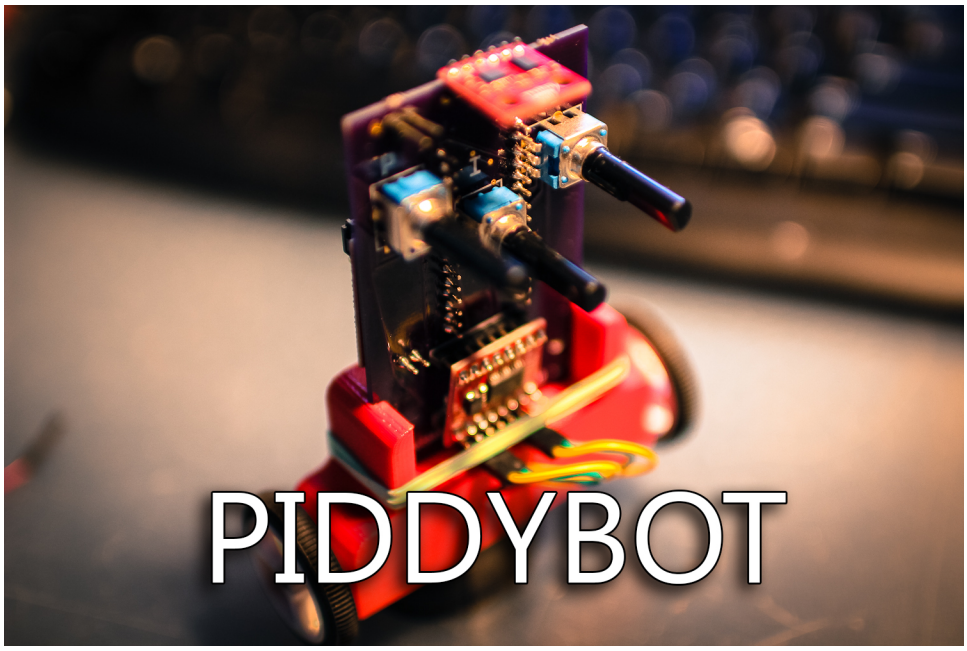

Assembly Help... Kind of.

Created by: Sean Hodgins
Idlehandsproject.com

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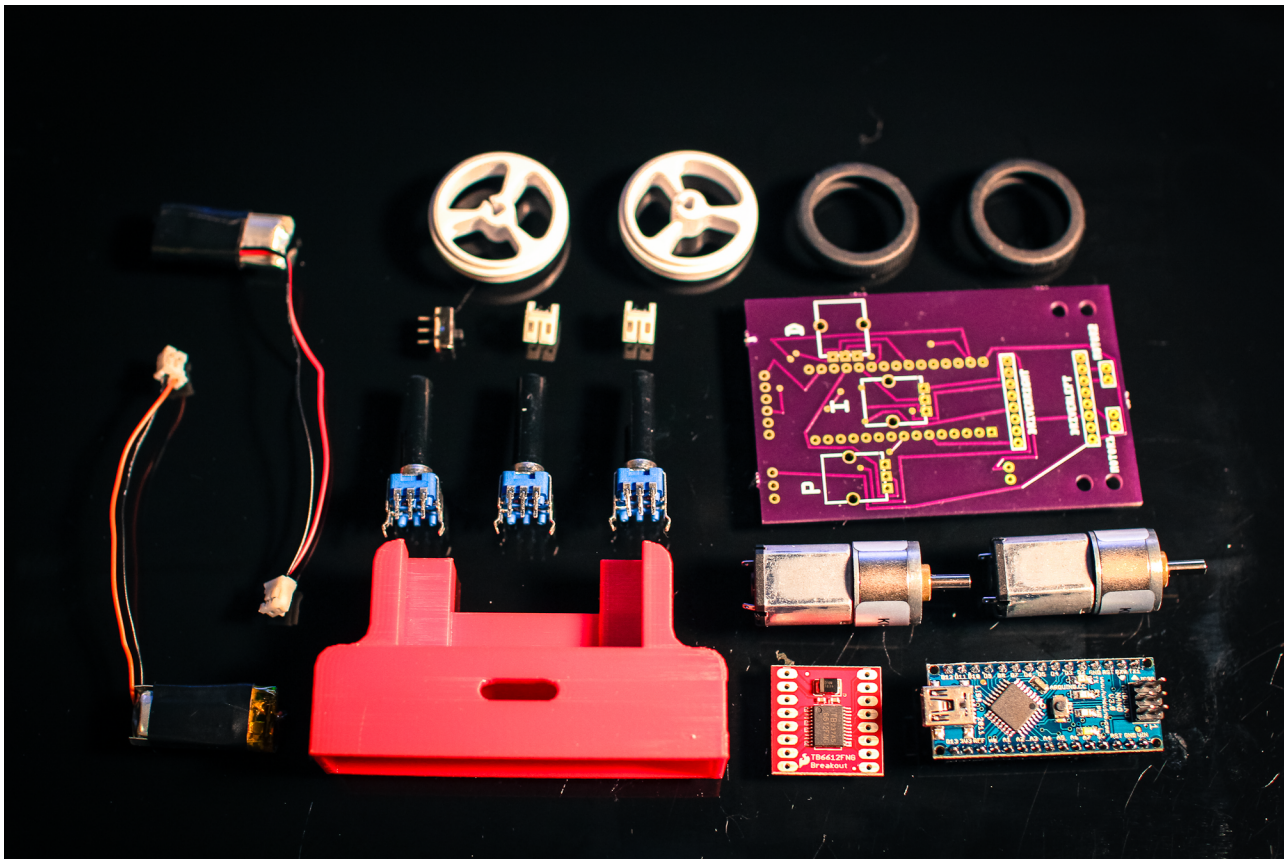
Follow me on Twitter @IHPArchives for project updates.
I will also glady respond to any questions.

