

The final design is made of depron as it is light weight, easy to fabricate desired shape. It has higher strength and can bear small impact. The spar is made of stainless steel. All the parts are fabricated with the same dimensions as done in the calculation. The aerofoil shape of the wing is Clarke-Y. The fuselage is made in aerodynamic shape so as to minimize the drag force.

4.2.1 Design Report

The specification of electronic components used are

- BLDC motor – 1600Kv
- Battery 11.1V, 2200mah, 25C
- Electronic speed controller – 30amp
- FPV Camera (2 MP with live transmission)
- Propellers – 10*4.5
- Flight controller – KK board
- Push rods (2mm thickness)
- Transmitter & receiver (Graupner mz-12, 2.4GHz)
- Servo motors

A pair of motor housing and gear was fabricated using 3-D printer which is made of ABS material.

4.2.2 Detailed Design Drawing

Fuselage

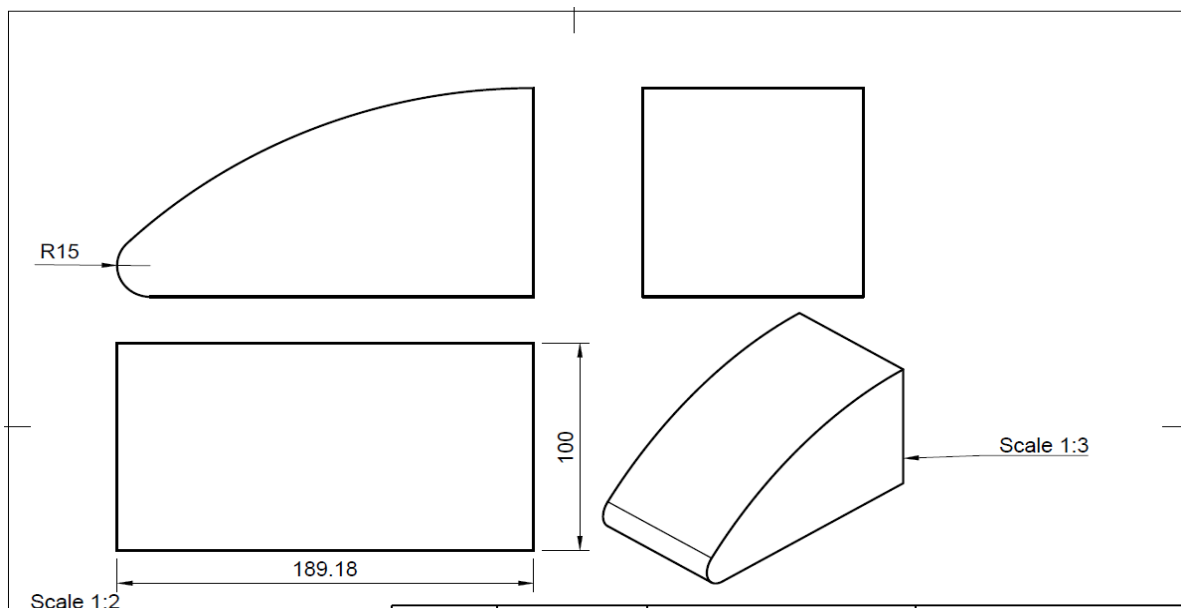


Figure 8 Fuselage

Wing

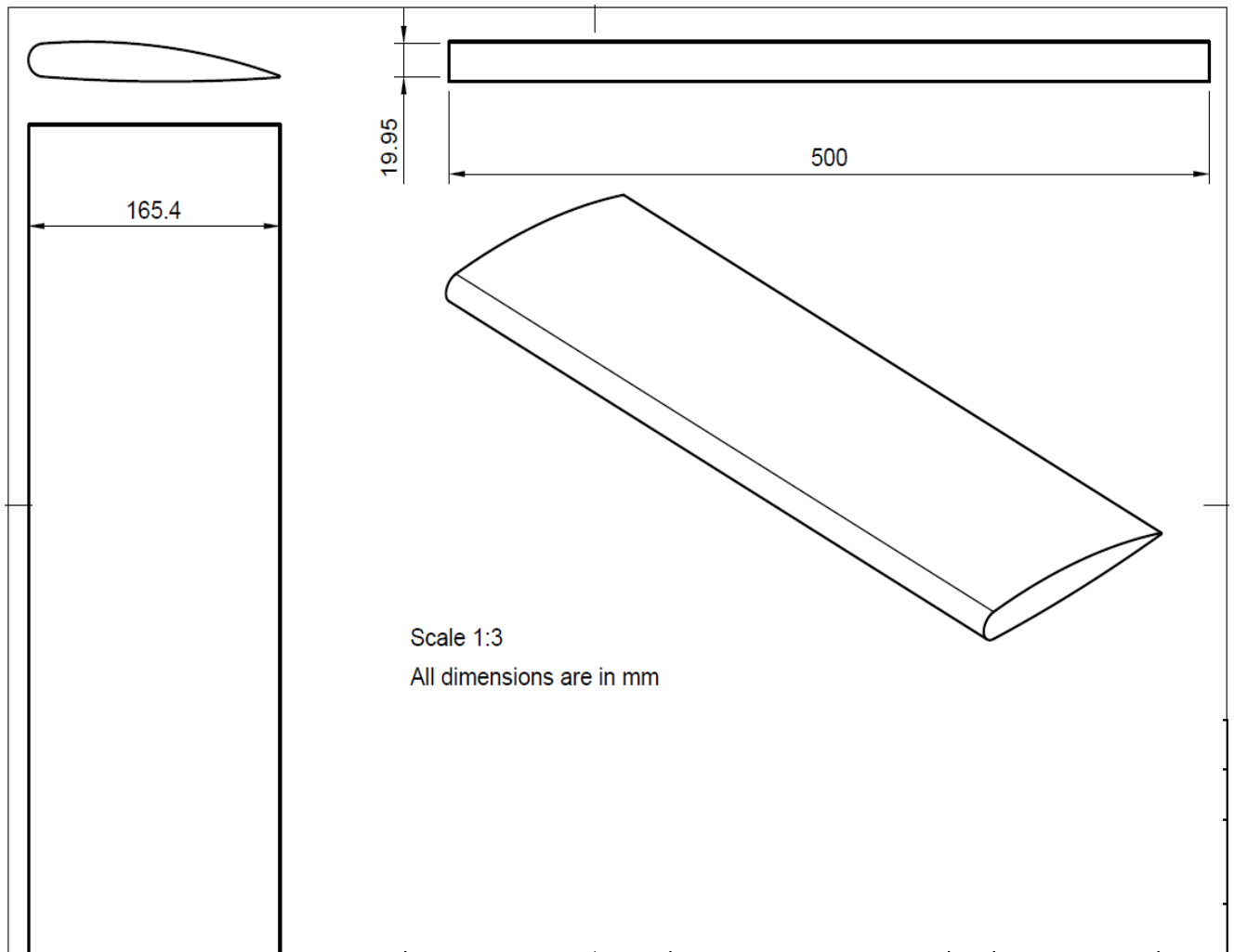


Figure 9 Wing

Horizontal Stabilizer

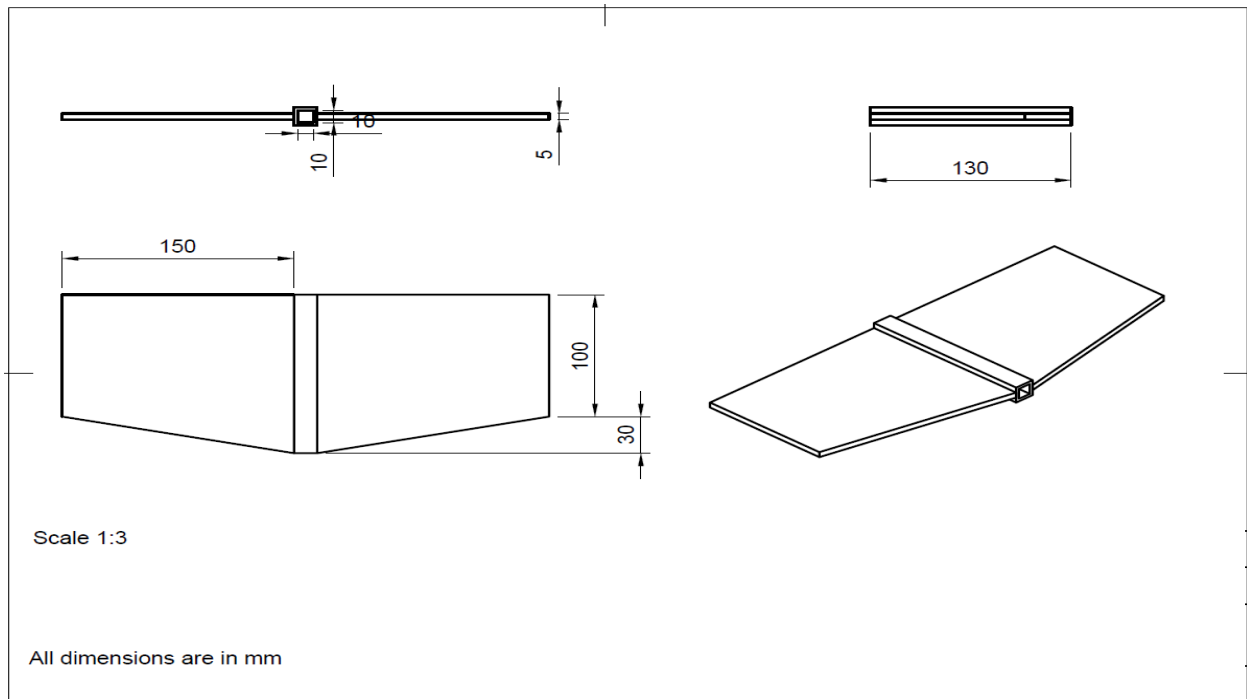


