



# Pro Display XDR

## Recycler Guide

March 2021

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# About This Guide

Apple Recycler Guides provide guidance for electronics recyclers on how to safely disassemble products to maximise 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](mailto:contactesci@apple.com).

# Identification



*Model number:*  
A1999

# Components Requiring Selective Treatment

The following substances and components should be removed for selective treatment in accordance with Annex VII of Directive 2012/19/EU.

Substance/Component	Location	Removal Instructions
Printed circuit board if the surface is greater than 10 square centimetres	Main logic boards, display logic boards, LED array logic boards	Follow steps 1-7
Cover glass and LCD cell if the surface is greater than 100 square centimetres	Cover glass and LCD cell	Follow steps 1-3
External electric cables	Thunderbolt 3 Pro cable, AC power cord	Follow step 1
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.

## Hazard Warning



Broken glass hazard



Danger of harming your hands



Chemical inhalation hazard



Sharp element

## Personal Protective Equipment

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



Wear hand protection



Wear a mask



Wear eye protection



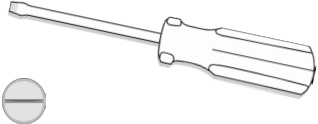
Wear foot protection



Wear protective clothing

# Recommended Tools

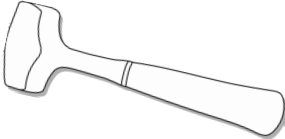
Flat-blade screwdriver



Flat surface scraper



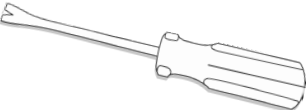
Hammer



Heavy chisel



Nail-pulling screwdriver



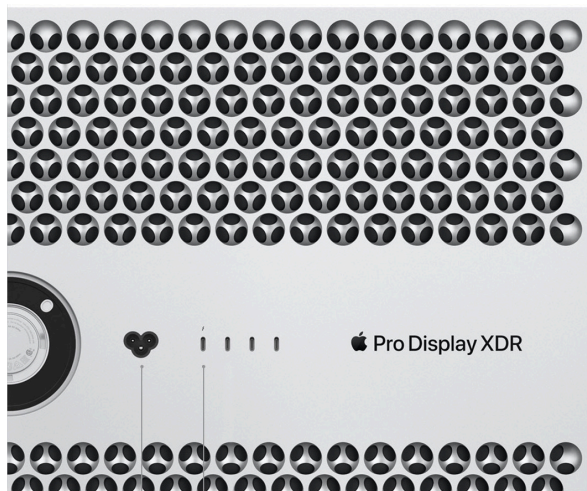
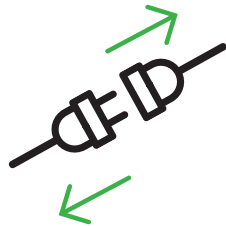
# Disassembly Instructions

1. Remove the display power cable and the Thunderbolt 3 Pro cable from the device.

» Turn off the display.

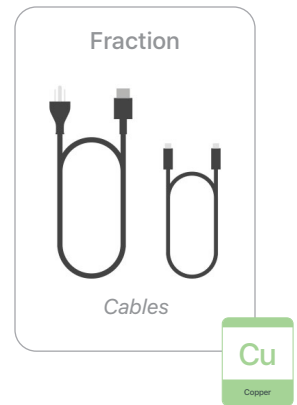


» Unplug the cables.



