

User Instructions

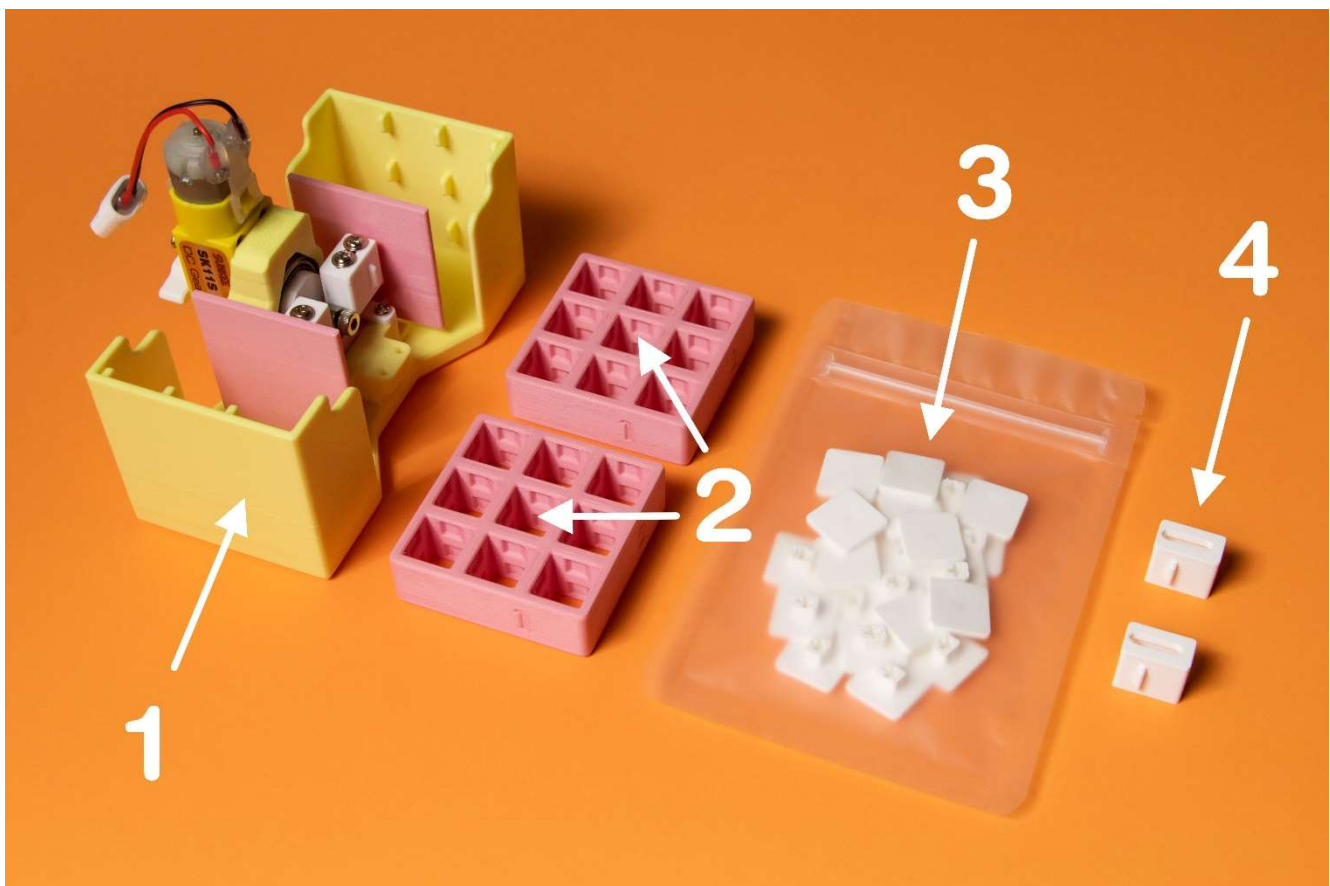
Switch Break-in Machine 3x3 RB v1.0



Feng Studio

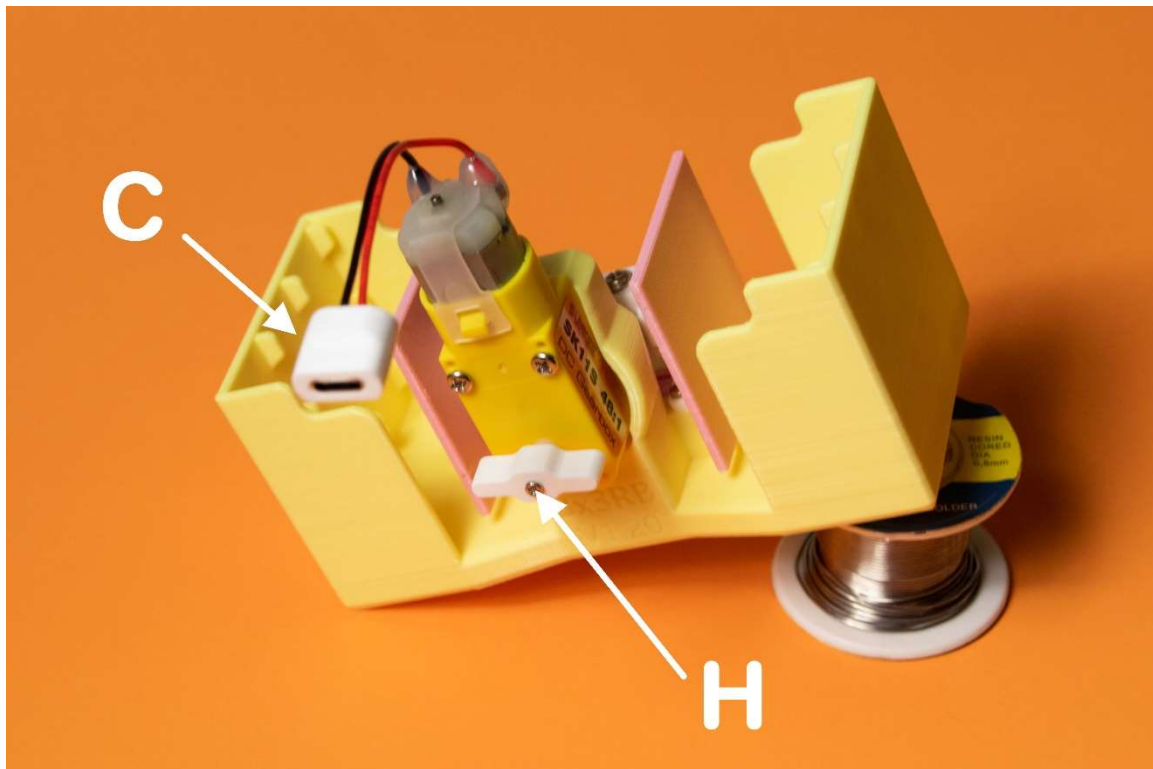
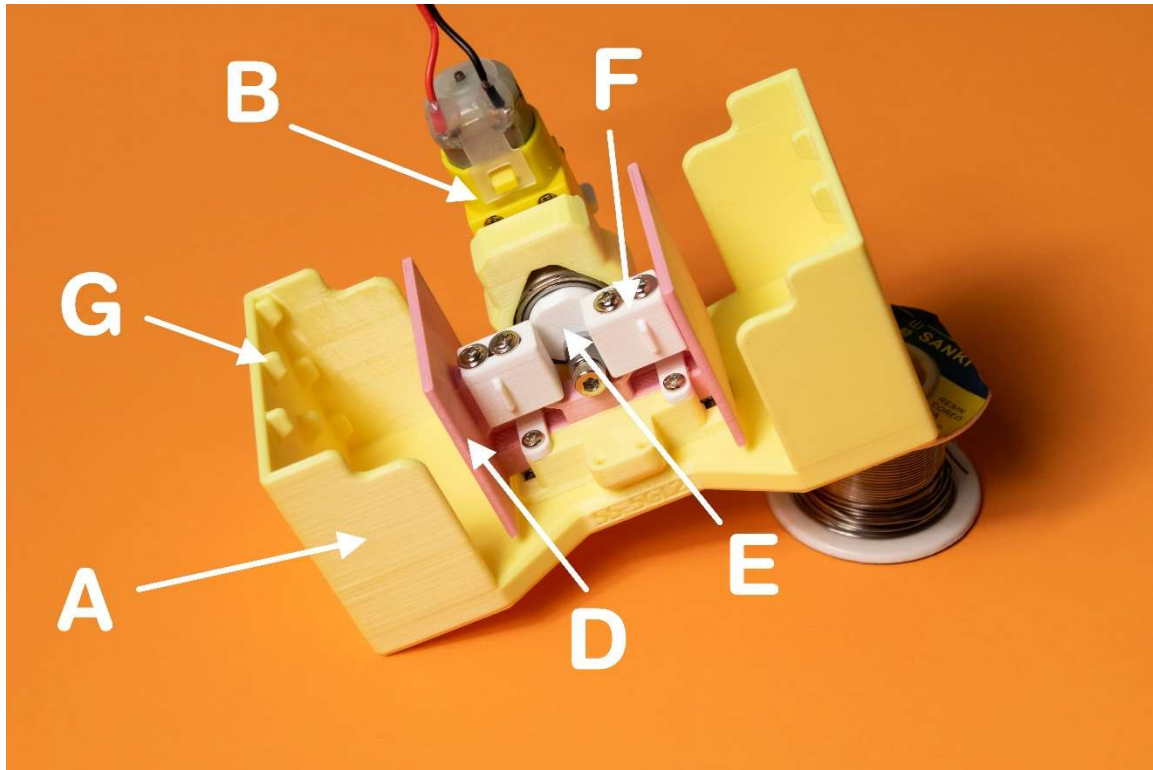
Below are the user instructions for assembling and operating this product. Some variations are to be expected between the provided images and the product on hand.

