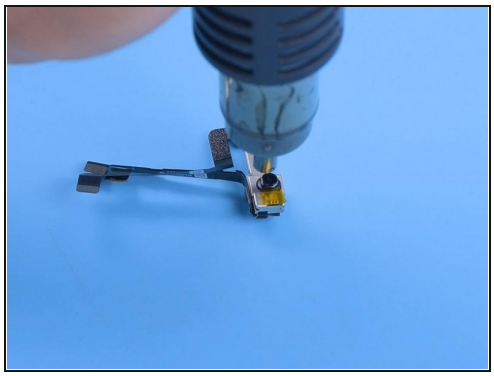
Step 36

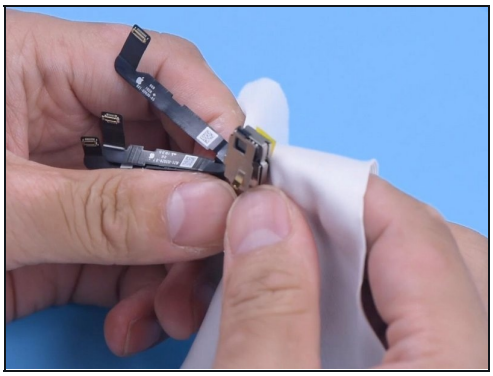


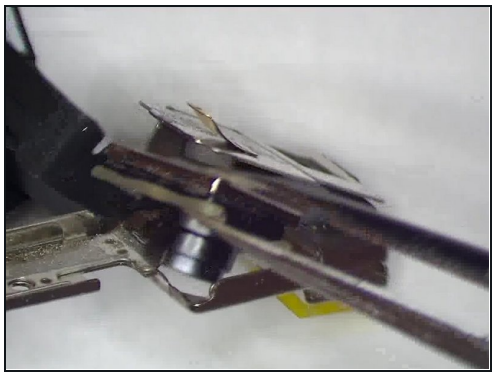


- Grind the corner of the metal plate away with a Polishing & Grinding Pen or a Dremel multitool.
- Pry up the metal plate with tweezers.

Step 37

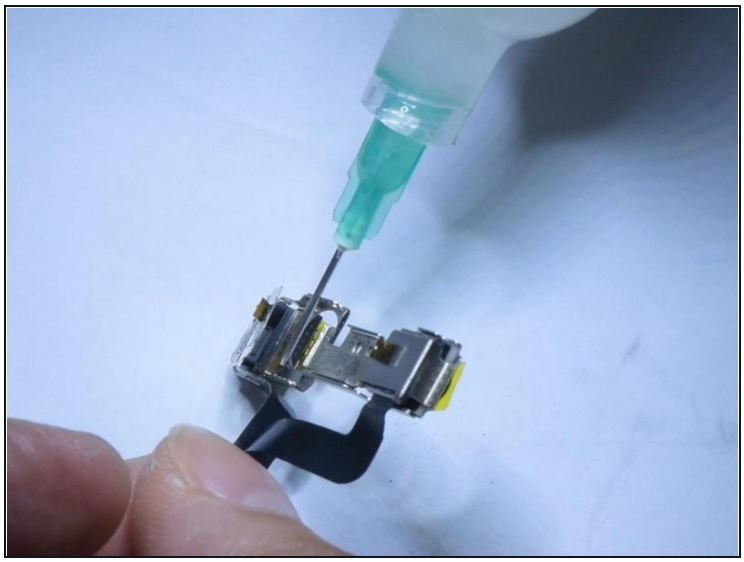


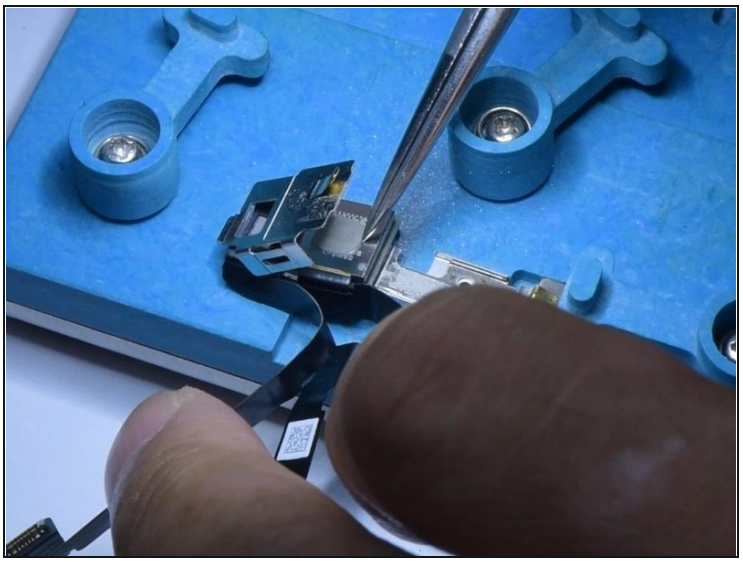




- Heat the front camera with a hot air gun at 100 °C for 30 seconds to loosen the adhesive bonding it to the frame.
- Cover the front camera with a lint-free wipe and press gently.
- Remove the damaged front camera.