Figure 10 Horizontal stabiliser

Rudder

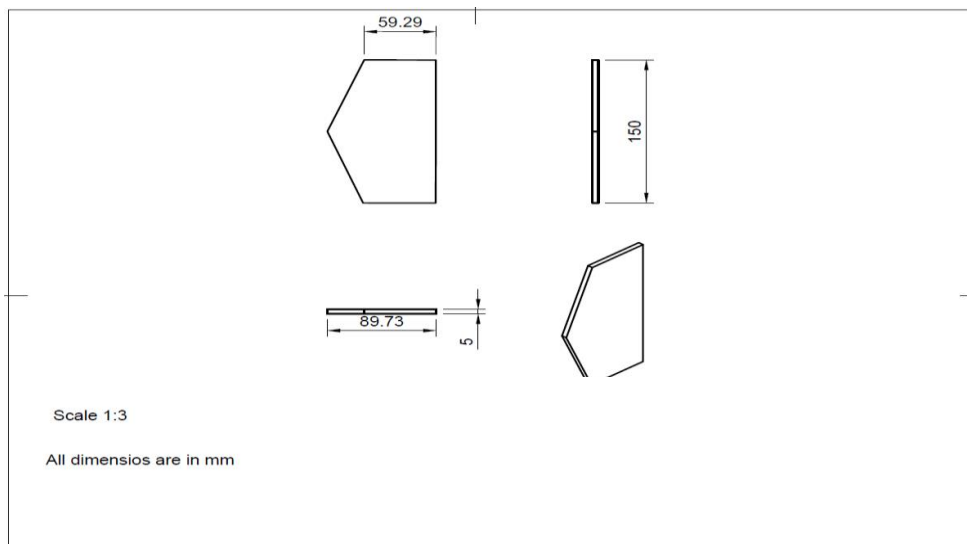


Figure 11 Rudder

Motor Housing

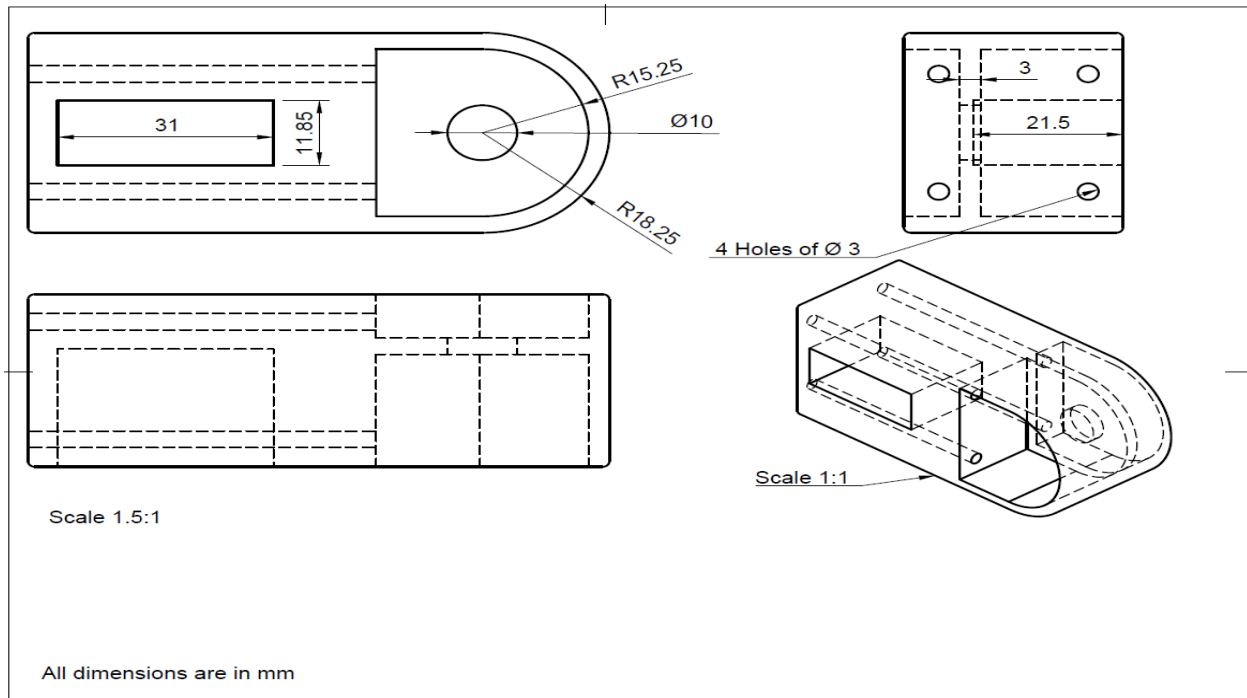


Figure 12 Motor housing

Spar

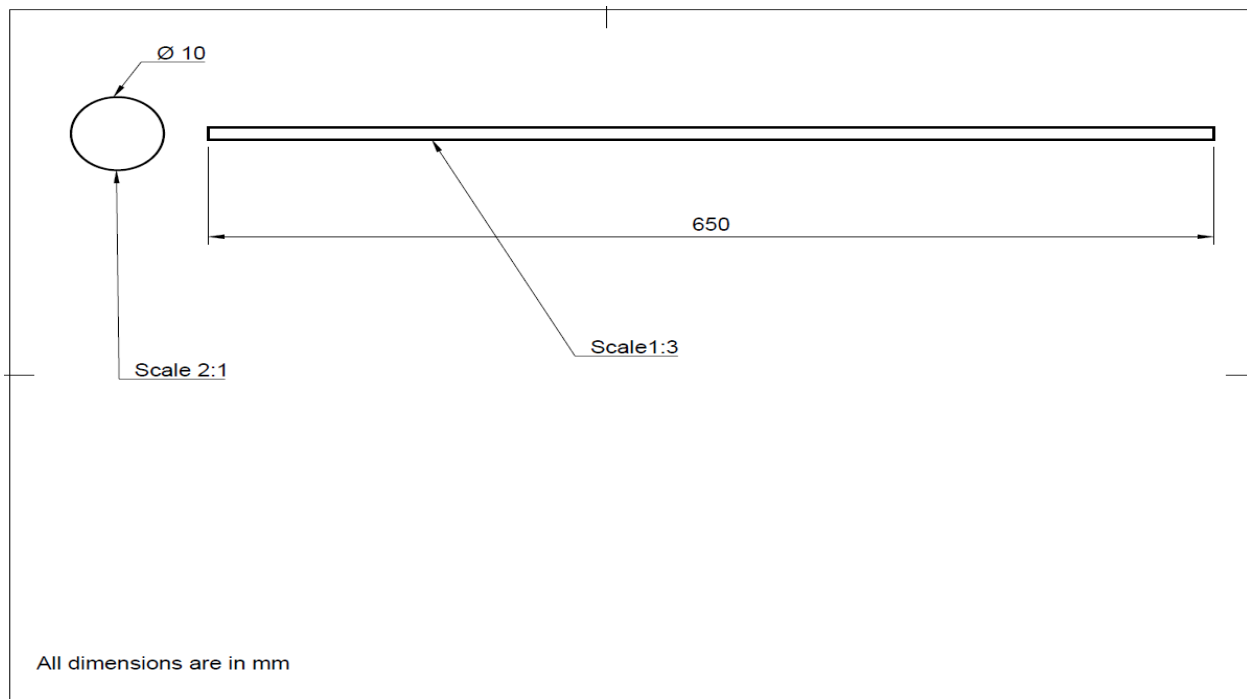
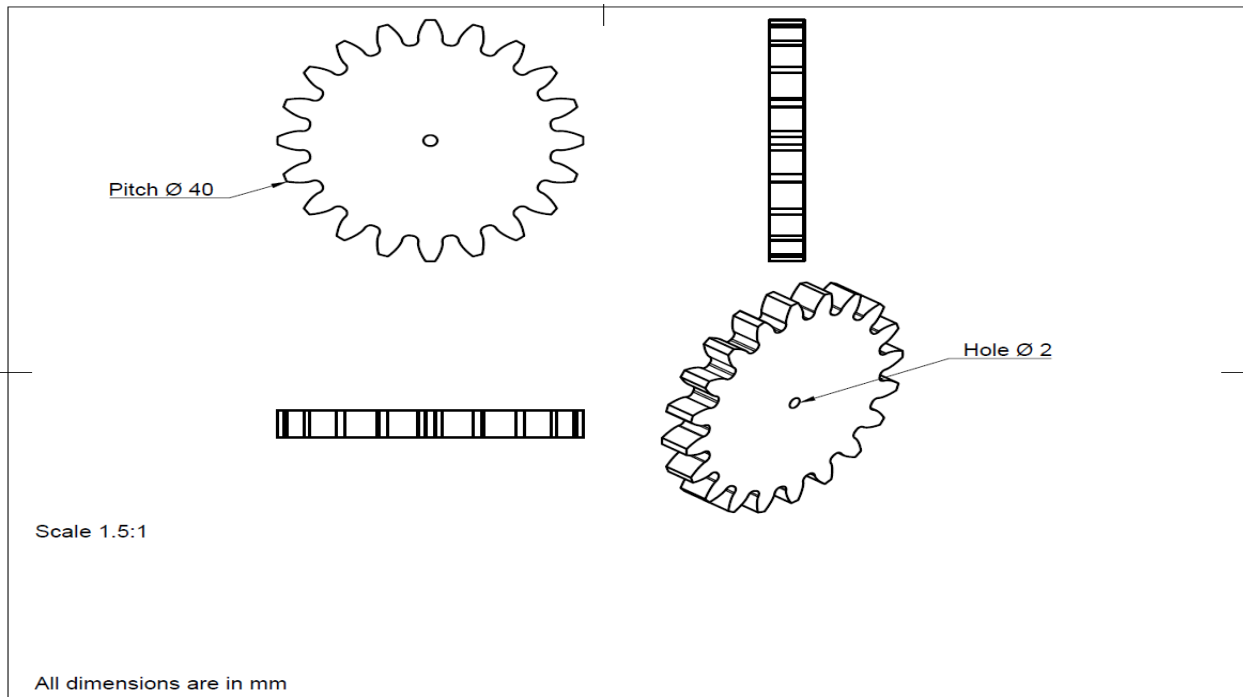