Section 1: Parts List

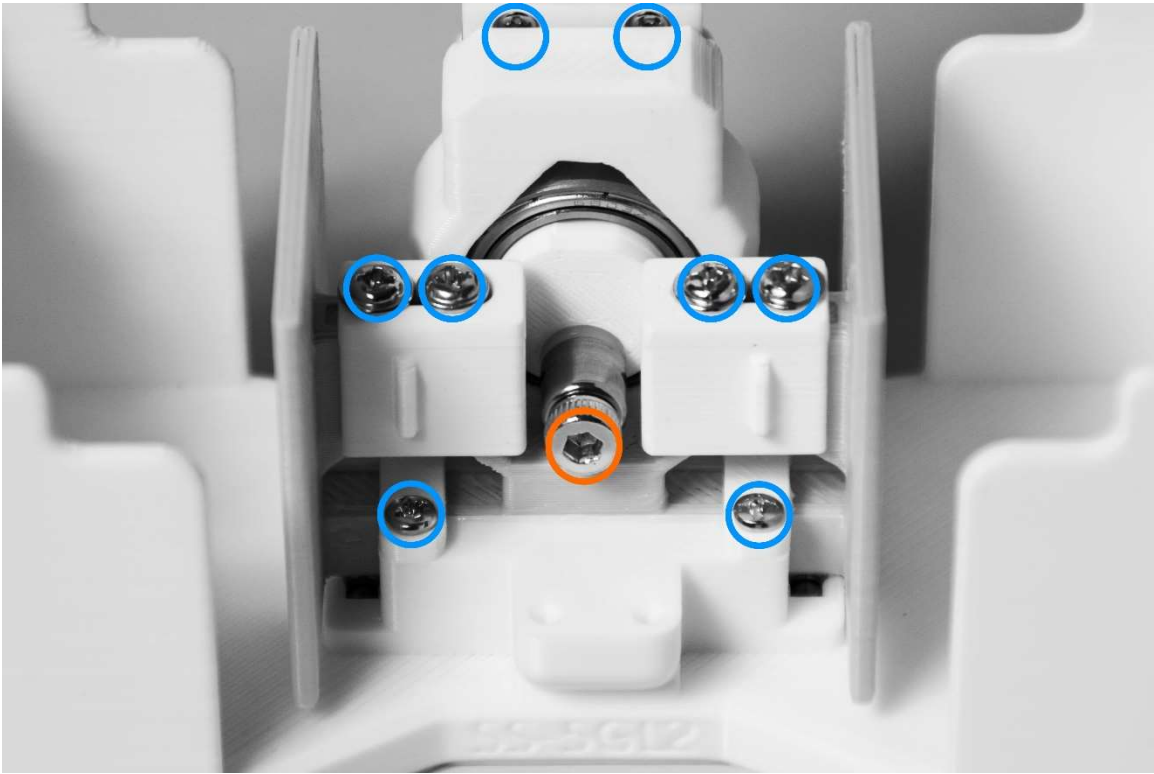


1 - Pre-assembled main body	2 - Plates * 2
3 - Keycaps * ~22	4 - Spare buffer pieces * 2

Section 2: Parts Diagram



A: Main body	B: Gear box
C: Female USB type-c port	D: Pusher
E: Wheel	F: Buffer piece
G: Off-center nibs	H: Handle



Blue: PH2

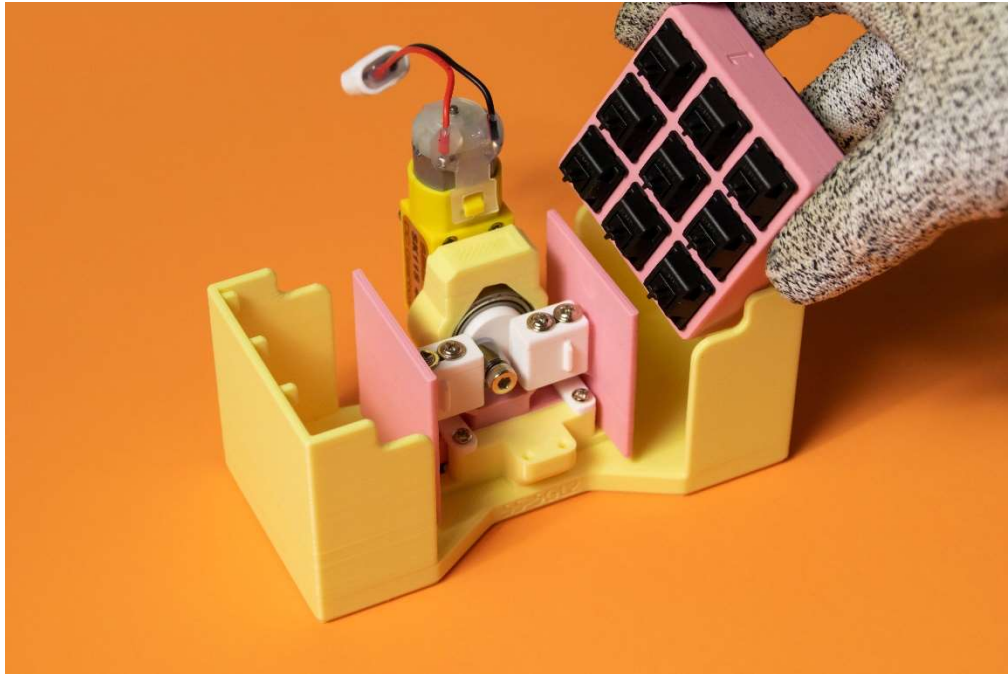
Handle screw: PH1

Orange: H3.0

In addition to using the correct sized screwdriver, please also avoid overtightening the screws. They only need to be tight enough to hold down the components securely. Overtightening can cause issues or permanent damage to the device. I will not be responsible for damages caused by overtightened screws.

