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# Internal Components

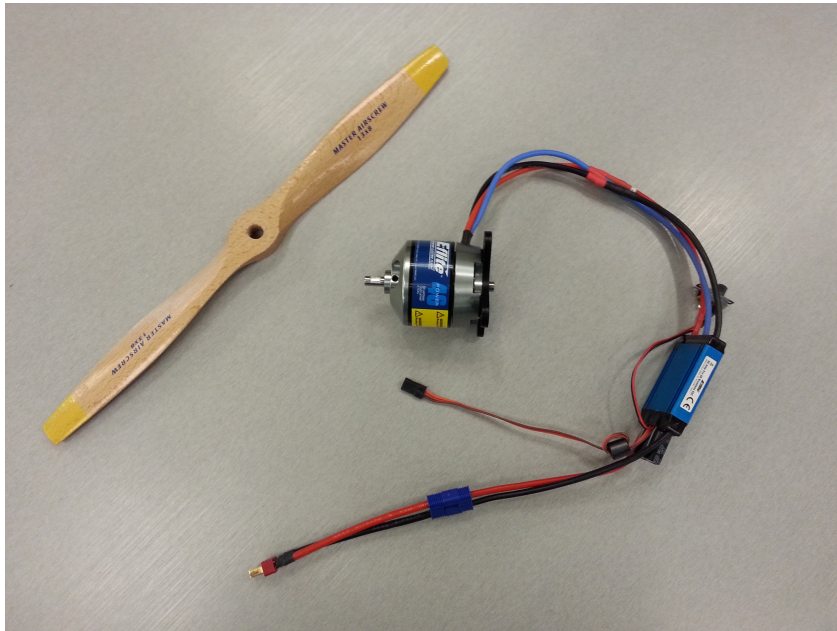
AME 40462

21 February 2018

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# Propeller / Motor / ESC



- Propeller: Master Airscrew 12x6
  - 12" diameter with 6 inch pitch
  - Connects to motor with provided prop adapter
- Motor: E-Flite Power 46
  - Connects to speed controller
  - Attached to firewall using provided x-mount
    - Connect motor to mount with screws/ Loctite. Connect mount to firewall with screws/washers/blind nuts
    - Ensure that the hole in the center of the firewall is larger than the motor shaft
- Electronic Speed Controller: E-flite 60 Amp Pro
  - Controls radio input to motor
  - Connects to flight battery, motor, and throttle setting on flight receiver
- Receiver Battery
  - Isolates receiver from flight battery and arming plug to keep receiver functioning for testing before flight

# Flight Receiver



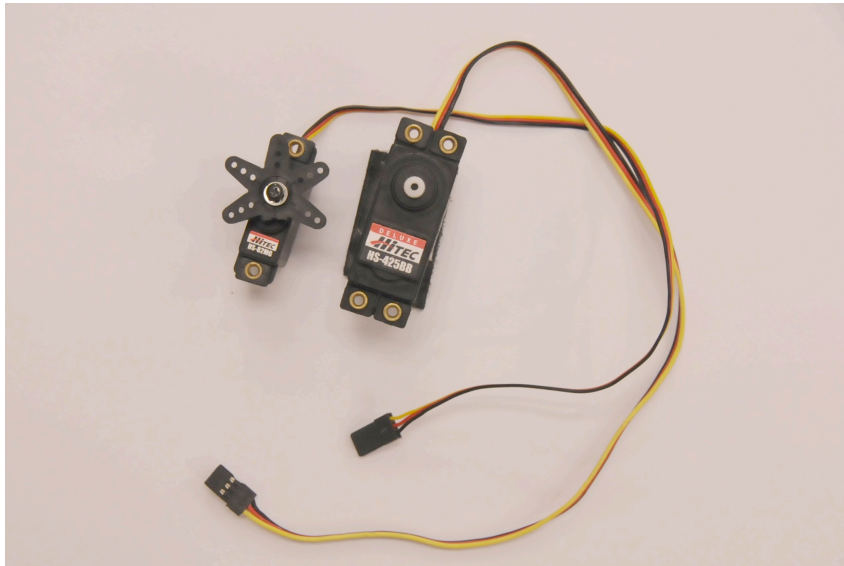
- Spektrum 7610
  - [Link](#)
  - 7 Channel
    - Throttle, Rudder, Aileron, Elevator, and 3 extra
  - Paired with corresponding Spektrum Radio
  - Additional antenna is for redundancy in case radio signal is lost
    - Mount in different plane (horizontal vs vertical) than receiver
  - Connects to receiver battery
  - Dimensions: 1.2 x 1.2 x 0.5 inches



- Glacier 30C 3000mAh 4S 14.8V LiPo Battery
  - Powers the motor and speed controller only
  - TAs exclusively handle charging
  - Flight batteries installed when groups are ready for flight
  - A different flight battery is used for each flight
    - Ensure there is easy access to the flight battery
  - Connects to speed controller



- DAQ is used as a Flight Data Recorder for analysis
  - Arduino Uno
  - Records GPS, Accelerometer voltage, Gyroscope voltage, and Pressure transducer voltage
  - Allow ample room for DAQ and GPS antenna
  - Uses separate 9V battery
    - Power the DAQ just before installing arming plug
    - DAQ should be easily accessible
    - Battery should be easily installed/removed
    - Should be easily removed for downloading data after each flight
  - Dimensions: 2.4 x 1.5 x 8.5 inches



- Two sizes available
  - Small and large
  - Typically from Hitec, but equivalent if sold out
  - Small
    - Hitec HS-81 or Hitec HS-82MG
  - Large
    - Hitec HS-425BB
  - Servo extension wire is easily used if mounted far from receiver
  - Can use as many of either as desired
    - Limited only by receiver channels
  - Include number of servos and number of extension cables in the parts list
  - Connect to flight receiver on appropriate channel