



Laptop

This is a general guide for most laptops.

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INTRODUCTION

Source: Dismantling Guide for IT Equipment, which was elaborated within the SRI project and financially supported by SECO and UNIDO, June 2015



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Laptops

A large variety of different laptop models exist and disassembly steps can thus vary a lot according to brand and model. A laptop usually consists of the following subcomponents: LCD screen, hard disk drive, battery, PWBs, compact disk drive, cables, keyboard, etc. To separate the subcomponents of a laptop computer can be tricky and laborious.

Dismantling of subcomponents does not always make sense as it is highly labor-intensive and can be processed by appropriate industries. However, the removal of hazardous substances (e.g. capacitors on PWBs) is required.

Health & Safety

Workers should wear aprons, gloves and protective shoes.

The critical step when disassembling a laptop is the removal of the cold cathode fluorescent lamps (CCFL). Avoid the damage of the CCFL during the removal of the LCD screen from the laptop body. Once the CCFLs are separated, they must immediately be put into an adequate recipient. As these lamps contain mercury, wearing an appropriate mask is recommended.

Note: As the construction of laptops can differ a lot, the dismantling steps mentioned below can vary in their order. However, the described steps show what parts the removal should focus on.



TOOLS:

- Several screwdrivers (T1) (1)
- Flathead Screwdriver (T2) (1)
- Side cutter (T4) (1)
- Pliers (T5) (1)
- Industrial Scissors (T6) (1)
- Cutter (T7) (1)
- Power Screw Driver (T8) (1)
- Industrial scale (T9) (1)
- Robust gloves (P1) (1)
- Protective shoes (P4) (1)
- Apron (P5) (1)

Step 1 — Laptop



- Remove the battery. Usually, no tools are needed to remove it.
- Remove all cards on the bottom (memory module, wireless card, modem card, etc.).

Step 2



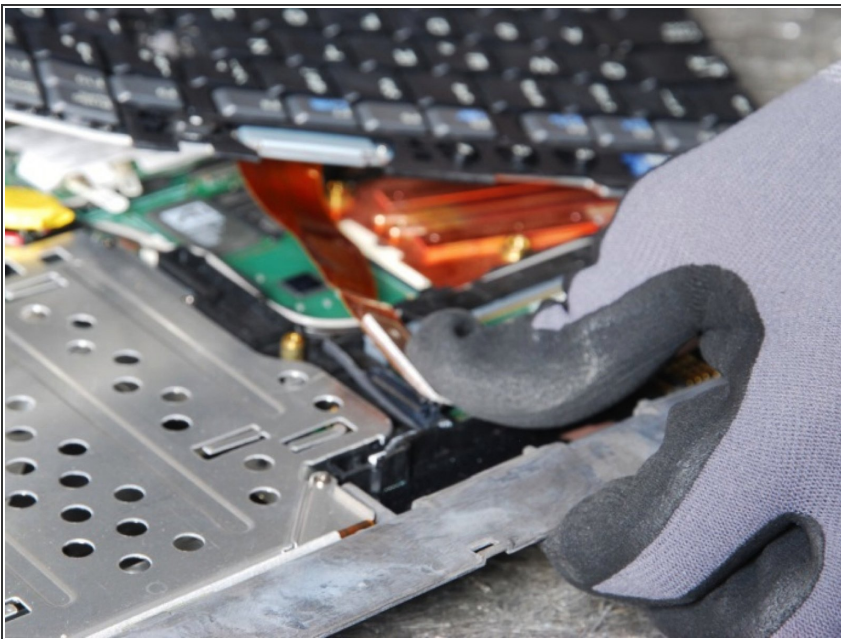
- Remove all drives (HDD, CDD, etc.). If you cannot find the HDD, it is hidden most likely under the keyboard or under the top cover assembly. If you cannot find securing screws for the optical drive on the bottom, they are most likely under the keyboard.