Read through the entire
document before using the
device

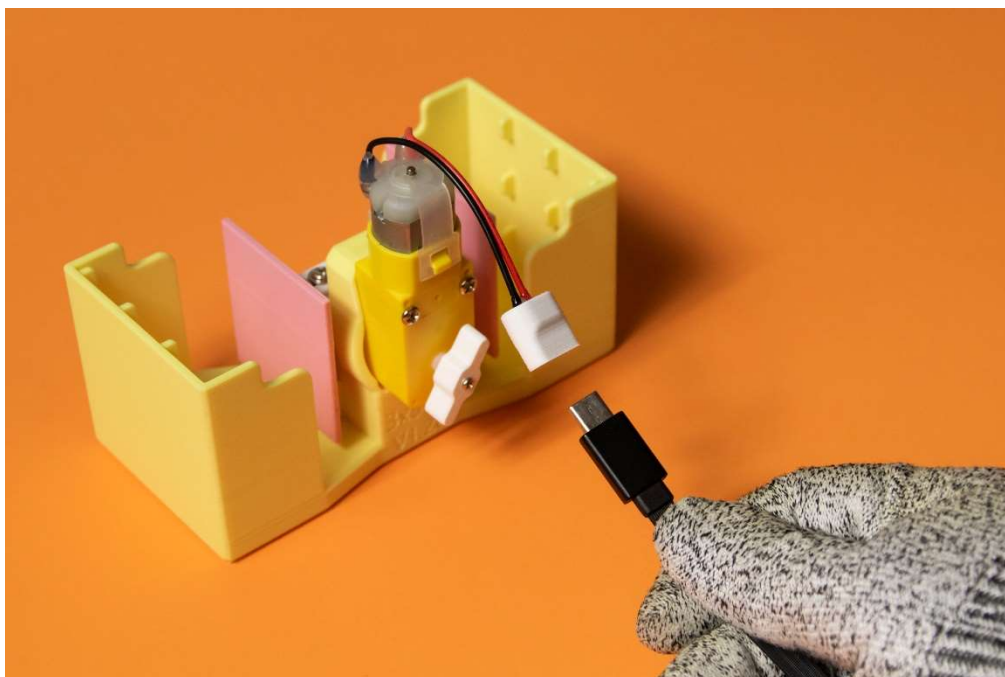
Section 3: General Operation (applies for both mode A and B)



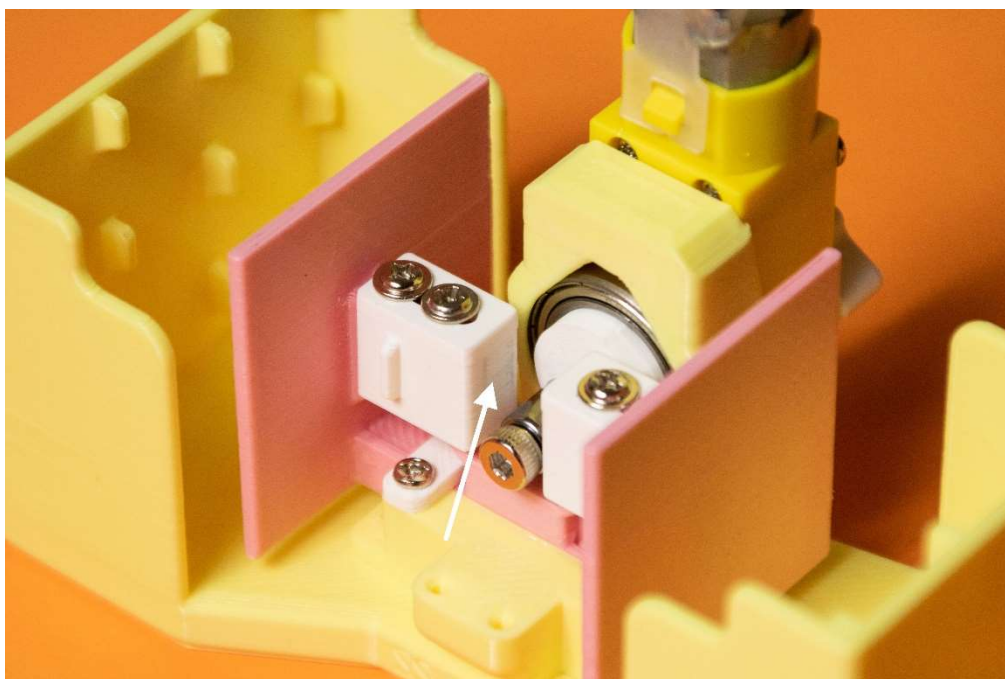
The switch plate is inserted through the top of the machine. The product will function with 1 or 2 plates.



The handle can be rotated to spin the wheel. Rotate the wheel **SLOWLY** and **ONLY WHEN NEEDED** to avoid breaking the gears. If the wheel can't be rotated in one direction, try the other. If both directions don't work, turn the machine on/off briefly and try again.



A standard 5V USB wall plug is recommended, along with any USB type-c cable. Simply plug or unplug the cable into the connector to turn the machine on or off. The user can also choose to use power banks or computer USB ports to provide power.



Check for wear on the bearing-pusher buffer piece periodically. Any wear on the plastic will be very obvious. Black residue from the lubricant on the wheel or buffer piece is normal. The machine does not need to be shut down periodically to prevent overheating.

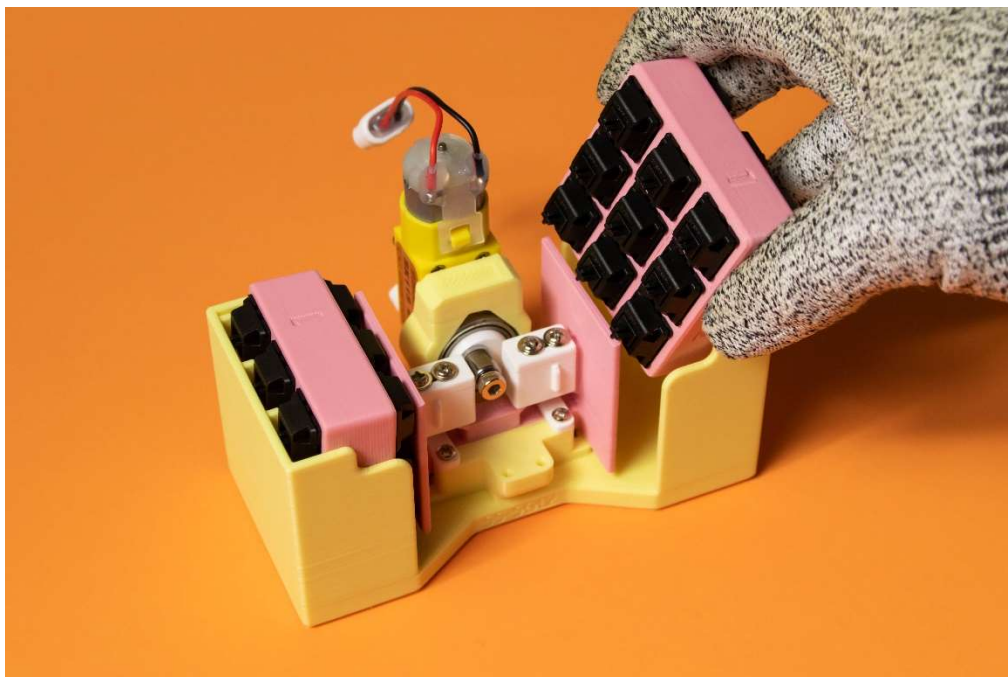


Make sure to space out the switches evenly if you are not planning on filling the entire plate. If you are filling the entire plates with switches, ~70g max bottom out switches is recommended.

