Assembly Instruction
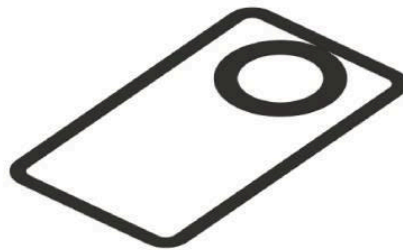## FlickOut - Mini Punching Ball Arcade Game

TPU

X3

Printing Instruction

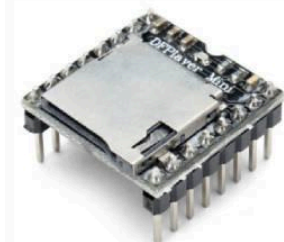I separated the parts across different print plates based on colors and materials for easier printing.

There are no particular difficulties during printing; I use basic PLA as well as a no-name TPU filament for the ball. I added 2 pauses at layer 2 and 4 for the logo print (I don't have an AMS) to allow you to change filaments.
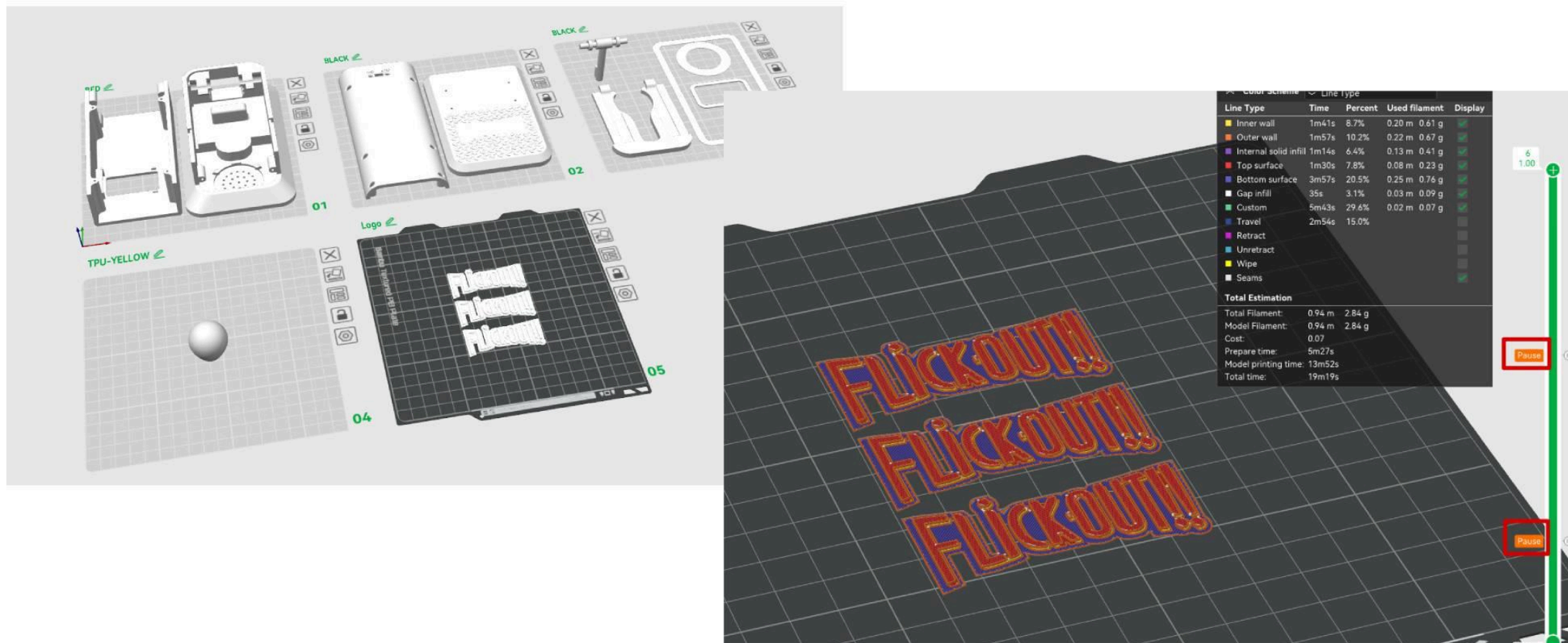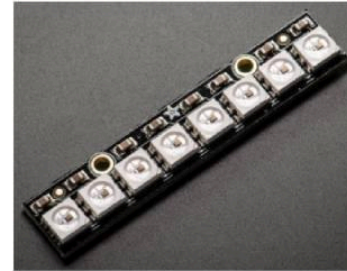
External Components

Lilygo T-Dispay S3 **X1**

DF Mini Player **X1**

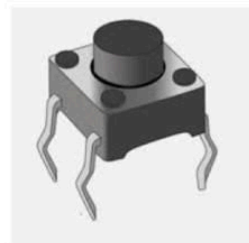SD card (max 32 GB) **X1**

NeoPixel Stick **X1**

Speaker 40mm **X1**
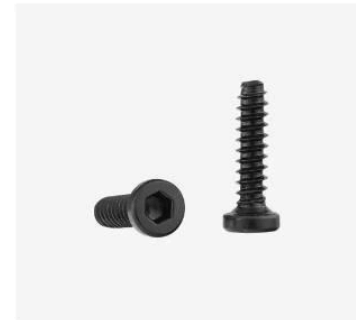
Lipo 1s 1000 mah

Dupont Jumper Wires
female to female

Push Button
6X6X5 **X1**

47K resistor **X1**

SS12F15 **X1**

BT8X2 self tapping
Screws **X10**

M2X8 screws
and Nuts **X2**

FSR Force sensor
0-30 Kg **X1**

10X5X4 ball bearing **X2**

FLICKOUT!!

