Design and Mechanism:

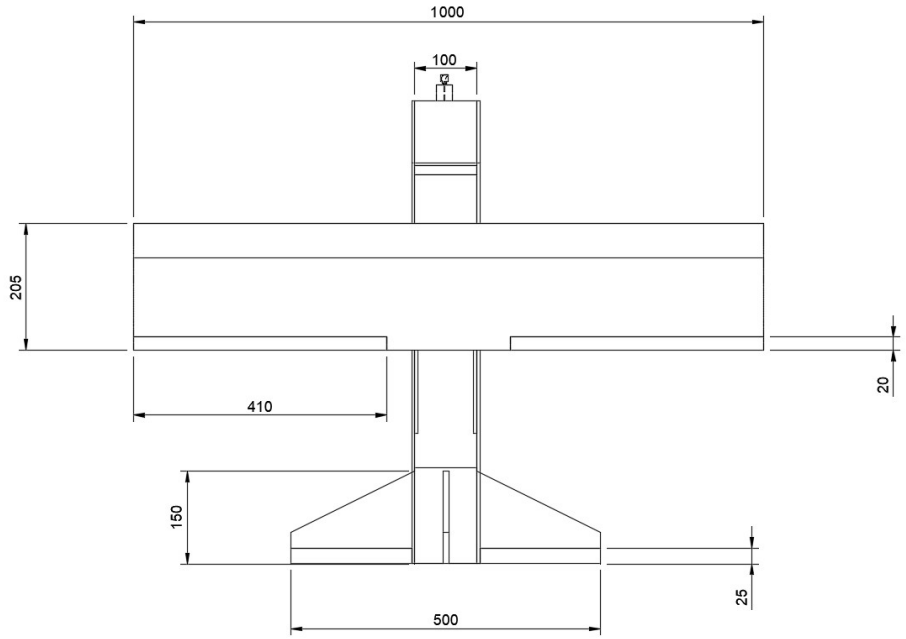
- Building Materials:
    - Balsa wood, foam board, tape, glue.
- Thrust to Weight ratio: 1
- The wing span and Airfoil design :
    - Airfoil: NACA 2412 was chosen after careful fluid analysis.
    - Wingspan: 1m selected to match the desired lift.
- Wing Fabrication:
    - 8 Balsa wood ribs are wrapped in shrink wrap.
    - The lower trailing edge top/bottom spars are also fabricated using balsa wood.
- Configuration: High-wing wing attached above fuselage.
- Centre of lift: Above center of mass.
- Payload Location: Directly below the wings, near plane COM, so that if there is a sudden weight decrease after dropping the ball, the plane doesn't become unstable.
- Payload Dropping Mechanism :
    - One single-door bay for the payload (direct opening of the fuselage).
    - One servo is used for opening.
- Wing-Body connection: Using a rubber band.
- Metal rods are connected along the length of the wing to provide structural rigidity.
- 4 control surfaces: 2 ailerons, elevator, rudder.
- Single Propellor plane with a motor mounted on the nose of the plane.
- 3mm dia. metal control rods(Connecting servos to ailerons, elevator and rudder)
- Foam board/ Sunpack, Tape, Glue

