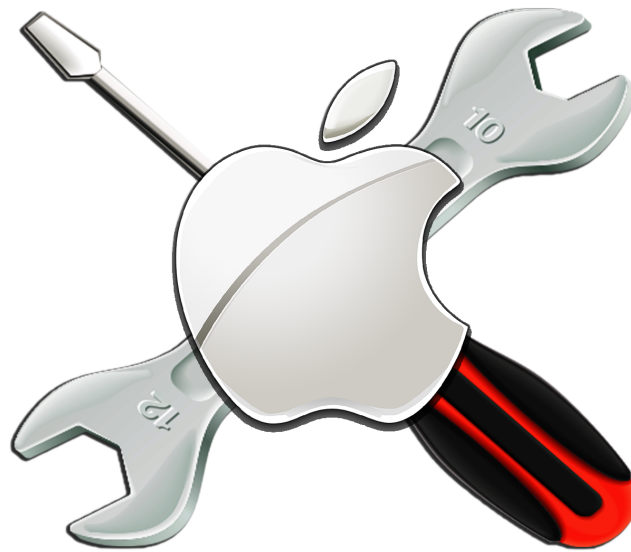# *How To Access Your MacBook Pro*

A Visual Guide by Chad Jordan
August 26*th* 2010

Introduction

In this guide, you will learn the essential process of accessing the inside of a mid-2009 unibody 13" MacBook Pro for upgrades of your most commonly replaced hardware. No matter what some people will tell you, you do not have to be Apple certified to access, repair, or upgrade the components inside of your Apple products. Apple may not want you to access products without taking them to their Genius Bar, but these computers are accessed very similarly to other electronics, with just a few small variants. Apple has never liked the idea of anyone other than their employees opening up their proprietary design, and as such Apple has made a number of its computers quite difficult to get access to over the years. However, the newer MacBook Pros are easier than ever for accessing internal hardware. It should be known that while this process is very straightforward, I would not recommend anyone just opening up a computer (PC or Mac) without having prior experience in maintaining and upgrading computer hardware. I say this because laptops have especially delicate components as well as very tiny screws. However, if you are comfortable with this process, and have some technical experience and or knowledge, hopefully, this guide will serve as a means of helping you through the process of how to maintain your newer MacBook Pro. **This guide will work for unibody models from early 2008 – present.** In this guide, the purpose of me opening up my computer is to swap out my existing hard drive with an upgraded one. You can use this guide to simply become more familiar with your MacBook Pro, or if you need to replace your hard drive, or the hard drive cables, swapping out the optical drive, upgrading your RAM, or replacing your battery! As I make my way through the guide, I will provide photos of the other components as well so it is clear how they are accessed. With all of this in mind, let's begin!

Step 1: Flip Laptop Over
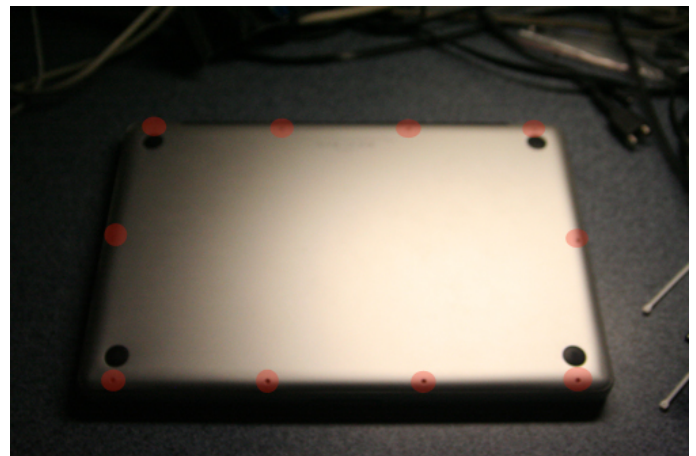
Ensuring that the laptop is powered off, flip it over so the bottom panel is facing up. You will see 10 individual P5 Pentalobe screws. The image on the right signifies the location of each P5 (1.2mm) screws. There will be two or three on the upper right that will be longer than the rest. This is simply due to the design of the chassis. Just keep in mind which ones were longer, and the holes they came out of, and you'll be fine. The newer aluminum unibody macs are really revolutionizing the way technicians access the hardware components in comparison to the earlier iBooks and original MacBooks. I used to work on the iBook G4's and they required lifting the top layer of the keyboard up and out of the chassis, then unscrewing the hard drive from

another layer underneath that. The laptops have become thinner which also means more components are condensed into a much smaller space.

