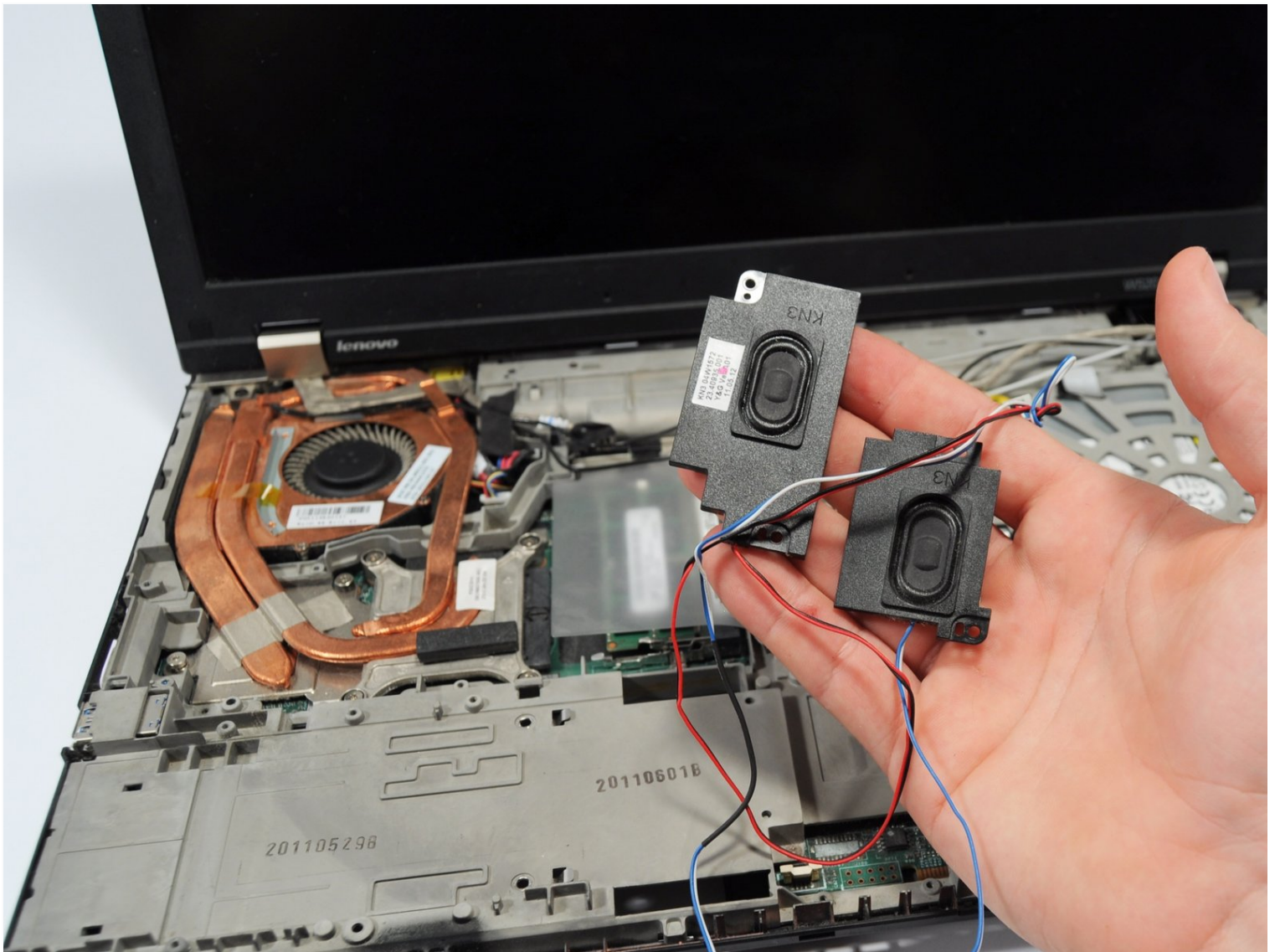




# Lenovo ThinkPad W520 Speaker Replacement

This guide will show you how to replace broken...

Written By: Andrew Schneider



# INTRODUCTION

This guide will show you how to replace broken speakers in a ThinkPad W520. Along the way, you will have a chance to upgrade or replace your RAM.