Even though I tried to keep it as simple as possible, this build is not plug and play.
Some simple soldering is essential.

You will therefore need:

-A soldering iron
-Heat shrink tubing
-Wire cutters
-Super glue
-Double side tape
-1.5 Hex ScrewDriver (the one that came with yor bambu printer works well)
-1.5 cross ScrewDriver

Before starting the assembly, please test the electronic setup to ensure that everything is working correctly.
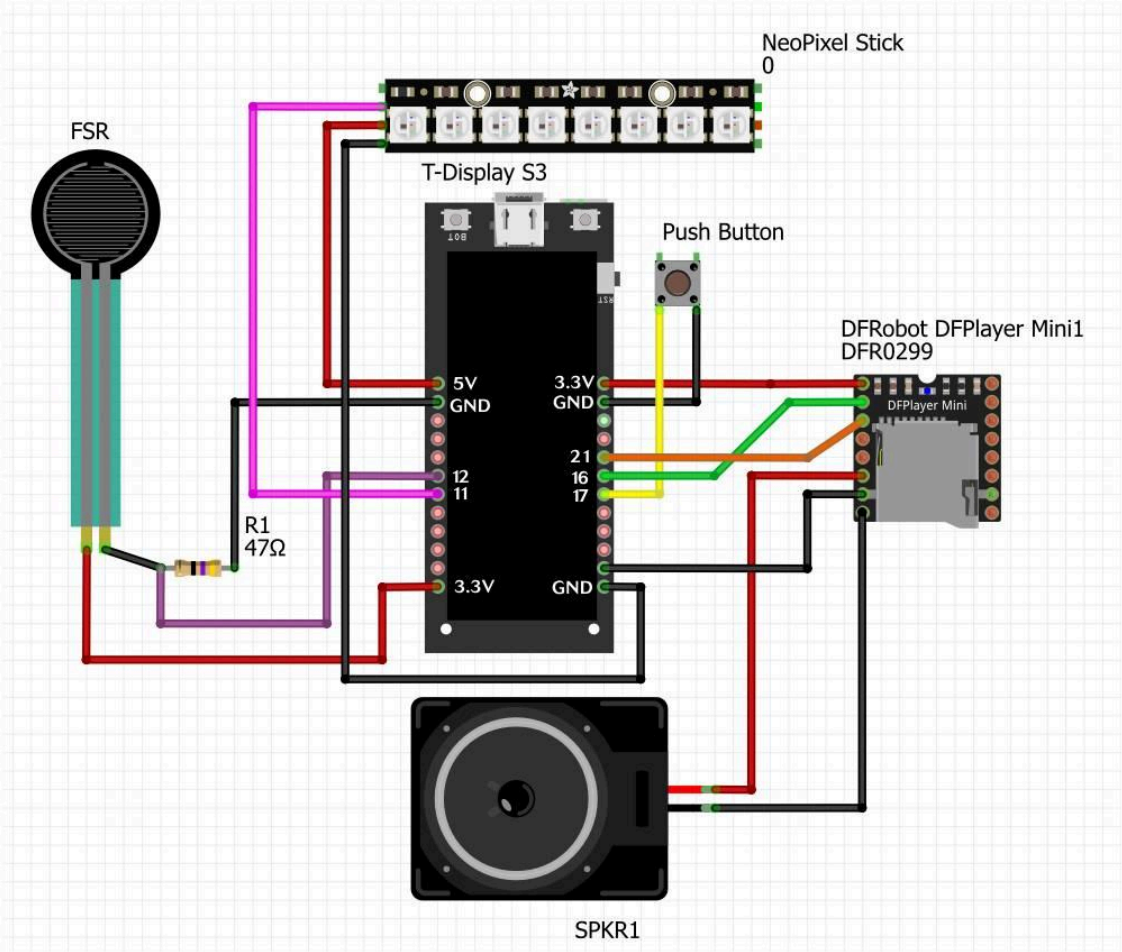

