Diagram for electronic setup

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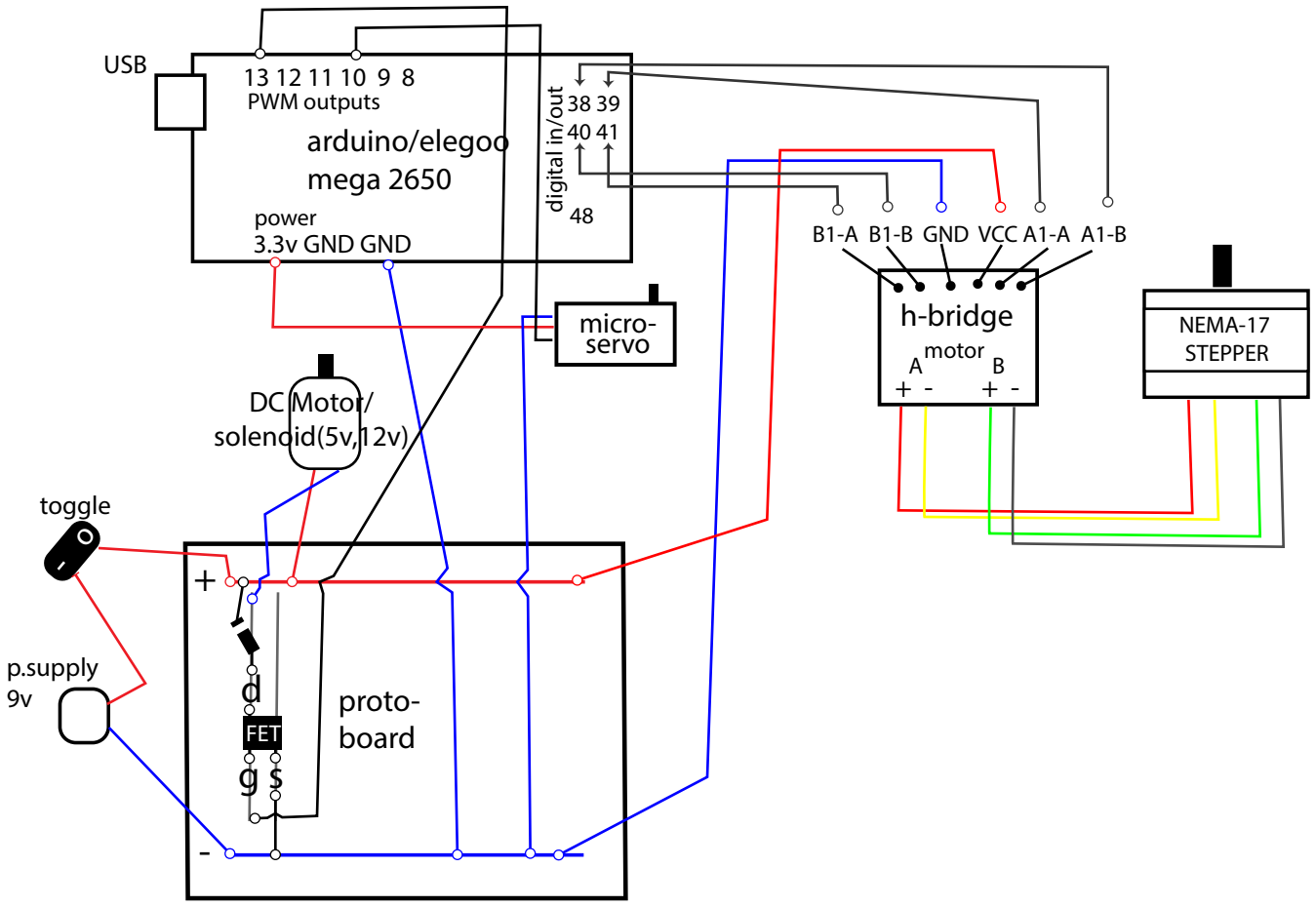

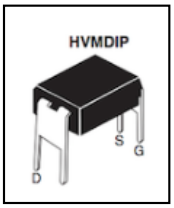

handy reference for FET (please take careful note of direction in diagram and do just not match angle with this photo)

On my setup, the second and third DC motors are to pins 12 and 11.
While the solenoid are to pins 22, 23, and 24 respectively

SUPPLIES

9v power supply, arduino (or equavalent) mega 2650, (3) DC Motors [6v] , (1) 5v solenoid, (1) 12v solenoid, 1 “micro” servo [3-6v], (2) NEMA-17 Steppers, toggle on/off switch (optional), (1) usb cable, (2) h-bridges [i’m using a HG7881 by LC Technology], (6) FET, (6) Diode, (1) protoboard, (tons of) jumpers, solder/solder iron.

Software:
Arduino IDE - Firmata library
Max MSP - maxuino

STEPPER

H-Bridge Pinouts	Microcontroller Pin
B-1A	38
B-1B	39
GND	GND (PUT THIS ASIDE FOR NOW)
VCC	VCC (PUT THIS ASIDE FOR NOW)
A-1A	40
A-1B	41

H-Bridge	Stepper(ADAFRUIT(Diagram)|CLASS)
Motor A (left)	Red|Blue Wire
Motor A (right)	Yellow|Red
Motor B (left)	Green|Green
Motor B (right)	Gray|Black

*for second stepper, same connections but microcontroller pins are 53-50 instead

SERVO

Micro-Servo	Microcontroller Pin (unless marked with "rail" then it should go to protoboard)
GND	GND (rail)
VCC	3.3v
Signal	10

DC Motor/Solenoid

DC Motor	Microcontroller Pin (unless marked with "rail" then it should go to protoboard)
GND	GND (rail)
VCC	Drain (to FET - see diagram)

*similar setup for solenoids. On my setup, the second and third DC motors are to pins 12 and 11.
While the solenoid are to pins 22, 23, and 24 respectively

Protoboard

FET		
Drain	-Diode-	Power
Gate		13
Signal		GND

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9v boards the respective rails (GND-GND POWER-POWER) with a toggle on/off between the rail and the 9v power.

Microcontroller powered via USB.