

Titanium Powerbook Backup Battery Replacement

Use Agreement

The PRAM Battery Replacement (“the Kit”) for Titanium-series Powerbooks (“the Machine(s)”) is supplied for installation by qualified technicians only. By purchasing and installing the kit, you assert, certify and warrant that you are a qualified technician to make such repairs and accept all risk of damage, incidental or consequential, which may occur to the Machine or Kit during installation of the Kit or as a result of improper installation.

Warranty

Devious Fish warrants the parts of the Kit against workmanship defect for a period of one (1) year. This warranty does not extend to damage by improper installation, improper care, or abuse.

In the event of the kit failing, Devious Fish will have at its option either replacement of the entire kit, replacement of defective components, or refund of the cost of the Kit. In no event will this Warranty cover labor costs for installation of the Kit.

Limits of Liability

Devious Fish shall not be liable for problems caused by improper handling, installation, care, or abuse of the Kit.

In the event of damage caused by a defect or malfunction originating in manufacturing of the Kit, Devious Fish’s liability shall be limited to the purchase price of the Kit.

Symptoms Addressed

The Kit will address 3 problems:

- Clock resetting to 1970.
- When main battery is drained, Macintosh attempts to sleep but immediately powers off instead.
- PRAM settings (such as mouse speed) being lost

It is unclear whether the kit will address some cases when a Powerbook will not power on.

Installation

Overview

The PRAM module and battery are located above the optical drive. Installation requires opening the bottom side of the Machine, removing the optical drive, opening the PRAM protective casing, physically disconnecting the crimps on the original battery, installing the new battery clip, installing the new battery, then reassembling the Machine.

Tools necessary

Torx driver (size 8 bit), pliers, small flathead screwdriver, heat gun (hair dryer). Use a grounding strap to minimize chance of damage by static.

1. Back up all data

If you're using an automated backup system, make sure it has been working. If you do manual backups, make one now.

2. Remove all power.

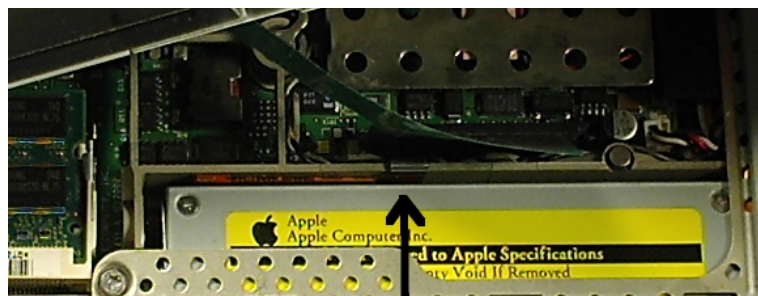
Disconnect from supply and remove main battery.

3. Remove optical drive clip

There is a clip for the optical drive located below the keyboard. Turn the screw between F5 and F6 keys to release keyboard. Position of the latch may be observed as the screw is turned.

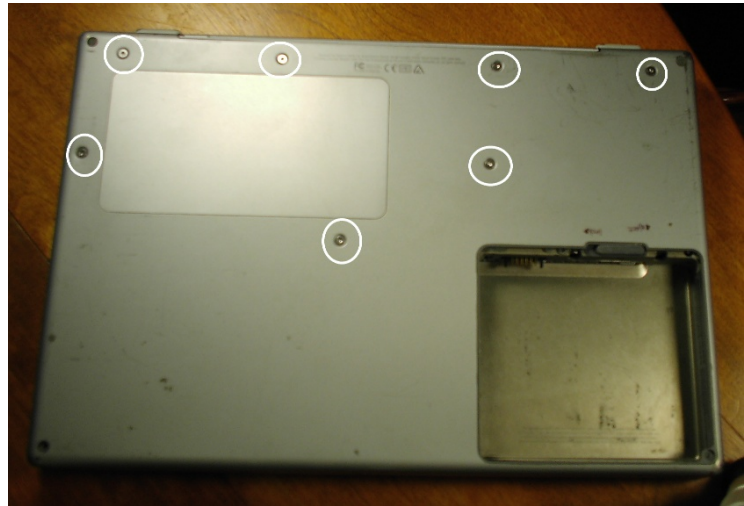
Pull back on the locking tabs next to F1 and F11 and angle up keyboard. Clip may be observed below the keyboard cable, near the connector to the logic board. The clip is not very tight, and may be removed without tools. Position the keyboard to allow access to the clip, then pry it out. Replace the keyboard when done.

