KitCat (“Cyborg” Cat Robot) Build Instructions

This document shows the instructions to build your robot.

KitCat (“Cyborg” Cat Robot) Manual

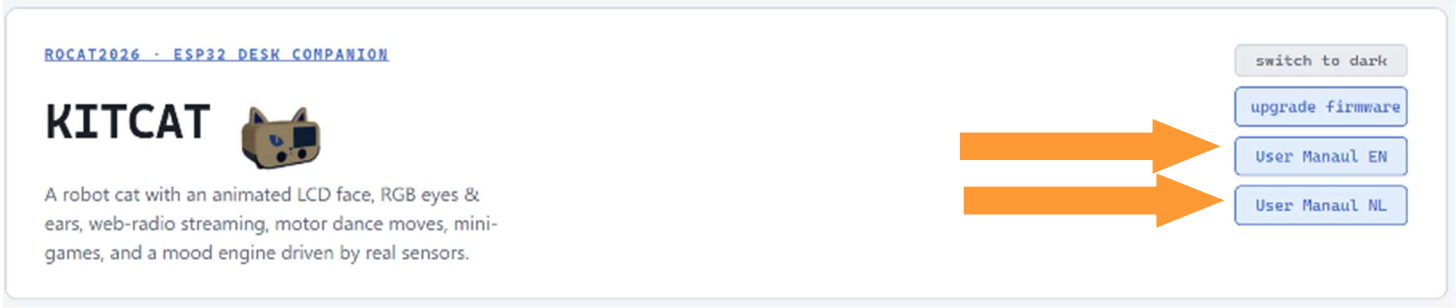
This manual can be downloaded using the links below or via the QR code:

General: https://woutervandewiele.github.io/rocat2026/

Dutch: https://github.com/WouterVandeWiele/rocat2026/wiki/user-manual-nl

English: https://github.com/WouterVandeWiele/rocat2026/wiki/user-manual

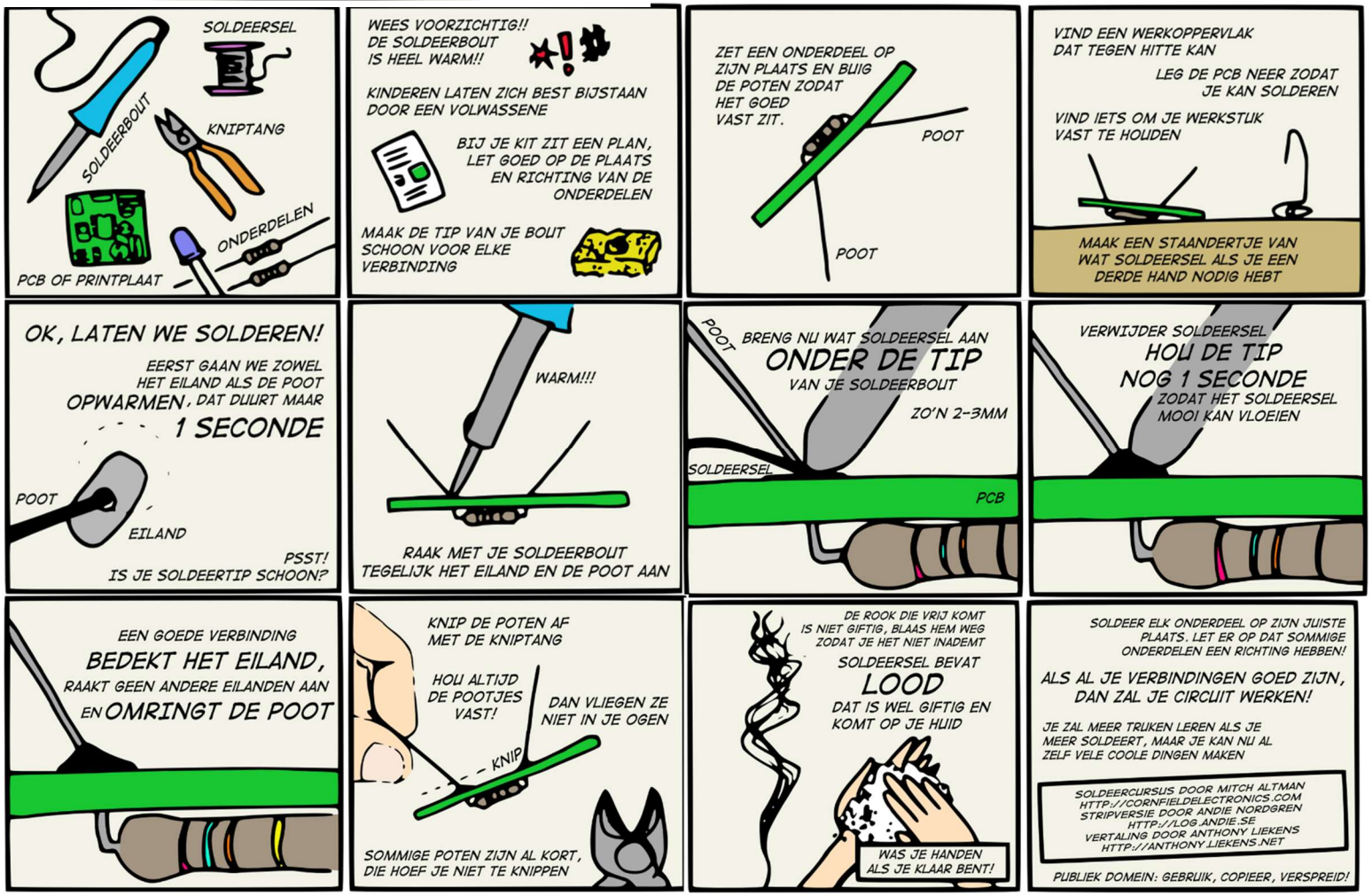
QR code linking to the main page where you can also find the manuals:



IEDEREEN KAN SOLDEREN!

ZO DOE JE HET ZELF

(Everyone can solder)



Warning:

The soldering iron and glue gun are hot. Be careful when using them. If you burn yourself, you must report it immediately to a supervisor.

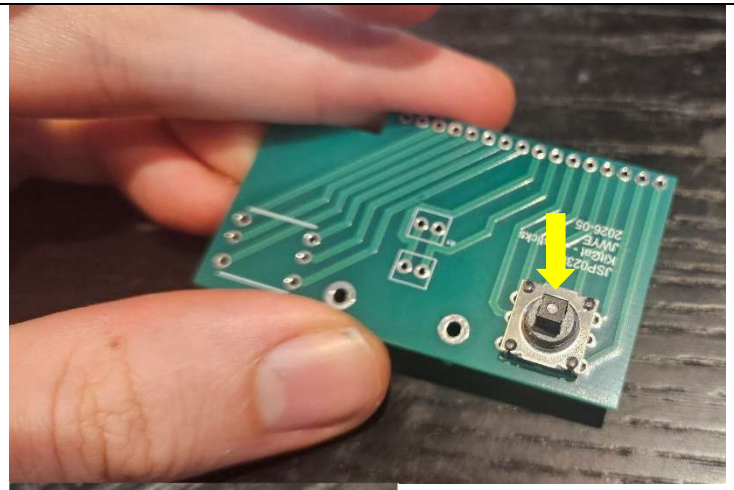
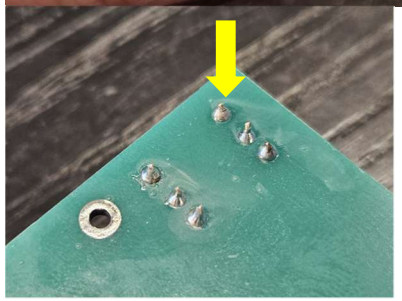
KitCat Robot Assembly Instructions

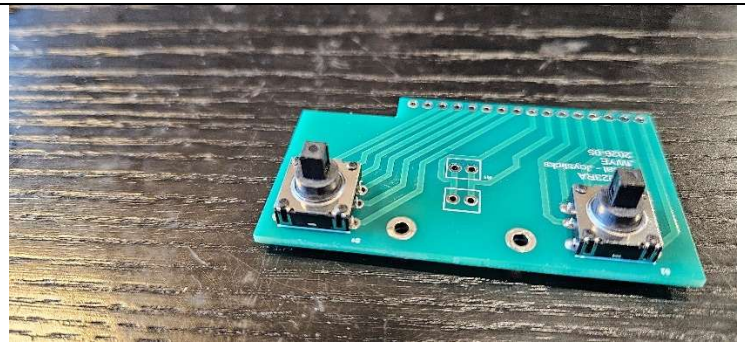
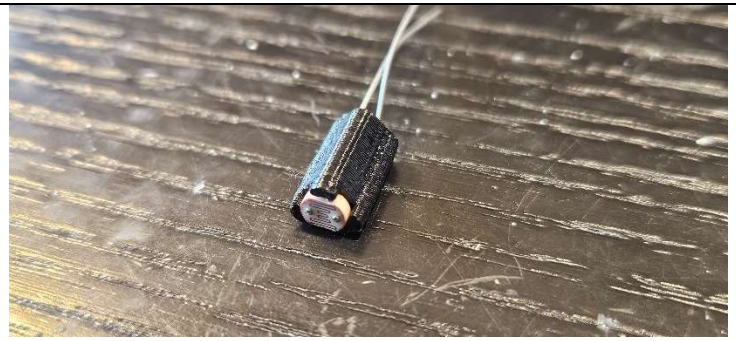
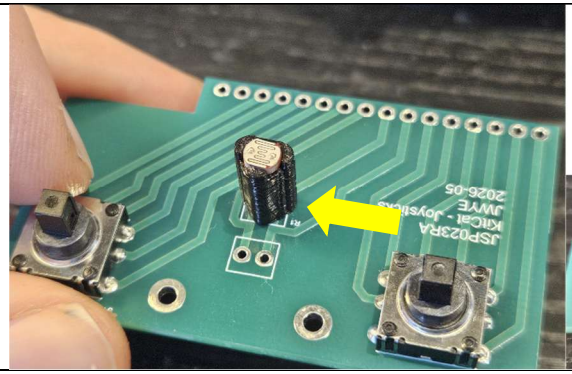
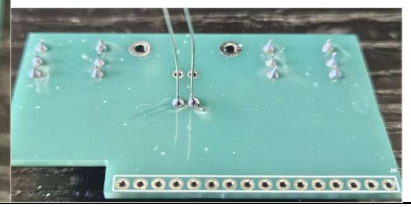
To build this speaker, follow the steps in the table below. The table contains the following columns:

