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Ardumoto Assembly Guide
by Pete-O | June 30, 2010 | *7 comments* Skill Level: ☆ Beginner

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Mobilizing the Ardumoto

Thank you for your purchase of the Ardumoto Arduino motor driver shield! Before driving your enemies before you, or maybe just driving a couple of motors, there are a few steps to assemble the shield.

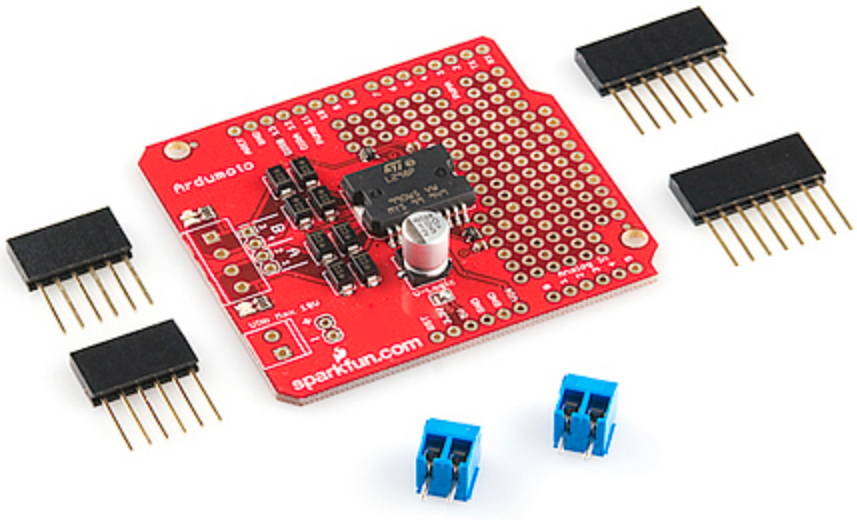
Preparation

There's only a few parts to install on the Ardumoto before you can use it. To do so, you'll first need a couple of things on hand: a soldering iron and some solder. Optionally, a "Third Hand" might come in, um, handy.

- Soldering iron (e.g. TOL-00085)
- Solder (e.g. TOL-09161)
- Third Hand (e.g. TOL-09317)

If this is your first time soldering you may want to check out our introductory soldering tutorial before proceeding. Read the guide and you'll pick up some good tips that will help your first soldering experience go more smoothly.

You may also want to clear a little room on your bench for this task, depending on your work habits (mine tend to be a little like scorched earth). OK, lets have a look at what's in the kit. Here's what you should find.

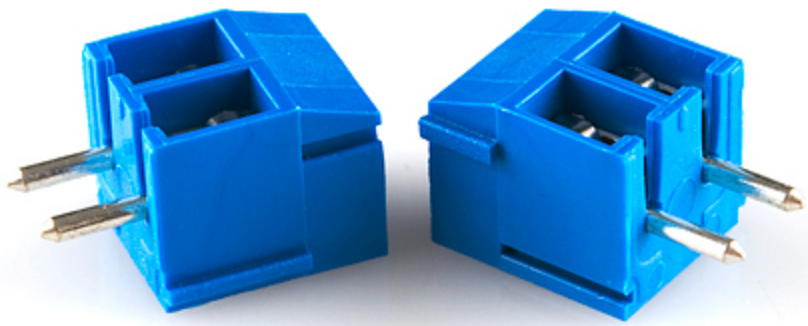


- 1x Ardumoto Driver Board
- 2x Stackable Headers 6-pin
- 2x Stackable Headers 8-pin
- 2x Screw Terminals 2-pin

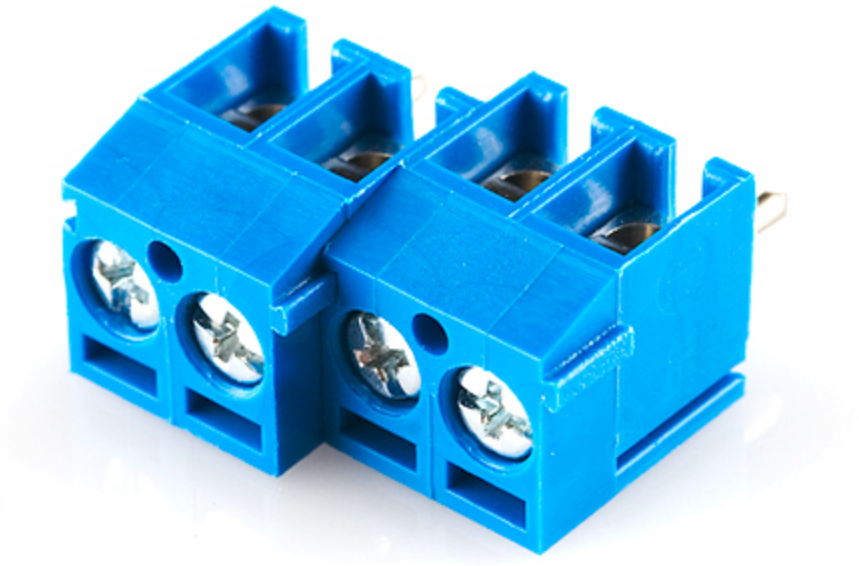
Missing any parts (bad SparkFun kitters!)? Drop our customer service team an email. We'll get them out to you as soon as possible.