Power port

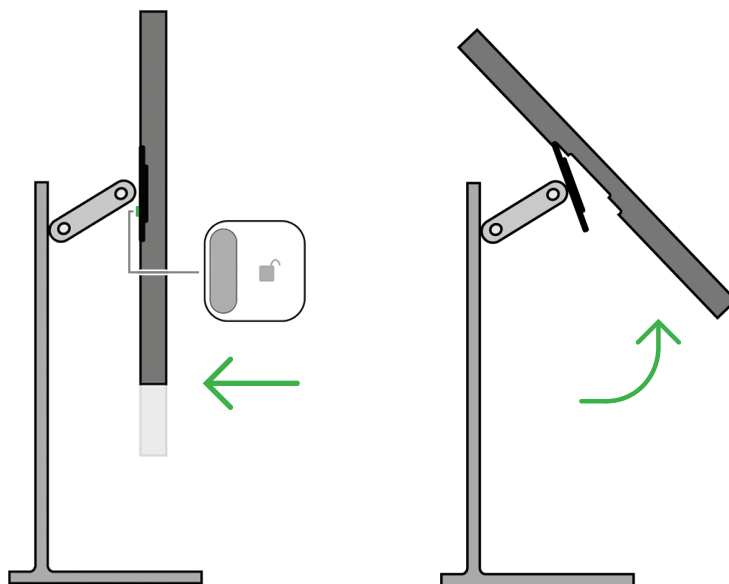
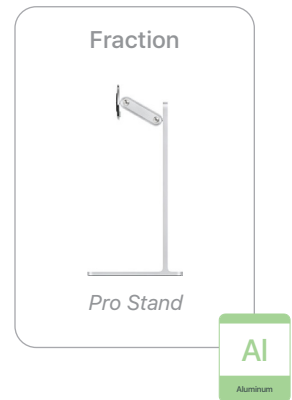
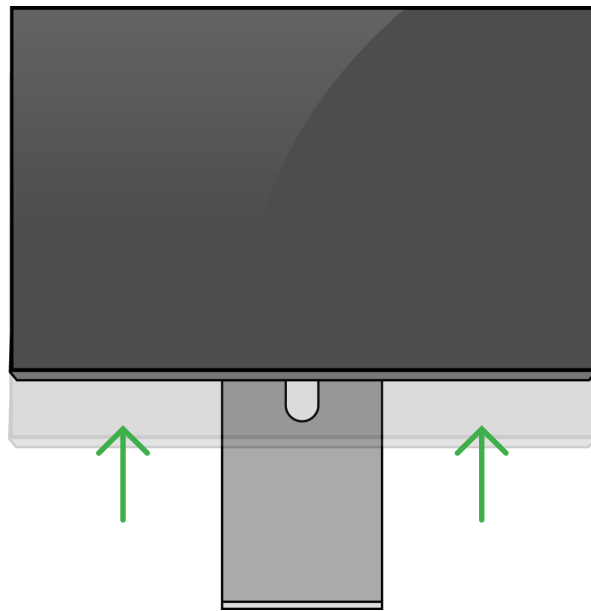
Thunderbolt 3 (USB-C) port



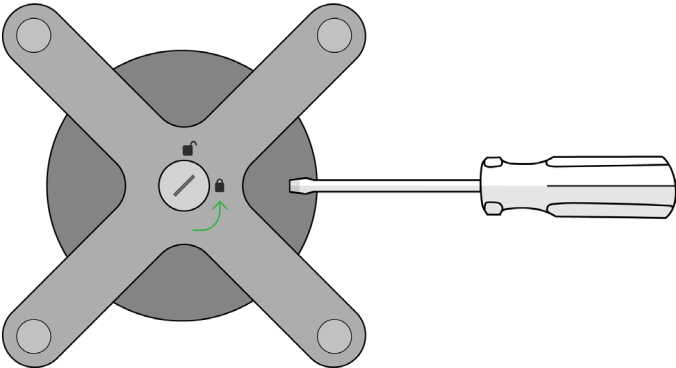


2. Remove the stand. If you have a Pro Stand, follow the first set of instructions. For a VESA mount adapter, follow the second set of instructions.

» Detach the Pro Display XDR from the Pro Stand.



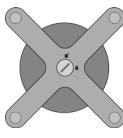
» Detach the Pro Display XDR from the VESA mount adapter.