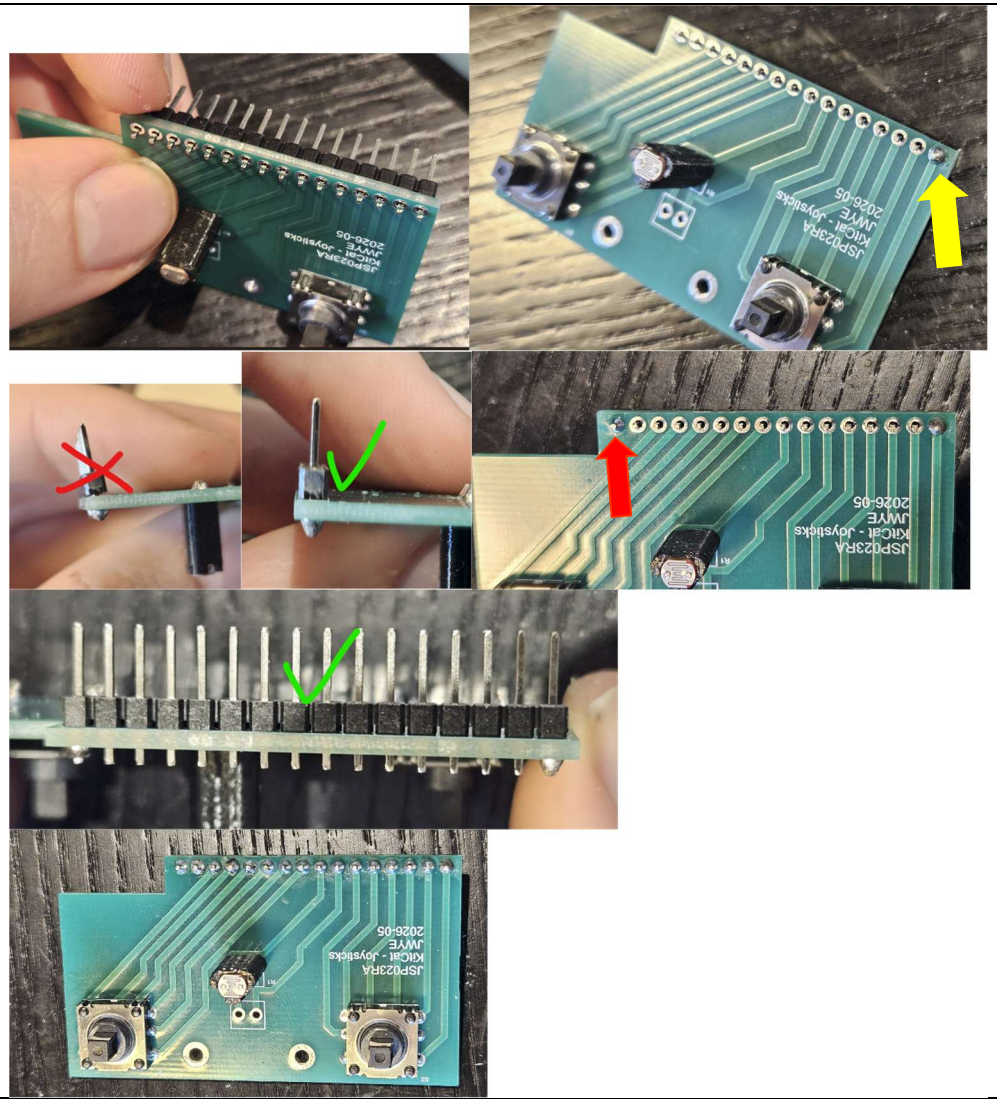
- **Step**: This indicates which step you are currently working on.
- **Component name + quantity**: This indicates which component you need to locate. The name listed here can be found on the bag containing that **component**. Sometimes additional information about the component is included, such as an image, the text on the component, etc.
- **Image**: This shows a photo of the intermediate steps leading up to the expected result after that step.
- **PCB numbers + note/explanation**: These numbers indicate where on the PCB you should place the components. Sometimes there's also a note or explanation included here.

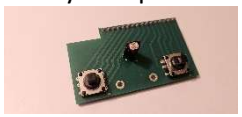
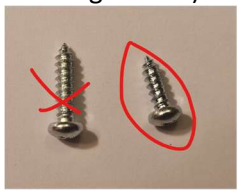
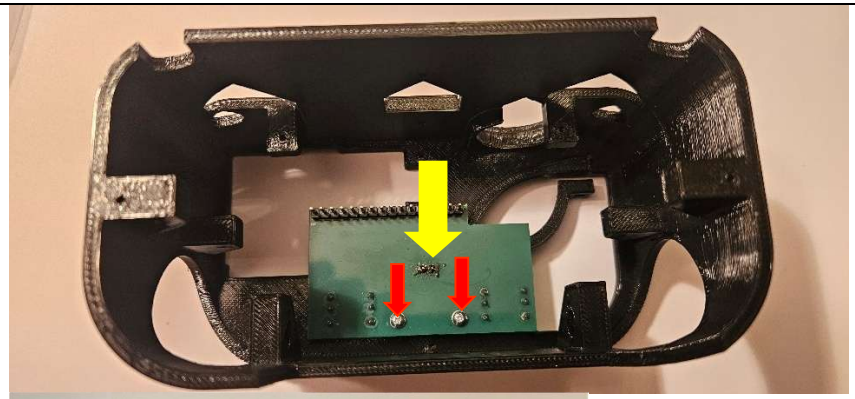
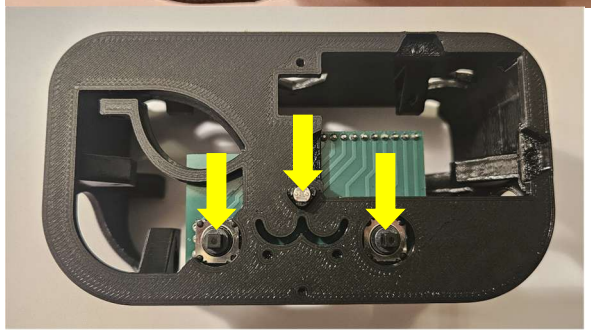
After you've taken a part out of the bag or box, make sure to reseal it so that parts don't get lost.

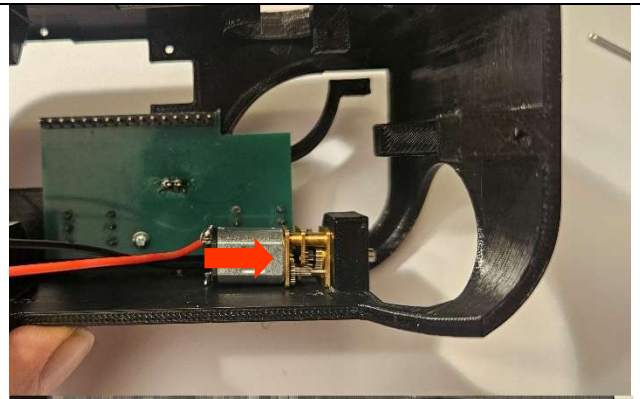
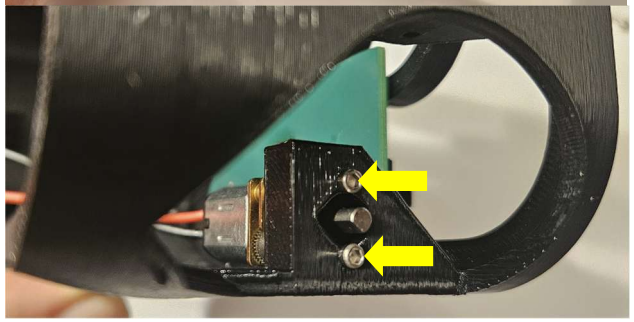
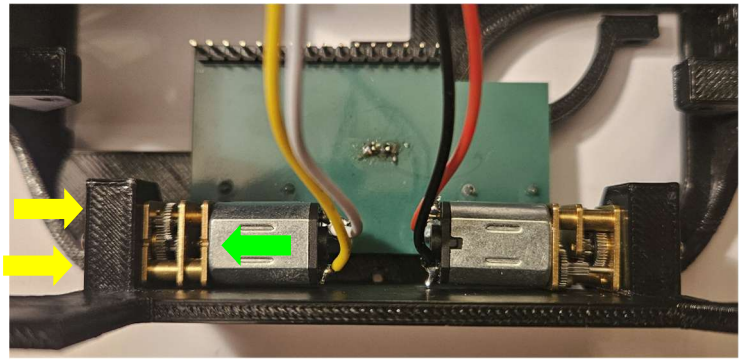
Have fun building during this workshop! If you're **unsure** about something or **have a question**, feel free to ask the **instructors**!

