



**NOMINET**

# Pips Construction Manual

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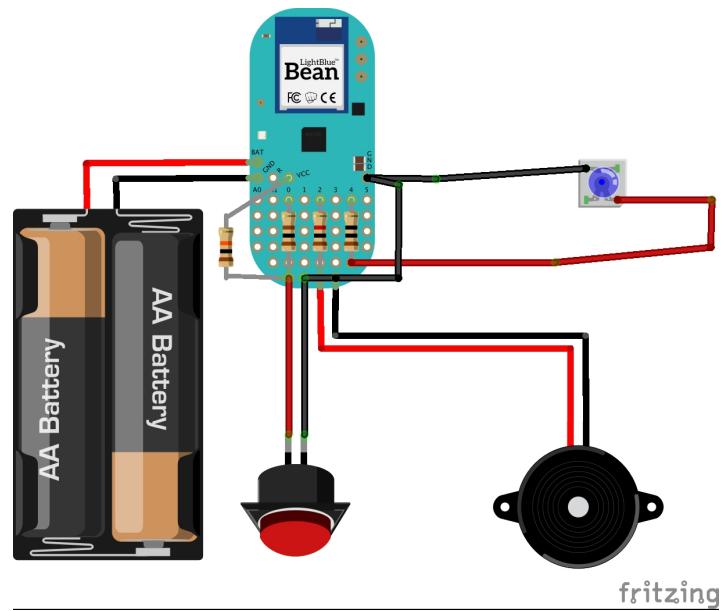
## Part I – The Case

### Step 1: Gather your materials

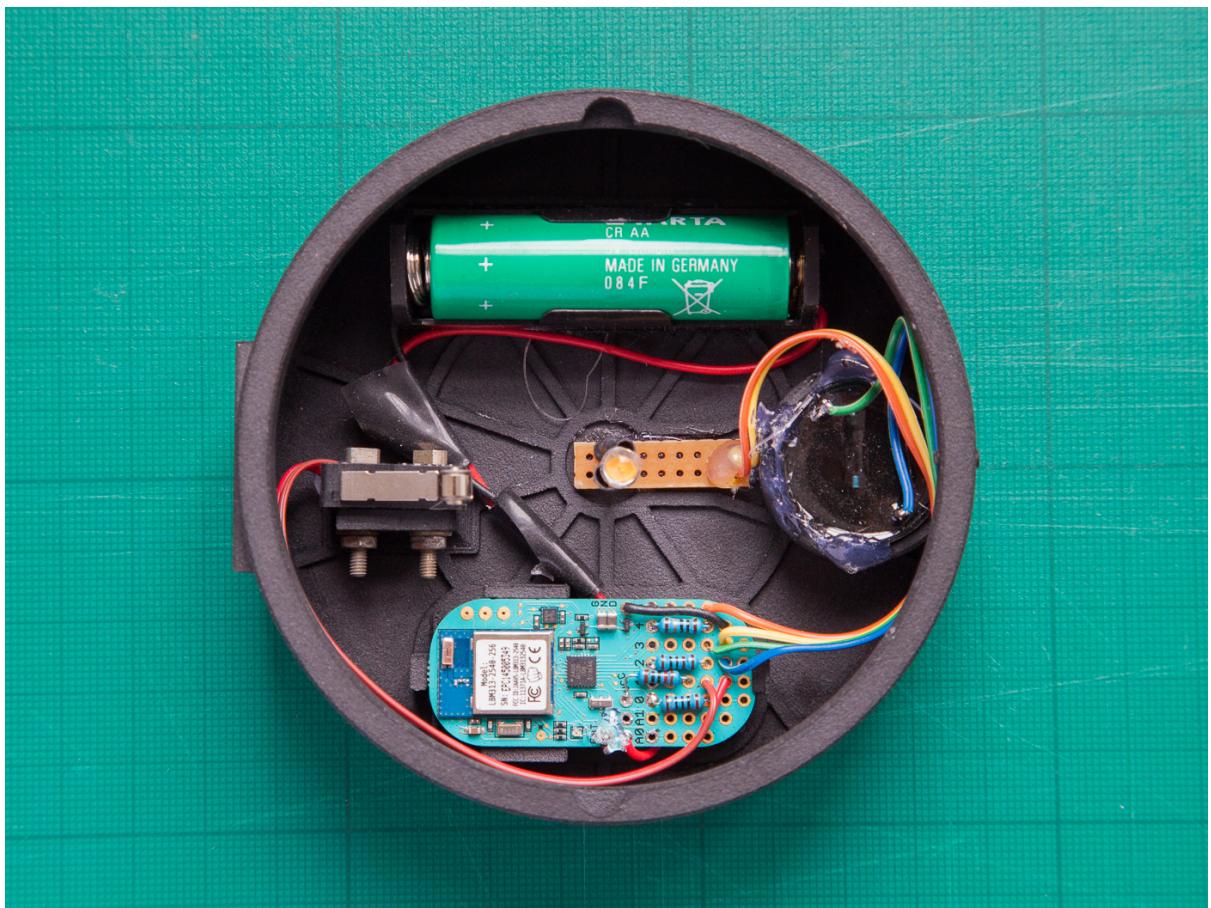
You'll need the materials from the shopping list that accompanies this manual.