Step 3



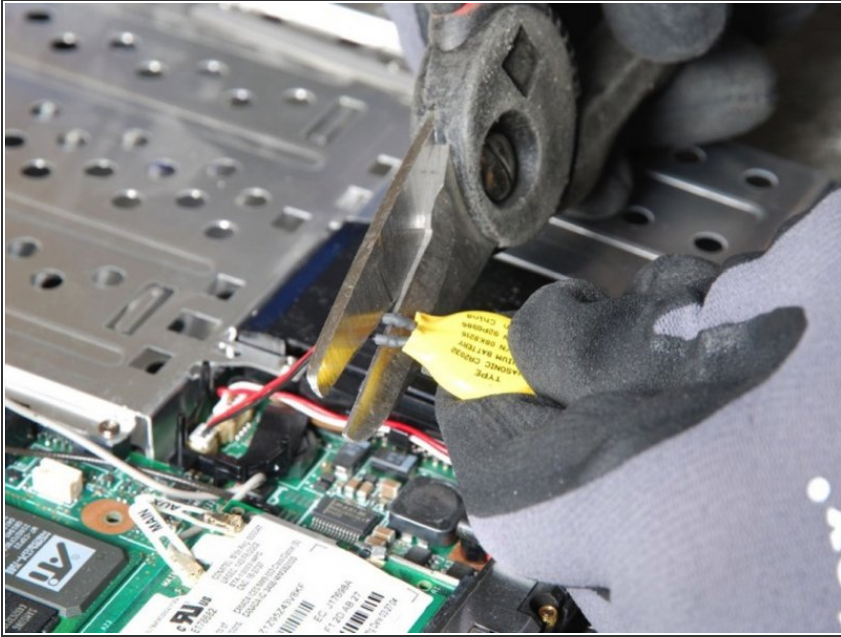
- Remove all screws on the bottom of the laptop.

Step 4



- Remove the keyboard securing strip and remove the keyboard.

Step 5



- Remove the mainboard battery.

Step 6



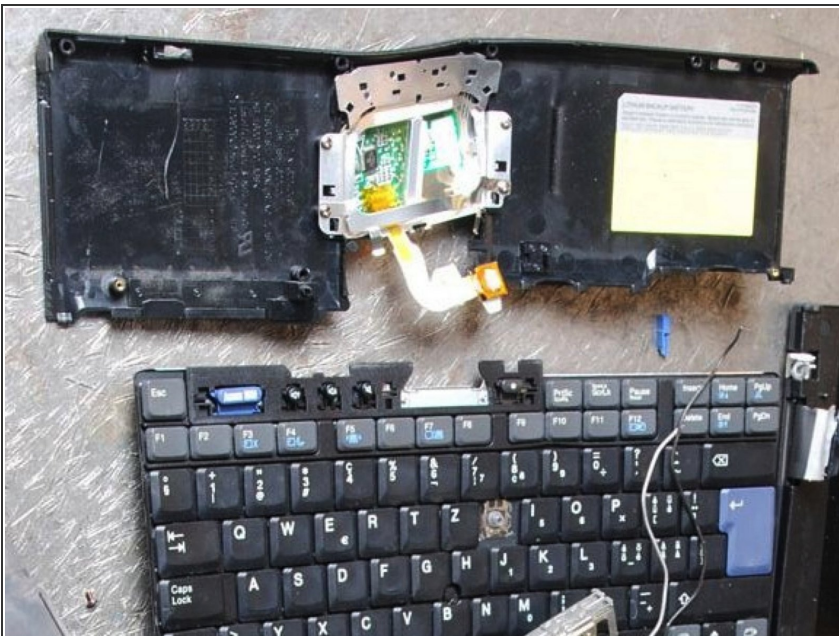
- Remove all screws under the keyboard and cut/disconnect all cables.

Step 7



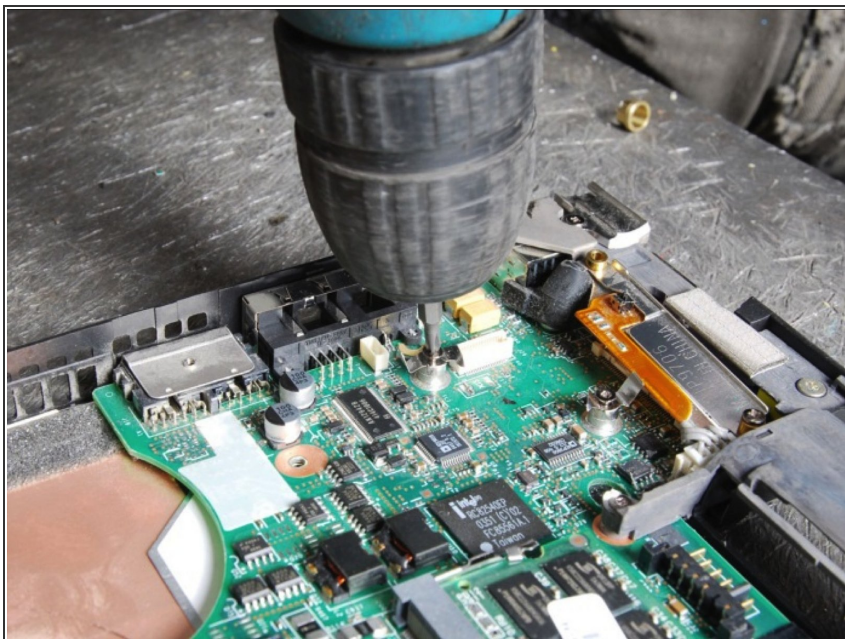
- Remove all screws securing the display assembly. Lift the LCD display off the base.
- ⓘ If this is not possible, break the display off the main body (e.g. by hyper-extending the hinges). Go on along instructions.
- ⚠ Take care the LCD backlights won't get damaged!