Step 2: Removing the Bottom Panel
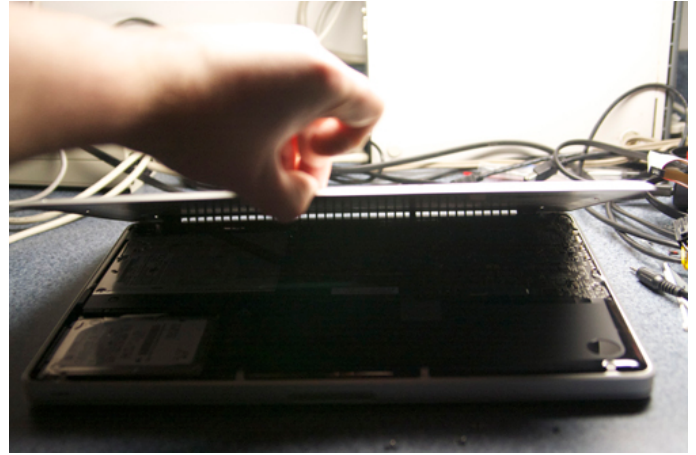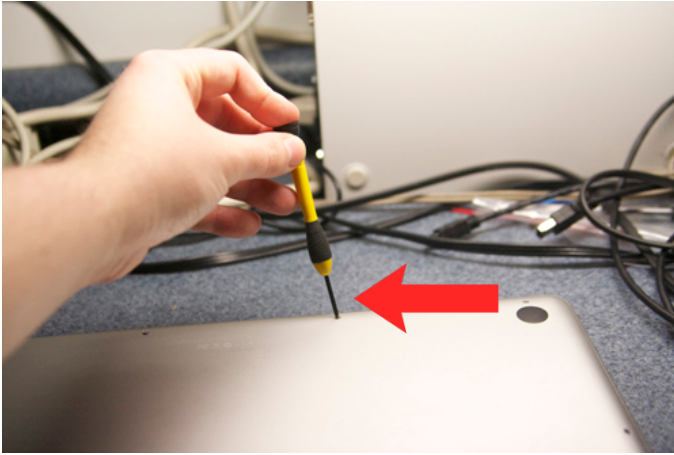
Once all screws have been removed, you should notice the panel begin to move ever so slightly upward, so you can now reach into the small crevice to lift the panel with ease. Unlike previous models, you will not have to worry about any data ribbons or small cables being attached to the bottom panel. You can simply lift it up with no concern.

Step 3: Identifying Internal Components

With the back panel removed everything is conveniently revealed right on the back for swift and easy access. With complete access for the most common components, we see that the hard drive is in the lower left, the optical drive being in the top left, the ram is seated between two tension brackets in the center of computer, and the main laptop battery along the bottom.
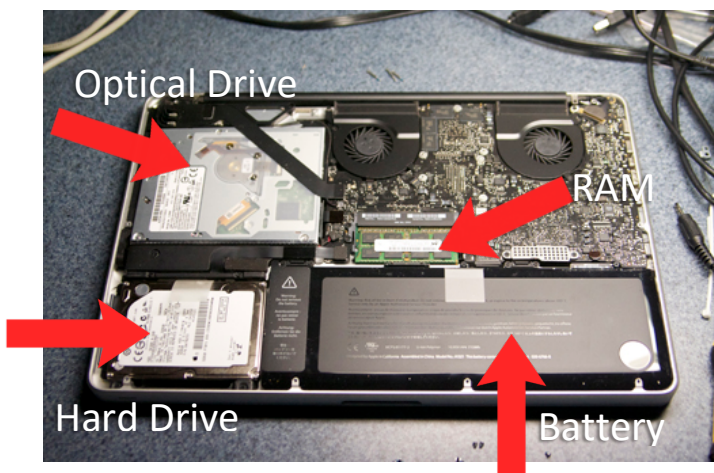

As you observe closely, you'll see the ribbon cables that are attached to both the optical drive and the hard drive. These cables are known as the **A1278** data cables. These cables are an example of a fragile component that you'll want to be very gentle with as you disconnect them.