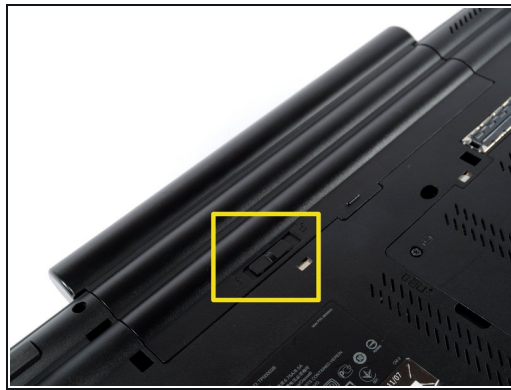
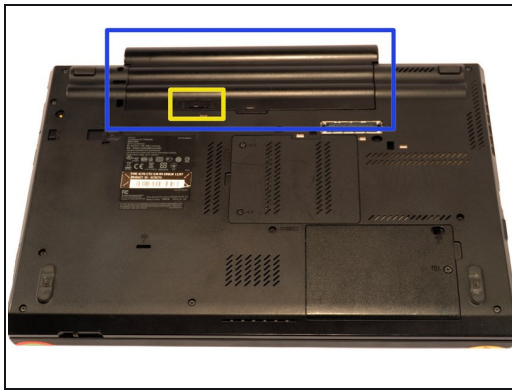
## TOOLS:


Spudger (1)

Phillips #0 Screwdriver (1)

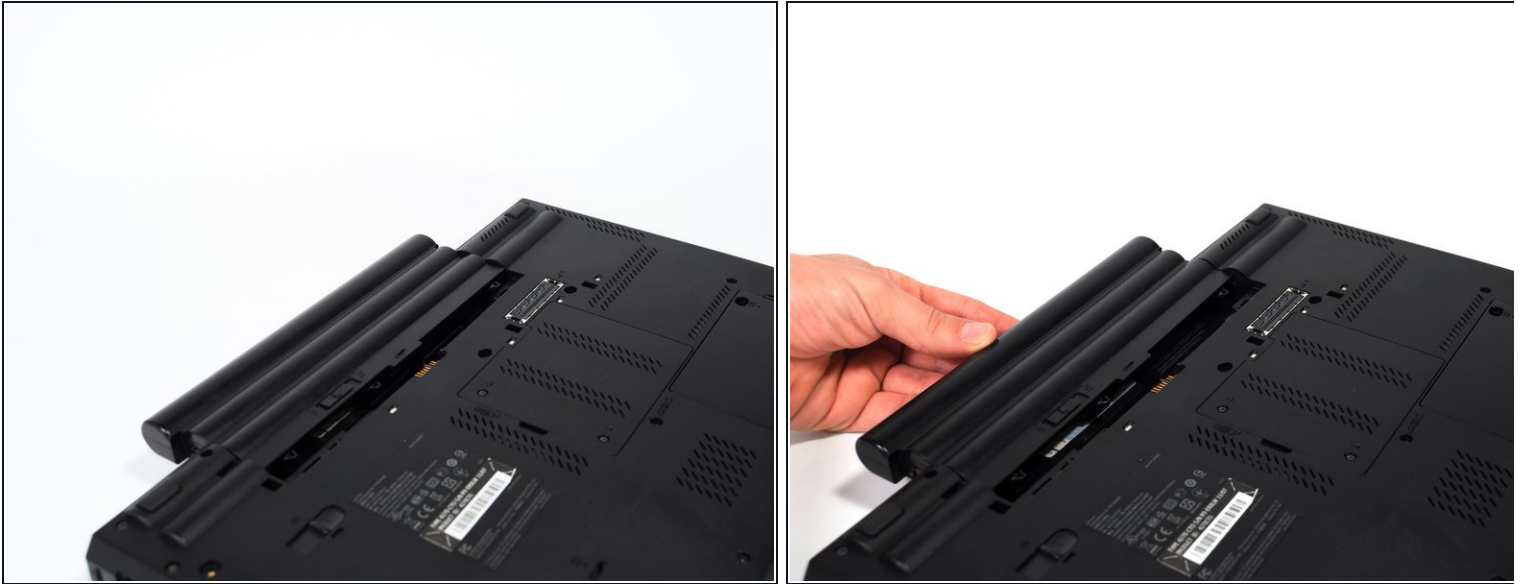
iFixit Opening Tool (1)

