



Jelly Cobra  
Team



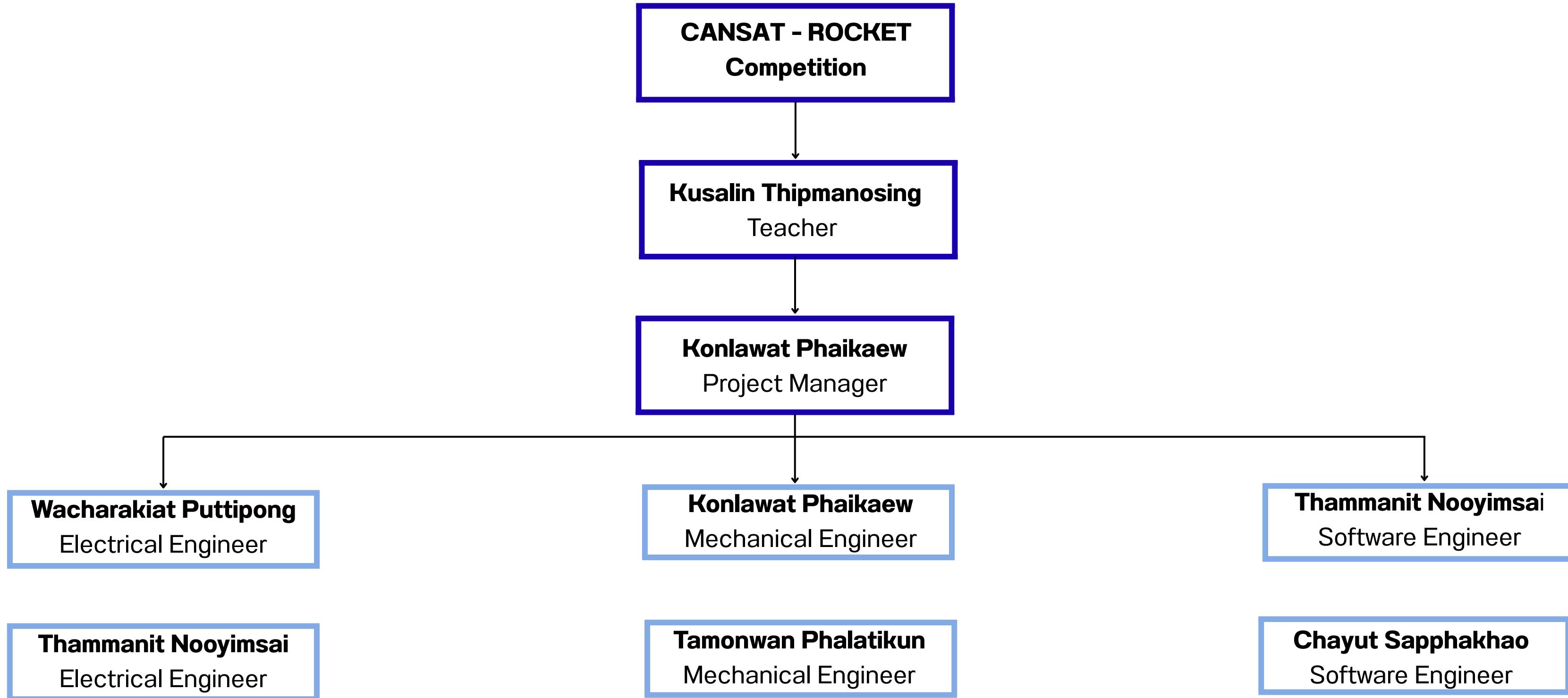
# Thailand CANSAT - ROCKET 2025

## Critical Design Review (CDR)

Jelly Cobra Team

PCSHSNST

# Team Organization





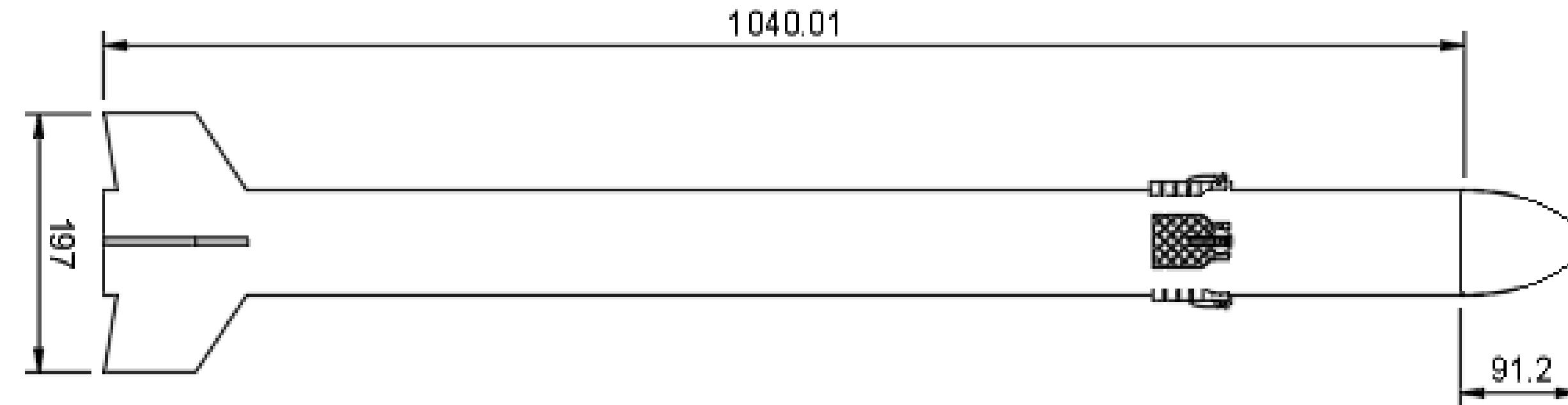
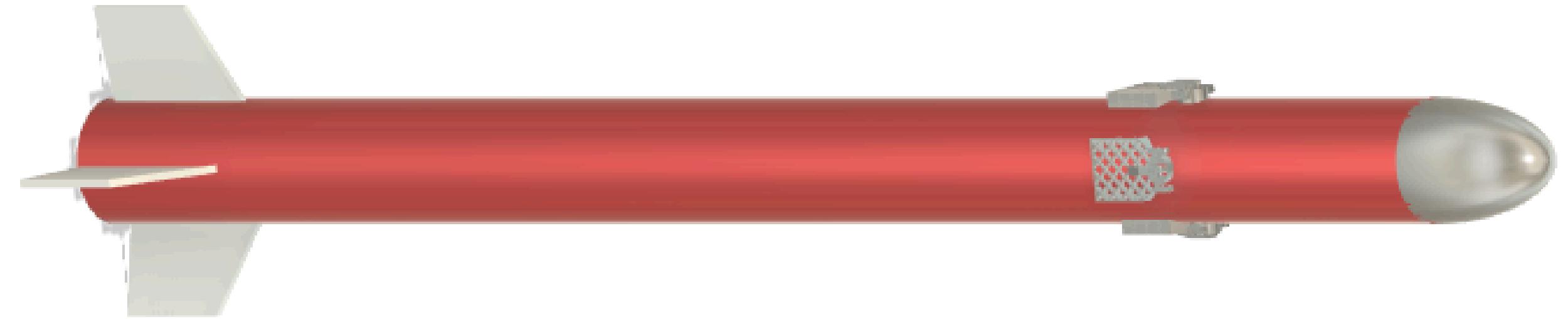
## Main Objectives

1. The CanSat can transmit data back to the ground station using the LoRa communication system on the 923.525 MHz frequency band and the RadioLib library.
2. Can confirm the CanSat's position with the ground station during the mission.
3. Can measure air pressure, temperature, and humidity.
4. Can operate in the air for no less than 90 seconds.
5. Can measure acceleration during launch and landing.
6. Can carry at least 1 quail egg with the egg remaining intact.