Pin Connections Table

| Component	Pin/Connection	T-Display S3 GPIO	Function
DFPlayer Mini	VCC	3.3V	Power Supply
	GND	GND	Ground
	RX	GPIO 16 (TXD2)	Serial Data Receive
	TX	GPIO 21 (RXD2)	Serial Data Transmit
Force Sensor (FSR)	Pin 1	GPIO 12	Analog Input
	Pin 2	GND (via 47kΩ resistor)	Ground Reference
External Button	Pin 1	GPIO 17	Digital Input (Internal Pullup)
	Pin 2	GND	Ground
LiPo Battery	Positive (+)	JST Connector	Power Input + Battery Monitor (GPIO 4)
	Negative (-)	JST Connector	Ground
Speaker	Positive (+)	DFPlayer SPK+	Audio Output
	Negative (-)	DFPlayer SPK-	Audio Return
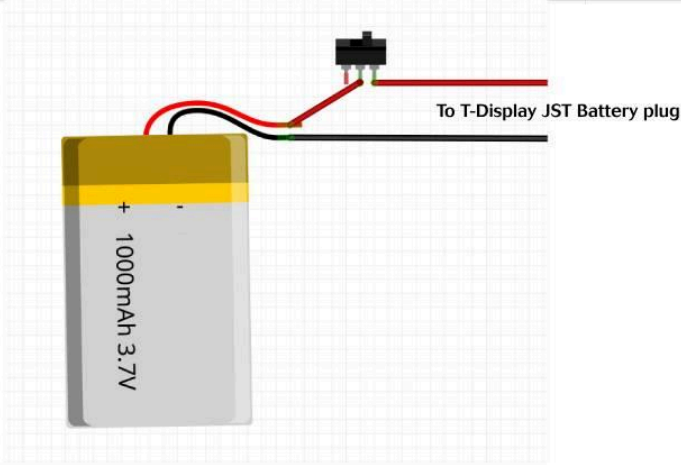
Electronics