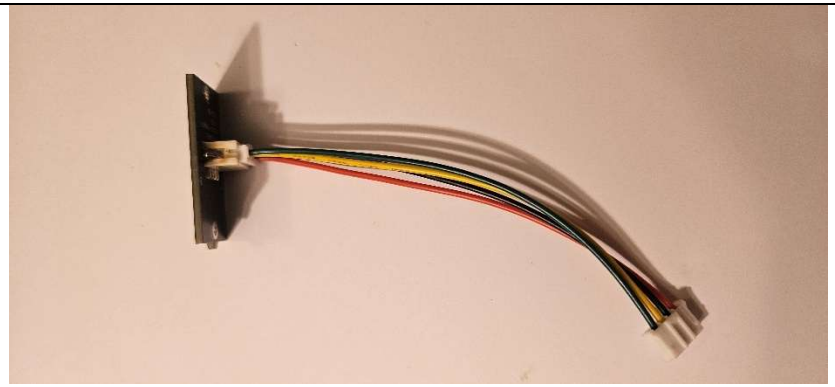
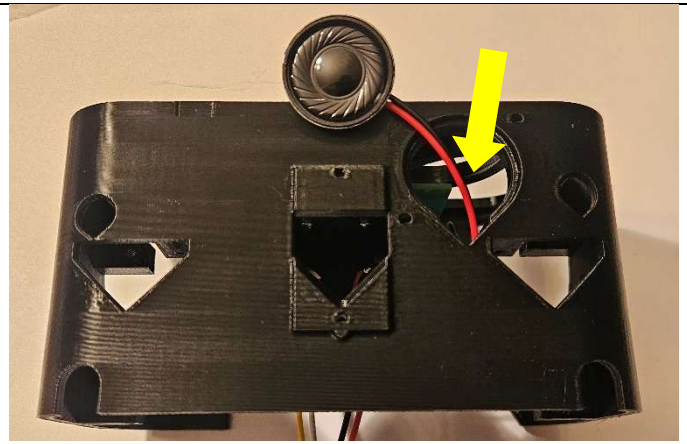
Step	Component-name	Pictures	PCB numbers + note/explanation
1	1x joystick-pcb 1x joystick 	 	Solder the joystick to the bottom of the circuit board. Make one solder joint first, then check to make sure the joystick is flush against the PCB. If everything looks good, you can make the other five solder joints.

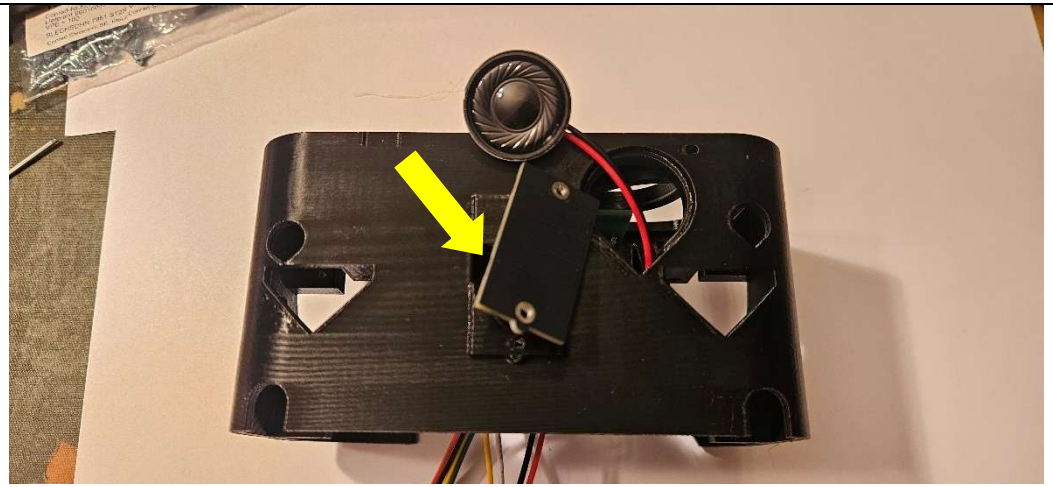
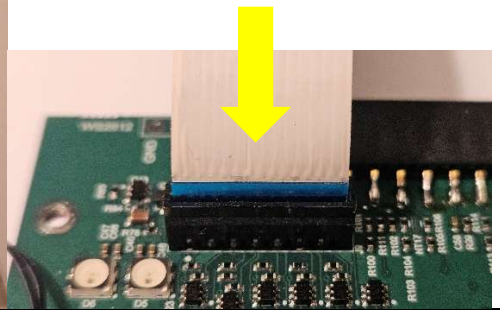
2	1x joystick 		Solder the second joystick as described in step 1.
3	1x light sensor  1x light sensor holder 		Slide the light sensor and the light sensor holder together.
4		 	Place the sensor in the holes **marked "R1." Pay attention to the orientation of the triangle.** First, solder one point and check that the sensor is flush against the PCB and sitting upright. Then solder the second point.

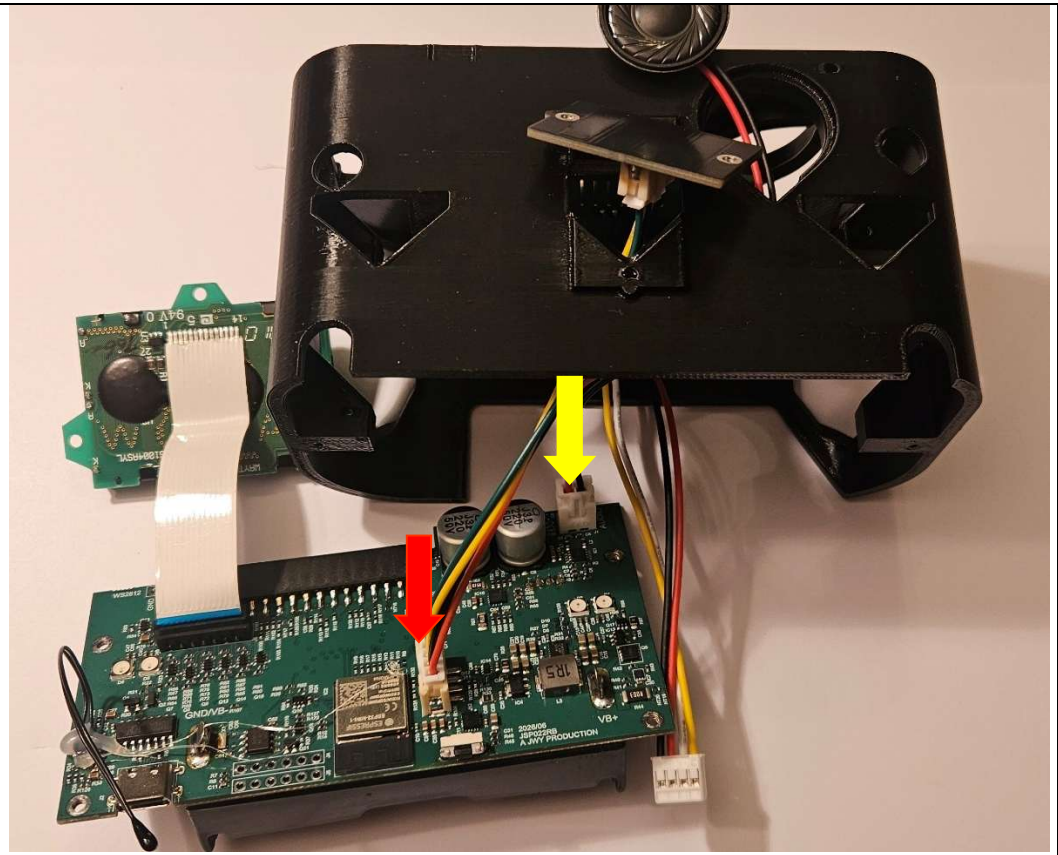
5	1x connector 		First, solder the connector in place with one solder joint (see yellow arrow). Make sure the connector is standing straight up. (See the photos with the green checkmarks for how it should be done, and the photos with the red X for how it shouldn't be done.) Next, solder the other side in place (see red arrow). Check again to make sure the connector is still aligned properly. Next, solder the other pins of the connector.
6		**Have the circuit board checked!**	