Figure 13 Spar

Gears (connected to servo)



Gears (connected to spar)

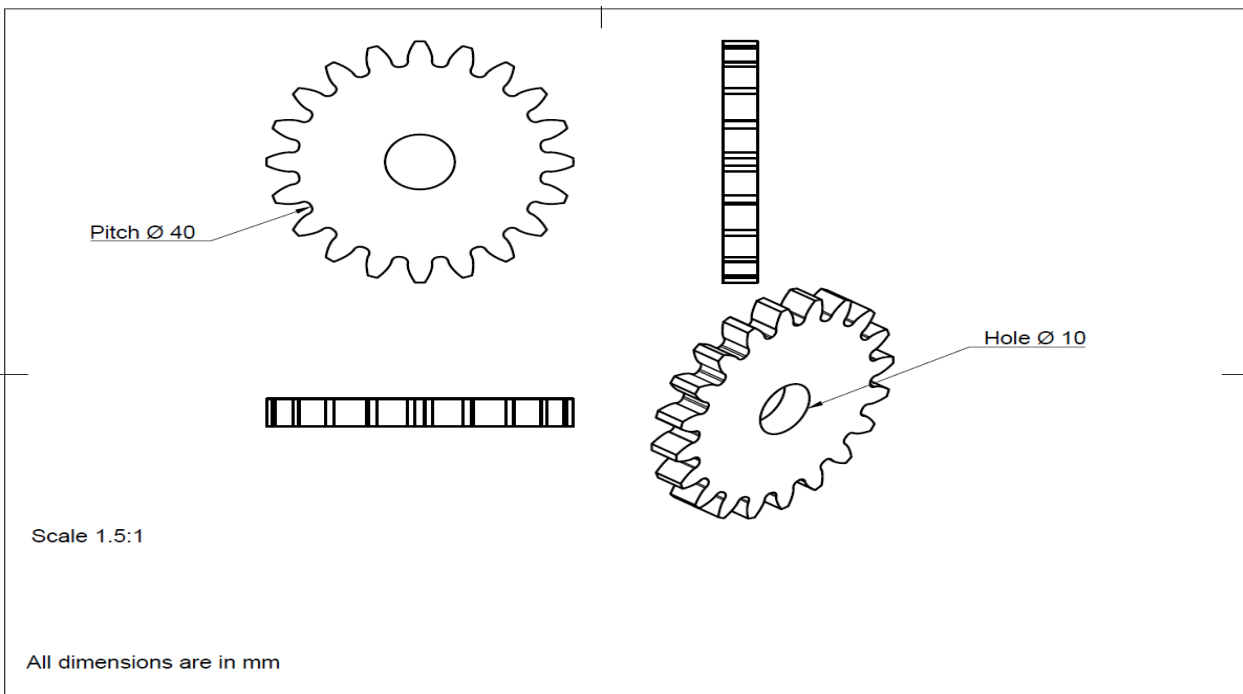