Section 4: Mode A – Centered Actuations



Step 1: Install switches into both sides of the switch plates (18 max on each).



Step 2: Insert switch plates in any orientation. Switch plate orientation does not affect break-in process in Mode A. Rotate the handle to move the pusher to make insertion easier.

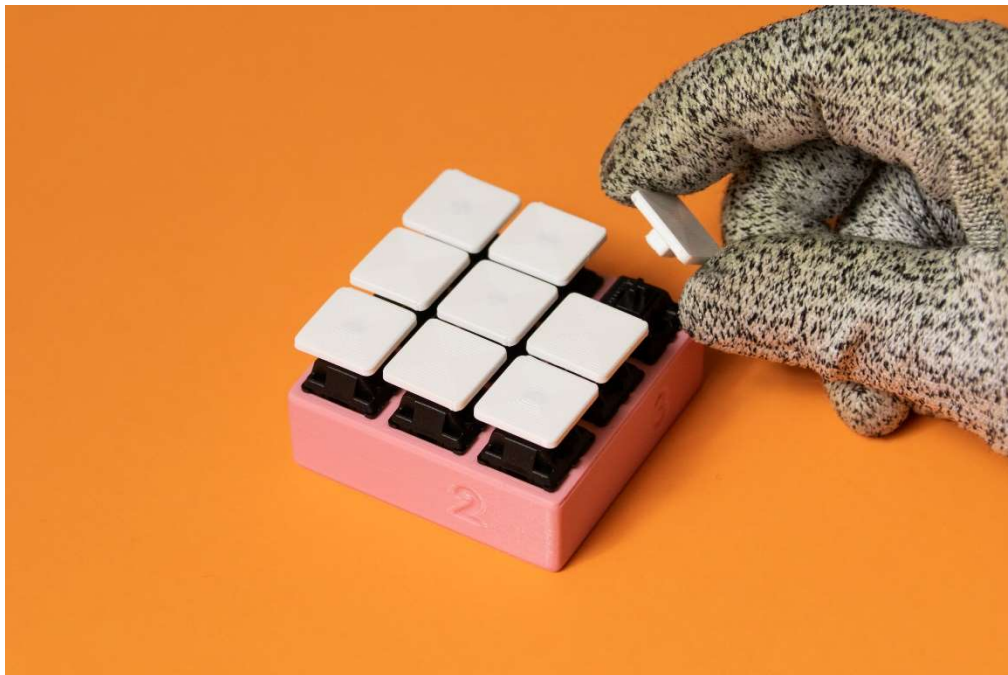


Step 3: Simply plug in the machine to start. To achieve consistency, it is recommended to break in switches by amount of time (min, hrs, etc).

Section 5: Mode B – Off-center Actuations



Step 1: Insert switches into only one side of the switch plate (9 max on each).



Step 2: Insert keycaps onto all switches.



Step 3: Insert switch plates with the keycaps facing away from the pusher, the off-center nibs should line up with the edge of the keycaps.

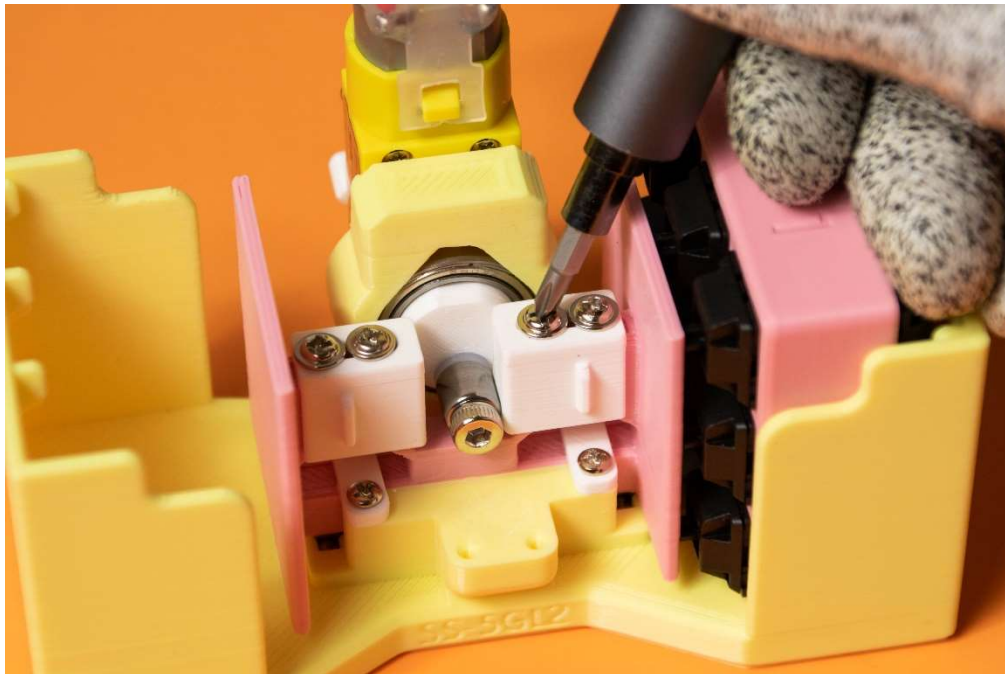


At this point, the user's machine should look like the image above. Once turned on, the nibs will apply a force to the side of the keycaps, resulting in more friction towards one side.

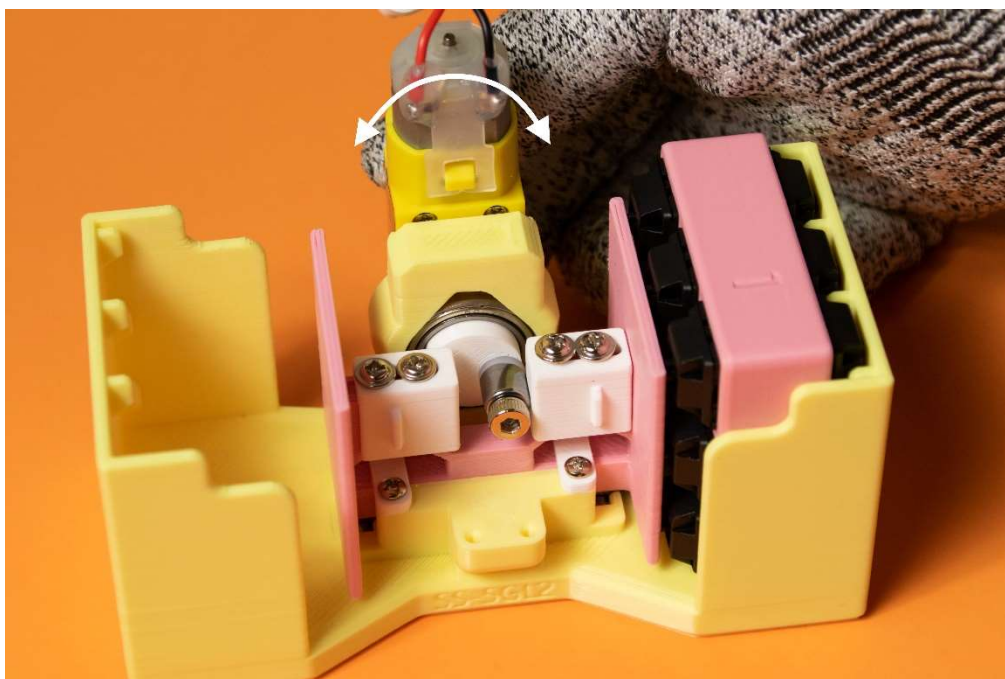


Step 4: Turn on the machine, the pusher will break in only one side of the switch. In order to break in the other three sides, rotate the switch plate 90 degrees after one side is finished. Please take notes on which side(s) has been broken in. 4 sides are labeled with numbers. For consistent results, break in each side for the same amounts of time.