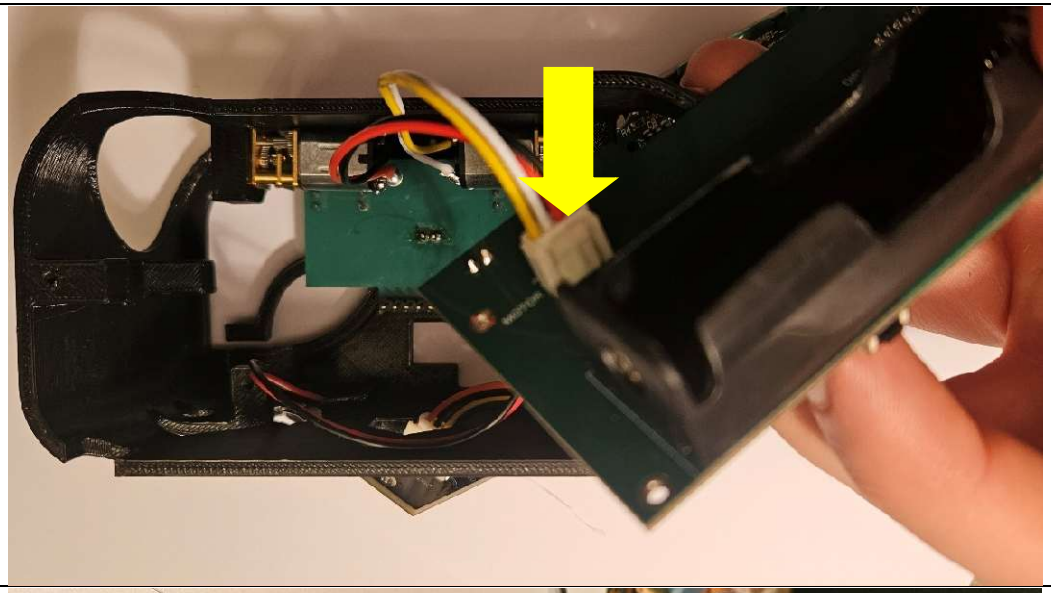
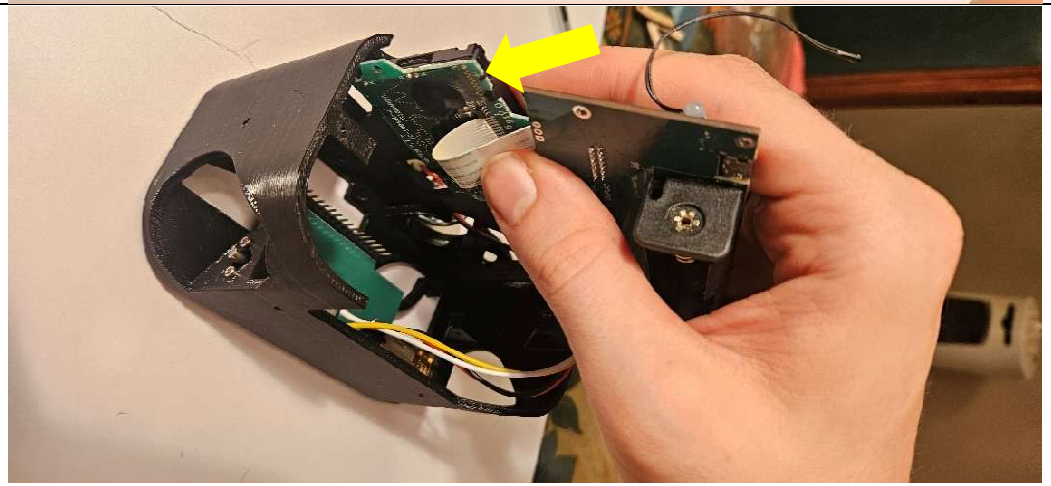
Step	Component-name	Pictures	PCB numbers + note/explanation
A0	1x plastic frame  1x Joystick pcb  2x short Phillips-head screws (not the longer ones) 	 	Insert the joystick circuit board into the frame as shown in the image. The nose should fit through the nose opening, and the buttons should fit through the two circular openings.

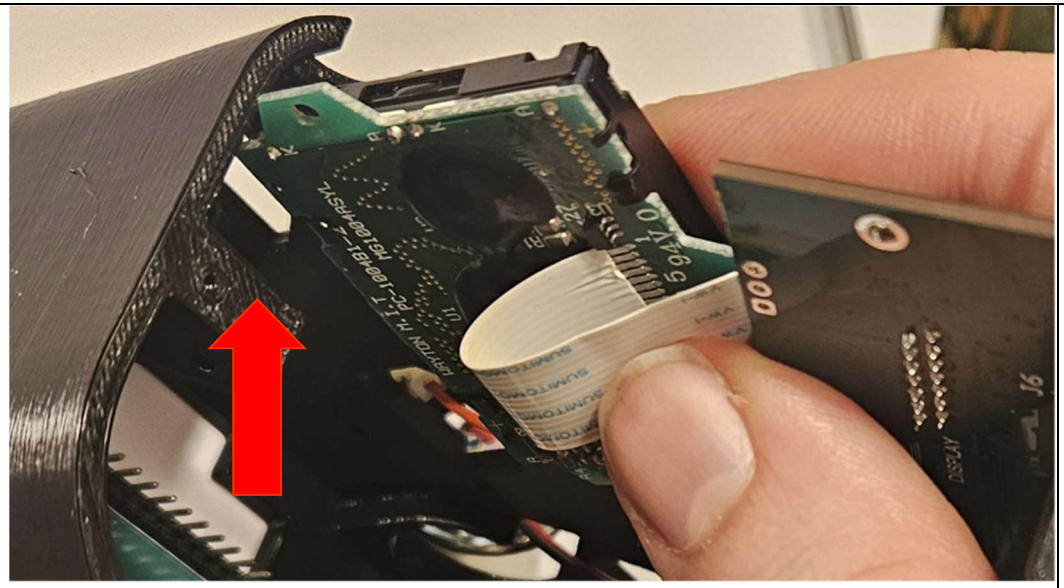
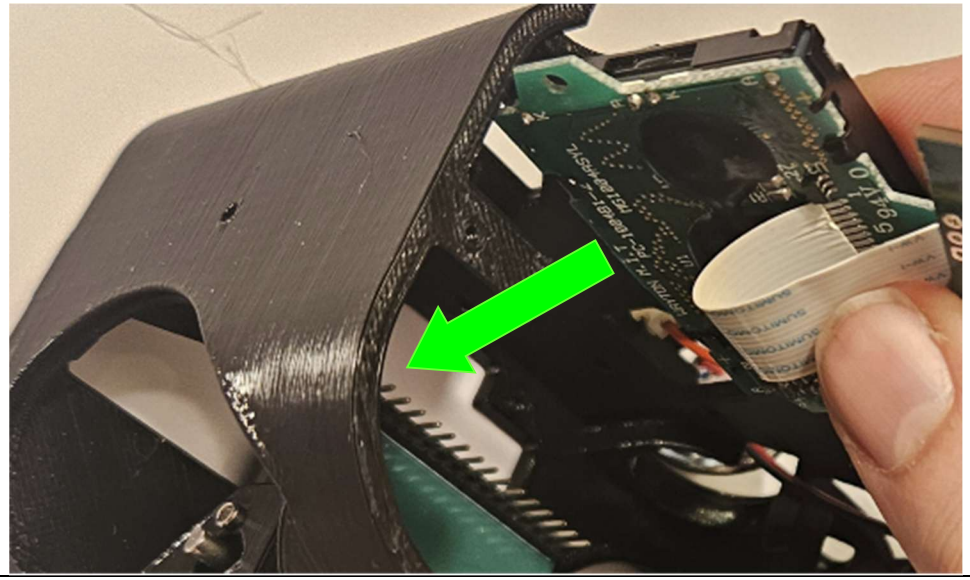
A1	1x set of motors  4x allen screws (metal color) 	  	1) Insert the motor with the **red and black wires into the right mounting point** (see red arrow). Secure it with 2 Allen screws (see yellow arrows). 2) Insert the motor with the **yellow and white wires into the left mounting point** (see the green arrow). Secure it with 2 Allen screws (see yellow arrows).

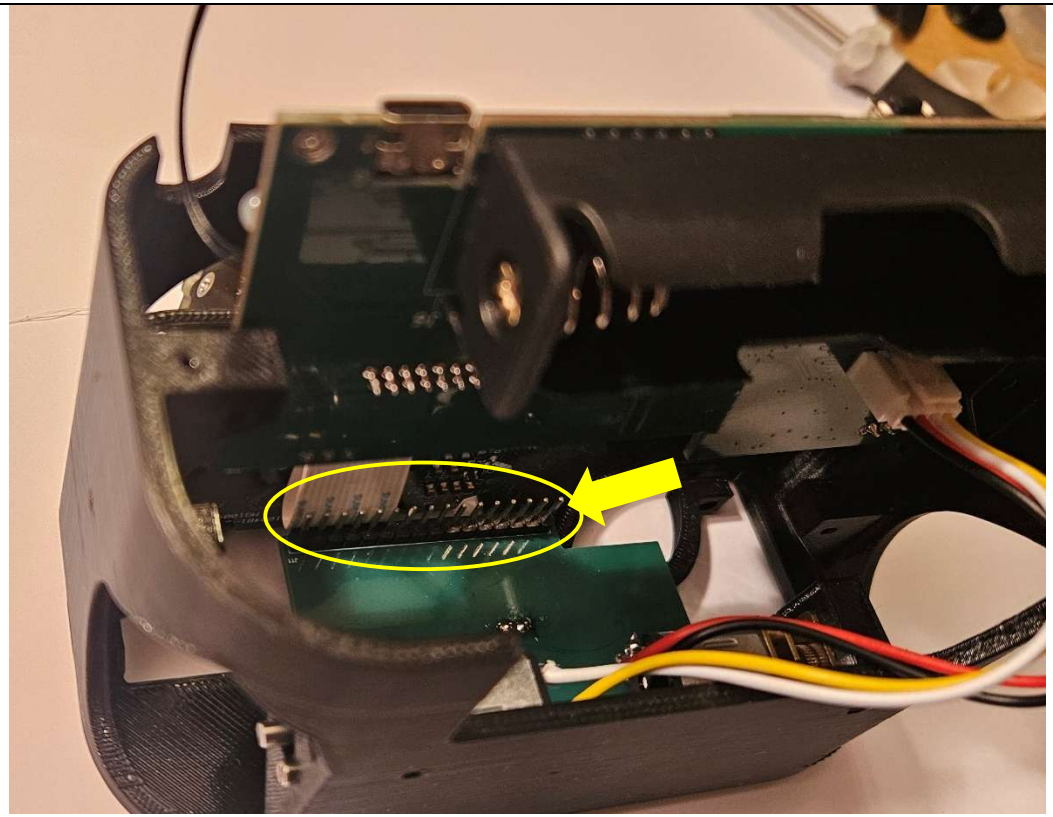
A2	1x aaipad-pcb  1x aaipad cable 		Plug the cable into the small pcb.
A3	1x speaker 		Feed the speaker cable through the hole indicated by the yellow arrow. The speaker may fall through the hole. Make sure only the cable is inserted into the hole.

