TITLE: SUB-ASSEMBLY #13 – SPEAKER

Revision	Date	Modifications	Author
V1.0	21-04-2020	Setup first version (images and elaboration)	Jeroen Roest / Bart Spel
V1.1	27-04-2020	Translation Dutch to English	Jim Smit

This manual describes how the speaker needs to be placed in the housing. Therefore, the OCB and the speaker itself need to be connected.
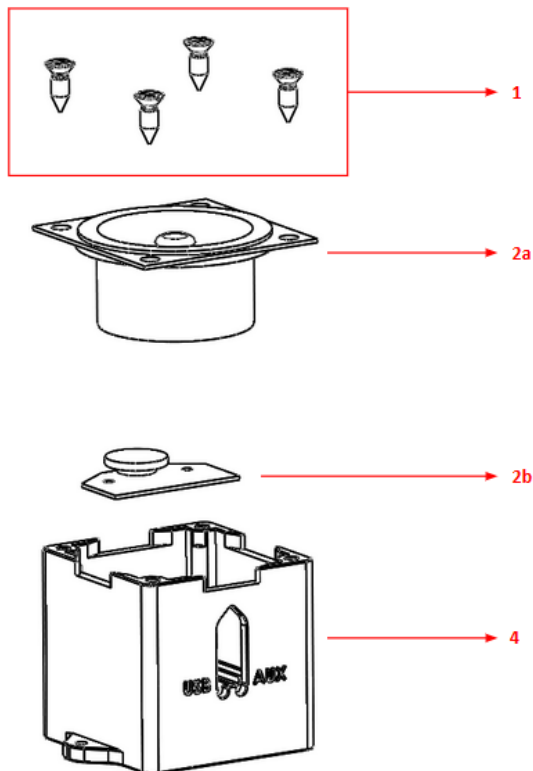
Part	Supplier	Quantity
1: Countersunk screw M4, 14 mm self-tapping	Fabory	4
2: Speaker a) top/diaphragm b) PCB	Todotipo	1
3: 3D- printed housing	MTB3D	1
4: Loctite 4061	Eriks	n.v.t.

1.
- The original housing of the speaker needs to be removed until the point where only the PCB, speaker (ic. diaphragm) and the cables are left.

2.
- To the PCB, 3 cables are connected:
    - One cable is the USB-connection for the Raspberry Pi. This one remains unchanged.
    - One cable is the AUX-connection for the Raspberry Pi. This one remains unchanged.
    - the third cable (power supply) is connected to the diaphragm. This
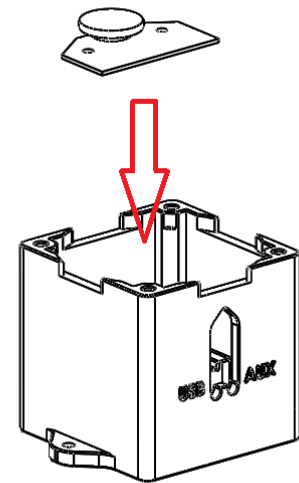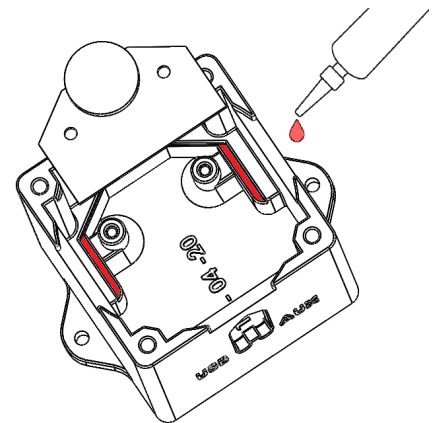
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  one is very **fragile**, so be careful here.

o The remaining cable needs to be cut through and provided with isolation. This one can be recognized by the connecton to the other speaker (which will remain unused).


(3.1)

3.
- Outline the screw holes of the PCB with the housing (Figure 3.1 and 3.2).
- Glue the PCB with the Loctite (Figure 3.2).
- The cables need to be directed outwards through the therefore intended holes (Figure 3.2).

