iMac (21.5-inch, 2017)

iMac (Retina 4K, 21.5-inch, 2017)

iMac (Retina 4K, 21.5-inch, 2019)

Apple Recycler Guide

July 2023

Contents

About This Guide

Apple Recycler Guides provide guidance for electronics recyclers on how to disassemble products to maximize recovery of resources. The guides provide step-by-step disassembly instructions and information on the material composition to help recyclers direct fractions to the appropriate material recycler.

To conserve important resources, we work to reduce the materials we use and aim to one day source only recycled or renewable materials in our products. A key path to reaching that goal is resource recovery from end-of-life electronics.

Disassembly procedures are intended to be performed only by trained electronics recycling professionals. The recycler is responsible for independently evaluating and ensuring compliance with all applicable environmental, health, and safety laws related to the work. These include but are not limited to laws relating to the management, handling, shipping, and disposal of the outputs of this work as waste and laws in place to ensure the health and safety of all employees who support this work.

For questions or feedback about this guide, email contactesci@apple.com.

Note: This guide may show images from other similar models, but the procedures are the same.

Identification

You can find the model number of the iMac on the bottom of the stand.

Model numbers:
A1418, A2116

Directive 2012/19/EU Annex VII Components

Directive 2012/19/EU Annex VII requirements apply to the following substances and components.

Substance/Component	Apple Part Name	Removal Instructions
Printed circuit board if the surface is greater than 10 square centimeters	Display logic board, hard drive, power supply logic board, main logic board	Follow steps 1–18
External electric cables	Power cord	Follow step 1
Battery	Coin cell battery	Follow steps 1–18
Cover glass and liquid crystal display (LCD) cell if the surface is greater than 100 square centimeters	LCD cell	Follow steps 1–7
No further substances or components as listed in Annex VII		

Safety Considerations

The recycler is responsible for independently evaluating all activities undertaken by its employees to perform or support the work and ensuring compliance with all applicable health and safety laws related to the work. These include but are not limited to laws relating to the health and safety of all employees who perform or support this work. The recycler is also responsible for evaluating the workspace and ensuring that the area in which the work is to be undertaken is designed using ergonomic best practices and meets all ergonomic requirements to ensure the protection of its employees.

Personal Protective Equipment

Personal protective equipment should be worn during the entire recycling process.


Wear hand protection


Wear a mask


Wear eye protection


Wear foot protection


Wear protective clothing

LED Safety

Broken light-emitting diodes (LEDs) must be handled properly to ensure the safety of your employees and mitigate any hazards. Package broken LEDs in an appropriate container to properly manage the hazards associated with the materials and store only with compatible materials. All waste must be properly classified, packaged, and labeled in accordance with all relevant laws and regulations.

Hazard Warnings

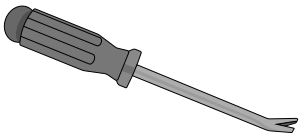

Broken glass hazard


Chemical inhalation hazard

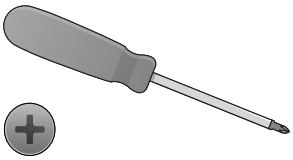

Chemical exposure hazard

Recommended Tools

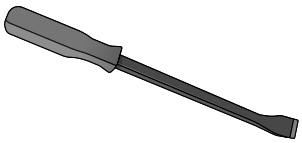
Nail-pulling screwdriver



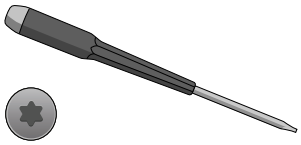
Phillips screwdriver



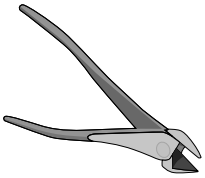
Screwdriver-handle pry bar



Torx T8 screwdriver



Wire cutters

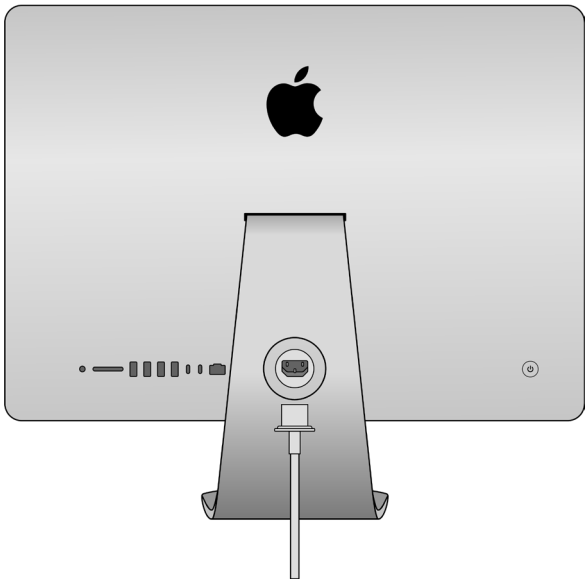


Disassembly Instructions

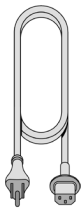
1. Remove the power cord.

» *Ensure that the iMac is turned off.*

» *Unplug the power cord from the back of the iMac.*



Fraction



Power cord

Cu

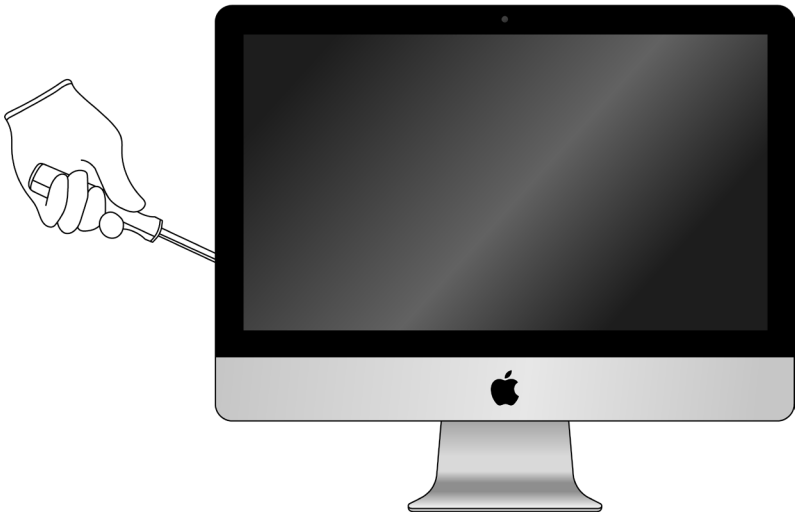
Copper

Warning: Before continuing disassembly, wait 10 minutes after unplugging the device for stored energy to discharge.