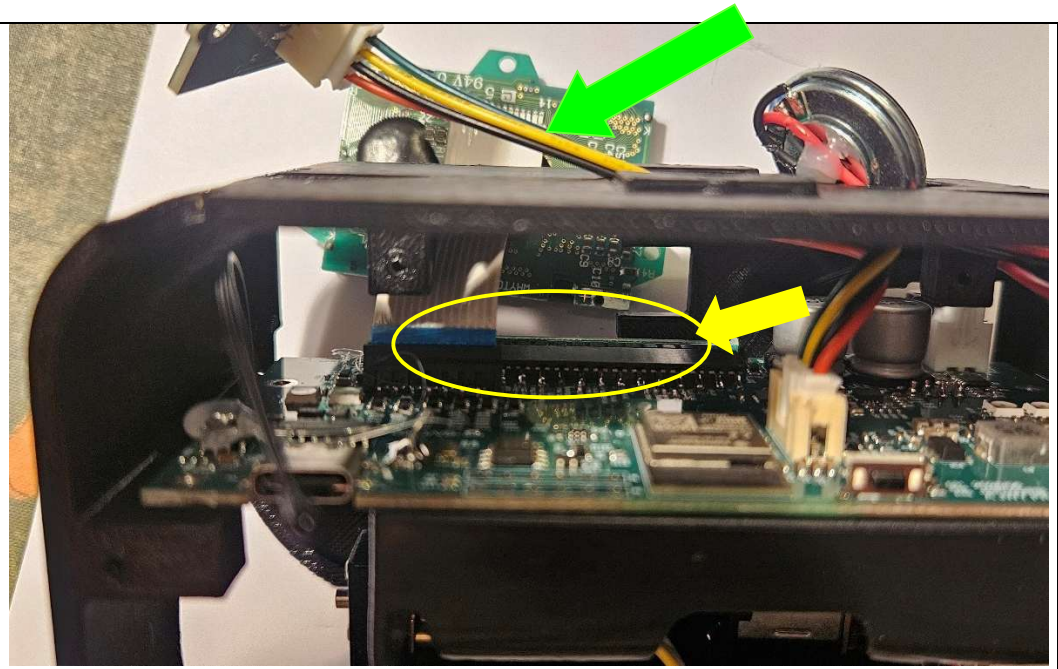
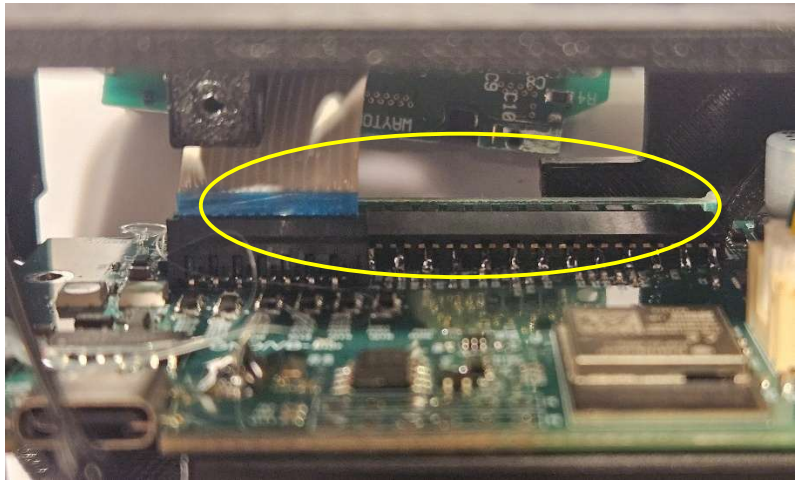
A4			Insert the Aaipad through the hole indicated by the yellow arrow.
A5	1x Display 1x PCB	 	Insert the screen into the connector. **The orientation is important!** Look closely at the photo to see how the two parts are positioned.

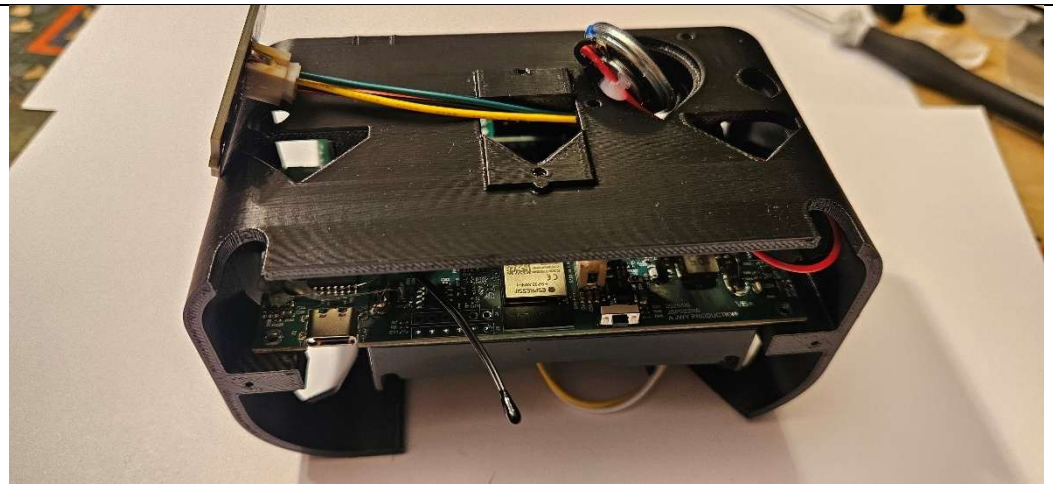
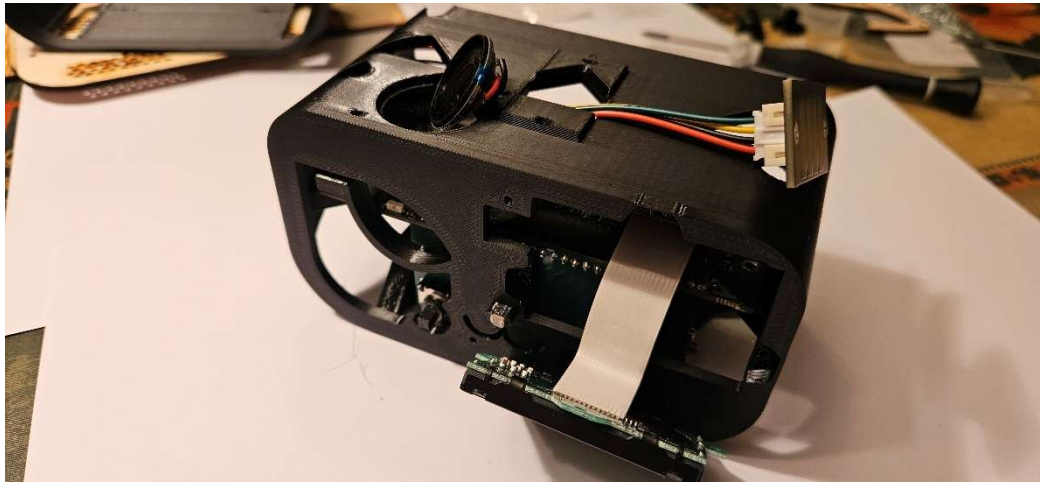
A6			Plug the speaker cable into the connector marked with the yellow arrow. Plug the Aaipad cable into the connector marked with the red arrow.

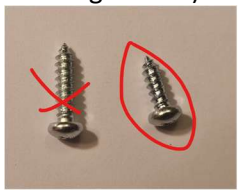
A7			Plug the motor cable into the connector on the bottom of the circuit board. (See yellow arrow)
A8			- Insert the circuit board into the plastic frame. Insert the small screen first, followed by the circuit board. Be sure to route the cable neatly.