The majority of connections are made without soldering using jumper wires.(secured by Kapton tape)
All that remains is to solder the force sensor resistor, the speaker wires, the push button, as well as the ON/OFF switch to the battery.
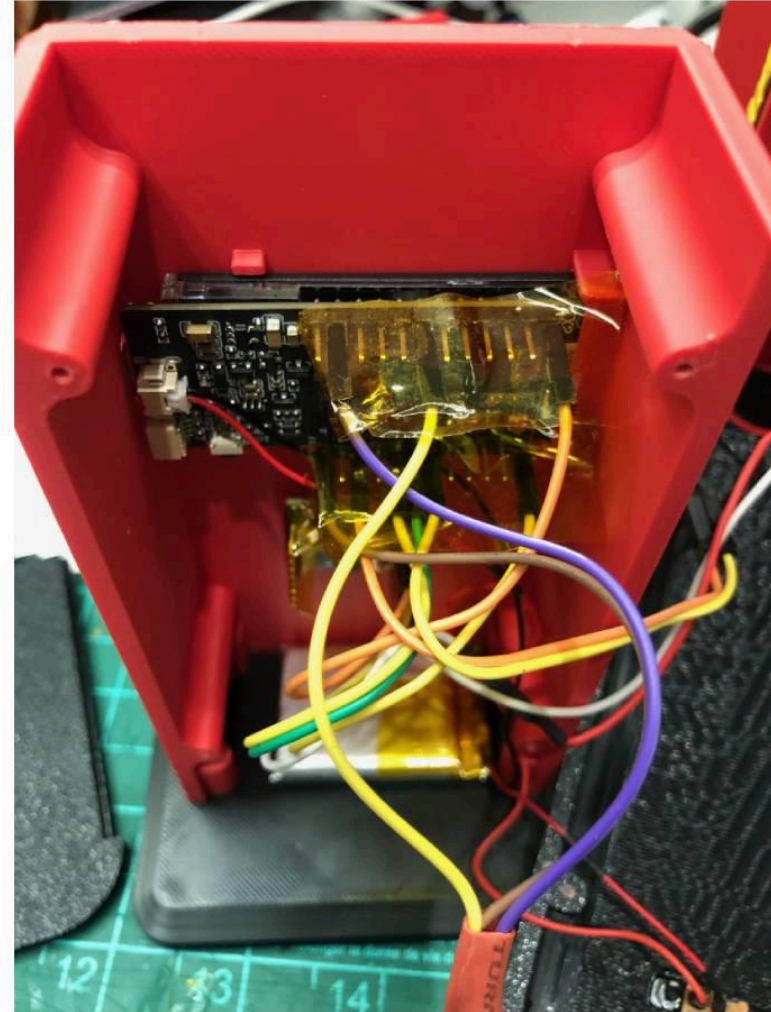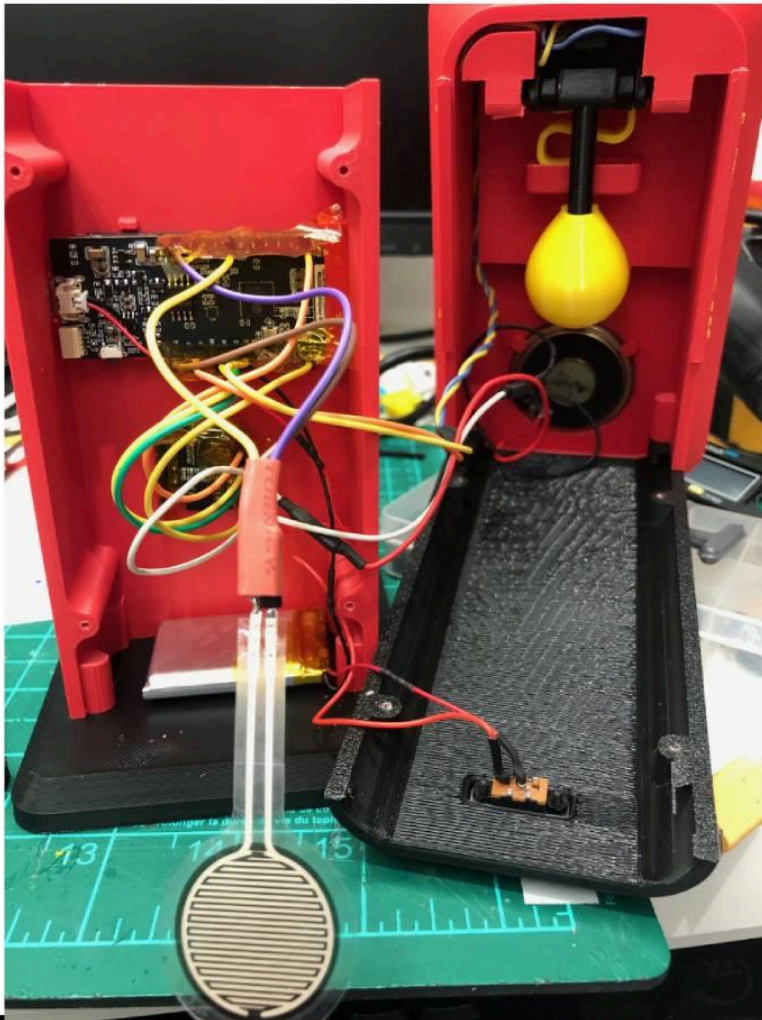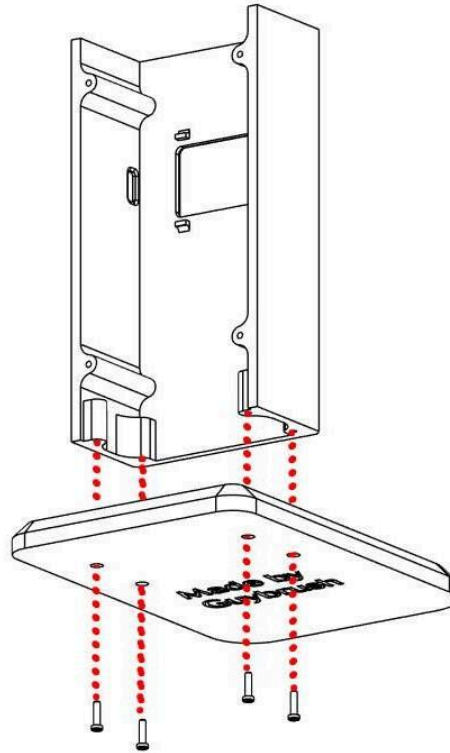
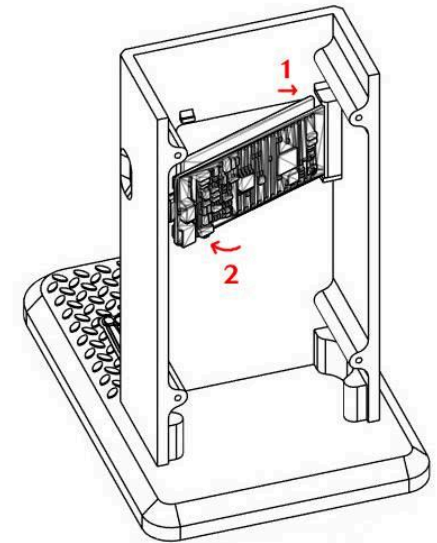# Software

Please find the software in the dedicated gitHub repository

https://github.com/GuybrushTreep/Flick-Out
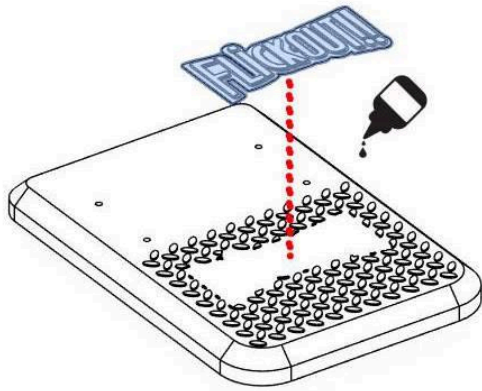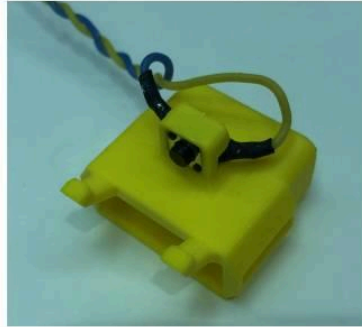
Glue the logo on the stand
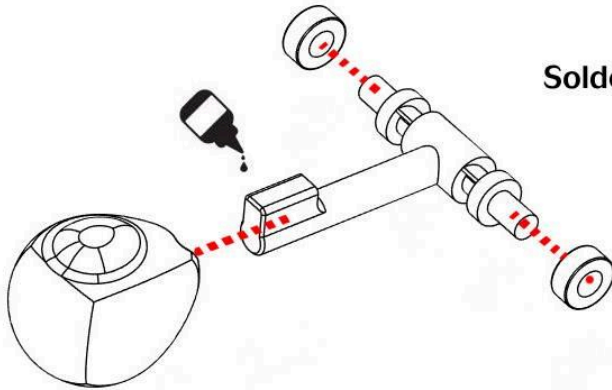
Screw the main frame to the stand
using 4 2X8 self tapped screws