2. Pry the display away from the housing.

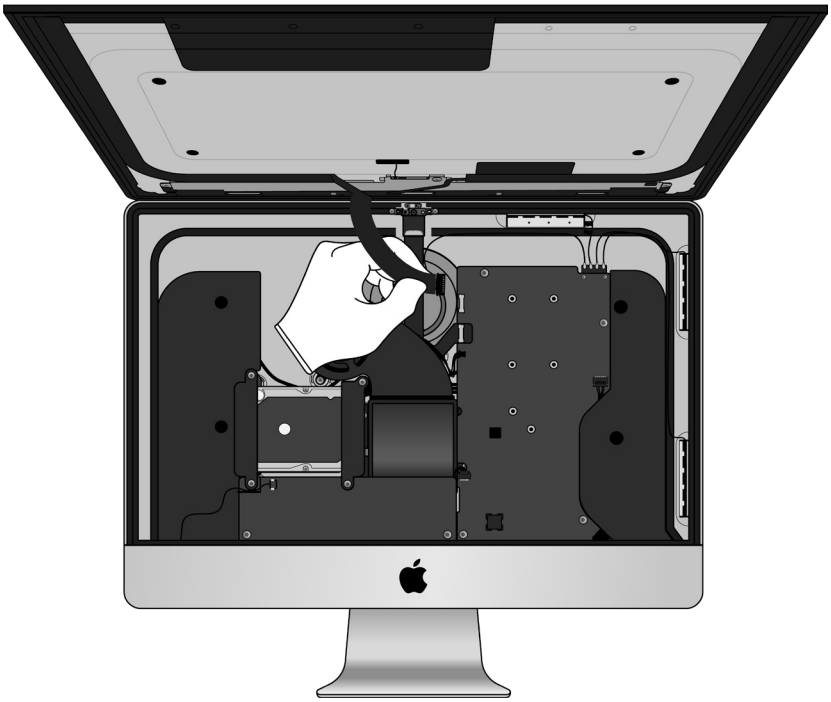
Broken glass hazard

Tools Used



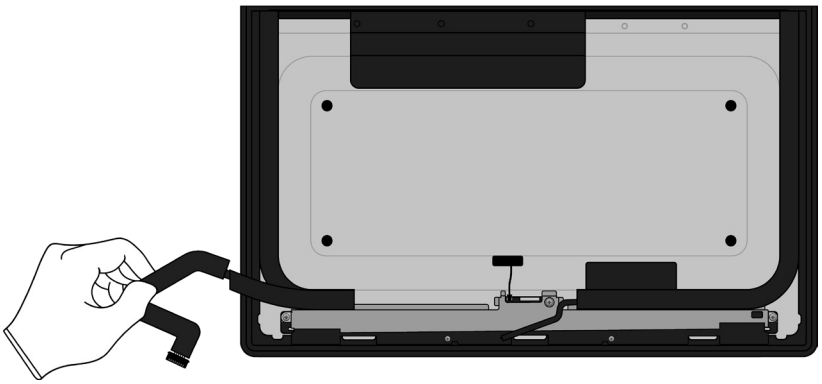
3. Separate the display from the housing.

» *Disconnect the wires.*



» *Lay the display facedown. Set the housing aside.*

4. Pull the ribbon cables off the back of the display.

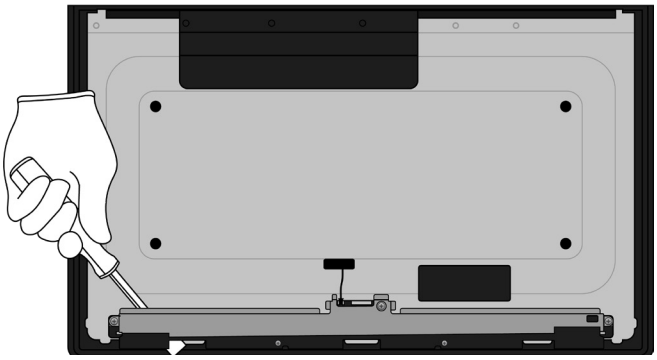


Fraction

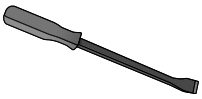
Ribbon cables

Cu
Copper

5. Pry off the logic board cover.



Tools Used

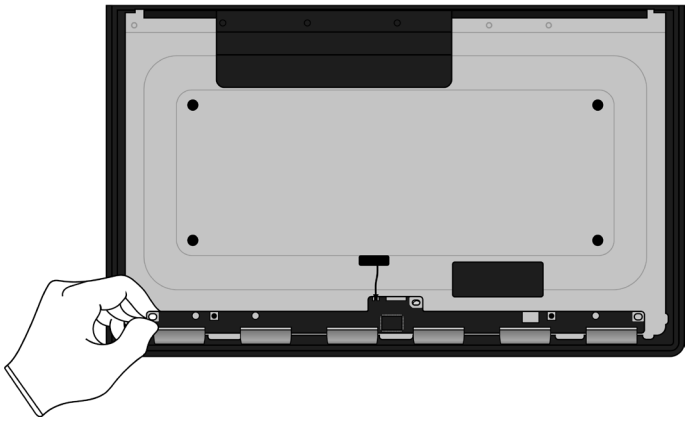


Fraction

Logic board cover

Fe
Ferrous

6. Pull off the display logic board.



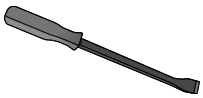
Fraction

Display logic board

PMs
Precious Metals

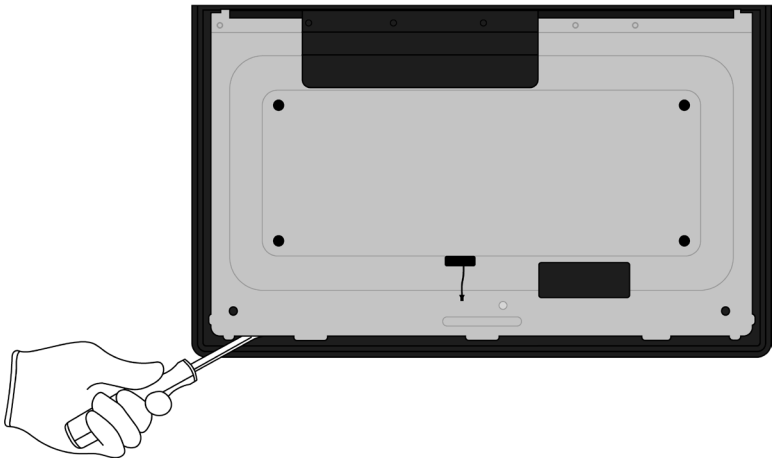
7. Remove the LCD cell and display films.