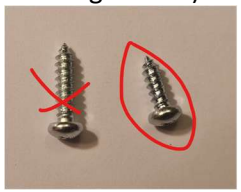
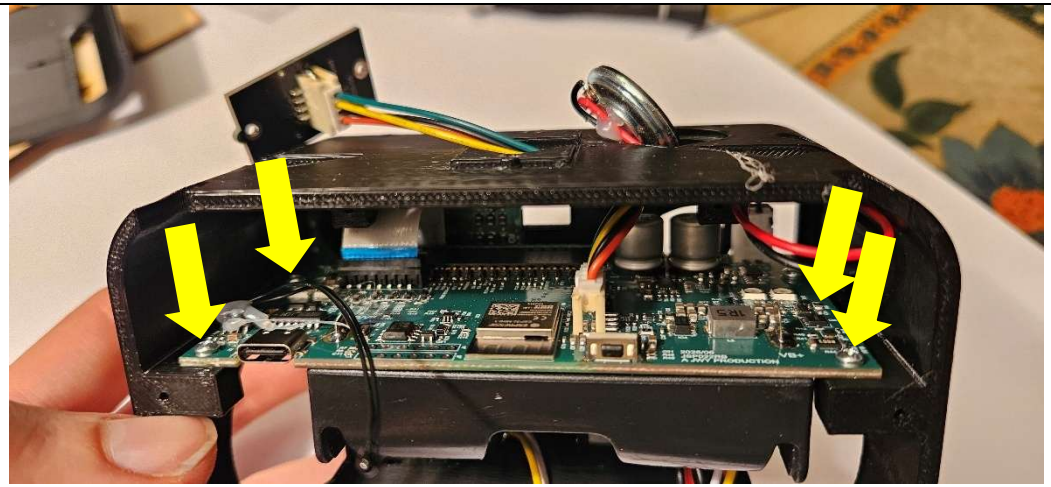
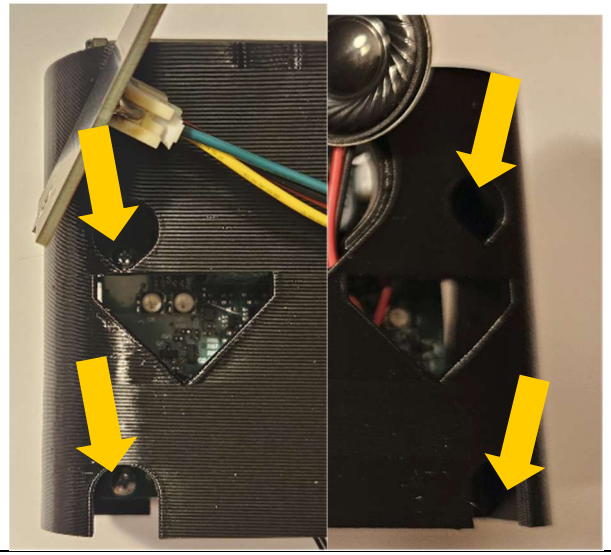
			-The circuit boards must be positioned above the protrusions in the frame. See the red arrow in the second image.
			-The screen must eventually slide through the hole on the front (caution). The green arrow indicates the hole.

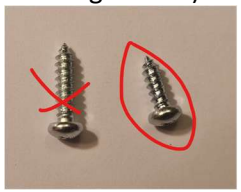
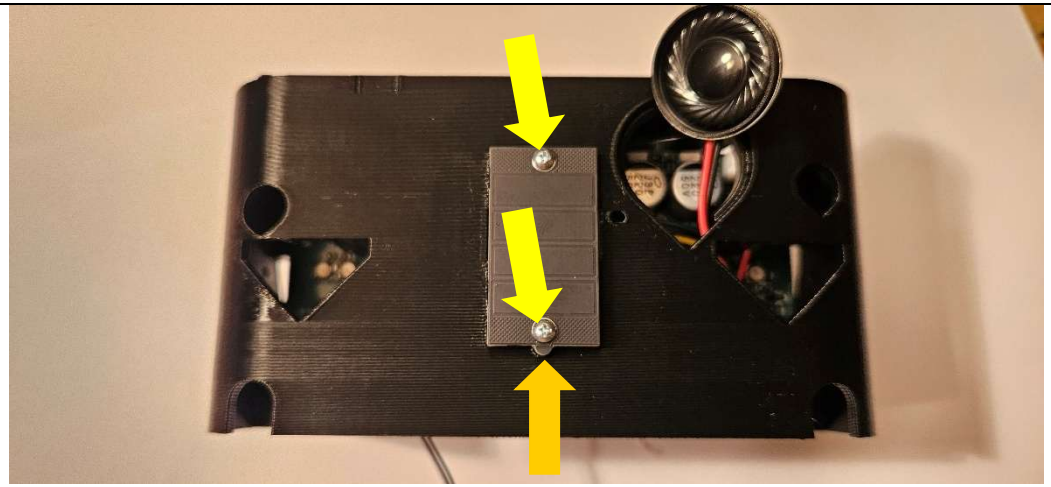
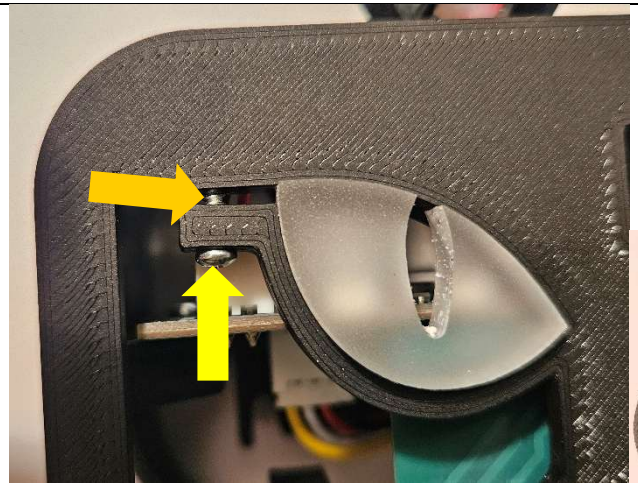
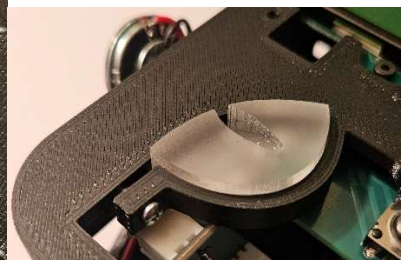
			The large circuit board should be slid onto the connector on the joystick circuit board. The yellow arrow and oval indicate the connector on the joystick circuit board. Be sure to check out the photos on the next page!

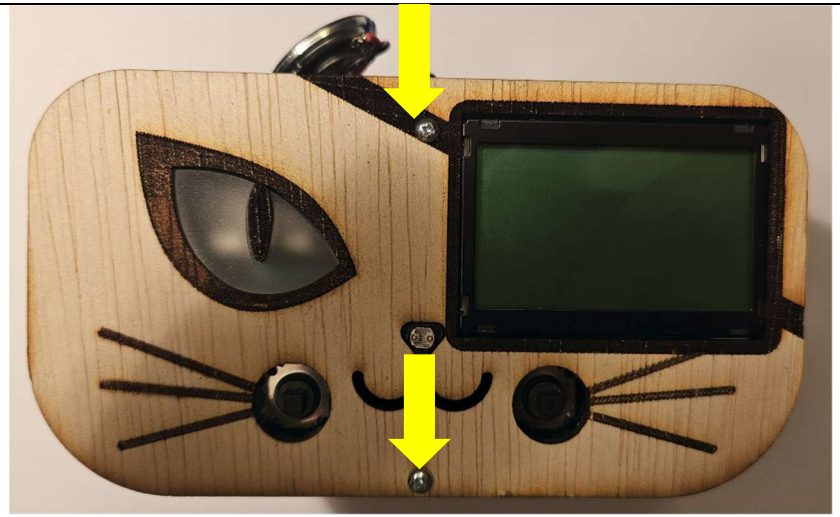
		 	

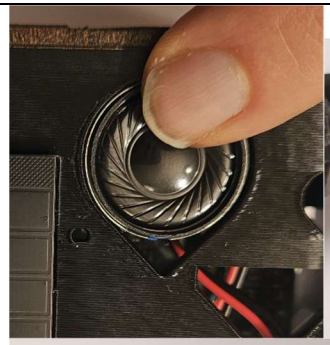
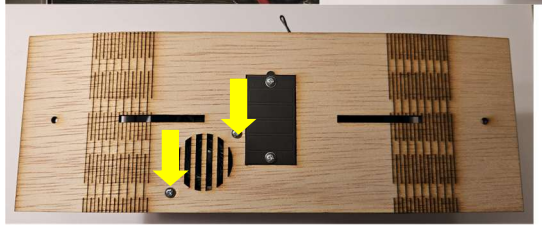
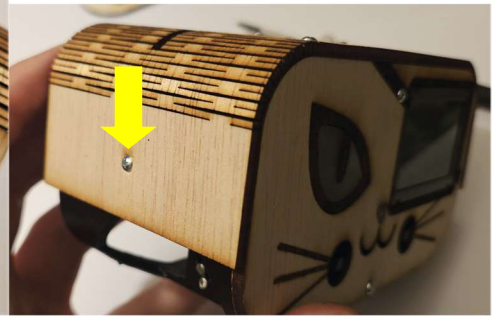
A9		 	**Your building kit should now look like the photos shown here.** **If you're not sure, just ask a workshop instructor!**