## Step 1 — Battery



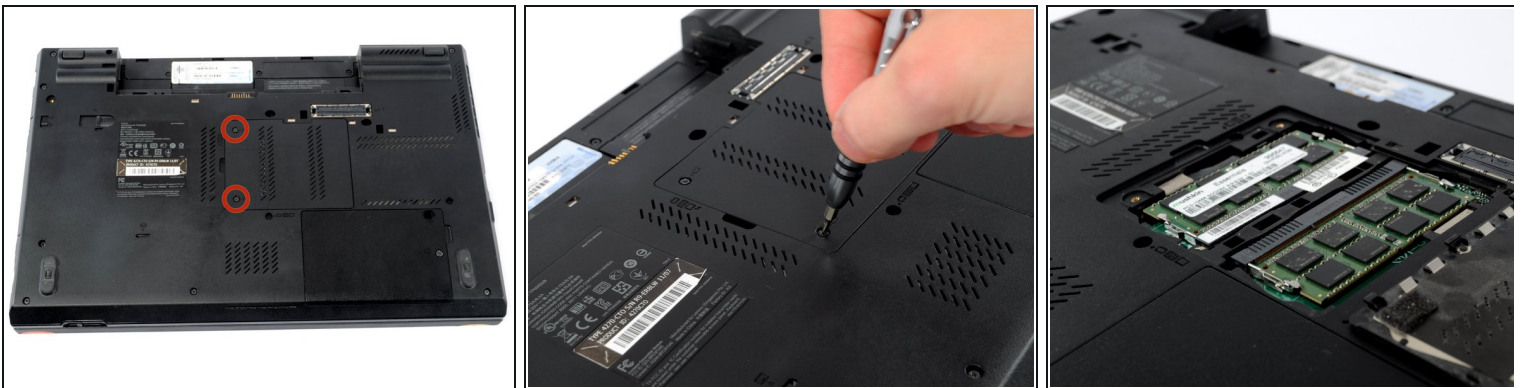
-  Make sure your laptop is unplugged and powered off.
- Use your left hand and push the unlock switch all the way to the right.
- Use your right hand to push the battery.

## Step 2



- Slide the battery out.

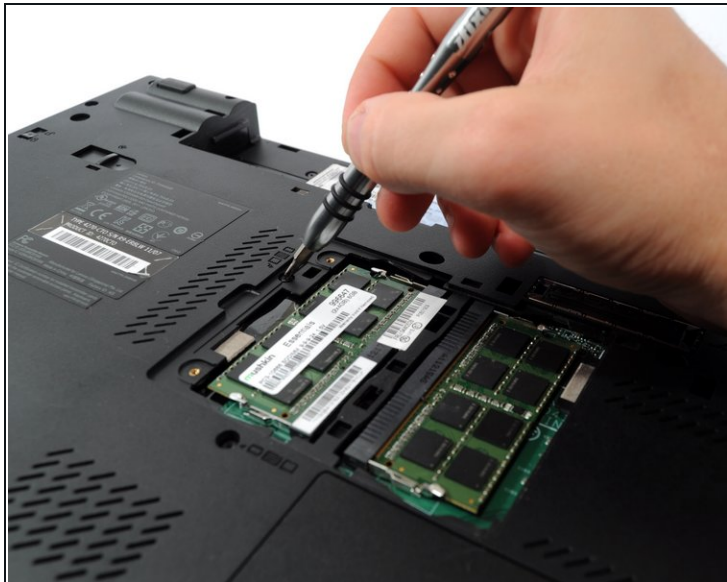
## Step 3 — Bottom RAM compartment



- Unscrew the two Phillips #0 screws.
  - The screws remain attached to the cover.
- Lift up and remove the cover.
- ⓘ Here is your first opportunity to modify your RAM configuration. This compartment can hold two DDR3 SDRAM sticks. You can install up to 8 GB sticks in each slot, allowing for an expansion of 16 GB of RAM.
  - If your laptop has a dual-core processor any RAM installed here won't function.