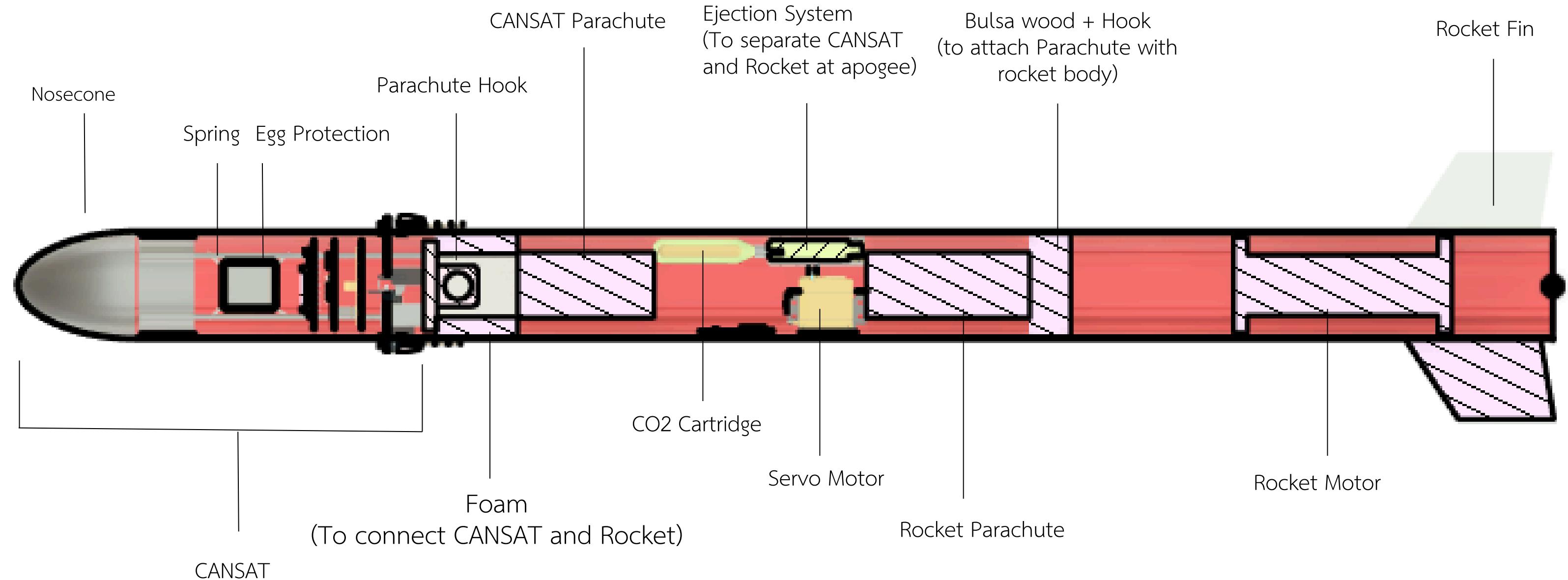
## External Objectives

1. Create Grid Fins to decelerate and control the direction of the CanSat during descent.

# Exterior Design

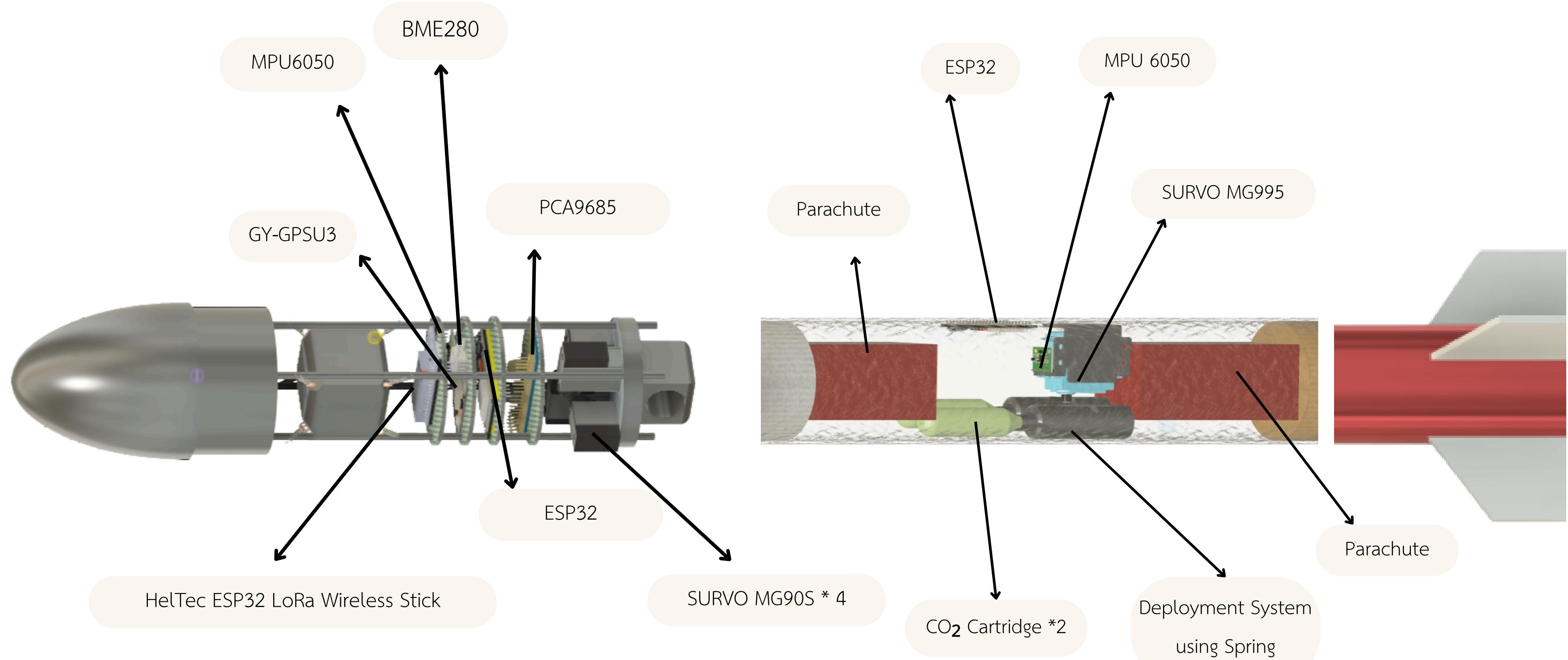


# Interior Design

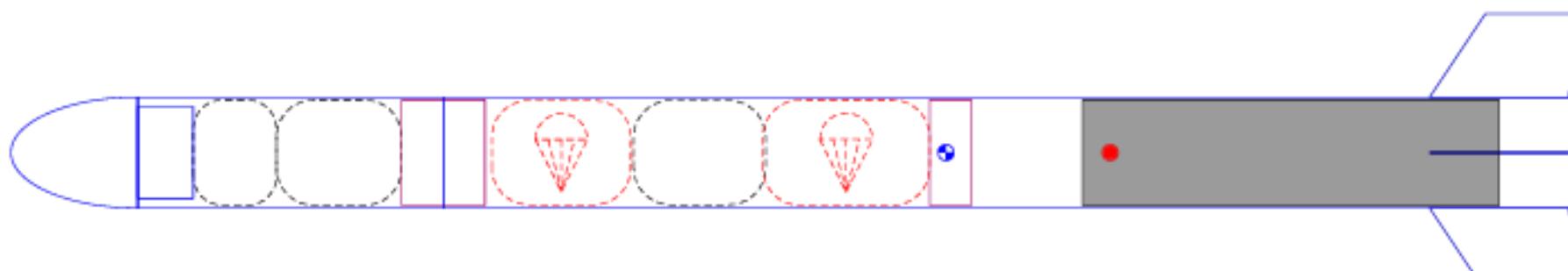




# Interior Design



# Rocket Design



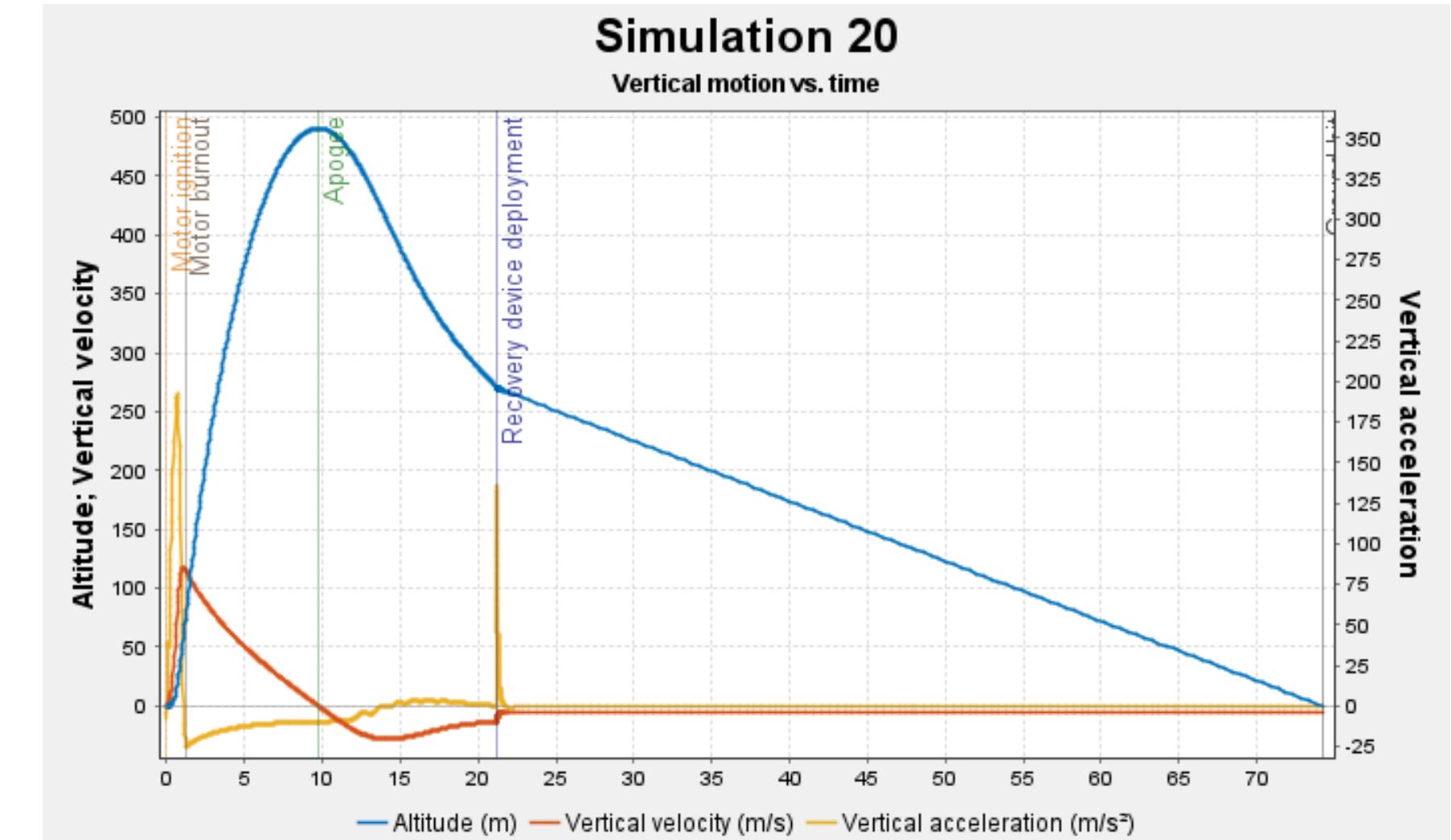
