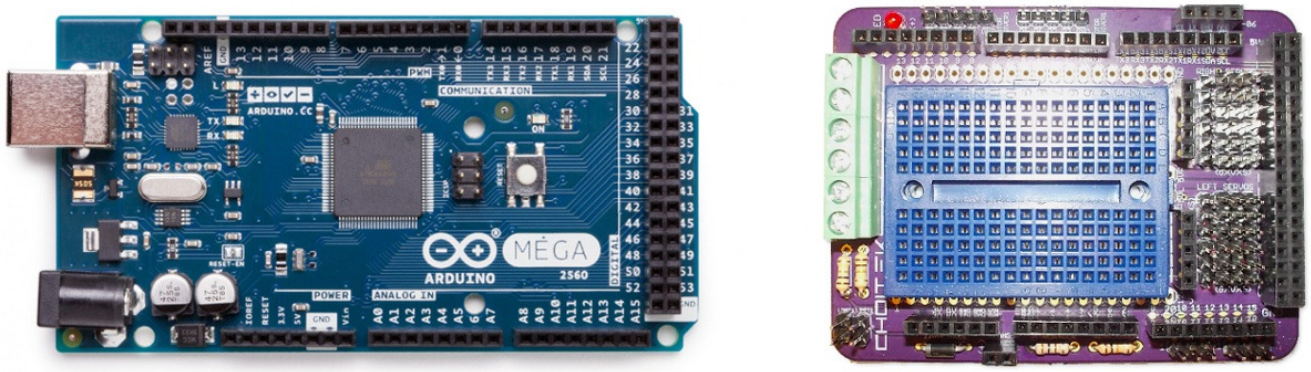
Megamark Arduino Setup Guide

At its core, the Choitek Megamark is controlled by an Arduino Mega 2560 paired with a Robot Controller Shield on top. This tutorial will show you how to set up core Arduino software and the Megamark Libraries to work with the Choitek Megamark Robot Platform.



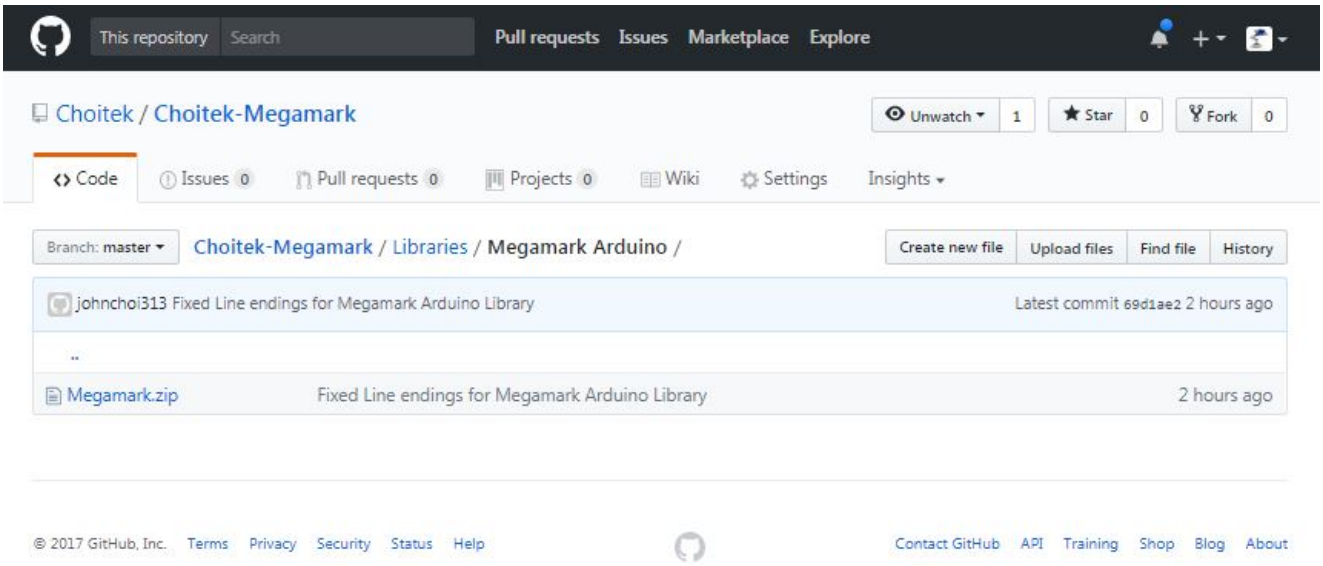
This is an official Arduino Mega 2560 Rev3 board pictured on the left with an official Choitek Robot Controller Shield pictured on the right.