Tools Used

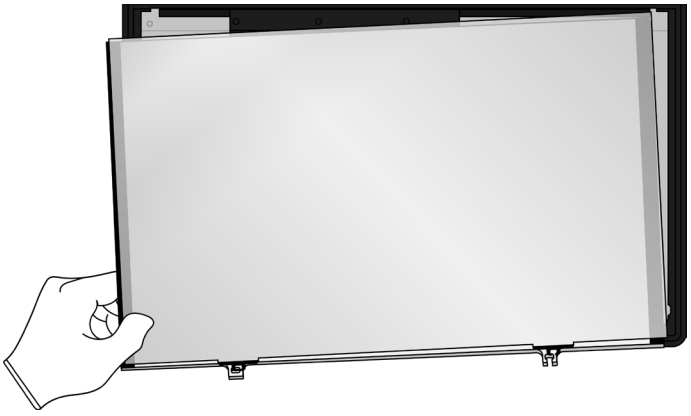


» *Pry the LCD cell and display films away from the mid plate. Set the mid plate aside.*

Chemical exposure hazard



» *Lift the display films away from the LCD cell by hand.*



Fraction

Display films

PL
Plastics

Fraction

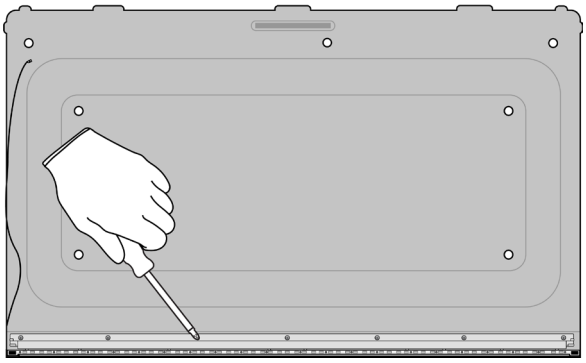
LCD cell

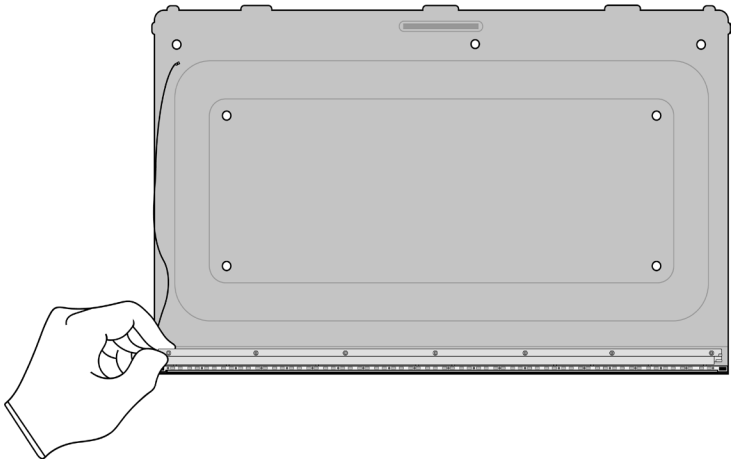
GL
Glass

8.

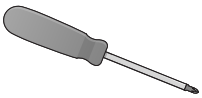
On the mid plate, remove the LED logic board by unscrewing the 28 Phillips fasteners. Pull off the LED back strip.

Chemical inhalation hazard





Tools Used



Fraction

Fasteners (x28)