Tools Used



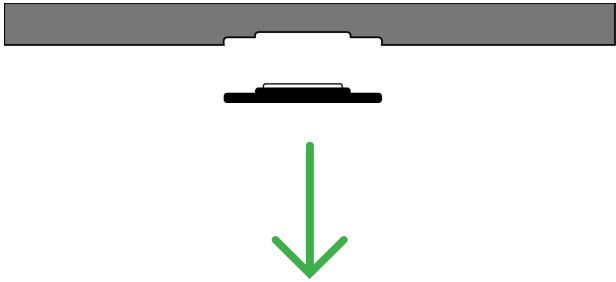
Fraction



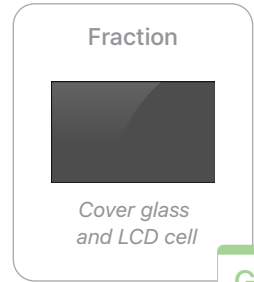
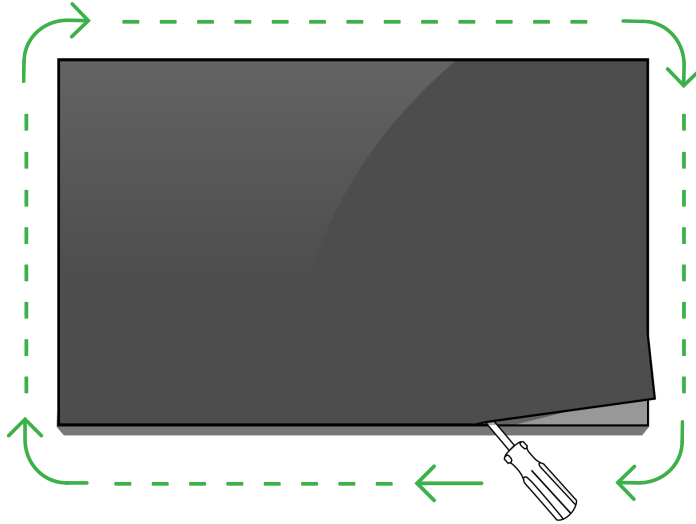
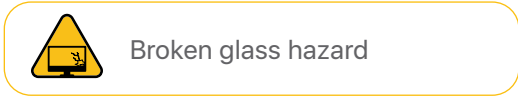
VESA mount adapter

AI

Aluminum



### 3. Remove the cover glass and LCD cell.



#### 4. Remove the two logic boards attached to the display.



Sharp element



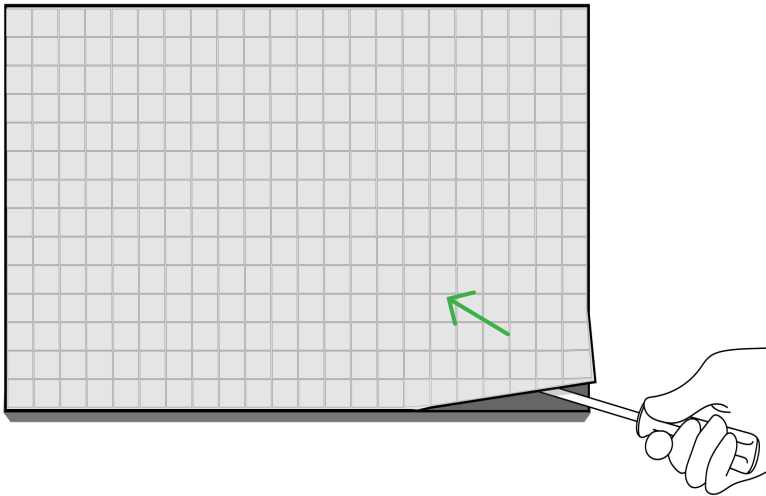
Fraction



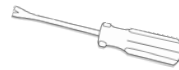
Display logic board (x2)

PMs  
Precious Metals

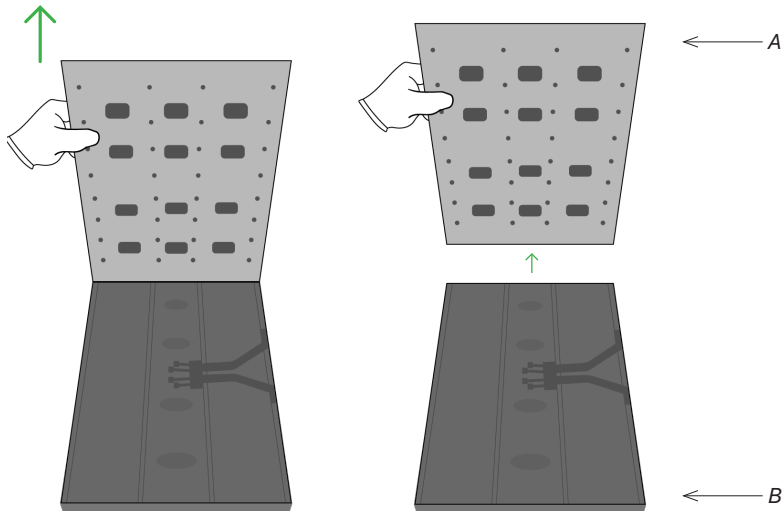
#### 5. Remove the LED array.