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For this guide, I'll only be removing the hard drive, but the optical drive works the same way. Notice the small connector that plugs directly into the logic board. These are simply lifted in a gentle, yet firm manner and when you're ready to reconnect them, you simply press down and snap them back into place. Next is identifying and working with the RAM.
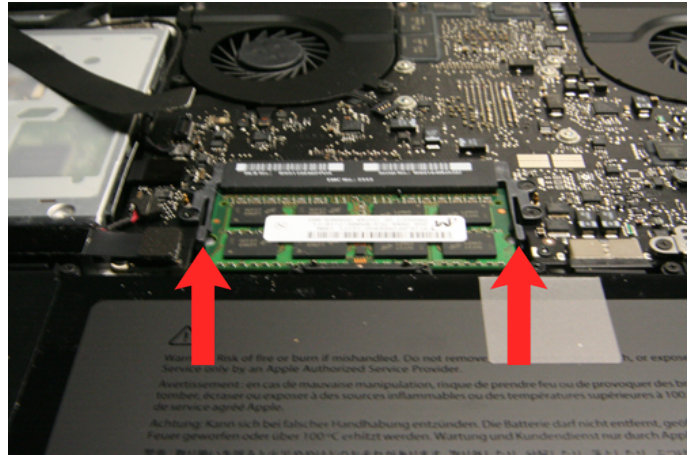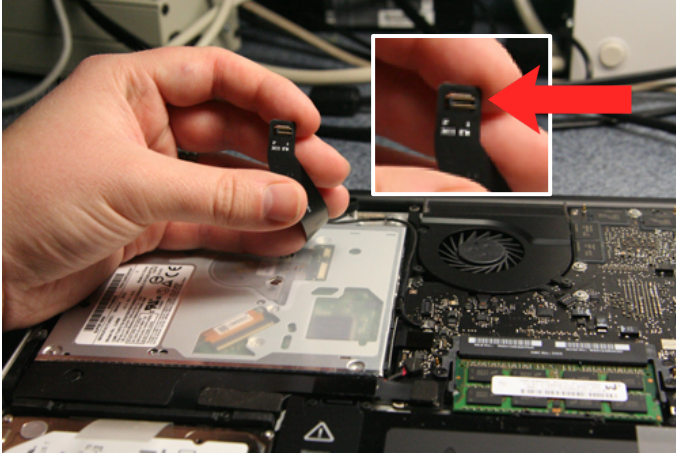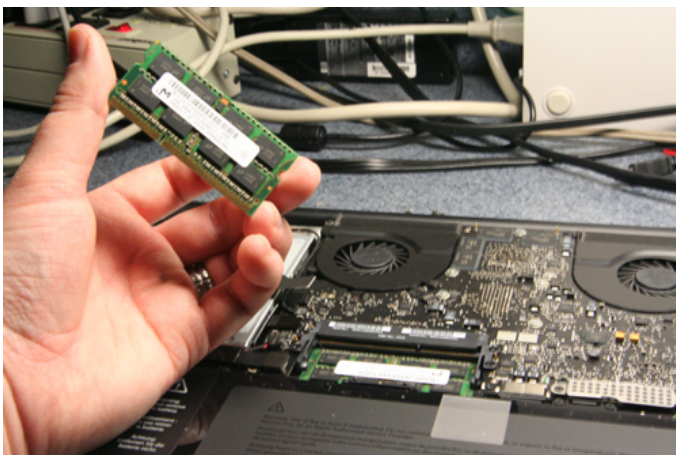