Fe
Ferrous

Fraction

LED back strip

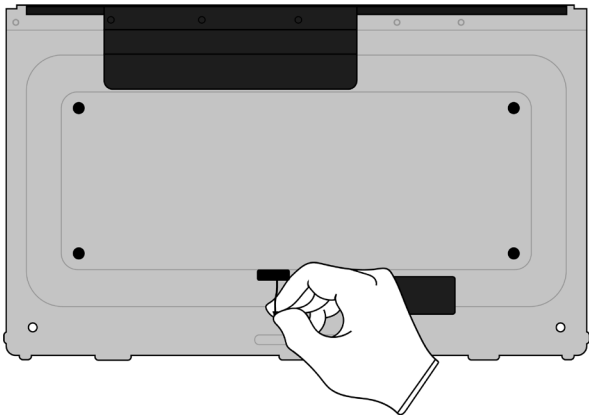
PL
Plastics

Fraction

LED logic board

PMs
Precious Metals

9. Flip over the mid plate and pull off the flex cable.



Fraction

Flex cable

Cu

Copper

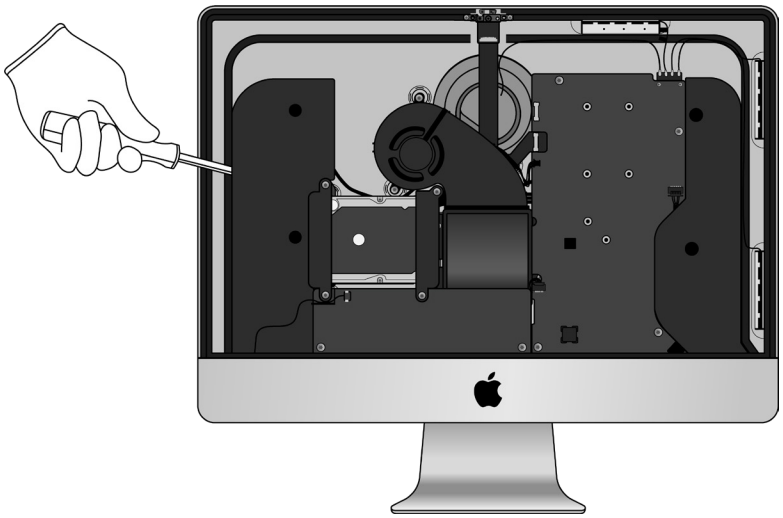
Fraction

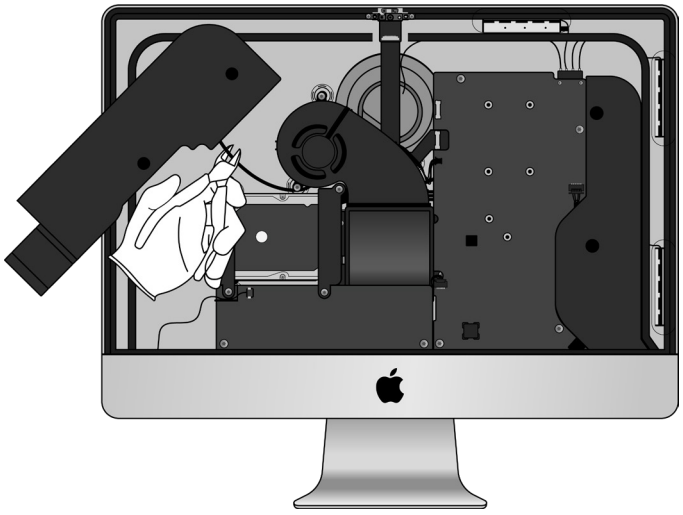
Mid plate

Al

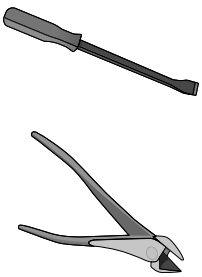
Aluminum

10. Pry off the left speaker. Cut the connector.





Tools Used

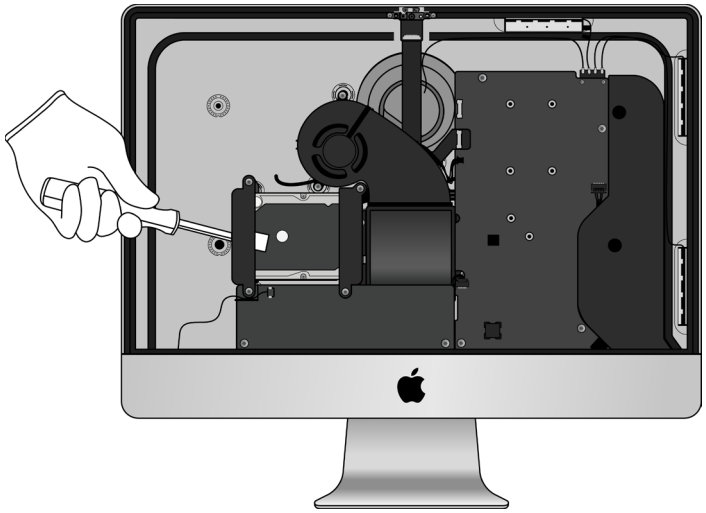


Fraction

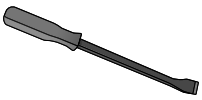
Left speaker

REE
Rare Earth Elements

11. Pry off the hard drive brackets.



Tools Used

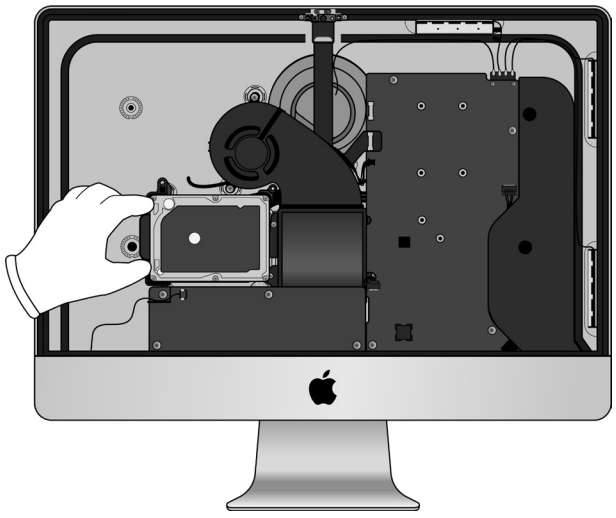


Fraction

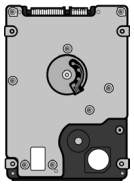
Hard drive brackets

PL
Plastics

12. Remove the hard drive by unplugging it from the connector.



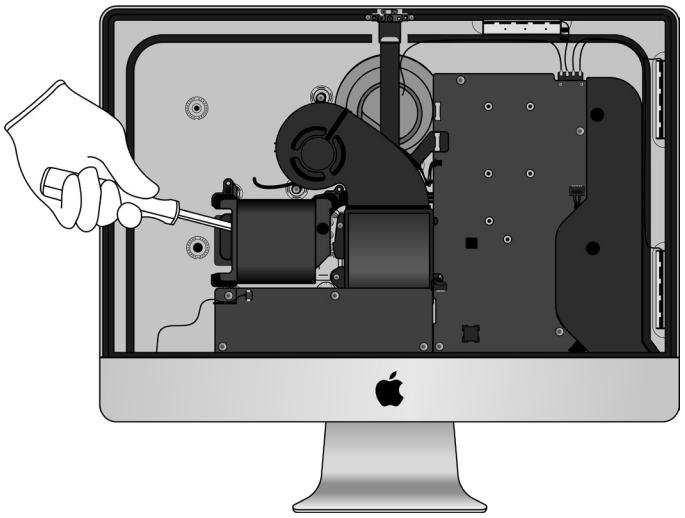
Fraction



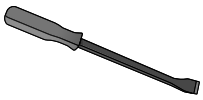
Hard drive

HDD
Hard Disk Drives

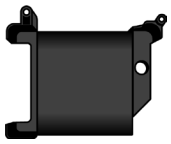
13. Pry off the remaining hard drive mounting bracket.