(3.2)

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4.
- The top plate (which already contains the speaker) needs to be placed on the top side of the 3D-printed housing.
- Outline the holes of this plate with the holes in the housing and fasten it using 4 countersunk screws, self-tapping (M4, 14 mm).
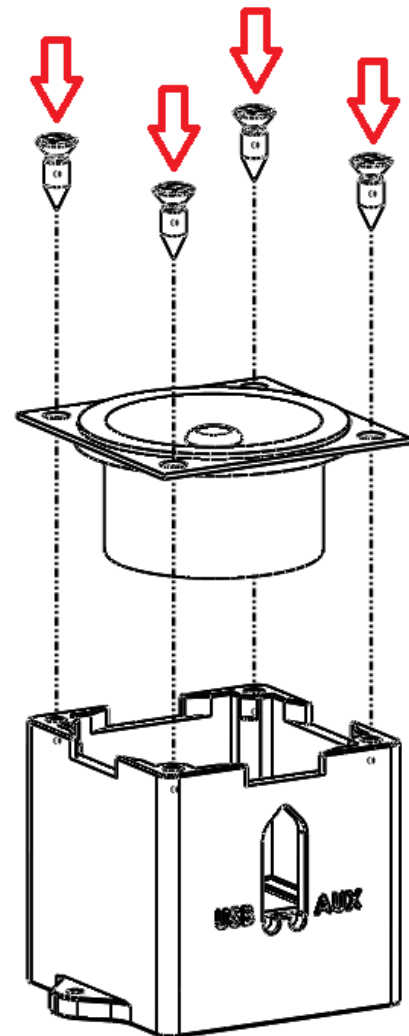
(4)

5.
- The AUX and USB cables need to be shortened. Therefore, these are cut through, creating a USB cable with length (roughly) 15 cm and an AUX cable with length (roughly) 20 cm:
  - o Cut the cable through and strips on both sides.
  - o Remove the (old) connection with the PCB and solder the new (stripped) cable to the PCB.
  - o The figures in Appendix I show which parts need to be connected where.

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If the assembly is done correctly, the result should look like the figures below. In here, the outgoing cables are not modelled, but connected with the PCB.
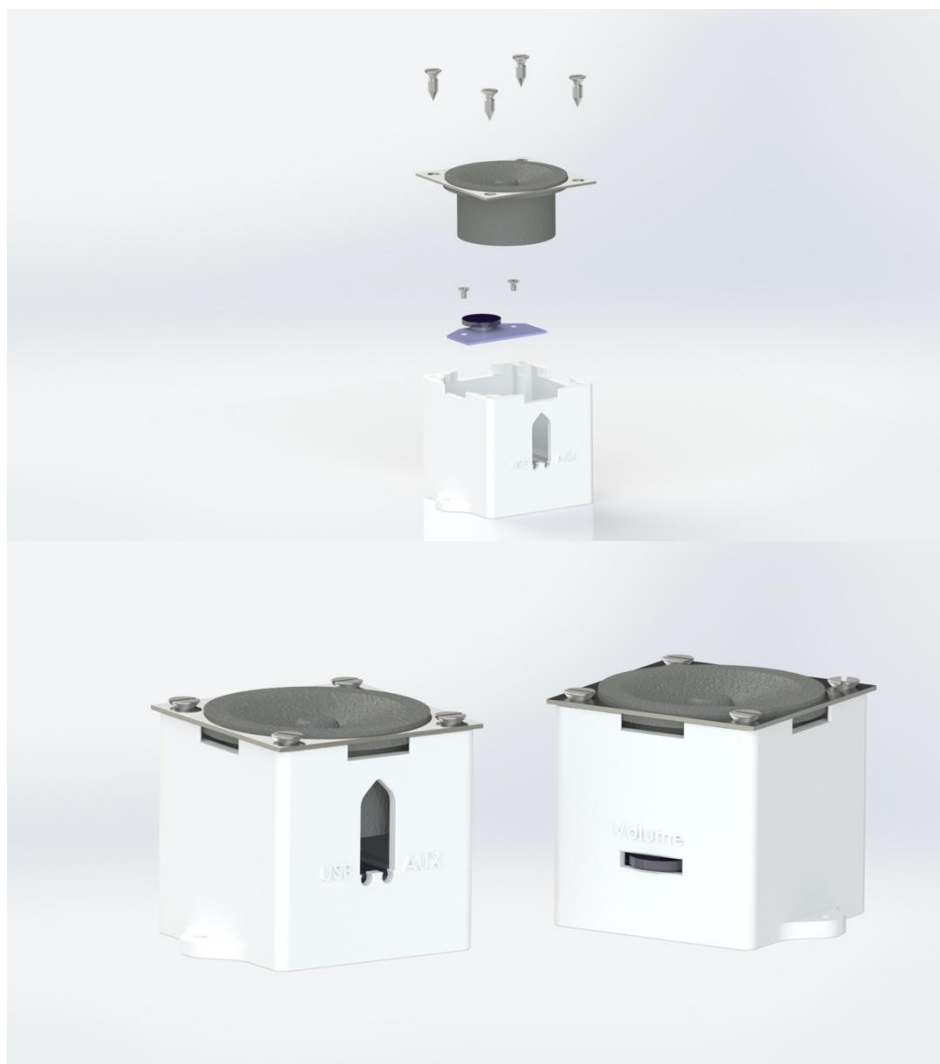
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Appendix I

Speaker PCB

Soldering