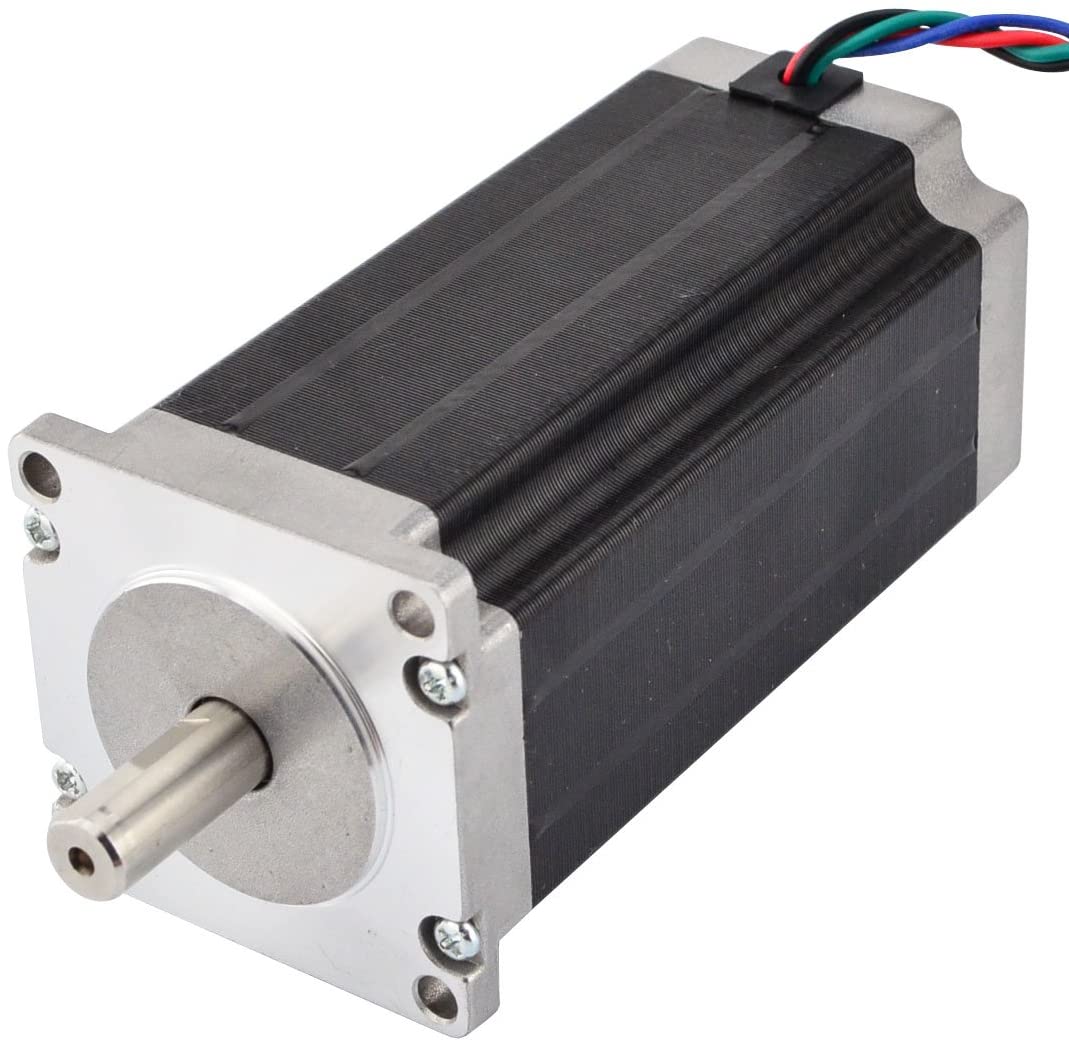
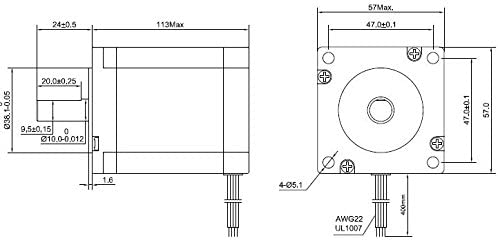
1. Part List:
   1. NEMA 23 Stepper Motor: $39.99