Insert the T-display into its housing
on the right side, then gently slide it
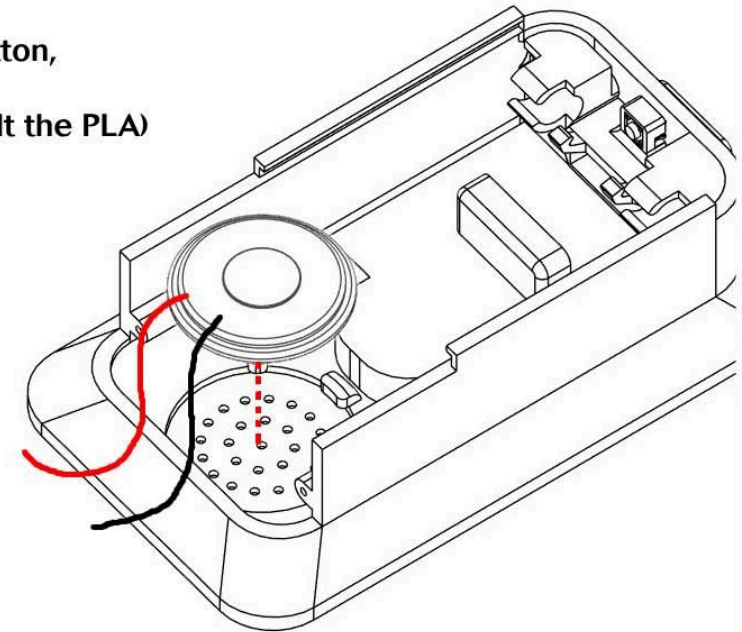to the left to lock it in place.
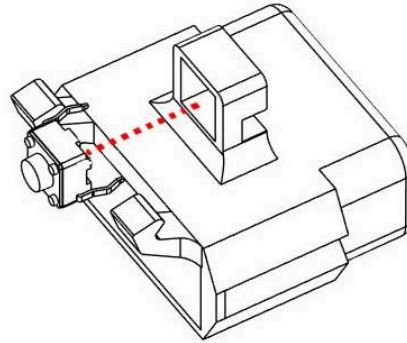
Cut off the two unnecessary legs of the push button,
then insert it into its housing.
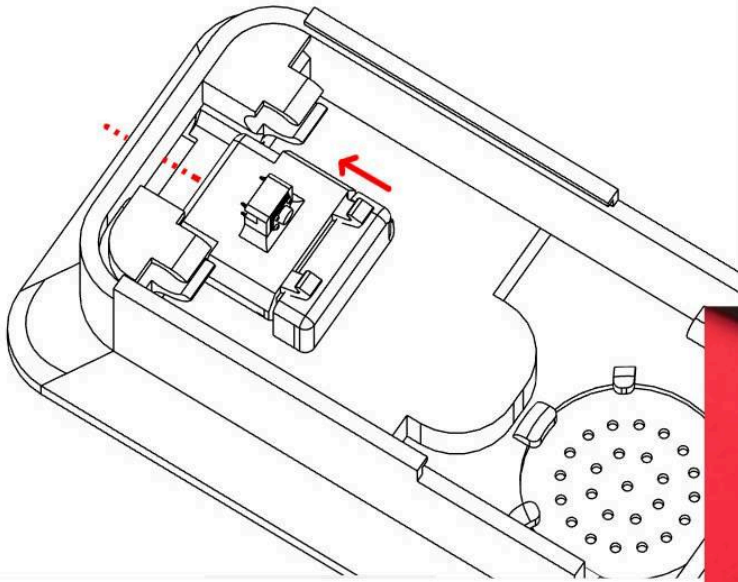Solder the two wires to the legs. (Be careful not to melt the PLA)

