

## How To Freeform A L293D Motor Driver

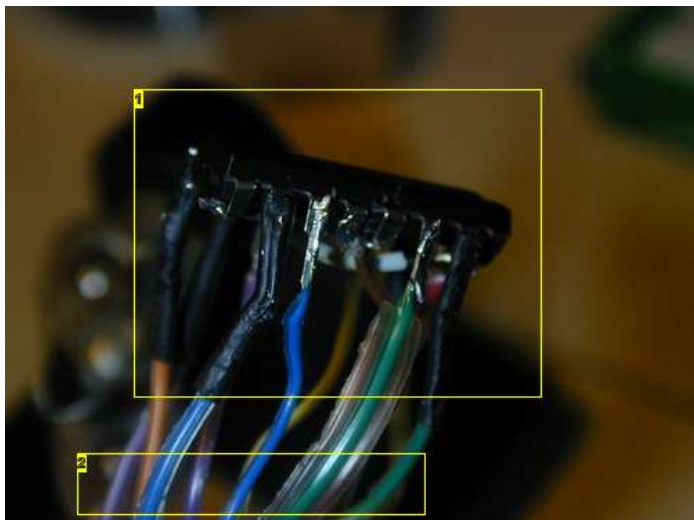
by [tinygeek](#) on November 27, 2009

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## Intro: How To Freeform A L293D Motor Driver

I was recently doing a project involving stepper motors, and needed a motor driver that had a small form factor and had 4 outputs. After finishing and refining my freeform of this driver, I decided to put it up here, as it seemed that not many people had done this. Without further adue, a freeform motor driver.



### Image Notes

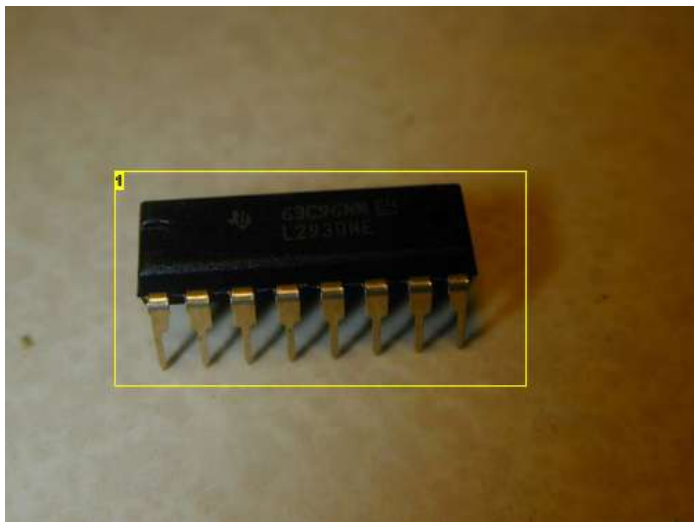
1. A little messy, but very functional.
2. What you do with the ends of the wires is your buisness.

## Step 1: Materials

You don't need much to make this. All you need is:

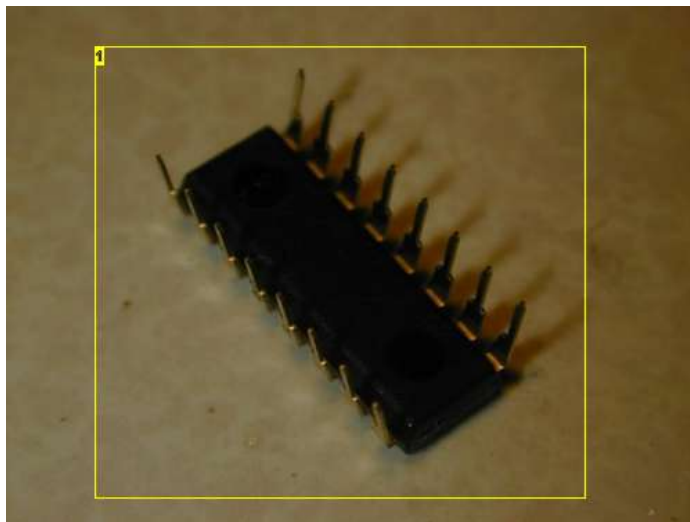
- (1) L293D IC -- The motor driver.
- (1) Small jumper wire -- It only needs to be about 1" long.
- (1) Piece of ribbon cable -- 12 strands, or one 8-strand piece and one 4-strand piece.
- (5) Short pieces of heat-shrink tubing -- It's never good to have shorted connections.