Assembly

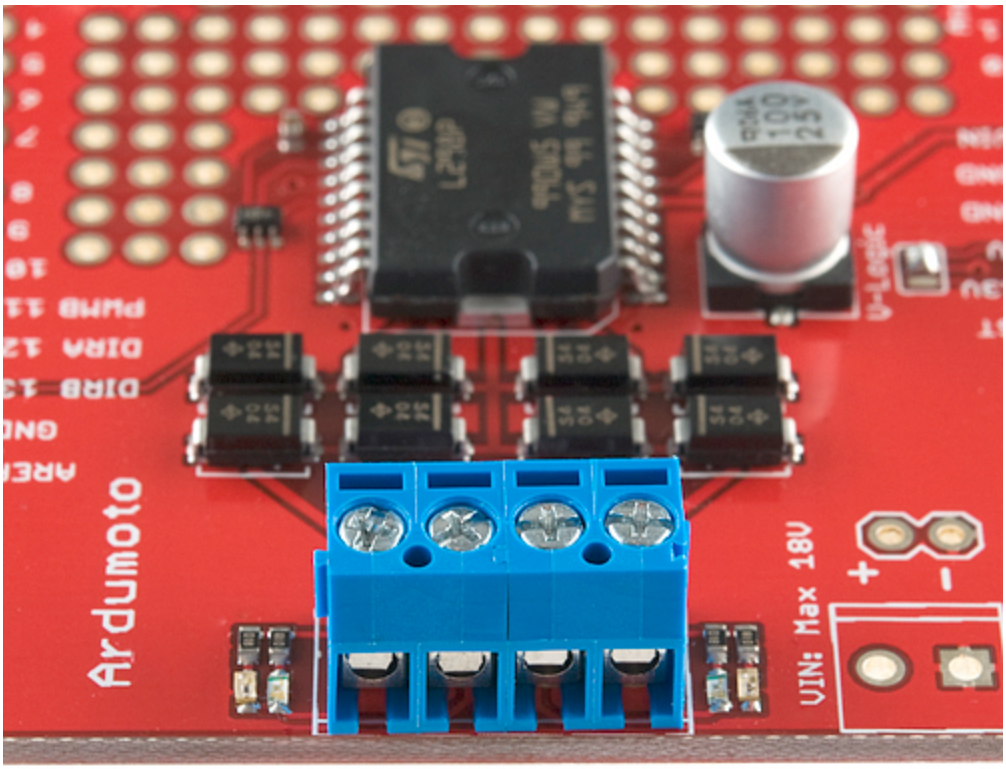
The sequence of installing the parts isn't critical, but generally I find that putting in the shortest, or smallest, parts works best. So I'd start with the two screw terminals. If you look closely at the screw terminals, you'll see a couple of rails and slots on either side of them. These are for mating several terminals together into a single unit.



Mate them together like so...



...and insert them into the Ardumoto board like so:


Ardumoto
VIN: Max 18V
+
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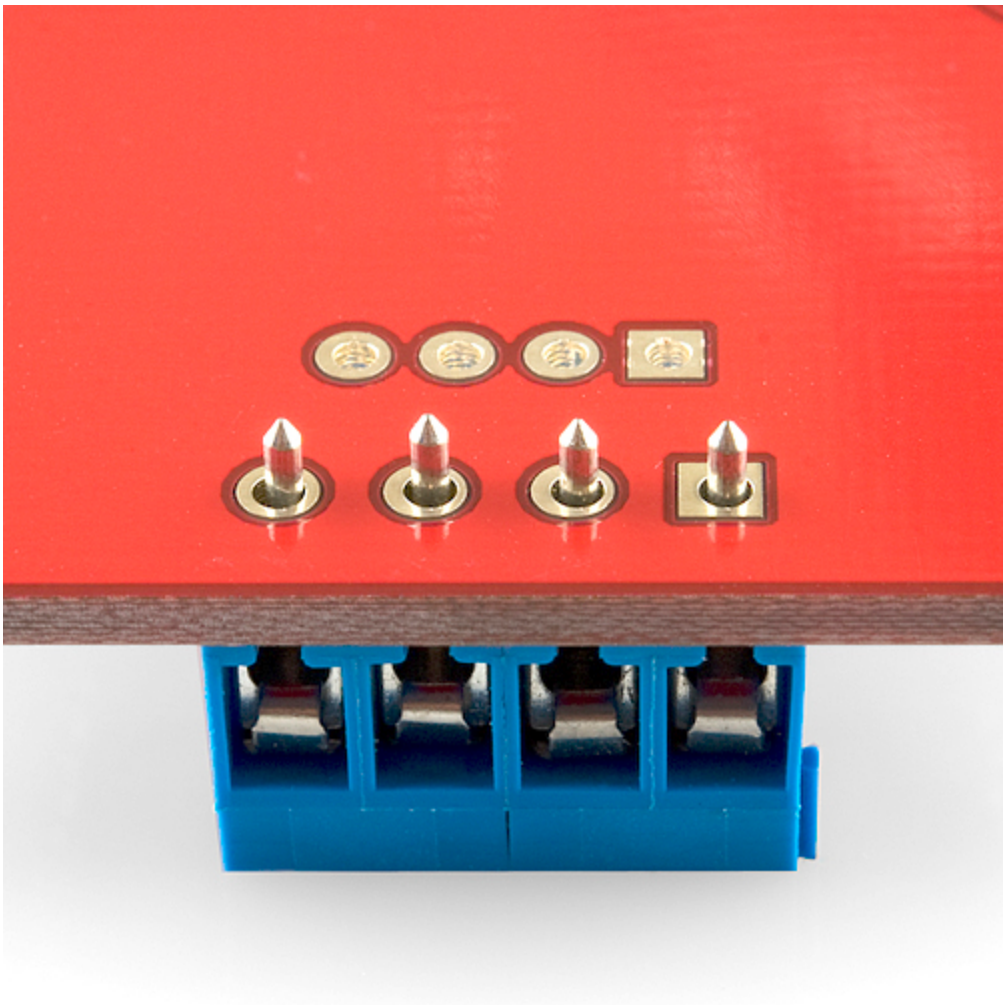
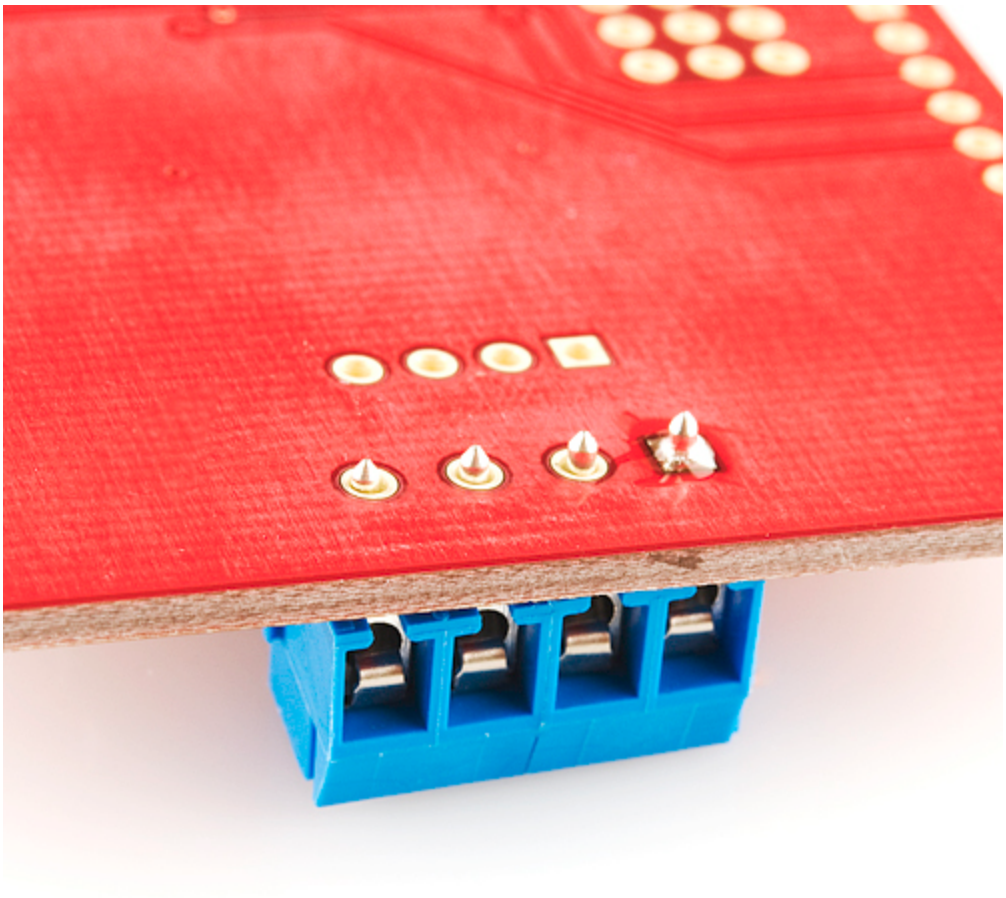
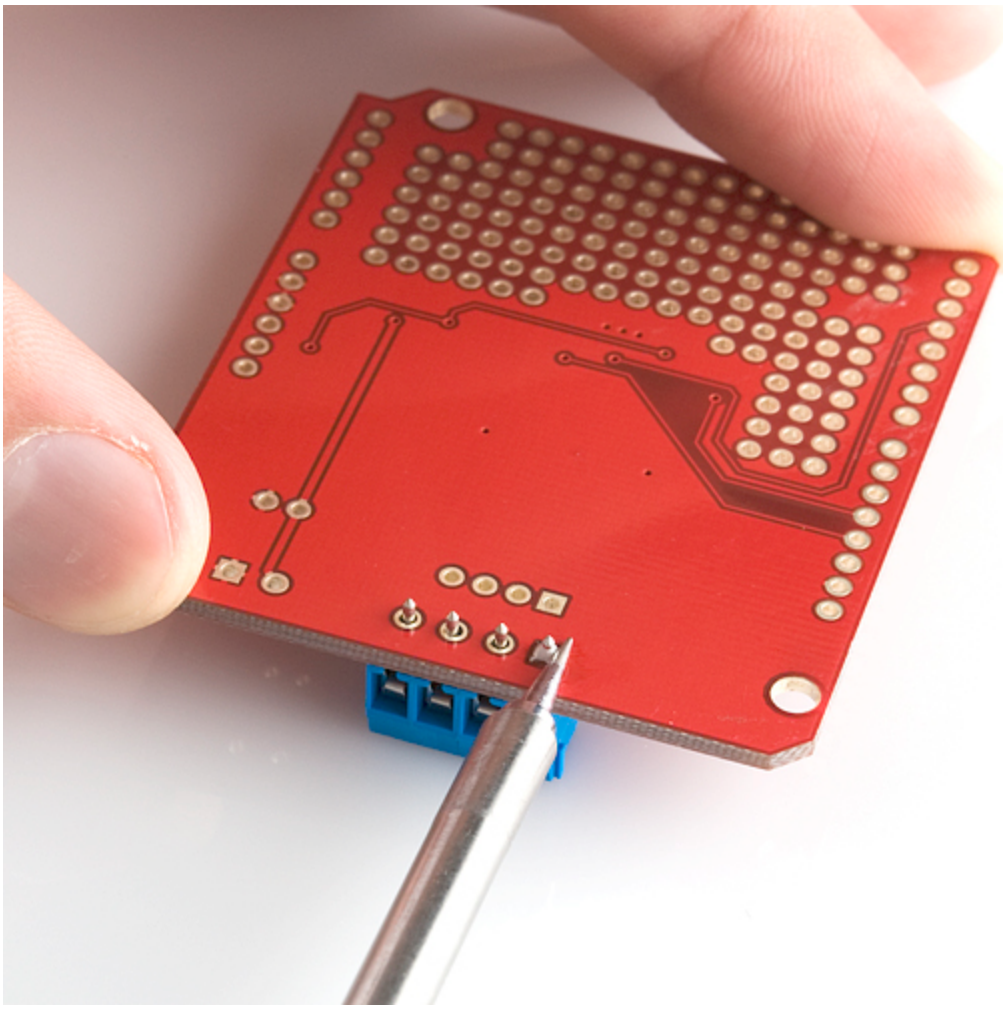


Now, while holding the screw terminals with your thumb, turn the board over and place it on the table so that the screw terminal pins are sticking out the other side of the board. Don't worry about crooked pins at this point, we'll take care of that.