Press-fit the two bearings onto the axle,
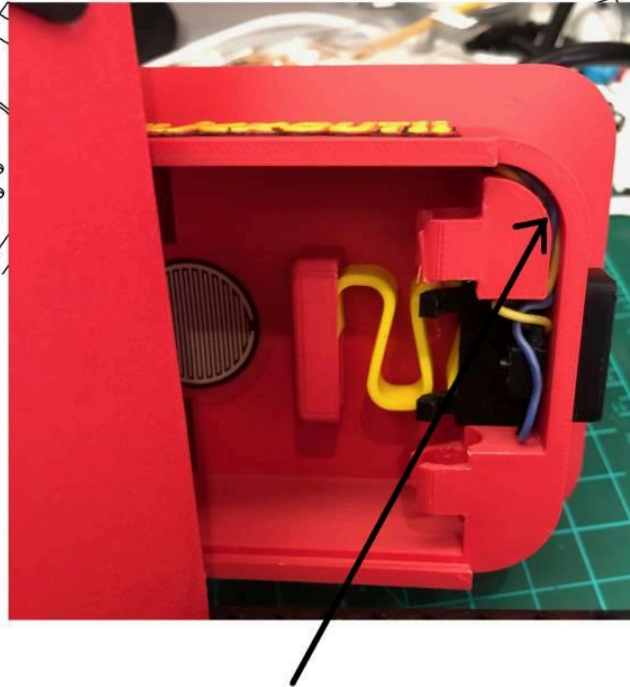then glue the ball (be careful to insert it fully).

Press-fit the speaker into its housing by sliding
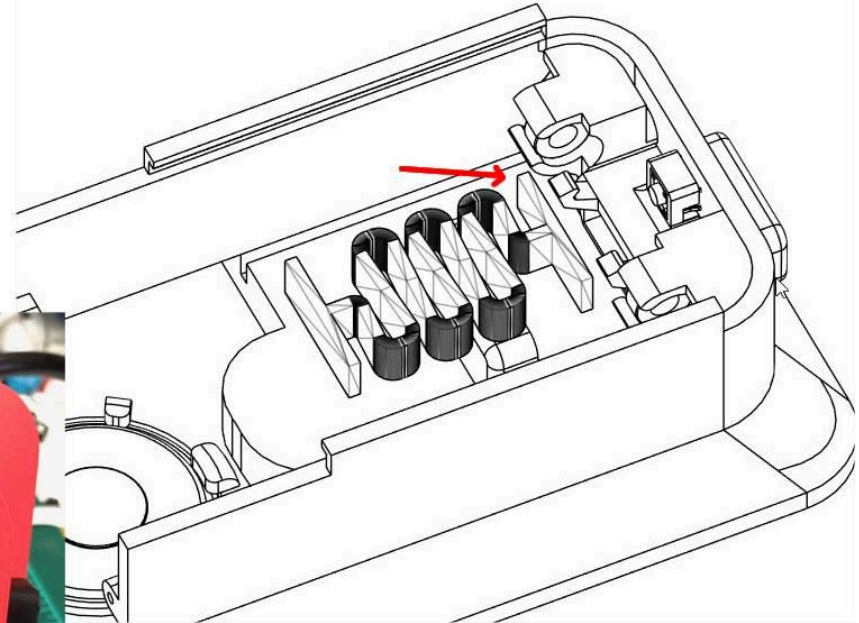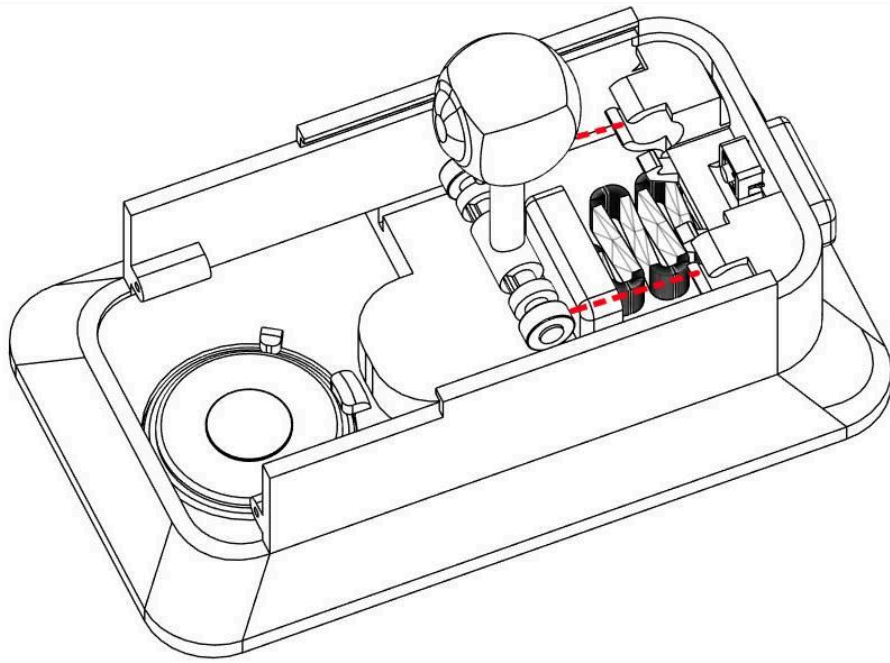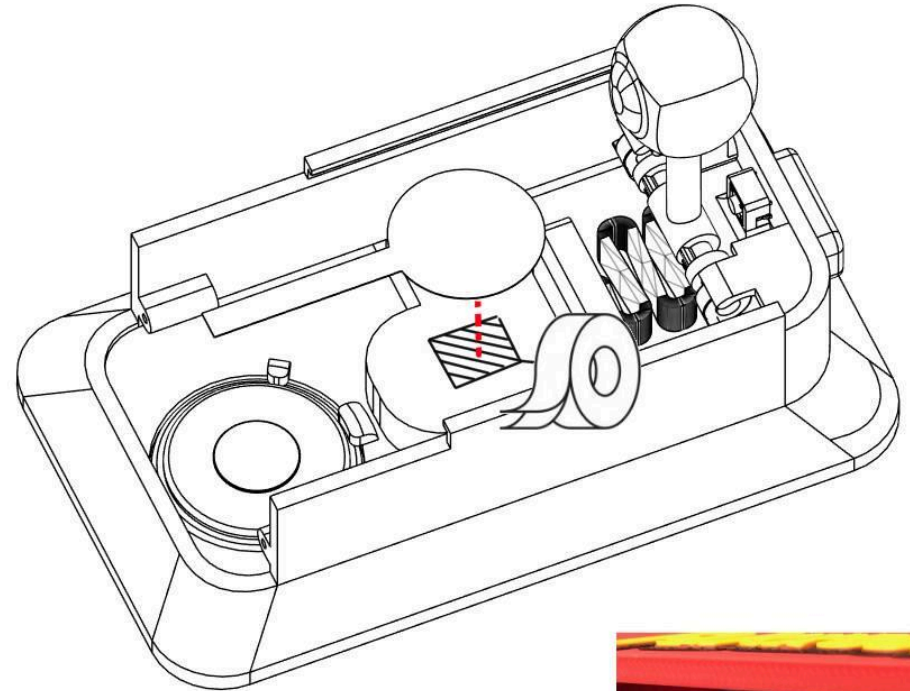it in from the side.