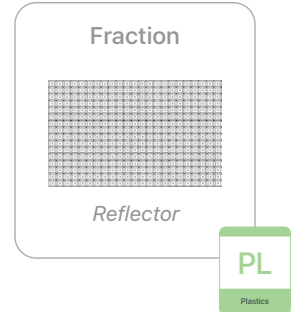
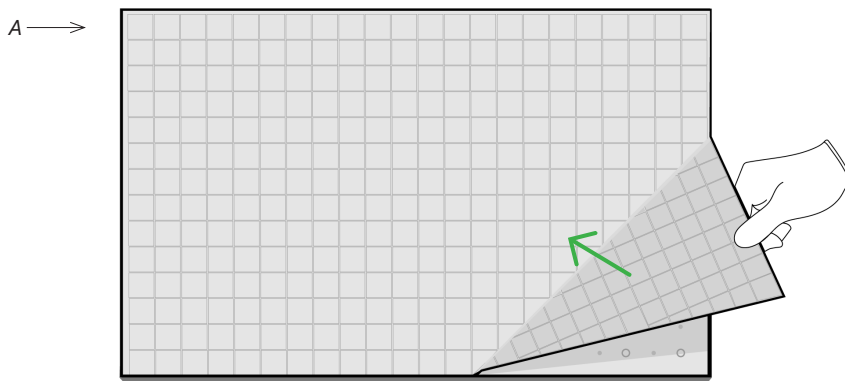
Tools Used




» Pull the LED array away from the base. Set the base aside for the next step.

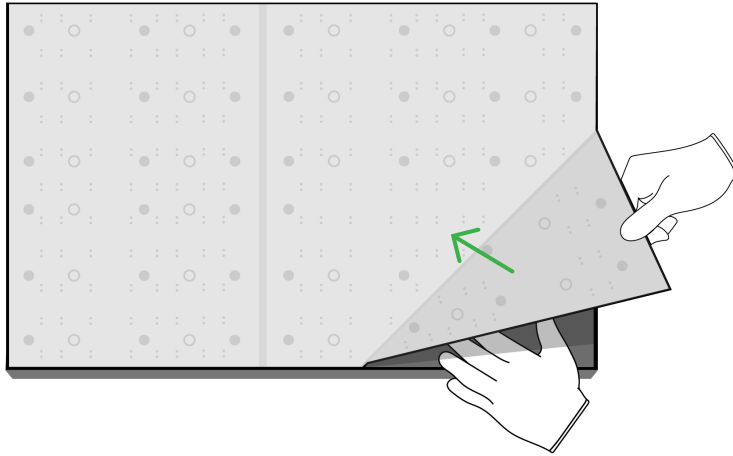


» Remove the reflector.

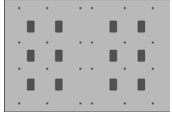


» Remove the two LED array logic boards.

 Chemical inhalation hazard




Fraction



Mid plate

**Al**  
Aluminum

Fraction

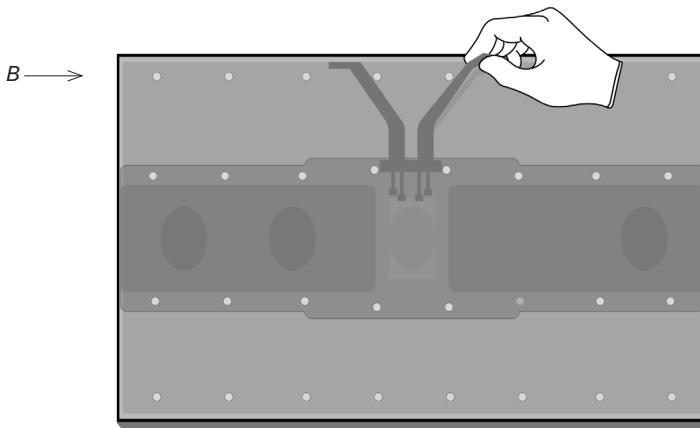


LED array logic board (x2)



**PMs**  
Precious Metals

## 6. Remove the dust plates.

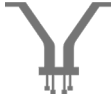
» Remove the ribbon wire.