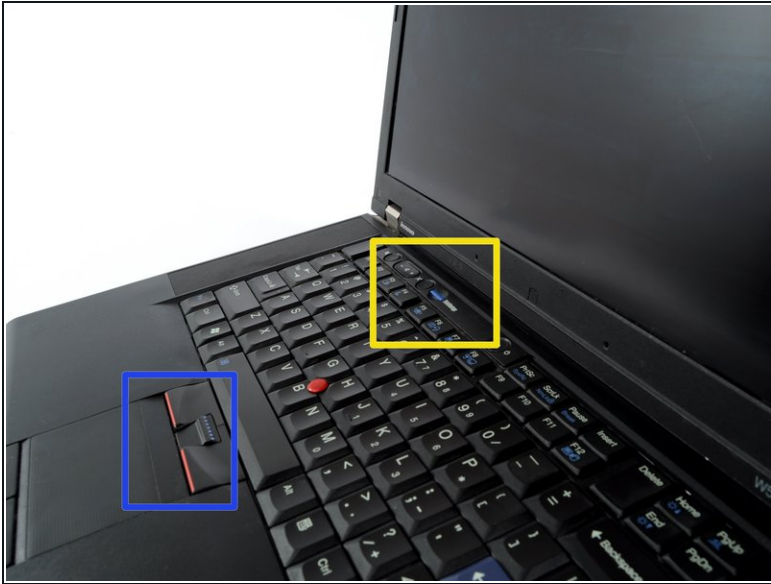


## Step 4



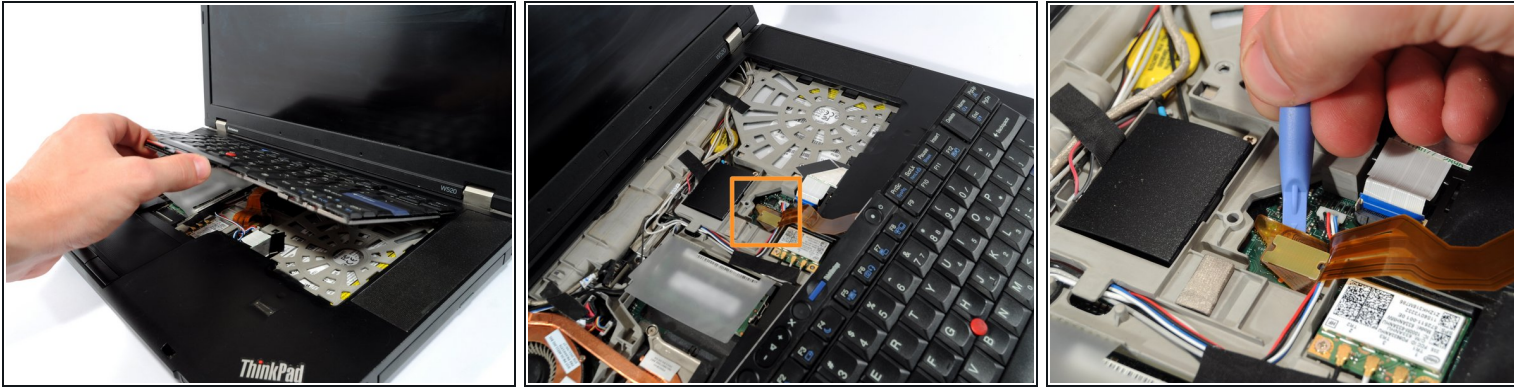
- Remove the two 13.75 mm Phillips #0 screws.
- These screws hold the keyboard in place.

## Step 5 — Removing the keyboard



- Flip your laptop over and open the screen.
- ⓘ This step requires both hands.
  - With your left thumb, grip the keyboard right below the blue "ThinkVantage" button. Use your other fingers as support only.
  - Using a spudger with your right hand, put pressure on one of the upper mouse buttons.
- After your hands are in place, gently but firmly push towards the screen. The keyboard should move about 2 mm towards the screen.

## Step 6



- Gently lift the keyboard up and away from the screen.

**⚠ Don't pull the keyboard up quickly, there is a connecting ribbon that could be damaged.**

- Using a plastic opening tool, remove the keyboard connecting ribbon from the motherboard.

## Step 7 — Top RAM compartment



**i** Here is your second chance to modify your RAM configuration. As before, there are two DDR3 SDRAM slots. Here they are stacked on each other, not side by side like the bottom. You may install up to 8 GB in each slot, allowing for 16 GB of RAM total.

- If your computer has a dual-core processor, these are the RAM slots that will work.



## Step 8 — Removing the hard drive



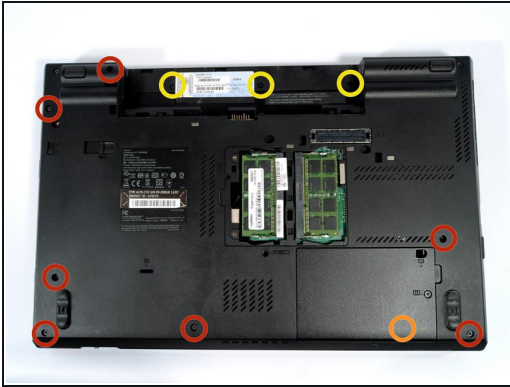
- Unscrew the Phillips #0 screw securing the hard drive cover.
  - The screw does not detach from the cover.
- Lift up and remove the cover.