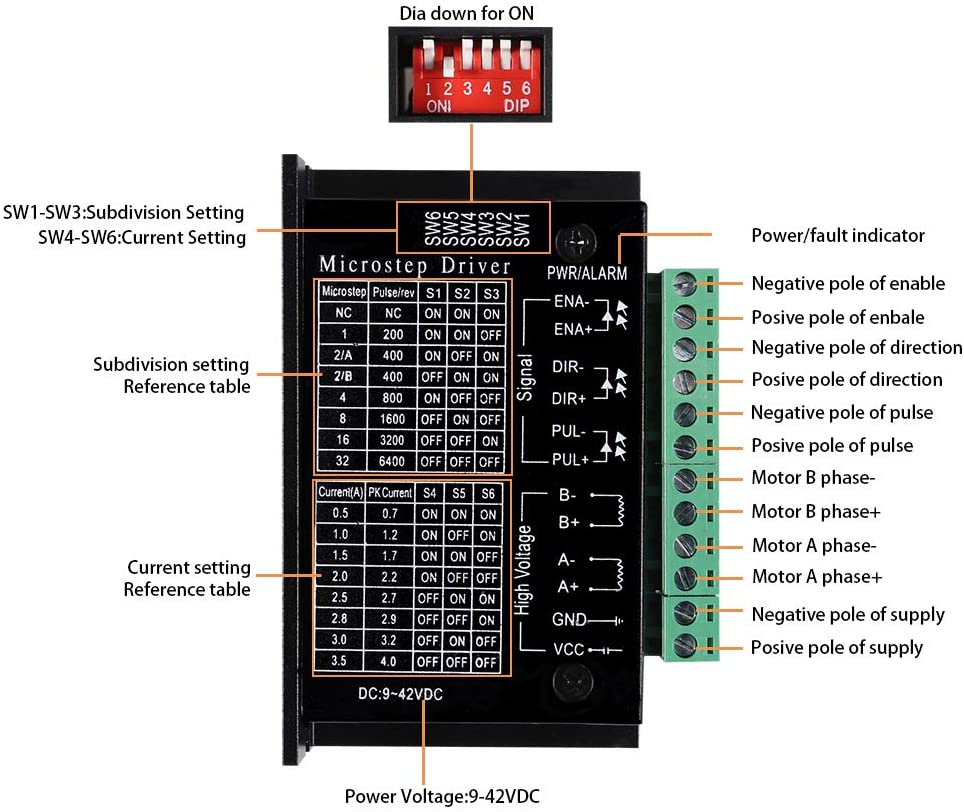
<https://www.amazon.com/gp/product/B00PNEPW4C/ref=ppx_yo_dt_b_asin_title_o04_s00?ie=UTF8&psc=1>



b. 

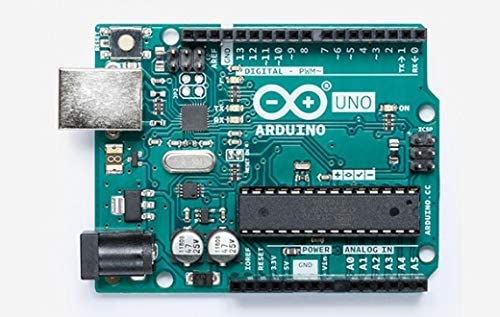
* 1. TB6600 Stepper Motor Driver: $10.75

<https://www.amazon.com/gp/product/B0839BBFVZ/ref=ppx_yo_dt_b_asin_title_o07_s00?ie=UTF8&psc=1>