Insert the button into its housing.

Then press-fit the spring starting by inserting it into the button.
It's quite tight but it will eventually go in.

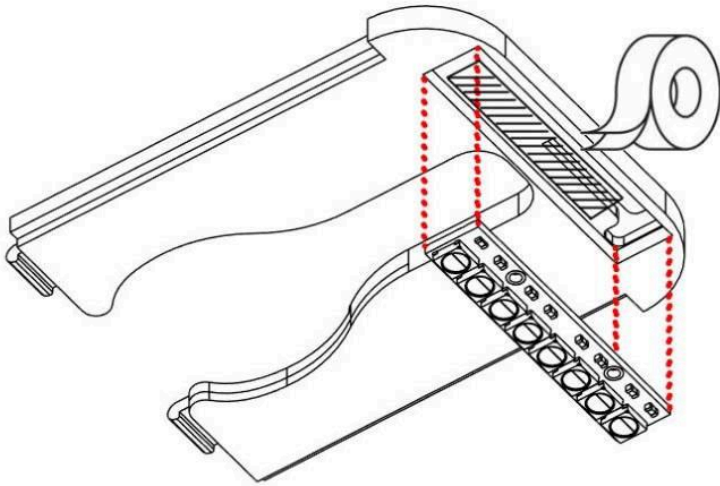Note the presence of a cable pass-through for the push button wires.

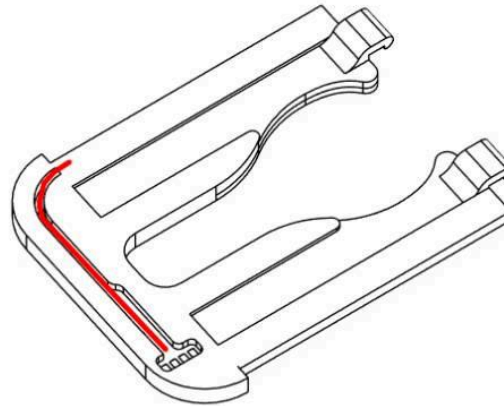Press-fit the arm into its housings.

