Stepper motor steppin'

3 messages

Michael Stebbins <michaelstebbins@gmail.com> Mon, Mar 26, 2012 at 10:13 PM
To: rydebmx01@yahoo.com

Jeff,

Here we go. I guessed $$ low last night, because I forgotten that you'd need to get the $10 connector board to enable programming/powering the Arduino via the computer. Sparkfun is a bad-ass company in Boulder CO with reasonable shipping rates, so I buy almost all electronics from them.

Parts to buy

- Stepper motor driver, $15: http://www.sparkfun.com/products/10267
- Arduino, $19: http://www.sparkfun.com/products/11114
- Connector board, $10: http://www.sparkfun.com/products/10009
- Power jack, $1: http://www.sparkfun.com/products/10811

You might already have these, if not, you can buy them from Sparkfun as well:

- Wall wart, $6: http://www.sparkfun.com/products/9442 (would have to be no more than 24V, 12V would be ideal, and absolutely no more than 750 mA, but the closer to 750mA you can get, the more torque/speed you can coax out of the stepper).
- Normal USB to Mini-B cable, $5: http://www.sparkfun.com/products/10424 (these are common for cameras and some cell phones, make sure you get the connector that looks like this one (Mini-B) as there are several different types).

Thoughts/data:

- http://www.bibus.hu/fileadmin/editors/countries/bihun/product_data/kollmorgen/documents/pacificscientific_series_powermax_ii_motors_catalogue_en.pdf: This is the closest to a spec sheet I could find based on the info on the motor sticker. You'll notice that the last page lists 24, 36, and 72 volts. Nowhere on the stepper is there a voltage callout.
- http://www.cnczone.com/forums/stepper_motors_drives/102822-importance_over-voltage.html: from this, I don't think that voltage really matters. Based on reading some user comments from the stepper driver board, I think that 12V is probably best and I'm 90% sure we can make it work with your stepper motor (or at least work well enough to do the job).
- http://digital.ni.com/public.nsf/allkb/0AEE7B9AD4B3E04186256ACE005D833B: I grabbed the multimeter, and determined that black and orange are one phase, and red and yellow are the other phase.
- http://www.omega.com/prodinfo/stepper_motors.html: I think you'll want to wire it in series because we are current-limited by the stepper driver board's maximum current rating of 750 mA, so you'll get the most "bang for your buck" as far as stepper performance in series.
- http://bildr.org/2011/06/easydriver/: finally, here's a little tutorial and some code that we can steal and use. Score!

- Last thought: have you considered epoxying another ski to the main one at a 90 degree angle, so the profile looks like a T? With a camera out at the end of the single ski, if you move it to fast, the ski will flex (like it would when you land a jump), and your camera could end up bouncing. The T-shape would be stiff as a dry martini. Just a thought.

Let me know if you have any questions about any of this. I will DEFINITELY help/teach you to put it together, solder any connections, install the Arduino software on a computer, and load/modify/test the code (because that shit is a lot of fun for me). That is, unless you don't want any help!

Mike

---

jeff skierka <rydebmx01@yahoo.com> Tue, Mar 27, 2012 at 6:22 PM
To: Michael Stebbins <michaelstebbins@gmail.com>

Mike, thanks a lot man! this is all awesome info. I'm getting paid tomorrow and hopefully only have to work a half day so I'm going to try and get everything ordered. The 2 ski thing definitely sounds like the way to go. I'm also going to pick up some cross country ski's at a thrift store and use them instead of the wide trick ski's I have. Don't have to much head room in the shop and need every inch I can get. I started to build a sealed box for the stepper motor yesterday out of 1/2" thick plastic. Hoping it will keep it dust free and should make it easier to mount the motor to a back plate. Also I am going to pick up some cool Chanel track stuff that they sell at a woodworking store I go to, might check and see if I can find it somewhere cheaper on the Internet though. should work pretty good for providing a track for the stepper motor box that the belt can be tensioned with. Not sure If I have to work the rest of the week. Hopefully not because I would really like to have this thing going before next week. I'll let you know when the parts should be in after I place the order tomorrow and if you have any time this weekend maybe we could get this thing spinning! Thanks for all the help. Headed out for .50 cent wings at the Atlantic crossing on 65th and roosevelt. hopefully see ya there.
Jeff

--- On **Mon, 3/26/12, Michael Stebbins <*michaelstebbins@gmail.com*>** wrote:

> From: Michael Stebbins <michaelstebbins@gmail.com>
> Subject: Stepper motor steppin'
> To: rydebmx01@yahoo.com
> Date: Monday, March 26, 2012, 10:13 PM
> [Quoted text hidden]

Mike Stebbins <michaelstebbins@gmail.com> Wed, Mar 28, 2012 at 8:02 AM
To: jeff skierka <rydebmx01@yahoo.com>

Jeff, glad to help, I love this shit! I can't promise I'll have much time this weekend, as I think we're going to Whidbey to hang with some friends, but if I do I'll let you know.

The skis sound good, and I like the protected box idea for the motor and a small electronics board. Hopefully it doesn't get too hot inside due to both of them (fire or fried circuits). We'll cross that bridge later.

One more thing I remembered: http://www.sparkfun.com/products/116, we need some of these.

Hope the wings were tasty, talk to you later.

Mike

Sent from a mobile telephone. Please excuse any mispellings or accidental auto-corrects.

[Quoted text hidden]