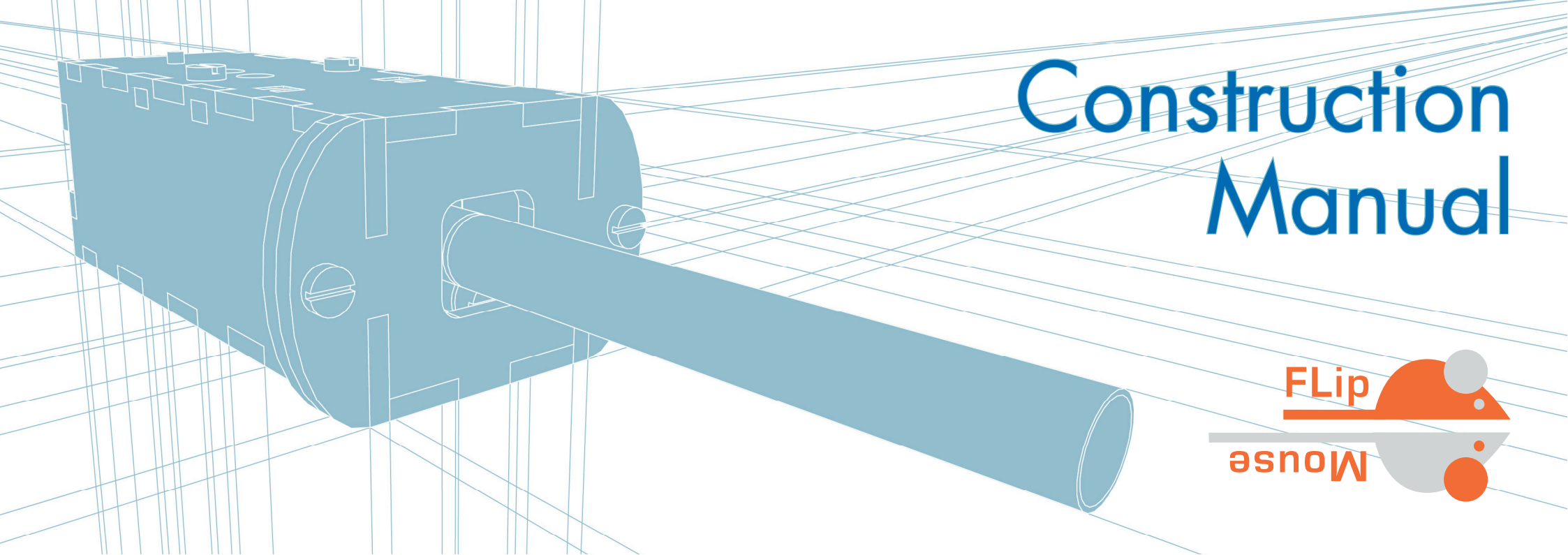
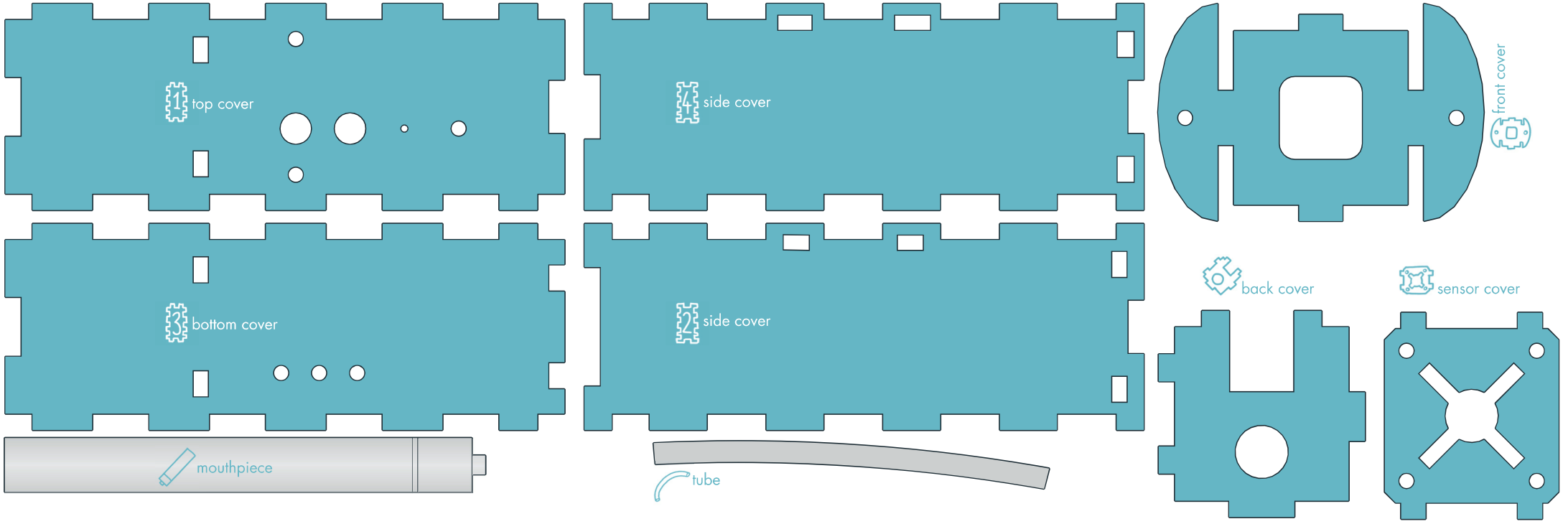
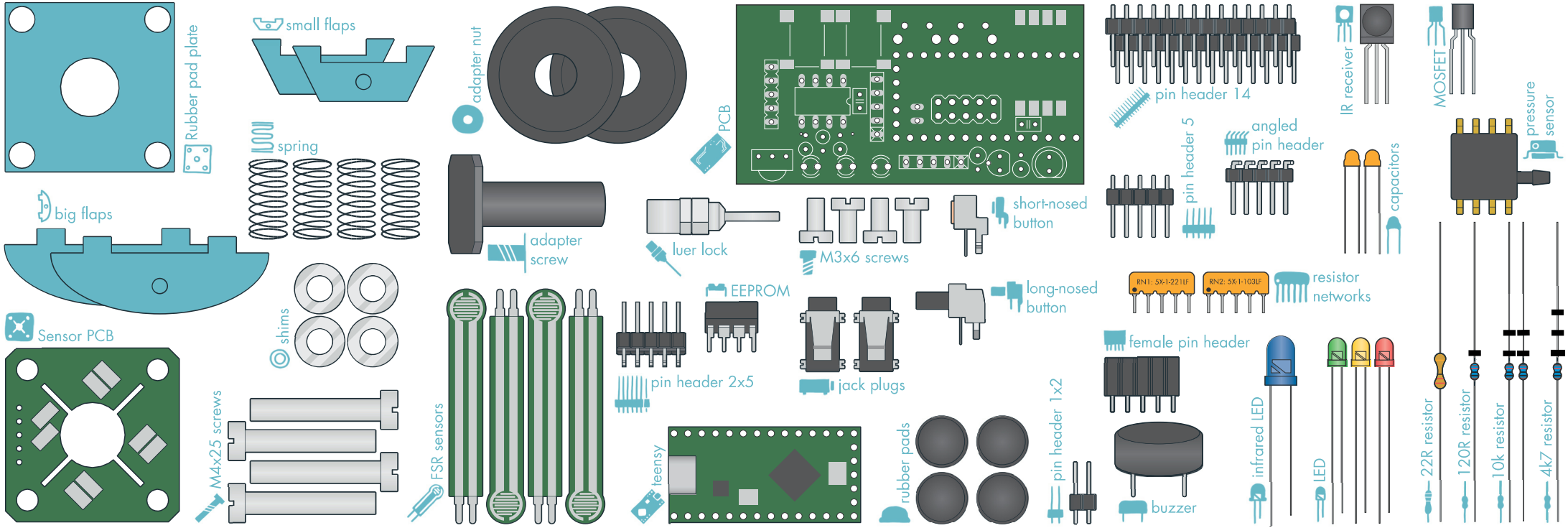


Construction Manual

FLip Mouse


1 top cover
4 side cover
front cover
3 bottom cover
2 side cover
back cover
sensor cover
mouthpiece
tube


Rubber pad plate
small flaps
adapter nut
PCB
pin header 14
IR receiver
MOSFET
spring
pin header 5
angled pin header
capacitors
pressure sensor
big flaps
adapter screw
luer lock
M3x6 screws
short-nosed button
Sensor PCB
shims
EEPROM
long-nosed button
RN1: 5K-1-221LF
RN2: 5K-1-103LF
resistor networks
female pin header
M4x25 screws
FSR sensors
pin header 2x5
jack plugs
infrared LED
22R resistor
120R resistor
10k resistor
4k7 resistor
teensy
rubber pads
pin header 1x2
buzzer
LED

FlipMouse Manual

Welcome!

This manual covers detailed step-by-step instructions for building the FLipMouse alternative input system. As additional tools you will need a soldering iron with a fine tip, sharp side-cutting pliers, a slotted screwdriver and optionally a PCB holder. The required materials are tin-solder (small diameter) and adhesive tape (Scotch tape).

You can find additional information including a video of the construction process and software downloads at our homepage **http://www.asterics-academy.net/flip**
If you experience problems or need replacement part,
contact us at: **office@asterics-acadmey.net**

Have fun building your FLipMouse device !

Legend

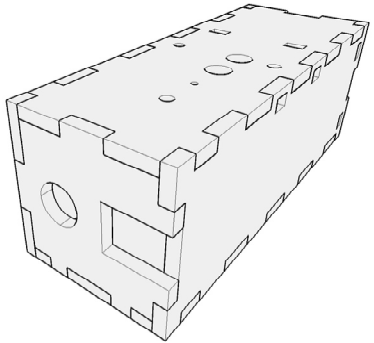
Solder with soldering iron.

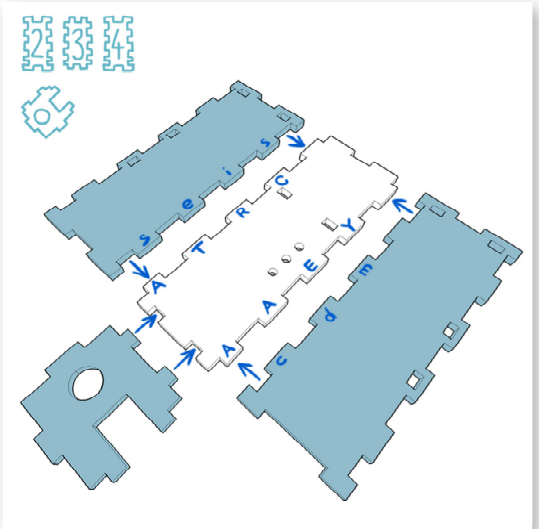
Clip with pliers.

Fix with tape.

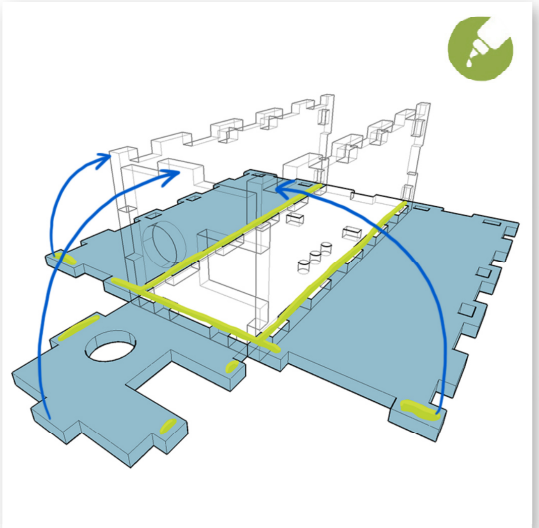
Glue with provided glue.

Wait the displayed amount of time.

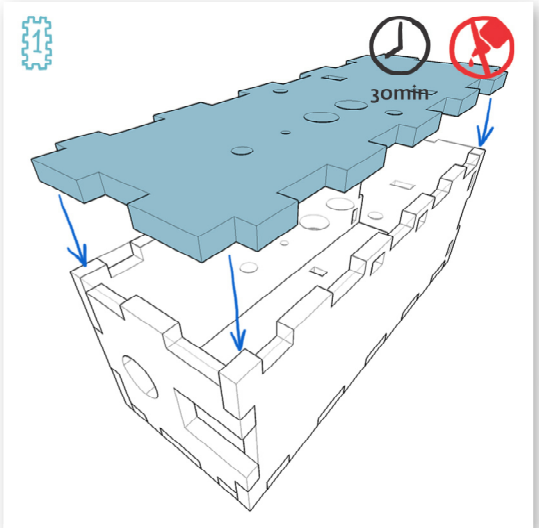




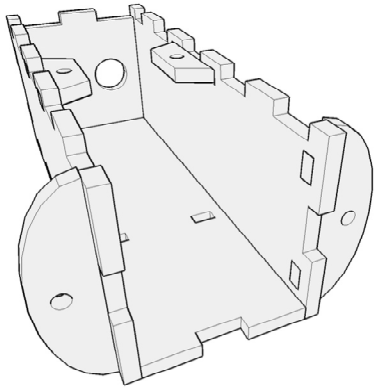
Put the pieces together, so that the words AsTeRiCs AcAdEmY are readable.

