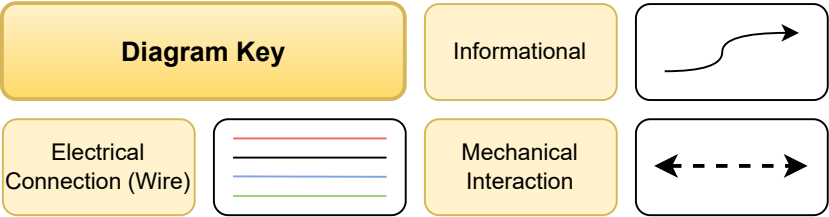
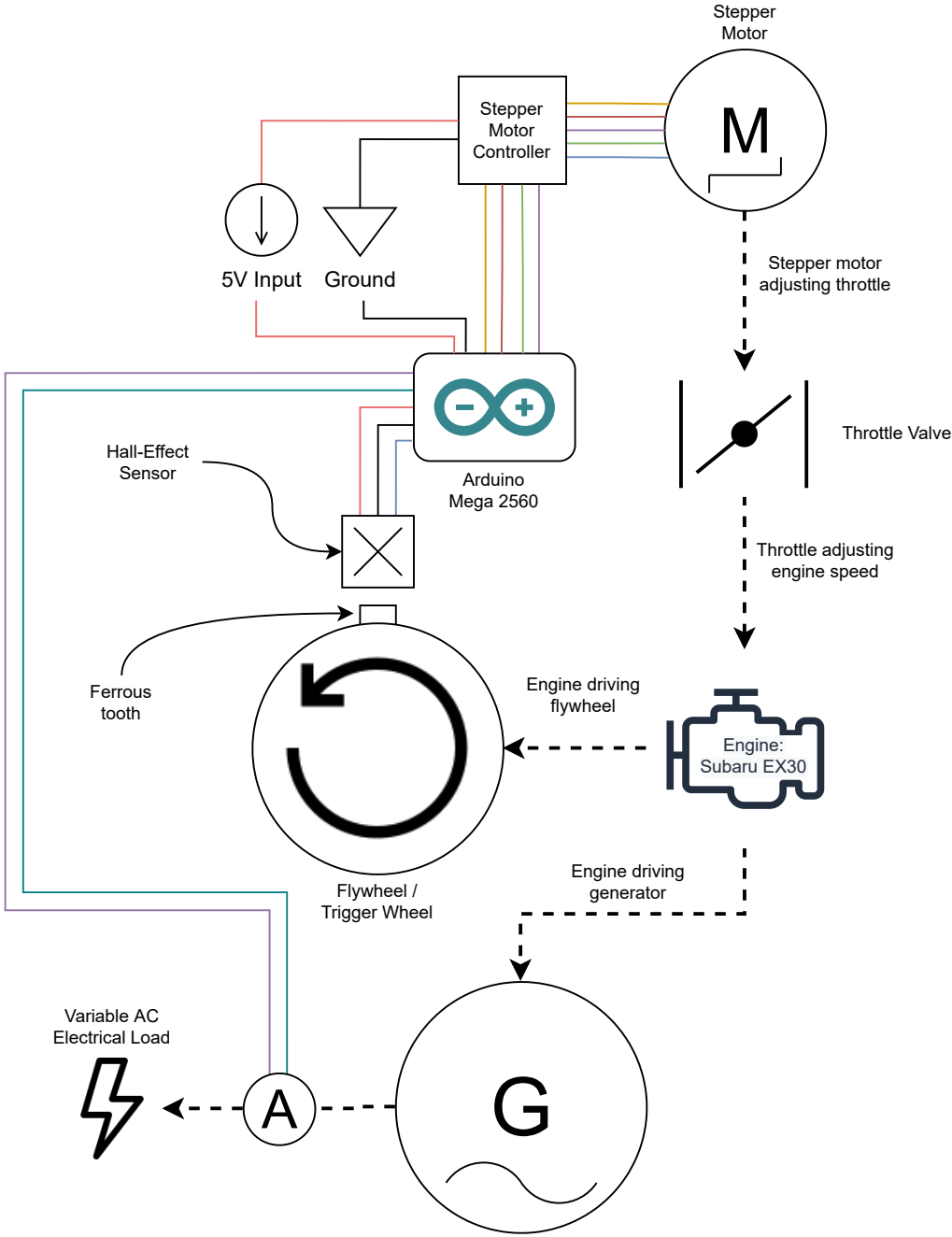


Microcontroller Engine Governor

Griffin White - Spring 2023
Revised 1-18-2023



Component Descriptions and Functions

Flywheel / Trigger Wheel		The flywheel assembly rotates at a constant speed. It is spun by the gasoline engine.
Variable AC Electrical Load		The electrical load places more / less strain on the generator, requiring the throttle to increase / decrease accordingly.
Engine		The engine spins the flywheel. Its speed is controlled via the throttle valve.
Throttle Valve		The throttle valve regulates the amount of fuel / air provided to the engine, thereby regulating its speed. It is controlled by the stepper motor.
Stepper Motor		The stepper motor controls the position of the throttle valve, thereby controlling the speed of the engine. It is controlled by the Arduino.
Hall-Effect Sensor		The hall-effect sensor produces a signal each time that a ferrous tooth passes by it. Using this signal, we can measure the RPM of the flywheel.
Arduino		The Arduino microcontroller monitors the flywheel RPM and adjusts the stepper motor as needed.

Basic Control Logic