Downloading the Arduino Software and Megamark Libraries

Step 1: First, install the latest Arduino IDE from the official Arduino website and choose your operating system:

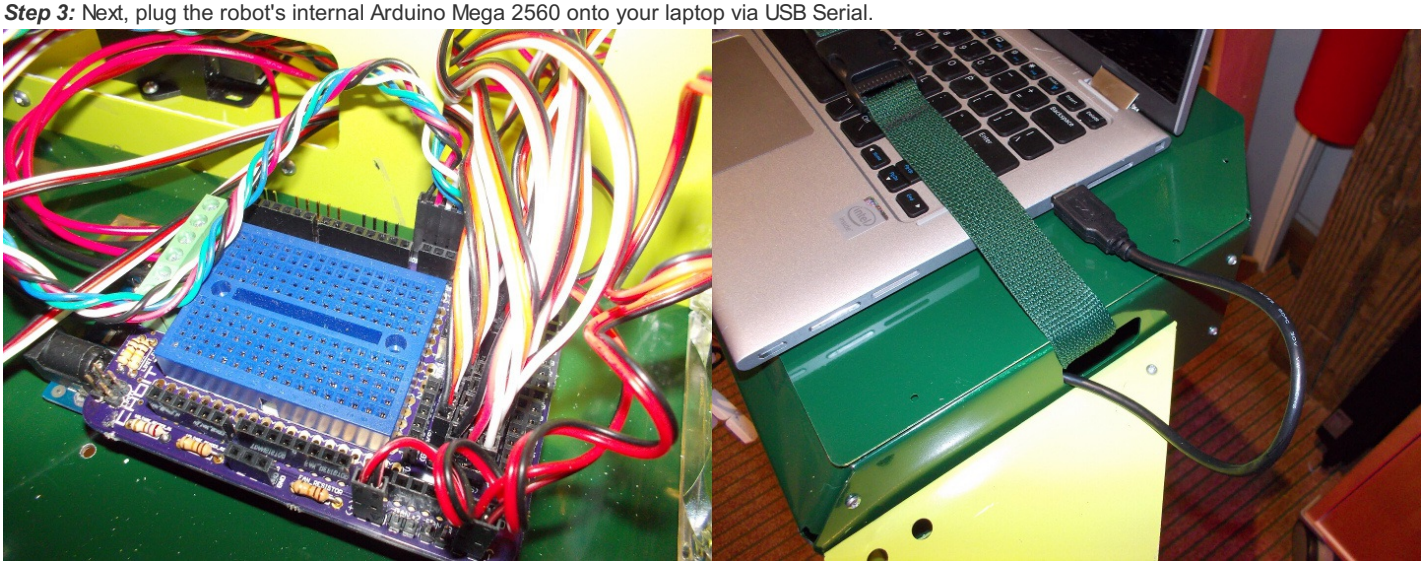
If you are stuck with any of the steps, the Arduino organization has thoroughly documented any trouble shooting steps you may encounter with the Arduino IDE.

Step 2: Second, download the `Megamark.zip` Library for Arduino, which can be found on Github or the main Choitek website. Extract it and place the extracted `Megamark` folder into Arduino's Libraries directory in Documents. Normally, this would be located in `C:\Users\Username\Documents\Arduino\libraries`.

