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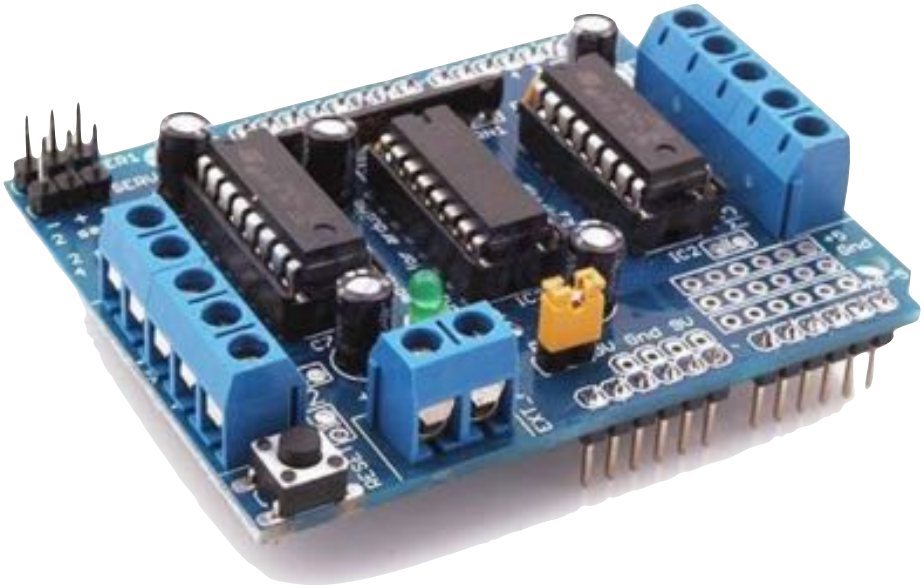
ARDUINO Motor Driver Shield

Instructor Guide



Arduino Motor Driver Shield

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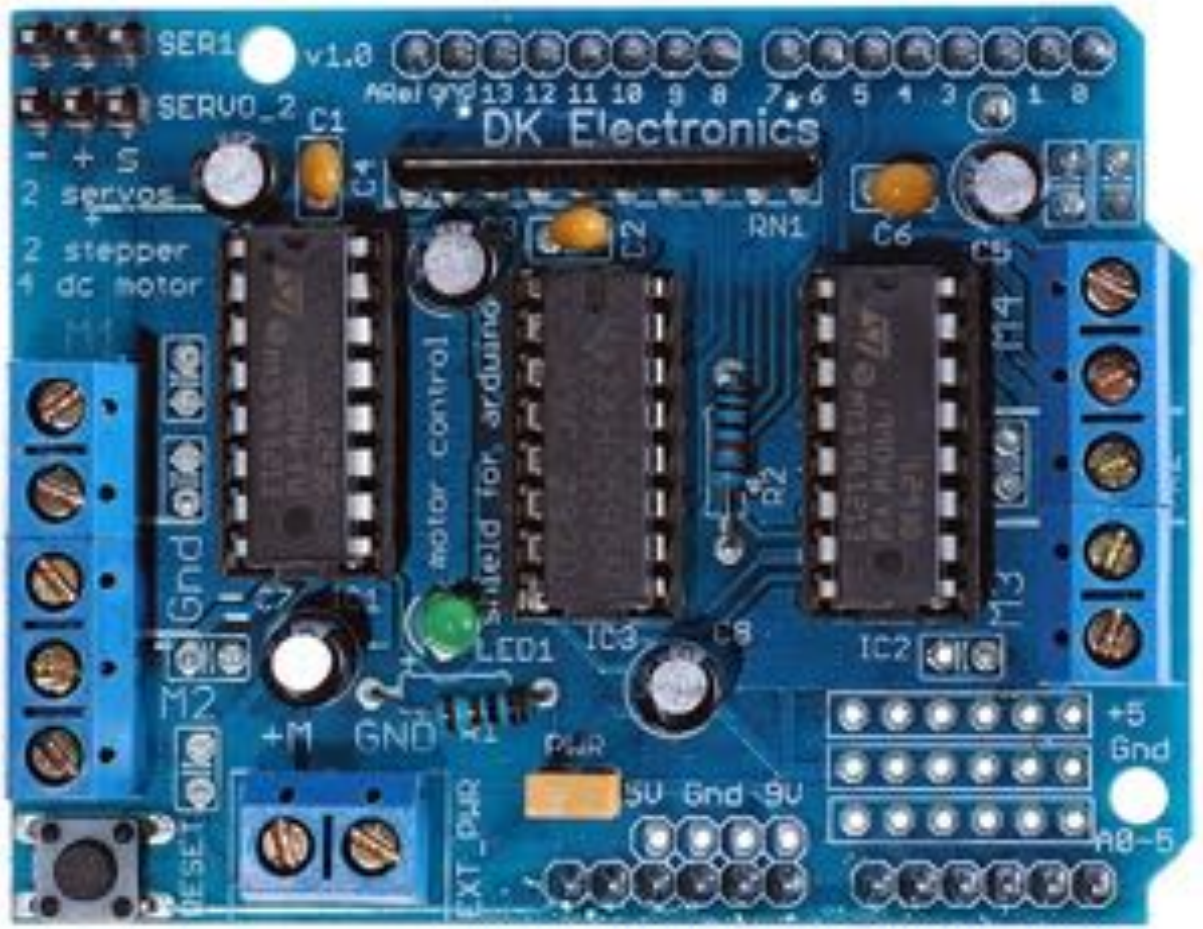

Motor Driver Shield version-1

for this tutorial, we are using this shield

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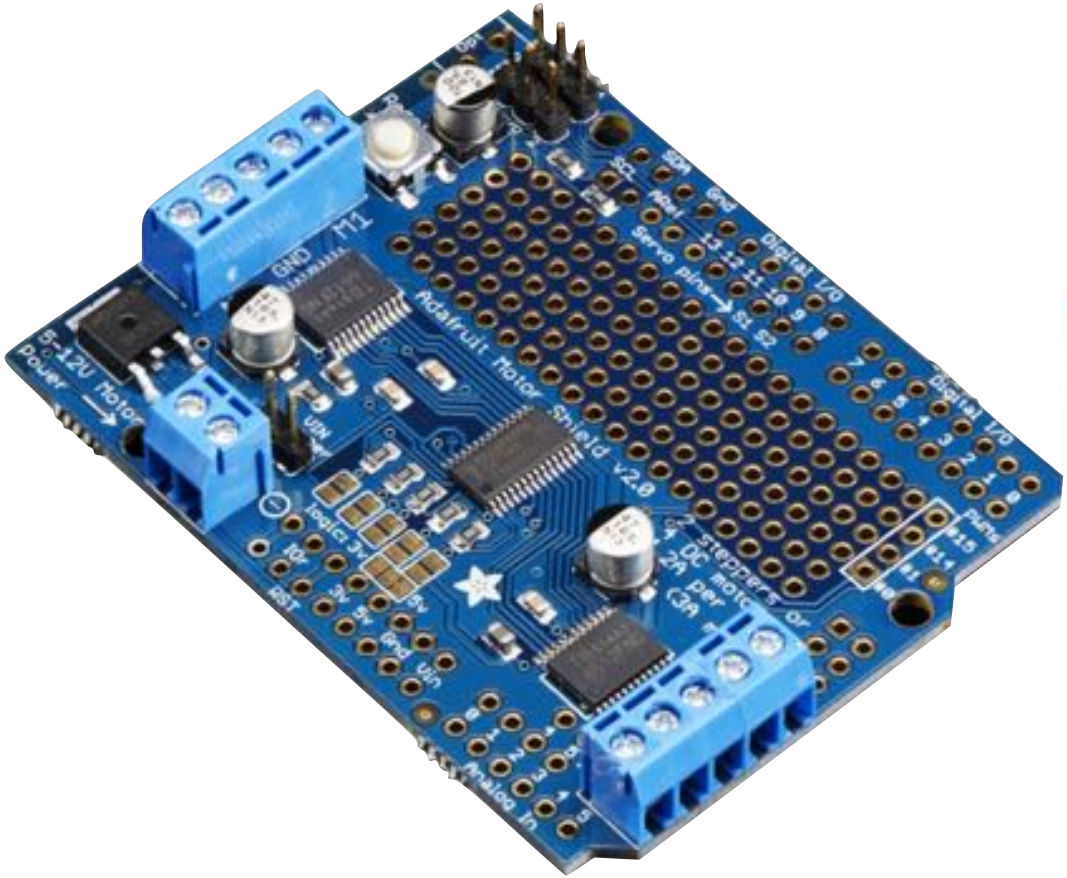