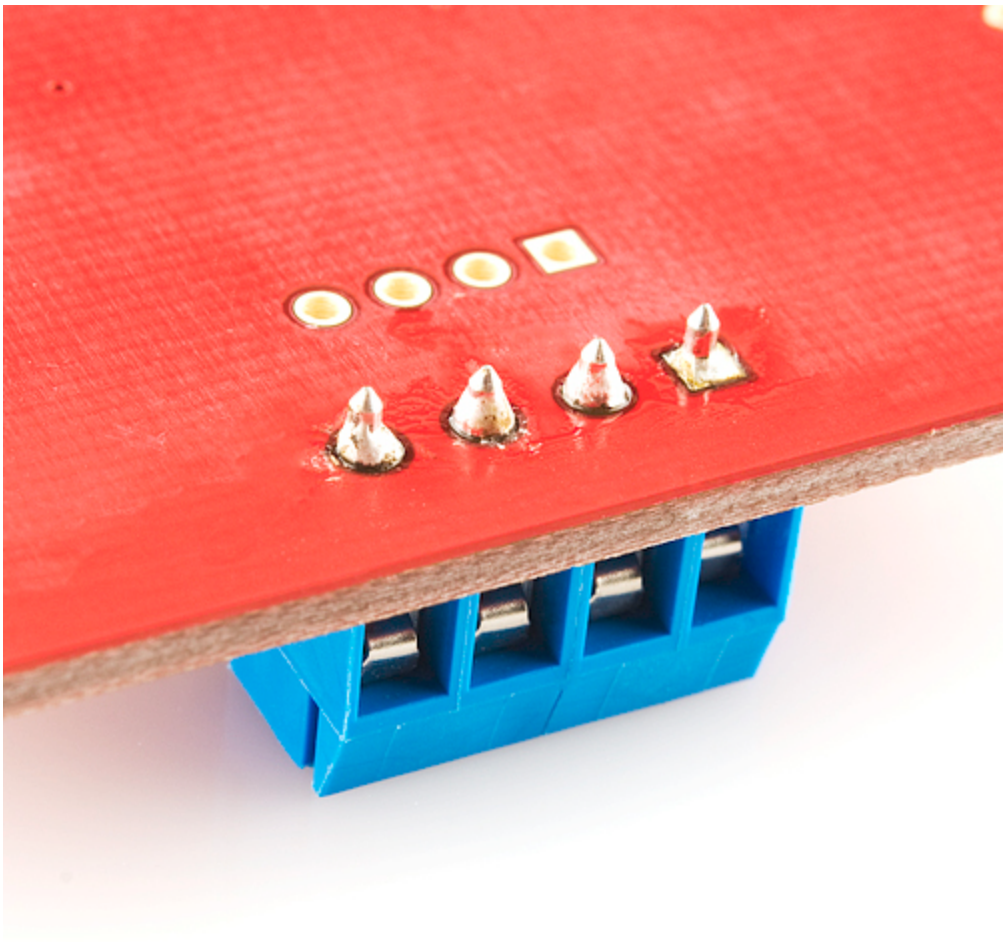
Now solder any one pin of the screw terminal pair.



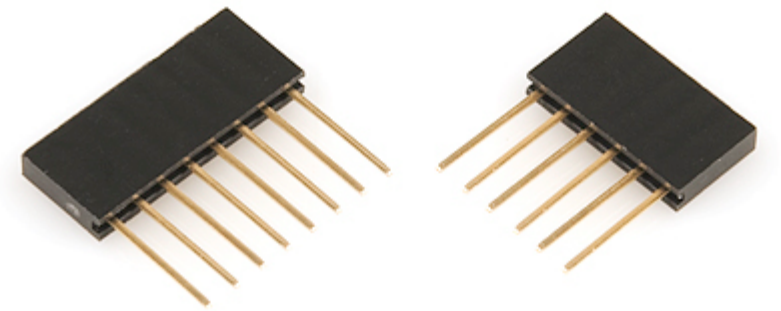
With your thumb and index finger, apply pressure to the board at the two corners which are adjacent to the screw terminals. Apply your soldering iron to the pin which you have already soldered, and you should see the screw terminals snug up very nicely to the board under the pressure of your hand.



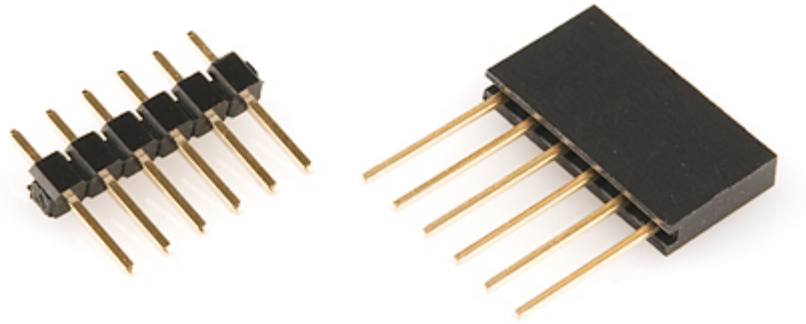
Then solder the remaining screw terminal pins.



