

## Powerbook G4 Aluminum 17" Repair Manual

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#### **Tools Needed for Take Apart:**

Torx T8 Screwdriver – Available from our online store Torx T6 Screwdriver – Available from our online sore Philips head screwdriver- Available from our online store Putty Knife (For opening LCD Only)

Always remove the battery and power supply from the computer before beginning any take apart or repair!

# THIS MANUAL IS CURRENTLY IN PRODUCTION AND IS INCOMPLETE.

The complete version of this manual will be available in 2-3 weeks.

### Orientation

For purposes of this manual, all designations of orientation (left, right, etc.) should be taken from the perspective of looking face on at the unit as shown in the picture below. For example, the left hand side of the unit would be the same side of the unit that the caps lock and tab keys are located on.



## Top case / Trackpad Removal

Before proceeding, you must first remove:

#### Battery

Begin by removing the 4 small Philips head screws from BOTH sides of the unit in the locations show in the picture. The picture below shows only the left hand side of the unit, however, you must remove the four (in the exact same locations) from the right hand side of the unit as well.



Next, flip the unit over. Remove the five Philips head screws on the back edge of the unit. These will be longer screws. The outer screws are different in shape than the middle three screws. Make sure you put the screws back in the correct locations during reassembly.



Next, remove the 6 screws from inside the battery bay. These are small flat screws. Note that there is a magnet close for the latch close to the edge, and it may pull the screw towards it. If it does, just pull the screw off of the magnet.



Three of the screws you just removed hold the ram shield in place. With those screws removed, simply lift the ram shield up, and then pull it out (towards the latch.) You can now set this part aside until reassembly.



Next, remove the two t8 screws from the locations shown. The one on the left hand side is the shorter of the two screws. (Note this during reassembly.)



Next, you must remove the ram chip in the first slot (if installed). Remove the ram by pushing the clips holding the ram in away from the ram slot.



The ram will pop up, grasp the chip and remove it.



When the ram chip is removed, this will reveal the trackpad connector. (Note there are two versions of this cable. The 1.0GHZ and 1.33 GHZ will have a wider cable. The connector however functions in the same manner. (Be extremely careful with this connector as it is made of a fragile plastic and can break easily if you use too much force.

On the connector, you will notice a tan connector which is soldered to the logic board, and a darker colored brown retainer clip. Use your fingernails to gently push that clip out from either side. It is better if you do not use a tool as you can easily break this piece. The piece should partially slide out as shown in the picture. DO NOT remove the clip entirely as this will damage it. Only push it out slightly as shown in the picture. When you push it out, you are releasing the tension on the trackpad cable so it may be easily removed.



Now, grasp the trackpad cable (the orange cable) and gently pull it out of the connector. It should slide out easily with no resistance.



Next, flip the unit over on its side. Starting at the back corner of the unit work your way around the edge of the unit until the top case comes off.



The case may be difficult to separate in some spots. If this is the case, start from another corner or another spot, and continue working around the unit until the top case is separated on all sides.



The top case should come off easily now, and unless you are replacing the keyboard, you can set aside for reassembly.



## Keyboard Removal

Before proceeding, you must first remove:

#### Battery Top Case / Trackpad

Begin by flipping the top case / trackpad over.





Locate the plastic film holding covering Philips head screws as shown in the picture.

Remove the 10 flat Philips head screws in the locations shown.



Below the keyboard, on the large orange cable, you will see a red wire with a white plastic connector. Gently grasp the cable and slightly wiggle it to free it from the connector.



Next, fold the large orange cable back and towards you. It is held on with a light adhesive.



When you pull back the cable, you will reveal the keyboard connectors. The translucent cable is the actual keyboard cable, and the orange cable is the backlight control for the keyboard. (Note that on the 1.0 and 1.33 and some 1.5 GHZ models, a different type of keyboard is used that does not have the separate backlight cable. Also the keyboard cable on this type of keyboard is curved instead of straight.)

To remove the cables, simply flip up the locking mechanism. (This is the bar on top of the connector.) This bar flips up to remove the keyboard, and after you have the keyboard cables reinstalled, simply flip the connector back down to secure them.

When these cables are removed, you'll be able to remove the keyboard. The keyboard should come out by prying it up from the opposite side (as you would normally look at the keyboard.) If you are having difficulties, you can push a flat tool or screwdriver through the now empty screw holes to push the keyboard out from underneath.



## Display Assembly Removal

Before proceeding, you must first remove:

#### Battery Top Case / Trackpad

Begin by familiarizing yourself with the internal view of the unit. On the left front you'll notice the hard drive, on the front right the optical drive, etc... Most of these connections do not need to be removed to remove the display. Most of the items you will be working with in this step will be located towards the back of the unit.



Begin by locating the display cable. This is the large cable on the right hand side of the unit as shown in the picture. It is usually wrapped in anti static tape and is also usually held down by a single piece of anti static (orange) tape. If there is any tape holding the cable down, remove it.

Next, gently grasp the cable and wiggle it gently to free it from its connector.