Step 8



- Lift the top cover assembly off the base and put it to the appropriate fraction.

Step 9



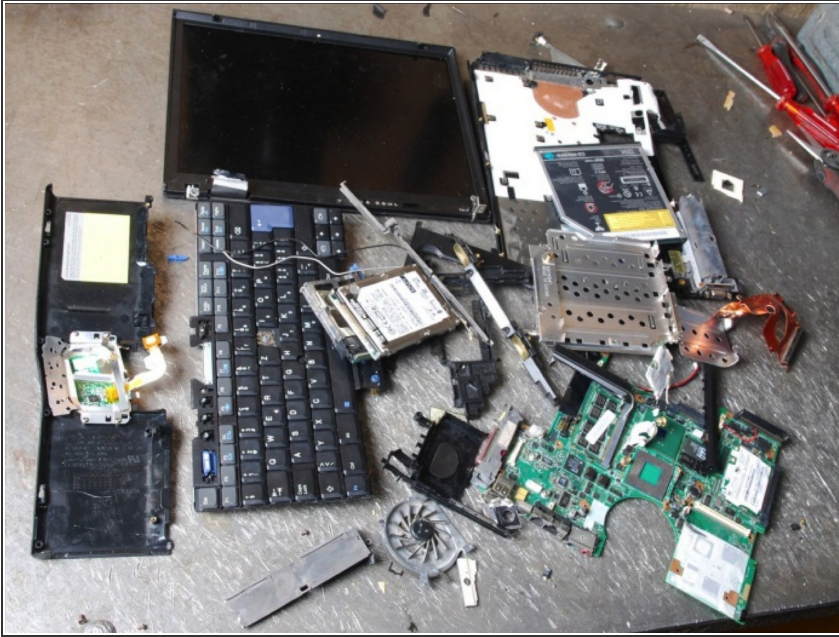
- Remove all screws securing the system board, the power board, the video board, etc. Disconnect all cables, connecting the boards.

Step 10



- Remove all boards and remove the CPU (motherboard).

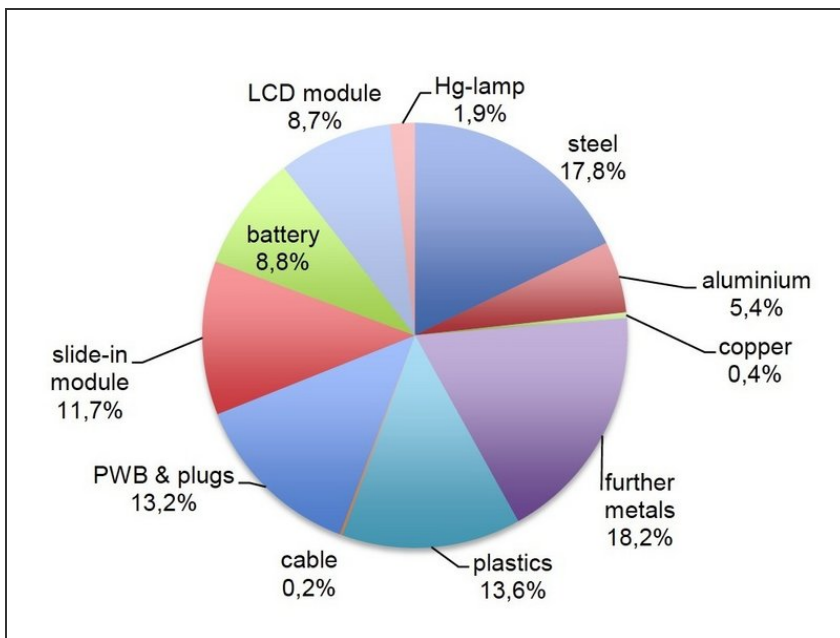
Step 11



- Separate the remaining materials according to their type and go on with the appropriate data sheet (e.g. aluminium, ferrous metals, plastic, further PWBs, etc.).

⚠ Make sure the plastic parts are completely free of metal pieces.

Step 12



- In average, a laptop weights 3.5 kg. The graph shows the share by weight of the recoverable material (ecoinvent 2010).
- Output Fractions: [LCD-Modules](#), [Hg-Lamps](#), [Aluminium](#), [Copper](#), [Ferrous Scrap](#), [Mixed Plastics](#), [Cable](#), [Printed Wiring Boards](#), slide-in module, [Batteries](#)