* 1. ARDUINO UNO R3: $19.89

<https://www.amazon.com/gp/product/B008GRTSV6/ref=ppx_yo_dt_b_asin_title_o04_s00?ie=UTF8&psc=1>



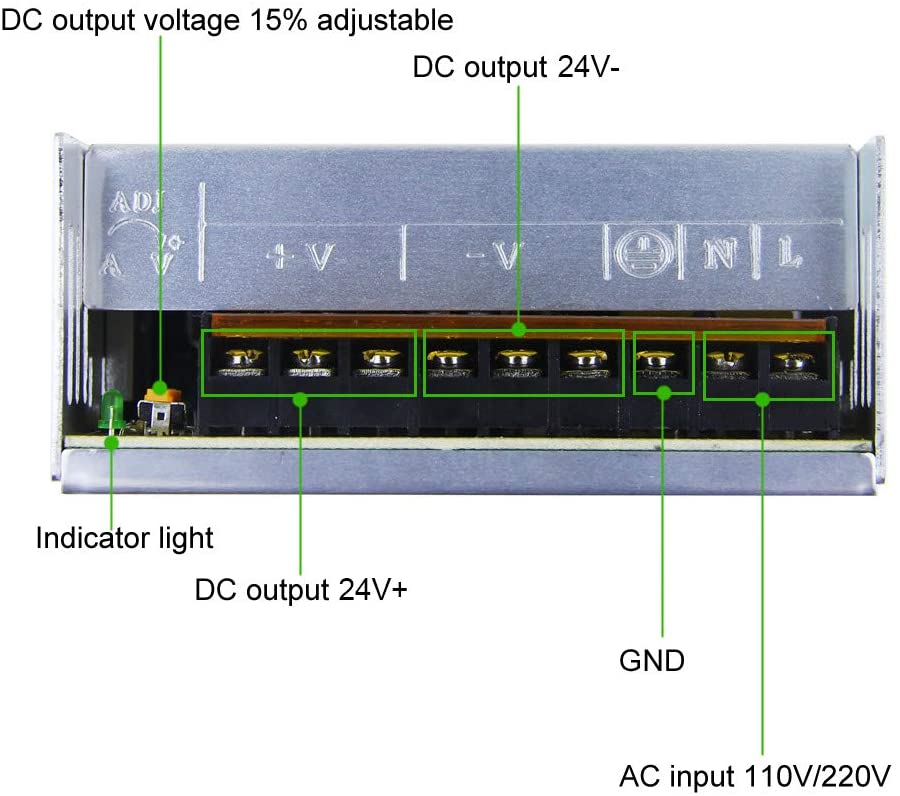
* 1. Power Supply for Arduino: $8.69

<https://www.amazon.com/gp/product/B01GD4ZQRS/ref=ppx_yo_dt_b_search_asin_title?ie=UTF8&psc=1>



* 1. Power Supply for the Motor: $24.99

<https://www.amazon.com/gp/product/B06XK2ZNKC/ref=ppx_yo_dt_b_asin_title_o05_s00?ie=UTF8&psc=1>



* 1. Screws: $24.99

<https://www.amazon.com/gp/product/B07H4MG7TC/ref=ppx_yo_dt_b_asin_title_o04_s00?ie=UTF8&psc=1>