You'll also need wire cutters, strippers, solder, and a soldering iron.



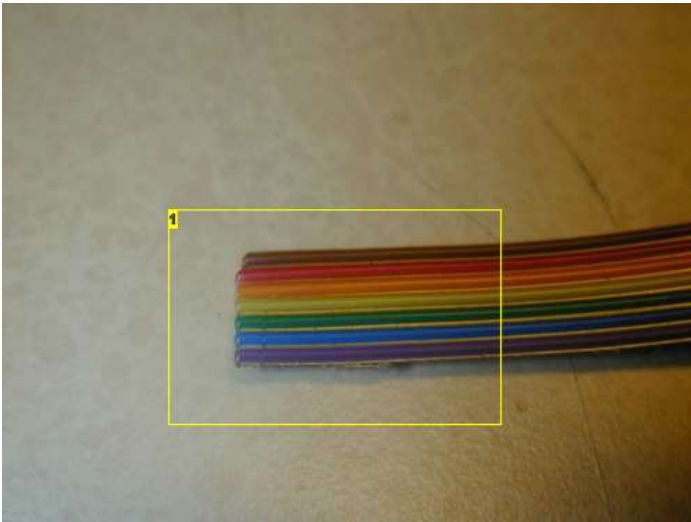
### Image Notes

1. L293D -- "Live Bug"



### Image Notes

1. L293D -- "Dead Bug"

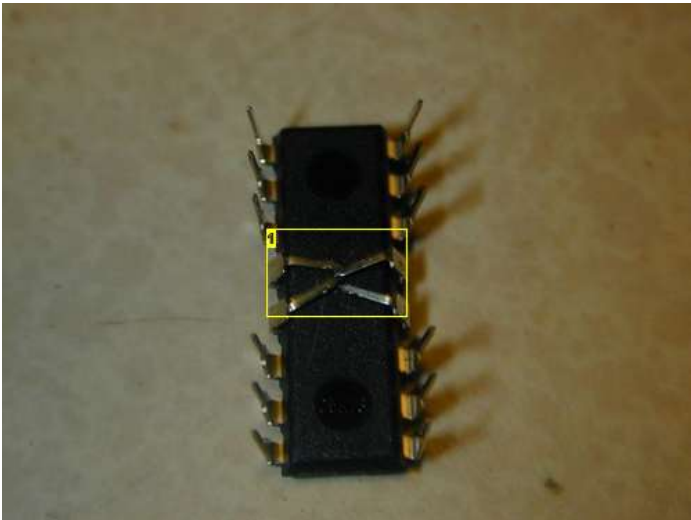


#### Image Notes

1. Ribbon Cable -- Color coded is nice.

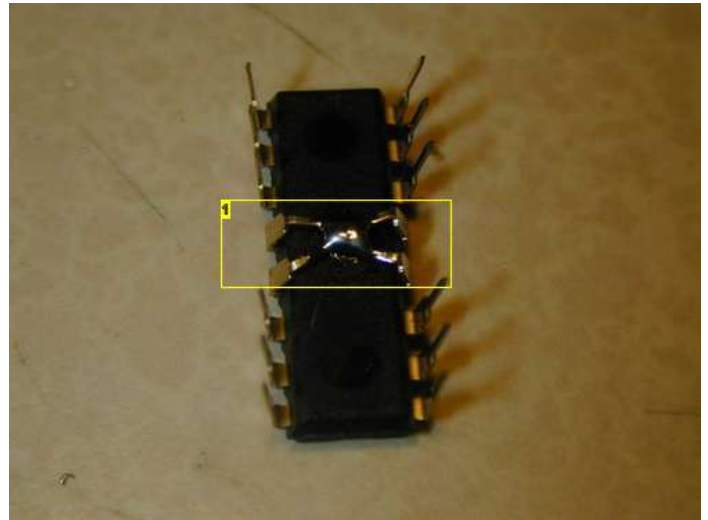
### Step 2: Solder Together Ground Pins

The L293d has a very nice pinout for everything except PCB layout. Since the four ground pins are in the middle, just fold them in until they're all touching and then solder.