Tools Used



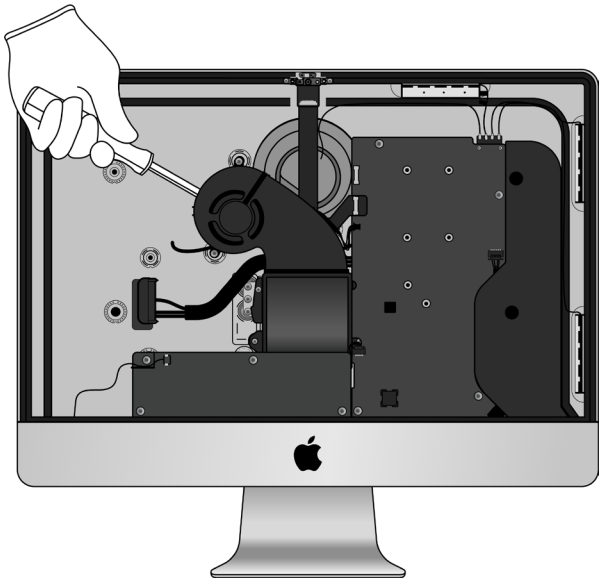
Fraction



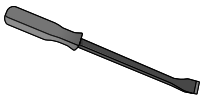
Hard drive mounting bracket

PL
Plastics

14. Pry off the fan.



Tools Used



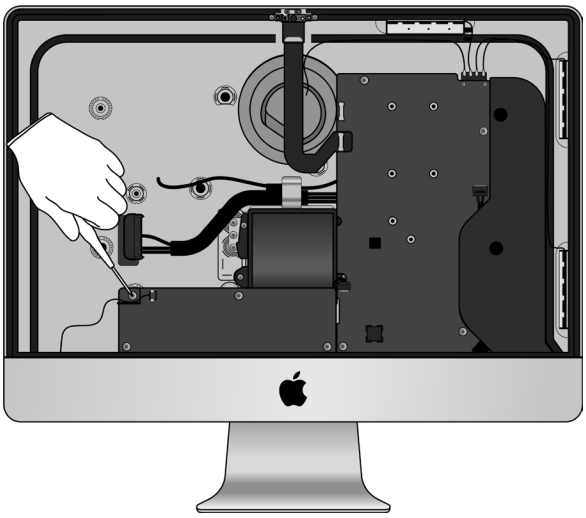
Fraction

Fan

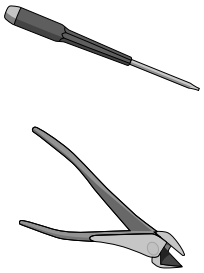
Cu
Copper

15. Remove the power supply logic board.

» *Unscrew the four Torx T8 fasteners.*



Tools Used

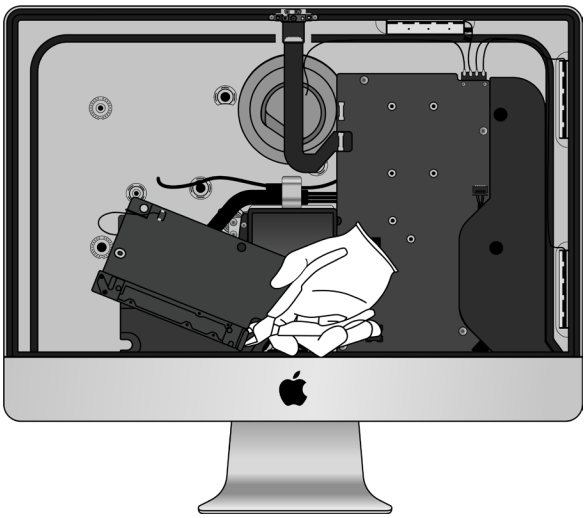


Fraction

Fasteners (x4)

Fe
Ferrous

» *Cut off the connectors.*

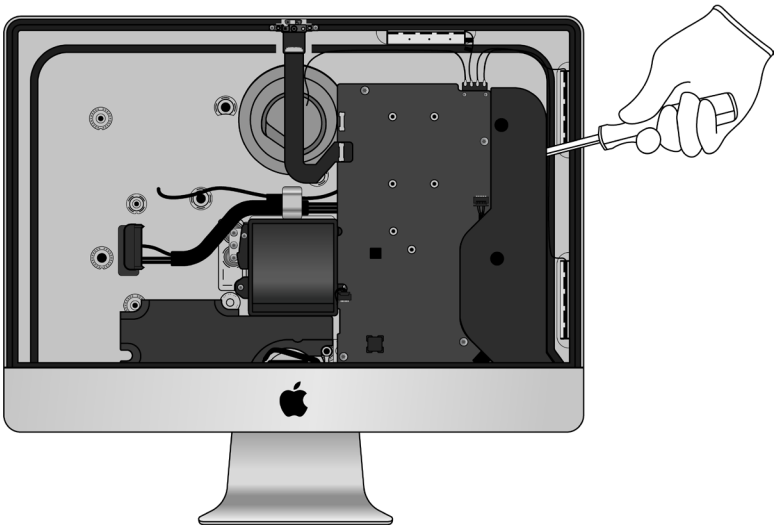


Fraction

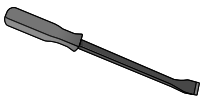
Power supply logic board

PMs
Precious Metals

16. Pry off the right speaker.



Tools Used



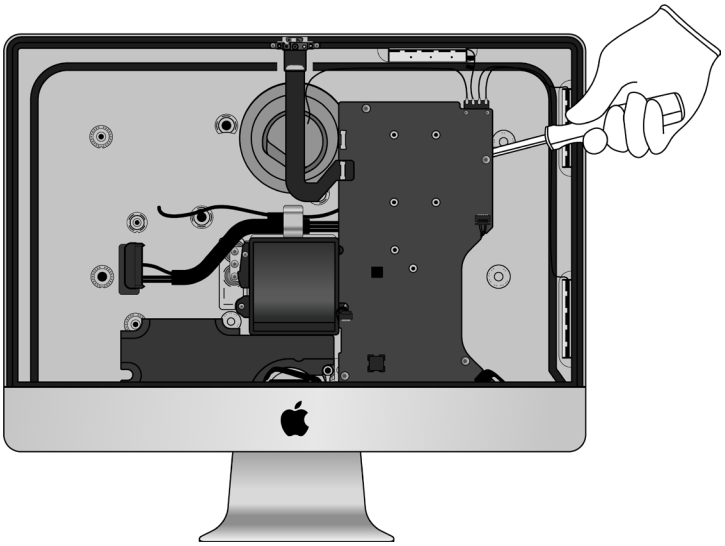
Fraction

Right speaker

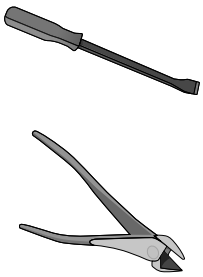
REE
Rare Earth Elements

17. Remove the main logic board.

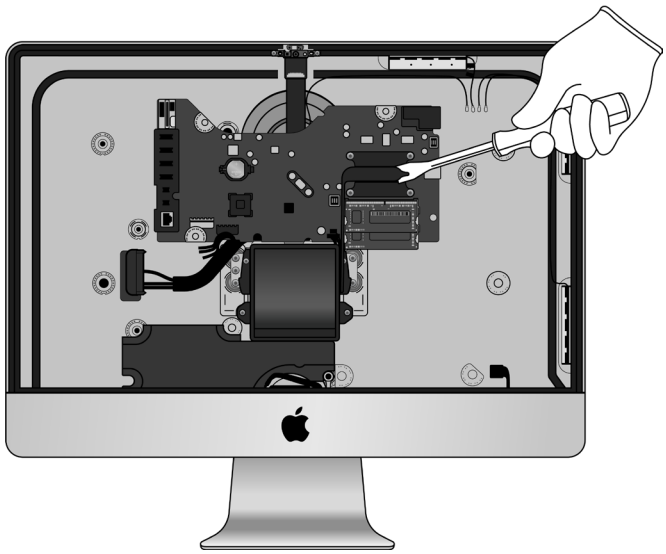
» *Pry the main logic board off the housing.*



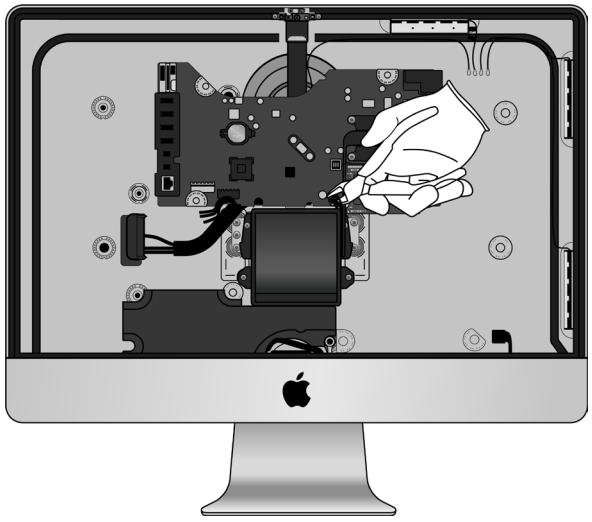
Tools Used



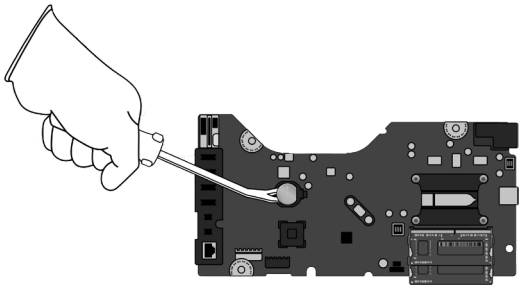
» *Flip over the main logic board and pry off the heat sink.*



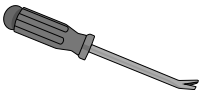
» *Cut the connected wires.*



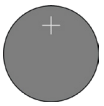
18. Remove the coin cell battery from the main logic board.