Motor Driver Shield version-2

Motor Driver Shield version-3

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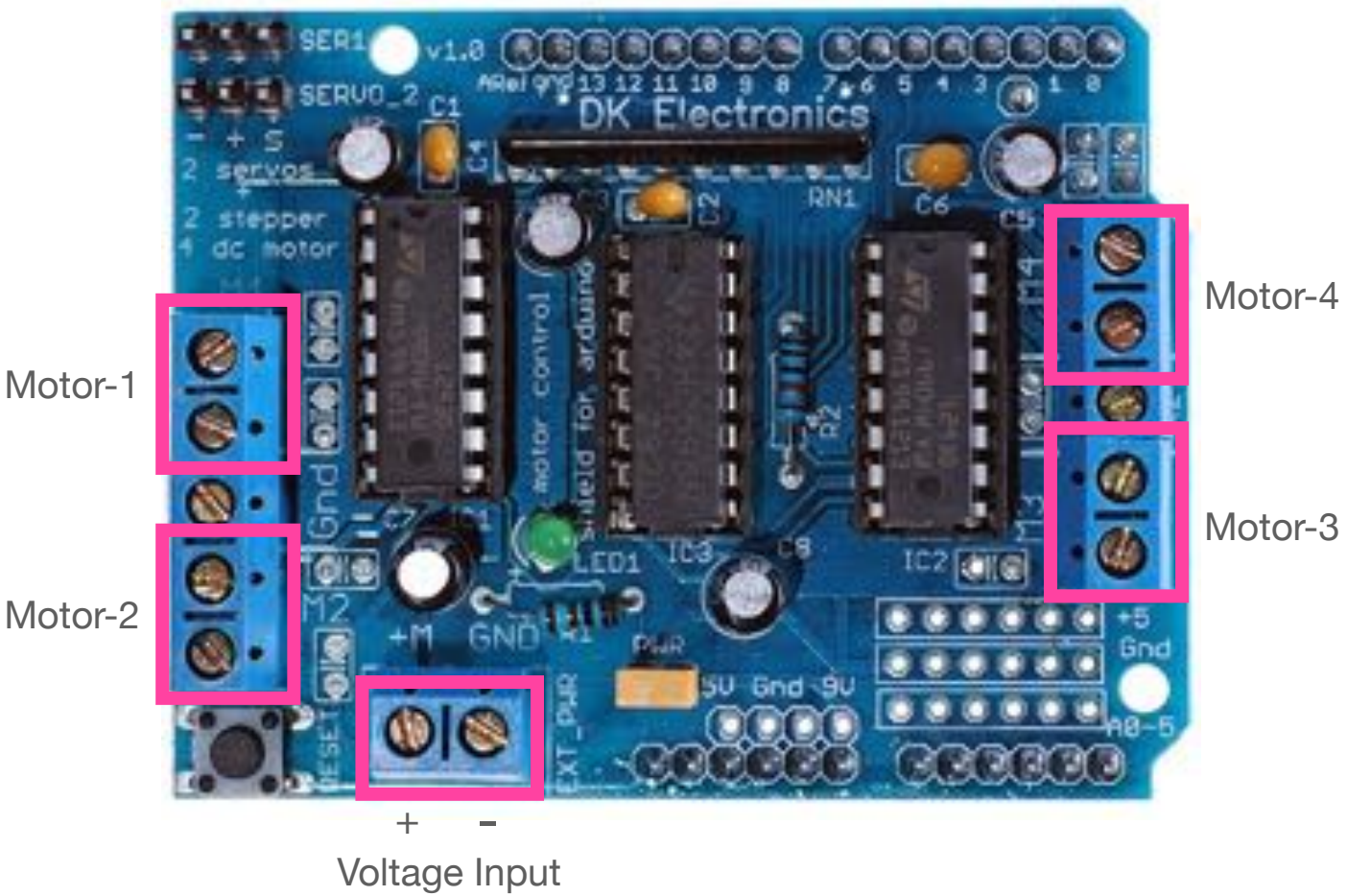
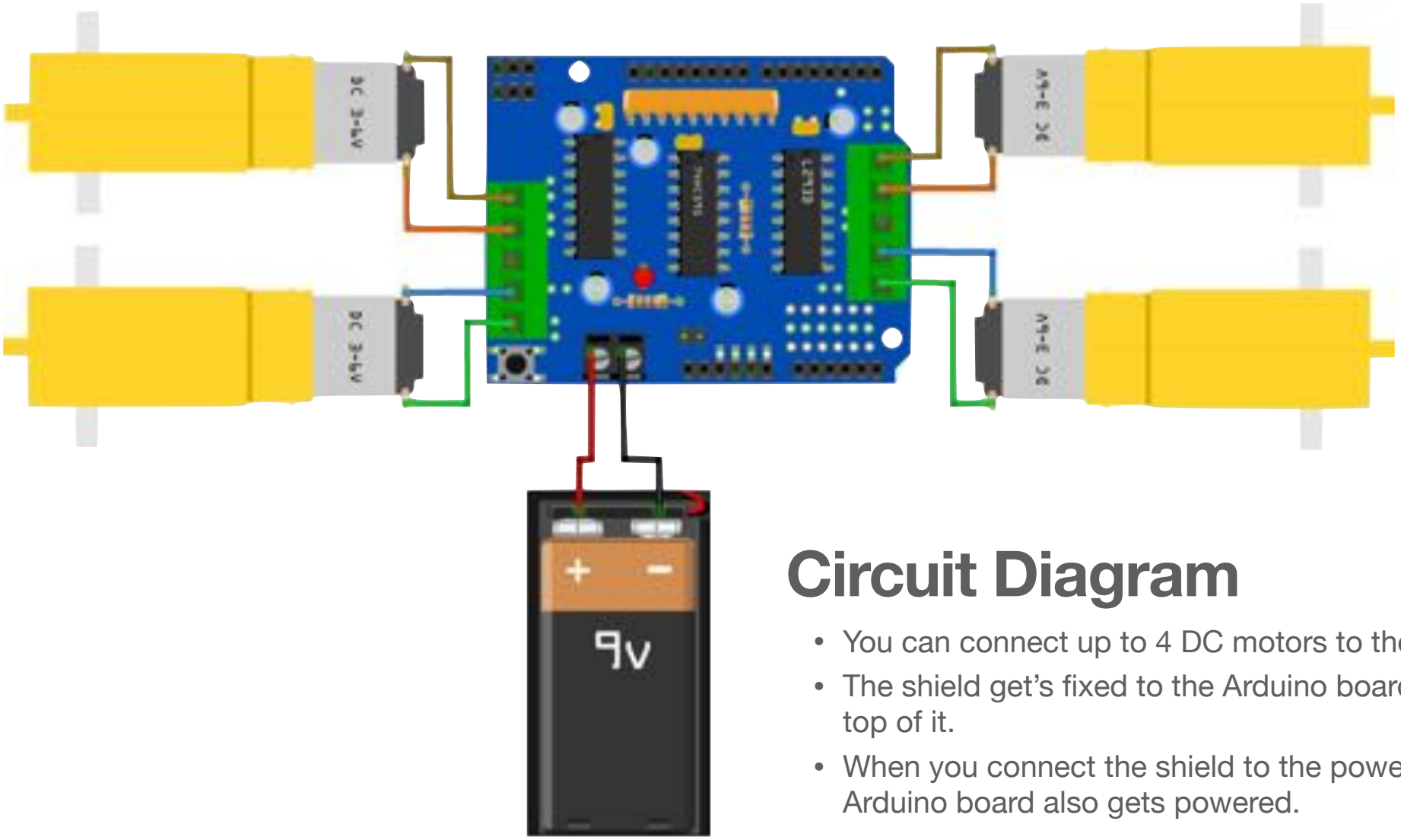