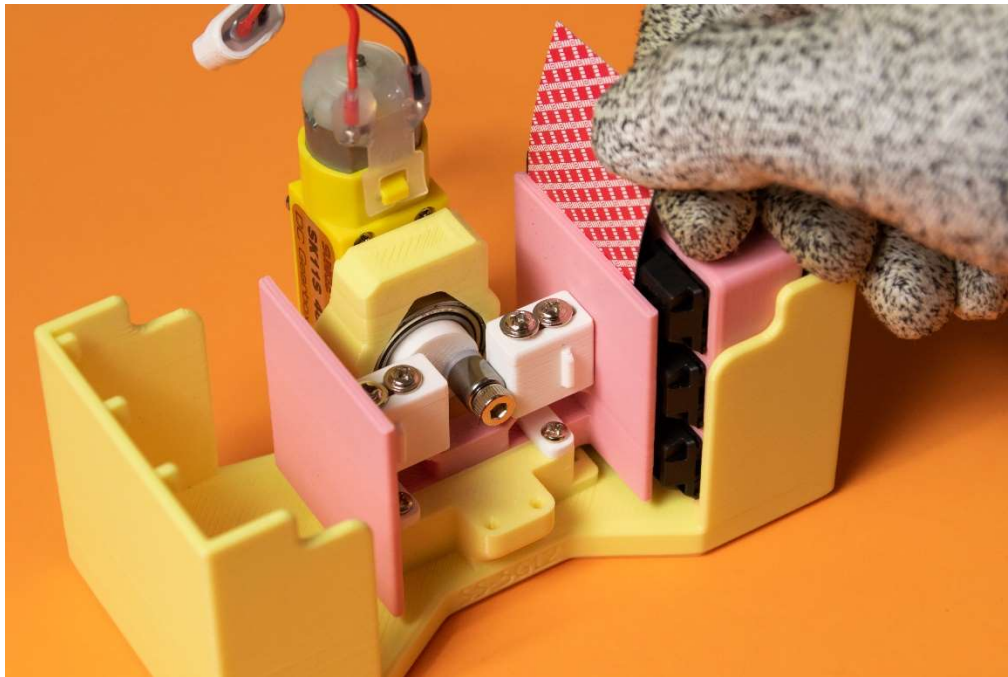
Section 6: Adjusting the Travel Distance



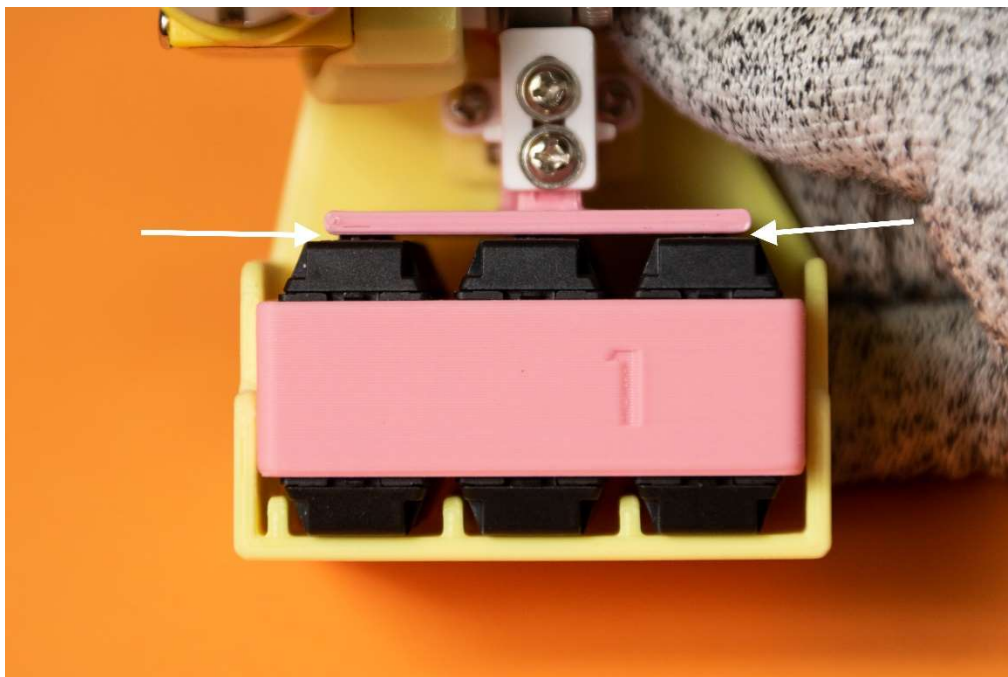
Step 1: Unscrew the 2 screws holding down the buffer. These do not need to be unscrewed completely, only loosened to allow the buffer to spin. Note that the machine is adjusted for 4mm switches out of the box, unless you are using long pole switches, you do not need to adjust the travel distance.



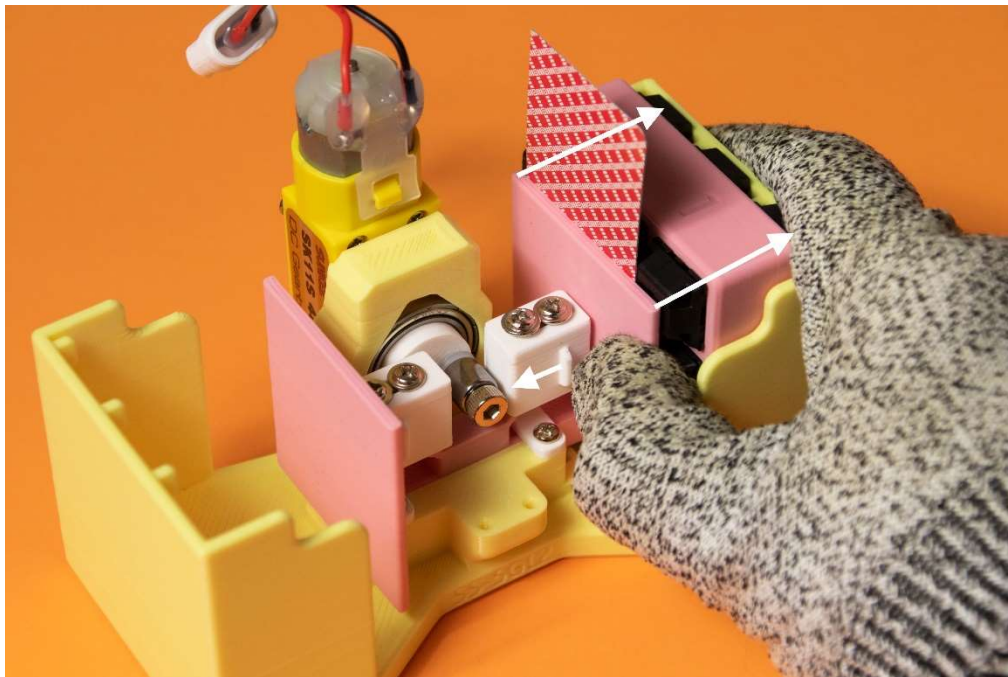
Step 2: Rotate the wheel as shown so that the switches are in the bottomed-out position. If you cannot move the wheel to the bottom out position, that means you need to lower the travel distance.