## Step 9



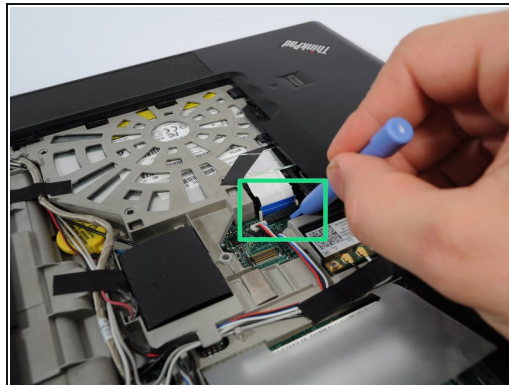
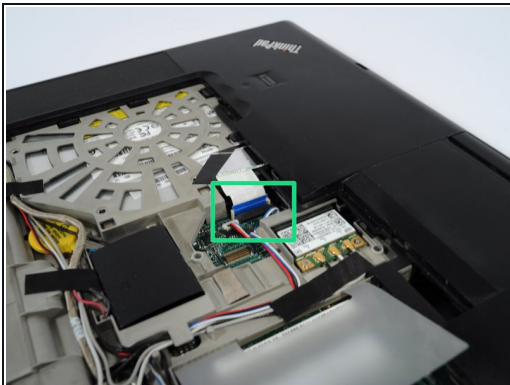
- Pull the black tab that is attached to the hard drive up and away from the laptop.
- The hard drive should easily slide out.

## Step 10 — Get your screwdriver ready!



- Remove the seven 13.75 mm Phillips #0 screws from the case.
  - Remove the 3.75 mm Phillips #0 screw from below where the hard drive used to be.
  - Remove the three 3.75 mm Phillips #0 screws from below where the battery used to be.
- ☑ Be careful with where you put your screws!

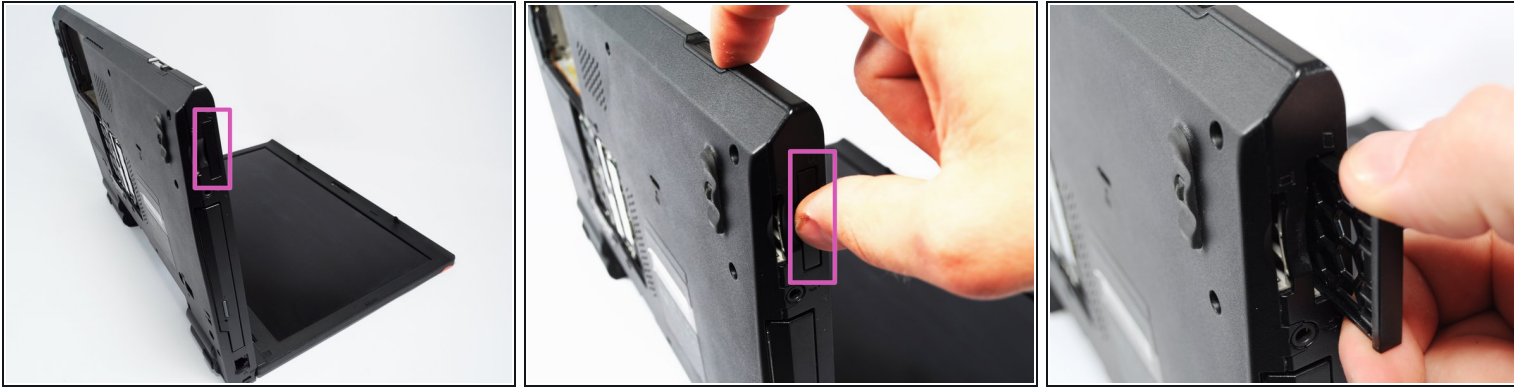
## Step 11 — Trackpad ribbon cable



- Before the top casing can be removed, there are two more things to do.
- First, the ribbon cable that connects the trackpad to the motherboard needs to be removed.
  - ❗ A fingerprint scanner is optional on this laptop - mine has it - and it is connected to the motherboard on the same ribbon as the trackpad.
- Use a plastic opening tool to lift up the ZIF connector.
- Pull the cable out of the connector.



## Step 12 — ExpressCard 34 Dummy



- The last thing to do before removing the top casing is taking out the dummy card in the ExpressCard 34 slot.
  - Flip the laptop so its resting on the back of the screen.
  - Using your thumb, press the plastic ExpressCard dummy into the case until you hear a click.
  - Let go and then pull out the card.
- ❗ If you have a real ExpressCard in the slot, this procedure is the same.

## Step 13 — Removing the top case



- Using a spudger, start about an inch from the very left of the laptop.
- Press the spudger into the edge of the casing.
- Slide the spudger to your right, along the edge of the casing.

