

## Video – Replace Laptop Components (13 min)

In this video, I'm going to demonstrate how to remove your RAM memory modules from your laptop as well as how to remove and replace your laptop hard drive. In order to do this, the first thing that you're going to want to do is go to your laptop manufacturer's website and download the maintenance manual for your particular make and model of laptop. I cannot stress this enough. You need the maintenance manual documentation if you plan on repairing or replacing units inside of your laptop. Beyond the maintenance manual, you're going to need some Phillips-head screwdrivers, a flathead screwdriver, a set of torques wrenches come in handy, an anti-static wrist strap, some reading glasses with 200% zoom to zoom in small characters, screws, and documentation on the motherboard, as well as possibly needing a flashlight in case there's not enough light.

Now to remove the RAM memory modules, the first thing that I'm going to need to do is make sure that the laptop is powered off, which it is, then I will flip it over and remove the battery. Now that the battery is removed, I can easily get to the first SO-DIMM memory module location which is located right here. Now, I'll remove this using a Phillips-head screwdriver and then using the flathead screwdriver, pop it open. Okay, there is the SO-DIMM RAM memory module. What I'll do is pop open the tabs. The RAM is removed diagonally at an angle. Now I can replace it with a new memory module and then replace the cover. Now most laptops have slots for two memory modules. The other memory module on this laptop is underneath the keyboard. To access it, I'm going to need to remove the keyboard.

Now for my particular make and model of laptop, there are three screws on the bottom of the laptop that hold the keyboard in place. So the first thing I'm going to need to do is I'm going to need to remove these screws. They're easily identifiable by a small icon embedded into the plastic of the case. So I can see one here. So I'll unscrew this. I think that's enough. The other one is here right in the middle. So I can unscrew that. And another one here. And I'll unscrew that. Now all I need to do is flip over the laptop, open it up, and to remove the keyboard there are four tabs here, here, here, and here. Now, how did I know that? I knew that by reading the maintenance manual for my laptop. Now I can lift up the keyboard and pull it out. Now I don't want to yank it off because there is a ribbon cable underneath attached to the motherboard. To remove this ribbon cable, I'll need to pull up on the tabs here and I need to be careful not to break the ribbon cable. Let's see if I can do it with my fingertips. And now the ribbon cable is easily detached. Now that's a flat ribbon cable and they're delicate so you want to make sure not to break them or tear them. With the keyboard off, we can look inside the laptop. You can see the CMOS battery here. Here is the second RAM memory module here. So all I need to do is pop open the tabs, the memory stick pops up, and then remove it at an angle. I'll take it and replace it with my new one. I'll have to orient it correctly according to the notch and then push it down to secure it into place. This would be a good time to possibly use some compressed gas and blow out my fan unit here. You can see the fan unit attached to the cooling unit, the CPU is underneath the cooling unit here.

Now I'll need to replace the keyboard. To do this, I'll make sure that this tab is loose and then I'll push this over and slide it very carefully into place, pushing down the tab to lock the ribbon into place. Okay, it's secure so I can flip this over, slide it in on one side, push it down, and secure the tabs. Next, I'll need to turn it over and tighten the screws back into the bottom of the keyboard holding it in place. Okay, done. The keyboard was removed and the RAM was replaced so I removed and replaced both sticks of RAM and now I'll need to remove and replace the hard drive.

For the hard drive, the hard drive on this laptop is located here so first thing I'll need to do is unscrew these and just by loosening them, it should pop open. I can use the flathead to help me pop it open. Make sure that these are unscrewed enough. There we go. The cover is off and there is my hard drive. The hard drive is secured with a screw here so I'll need to remove that. I'll use the flathead. The screw is actually a torques screw but it has the ability to be removed with a flathead screwdriver as well. Now, all I need to do is grab the tab, slide it over which disconnects the SATA hard drive and now I can remove it. Now to remove the hard drive, I'll actually need to remove it from this casing by unscrewing it here, here, here and here, and then taking the new hard drive and attaching it to this casing, and then replacing it.

Now I don't actually have another hard drive, so I'll just put it back. To put it back, I need to make sure that the SATA power and data connectors are oriented correctly. I'll slide it in to make contact, and then I want to make sure to secure it here. For that I need to use the flathead. Okay, now it's secure and it won't slide out and disconnect while I'm running it. I'll put the cover back on. Sliding it in the right side first is important. Then fasten the screws with my Phillips-head screwdriver.

A couple of other easily replaceable items would be my wireless NIC located here. To remove the wireless NIC, I'll open the screws up or loosen the screws, pop off the cover, and you can see the internal wireless NIC located right here. This is my network interface card. Notice the two antennas connecting into the card. If I wanted to replace this piece, I'd need to unscrew it here, here, and then pop out the antennas and then I could replace it with a new one and then make sure to secure in, push in the antenna leads, otherwise they wouldn't be connected to the antenna which runs through by the monitor.

Another easily replaceable item is the Bluetooth adapter here and my DVD drive here. For the DVD drive, I think you'll like this. All I need to do is remove the screw. So I'll remove this screw. And in this particular laptop, the DVD drive was replaced. I replaced my DVD burner with a special adapter tray which allows me to put in a second hard drive into my laptop. You can see here, here is a second laptop hard drive which connects in to the SATA and then the SATA connectors go right in where in place of the DVD burner. So that's pretty neat. It's a little special thing that I decided to do with my laptop. And we'll replace the cover for the wireless nic. And replace the battery. And we're back in action.