Now onto the headers. The kit comes with stackable headers, but you may alternately want to install regular male headers if you're not going to be stacking anything on top of the Ardumoto and save the stackables for another project. For the purpose of this tutorial, we'll go with the stackables since they're more difficult to install.

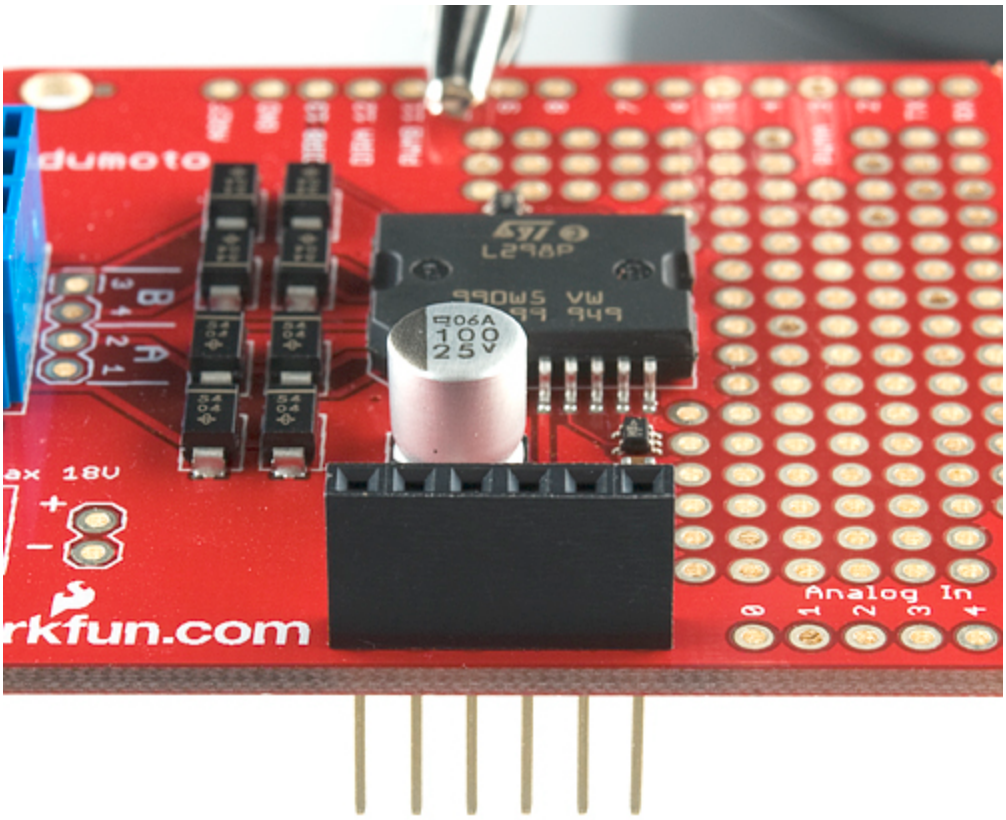


Stackable Headers

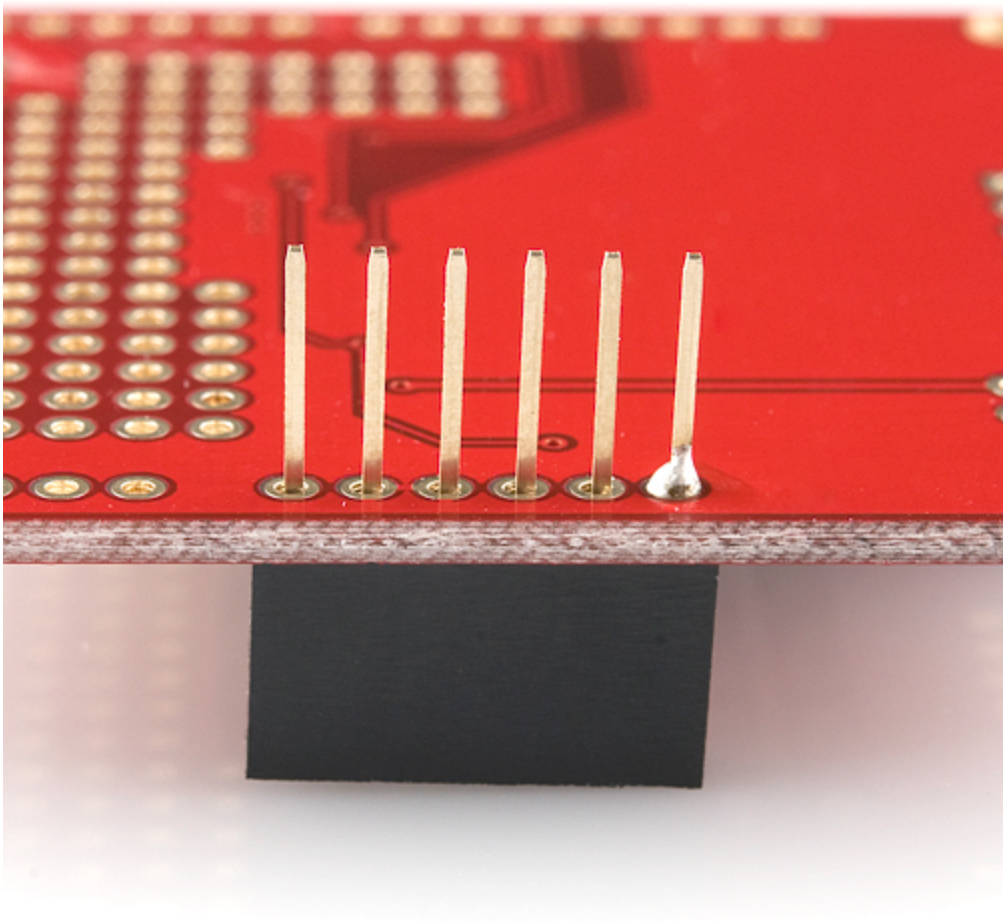


Male Breakaway headers and Stackable headers

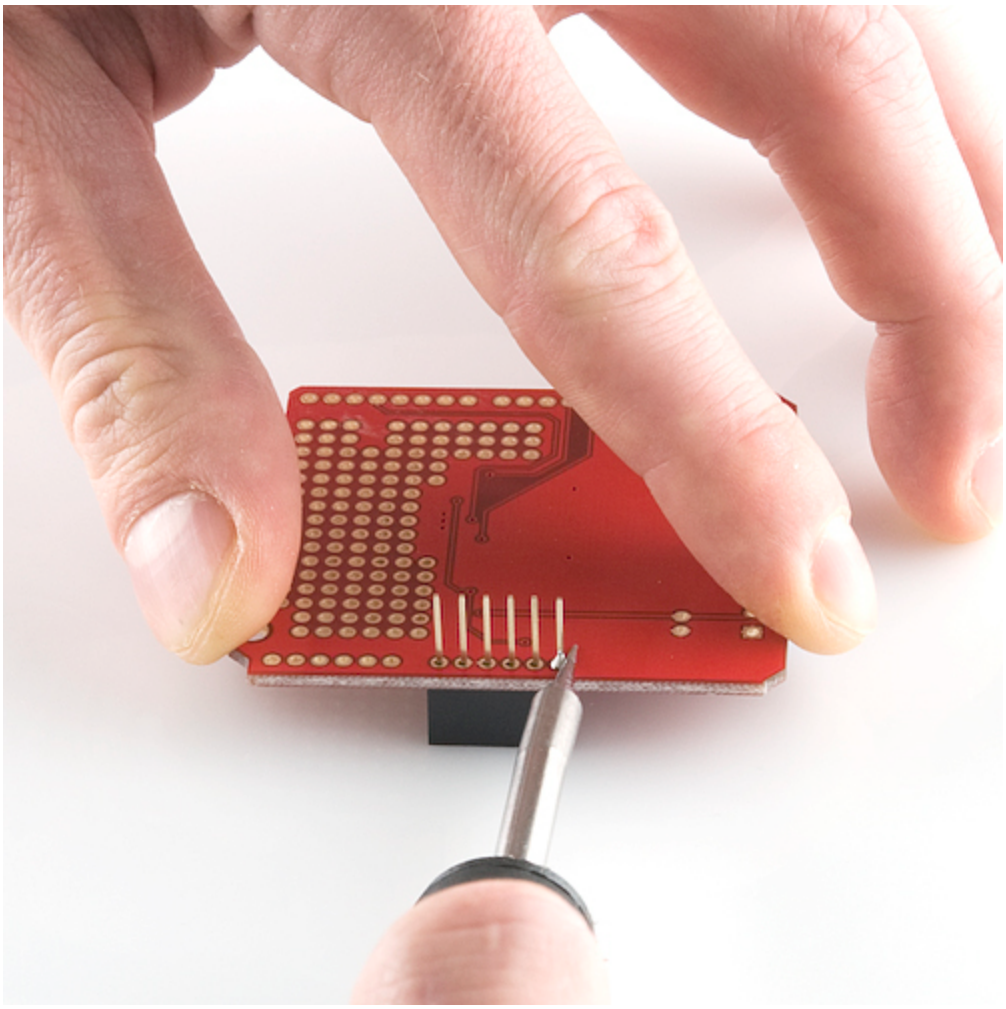