#### Image Notes

1. All four pins touching.



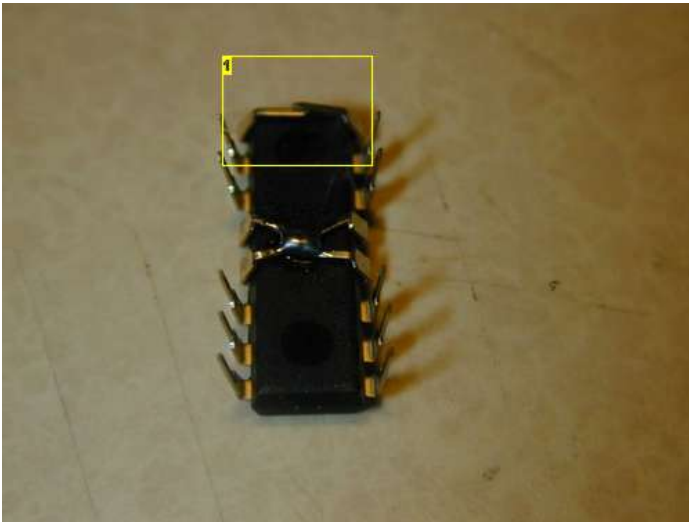
#### Image Notes

1. All soldered!

### Step 3: Soldering Logic Power

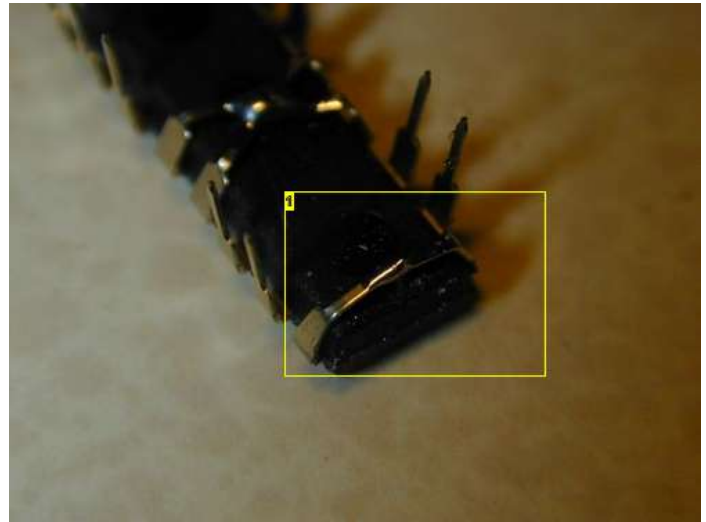
Pin 16 is the Logic power supply. It wants to be connected to +5 volts. Pin 1 is the 1-2 channel enable. It has to be connected to +5 for the chip to run. I usually connect the enables to +5, but if you don't want to because you want to use them, just skip this step.

Fold pins 1 and 16 together across the bottom of the chip, and solder.



#### Image Notes

1. Folded together.



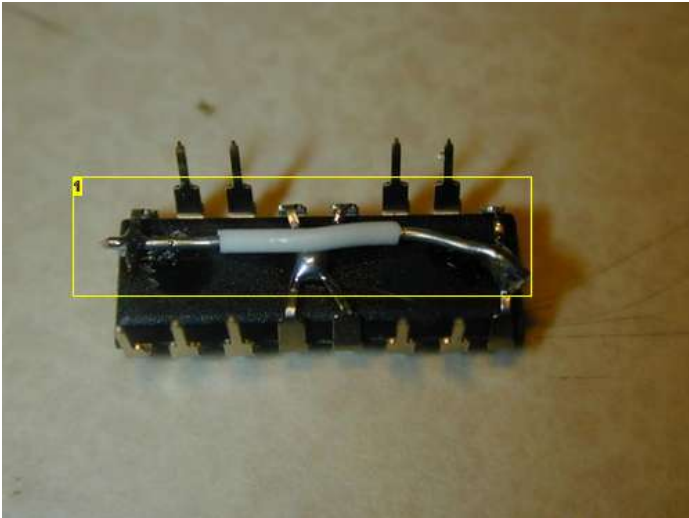
#### Image Notes

1. Soldered.

### Step 4: Hooking Up The Last Enable

If you're using the enables, skip this step too.