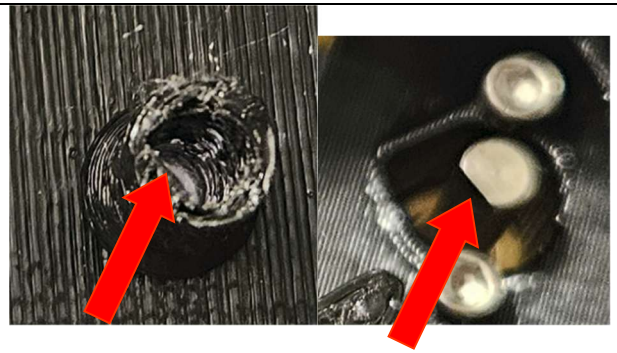
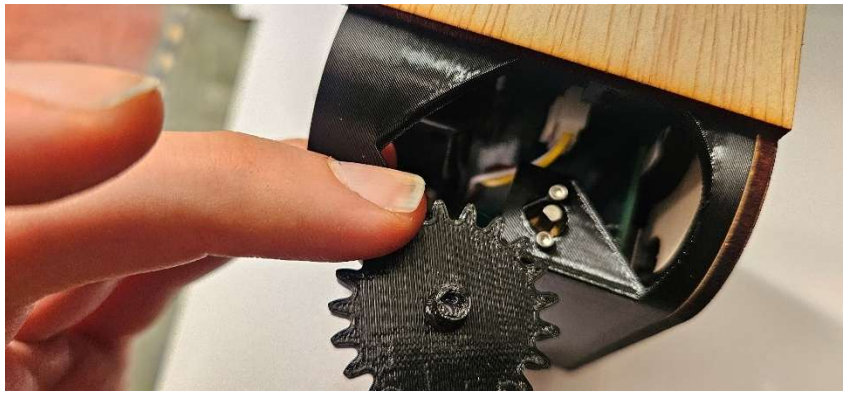
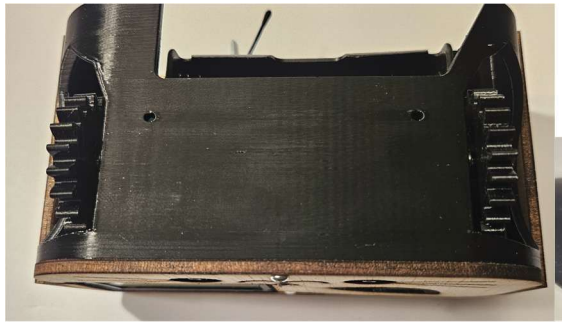
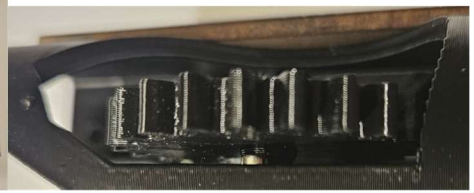
A10	2x short Phillips-head screws (not the longer ones)  1x black (short) Allen screw 	 	Screw the black screw to the left of the screen (red arrow). Screw the other two screws to the right and above the screen (yellow arrows).

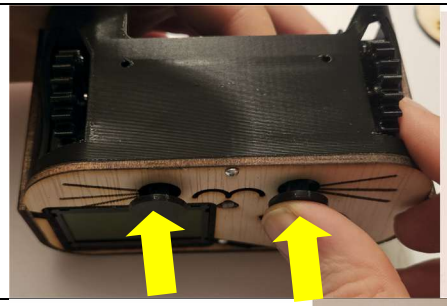
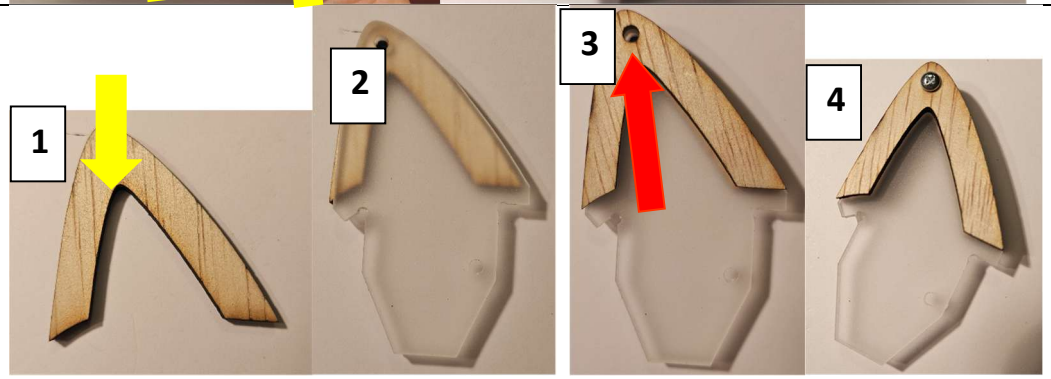
A11	4x short Phillips-head screws (not the longer ones) 	  	Secure the large circuit board with the 4 screws in the locations indicated by the yellow arrows. Use the 4 holes at the top of the frame (see orange arrows) to position your screwdriver.

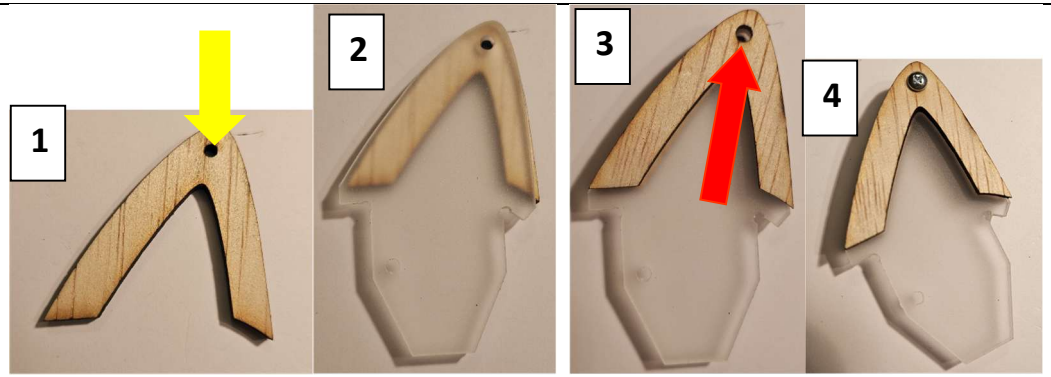
A12	2x short Phillips-head screws (not the longer ones) 		Secure the Aaipad circuit board with the 2 screws (see the yellow arrows). Note: The circuit board has a small bump, and the frame has the same bump. The bumps must align with each other (see the orange arrow).
A13	1x long Phillips-head screw  1x plexiglass eye 	 	Slide the eye into the eye-holder and screw (yellow arrow) the holder and eye in place until the eye is slightly tightened. There should still be a small gap (orange arrow).

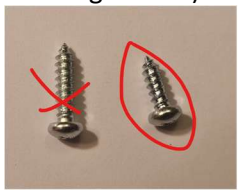
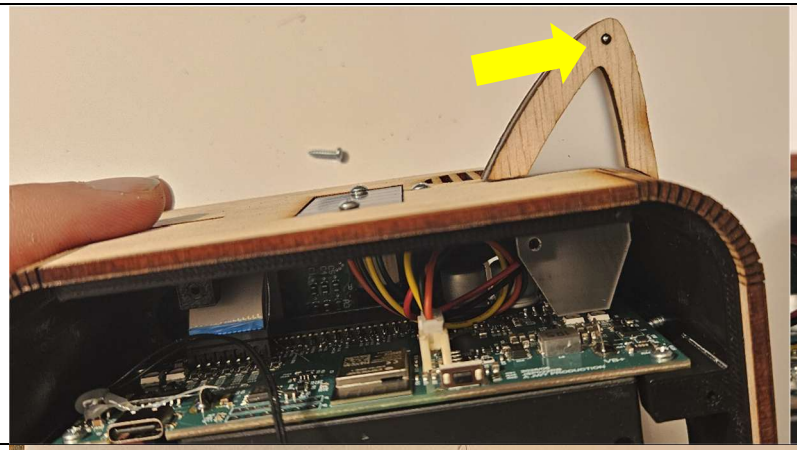
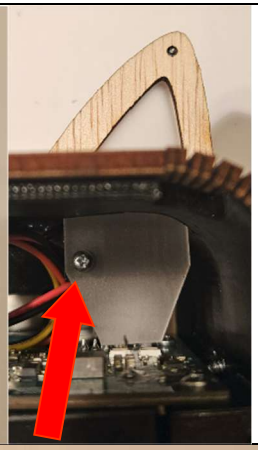
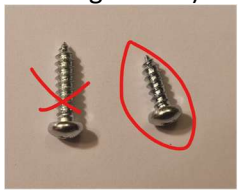
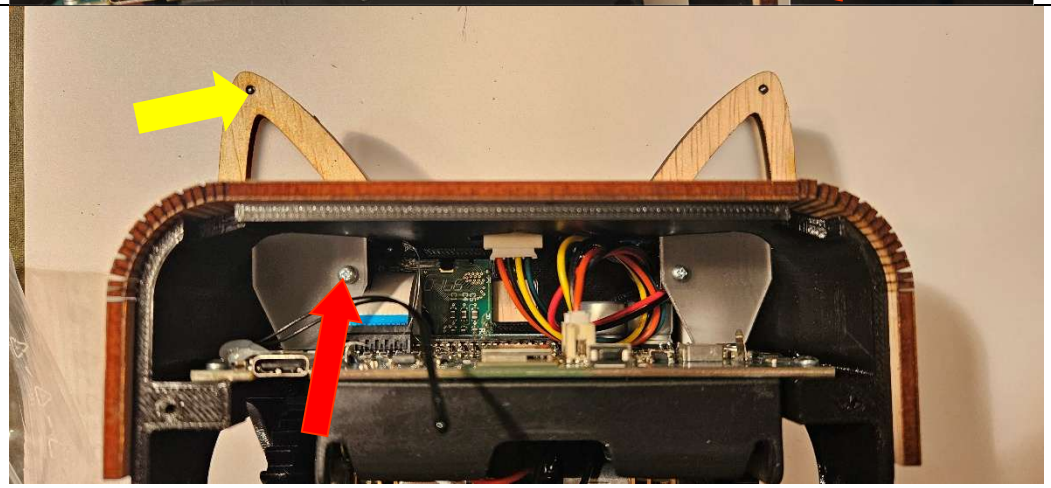
A14	2x long Phillips-head screw  1x wooden face 		Screw the face to the frame. (yellow arrows)