Tools Used



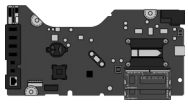
Fraction



Coin cell battery

BT
Battery

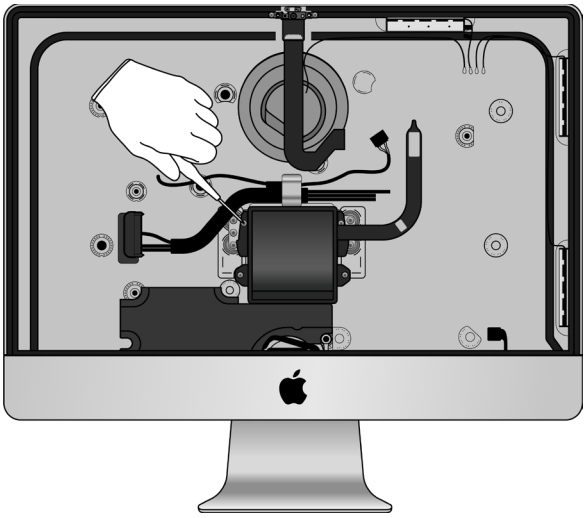
Fraction



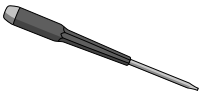
Main logic board

PMs
Precious Metals

19. Remove the heat sink from the housing by unscrewing the four Torx T8 fasteners.



Tools Used

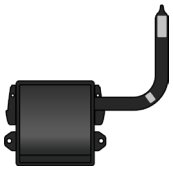


Fraction

Fasteners (x4)

Fe
Ferrous

Fraction

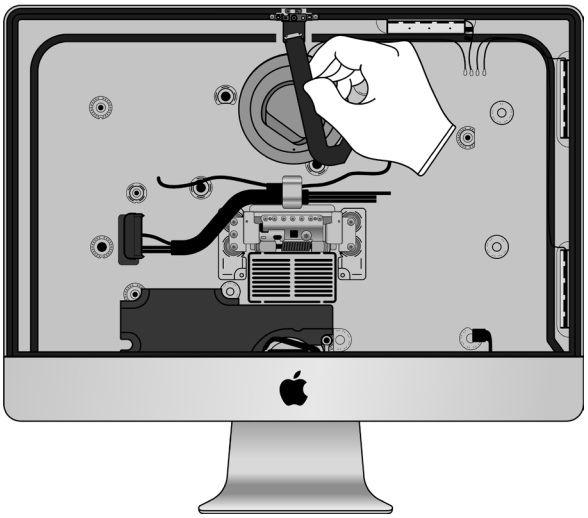


Heat sink

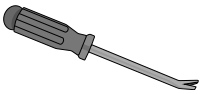
Cu
Copper

20. Remove the camera with logic board.

» *Pull off the ribbon cable by hand.*



Tools Used

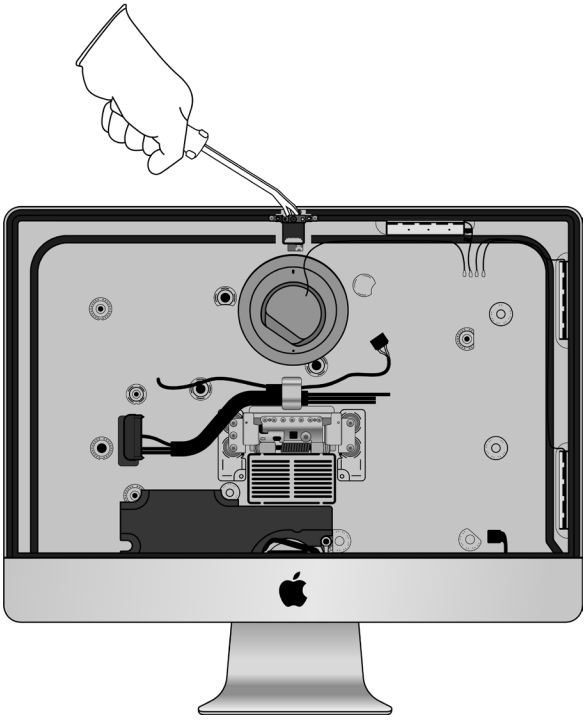


Fraction

Ribbon cable

Cu
Copper

» *Pry off the camera with logic board.*

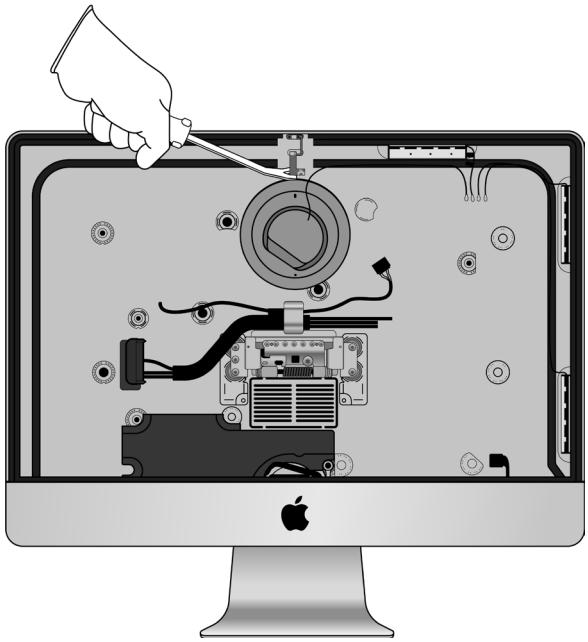


Fraction

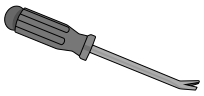
Camera with logic board

PMs
Precious Metals

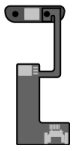
21. Pry off the microphone.