Motor-1
Motor-2
Motor-3
Motor-4
+
-
Voltage Input
DK Electronics
SERVO_2
2 servos
2 stepper
4 dc motor
motor control
shield for arduino
+M
GND
PWR
5V Gnd 9V
+5
Gnd
A0-5



Circuit Diagram

- You can connect up to 4 DC motors to the shield.
- The shield get's fixed to the Arduino board and sits on top of it.
- When you connect the shield to the power supply, Arduino board also gets powered.

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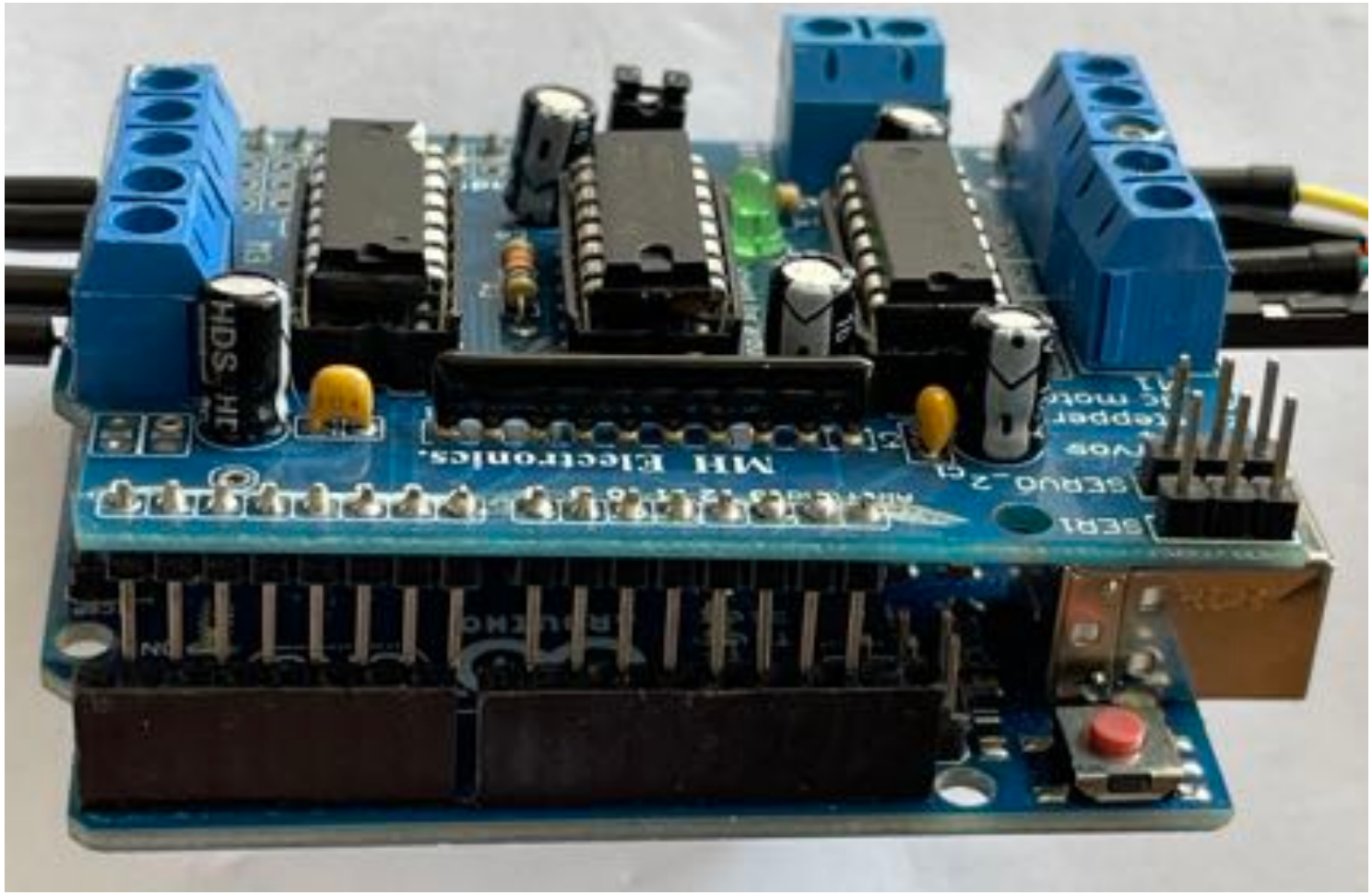
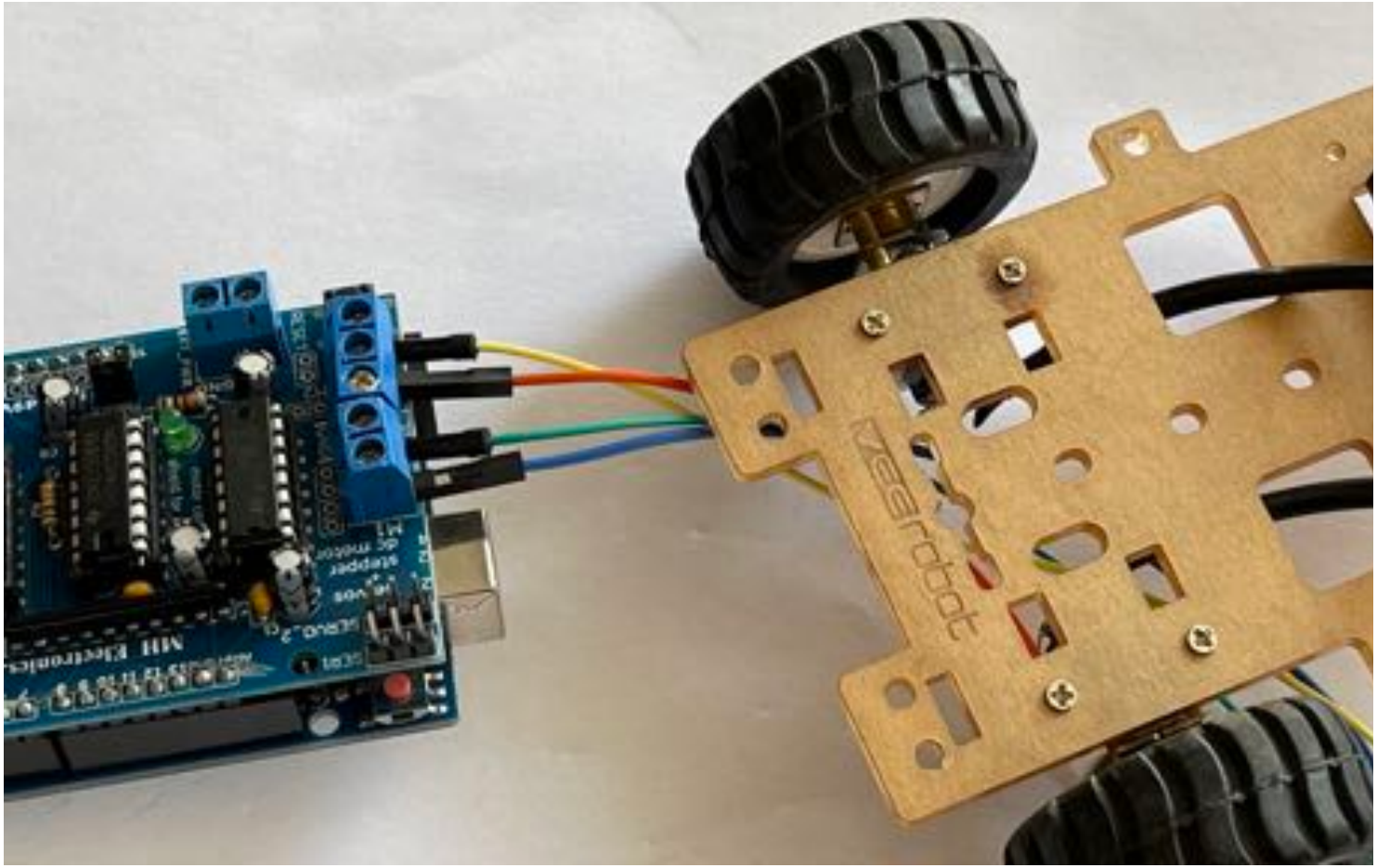
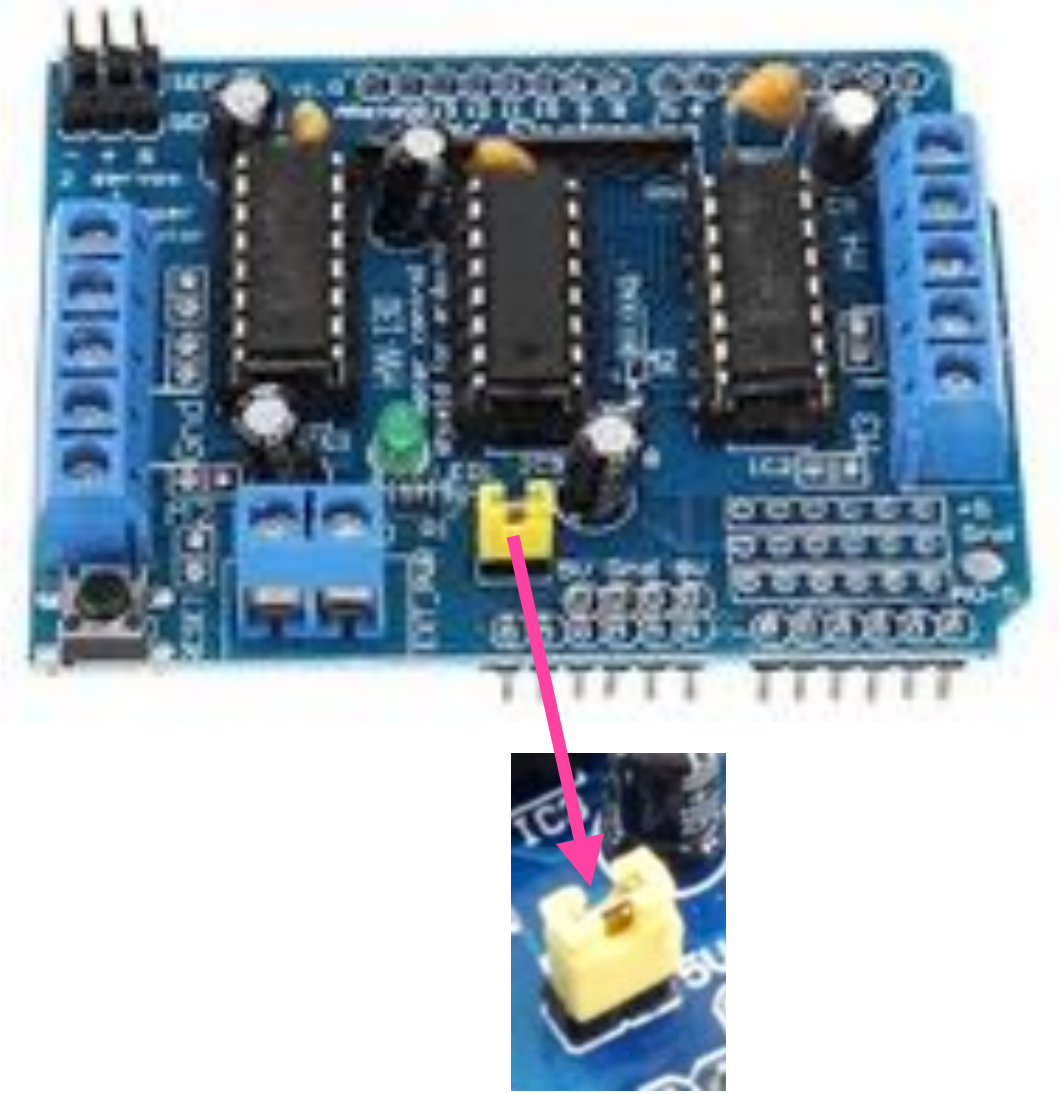