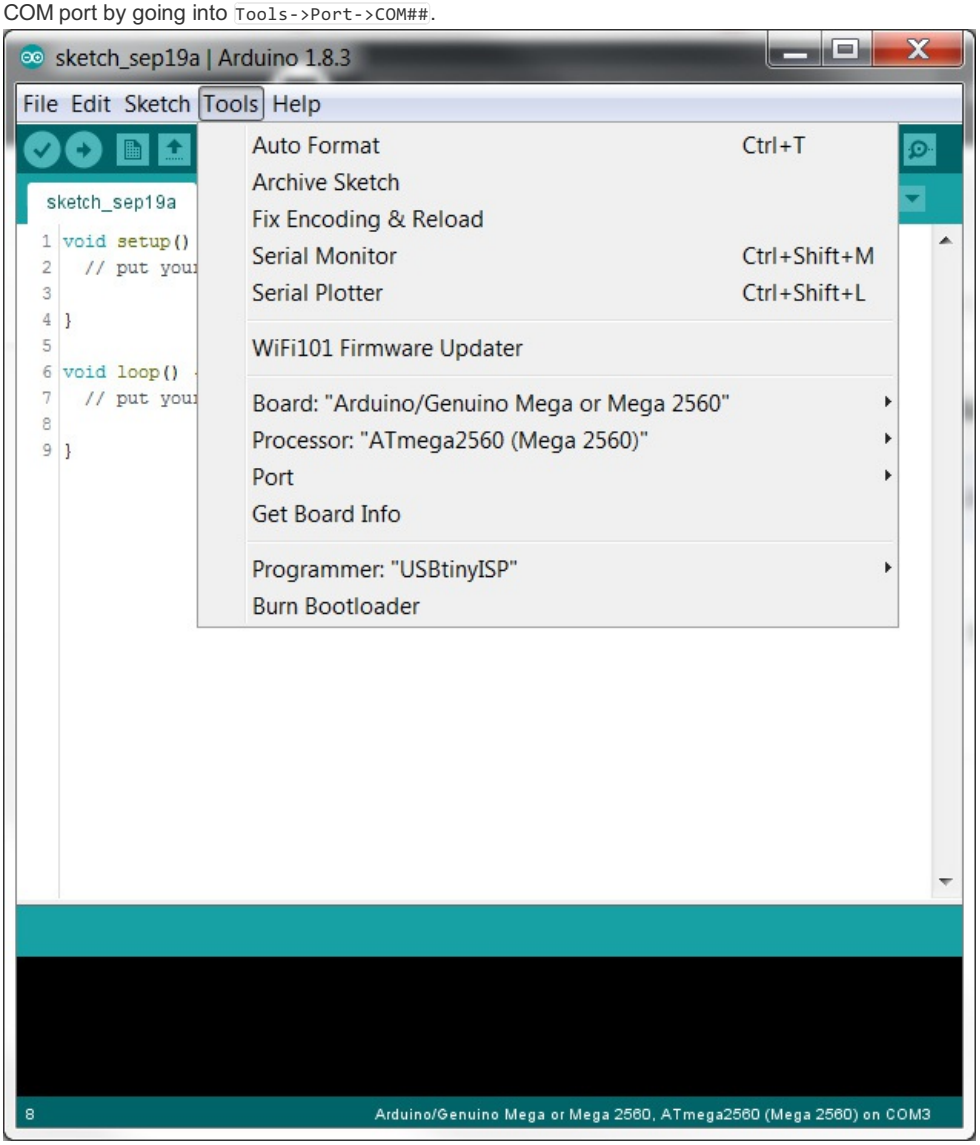


Testing the Arduino Software and Megamark Libraries

Step 3: Next, plug the robot's internal Arduino Mega 2560 onto your laptop via USB Serial.