Tools Used



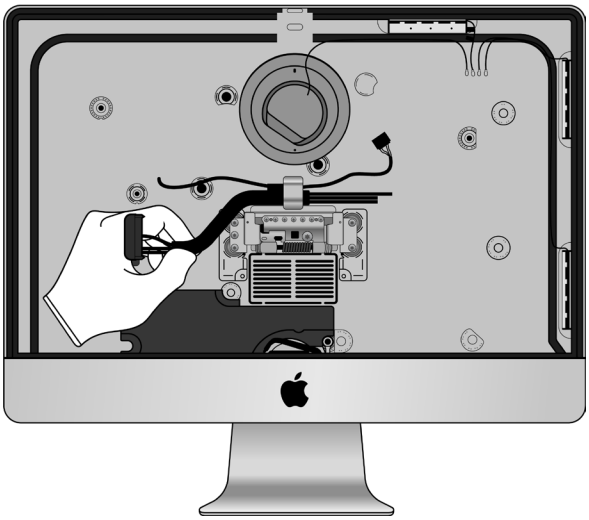
Fraction



Microphone

Cu
Copper

22. Pull the wires off the wire bracket.

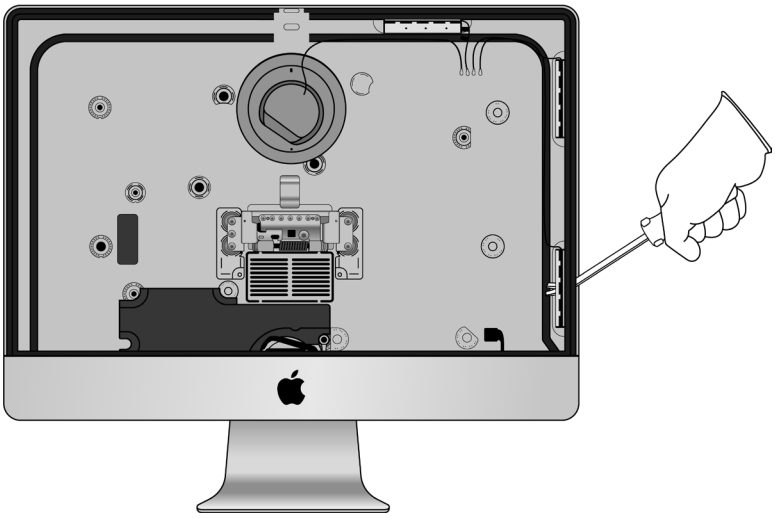


Fraction

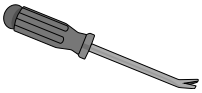
Wires

Cu
Copper

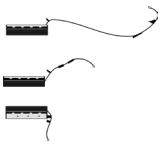
23. Pry off the Wi-Fi antennas.



Tools Used



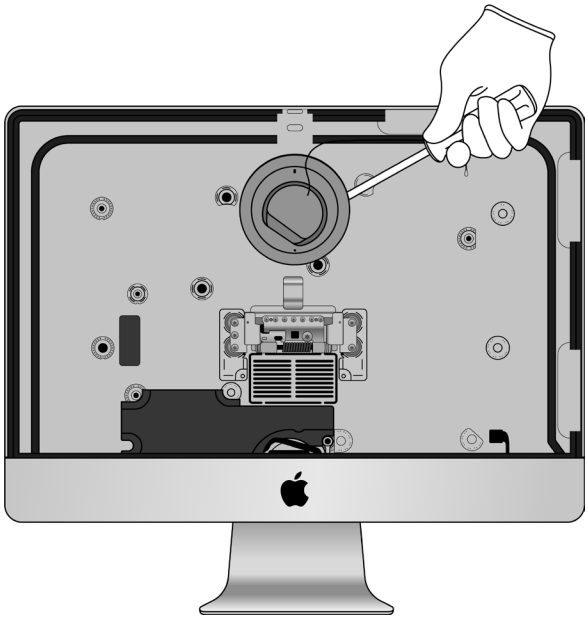
Fraction



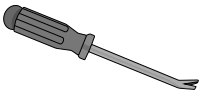
Wi-Fi antennas

Cu
Copper

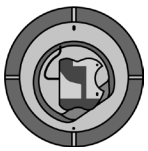
24. Pry off the Bluetooth antenna.



Tools Used



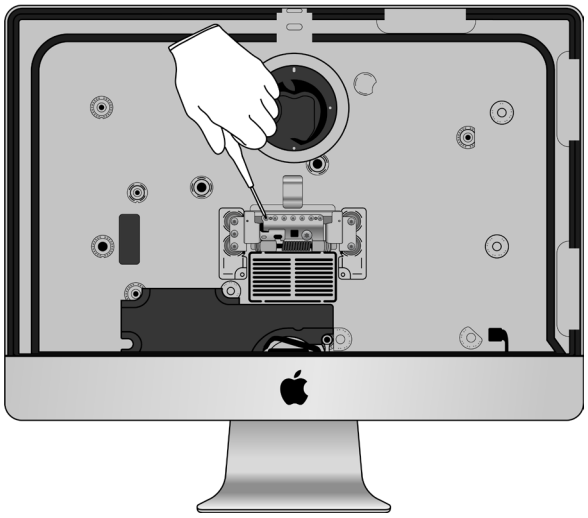
Fraction



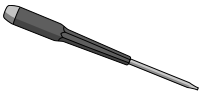
Bluetooth antenna

Cu
Copper

25. Remove the stand by unscrewing the seven Torx T8 fasteners.



Tools Used

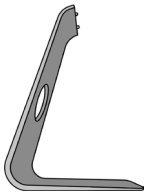


Fraction

Fasteners (x7)

Fe
Ferrous

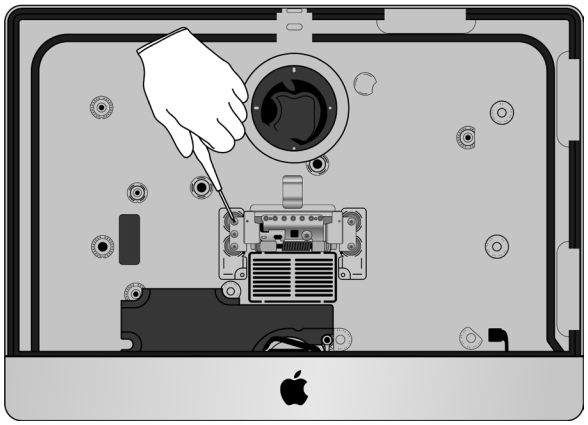
Fraction



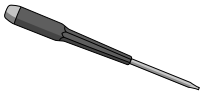
Stand

Al
Aluminum

26. Remove the hinge from the housing by unscrewing the four Torx T8 fasteners.

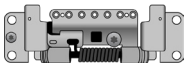


Tools Used



Fraction

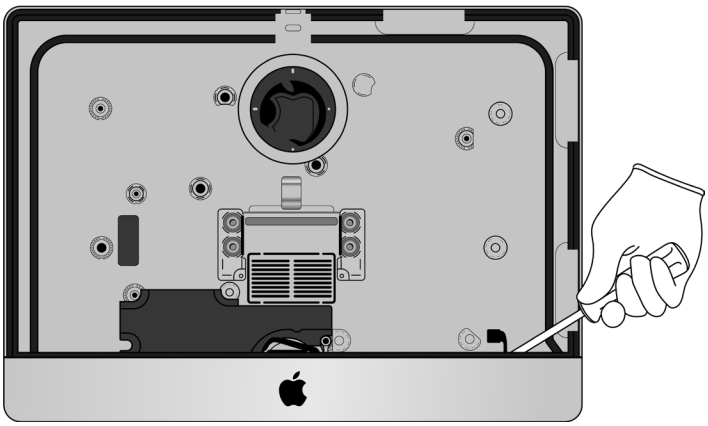
Fasteners (x4)



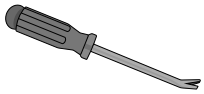
Hinge

Fe
Ferrous

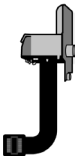
27. Pry off the headphone jack.