Note: You may alternately disconnect the keyboard from the logic board and set it aside, then remove the clip. The keyboard connector is fragile, so be careful if you choose this method.



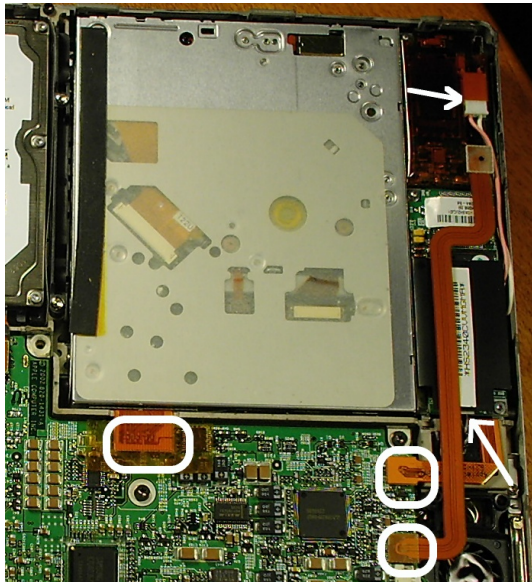
1. Remove bottom case

Turn machine over and remove 7 Torx screws (size T8) on the bottom of the case. The bottom should remove easily once all screws are removed.



2. Remove optical drive.

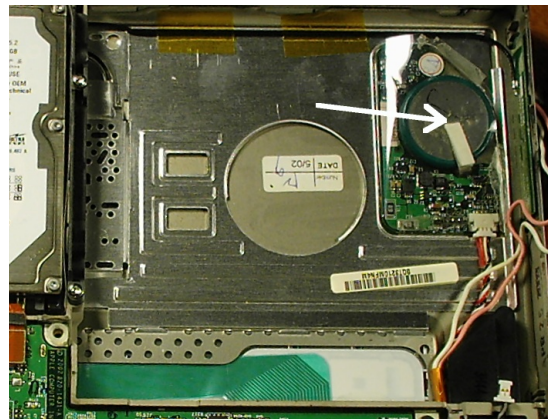
The display inverter and modem are mounted on the optical drive frame. Leave them on and remove the entire frame with them attached. Disconnect the cables shown in the diagram to allow this. Angle up the frame at the edge of the computer and remove drive.



3. Analyze situation

Because of machine and optical drive variation, test fit all parts before permanently installing them. In the diagram to the right, the arrow points to the existing battery. The clip will be installed in the round shield cut-out (see later picture).

Place the clip in the cut-out, taking care that the disconnects are out of the way. Try installing the optical drive. Position the two rubber feet into their recesses and angle the drive back



down in. Verify that the drive easily lays flat and that the clip is not interfering.

If all looks good, remove the optical drive again and proceed with the install. If the kit won't fit, contact us to arrange return.

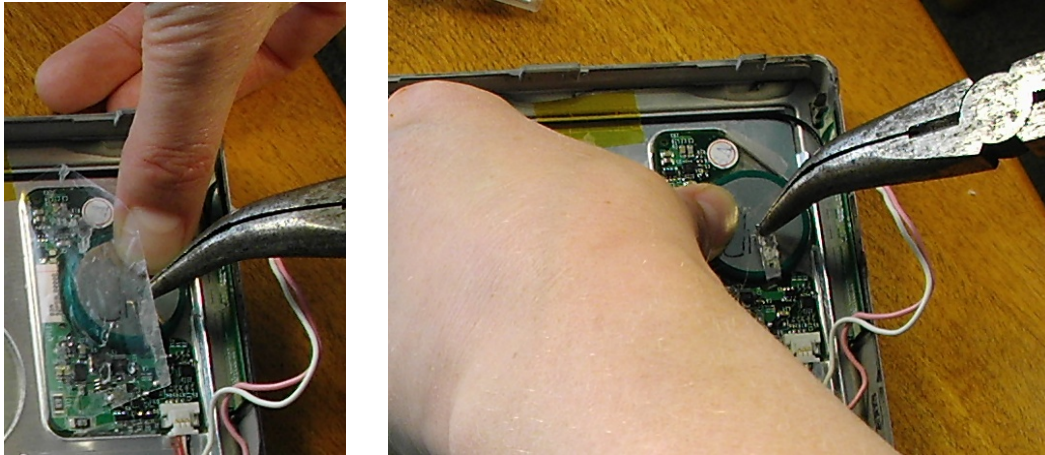
1. Open battery control board plastic protective cover

To protect the board from shorting against other components, it is wrapped in plastic. Pry loose (don't cut) the tape and open the cover.