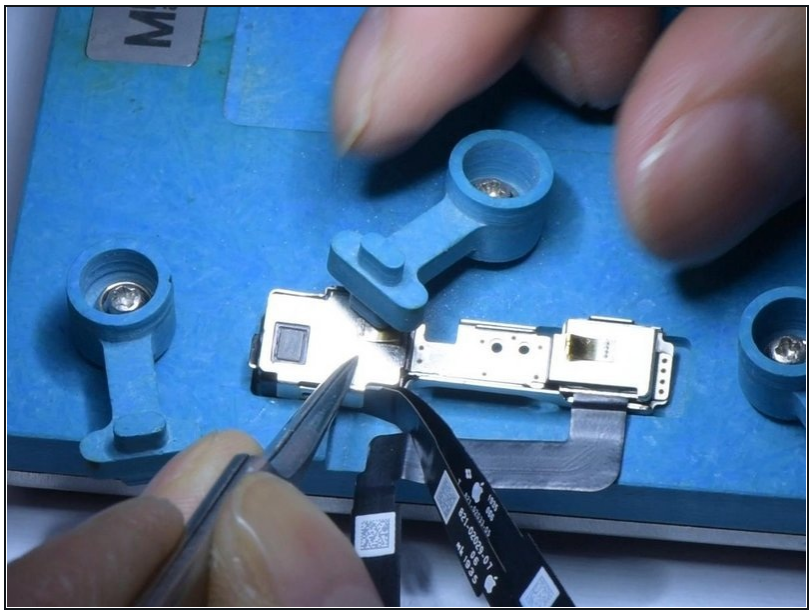
Step 38





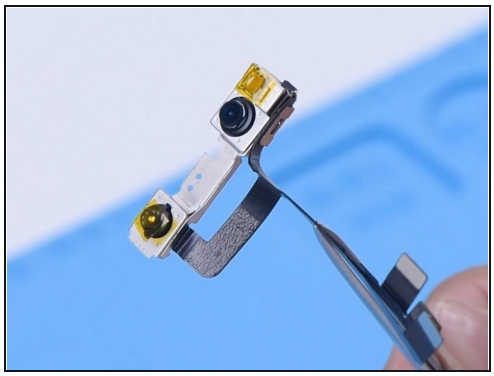
- Apply adhesive to the edges of the frame surrounding the camera opening. Use it sparingly.
- Install the new front camera, being careful to insert it squarely into the hole to avoid getting adhesive on the lens.

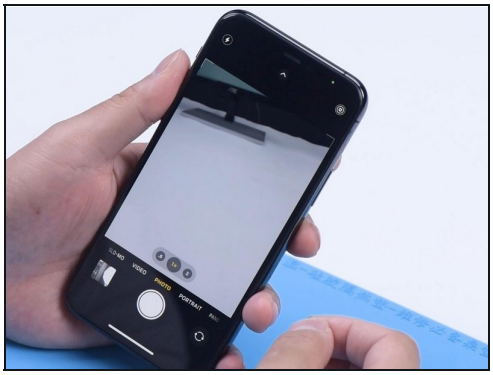
Step 39

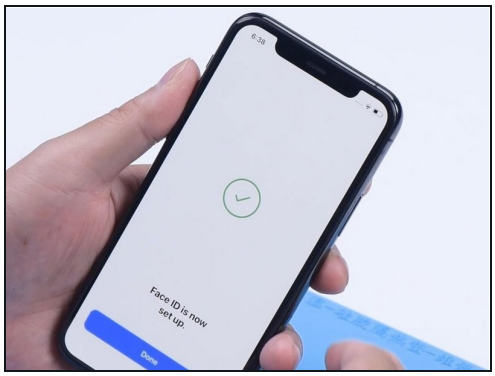


- Apply adhesive to the back of the camera and press the frame firmly down onto the camera.
- Place the front camera in the holder with a retainer placed on top of the glued assembly to hold it in place as the adhesive dries.

Step 40







- After an hour, remove the front camera module. The front camera has been successfully replaced. Remove the Kapton tape from the IR camera and dot projector.
- Install the front camera module and test. Turn on the phone. Both the front and rear cameras should work. Face ID should function too.

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