



# Applying Low Voltage After Every Repair (Retina MacBook 2015 Only)

After any repair, but before powering on, the 2015 12" Retina MacBook must be briefly connected to an iPhone charger to prevent damage to the logic board.

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## INTRODUCTION

The first-generation 12" Retina MacBook has a design quirk that requires connection to low-voltage power after a repair. **If this step is skipped, permanent logic board damage may result.** This procedure is not required for 2016 and later models.

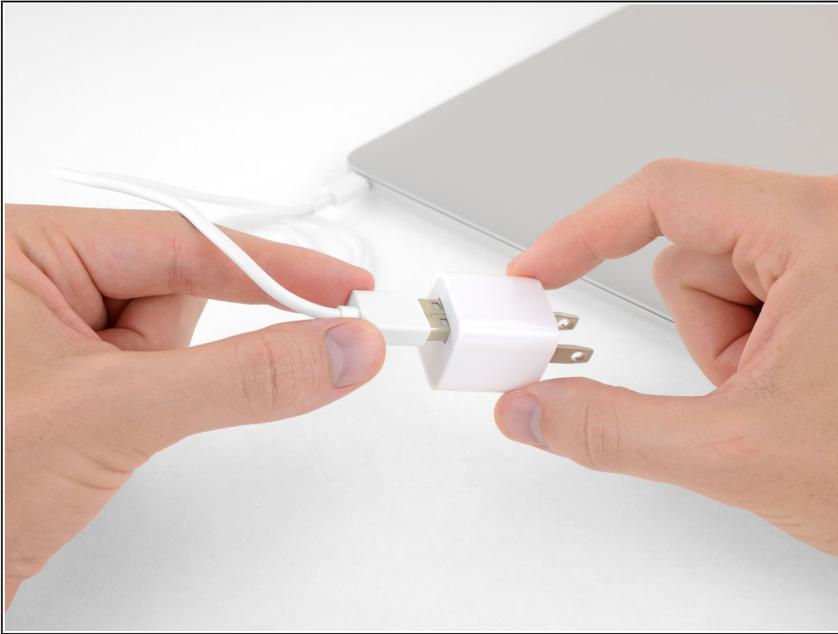
Connecting the Retina MacBook to low-voltage power requires a 5-Watt A/C adapter (like the kind that comes with iPhones) and a USB-A to USB-C cable, neither of which is included in the MacBook's original box.



### PARTS:

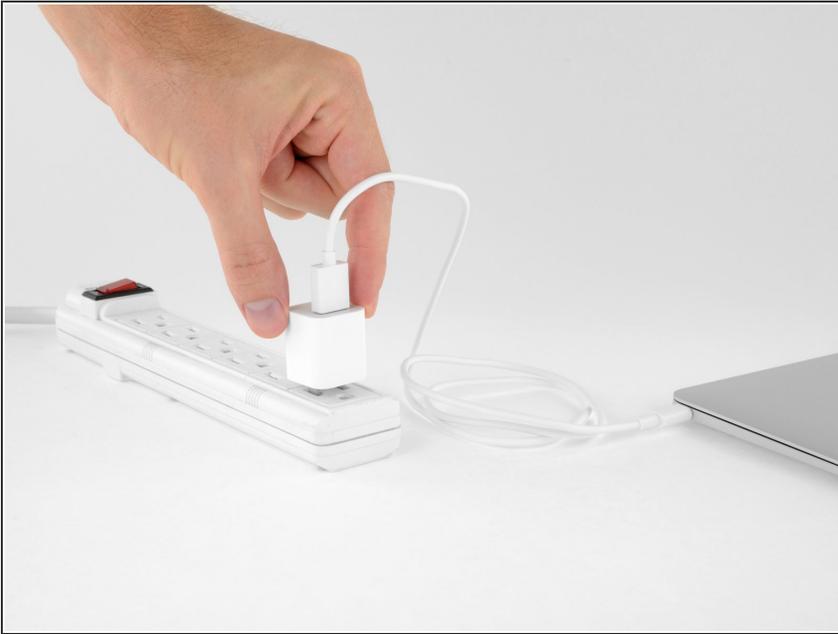
- [USB-C to USB-A Cable](#) (1)
  - [USB Power Adapter for iPhone and iPod](#) (1)
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## Step 1 — Applying Low Voltage After Every Repair (Retina MacBook 2015 Only)



- Using a USB-A to USB-C cable, connect your MacBook to a standard 5 W iPhone wall charger.

## Step 2



- Plug the charger into a surge-protected A/C outlet.
- Wait until you hear the power connect chime (you should also see the battery charge symbol onscreen).
- ⓘ You'll typically hear the chime in 10 seconds or less—unless your battery charge level is very low, in which case it may take up to 15 minutes.
- Power on your MacBook by pressing the power button.
- Once the MacBook successfully powers on, you can disconnect the 5 W charger, and use/charge your MacBook normally.
- ⓘ If the MacBook fails to power on after 15 minutes, there may be an issue with your repair.

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