Tools Used



Fraction



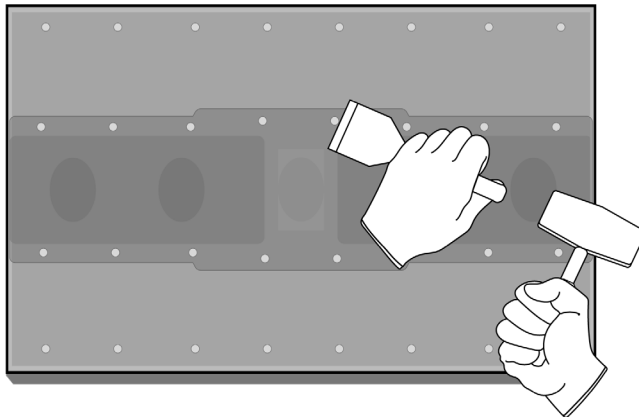
Ribbon wire

**Cu**  
Copper

» Use the chisel to remove the fasteners.



Danger of harming your hands



Fraction

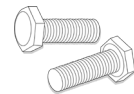


Centre dust plate

Al

Aluminum

Fraction

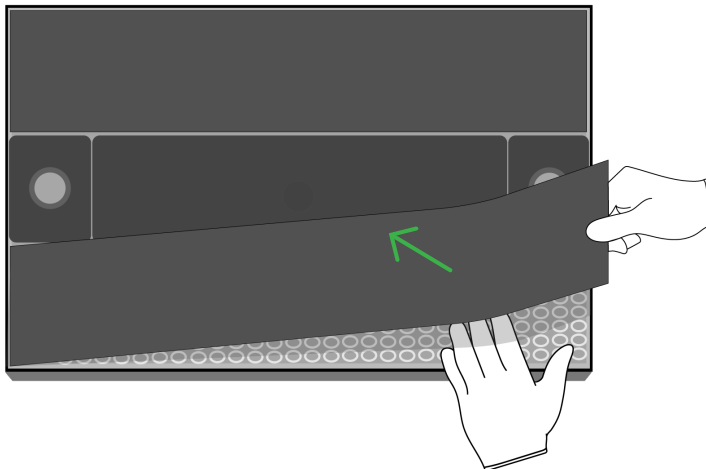


Fasteners (x35)

Fe

Ferrous

» Remove the side dust plates.



Fraction

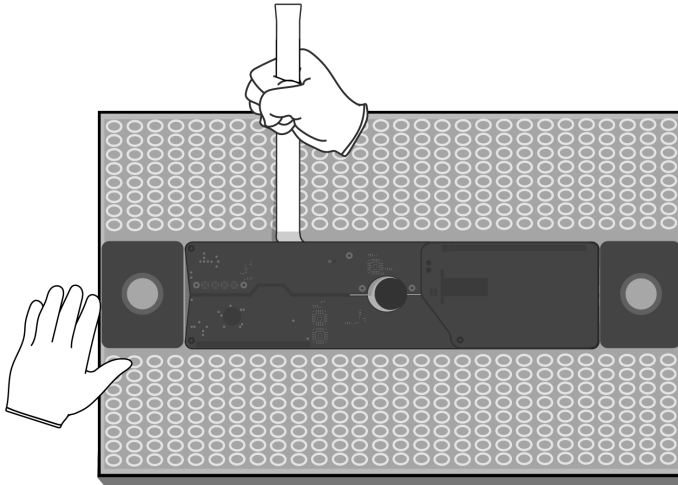


Side dust plates

Fe

Ferrous

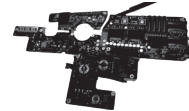
## 7. Remove the four main logic boards.