Glue the force sensor using double-sided tape.
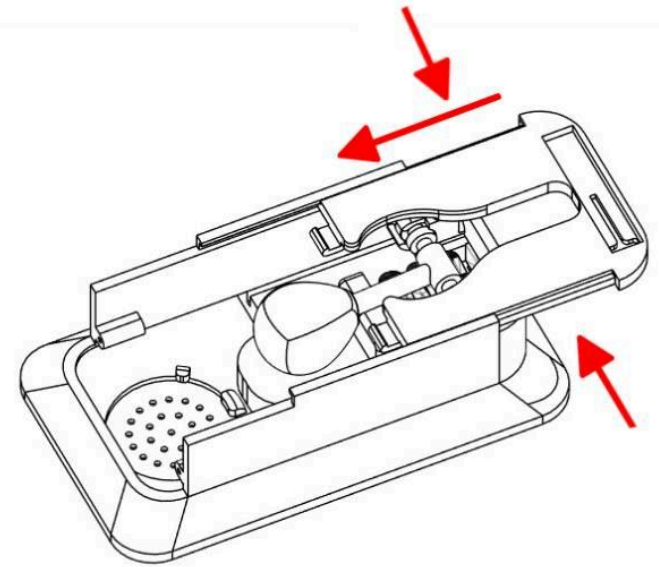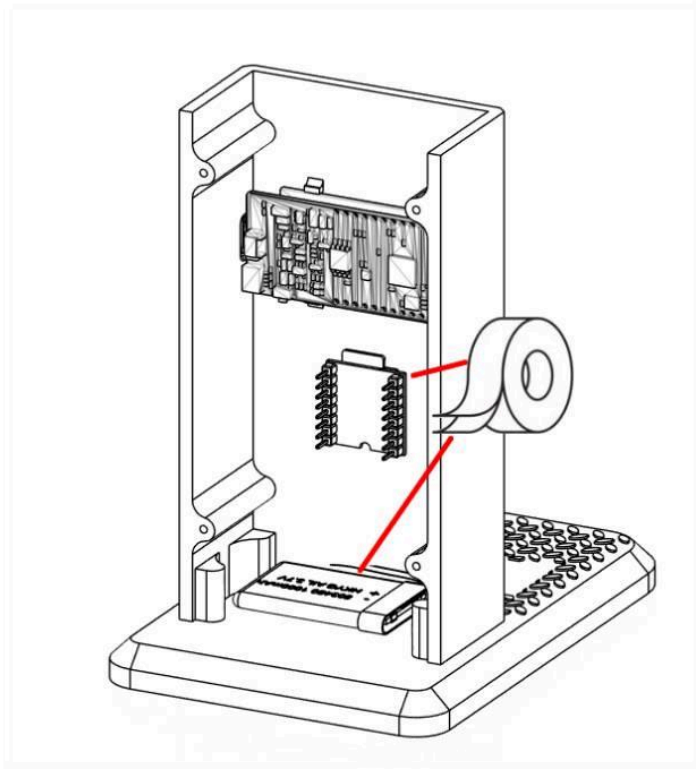Be careful to center it perfectly in relation to the ball.

Assembly

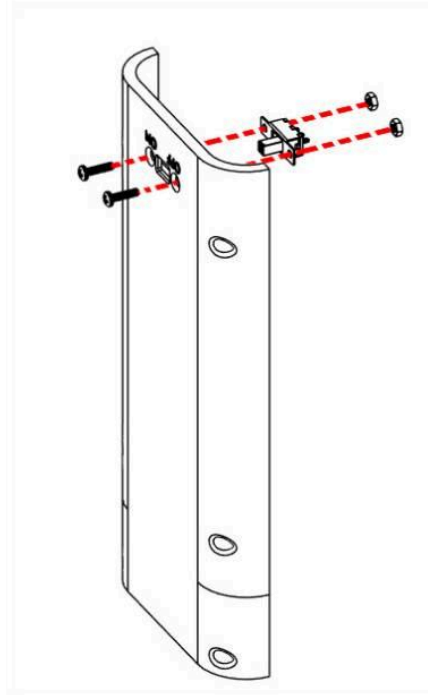Insert and attach the neopixel stick using double-sided tape

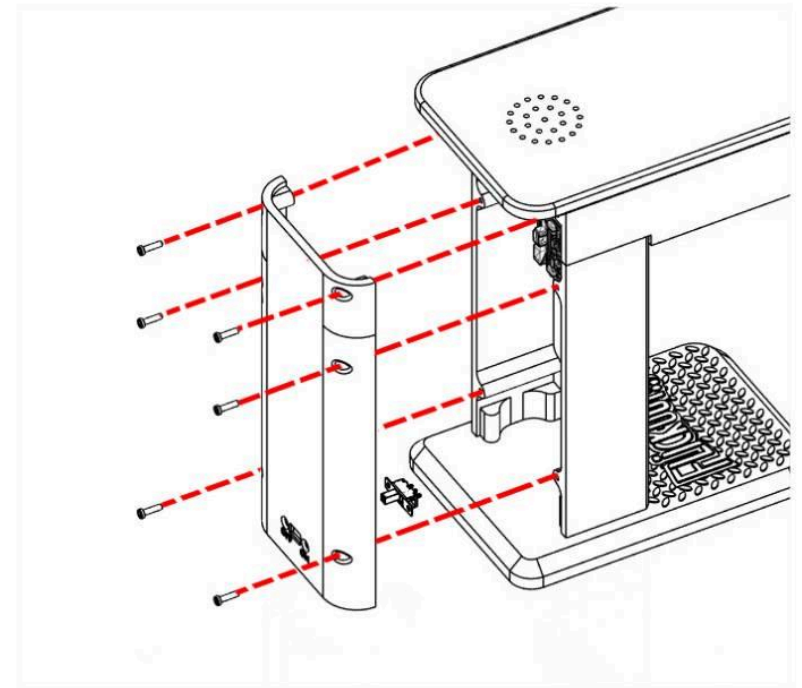Run the wires through the groove designed for this purpose

Slide the cover gently, you must press on the sides to make it go through

Attach the DF mini player as well as the battery using double-sided tape

Screw the switch to the back cover

And finally, screw the back cover using 6 self-tapping screws