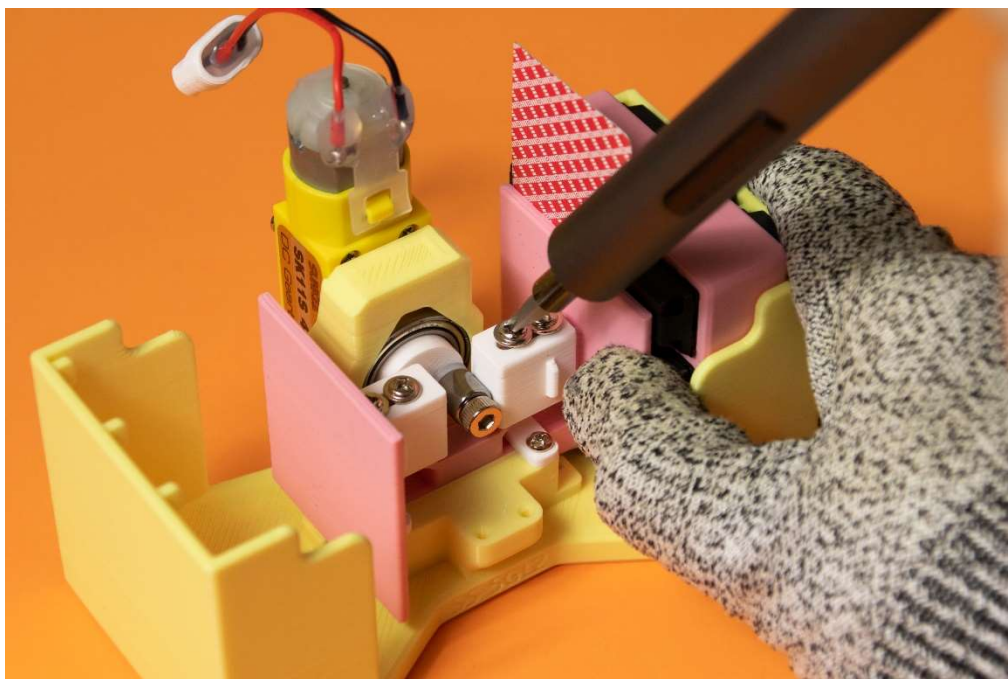
Step 3: Stick a piece of card in between the pusher and the switches. This can be done before step 2 as well. The goal is to get a card stuck while the switches are bottomed out.



Step 3 continued: The previous step is necessary since it leaves a small gap and prevent complete bottom out. This does not impact break-in performance.



Step 4: With 1 hand, push the pusher as shown to bottom out the switches. With another hand, move the buffer piece until it touches the bearing in the middle

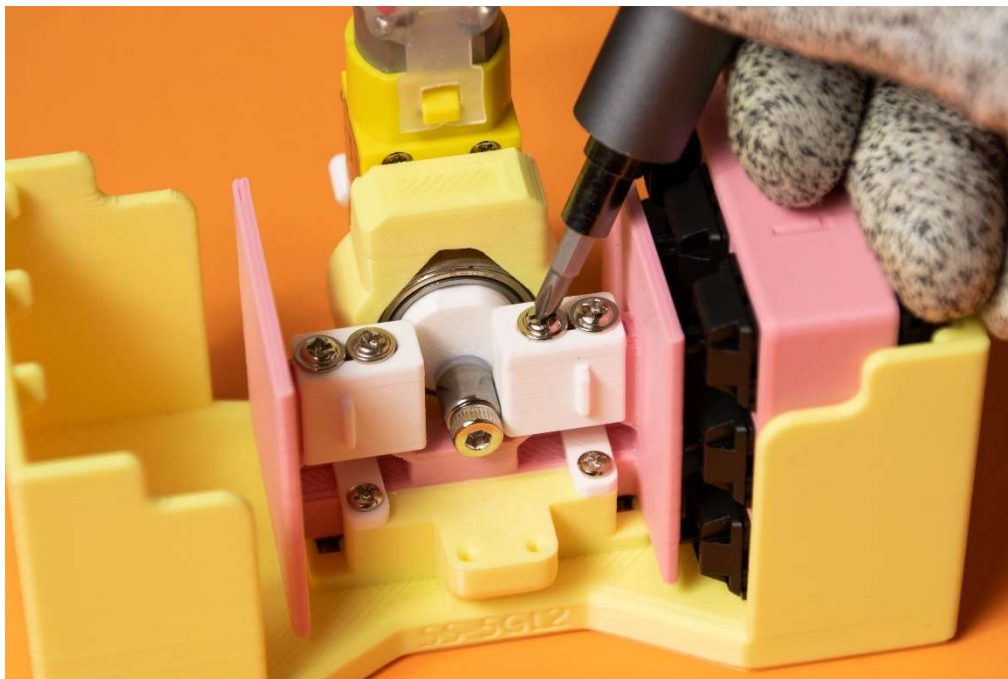


Step 5: Without moving, tighten the screws on the buffer pieces while it is still in contact with the bearing in the middle. Remove card and repeat on the other side.