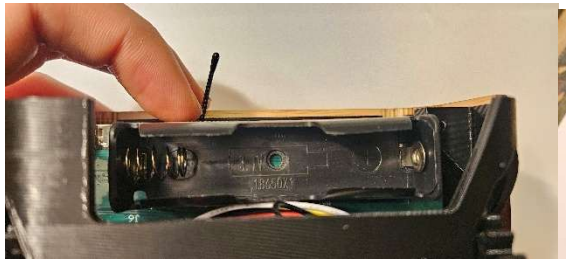
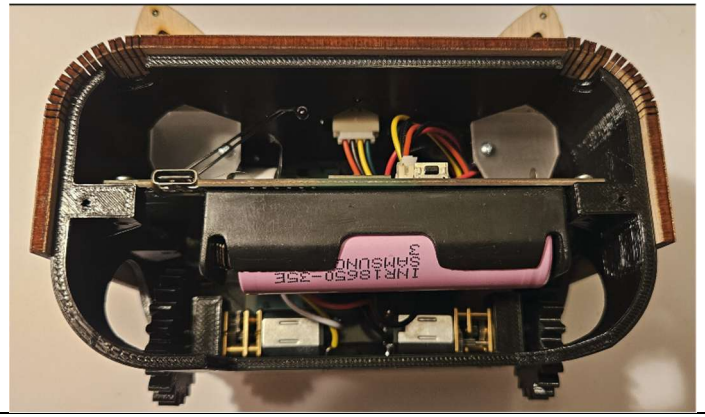
A15	1x wooden side panel  4x long Phillips-head screw 	    	Press the speaker into place, making sure the cable isn't pinched. Then attach the long wooden side panel. Screw the top in place. Screw the sides in place.

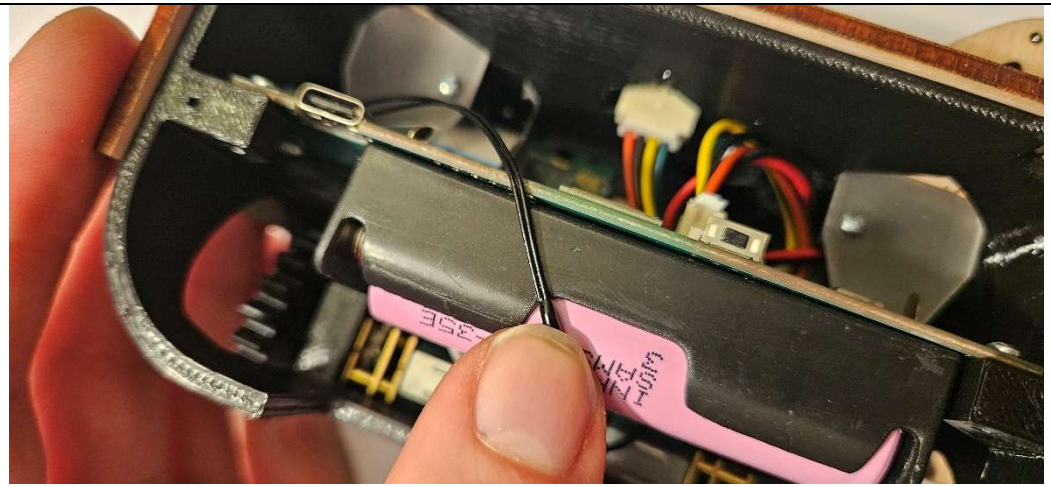
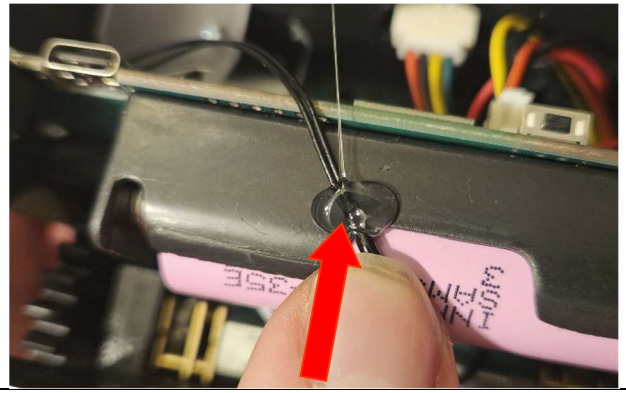
A16	2x gear wheels 	   	Slide the gears onto the shaft for both motors. Note that the motors and gears have a flat side; you must align them so that you can slide the gear onto the shaft. There shouldn't be too much space left, so **carefully** slide the gears on just far enough.

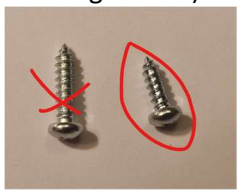
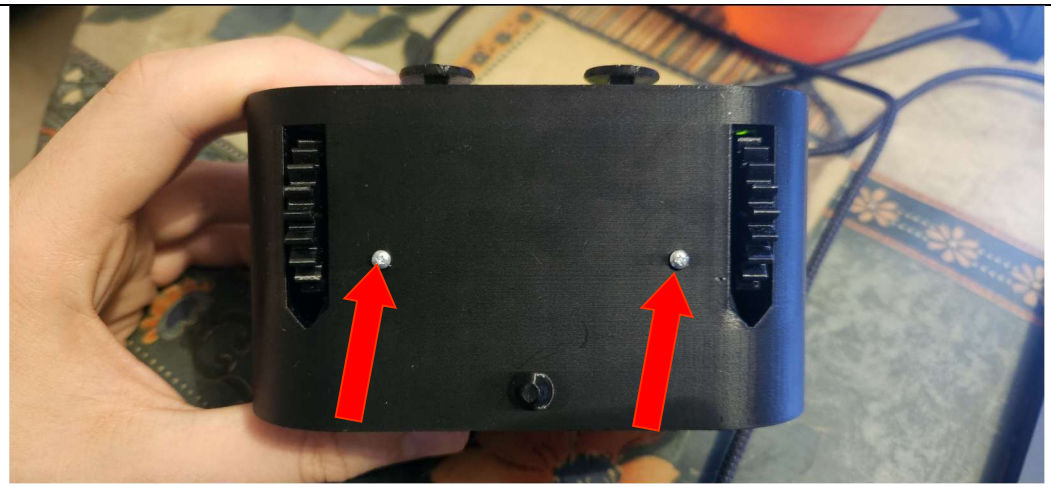
A17	2x push buttons 	 	Slide the push buttons onto the joysticks.
A18	1x wooden ear piece with smaller hole  1 x wooden ear piece with larger hole  1x plexiglass ear piece  1x long Phillips-head screw 		Left Ear 1) Place the ear piece with the small hole (yellow arrow) as shown in Figure 1. 2) Place the Plexiglas piece with the same shape on top of this piece of wood. 3) Place the ear piece with the larger hole (red arrow) on top of the Plexiglas. 4) Screw the 3 parts together.

A19	1x wooden ear piece with smaller hole  1 x wooden ear piece with larger hole  1x plexiglass ear piece  1x long Phillips-head screw 		Right Ear 1) Place the ear piece with the small hole (yellow arrow) as shown in Figure 1. 2) Place the Plexiglas piece with the same shape on top of this piece of wood. 3) Place the ear piece with the larger hole (red arrow) on top of the Plexiglas. 4) Screw the 3 parts together.

A20	1x short Phillips-head screws (not the longer ones) 	 	Take an earpiece and slide it into the opening along the top. Make sure the screw head (yellow arrow) is **not visible**. Secure the earpiece with a short screw (see red arrow).
A21	1x short Phillips-head screws (not the longer ones) 	 	As in the previous step: Take an ear and slide it into the opening along the top. Make sure the screw head (yellow arrow) is not visible. Secure the ear with a short screw (see red arrow).

A22		**First, have an instructor check everything; they'll give you a battery.**   	

A23		 	Glue the temperature sensor to the battery using a glue gun. Do not pull too hard on the sensor.

A24	2x long Phillips-head screw  1x wooden back plate 		Slide the back plate onto the frame and screw it in place.
A25	2x short Phillips-head screws (not the longer ones)  1x plastic bottom plate 		Screw the bottom plate to the frame.

A26			Done!