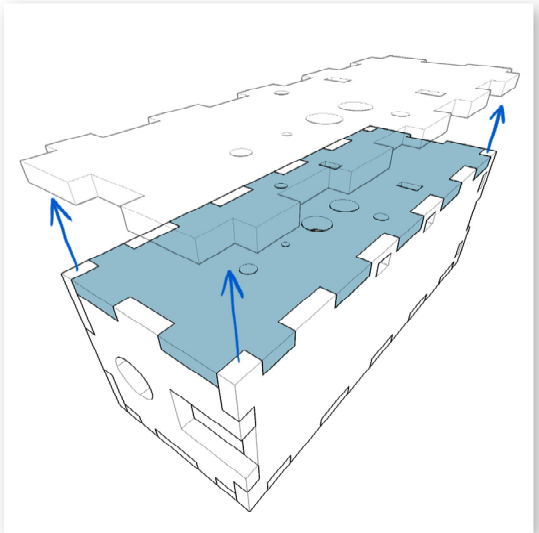


Make sure there is glue on each edge/corner.
Glue hardens due to light exposure.
Attention: glue residue can hardly be removed from acrylic glass!

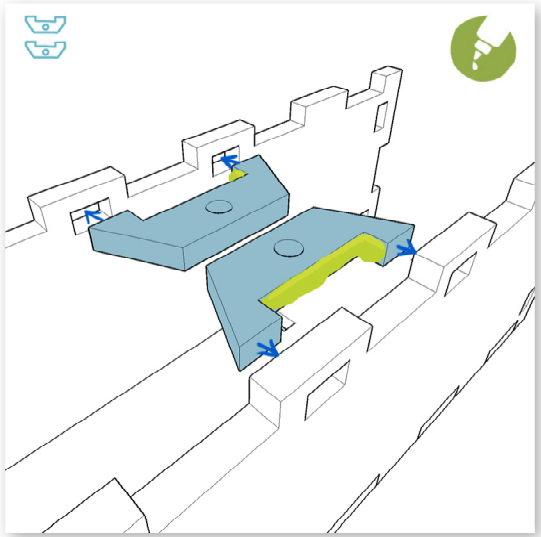


Do not glue the top cover! Wait 30 minutes.

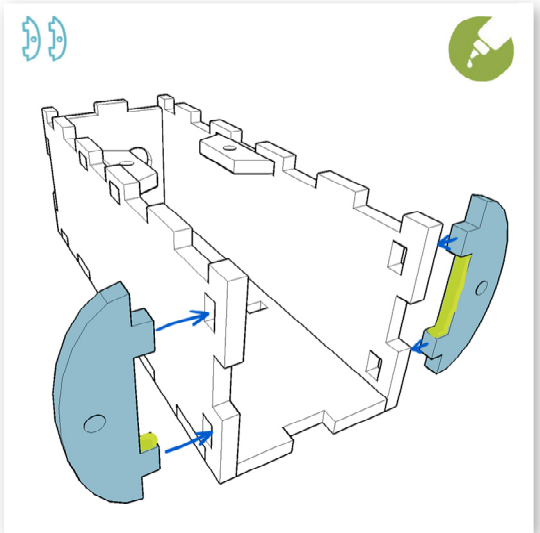




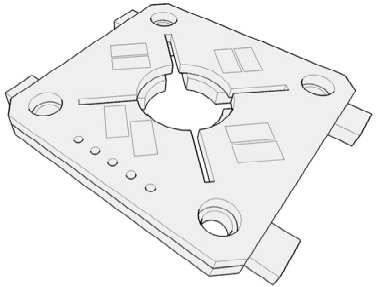
Remove the top cover.

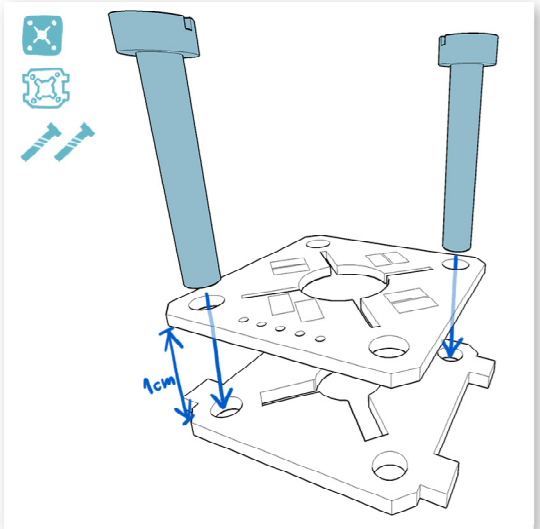


Glue the inside flaps in a straight angle.

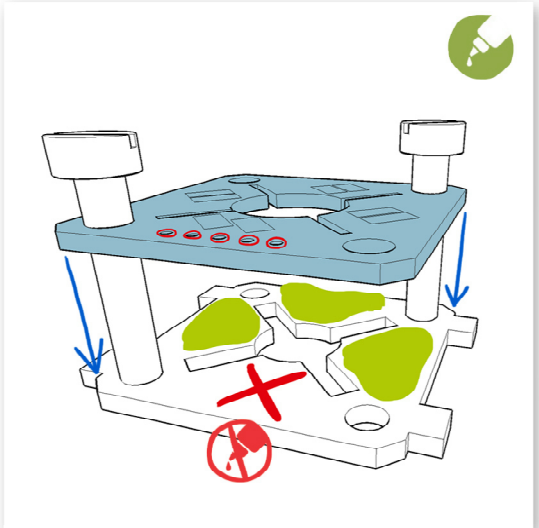


Glue the outside flaps in a straight angle.

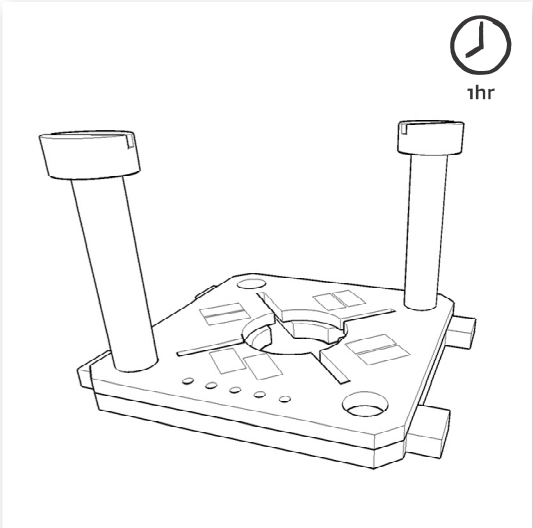




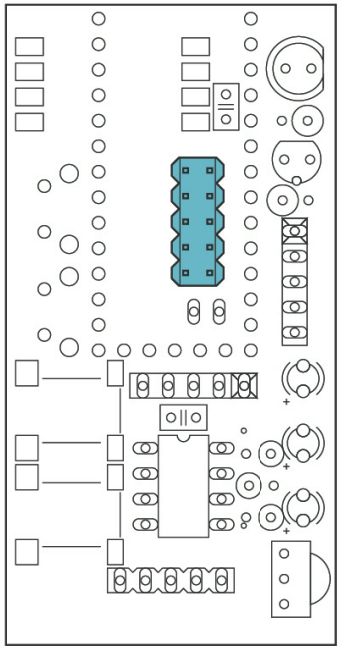
Leave a 1cm gap.

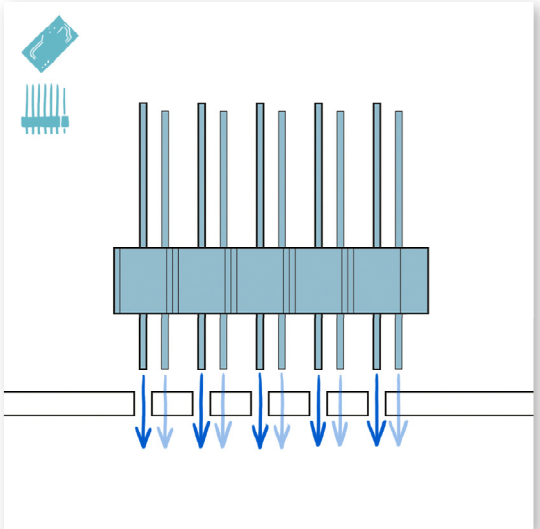


Don't glue the side with the pin holes!
Press both parts together.

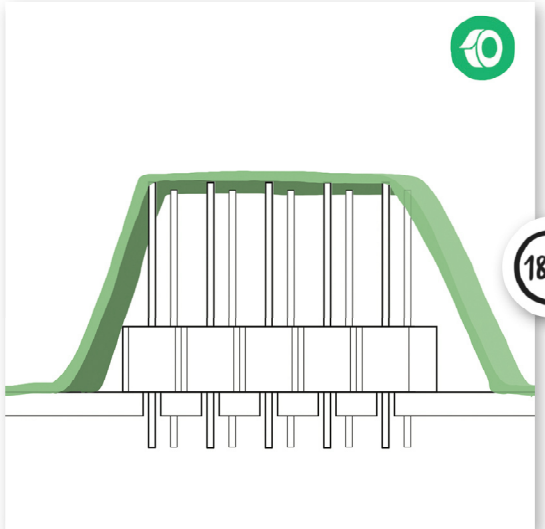


After 1 hr you can remove the screws.

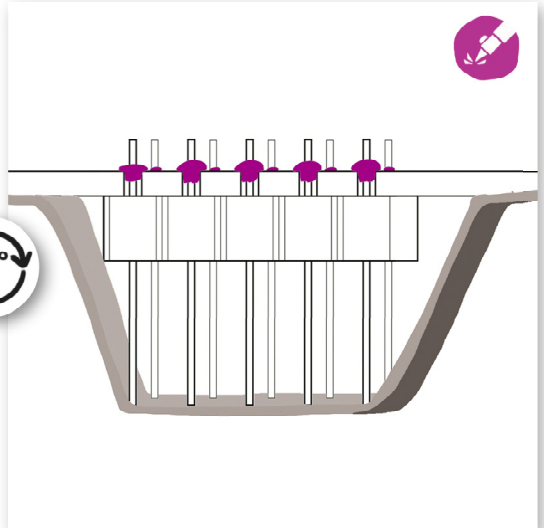




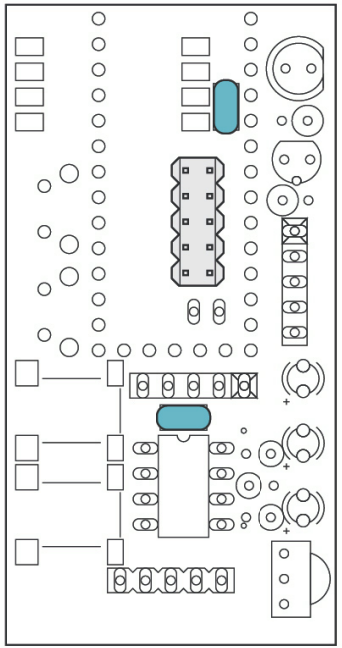
Place the pin header.

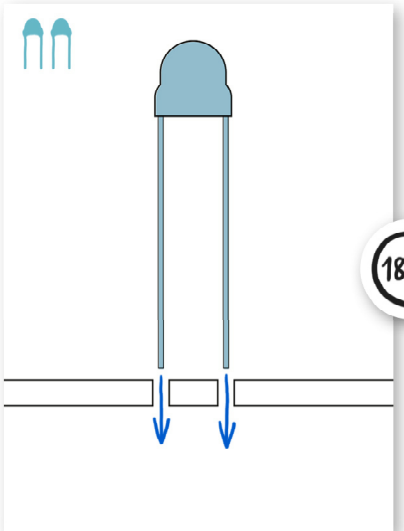


Use tape to fix the part.