Fold in the 3-4 channel enable (pin 9) and solder a jumper wire between it and the connection made in step 2.

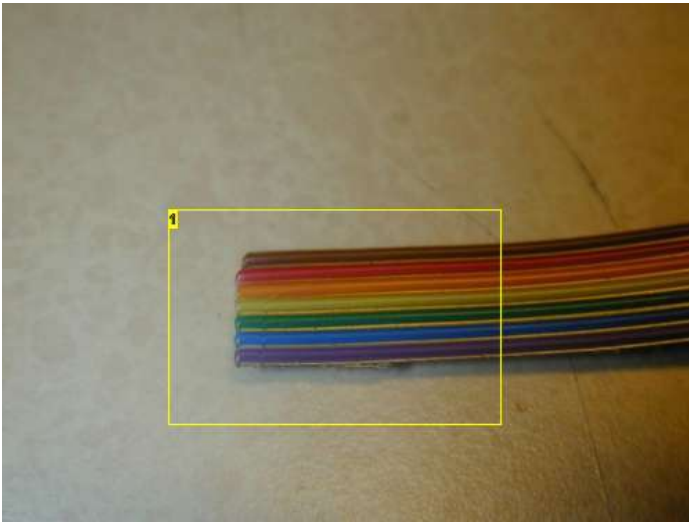


#### Image Notes

1. 3-4 enable connected to +5.

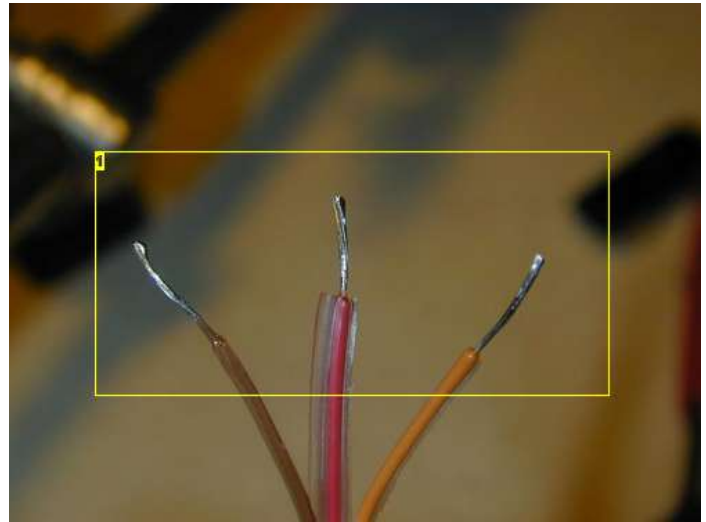
### Step 5: Prepare The Ribbon Cable

Separate strands of ribbon cable, and tin the ends. It will make soldering much easier later.