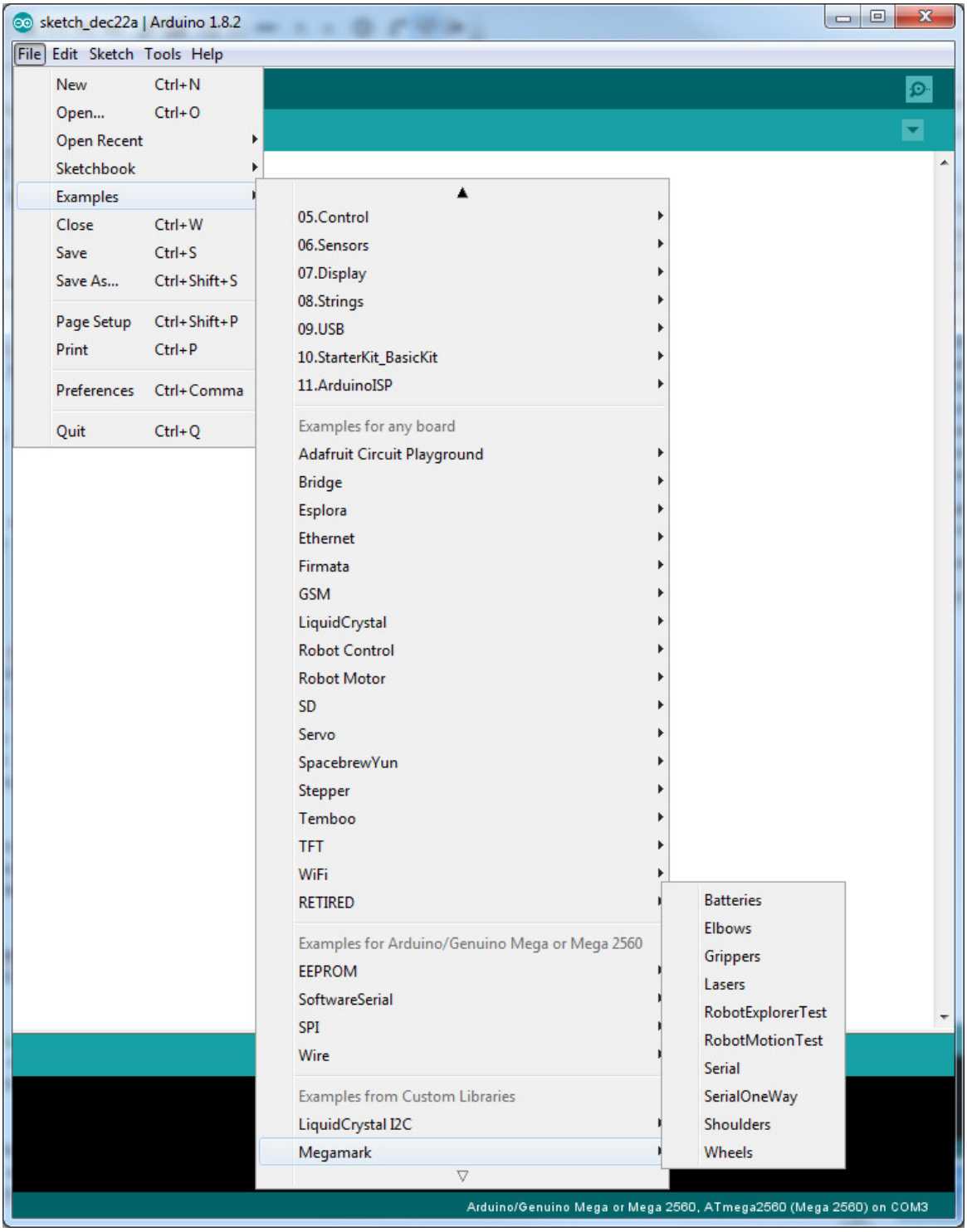


Step 4: Fire up the newly installed Arduino IDE. Set your board type by going into `Tools->Board->Arduino/Genuino Mega or Mega 2560`. Set your COM port by going into `Tools->Port->COM##`.