Figure 14 Gear

2D Assembly Drawing and Assembly

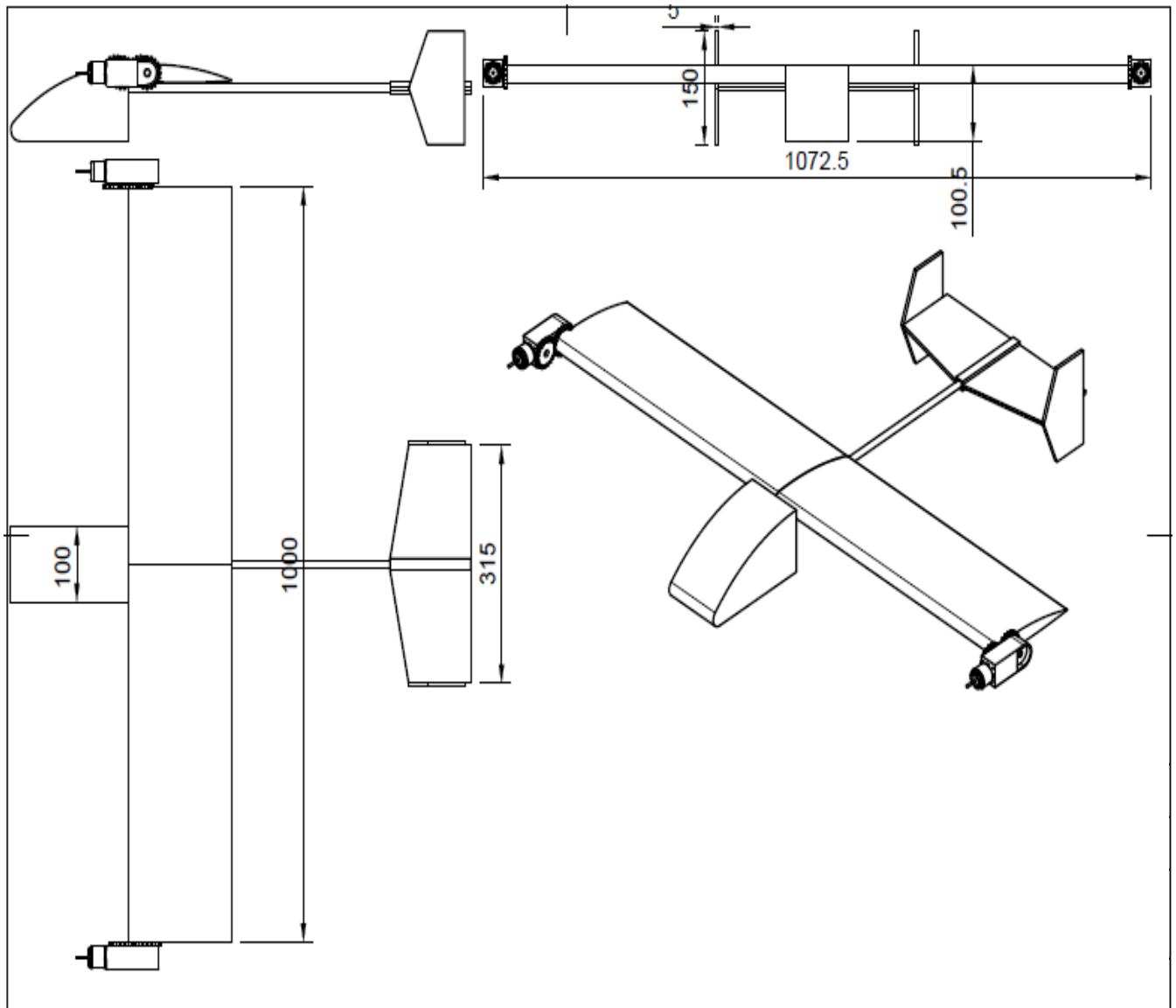


Figure 15 2D assembly drawing