Next, on the left hand side of the unit, located the cable going from the modem to the logic board. If any tape is holding the cable down, remove it. Next disconnect the cable from the logic board by using your fingernail or a flat tool and prying up from the underside of the cable.



Pull back the cable, and it will reveal the invert cable connector to the logic board. Grasp the cable and gently wiggle it to remove disconnect it from its logic board connector.



Next, disconnect the orange dc-in cable. This connector is the same style connector at the trackpad ribbon cable connector. Use the same method and precautions for removing this cable.



When the DC-IN cable is free, you will have access to the airport cable connection. Locate a black cable held with a gold metal piece in the middle.



This cable is actually two cables which are joined by the gold connector. Grasp the gold connector from either side, and pull the connector apart. When the cables are separated, they will look as they do in the picture below.



Next, locate the Bluetooth antenna. Disconnect the antenna by using a flat tool and gently prying up from underneath the connector.



On the left hand back of the unit, lift up the bundle of cables coming out of the hinge as shown, and this will reveal a black plastic holder held in place by a single T6 screw. Remove this screw.



Next, remove the 4 T6 screws from the locations shown. You DO NOT need to remove the two t6 screws in the middle, just the two on each side. Also note that when you remove the two screws on the left hand side you may here a pop and the piece may move as this is a tension component. It is completely normal for this to happen on both sides.



Before you remove the remaining screws, you may want to prop up the display from the back so that it does not fall over when you remove the remaining screws.Now, remove the same five T6 screws from the right hand side of the unit.



Next, grasp the display as shown and lift it up and out of the unit. Note that on both clutches the end piece can be removed. Remove these and set them aside so you don't lose them. On reassembly, make sure to put these back in place. They are different, so make sure the groove is in the up position on either side.



### **Display Back Panel Removal**

Before proceeding, you must first remove:

#### Battery Top Case / Trackpad Display Assembly

Note that Apple did not intend on people opening up the display assembly. The most difficult part of working on the display is removing the back case. The back case is held in place by a number of metal clips along the two sides and bottom. You must be careful when performing this procedure as if you apply too much pressure to the wrong location you can break your LCD.

## The edges of the display are sharp, and if you do not wear gloves, you can risk cutting your fingers. Proceed with extreme caution.

Begin by pulling back the clutch on either side of the display to have access to the Philips head screw. While still pulling back, remove this screw from either side of the display.



Next, use a flat tool such as a metal putty knife to begin to separate the case. Begin at the bottom corner (either one) of the display. Insert the putty knife in between the light gray trim and the aluminum back casing.



Position the putty knife as shown and begin to slightly pry back with the putty knife. DO NOT use so much force that you bend the case! Work the knife all the way along the bottom edge of the display.



After working along the bottom of the unit, begin with a side. Use your putty knife to open up the edge of the display enough so that you can see inside the case and locate the first metal latch. It is silver and made of a thin aluminum.

While you still have the putty knife in to hold the case open, use a flat head screwdriver to pop and release the first latch. The first latch will be the most difficult to get to as you have the least amount of room to work with.

After removing the first latch, continue up to the next latch, moving the putty knife further up each time.

There are six latches on each side. There are 3 close to the bottom, and 3 closer to the top. The 3 on the bottom are by far the most difficult to release. It is easier if you remove the bottom 3 latches on one side, and then go to the other side to remove the bottom 3 latches on that side. Then proceed to the top latches.



Note also that as you move along, some of the first latches you worked on will try to latch back. To prevent this, make sure you keep the panel held apart with your putty knife. You can also use a tool such as a screwdriver to act as a spacer.

You will have to leave a spacer of some type in when you finish with one side of the display and start with the next side.



The back panel should now be free from the display assembly.



#### Inverter Board Removal

Before proceeding, you must first remove:

Battery Top Case / Trackpad Display Assembly Display Back Panel

The inverter board is located at the bottom of the display below the LCD panel. Begin by removing any anti-static tape.



Next, grasp the inverter cable (the one coming from the LCD) and pull up on it to lift the inverter board up and out of the clutch cover.



Next, disconnect the cable by grasping the cable and gently wiggling it out of the connector on the inverter board.



On the opposite side of the board is the inverter cable that goes from the board itself to the logic board. Disconnect this cable, and the inverter board can be removed.



#### LCD Panel Removal

Before proceeding, you must first remove:

Battery Top Case / Trackpad Display Assembly Display Back Panel Inverter Board

Begin by removing any anti static tape holding down the display cable as shown in the picture. Then grasp the display cable and gently pull and wiggle it to remove it from the display connector.



On each side of the display (except on the bottom), there are 4 black Philips head screws. Remove these screws from the 3 sides of the unit for a total of 12 screws.



Starting at a top corner (either one) you can begin pulling the LCD away from the front bezel. It is held on with a light adhesive.



The bottom of the lcd is only held on by an adhesive which is a little strong than that of the sides and top. You will have to use a little force to pry it loose.

When you get the LCD assembly completely free, simply route the inverter cable out of the bottom of the front bezel assembly. (There is a hole in the front bezel that the cable must be routed through.