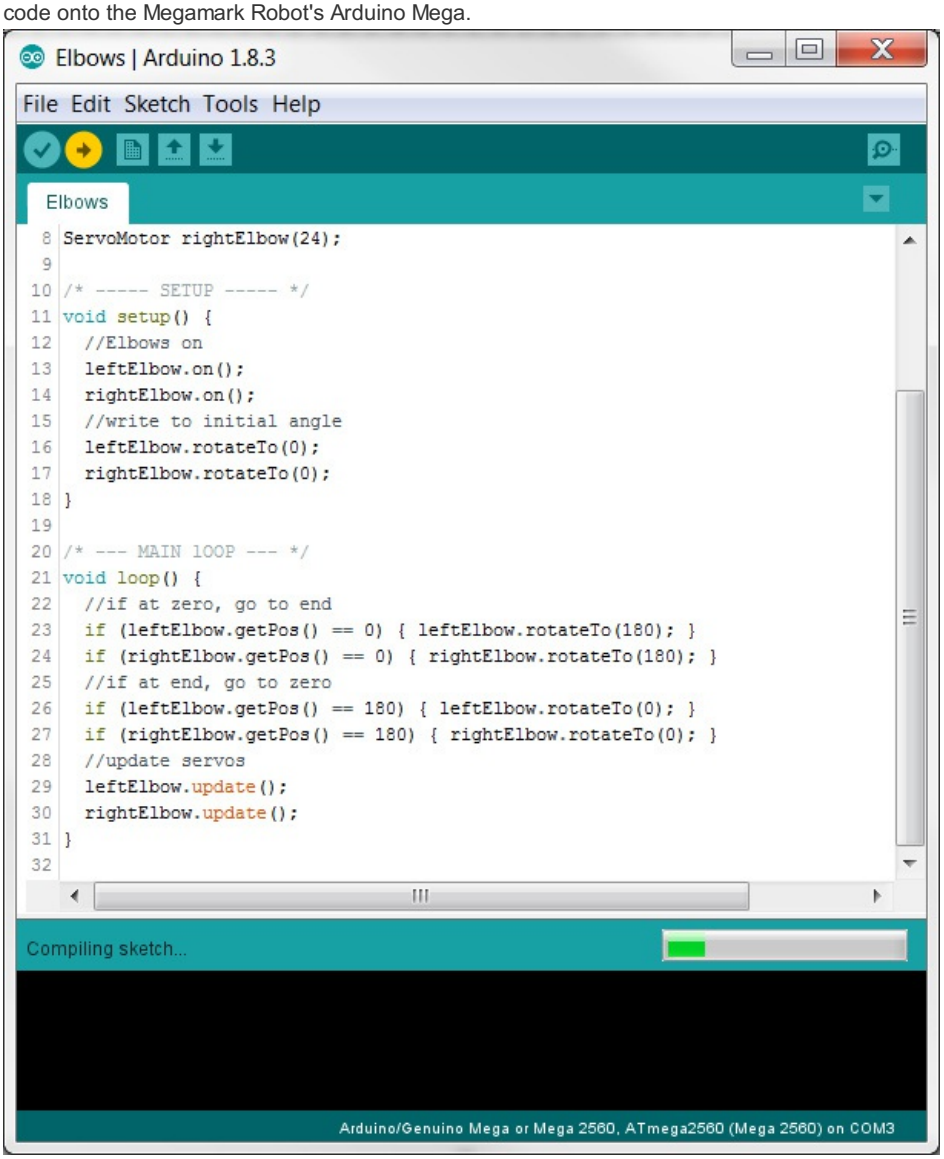
Some versions of the Choitek Megamark run on an Arduino Mega 1280 for legacy compatibility reasons. If this applies to your Megamark robot, you will also need to change `Tools->Processor->Board->ATmega1280`.

Step 5: Now, once the Arduino software has been correctly installed and configured with the correct settings, you should be able to use the Megamark Arduino Library. Go over to `File->Examples->Megamark->Elbows`. This is a simple example that tests the Megamark robot's elbow motors by rotating both of them up and down in a continuous loop.



The Megamark Library is just one of the many add-ons to increase the functionality of the Arduino platform. Check out the full list of Arduino Libraries, which can be used to extend the functionality of the Megamark platform as well!

Step 6: Once the example file has been loaded, press the `Upload` button (shaped liked an arrow in the upper left corner of the screen) to load the code onto the Megamark Robot's Arduino Mega.



The `Verify` button shaped like a checkmark directly to the left of the `Upload` button will compile your code and make sure you have no simple syntax errors, but does not push code the Arduino.

Step 7: The robot should now be happily moving its elbows in a continuous up and down motion! Be sure to try out the other examples to get a sense of how to use the Megamark Library for Arduino. Once you are ready to move on to a higher level language like Python 2.7 or Unity, upload the example `File->Examples->Megamark->Serial`, which will make the Choitek Megamark robot ready to receive commands directly via real-time USB Serial communication.

That was pretty easy wasn't it? Now go out there and make some code of your own like the awesome robotics engineer you know you are!