### Step 2: Wire everything up

Fire up your soldering iron and wire up all of the components as per the fritzing wiring diagram. Make sure you leave enough slack to position the components in the base. Fix the LED to a piece of strip board.



fritzing





### Step 3: Fix the switch in place

You'll need to find yourself a small pair of nuts and bolts that fit. The switch fixes onto the switch mounting which is integrated into the printed Pip case.

### Step 4: Glue the battery holder, LED, and buzzer in place

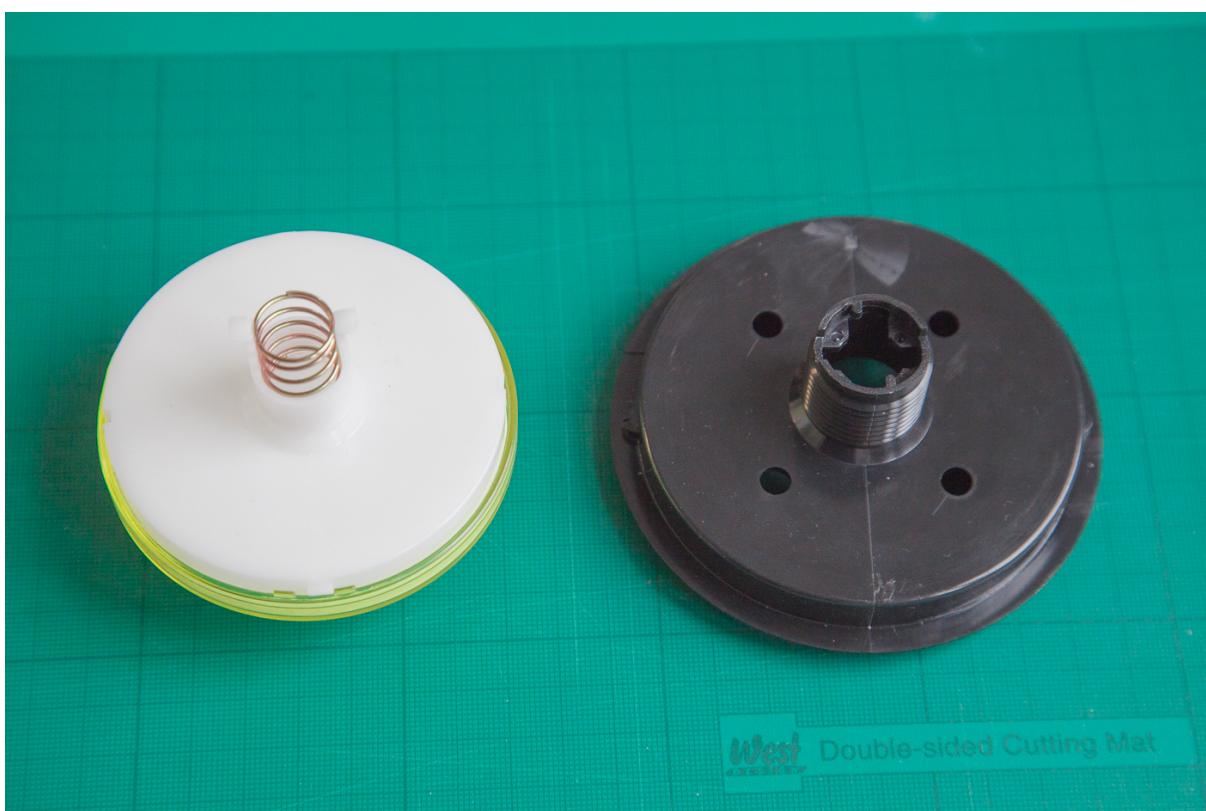
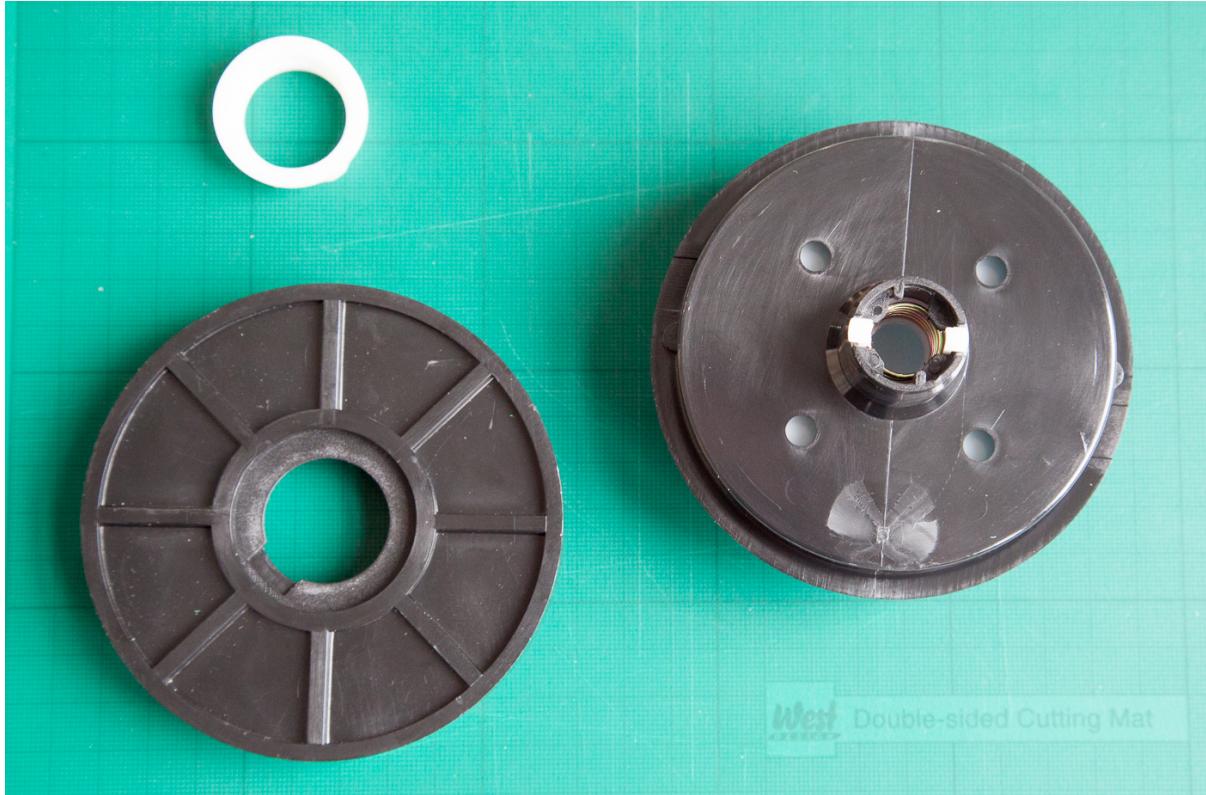
A glue gun is useful here. Even though the buzzer should fit snugly into the casing, a blob of glue to keep it in place is a good idea.