Stages: 1

Mass (with motor): 1866 g

Stability: 1.48 cal / 10.4 %

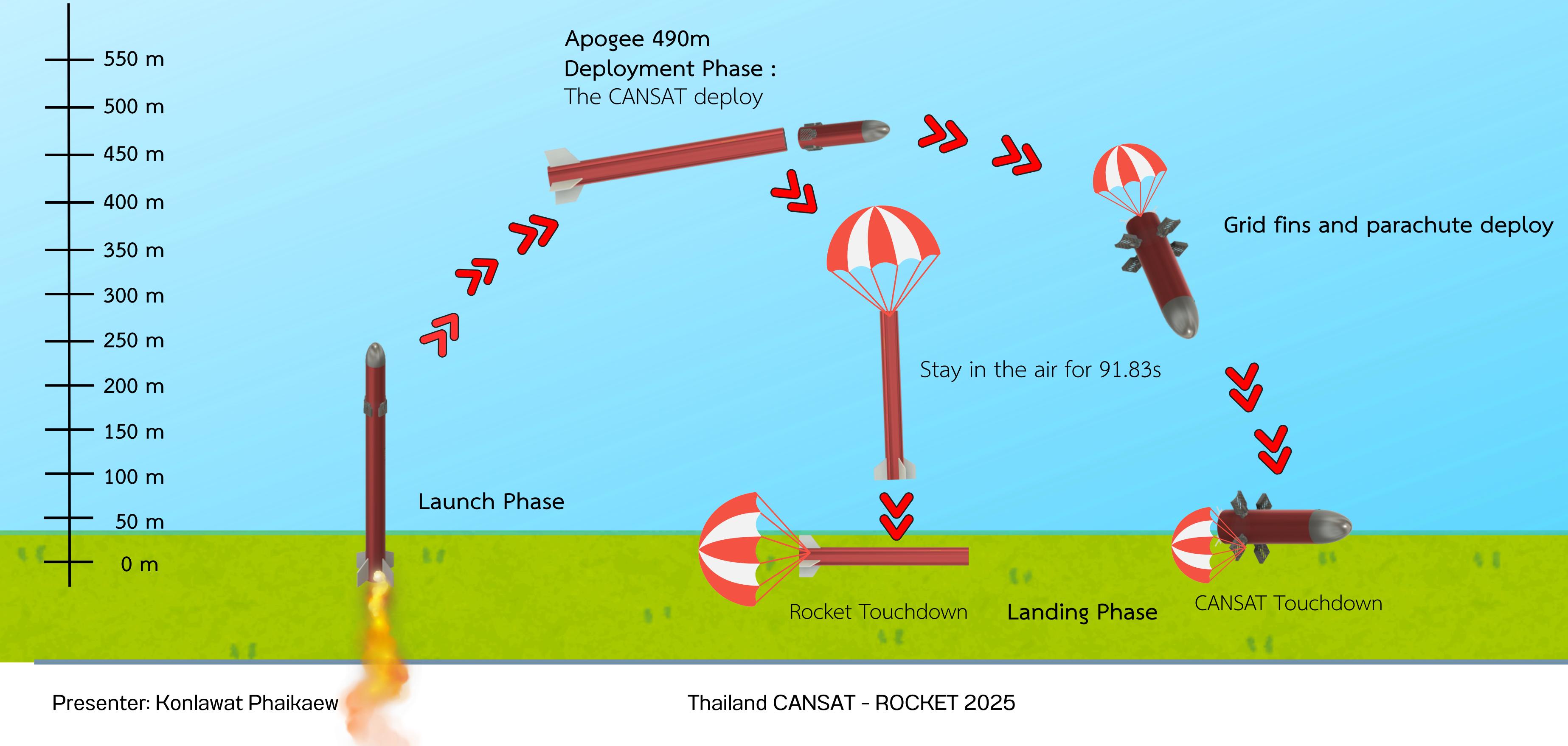
CG: 67.3 cm

CP: 79.1 cm



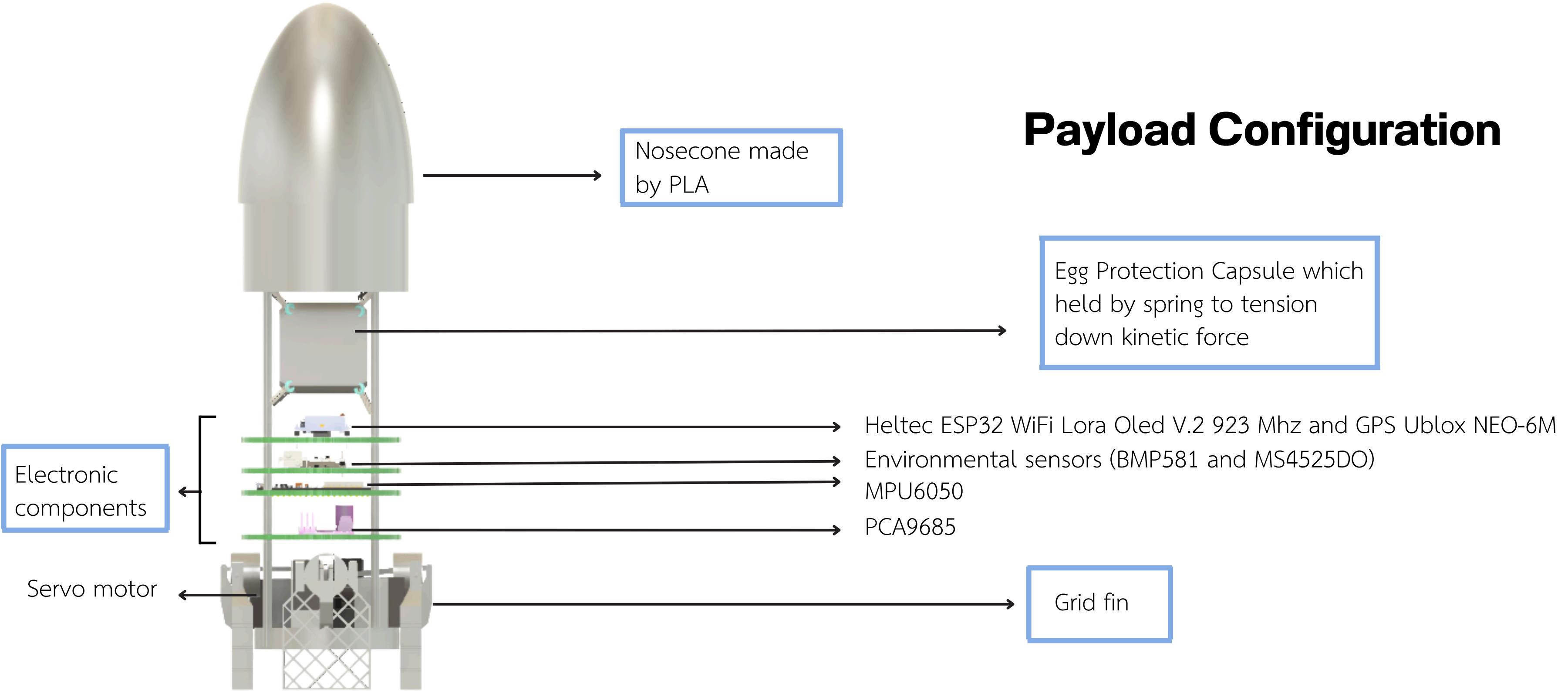
Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Motor Wt	Size
H190	219 N	1.08 s	363 N	238 Ns	11.95:1	210 g	76/300 mm