#### Image Notes

1. Ribbon Cable -- Color coded is nice.

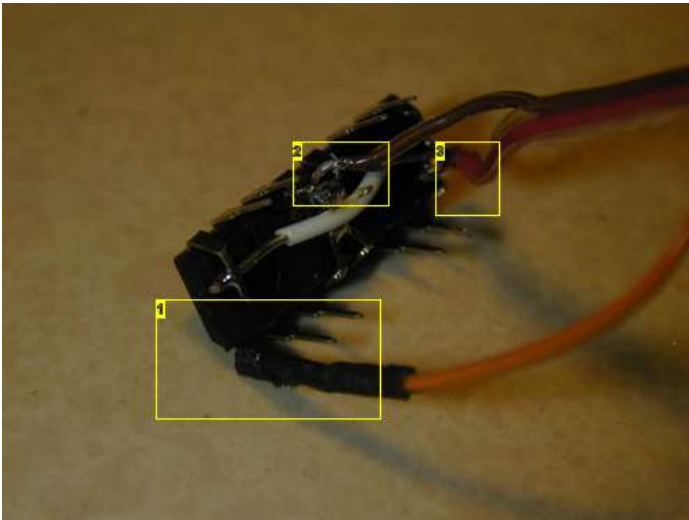


#### Image Notes

1. Tinned. All the others are too, but if I only show three the image is less crowded.

### Step 6: Solder Power Wires

Solder wires to Ground, +5, and the Motor supply pin (pin 8). Trim excess off the ground and +5 connections, and put heat shrink tubing over the Motor supply wire.



#### Image Notes

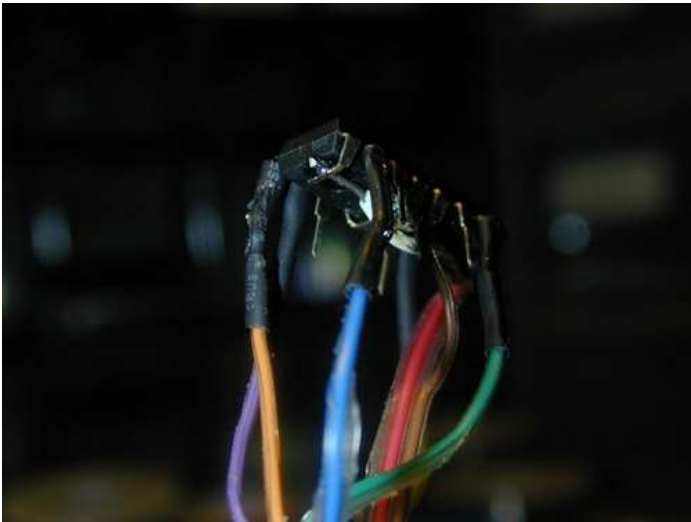
1. Motor Supply  
2. Ground  
3. +5

### Step 7: Solder Inputs

Solder four strands of cable to the input pins. They are:

Pin 2  
Pin 7  
Pin 10  
Pin 15

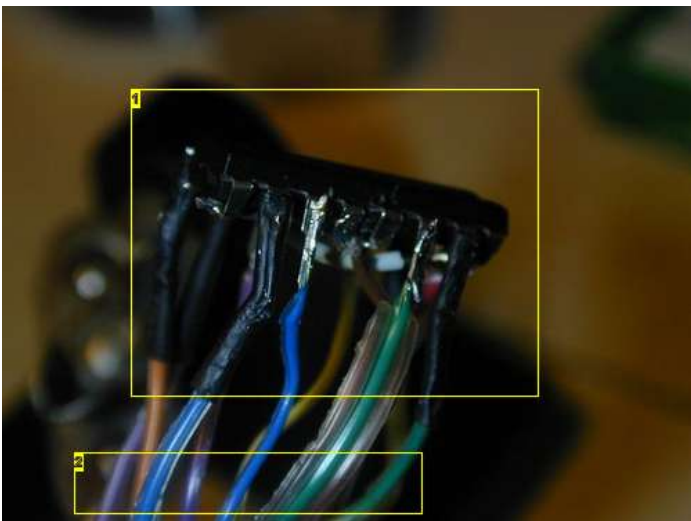
Heat shrink over the connections.



### Step 8: Solder Outputs And Finish Up!

All the remaining pins are outputs. Solder ribbon cable to them. You don't have to heat shrink them, because everything around them is insulated.

And that's it! Hook it up to a motor, stay within the voltage and current limits, and have fun!



#### Image Notes

1. A little messy, but very functional.
2. What you do with the ends of the wires is your business.

### Related Instructables



**Cellphone  
Operated Robot**  
by avadhut10001



**Physiotherapist  
Robotic Arm..**  
by Nirzaree



**Arduino + Game  
maker Rover** by  
cooldog



**Roll-A-Way  
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TheRafMan



**Stepper Motor  
Module** by carlyn



**Control your  
motors with  
L293D and  
Arduino** by  
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