The easiest way I've found to install these guys is one at a time, and in much the same manner as we did the screw terminals. The sequence isn't particularly important, but we've got to pick one. So install one of the 6-pin headers into the top of the Ardumoto board like so:



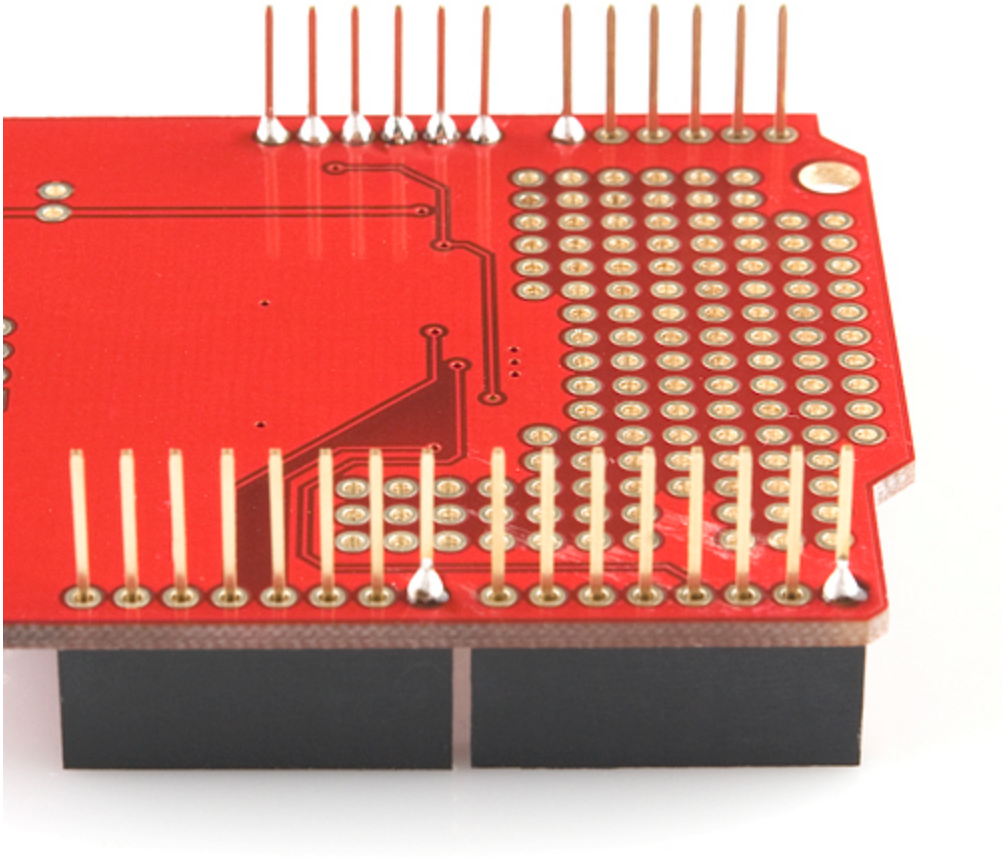
Then in the same way we did the screw terminals, hold the header with your thumb and place the board face down on your table so that the pins are sticking out at you and solder one pin (one of the end pins works best for me).