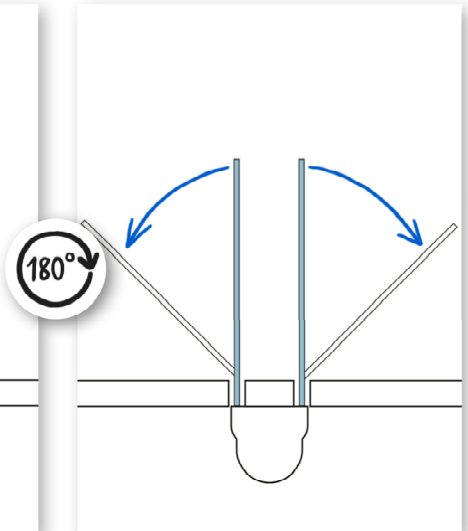


Solder and remove the tape.

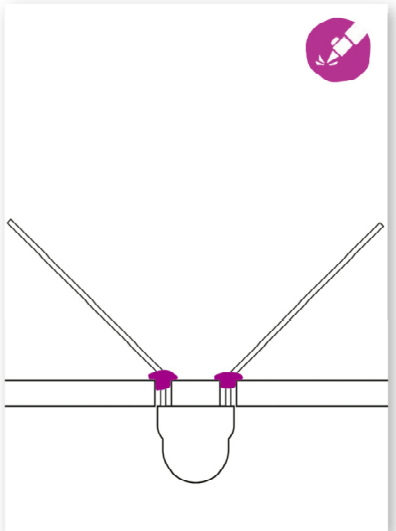




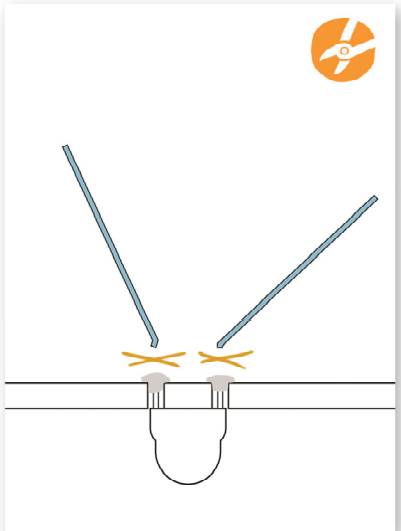
Place the capacitors.



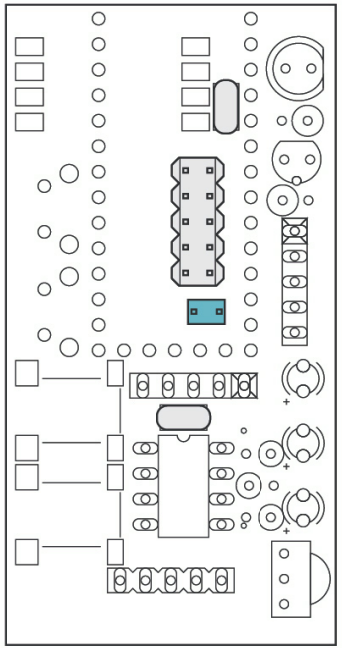
Bend the pins to fix the part.

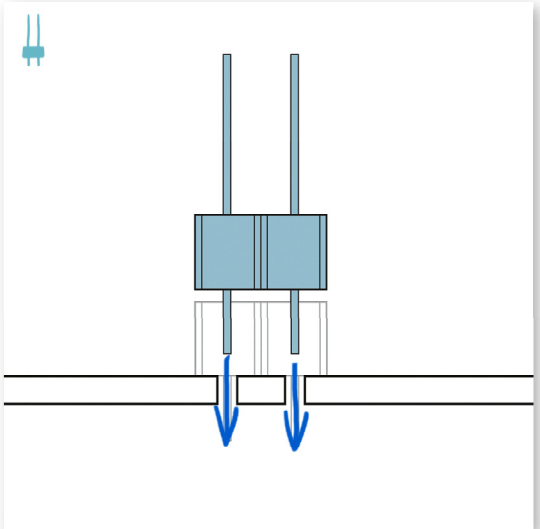


Solder the pins.

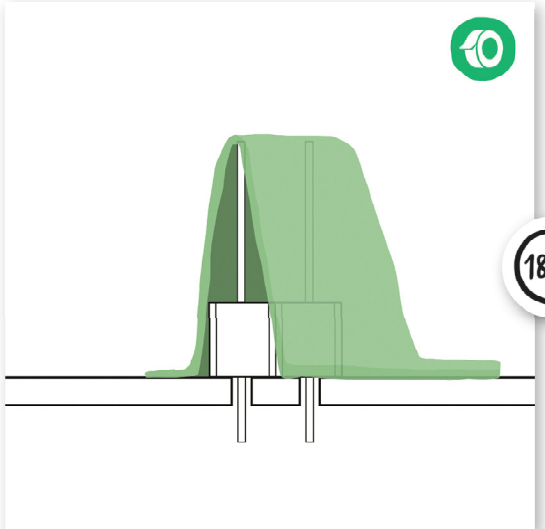


Clip the remaining pins of the capacitors.

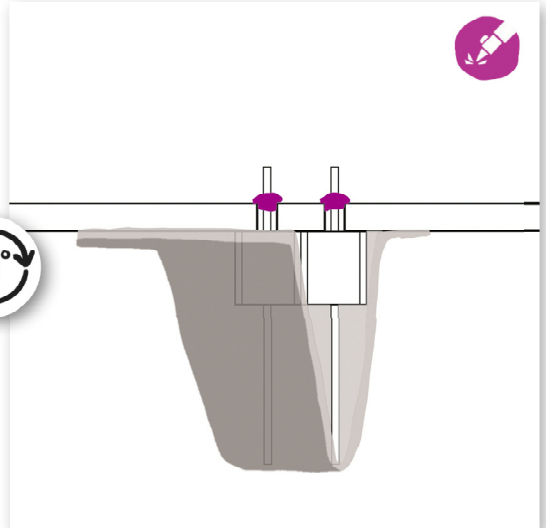




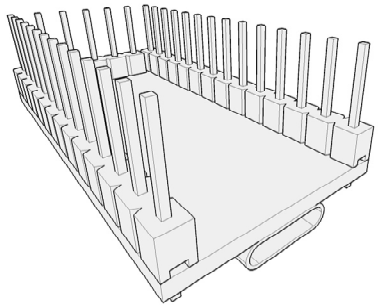
Place the pinheader.

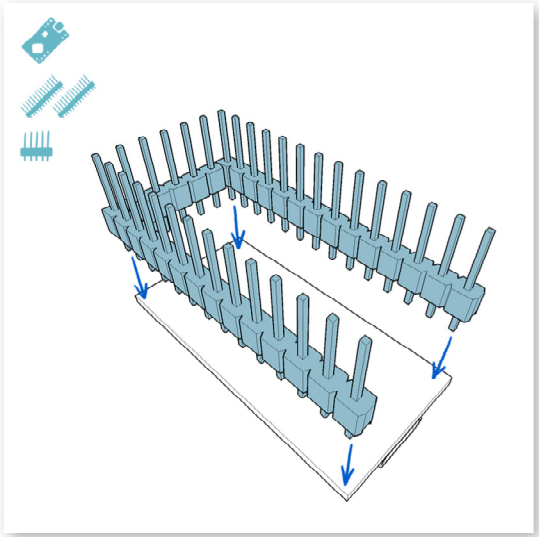


Use tape to fix the part.

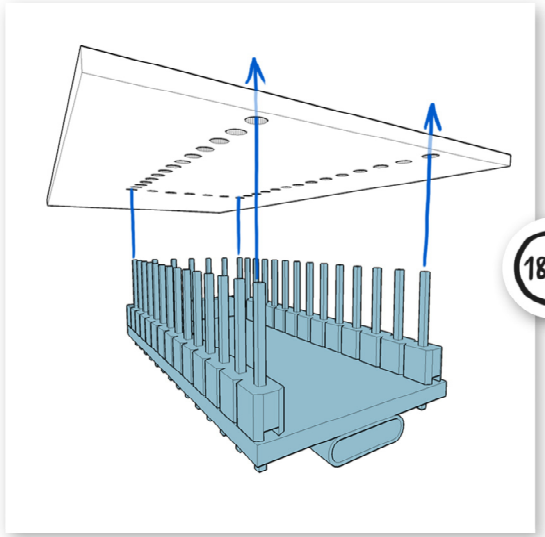


Solder and remove the tape.

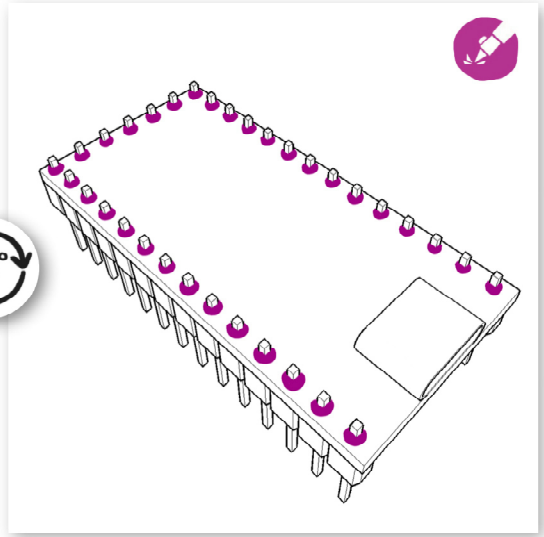




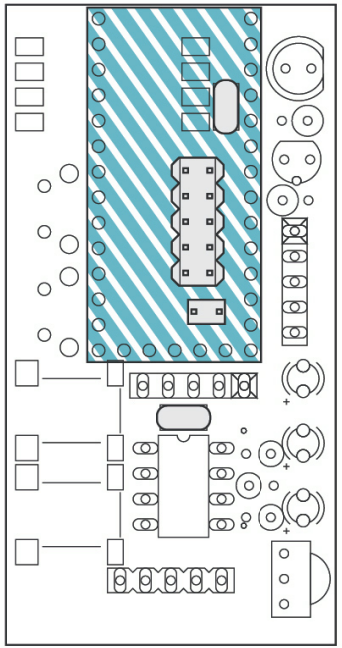
Place the 3 pin headers on the Teensy.

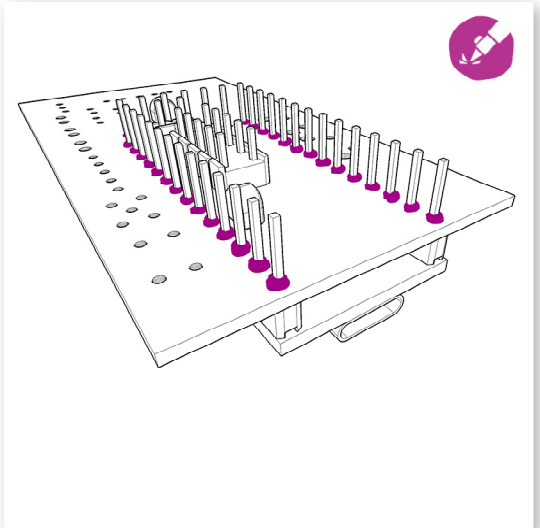


Place the Teensy board on the PCB.

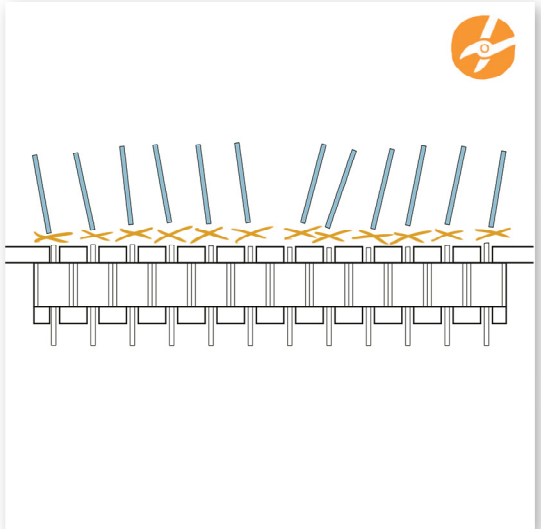


Solder the pins on the Teensy.
Don't leave space between Teensy and pin headers.