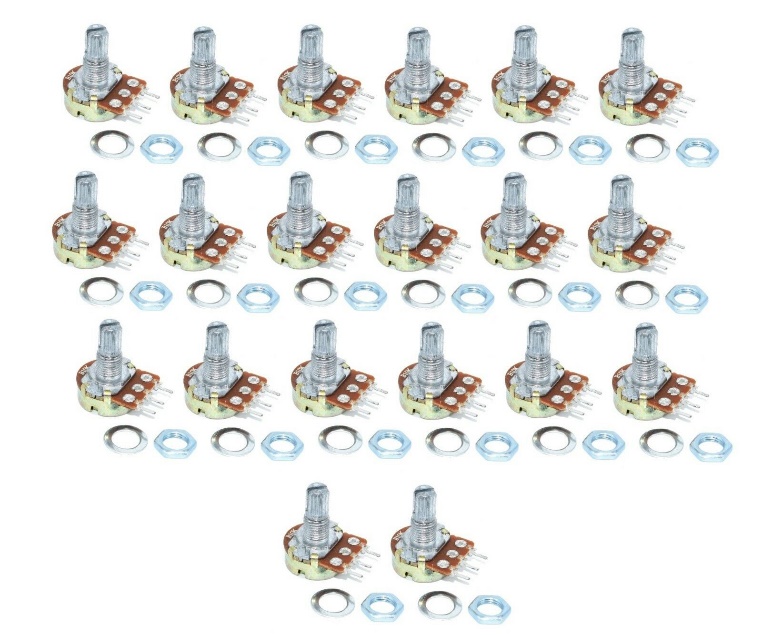
* 1. Jumper Cables: $6.90

<https://www.amazon.com/gp/product/B01EV70C78/ref=ppx_yo_dt_b_search_asin_title?ie=UTF8&psc=1>