Electronic Components

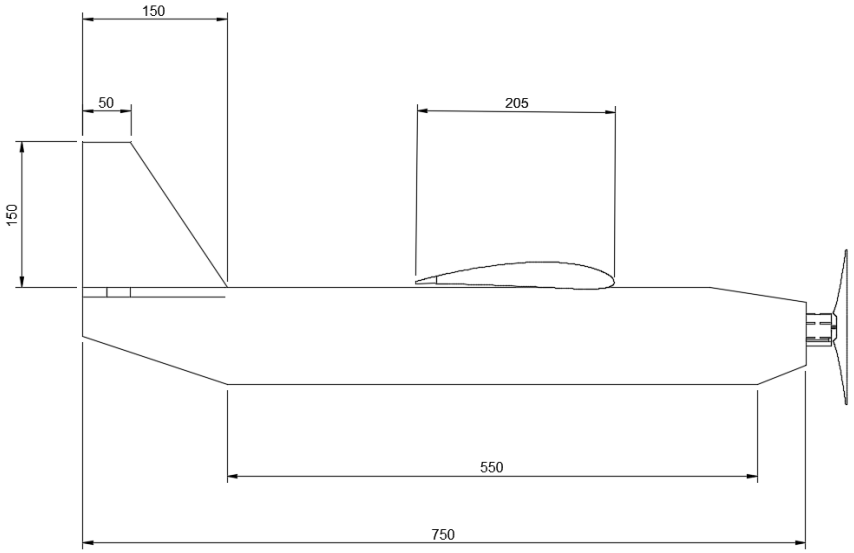
- BLDC motor with max thrust up to 500 g each (2100kv)
- 1 Lithium-Polymer battery (3000mAh)
- Electronic Speed Controller (ESC)
- Fly Sky FS-i6 6-Channel 2.4 GHz Transmitter and FS-iA6 Receiver
- Mini Digital Servo Motor (90°Rotation)
- Plastic Propellers(10 inch), 9mm shaft diameter.
- Connecting wires.

Aircraft Dimensions:

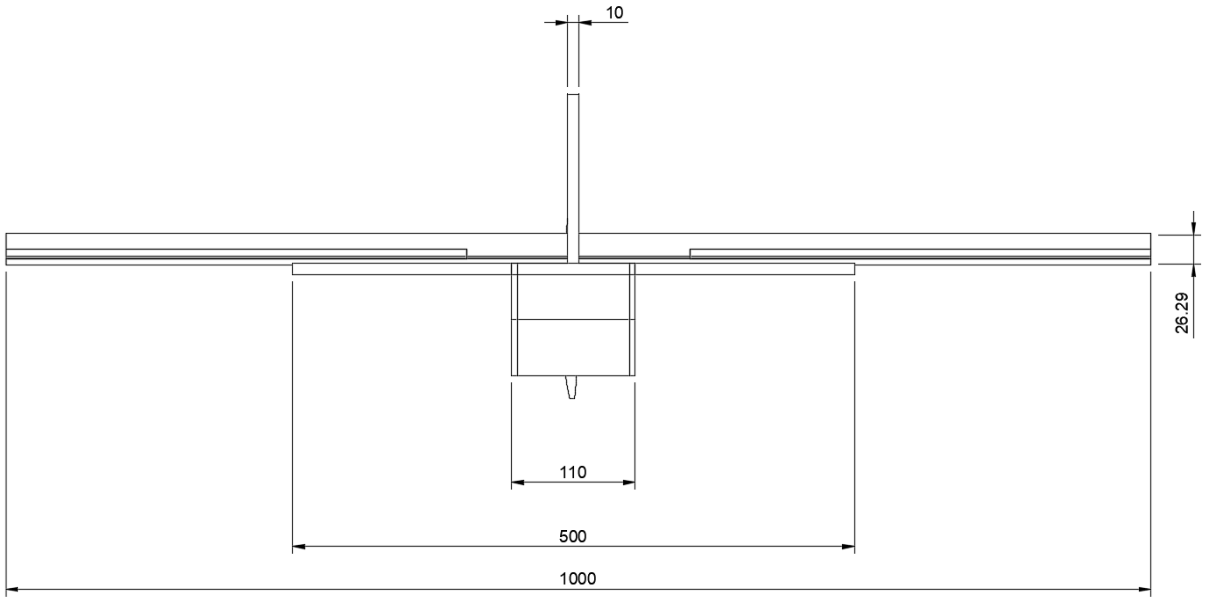
• ***All dimensions are in mm***



TOP VIEW



SIDE VIEW



FRONT VIEW