### Tools Used



### Fraction

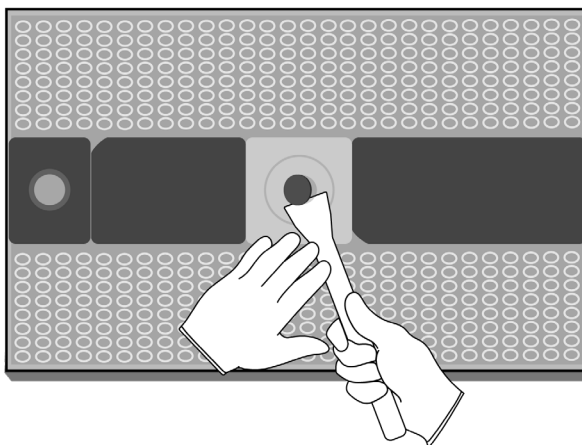


Main logic board (x4)



## 8. Remove the magnets.

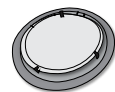
» Remove the centre magnet.



### Tools Used



### Fraction

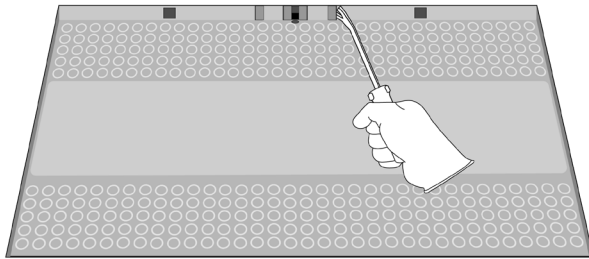


Magnet





» Remove the side magnets.



Fraction

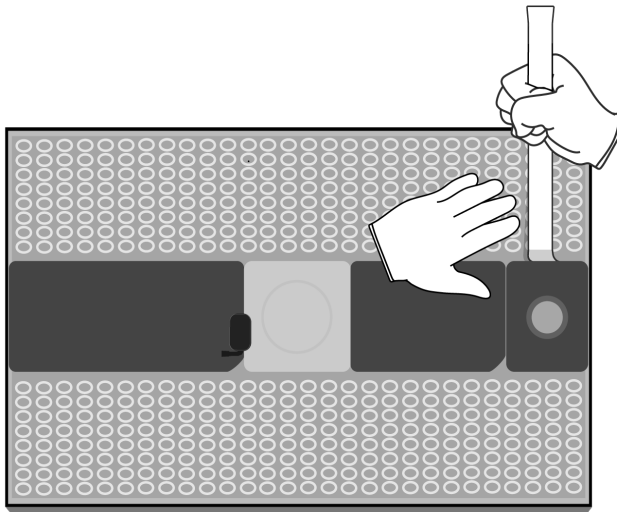


Magnets

REE

Rare Earth  
Elements

9. Remove the fans and AC power inlet.



Tools Used



Fraction



Fans

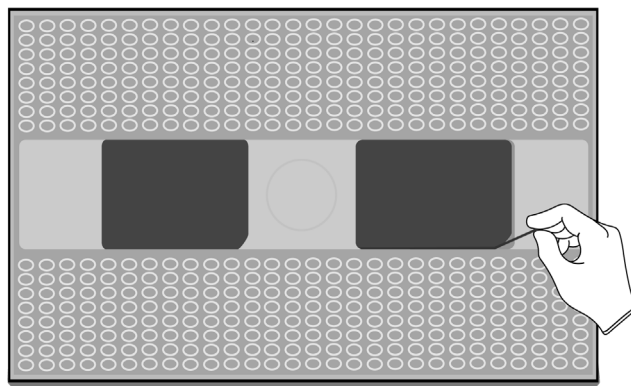
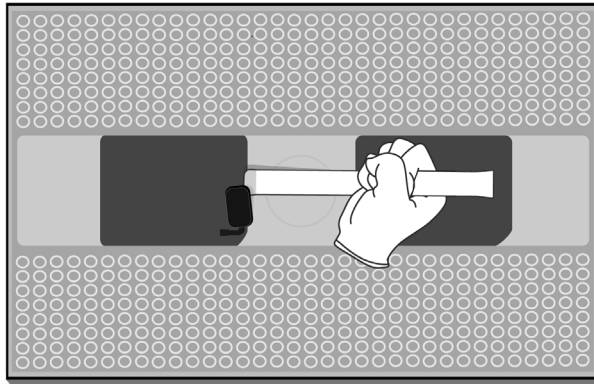


AC power inlet

Cu

Copper

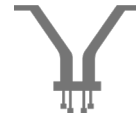
# 10. Remove the final ribbon wires and cables.