# Flight Plan



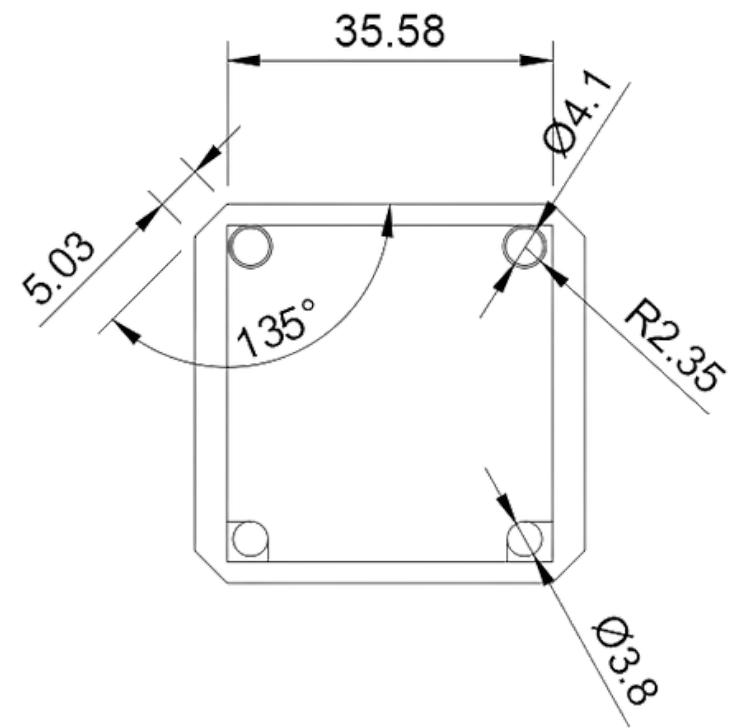
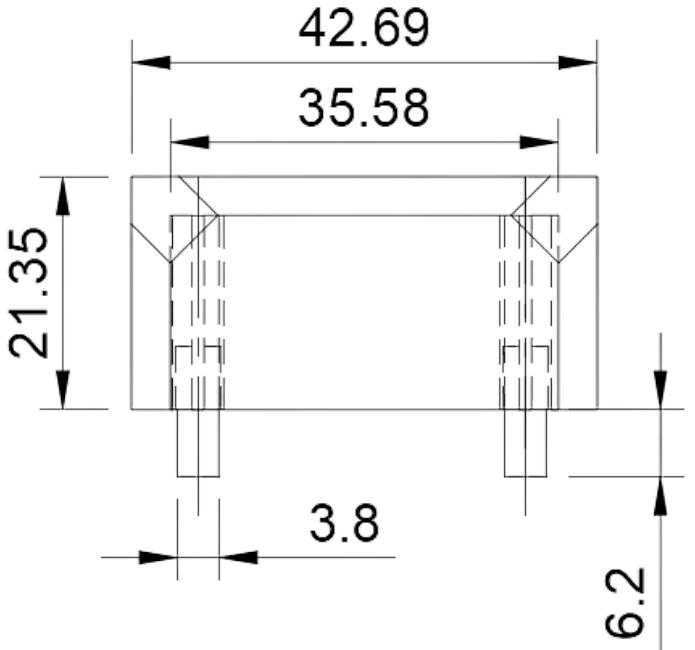
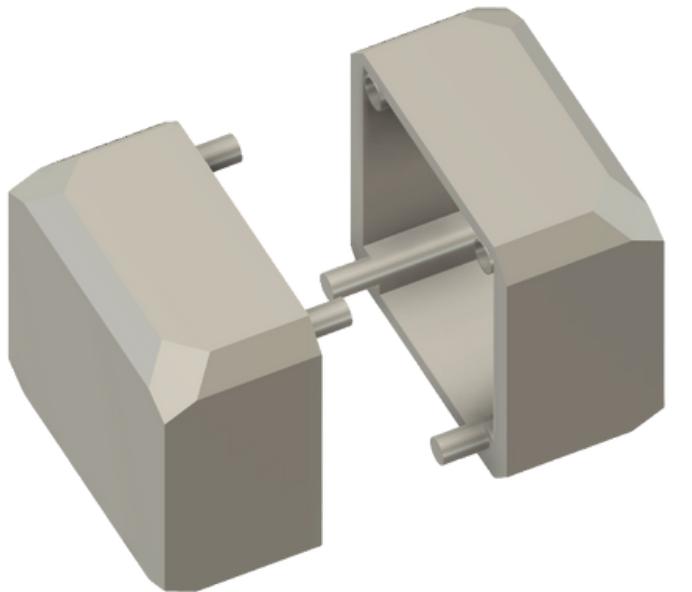