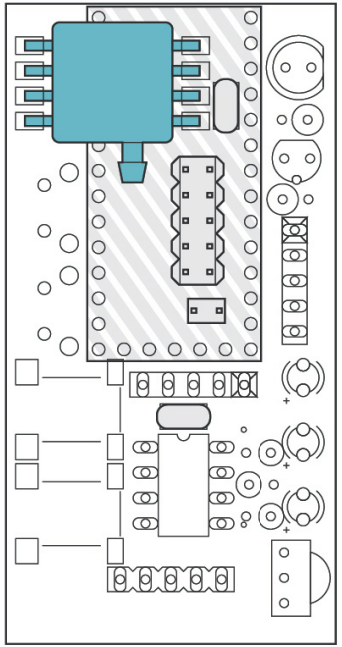


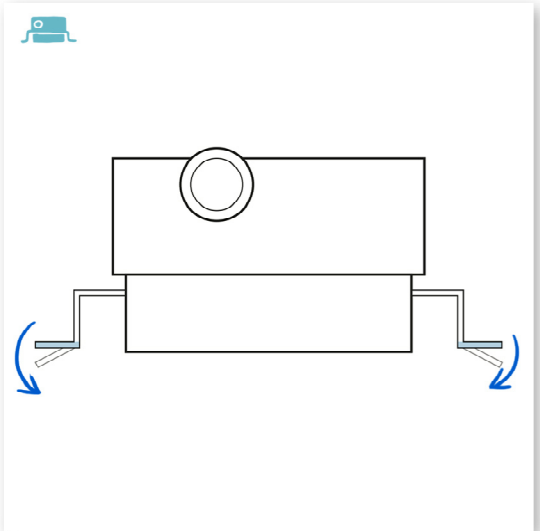


Solder the pins of the Teensy on the PCB.
Don't leave space between Teensy and PCB.

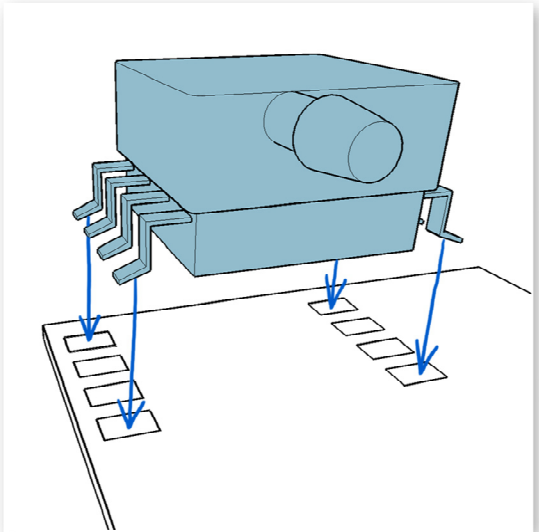


Make sure that the pins are clipped very close
to the PCB surface

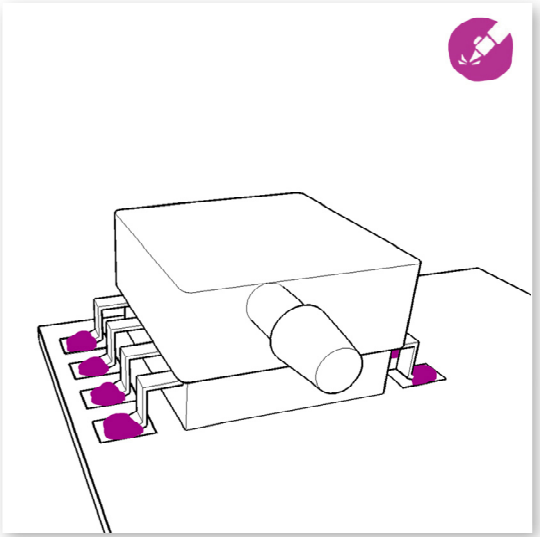




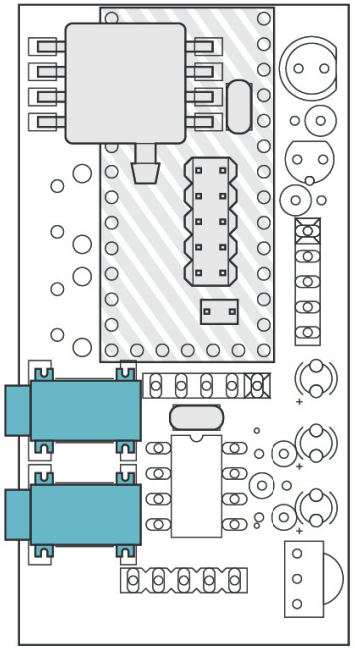
Bend the pins of the pressure sensor downwards.

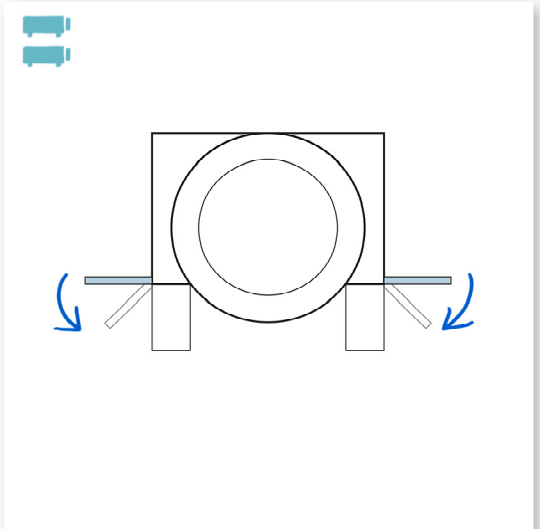


Place it on the PCB.

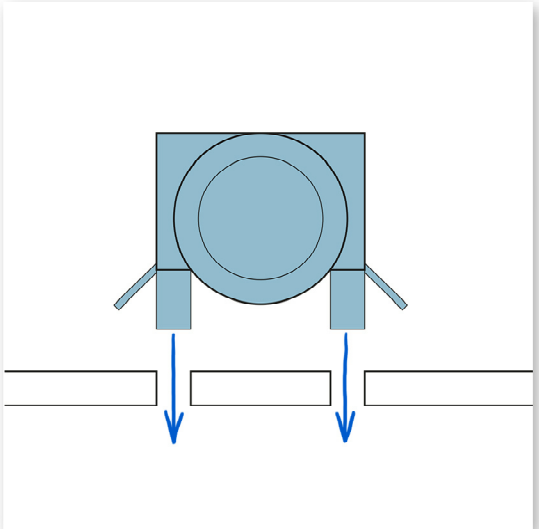


Solder it.

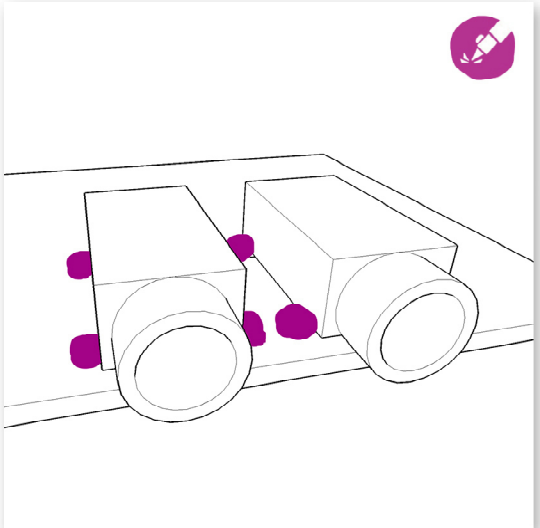




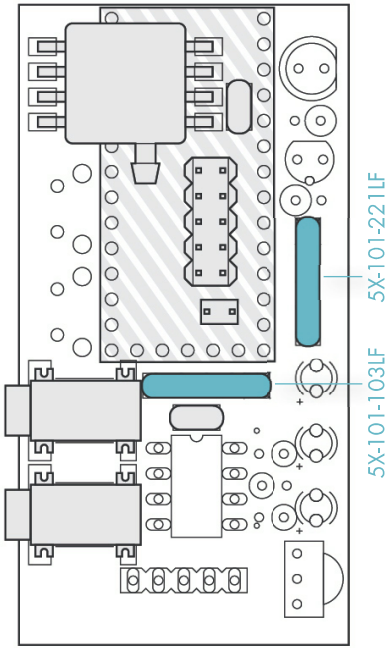
Bend all 4 pins of the jack plugs downwards.

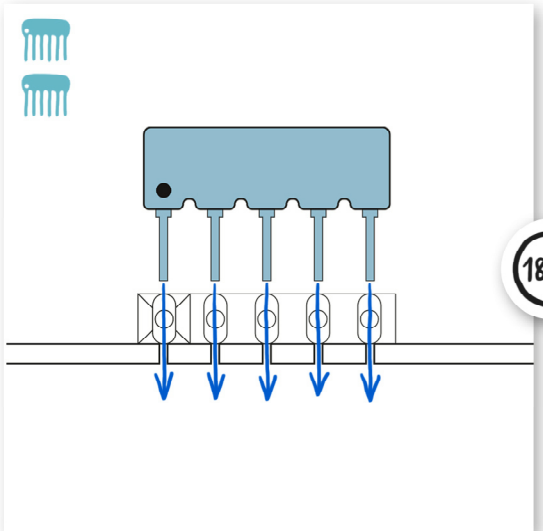


Place them on the PCB.

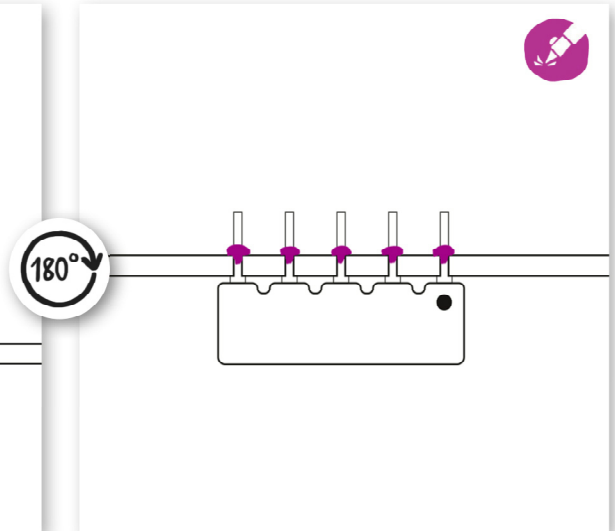


Solder the pins. Make sure that they are connected but avoid short cuts (fine solder tip needed)

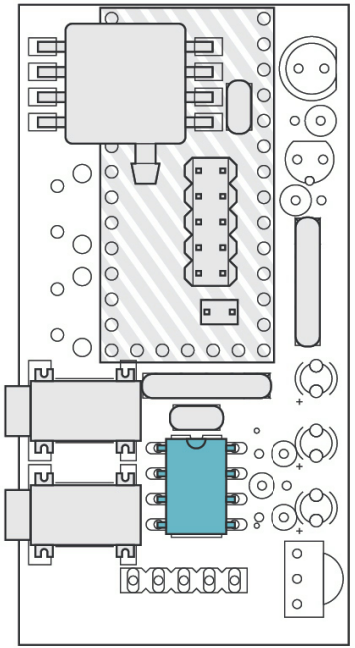


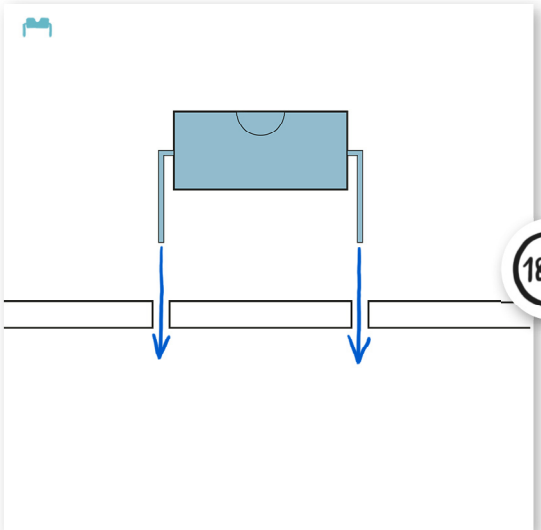


Place the resistor networks. There is a cross on the PCB and a point on the part.

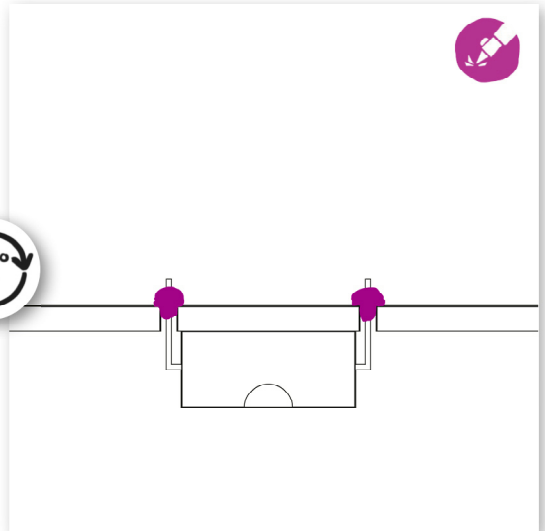


Solder these pins.