## Part II – The Button

We modify the switch so that we can have a low-profile box (and all that modification is only necessary if that's important!). To do this, we take the microswitch off the bottom of the original switch, and replace it with one that's mounted in the box, with the switch lever/roller fitting through a hole we cut in the bottom of the switch so it's pushed down by the moving part. Having removed the original microswitch, the moving/illuminating part of the switch is no longer retained & would just fall out. So we drill a hole in the side and use the self-tapping screw to go into the slot, and that retains the top part of the switch. The steps to carry out this modification are explained in this part.

## Step 5: Disassemble the button

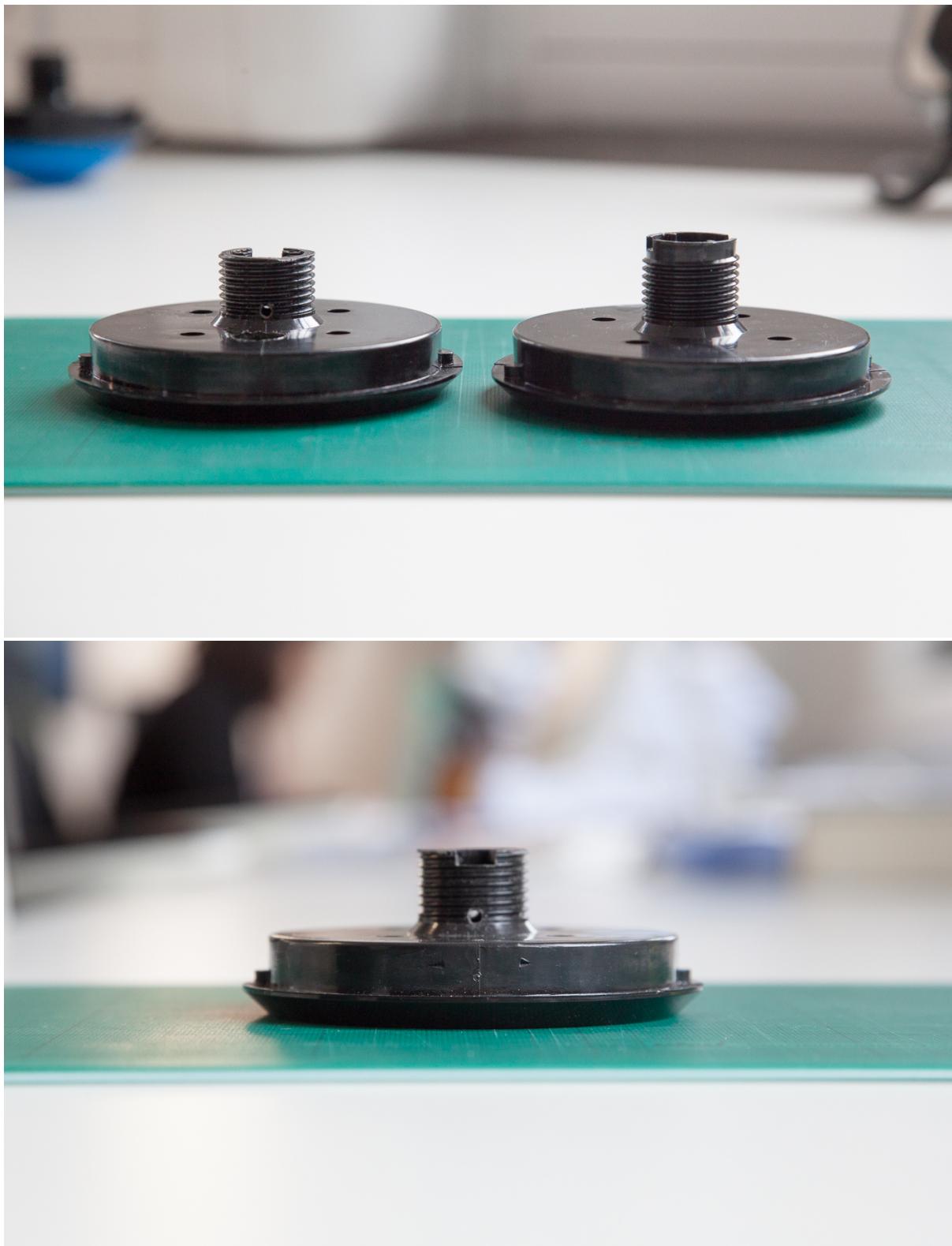
Remove the base part of the button and disassemble the entire mechanism. You won't need the original bottom and plastic bolt.



## Step 6: Trim down the threaded spring housing

This part of the button needs to be trimmed down with a hacksaw so that it will fit into the casing. Saw the bottom part off so that the end is flush with the 4 spring retaining tabs that protrude into the shaft. You will also need to cut a notch into the shaft for the LED's strip board to fit under.