## Step 14



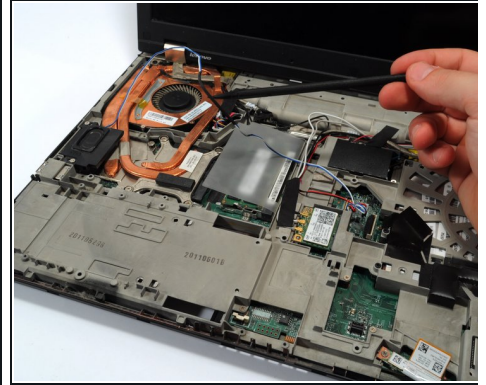
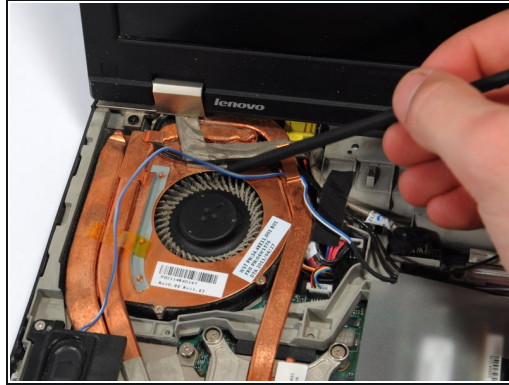
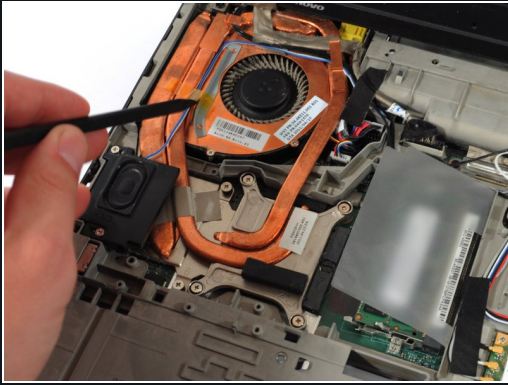
- Once you reach the screen release mechanism, remove the spudger.
- Put the spudger on the edge of the casing, about an inch from the very right of the laptop.
  - Gently push until you hear the clip release.
- Set the laptop down on its base.
  - Slowly pull up the casing with both hands at the corners. There should be a few more clips that release.
- Fully remove the casing.

## Step 15 — Plan of attack



- Here you can see the left speaker, the right speaker, and the connector that both speakers attach to.
  - Left speaker
  - Right Speaker
  - Connector
- We will start with the left speaker.

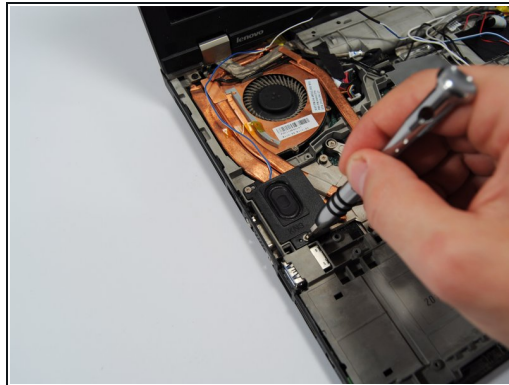
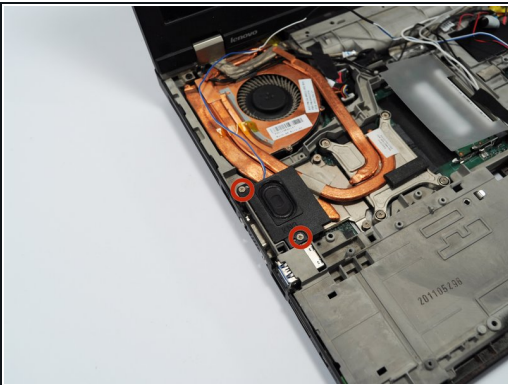
## Step 16 — Left Speaker



- The left speaker is connected with the blue and white wire. The two wires should be stuck to each other.
- Using a spudger and your hand as needed, gently remove the wire from all constraints.

⚠ Be careful not to damage any other wires. Do not dramatically bend any of the wires.