# Physical Layout (Payload)



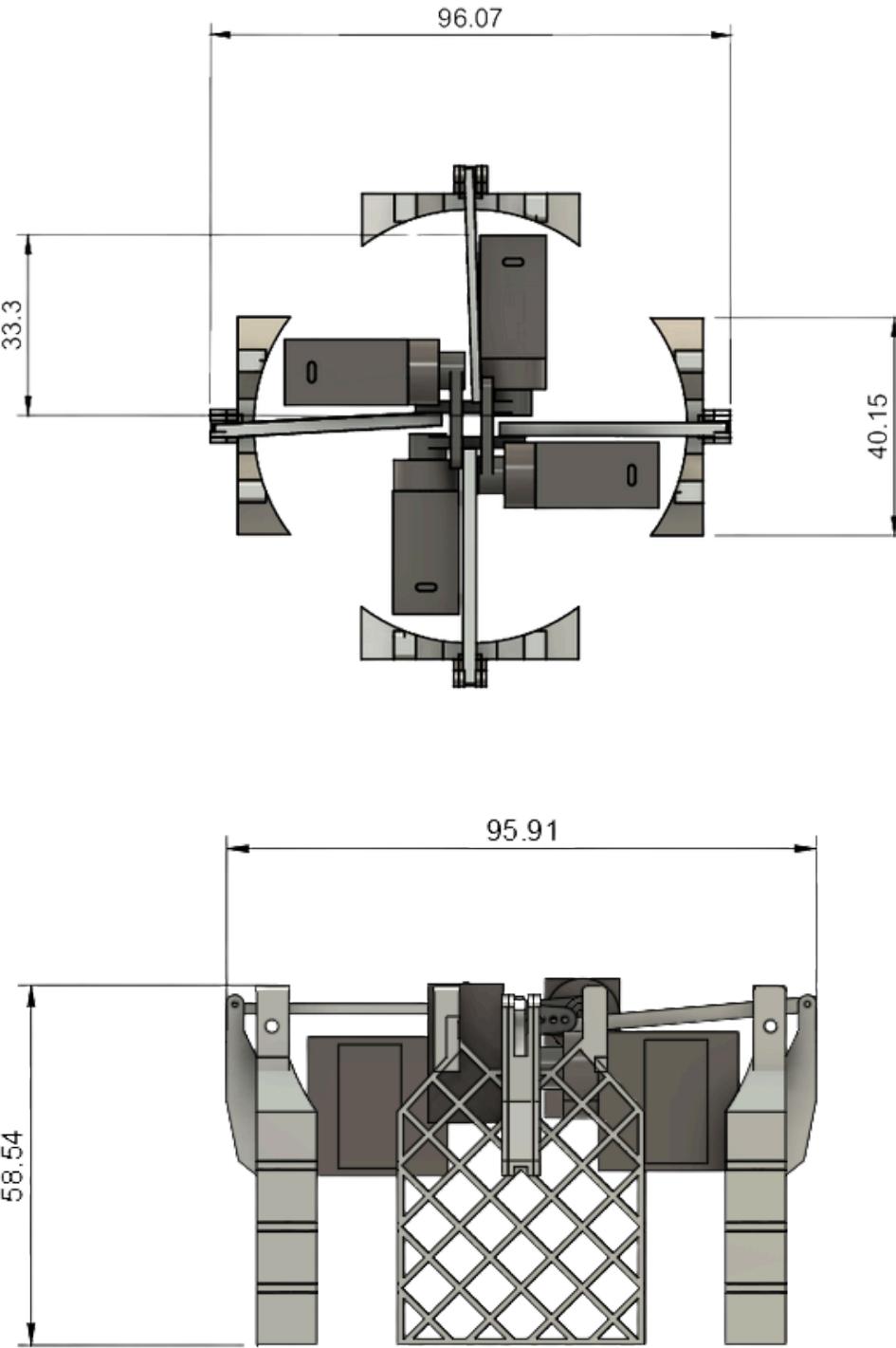
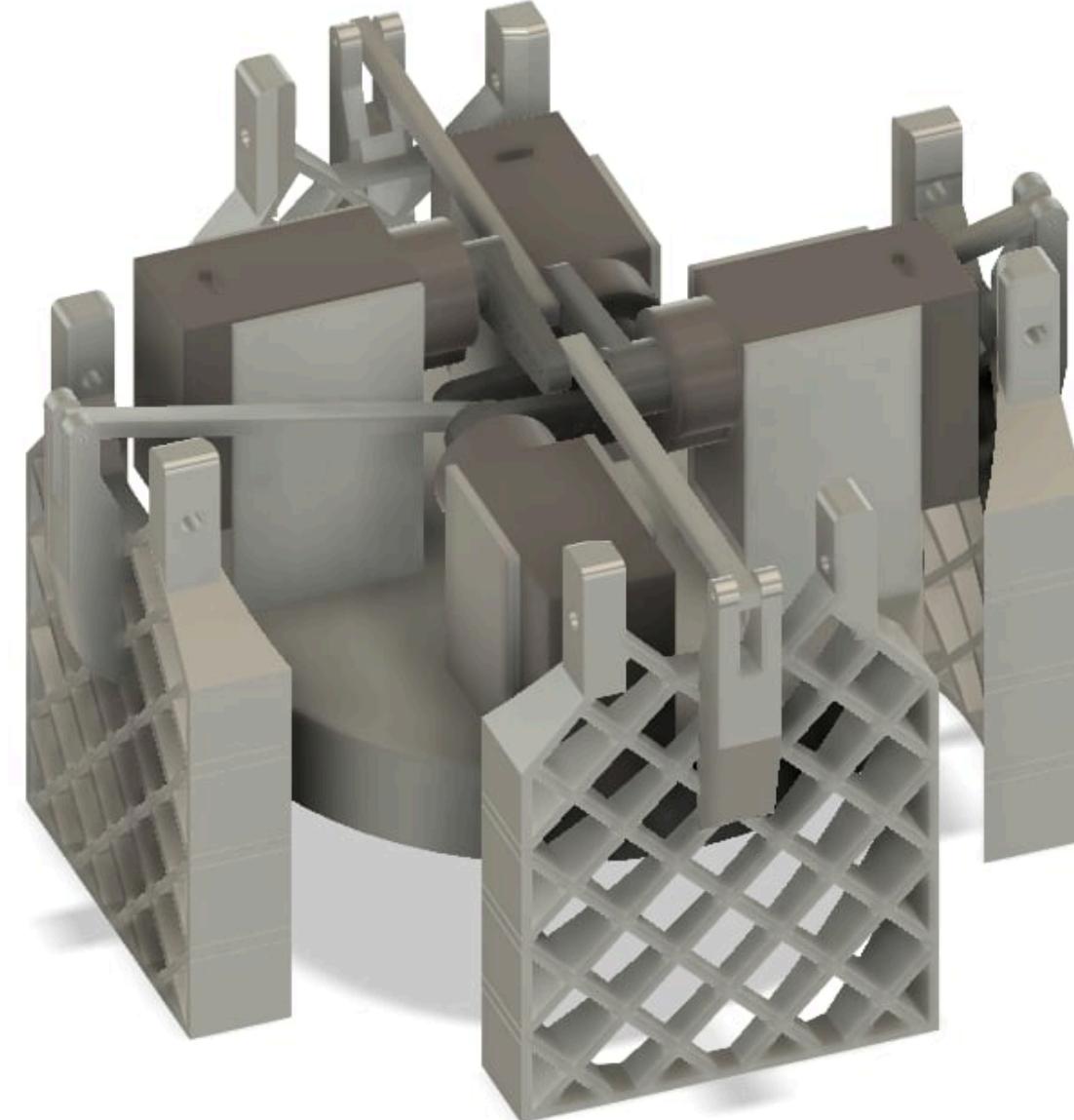


# Physical Layout (Egg Protection)



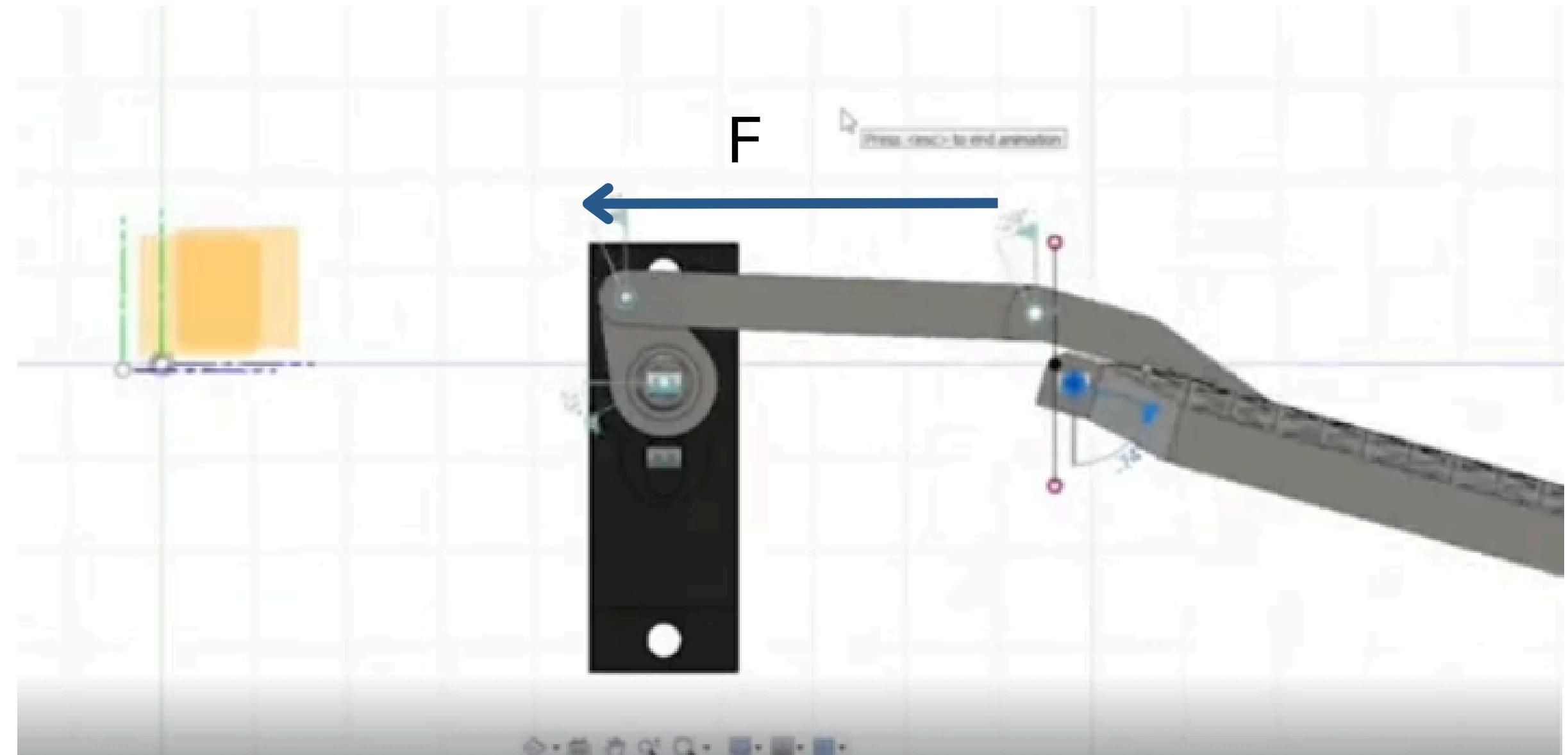
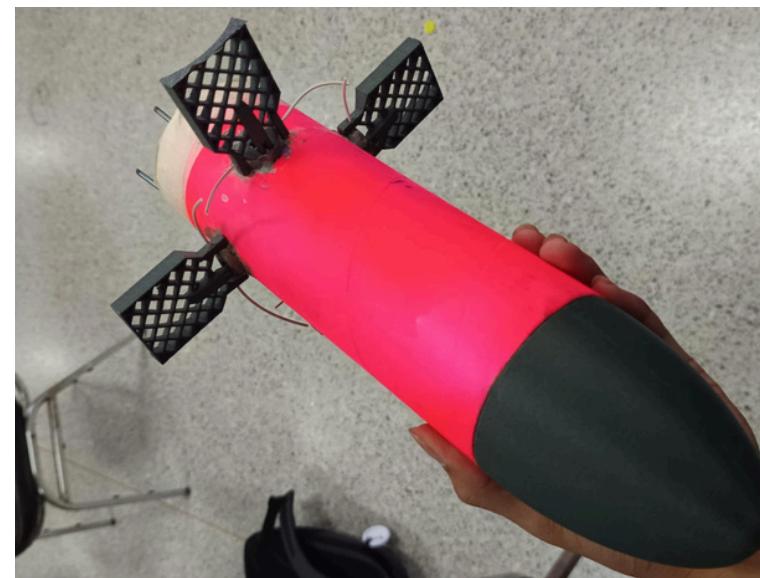
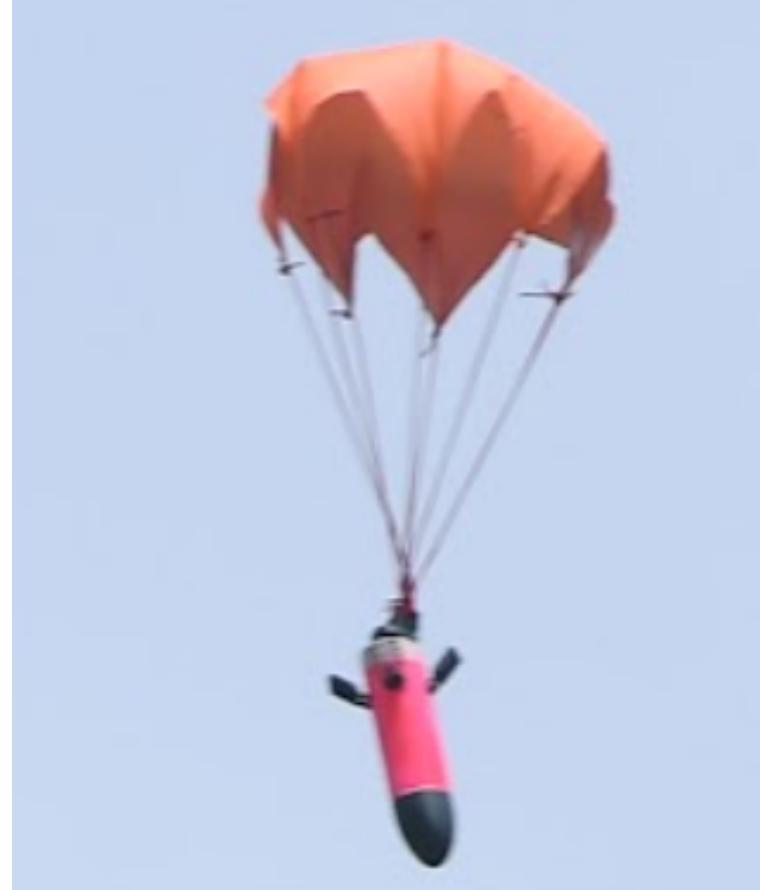