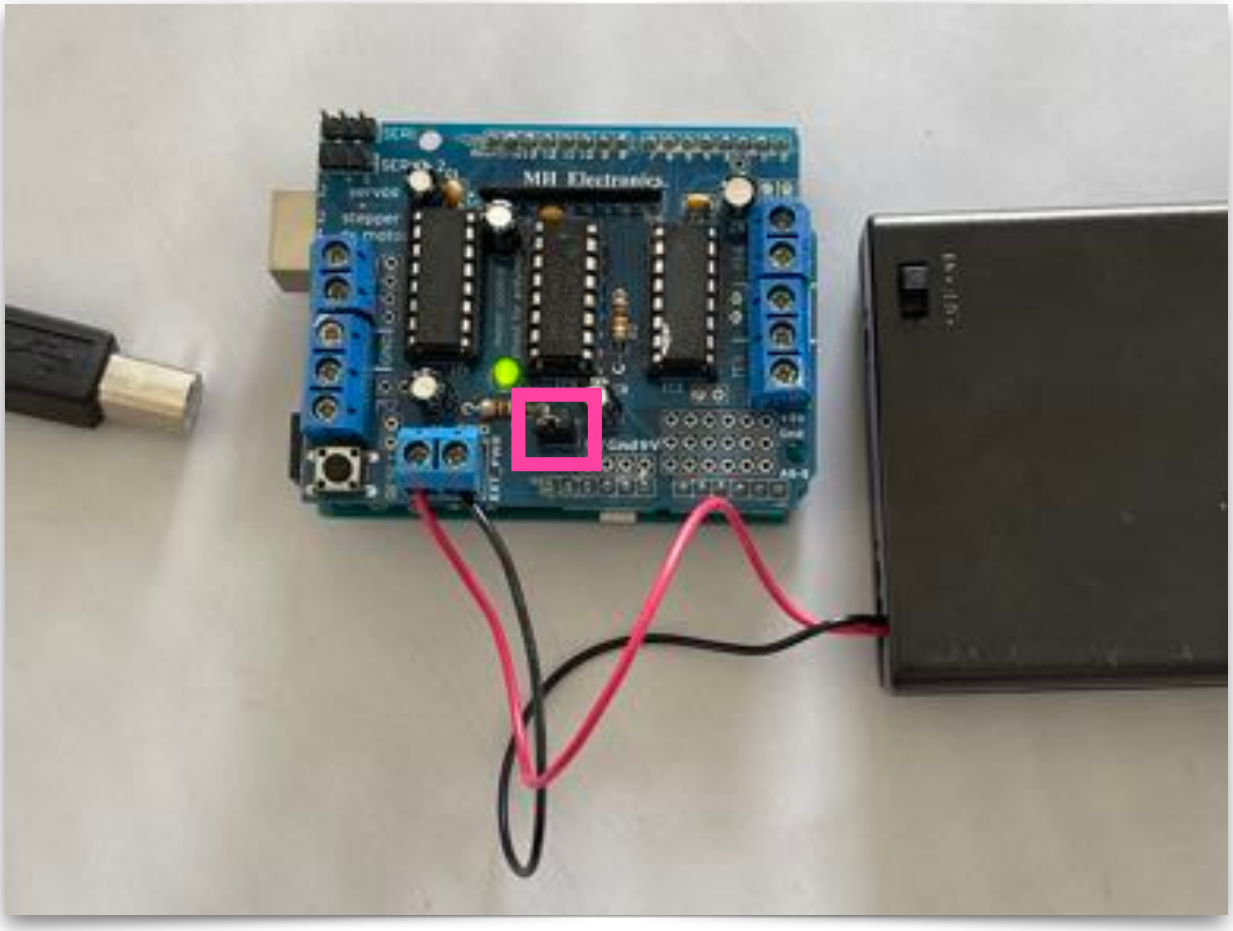
Motor Driver Shield (version-1), gets fixed on top of the Arduino Uno board