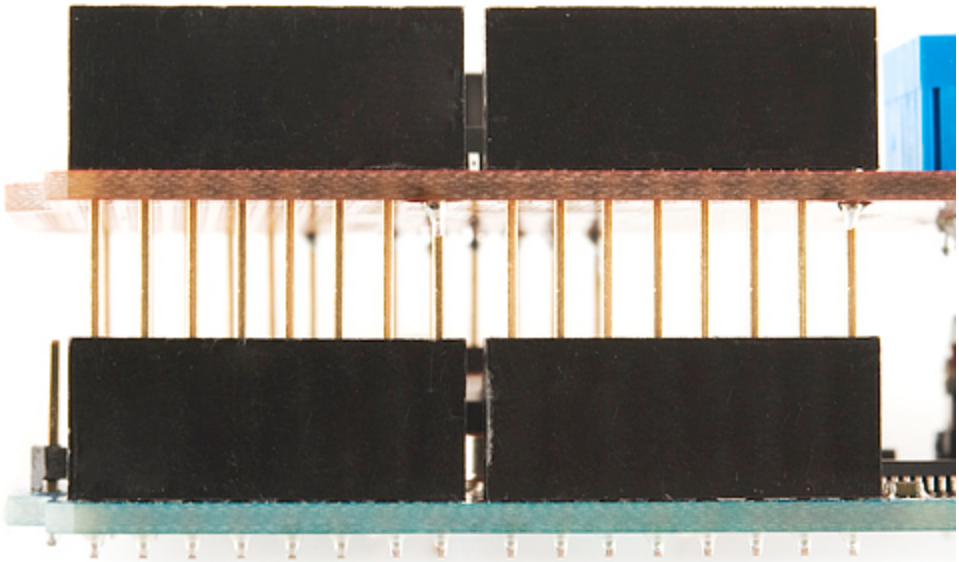
And again, like we did before, hold down the corners of the board and reheat the previously soldered pin. The header should then snug up very nicely to the board.



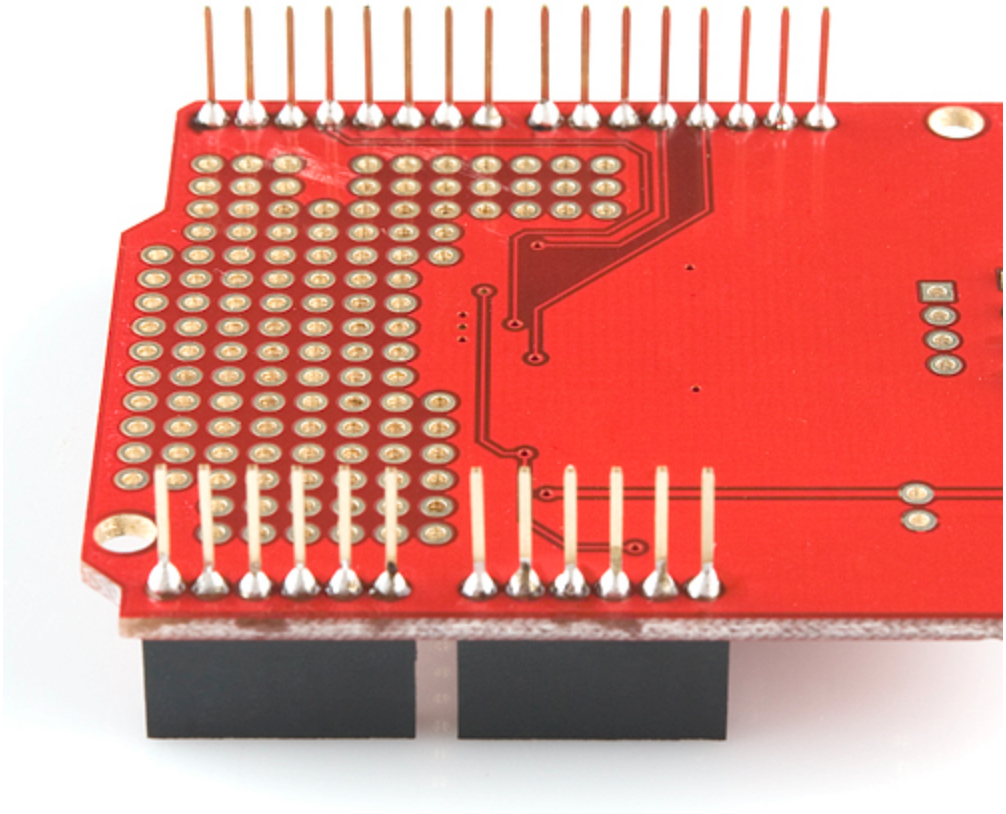
Now repeat the last two steps for the remaining three headers.