# Physical Layout (Grid fin Deployment System)



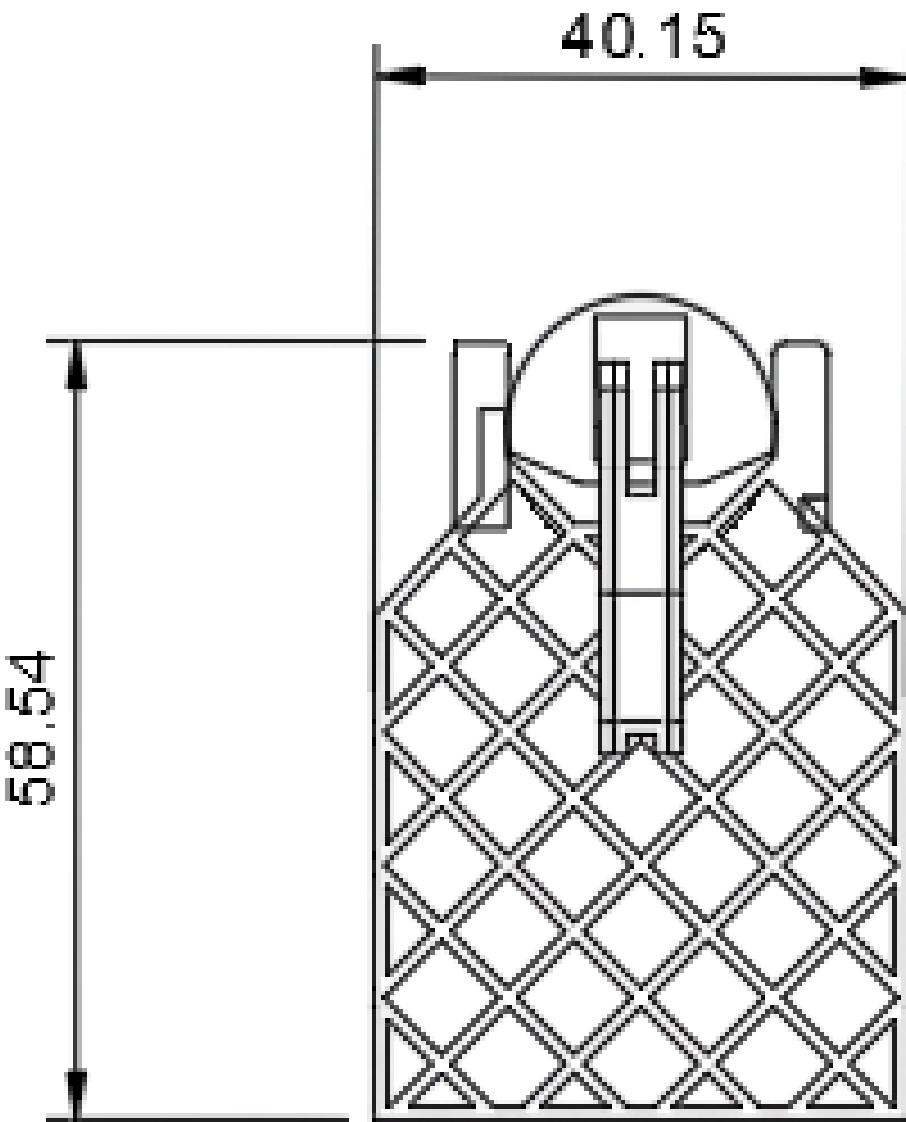
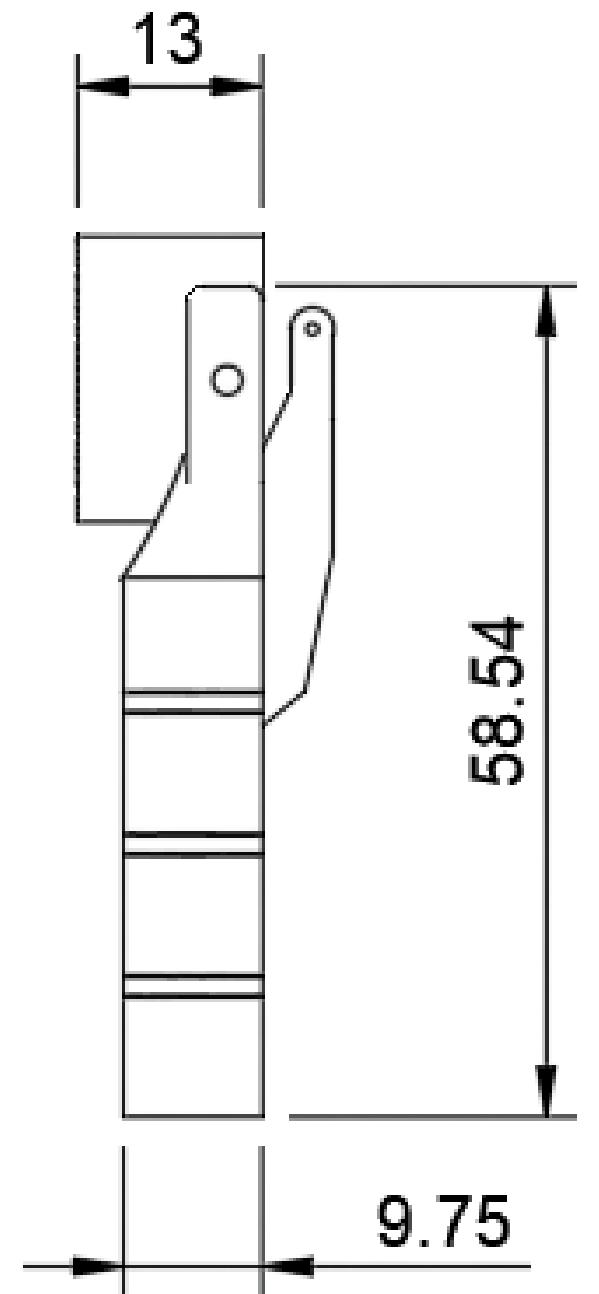
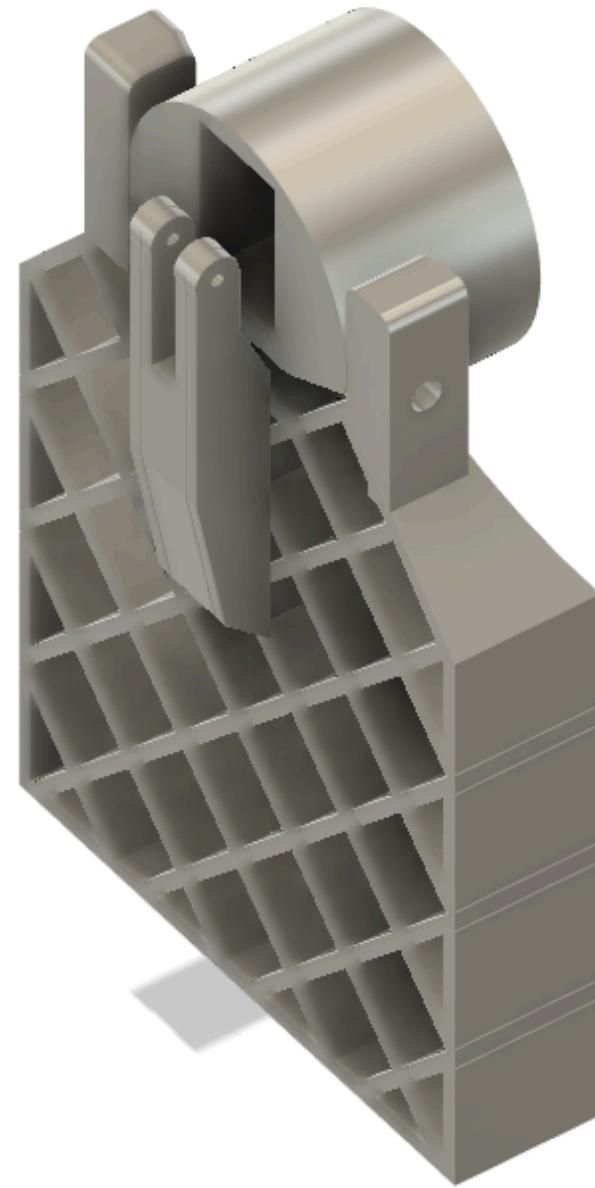