2. Disconnect battery

Note polarity of the battery as you work! In models seen, positive is the topside of the machine (now facing down, since it's upside-down), with its terminal toward the front of the machine. However, there are several models using this battery and it's possible some use a different alignment.

Use pliers to pull the tabs loose from the battery (do not cut!). Another strategy is to slide a small screw drive below the tab and pry it up. This process requires application of some force and much patience. Use care so that you do not rip the tab lose from the PRAM board or cause other damage.

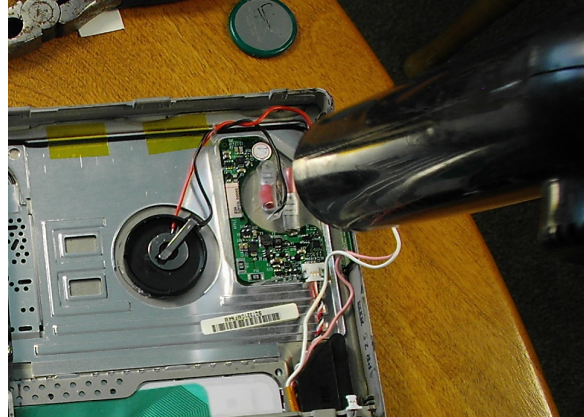


Repeat on the other side of the battery. Note that there is adhesive holding the battery in place on the topside as well that you will need to complete with.

1. Install battery clip

Fold the two battery tabs back on themselves to thicken the metal and use pliers to pinch them flat.

Make sure the heat shrink tubing is over the wires on the battery clip. Slide the disconnects over the flattened tabs, noting correct polarity. On new clip, red is positive, black is negative. Slide forth heat shrink tubing to cover exposed terminals. Seat clip on old adhesive and push gently to adhere. Use a heat gun to shrink the tubing, taking care not to excessively heat other components.

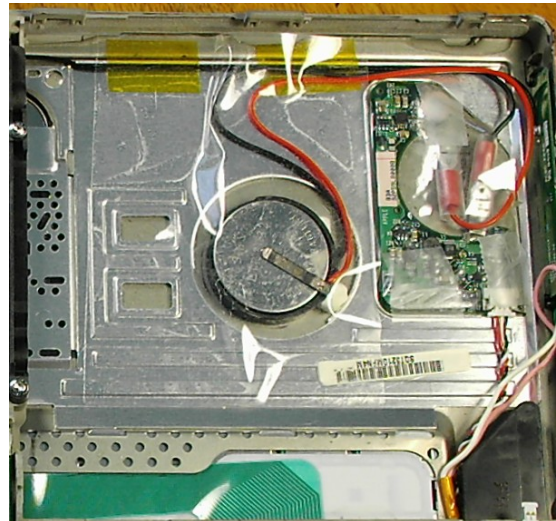


Install the battery into clip, noting polarity - positive side visible, as noted on the clip.

2. Cover

Close the plastic cover over the control board. Reattach the original tape, using additional invisible tape if the original adhesive isn't sticking.

Next, install the adhesive plastic sheet over the battery and clip to secure it and prevent it short circuiting to the optical drive.



3. Reassemble machine

Reverse steps 5-1 to reassemble the machine.

The new battery may take up to 48 hours to trickle charge to full capacity. Usually, however, about 12 hours of charging is sufficient to be able to test.

You can verify the battery is working by saving all open work, then putting the machine to sleep. Disconnect power and remove the battery. The machine should remain in sleep and not power off.

If after 48 hours, the machine is having problems then check the following:

- Try resetting the PMU by pressing the PMU reset button **once** and waiting 5 seconds before powering on the machine again.
- The connecting wire is plugged into both the battery control board and logic board.
- The connections to the battery terminals are secure and polarity is correct.
- The battery is correctly installed in the clip.