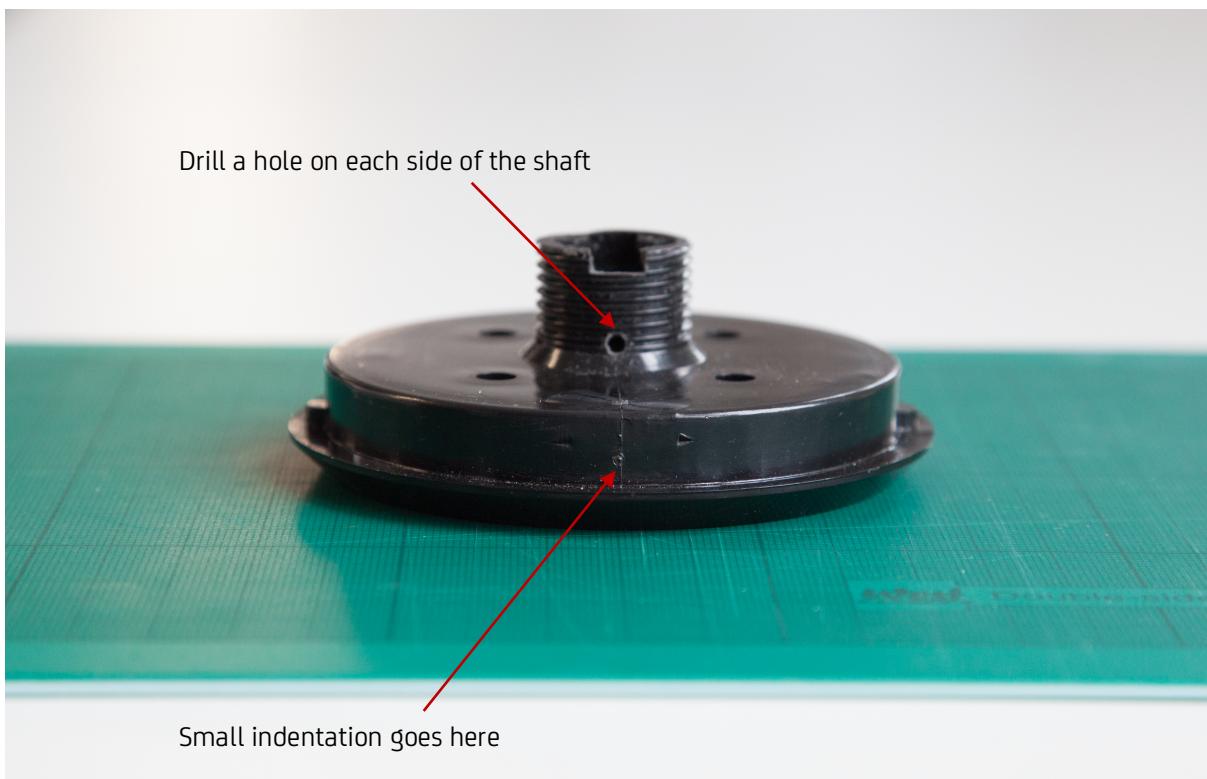




### Step 7: Drill some holes

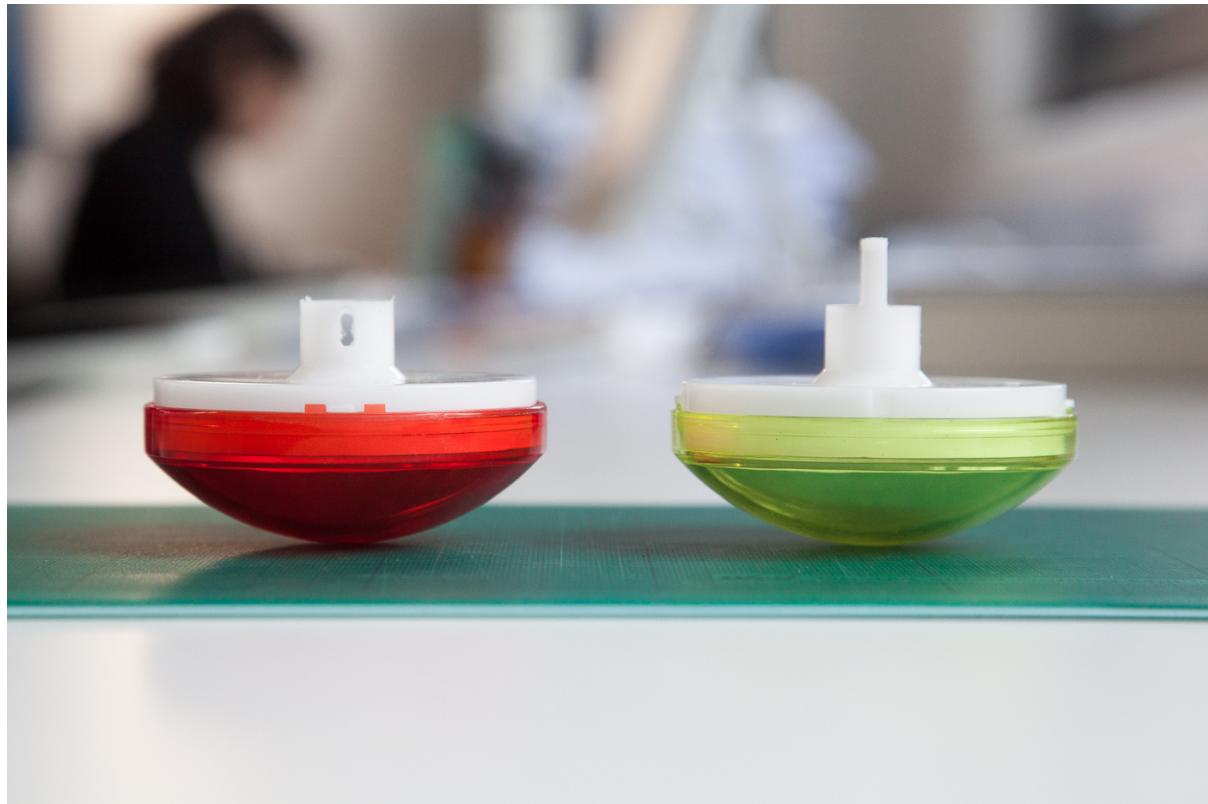
Drill a hole in the button base that aligns with the microswitch. The switch should protrude through the base so that pushing the button switches the switch. Drill two small holes into either side of the shaft. You'll need to find some small screws that can fit through these holes. Finally, use your drill to

