Philips BTM 2310/12 CD tray randomly opens / closes

A defective pushbutton on the Philips BTM 2310/12 causes random open/close of the CD tray

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INTRODUCTION

Looking for answers to the problem of a randomly opening CD-tray on Philips equipment, I also tried the several times described fix on the open/close switch. But the switch was fine. So digging deeper I discovered the interresting way of encoding different pushbuttons used in this device and the problems that arise with it.
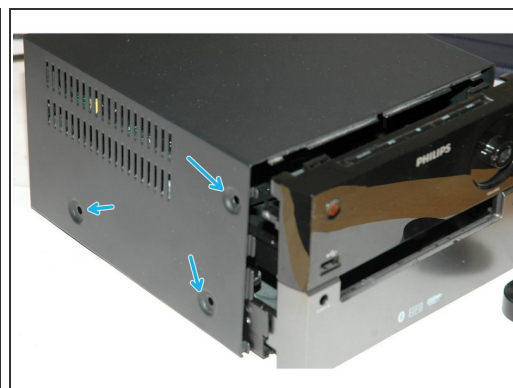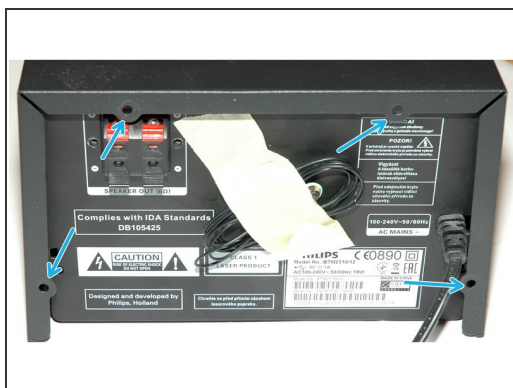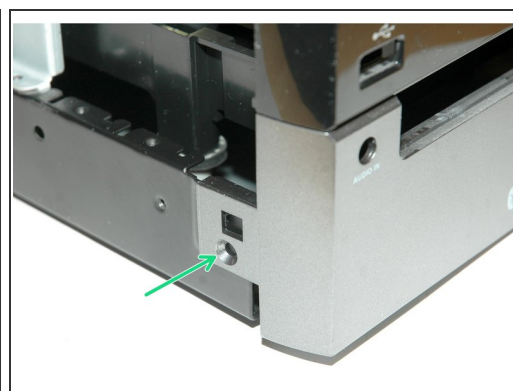
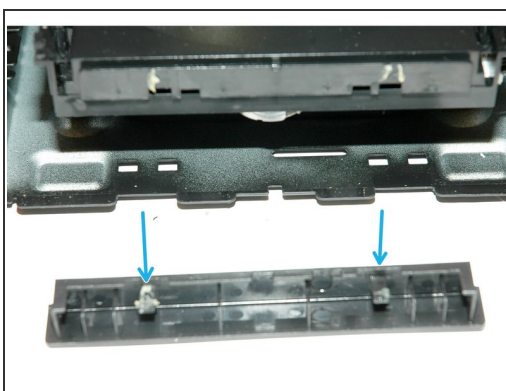https://www.philips.de/c-p/BTM2310_12/mi...

TOOLS:

- Phillips #00 Screwdriver (1)
- Soldering Iron (1)
- Desoldering Braid (1)

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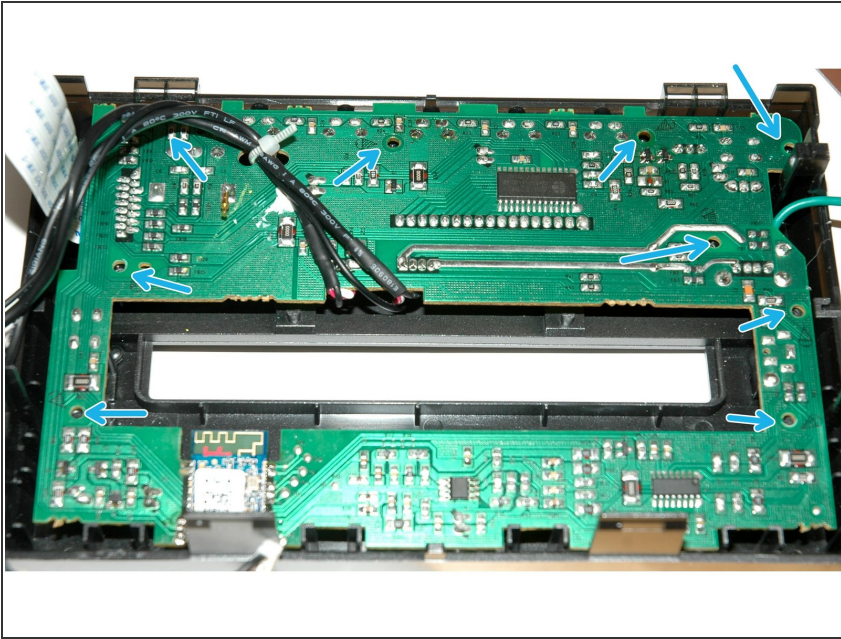
Step 1 — Open