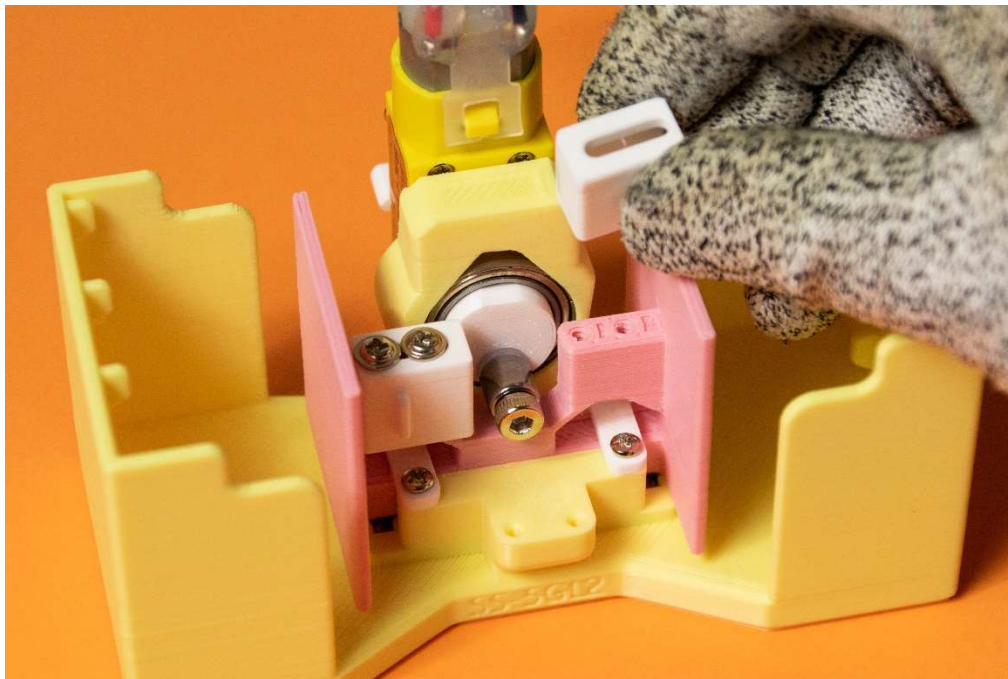
Section 7: Replacing the buffer piece



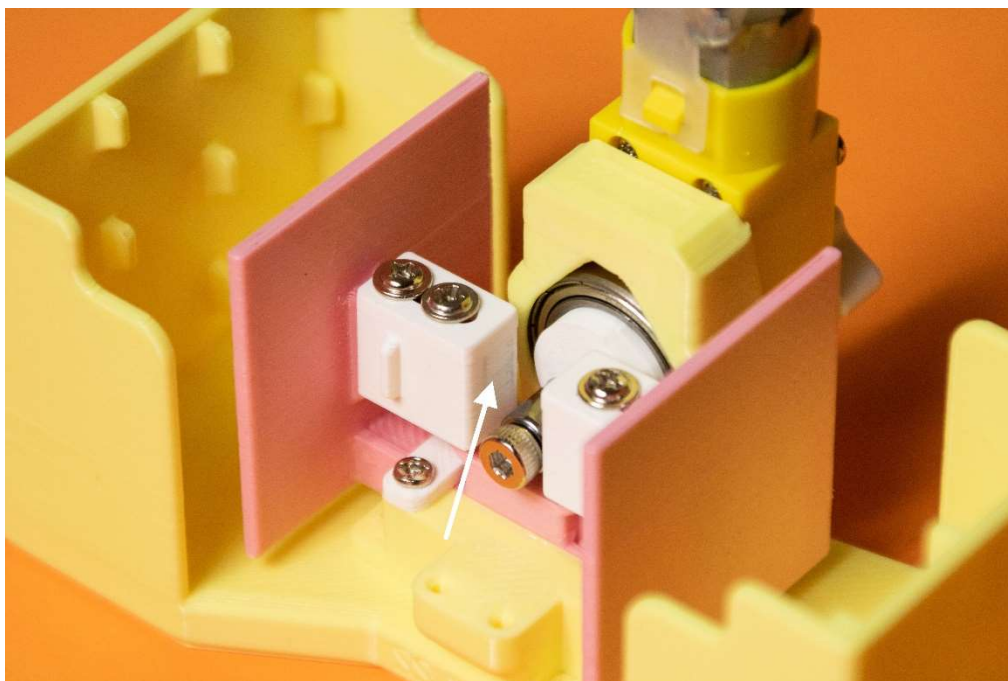
When to replace the buffer? Wear on the buffer will decrease the travel distance of the pushers, when this happens, sometimes one can compensate by adjusting the travel distance following section 6. Use your judgement, the pictured piece was used for ~400 hours and is still usable (picture from 4x4).



Step 1: Completely remove the 2 screws holding in the buffer pieces.



Step 2: Simply remove the buffer and replace with new ones.

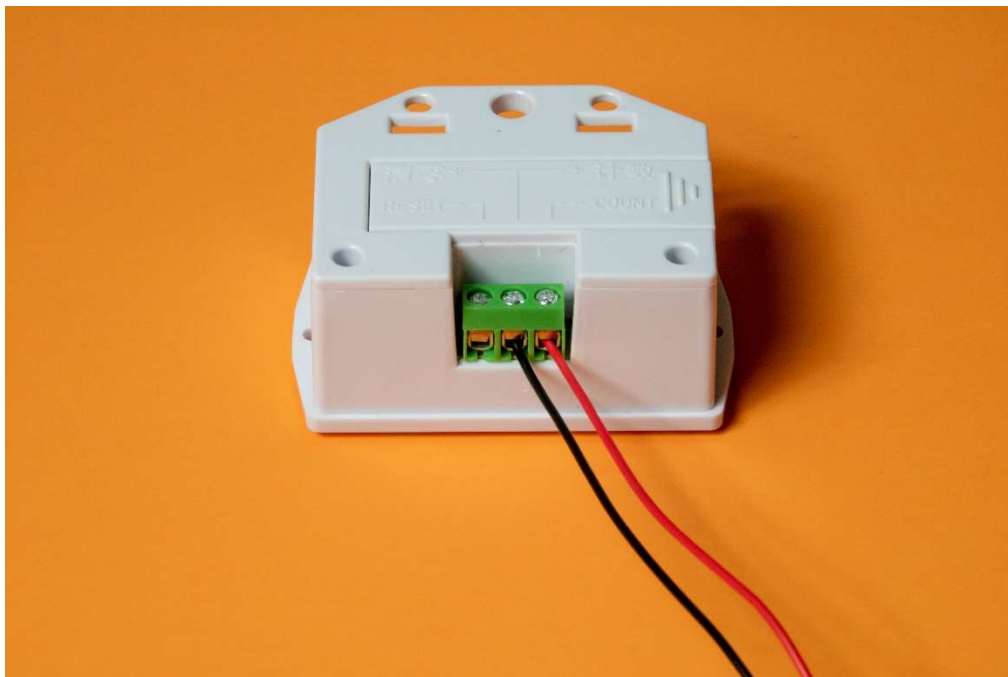


Step 3: Apply any type of grease to the new buffer piece, where the bearing comes in contact with the buffer.