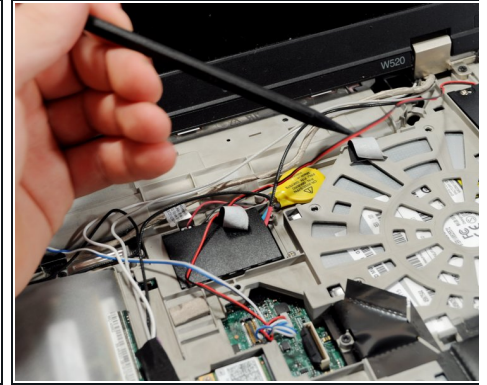
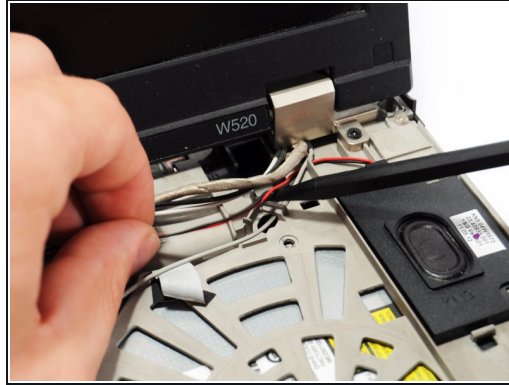
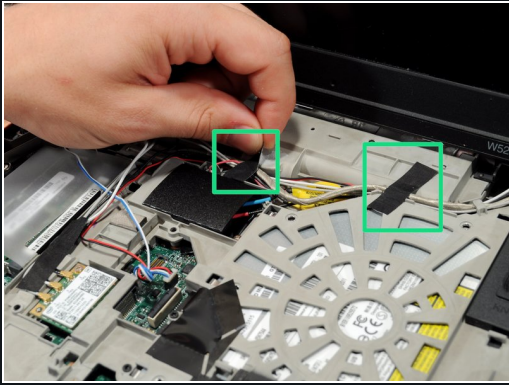
## Step 17



- Remove the two 3.5 mm Phillips #0 screws from the speaker.
- Remove the speaker.



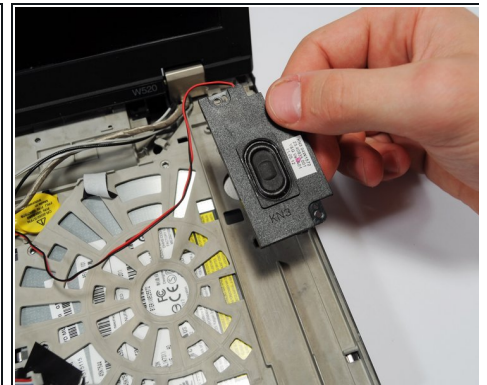
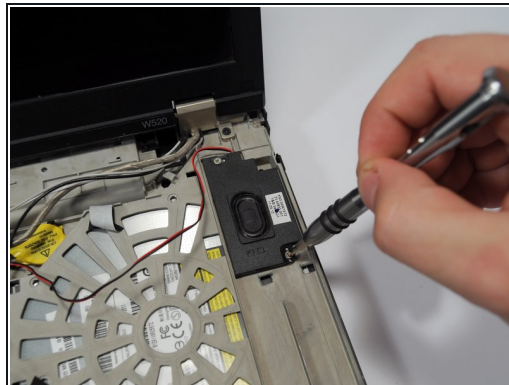
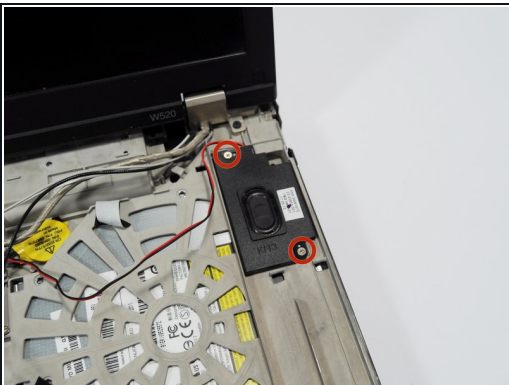
## Step 18 — Right Speaker



- The right speaker is connected with the black and red wires. The black and red wires should be stuck together.
- First lift up the two pieces of black tape, but don't fully remove them.
- Using a spudger and your hand as needed, gently free the black and red wire from all constraints.