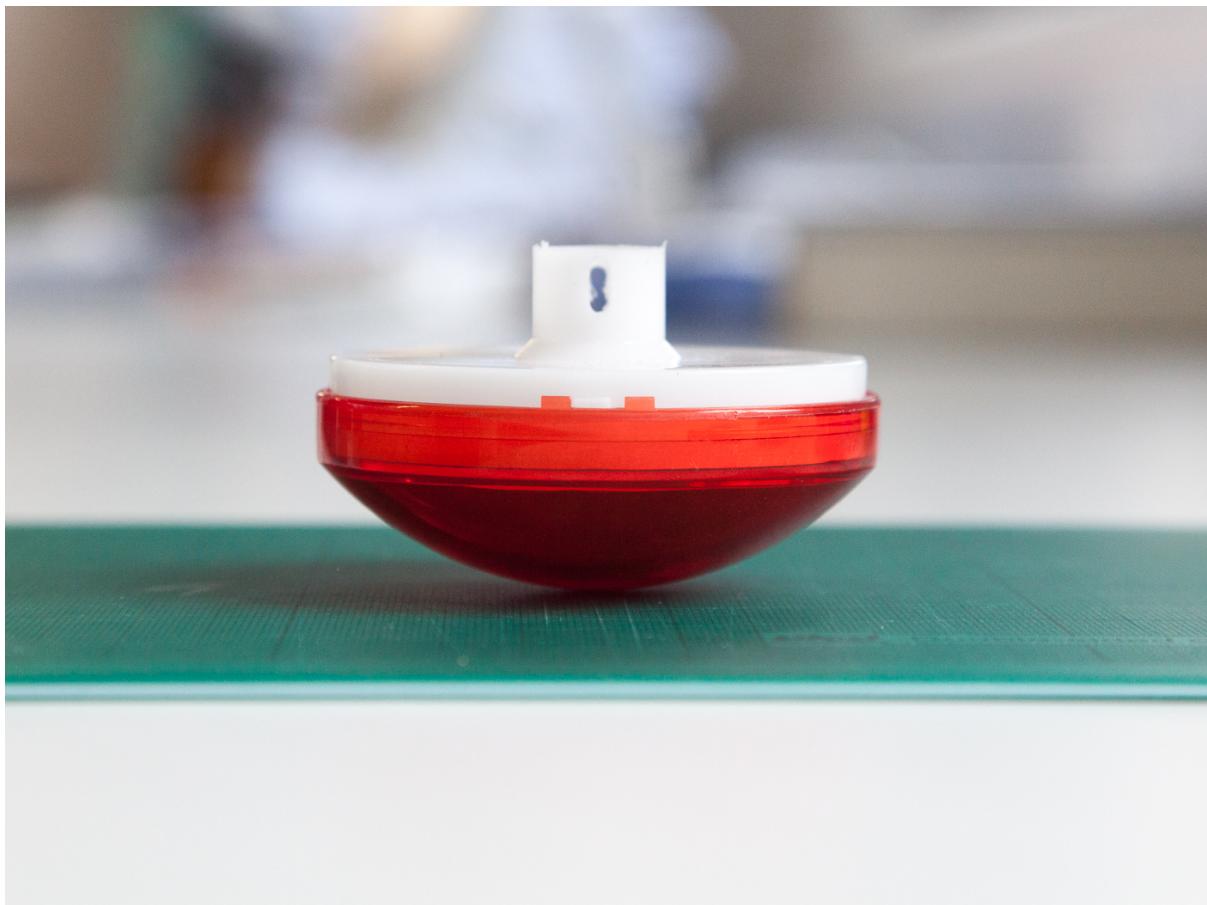
make a small indentation on the lip of the button on the same side as the shaft notch. This will provide a recess for the socket screw and will hold the button and the case together more firmly.