Step 4: Swapping RAM

The mechanism of swapping out RAM works the same way as nearly all other PCs. You just release the two tension brackets on each side of the memory stick by pulling the brackets out in the opposite direction and the RAM will automatically lift right up.
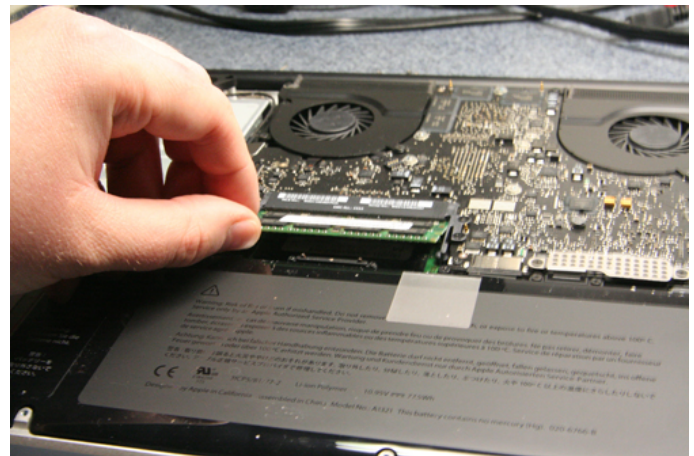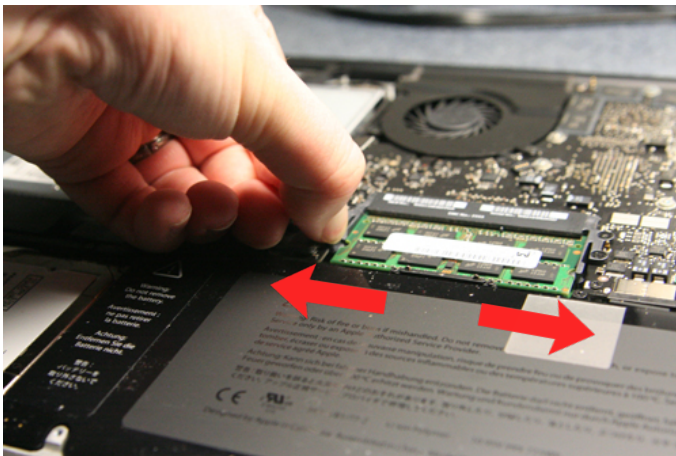

At this point, the RAM is sitting at a 35° angle, and you simply pull it out.


Do the exact same thing for the next stick underneath, and when you're ready, simply reconnect your new sticks by doing the same thing in reverse, ensuring the teeth are properly aligned with the grooves and pressed in, and finally press them down so they snap back into place.

When the tension brackets snap into place, you'll know the memory sticks are properly seated again. Next, it's time to swap out the hard drive.
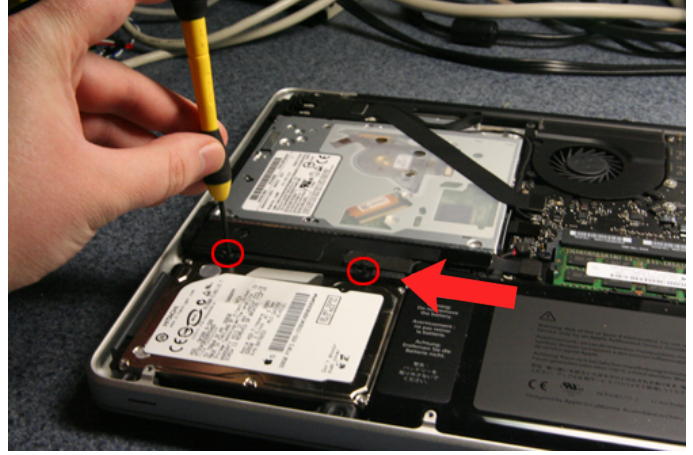
Step 5: Removing the Hard Drive

The **hard drive bracket holder caddy** is a nice change of pace from the bracket sleds you may have seen in hundreds of previous PC laptops over the years. This piece shown below holds the hard drive in place with two Phillips-head screws. Once those screws are loose enough, you can lift the bracket caddy right out. At this point, the A1278 data ribbon is connected to the hard
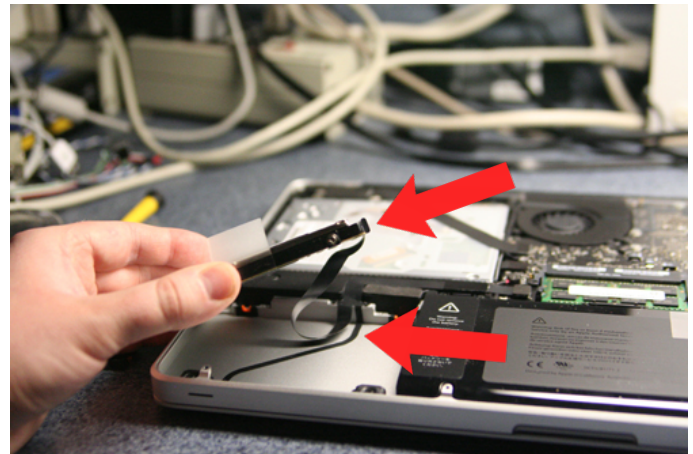

drive via the SATA connector. If you've never plugged or unplugged a SATA connector to the teeth of a SATA hard drive, then you know that you can simply slide it right off, freeing the hard drive from the computer.