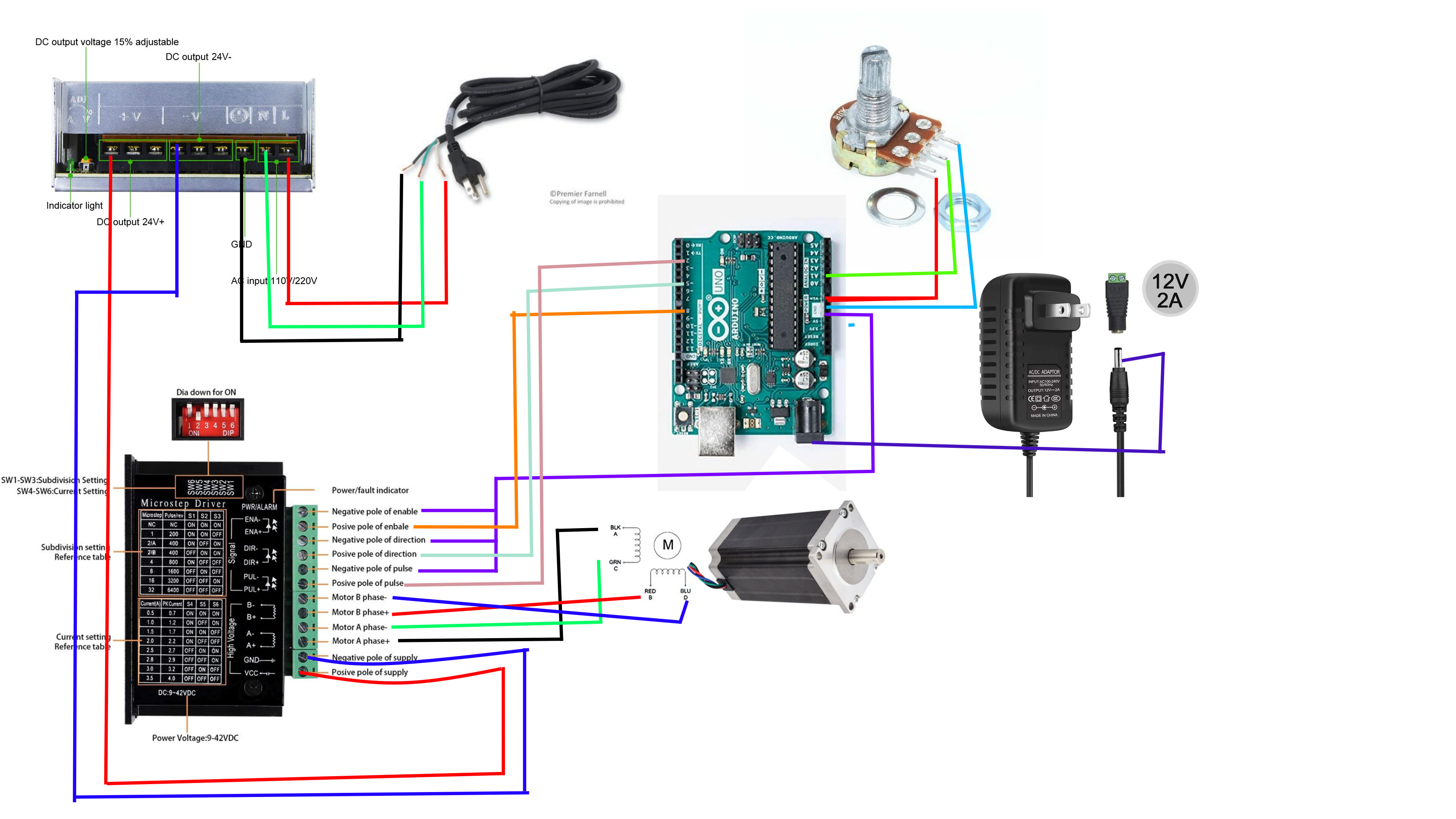
* 1. Potentiometer (Optional): $0.5

<https://www.ebay.com/itm/20pcs-10K-ohm-Linear-Taper-Rotary-Potentiometer-Panel-pot-B10K-15mm/392123626642?ssPageName=STRK%3AMEBIDX%3AIT&_trksid=p2057872.m2749.l2649>



1. Connections:

|  |  |  |  |
| --- | --- | --- | --- |
| From Device | From | To | To Device |
| 15A Power Supply for Motor | L | L (Live) of Line to the wall | 120V Outlet |
| N | N (Neutral) of Line to the wall |
| Ground | Ground of Line to the wall |
| V- | GND on Stepper Driver | TB 6600 Stepper Driver |
| V+ | VCC on Stepper Driver |
| TB 6600 Stepper Driver | VCC | V+ | 15A Power Supply for Motor |
| GND | V- |
| A+ | Black Wire | Stepper Motor |
| A- | Green Wire |
| B+ | Red Wire |
| B- | Blue Wire |
| PUL+ | 5 | Arduino |
| PUL- | GND (Combine PUL-, DIR- and ENA- all and connect to GND of Arduino) |
| DIR+ | 2 |
| DIR- | GND (Combine PUL-, DIR- and ENA- all and connect to GND of Arduino) |
| ENA+ | 8 |
| ENA- | GND (Combine PUL-, DIR- and ENA- all and connect to GND of Arduino) |
| Stepper Motor | Black Wire | A+ | TB 6600 Stepper Driver |
| Green Wire | A- |
| Red Wire | B+ |
| Blue Wire | B- |
| Arduino | 2 | DIR+ | TB 6600 Stepper Driver |
| 5 | PUL+ |
| 8 | ENA+ |
| A1 | Middle Pin | Potentiometer |
| Vin | + |
| GND (Next to Vin) | - |
| GND (Next to 5V) | Combine PUL-, DIR- and ENA- all and connect to GND of Arduino | TB 6600 Stepper Driver |
| Power Supply Connection | 12V Power Adaptor | |



1. Settings:
   1. TB 6600 Driver:

Set on the side controller of the driver 

|  |  |
| --- | --- |
| 1 | On (Down) |
| 2 | Off (Up) |
| 3 | Off (Up) |
| 4 | Off (Up) |
| 5 | On (Down) |
| 6 | Off (Up) |

* 1. Arduino:

Code can be found at:

<https://github.com/zoorage/Ventilator-Prototype.git>

1. Video of Earlier Prototypes:

<https://www.youtube.com/watch?v=NUu_Q0IXxf4>

<https://www.youtube.com/watch?v=SI2yv-K0nfQ>