Tools Used



Fraction



Ribbon wires  
and cable

Cu

Copper

Fraction




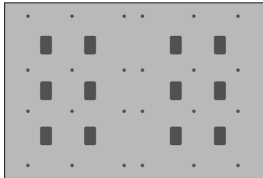
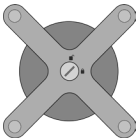




Aluminium enclosure

Al

Aluminum

# Treatment of Output Fractions

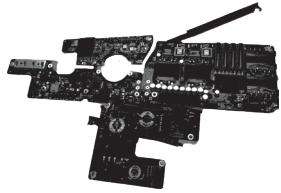
All outputs from this process must be managed, handled and disposed of in accordance with applicable waste laws and regulations, including, but not limited to, the Waste Framework Directive and its national enactments in Europe.

Fraction	Downstream Processing
<p data-bbox="435 604 571 630"><b>Aluminium</b></p>  <p data-bbox="418 779 586 800"><i>Centre dust plate</i></p>  <p data-bbox="456 1043 545 1064"><i>Mid plate</i></p>  <p data-bbox="402 1262 602 1283"><i>VESA mount adapter</i></p>  <p data-bbox="451 1528 553 1549"><i>Pro Stand</i></p>  <p data-bbox="402 1755 599 1776"><i>Aluminium enclosure</i></p>	<p data-bbox="967 604 1273 630"><b>Primary Target Material</b></p>  <p data-bbox="927 831 1308 856"><b>Potential Additional Materials</b></p> 

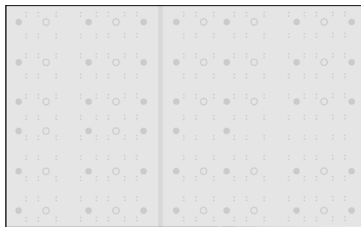
**Fraction**

**Downstream Processing**

**Logic Boards**



*Main logic boards*



*LED array logic boards*



*Display logic boards*

**Primary Target Material**



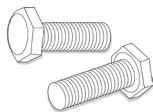
**Potential Additional Materials**



**Ferrous**



*Side dust plates*



*Fasteners*

**Primary Target Material**



Fraction	Downstream Processing
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**Cover Glass and LCD Cell**



*Cover glass and LCD cell*

**Primary Target Material**



**Potential Additional Materials**



**Mixed Electronics**

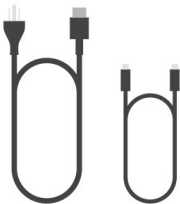


*Fans and AC power inlet*

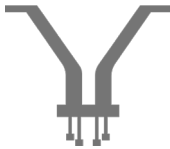
**Primary Target Material**



**Potential Additional Materials**



*Cables*

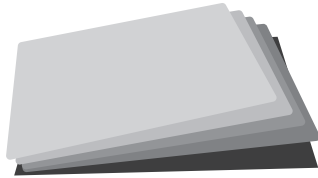


*Ribbon wires*

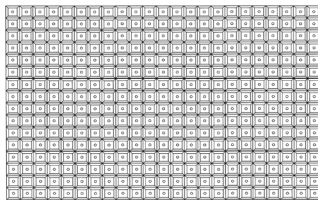
**Fraction**

**Downstream Processing**

**Mixed Plastics**



*Films*

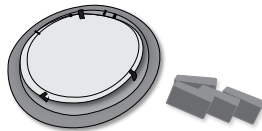


*Reflector*

**Primary Target Material**



**Rare Earth Magnets**



*Magnets*

**Primary Target Material**