Connecting DC Motors to the Shield

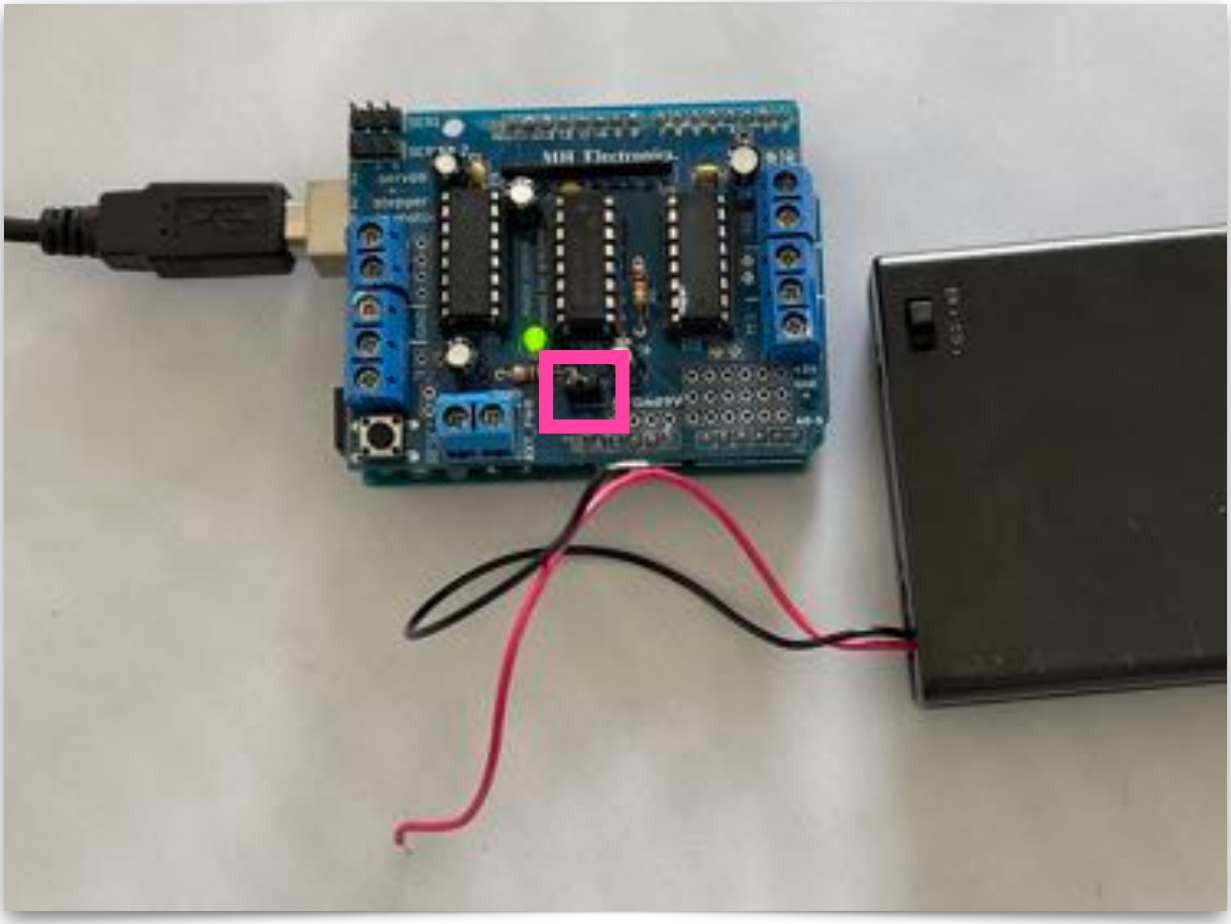




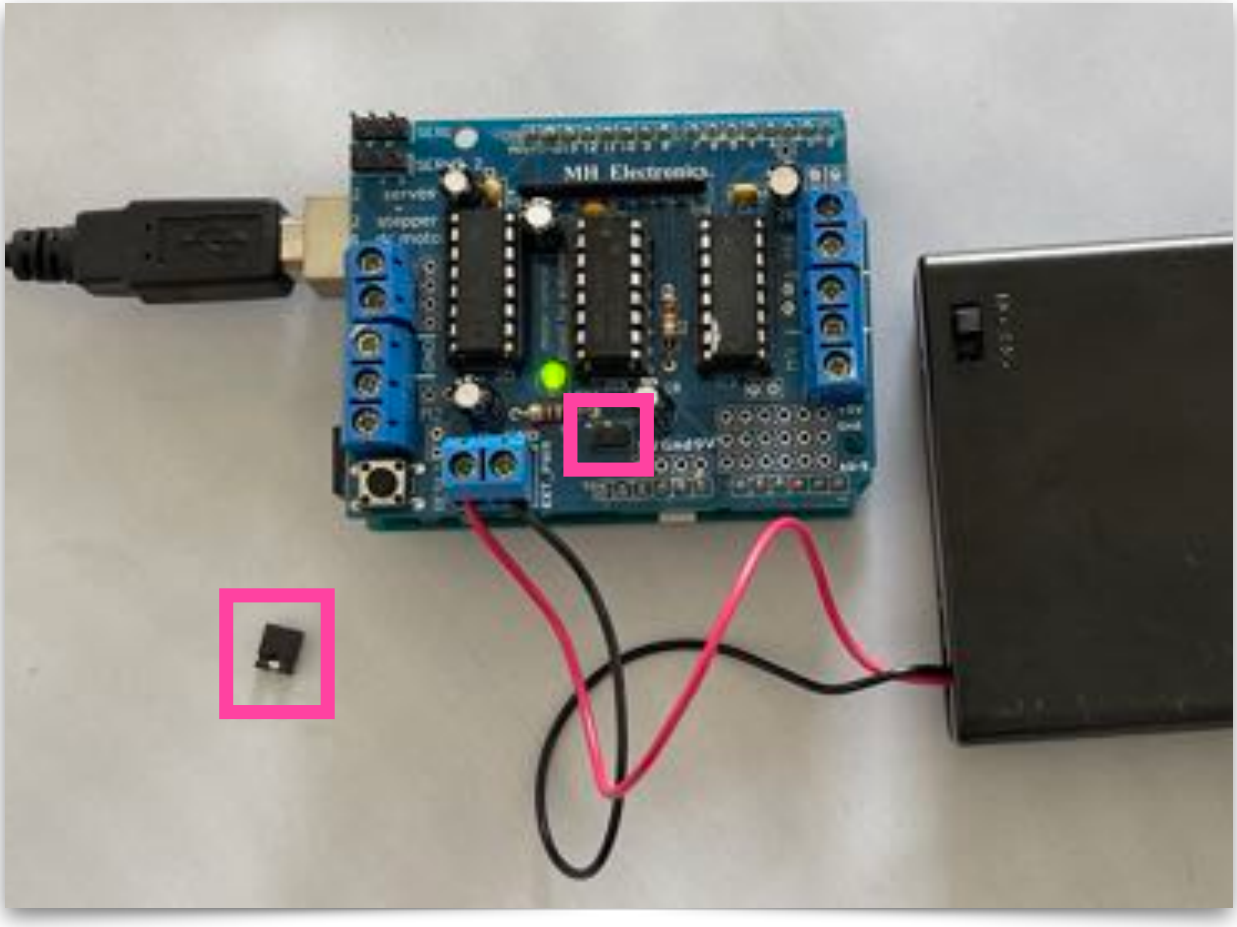
Voltage Jumper



- A battery pack is supplying voltage to the Shield and to the Arduino Board
- Arduino is not connected to any power supply of its own
- Voltage Jumper is connected
- Use this configuration if you are controlling more than one DC motor



- If you want to connect only one DC motor, you can power the Motor Shield from the Arduino itself
- In this case, Voltage Jumper is connected
- This is not recommended as it will heat up the Arduino



- If you want to supply power to the Arduino board directly AND connect the Motor Shield to its own power supply
- **Disconnect the voltage jumper**

Motor Shield (v1) Commands

```
motor1.run(FORWARD);
```
→ To run Motor1 Forward

```
motor1.run(BACKWARD);
```
→ To run Motor1 Backward

```
motor1.run(RELEASE);
```
→ To Stop Motor1

```
motor1.setSpeed(140);
```
→ To set speed of the motor.
Value can range from 0 (stop)
to 255 (max speed)

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Motor Shield (v1) Commands

```
#include <AFMotor.h>
```

To install Adafruit Motor Shield (v1) Library

```
AF_DCMotor motorname(portnum, freq)
```

```
Example:
AF_DCMotor motor4(4);
```

Command to initialise a DC motor. Call this command once for each motor in your sketch. Each motor must have a different name. If frequency is not defined, default value will be used.

