

cpsc 543 Labs: Motor Shield Assembly and Setup

Your cs543 kit comes with an Adafruit motor shield (2018W1: v2). The following instructions guide you through connecting the board and setting up its Arduino skeleton control code.

Suggested Steps

- 1) Soldering: If needed, learn or review principles of SAFE soldering (and desoldering to fix errors), e.g. with tutorials such as these:
 - Curious Inventor: http://www.youtube.com/watch?v=I_NU2ruzyc4
 - Sparkfun: <http://www.sparkfun.com/tutorials/213>
- 2) Basic electronics: If needed, scan/do some basic electronics tutorials – e.g.
 - <https://learn.adafruit.com/>
 - <http://arduino.cc/playground/Main/ElectroInfoResources>

The following instructions reference *items* in the left sidebar of the [Adafruit Motor Shield](#) page.
 Full Link: <https://learn.adafruit.com/adafruit-motor-shield-v2-for-arduino>

- 3) Install standard headers and terminal blocks (if needed) – to connect shield to Arduino Uno. You don't need stacking headers. Involves soldering; might want to do it in the lab.
- 4) Install software: Set up motor shield interface libraries.
 - Libraries: download and install the [Motor Shield v2](#) and [AccelStepper](#) libraries within your Arduino/libraries directory.
 - Here's a refresher on [how/where to install the library](#).
 - Tips:
 - Restart the Arduino IDE after copying over a new library to make it show up.
 - To see the serial messages while running, click the mag glass at right of the Arduino sketch toolbar, to show the serial monitor.
- 5) Hardware: try your motors. Continue to follow left sidebar, Adafruit Motor Shield page.
 - *Power Usage*: Plug the motor shield into your Arduino board. Then I suggest you try driving your DC motor next.
 - *Using DC Motors*: hook up your kit DC motor to the two M1 screw terminals. Tip: “motorTest” is a good example to make sure it's all working.
 - *Using stepper motors*: follow instructions (slightly more complex than DC motor).
 - [Code Extras](#): A few libraries and code samples that are useful for motor testing and control/communication extras. Read readme files! Find on course Deliverables page.
- 6) Also try Camille Mousette's “MotorShieldCommander”¹, included in [Code Extras](#)

¹ *Compatibility with shield V2 not tested at time of writing.*