### Step 8: Modify the bottom of the button

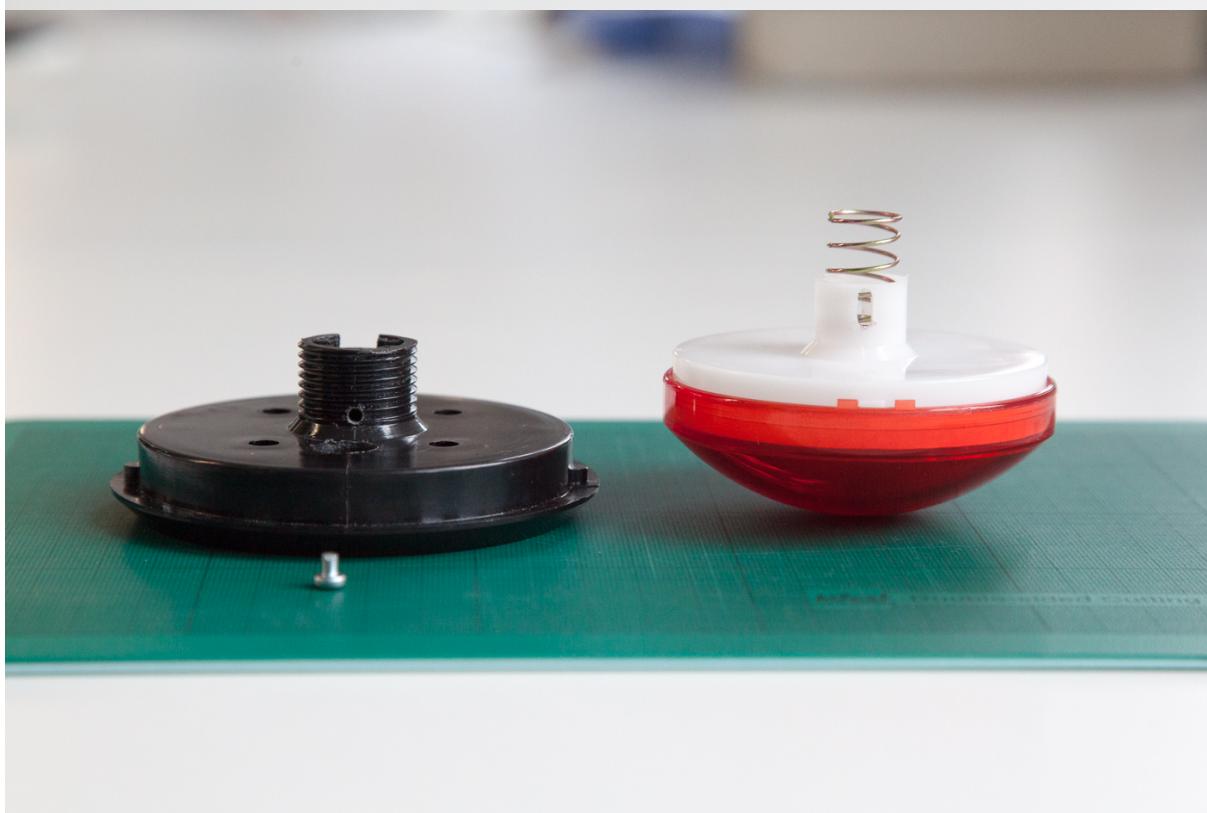
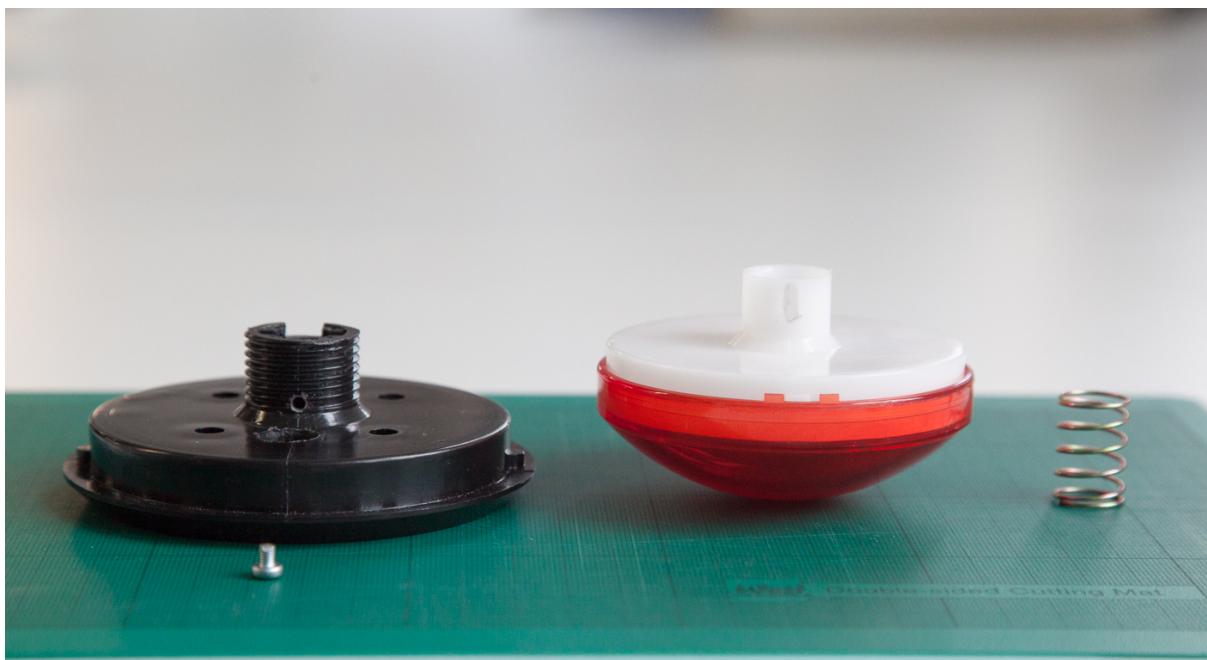
Cut off the white plastic clips from the bottom of the button and use a drill to make a long hole in the side of the small shaft in which the spring sits.