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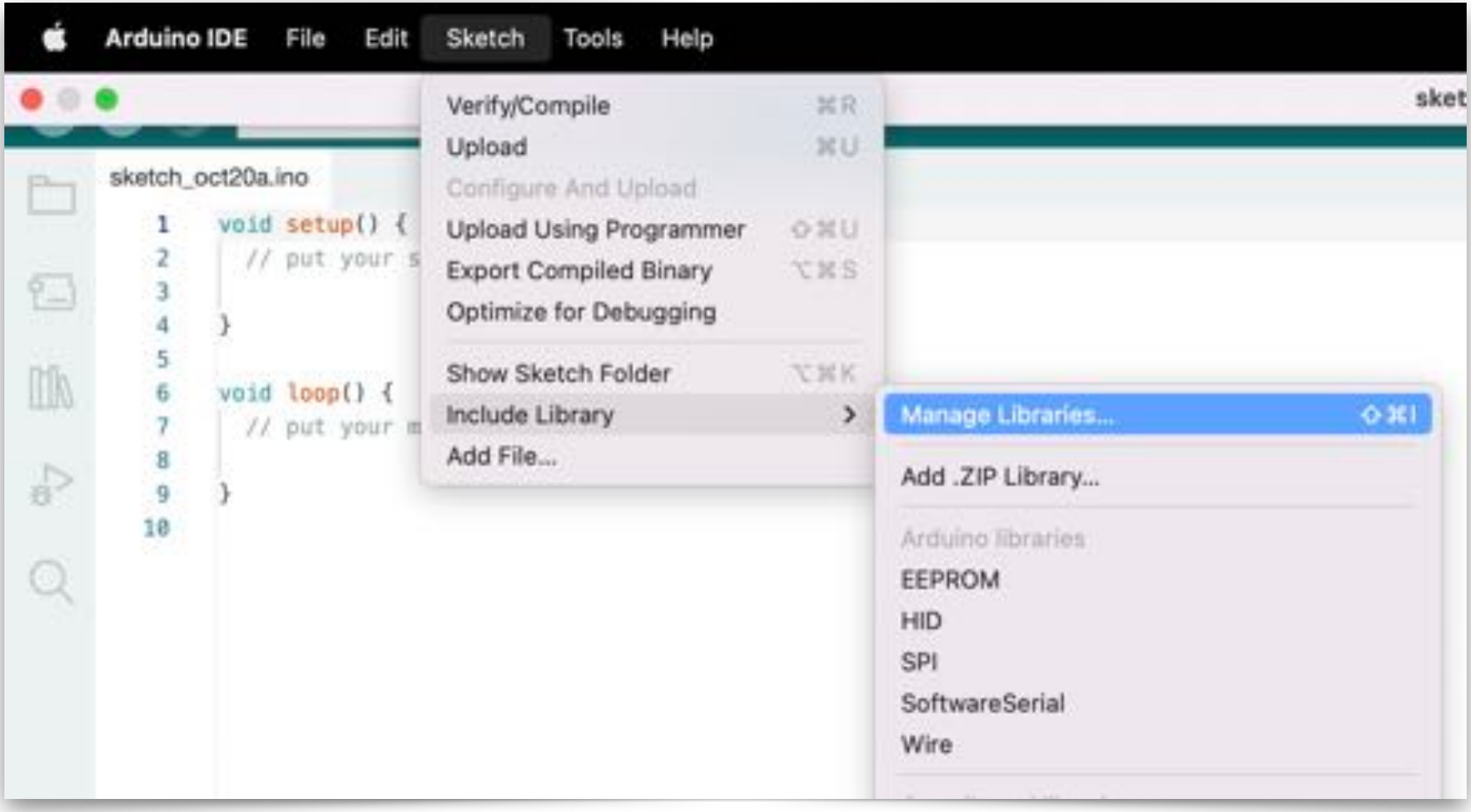
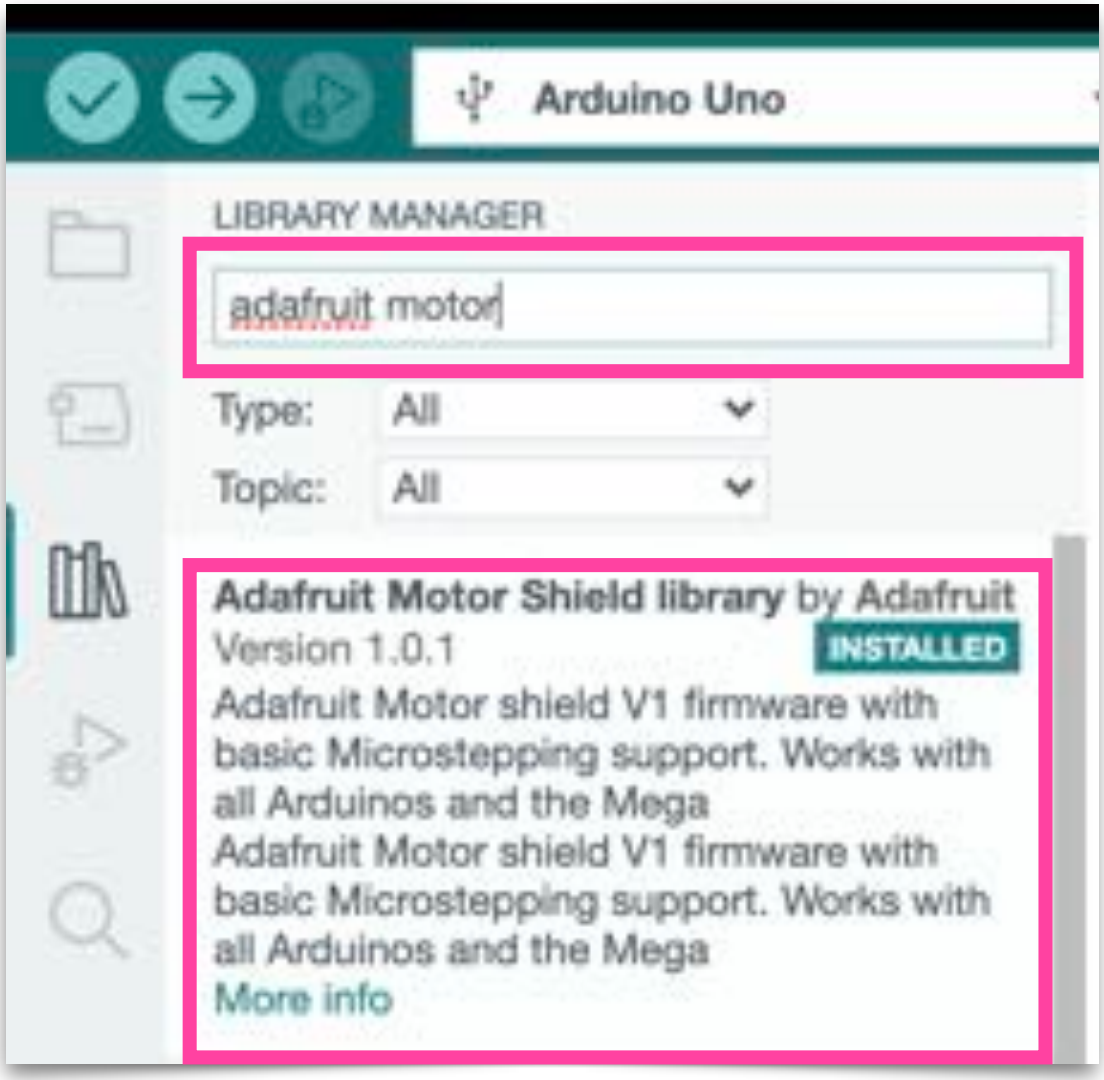
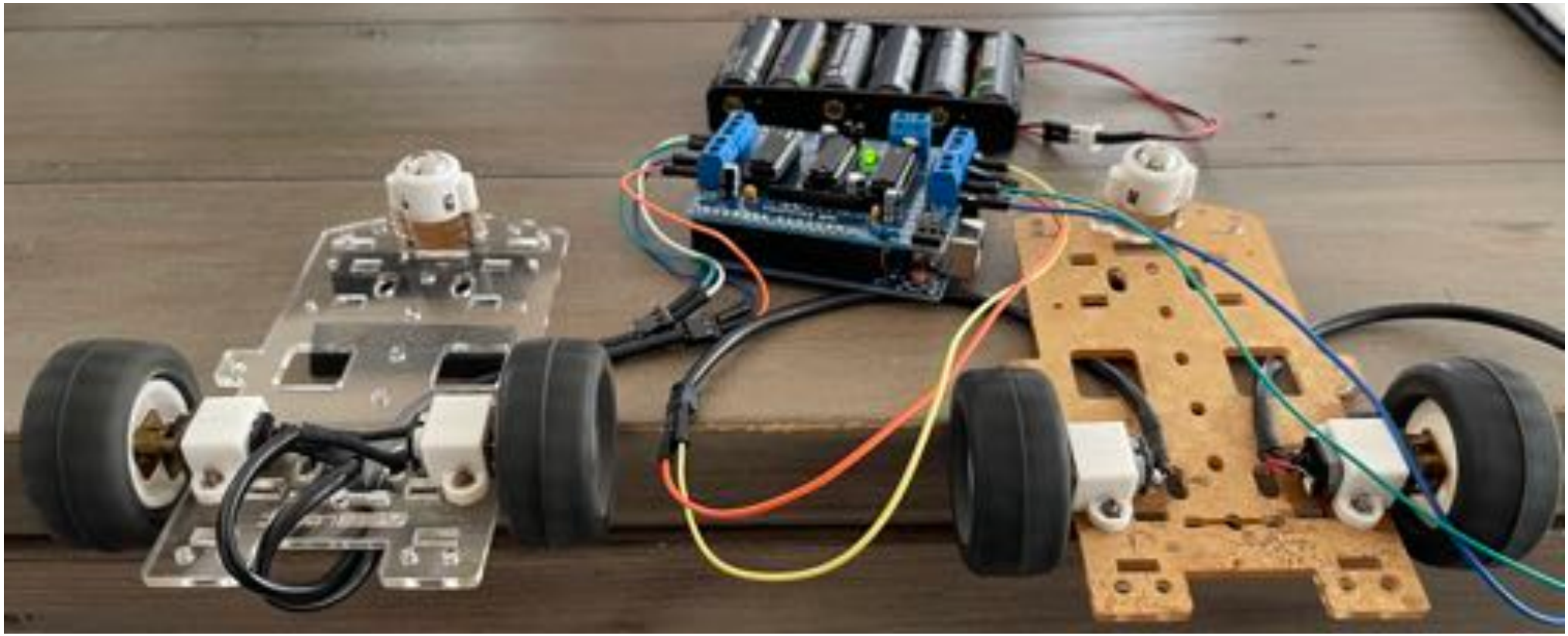