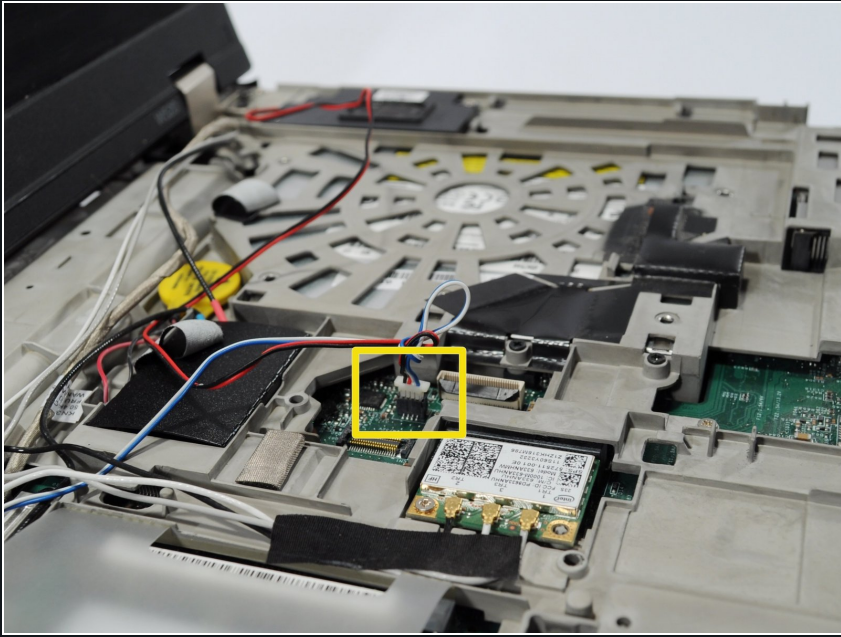
⚠ Be careful not to damage any other wires. Do not dramatically bend any of the wires.

## Step 19



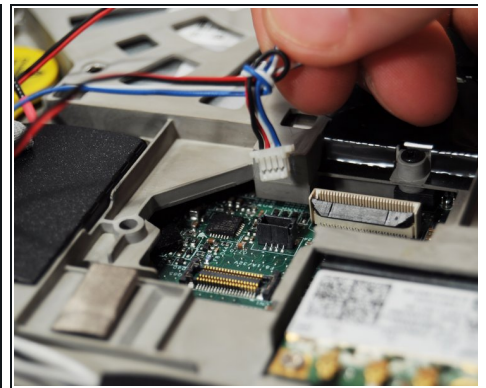
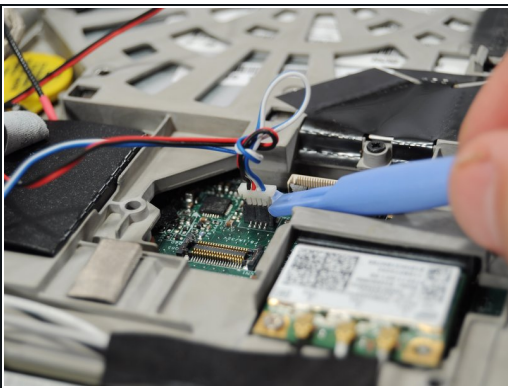
- Remove the two 3.5 mm Phillips #0 screws.
- Remove the speaker.

## Step 20 — Speaker connector



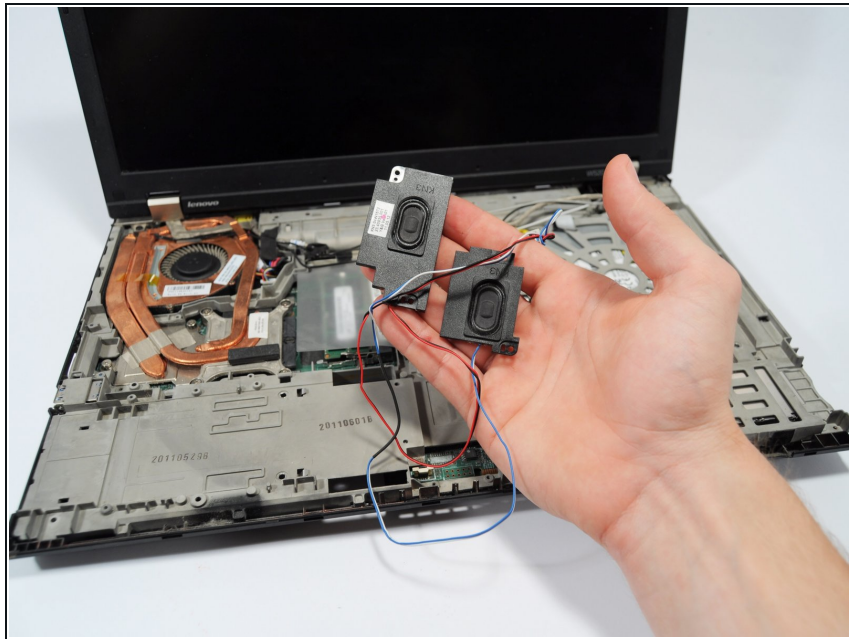
- Now, we must remove the speaker wire connector from the motherboard.

## Step 21



- Using a plastic opening tool, gently pry up on the right side of the connector.
- Then repeat on the left side.
- Repeat process until the connector comes off.

## Step 22 — Removing the speakers



- Pass the speakers under any other wires that are restricting them.
- The speakers are now free to be removed and replaced.

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