# Overflow Robotics Co.

# Alexandria, Egypt

Non-ROV device Document

## *Main Idea:*

"Batta 1.0," our 2024 float, revolves around a syringe power screw mechanism. This mechanism is powered by a DC motor connected to a screw, which drives the vertical movement of a wooden plate holding six syringes. The syringes remain fixed while their moving parts are affixed to the wooden plate, which rotates along the DC motor screw. Activating the DC motor initiates the vertical motion of the wooden plate, thereby adjusting the position of all six syringes and activating the buoyancy engine.

## *Design:*

Batta 1.0 is predominantly crafted from HDPE components. The cylindrical body houses the power screw construction and the electrical system, while two HDPE end caps are utilized. One end cap features four cable glands for accommodating a water hose, pressure sensor, and NRF module antenna and a Pressure relief plug that is more than 2.5 cm in diameter.

## *Electrical:*

The electrical setup of Batta 1.0 is straightforward. An Arduino Nano controls the float, with an L289N motor driver managing the DC motor. Wireless communication is facilitated by an NRF module. Power is supplied by a 12V non-rechargeable battery, protected by a fuse within the first 6 cm. The Arduino receives a start signal from the NRF module, initiates data profiling and collection, and then transmits the data to the station via the NRF module. Both the station and the float are equipped with NRF modules, allowing for data transmission between them. The station system receives the data and generates a graph depicting depth over time readings.

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