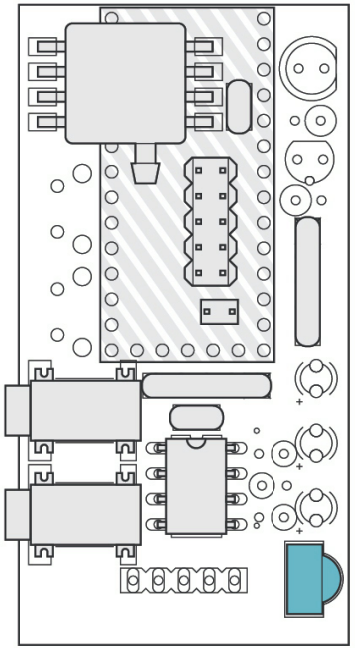


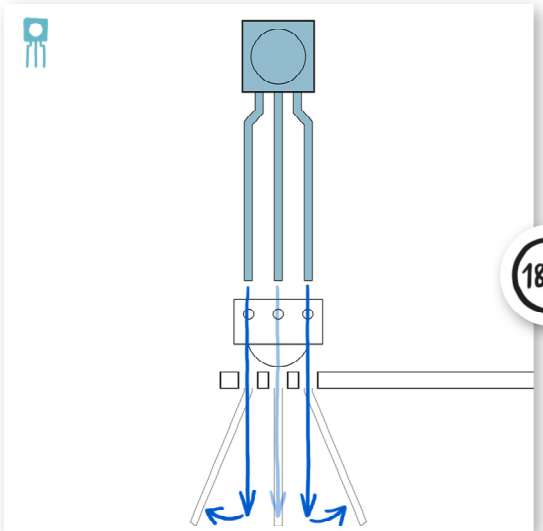


Place the EEPROM.

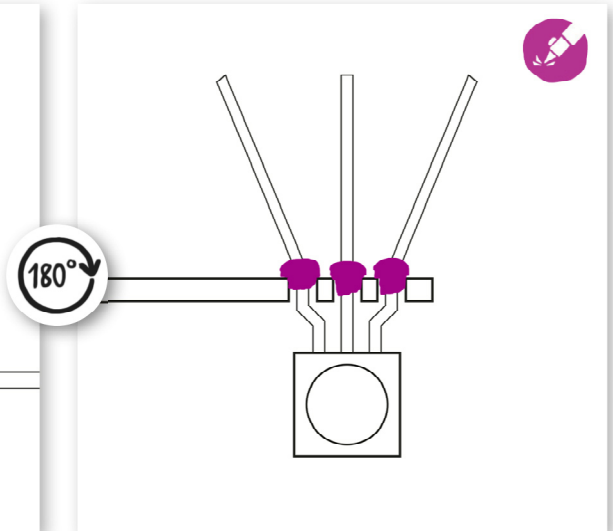


Solder it.

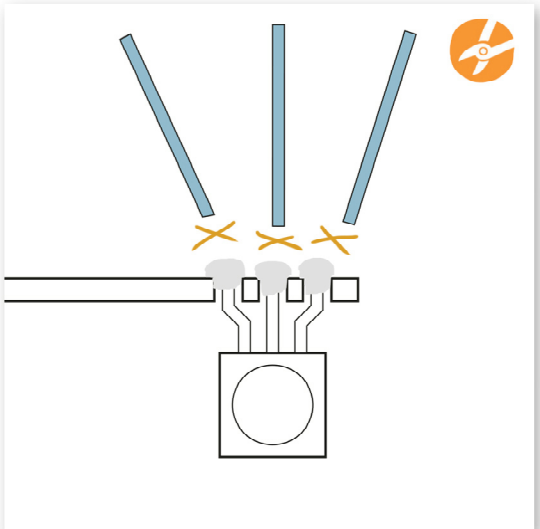




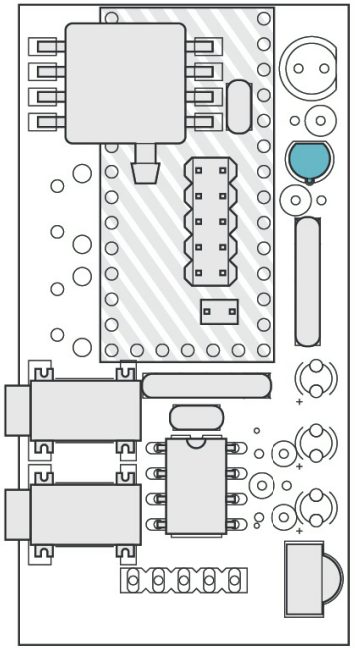
Place the IR receiver and bend pins.

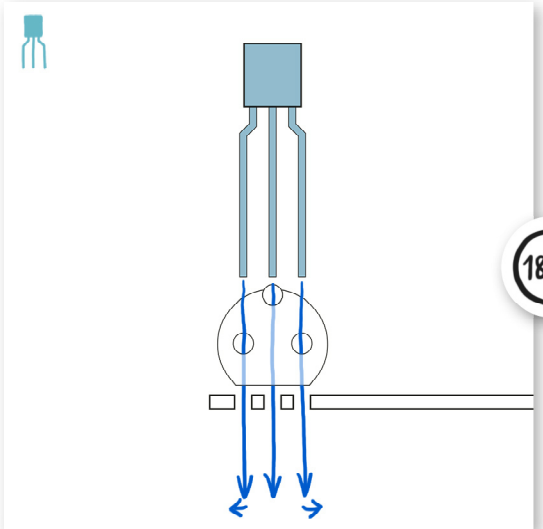


Solder it.

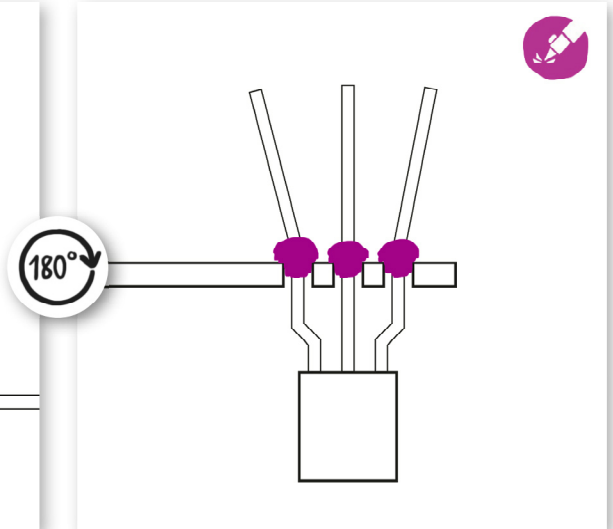


Clip the pins.

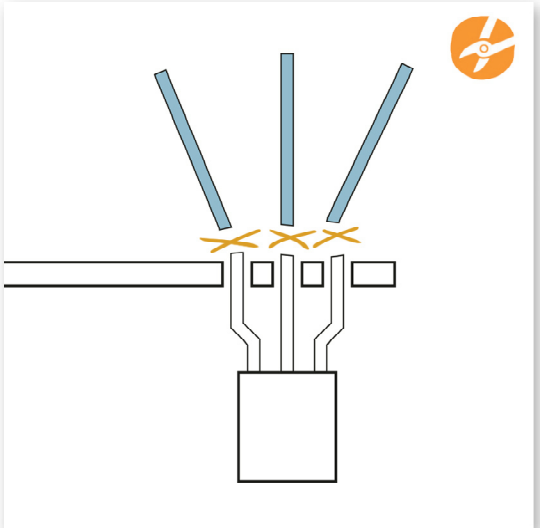




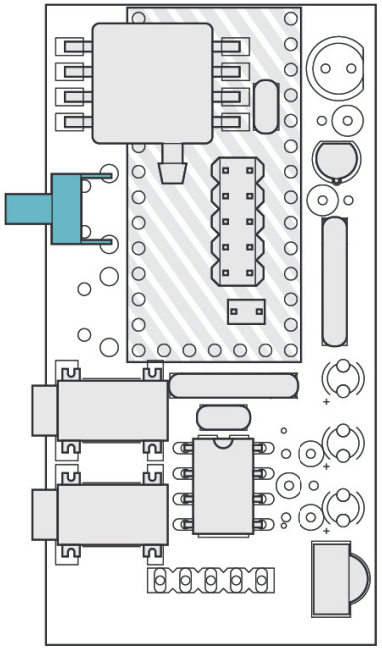
Place the MOSFET,
bend the pins to fit into the PCB.

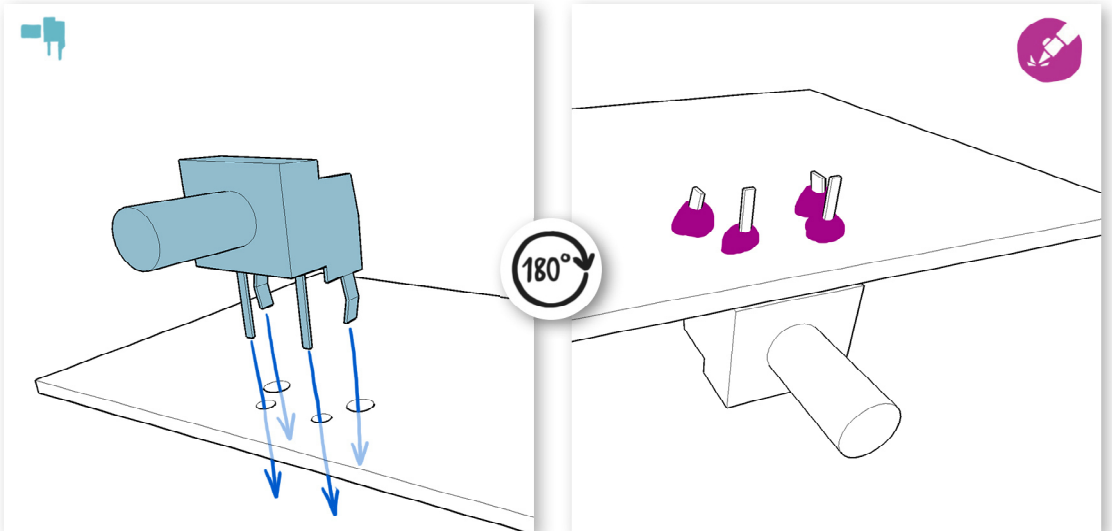


Solder it.



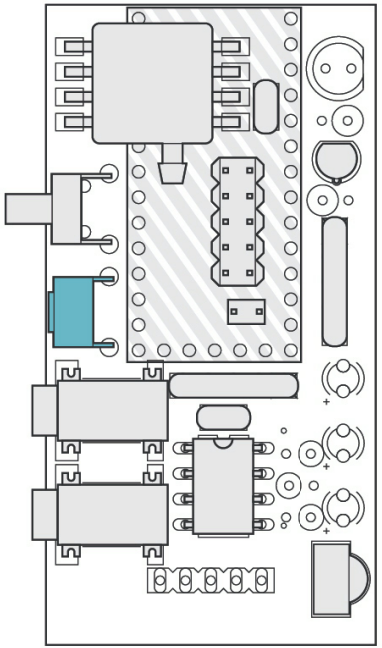
Clip the pins.

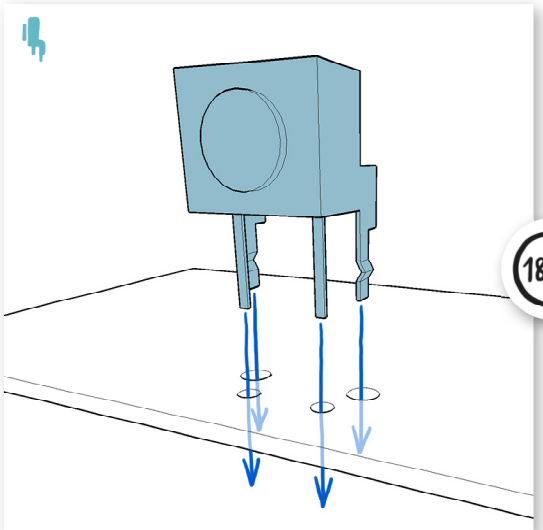




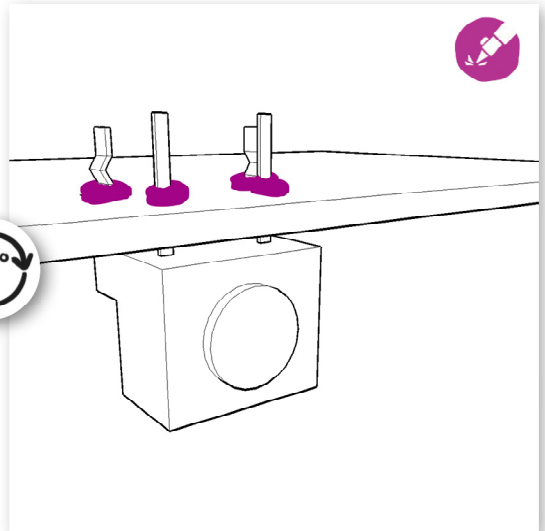
Place the long-nosed button.