- Remove screws
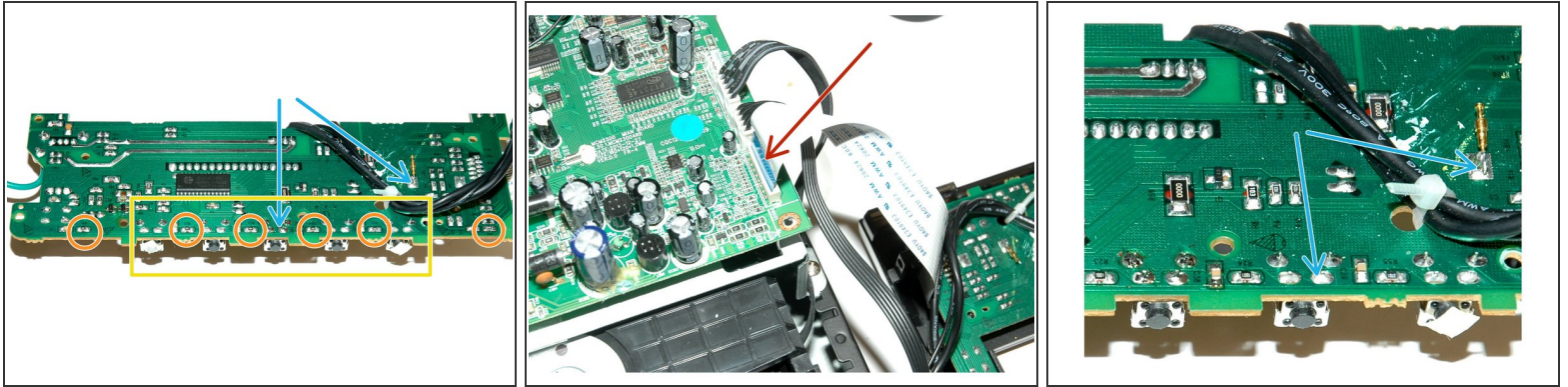
Step 2 — Open
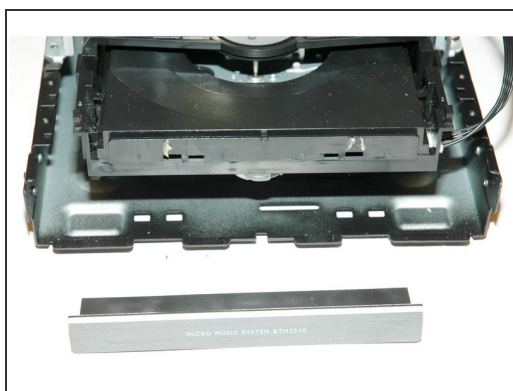
- Open tray and unclip front of tray

- There are two hooks and some glue

- Close tray

- Remove screws for front

- Remove front

Step 3 — Remove PCB

- Remove screws

- Remove PCB from front

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Step 4 — Measure

- This is the section of the pushbuttons. Each of them, when pressed, is shorting to ground one connection in a resistor chain. This basically is a variable resistor to the microcontroller on the other end of the ribbon cable. The microcontroller measures the resistance and decides which value means which keypress.

- The problem comes when there is another resistance appearing due to dirt or other reasons. Then the whole circuit can behave as if random keys are pressed.

- Remove ribbon cable

- Measure resistance to ground at this point. Should be OL (open)

- If not, measure resistance across pushbuttons. Search for lowest resistance. This is the place you want to replace the pushbutton

- The resistances (in the circles) from left to right are 1k, 1k2, 1k8, 1k8, 2k7, 4k7

Step 5 — Remove/replace/clean pushbutton
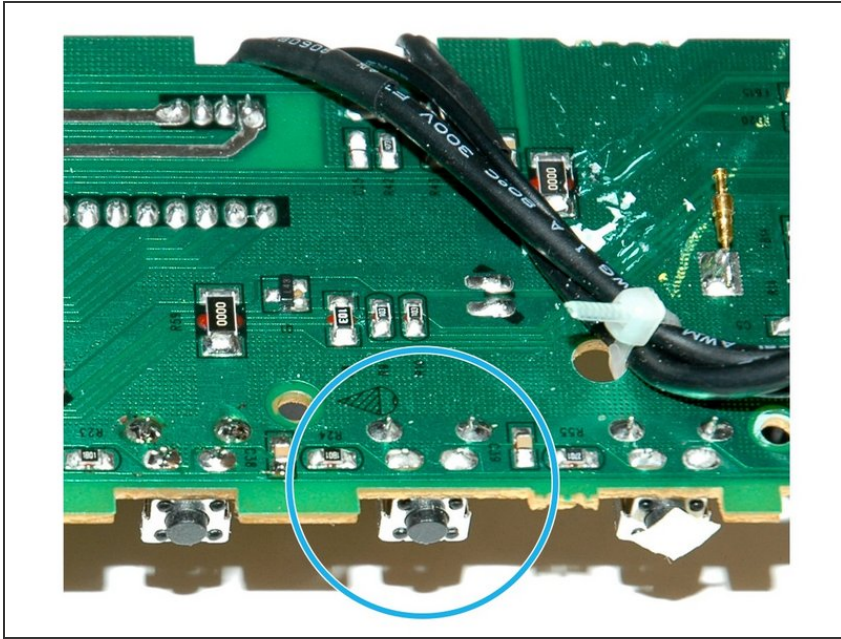
- Remove pushbutton and either clean it, or replace it.

- I did not find a way to open and reseal a button, so instead ordered replacement buttons. They are very cheap.

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