Important Note:
Per the above picture on the right, be careful not to pull the hard drive up too fast from the laptop as it could damage the ribbon cable. If you are wanting to replace the A1278 ribbon cable for the hard drive, you can gently lift it up as I did in the earlier picture with the optical drive cable from the logic board. This component however is adhered to the aluminum chassis with an adhesive that you can slowly peel off and reconnect the new cable afterward.

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Step 6: Replacing the Battery

Over time, the battery is another component that will inevitably require replacement after 1,200 or so cycles of recharging the cells. To access the battery, there are three screws: two Phillips heads, and one tri-wing screw. The tri-wing screw is not a common screw to find in everyday electronics, and Apple counts on that to make it more difficult for people who are thinking of replacing the battery. As you probably put two and two together, you will need a **tri-wing screwdriver** in order to remove the tri-wing screw. These are readily available on EBay and very inexpensive. Once you remove all three screws, simply lift up on the plastic flap attached to the battery, and the battery will come right out. Your battery will last for two to three years on average before any replacement is required, as long as you only make sure to purchase a genuine Apple laptop battery. That's not a sales pitch to help Apple, it's just the honest truth based on my own experience. In order to monitor your battery's lifespan, simply go to **About This Mac > System Report > Power** to find the cycle count under Battery Information.
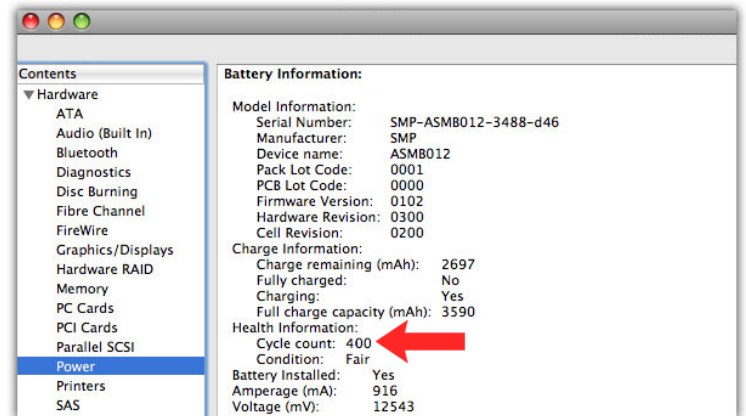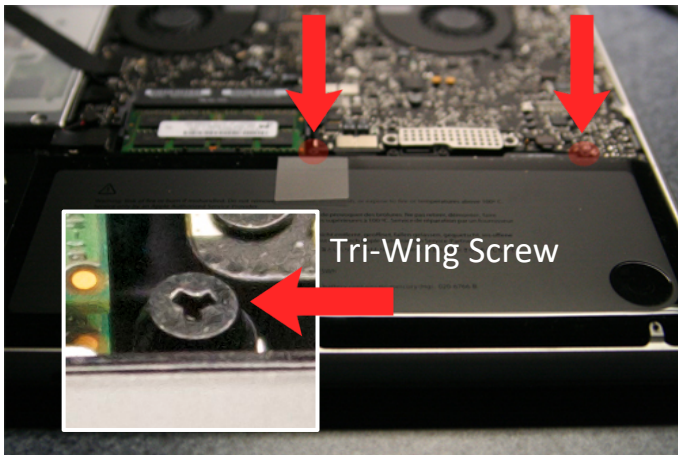
Conclusion:

This concludes my technical guide on how to access the most common components in your unibody MacBook Pro. I hope it successfully assisted any potential readers who wanted to learn how to become more familiar with MacBook's. Everything I learned about this process was fueled by the desire to explore my own MacBook. All images used in this guide were captured by me and the knowledge applied was from years of exposure and experience with computer technology. If you have any questions about this guide or any other general inquiries, you can email me at technologicguy@gmail.com