Solder it.

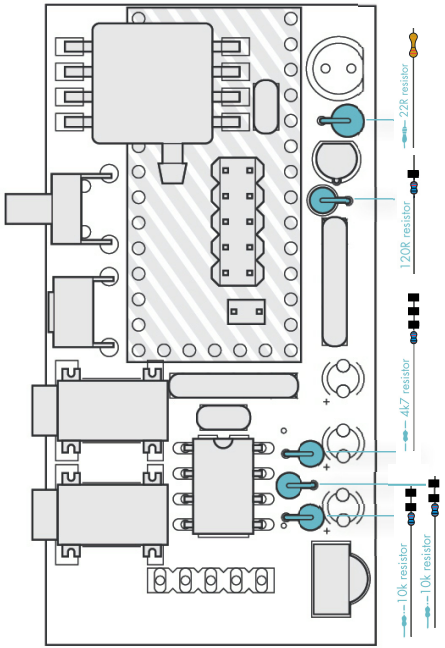


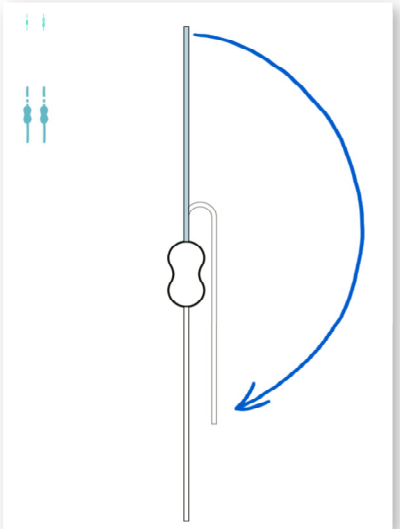


Place the short-nosed button.

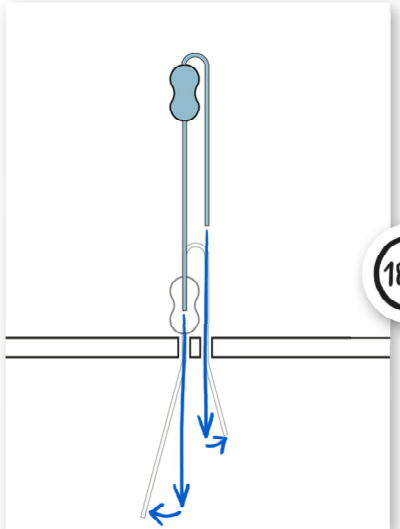


Solder it.

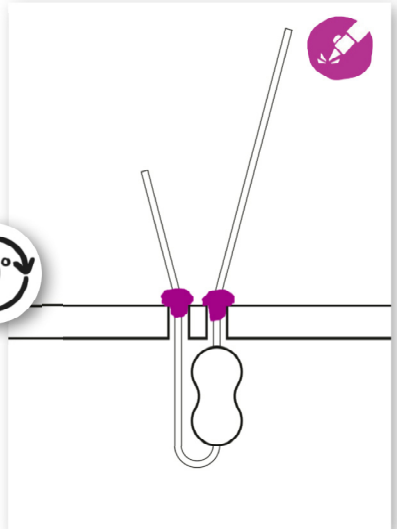




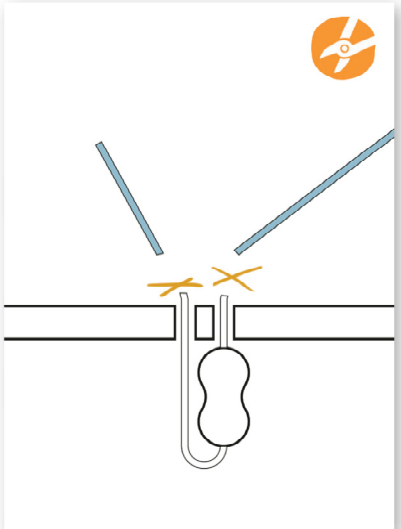
Bend one leg of each resistor as tight as possible to 180.



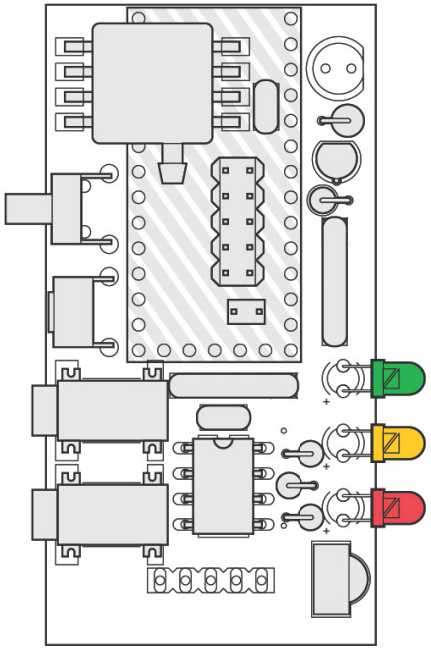
Place the resistor, bend the legs to fix it. Make sure to place the resistor as close as possible to the PCB

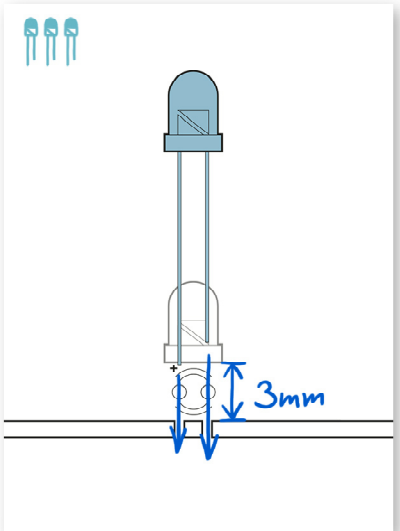


Solder it.

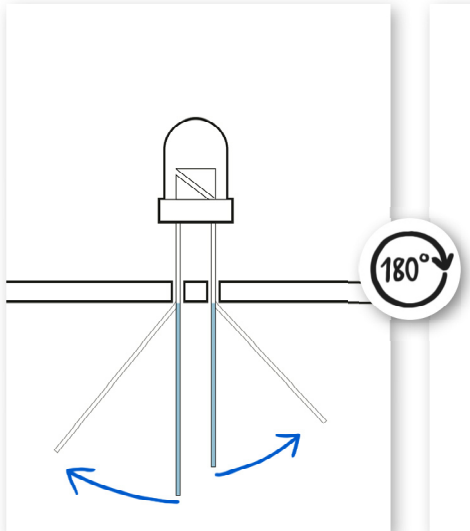


Clip the pins.

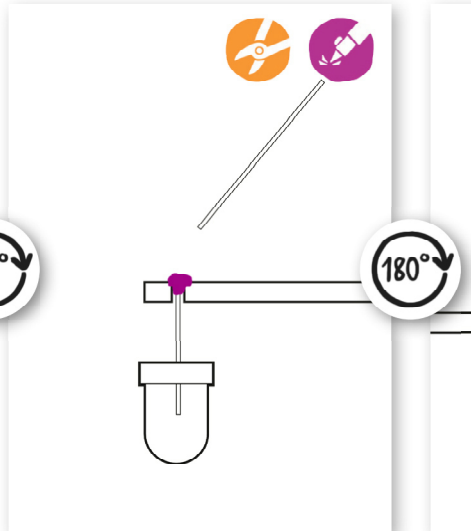




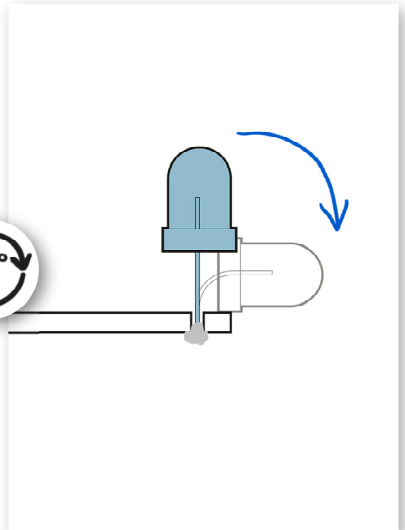
Place the LEDs with 3mm space.
Please note the position! The smaller part inside the LED should be at the "+" sign on the PCB!



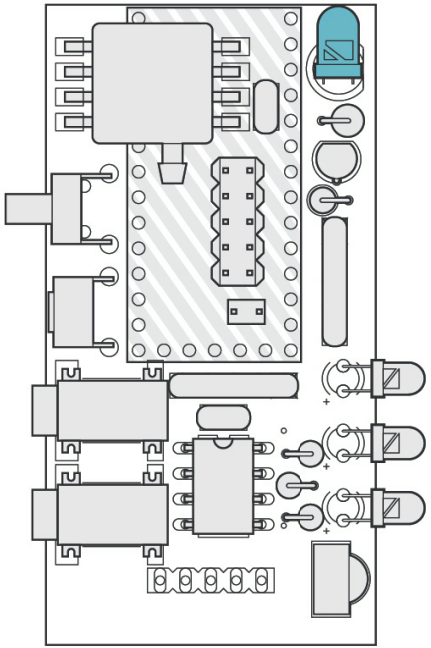
Place the acrylic spacer part between all LEDs and the PCB to adjust the distance.
Bend the pins to fix the LEDs

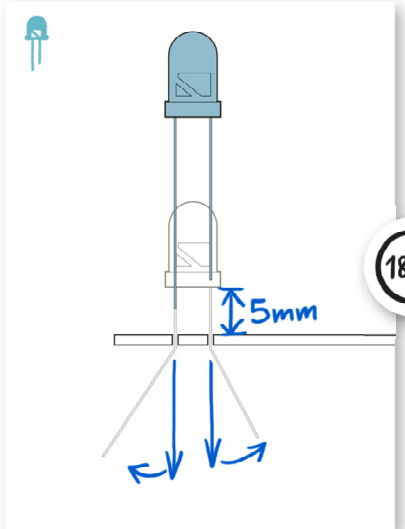


Solder the LEDs & clip the pins.
Remove the spacer.

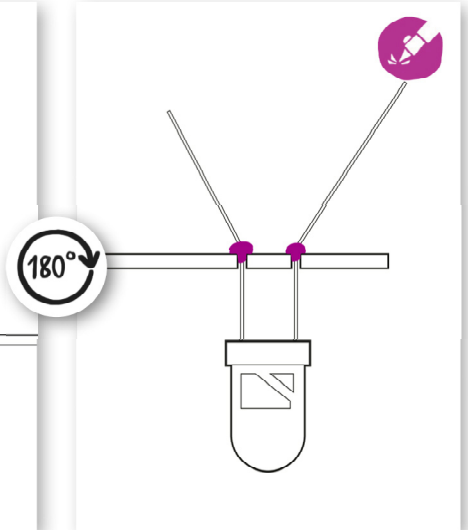


Bend the LEDs to 90.

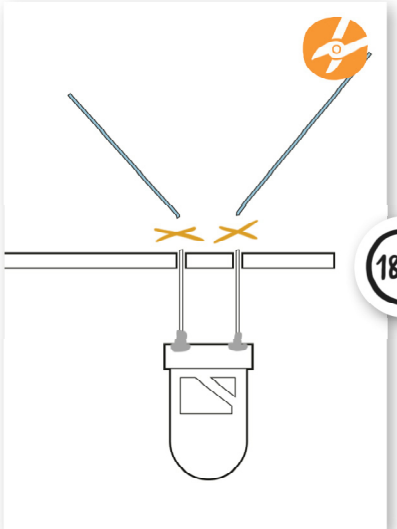




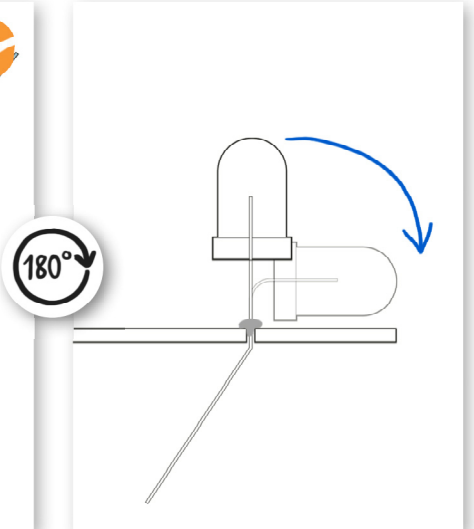
Place the infrared LED with 5mm space. There is one side flat on the LED housing and the corresponding mark on the PCB.