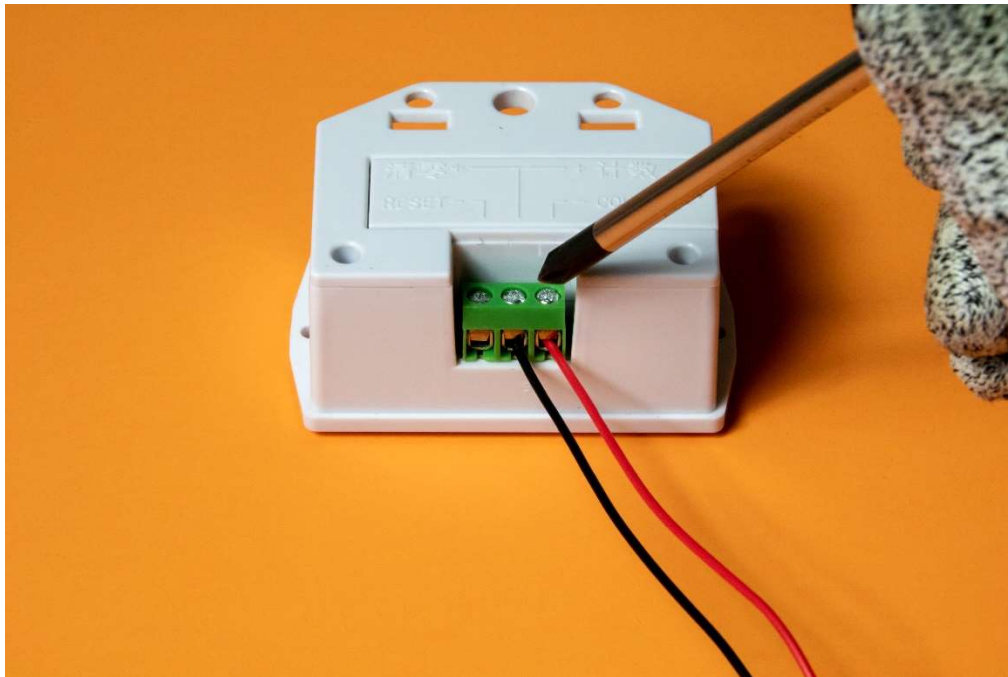
Section 8: Actuation Counter



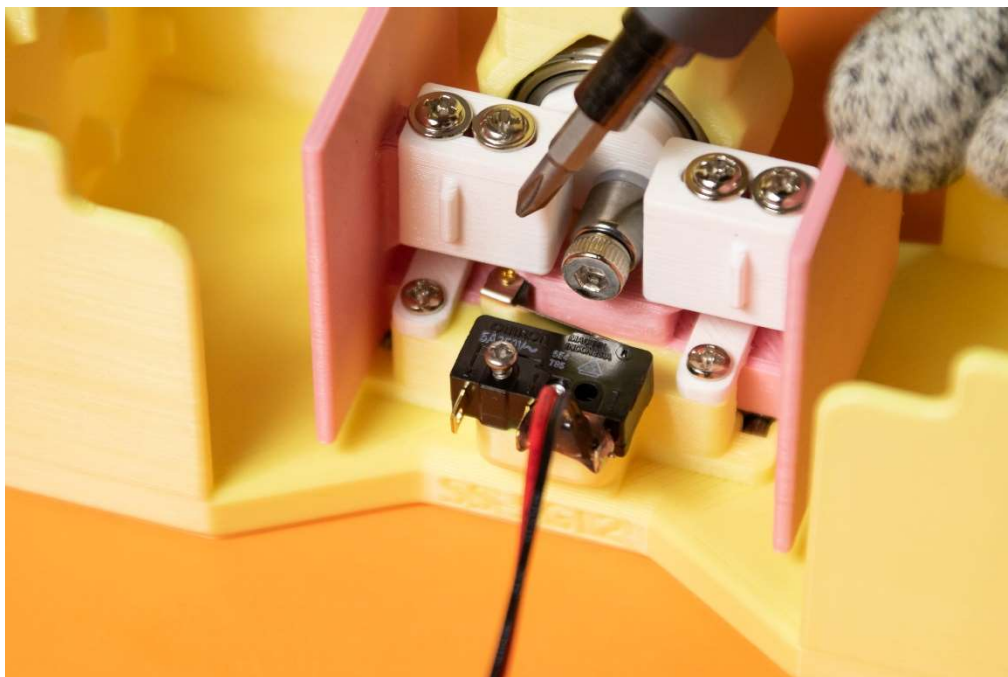
Step 1: Flip the counter so the back side is facing up.



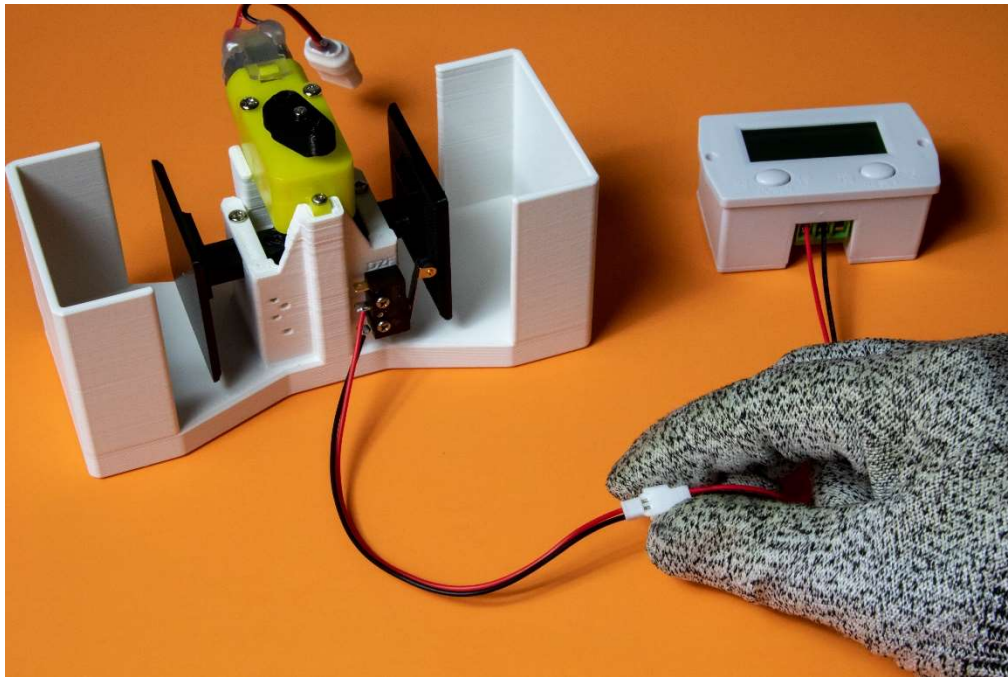
Step 2: Insert the 2 wires into the right and middle slots, the order of the wires does not matter. Make sure the screws are loose if you are unable to insert the wires.



Step 3: Tighten the two screws and make sure the wires are secure.



Step 4: Hold the switch onto the main body of the machine so that the holes line up and that the wheel of the switch is inside the hole of the pusher. Screw in the two screws.



Step 5: Connect the two wires with the white connector, the pins only go in one way.



Step 6: Remove the battery compartment cover.



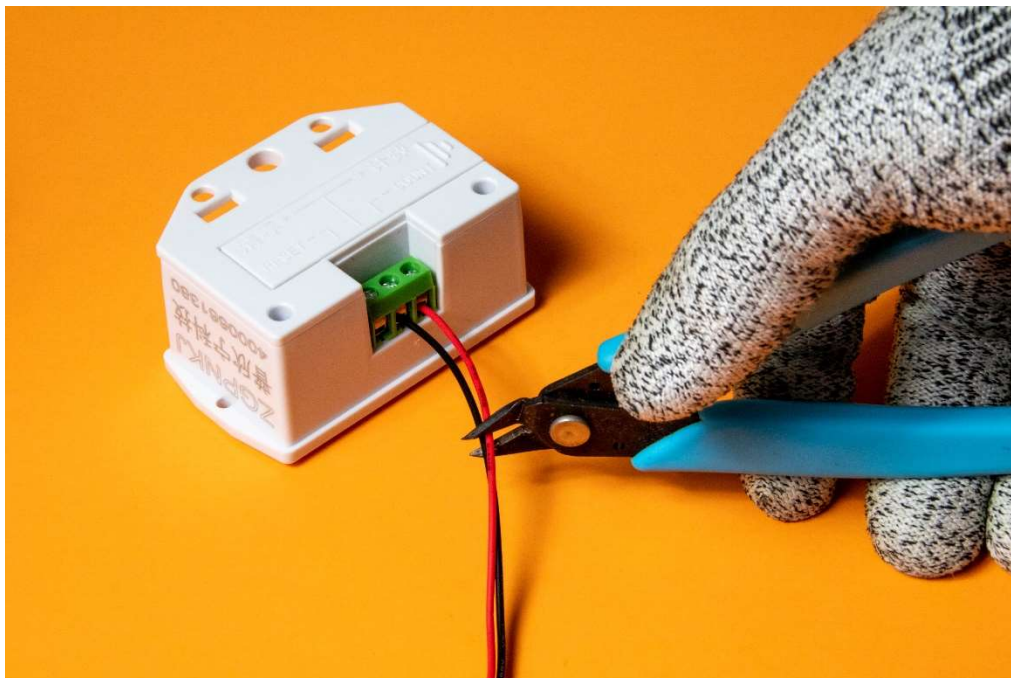
Step 7: Insert a AA battery (1.5v) and put the cover back in place.



Step 8: Long press the POWER button (left) to turn on/off the counter. The current count will be saved when the counter is shut off.



Step 9: Long press the RESET button to reset the counter, the counter resets itself after the count reaches 1,000,000.



Step 10 (OPTIONAL): Cut the wire if you feel the wire is too long, please note this process is not reversible unless you choose to solder on another section.