To install Motor Shield Library, go to Sketch > Include Library > Manage Libraries



Search and install Adafruit Motor Shield Library Version 1



Motor Driver Shield (ver 1) can drive up to four geared DC Motors

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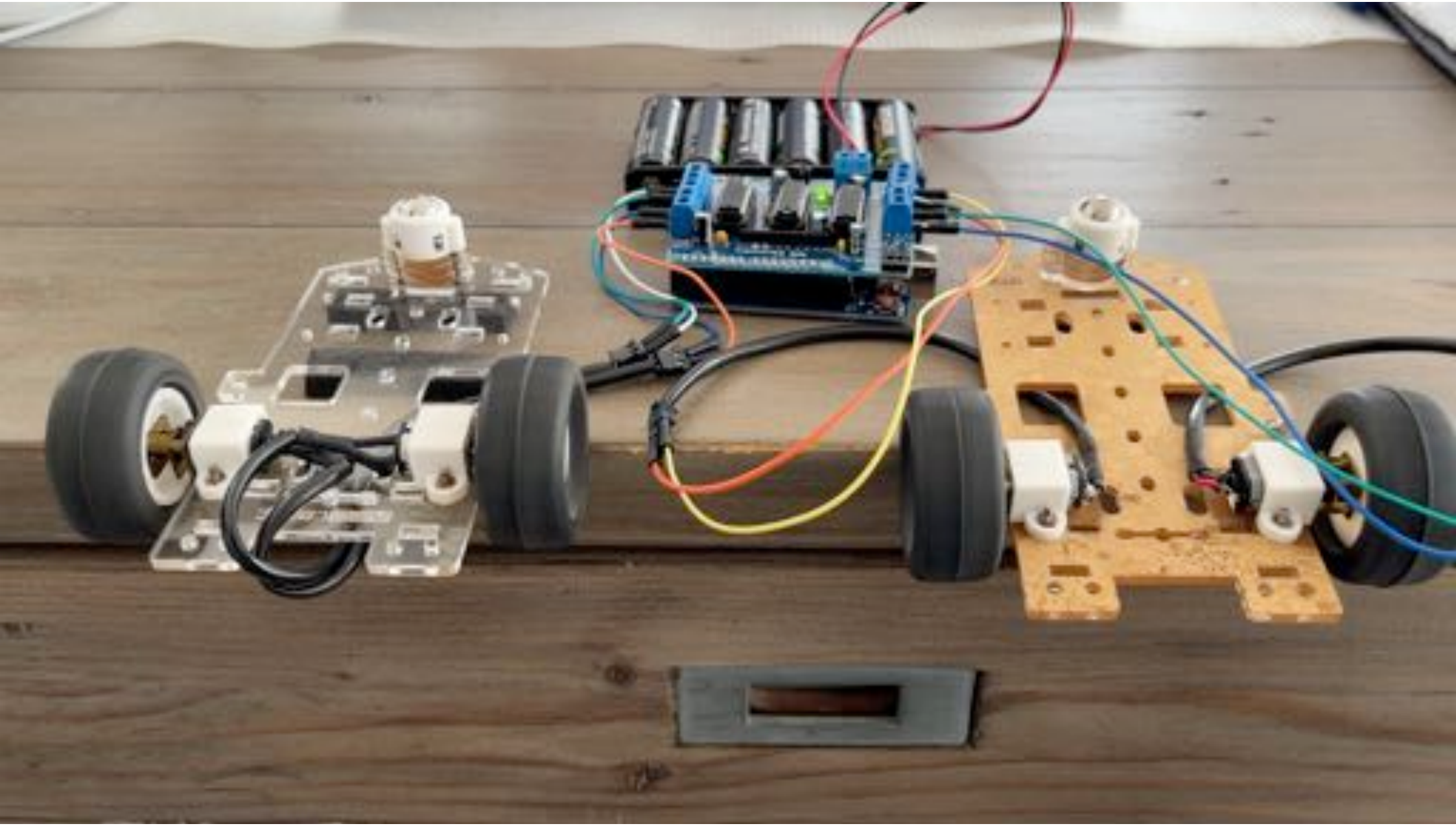
Arduino Code

to run four DC motors

```
#include <AFMotor.h>

AF_DCMotor motor1(1);
AF_DCMotor motor2(2);
AF_DCMotor motor3(3);
AF_DCMotor motor4(4);

void setup() {
}

void loop() {

motor1.setSpeed(200);
motor2.setSpeed(200);
motor3.setSpeed(200);
motor4.setSpeed(200);

motor1.run(FORWARD);
motor2.run(FORWARD);
motor3.run(FORWARD);
motor4.run(FORWARD);
delay(2000);

motor1.run(RELEASE);
motor2.run(RELEASE);
motor3.run(RELEASE);
motor4.run(RELEASE);
delay(1000);

motor1.run(BACKWARD);
motor2.run(BACKWARD);
motor3.run(BACKWARD);
motor4.run(BACKWARD);
delay(2000);
}
```

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