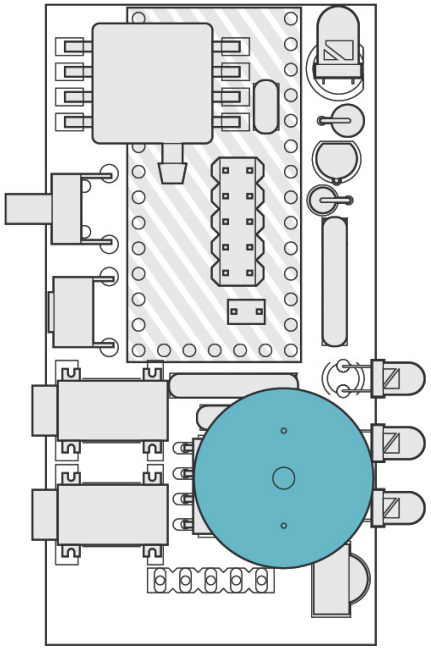
Bend the pins & solder them.

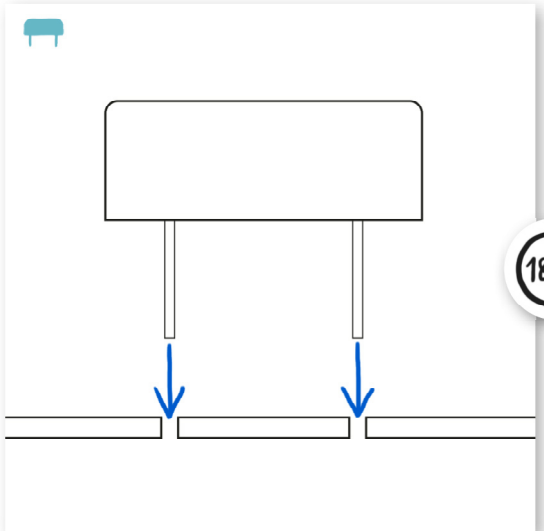


Clip the pins.

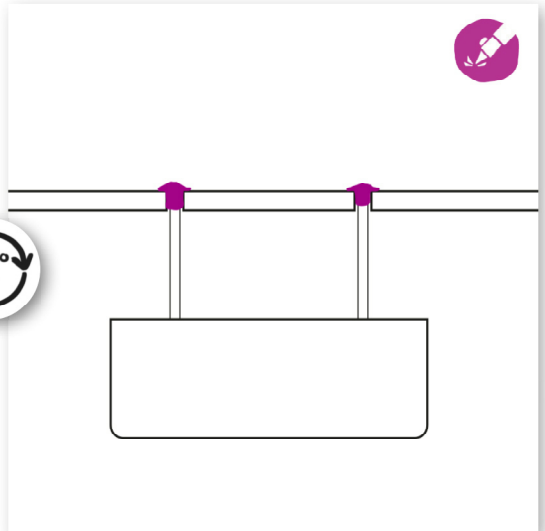


Bend the LED to 90, pointing upwards in this drawing.

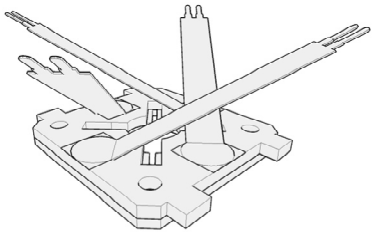


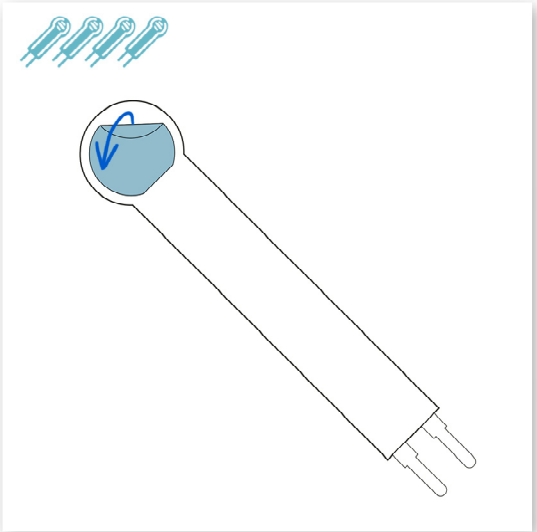


Place the buzzer over the LEDs.

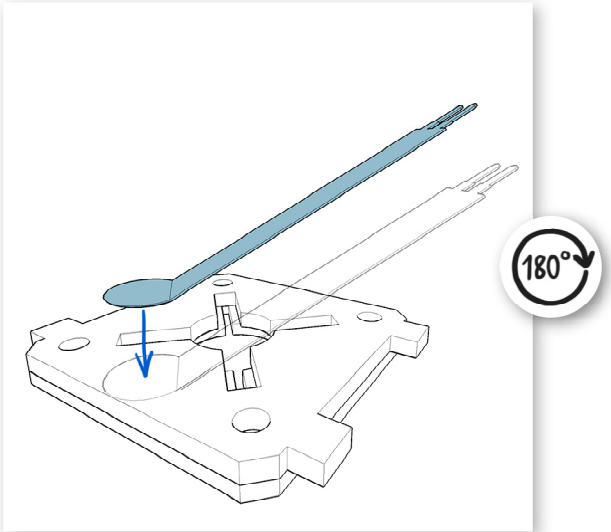


Solder it.

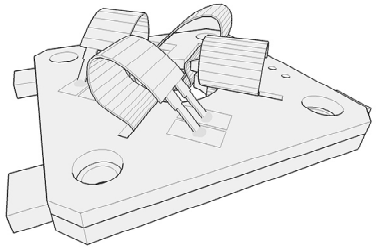


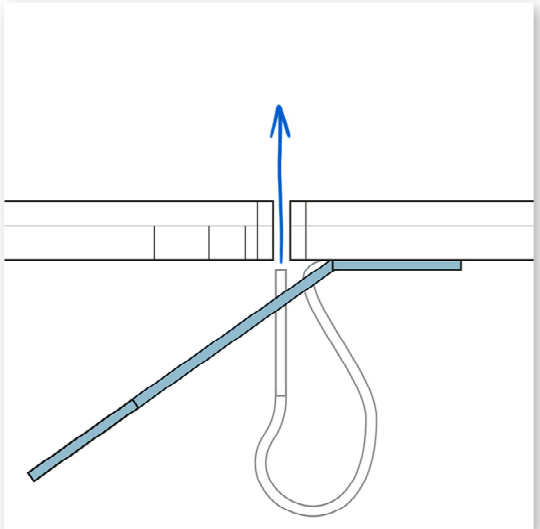


Carefully remove the cover of the 2-side adhesive tape on the sensor. Attention: this is a transparent foil.
DO NOT remove the black foil!

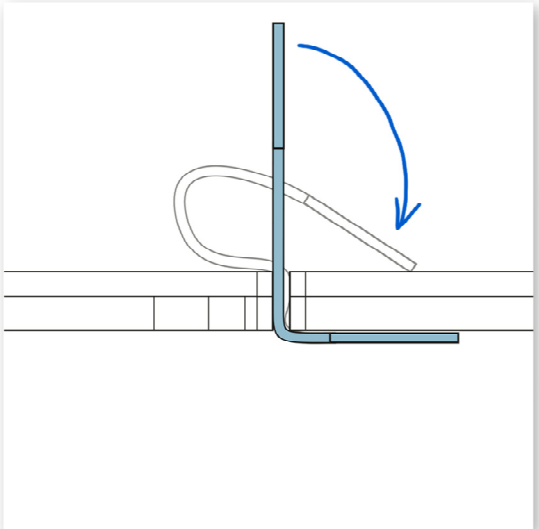


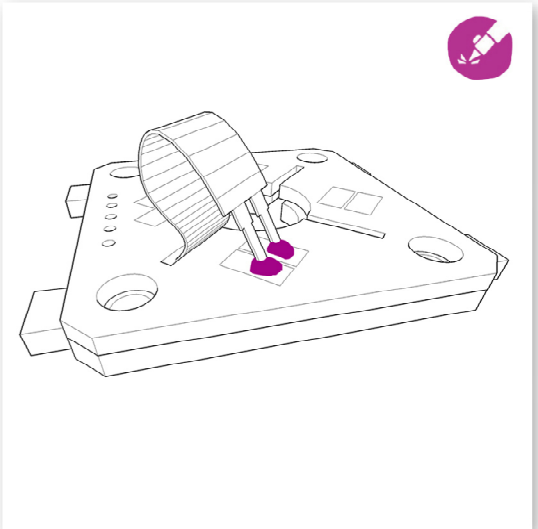
Place the sensor on the acrylic part.



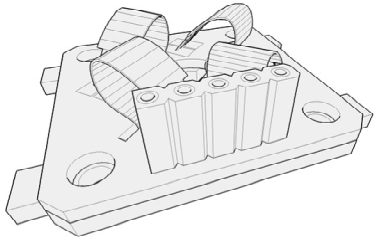


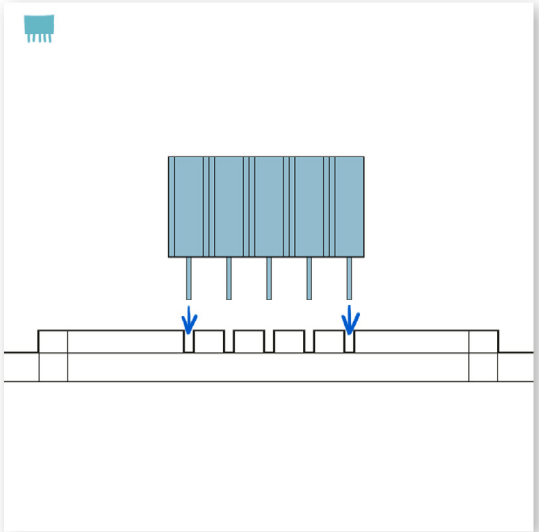
Put the pins through the cuts on the other side.



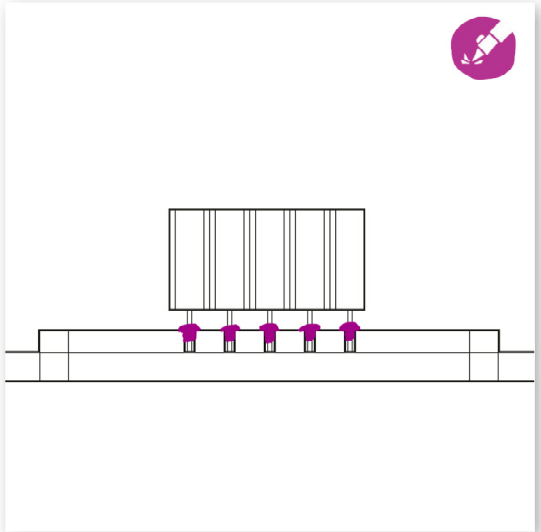


Solder the pins. Attention: do not buckle the sensor.
Solder for a short time, the sensor is made of plastic.

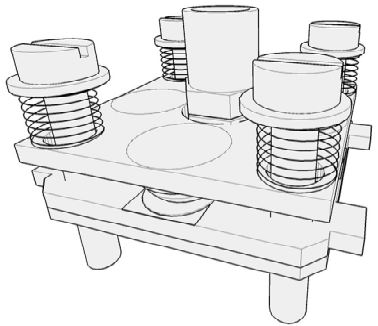


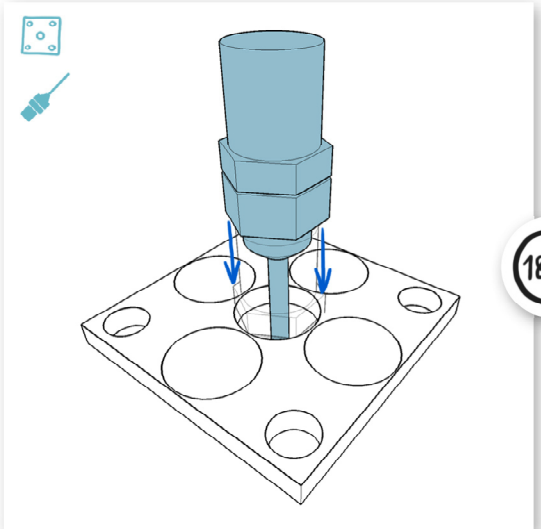


Place the pin header on the sensor carrier.