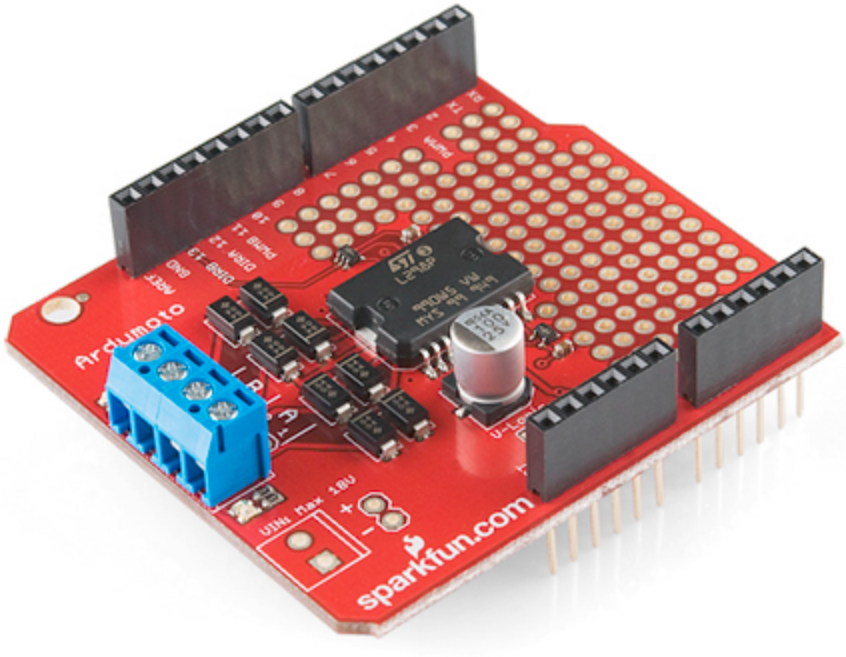


The easiest way to verify your pin alignment is to plug the Ardumoto into your Arduino. Gently, and only slightly, plug the two together. You don't have to go all the way in to verify the alignment, nor should you since only one pin is soldered on each header. If you've already aligned the way previously illustrated, you should be pretty close anyway. If you need to realign, you can do so by just bending the headers just a little bit. Once sure, solder the remaining pins on the four stackable headers.



And now you're ready to rock!




Ardumoto
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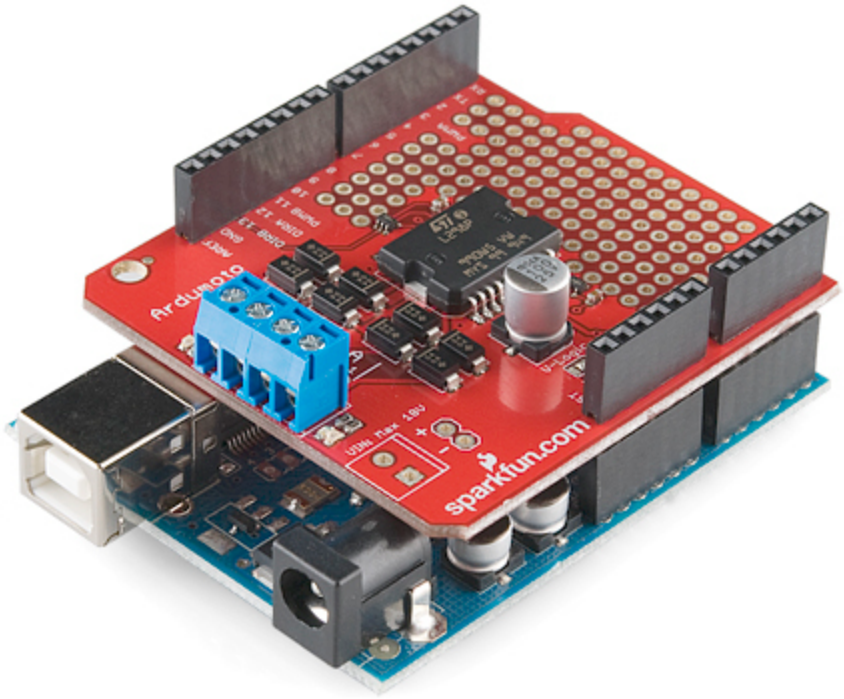

Keep on truckin'! Drop us a line and let us know what your projects are up to.

Have a suggestion for how we can improve this assembly guide? Steps missed? Instructions unclear? Please let us know. You can leave a comment below or email us spark@sparkfun.com. Also let us know if this is the most awesome assembly guide you've ever encountered and we'll stop trying to improve it.

▼ Comments 7 comments

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- phobic | about 11 months ago 1

  Is it possible to stack two of these boards on top of each other? For controlling four motors?

  - PDunham | about 5 months ago 1

well, yeah, but it wouldn't be able to control each individually. In other words, motor 1 on each board will do exactly the same thing, as will motor 2. So, yes and no.

- chimpfunkz | about 2 months ago * 1

  If I wanted this to not be stacked on top (stand-alone/on the side) which of the pins would I absolutely need to connect to the arduino board?

  - i_are_geek_X | about 2 months ago 1

    although I do not recommend it, but I believe you can use some male breakaway headers on the board, and then use male/female connecting wires to connect everything together. Just be sure to connect everything correctly...

- Cello62 | about 3 weeks ago 1

  Hi I'd like to drive three servo motors Hitec, two 360Â° for wheels and one standard to use with a sensor. Can i use this shield to do this? If yes, can you explain me please how? Thanks

- Cello62 | about 3 weeks ago 1

  Hi I'd like to drive three servo motors Hitec, two 360Â° for wheels and one standard to use with a sensor. Can i use this shield to do this? If yes, can you explain me please how? Thanks

  - MikeGrusin | about 3 weeks ago 1

    This shield is used for driving DC motors, which are different than servo motors. You don't even need a shield for servos, since you can run them straight from Arduino pins. See our tutorial for more information.