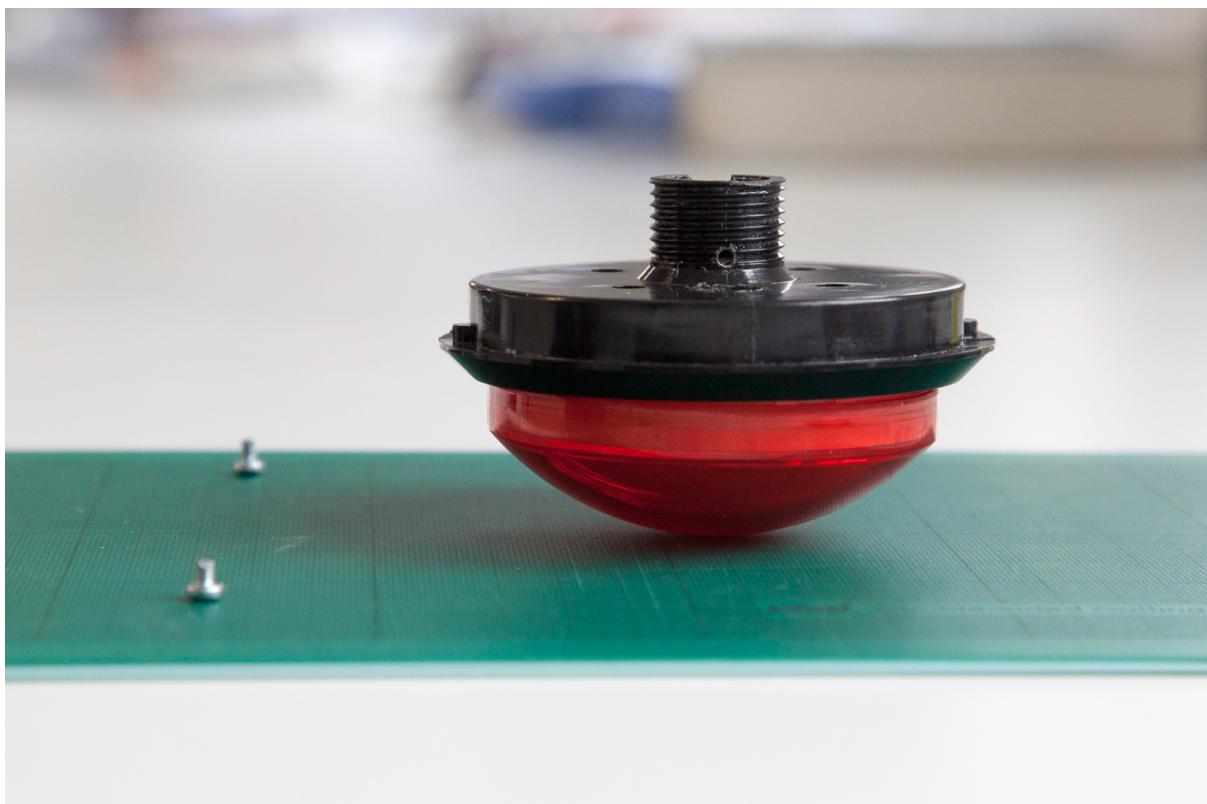




### Step 9: Reassemble the button

Reassemble the button and screw it together.





## Step 10: Assemble the two components

Place the button on top of the case and fix them together with the socket screw.