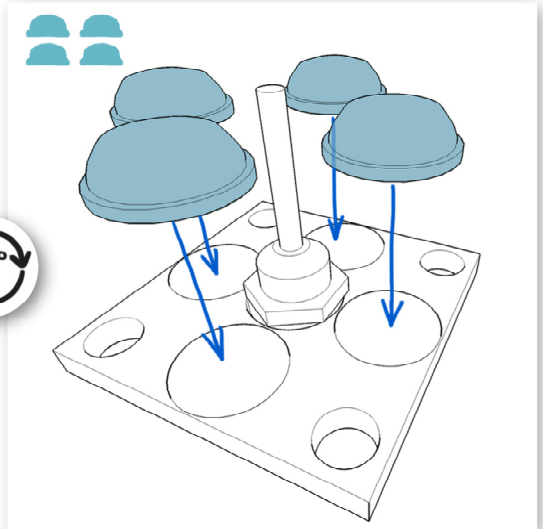


Solder one pin first, bend the pin header to a straight angle and solder the remaining pins.
This might be tricky, use a fine solder tip.

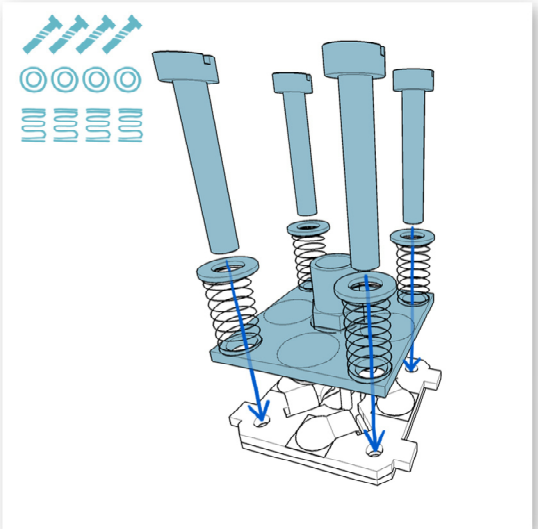




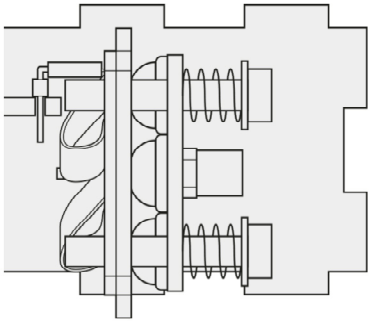
Mount the Luer lock connector with the M5 screw nut.

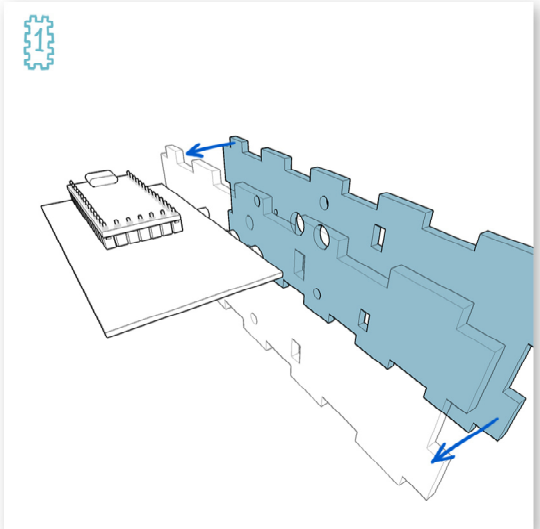


Place the rubber pads and glue the screw nut.

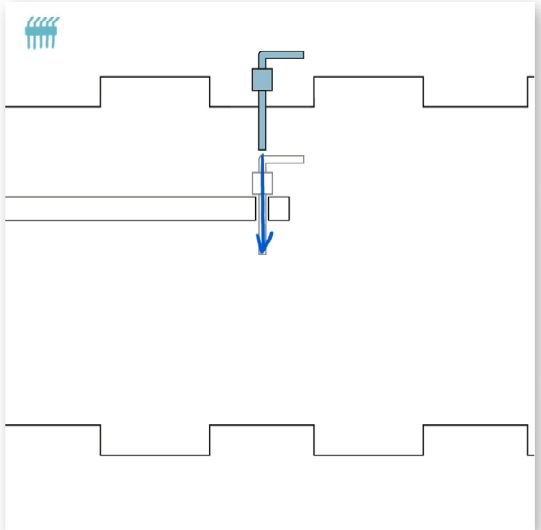


Turn all 4 screws that some force is applied,
not too much.

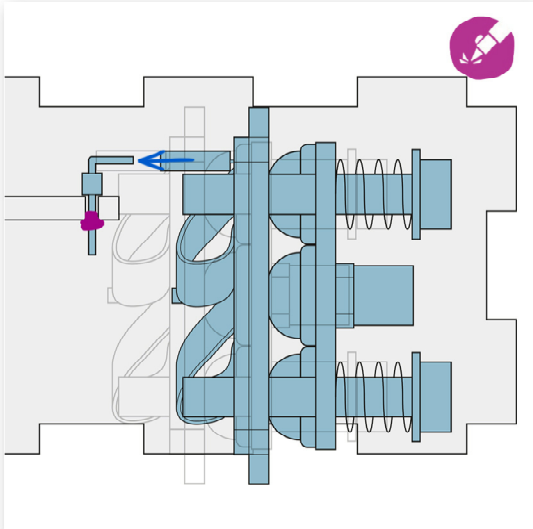




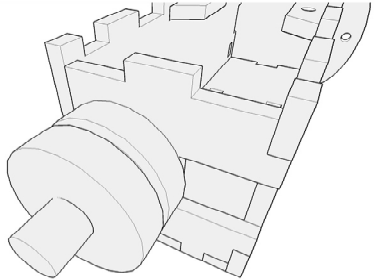
Use the top cover to align the main PCB straight.
Attention: Please make sure all parts fit well and the alignment is straight. There is no possibility to change the positioning after soldering!

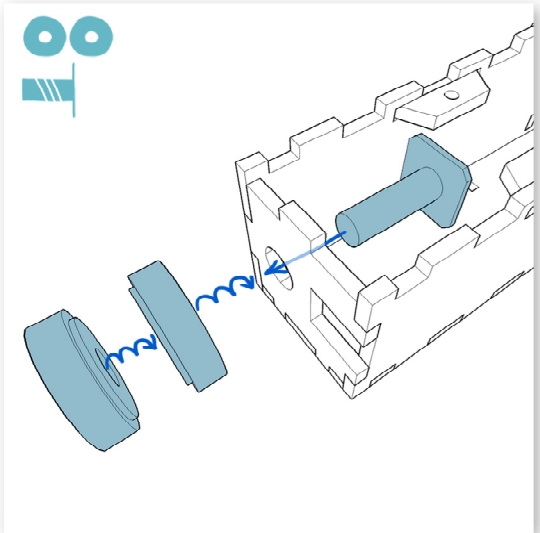


Put the angled pin header to the PCB.

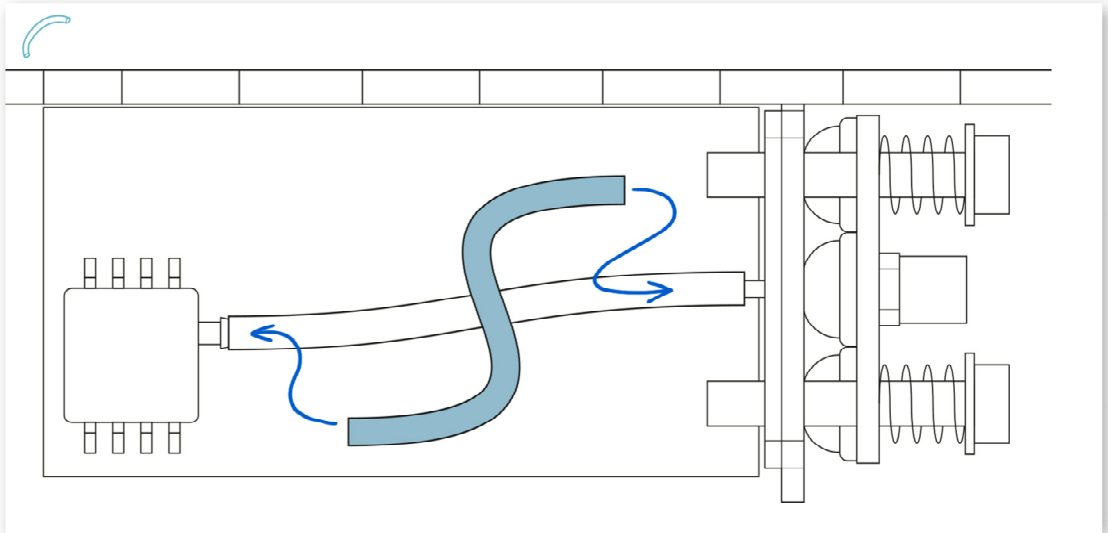


Put both parts together and use the top cover to align them. Solder all 5 pins.

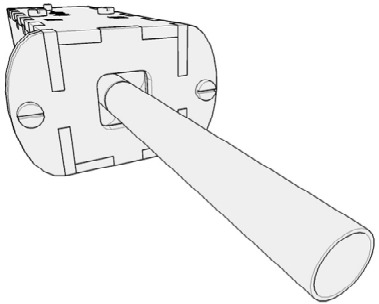


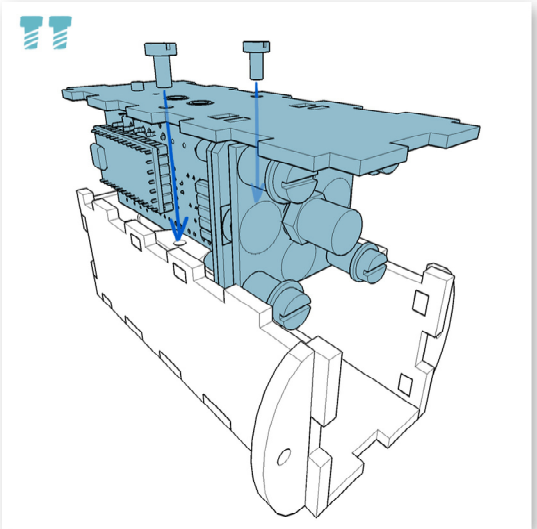


Mount the adapter.

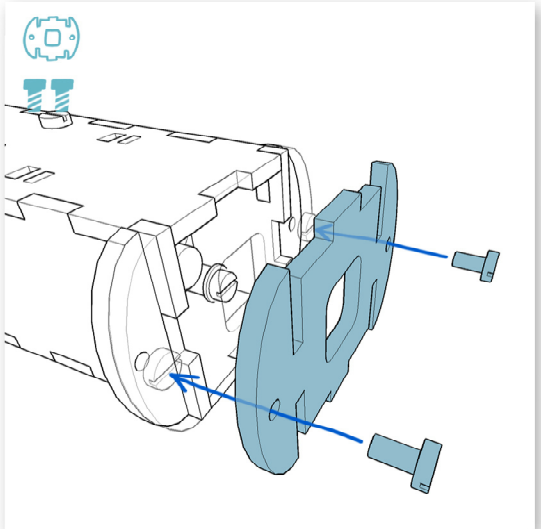


Put the tube on the pressure sensor and the sensor carrier.

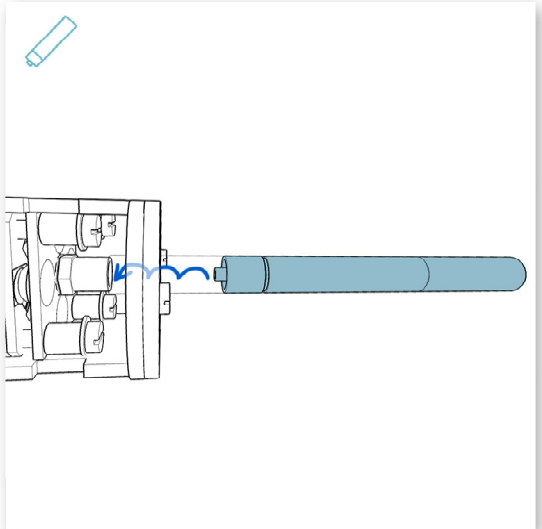




Place both PCBs into the case, put it in from the front. Be careful to fit the LEDs to the corresponding holes. Mount the top cover.



Mount the front cover. Optionally remove sharp edges and corners using fine sandpaper.



Attach the mouthpiece.

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