# Physical Layout (Grid fin Deployment System)



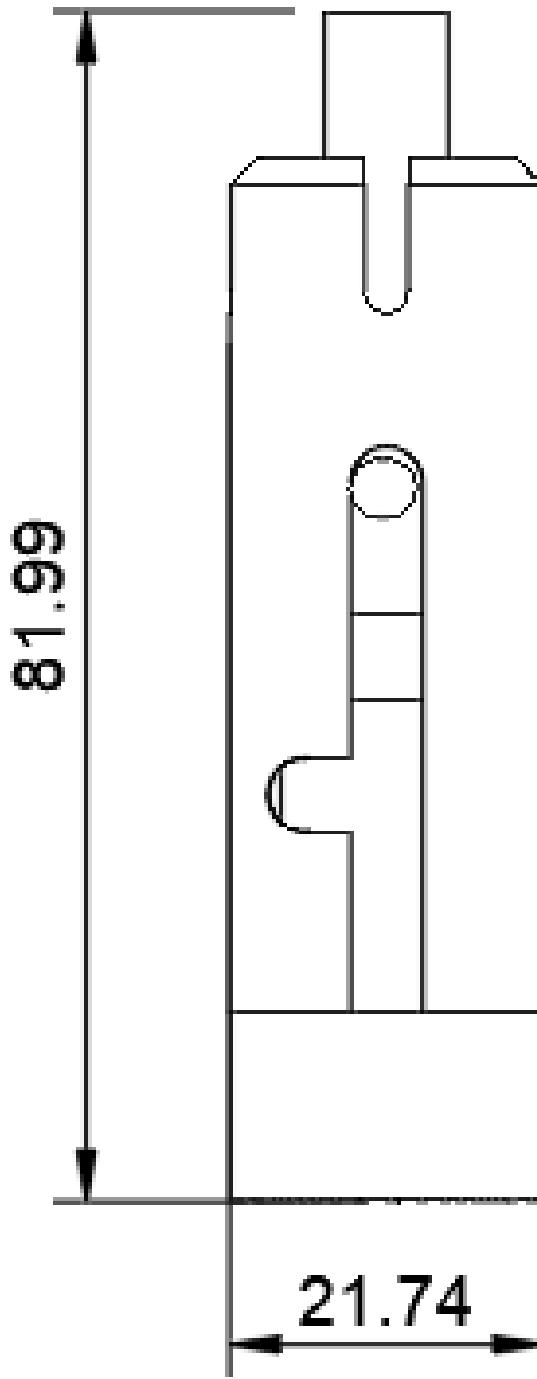
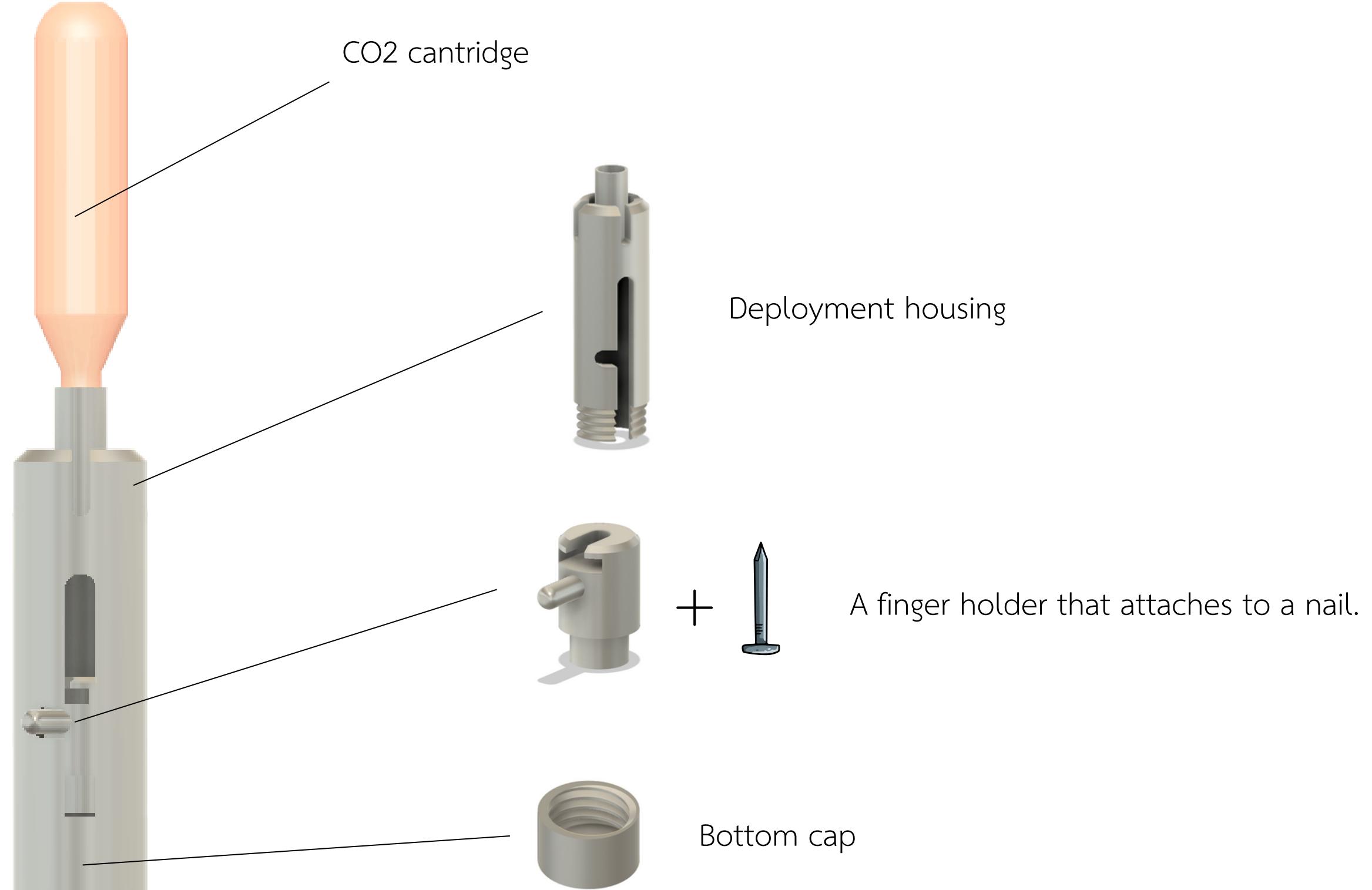


# Physical Layout (Grid fin)





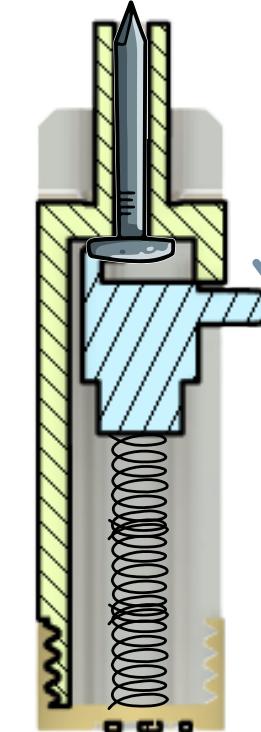
# Physical Layout (Ejection System)