Tools Used



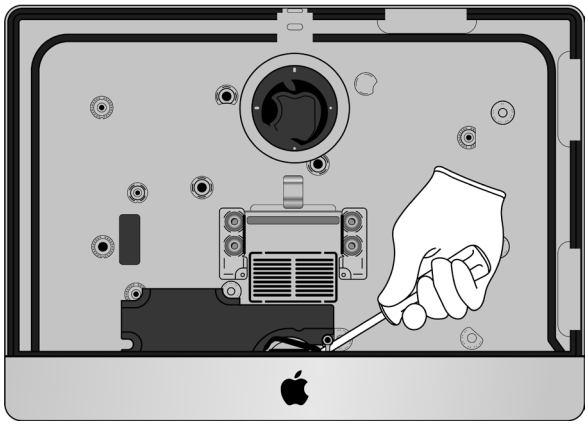
Fraction



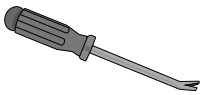
Headphone jack

Cu
Copper

28. Pry off the power connector.



Tools Used

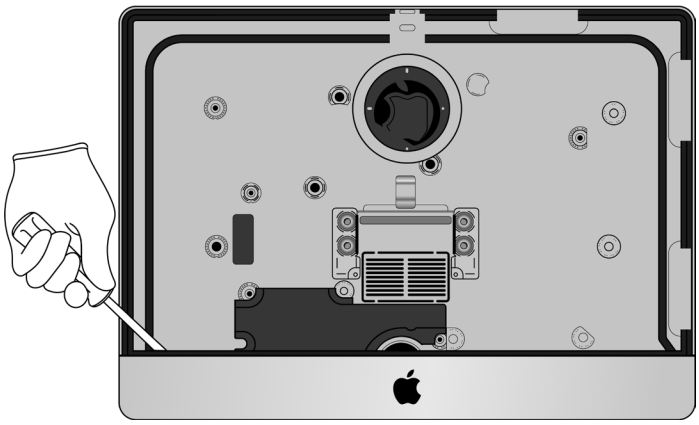


Fraction

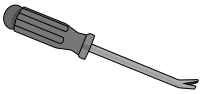
Power connector

Cu
Copper

29. Pry off the power button.



Tools Used

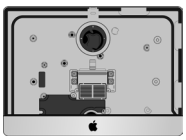


Fraction

Power button

Cu
Copper

Fraction

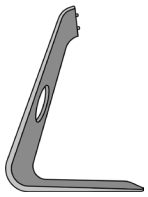
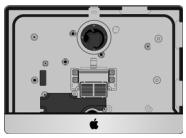


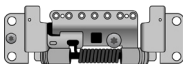
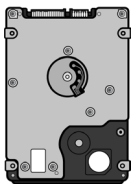
Housing

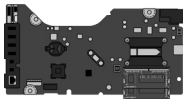
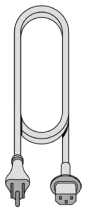
Al
Aluminum

Material Categorization of Output Fractions

All outputs from this process must be managed, handled, and disposed of in accordance with applicable waste laws and regulations, including but not limited to the Waste Framework Directive and its national enactments in Europe.

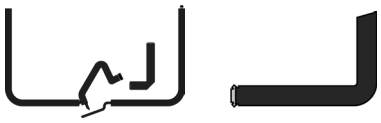
Fraction	Downstream Processing
Aluminum  *Mid plate*  *Stand*  *Housing*	**Primary Target Material** Al Aluminum **Potential Additional Materials** PL Plastics
Batteries  *Coin cell battery*	**Primary Target Material** BT Battery

Fraction	Downstream Processing
Ferrous  *Logic board cover*  *Fasteners (x47)*  *Hinge*	**Primary Target Material** Fe Ferrous
Glass  *LCD cell*	**Primary Target Material** GL Glass **Potential Additional Materials** ITO Indium Tin Oxide
Hard Disk Drives  *Hard drive*	**Primary Target Material** HDD Hard Disk Drives **Potential Additional Materials** PMs Precious Metals REE Rare Earth Elements SS Stainless Steel

Fraction	Downstream Processing
Logic Boards	**Primary Target Material**
 *Display logic board*	PMs (Precious Metals)
LED logic board	**Potential Additional Materials**
 *Power supply logic board*	Cu (Copper), Fe (Ferrous), PL (Plastics)
 *Main logic board*	
 *Camera with logic board*	
Mixed Electronics	**Primary Target Material**
 *Power cord*	Cu (Copper)
	Potential Additional Materials
	Fe (Ferrous), PL (Plastics), PMs (Precious Metals)

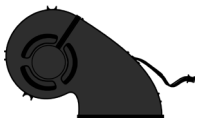
Fraction	Downstream Processing

Mixed Electronics (cont.)

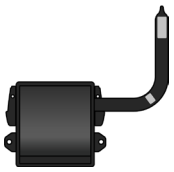


Ribbon cables

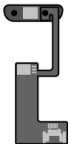
Flex cable



Fan



Heat sink

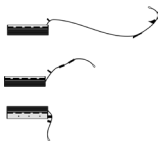


Microphone

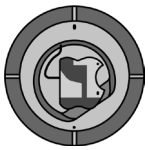
Wires

Fraction	Downstream Processing

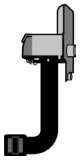
Mixed Electronics (cont.)



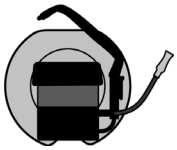
Wi-Fi antennas



Bluetooth antenna

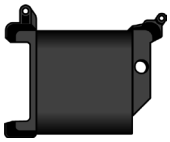


Headphone jack



Power connector

Power button

Fraction	Downstream Processing
Mixed Plastics  *Display films* *LED back strip*  *Hard drive brackets*  *Hard drive mounting bracket*	**Primary Target Material** PL Plastics
Rare Earth Magnets  *Left speaker*  *Right speaker*	**Primary Target Material** REE Rare Earth Elements **Potential Additional Materials** Cu Copper Fe Ferrous PL Plastics