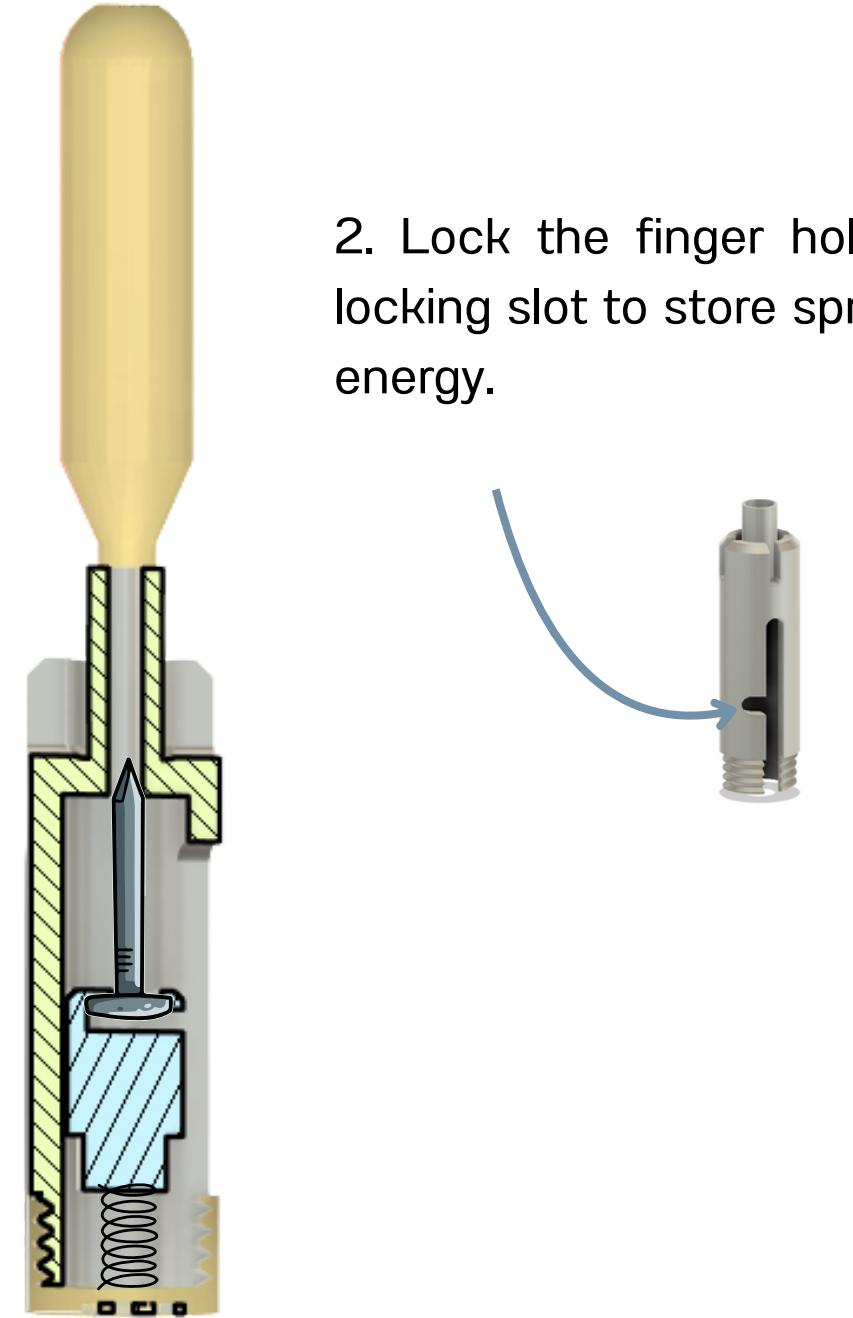


# Physical Layout (Ejection System)

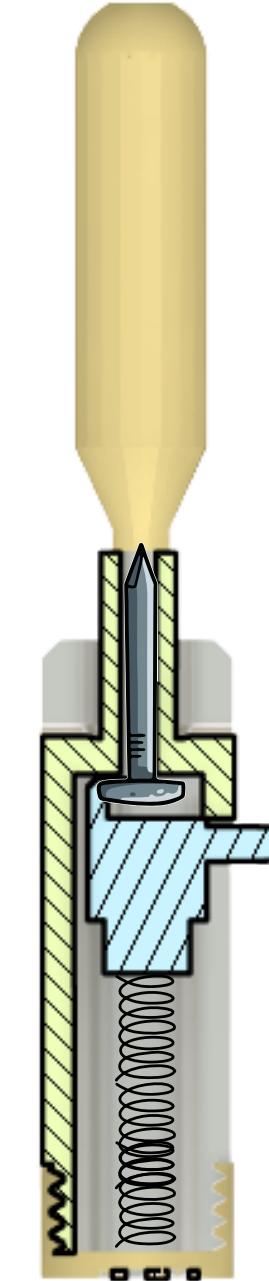
1. Push a finger holder down as far as possible.



2. Lock the finger holder into the locking slot to store spring potential energy.

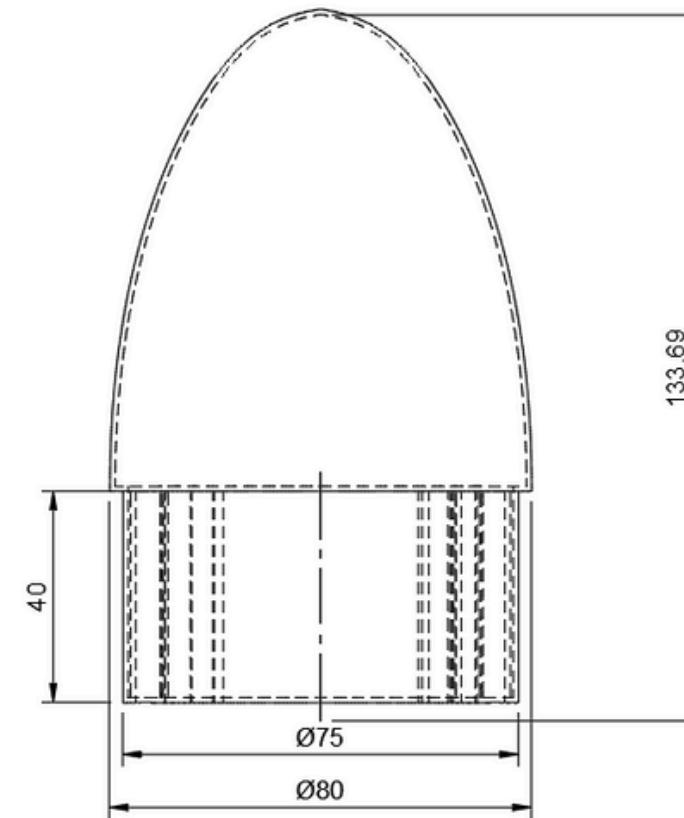
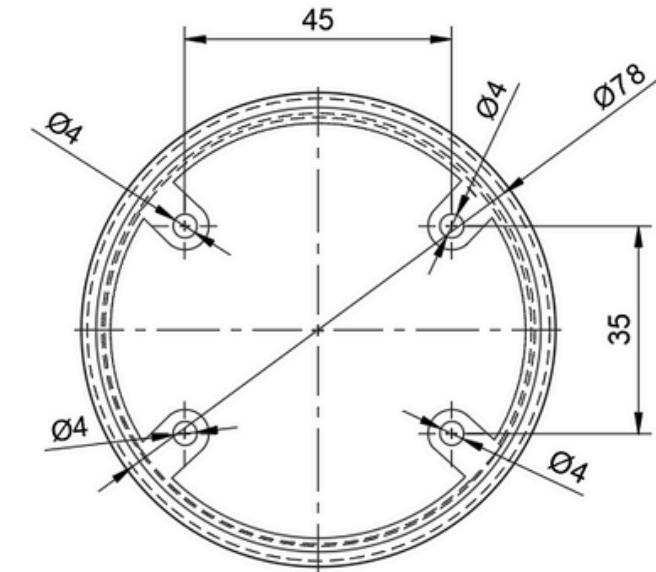


3. The servo will release the finger holder at the apogee, causing the spring to snap the finger holder (which is attached to a nail) to puncture the CO<sub>2</sub> cartridge.





# Physical Layout (Nosecone)





# Sensor Subsystem Overview

Sensor	Model	Function
Temperature	BME280	Measures temperature inside CANSAT
Pressure	BME280 / MS4525DO	Measure pressure values throughout descent
Accel / Gyro	MPU6050	Measures tilt and rotation angles in relation to x-plane
GPS	GPS Ublox NEO-6M	Measures longitudinal and latitudinal position of CANSAT