Parts List

All parts, more detail, and files can be found at http://idlehandsproject.com

3 x Potentiometers
1 x Arduino Nano V3
1 x Custom PIDDYBOT PCB
2 x Geared Motors 26:1
1 x 1A Dual Motor Driver Board
1 x Wheel Set
1 x 6 DOF IMU from SparkFun -
1 x 3D printed Body. – Thingiverse
2 x Battery Connectors
2 x Lithium Batteries 110mAh
4 x M2 Screws for Motor Mounting
2 x Female Jumper Cables
20 x Female Straight Headers
6 x Female Right-angle Headers



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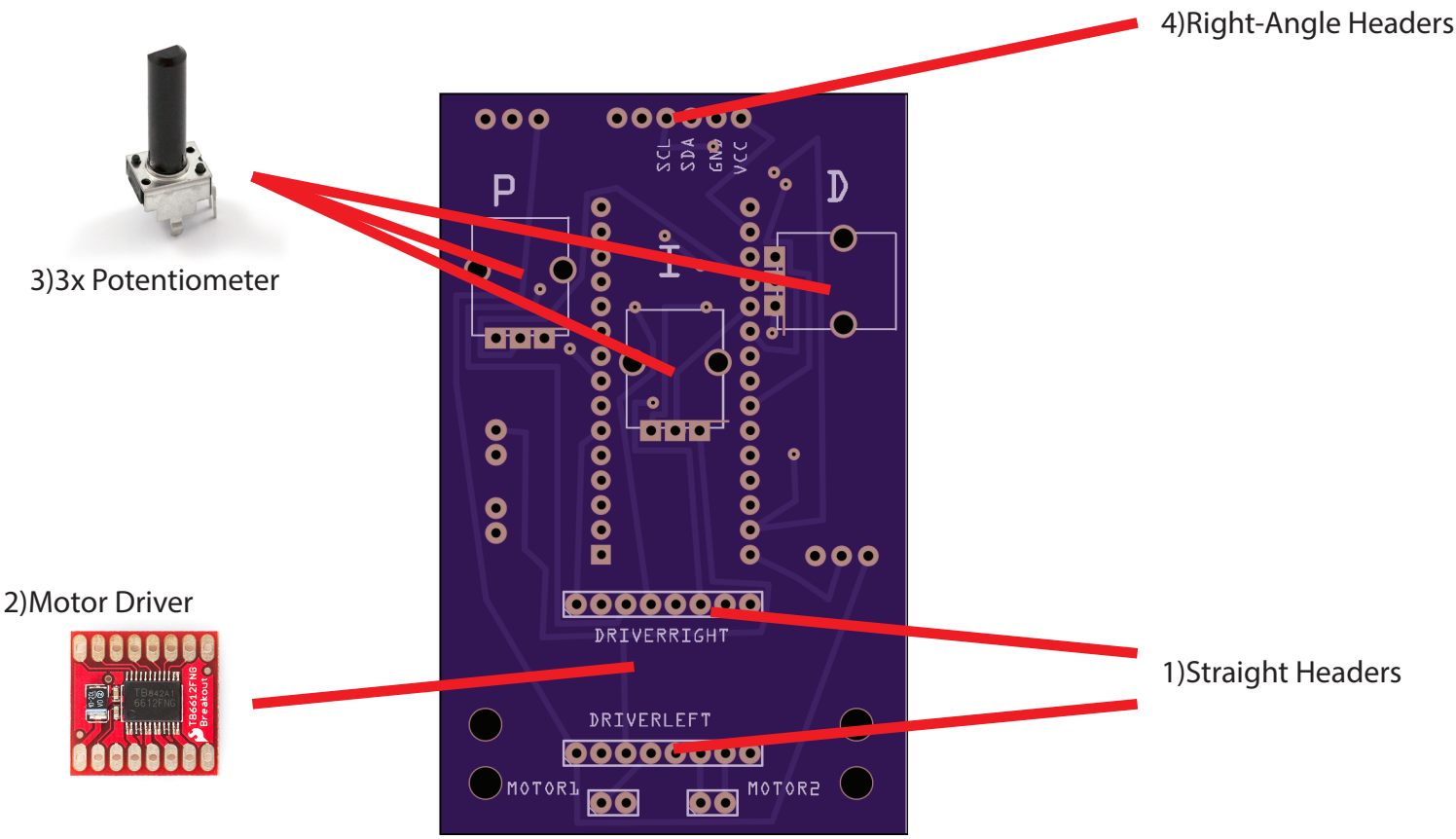
PCB Front



1) Install Male headers in the 2 motor connections and then 16 in the motor driver location, all with the short side of the header into the PCB. Make sure the motor driver will go on the headers before soldering them more than 1 on each side.
2)Place the motor driver on the headers in the orientation above(writing to the right) and solder the connections.
3)Snap the three potentiometers into their locations shown above and solder them in place. You must solder these in(at least the middle one) before putting in the arduino.
4) You can also install the right angle headers in the upper location at this time, short end in the board and the angle end facing upwards away from the pcb. They must be soldered on this side of the PCB.

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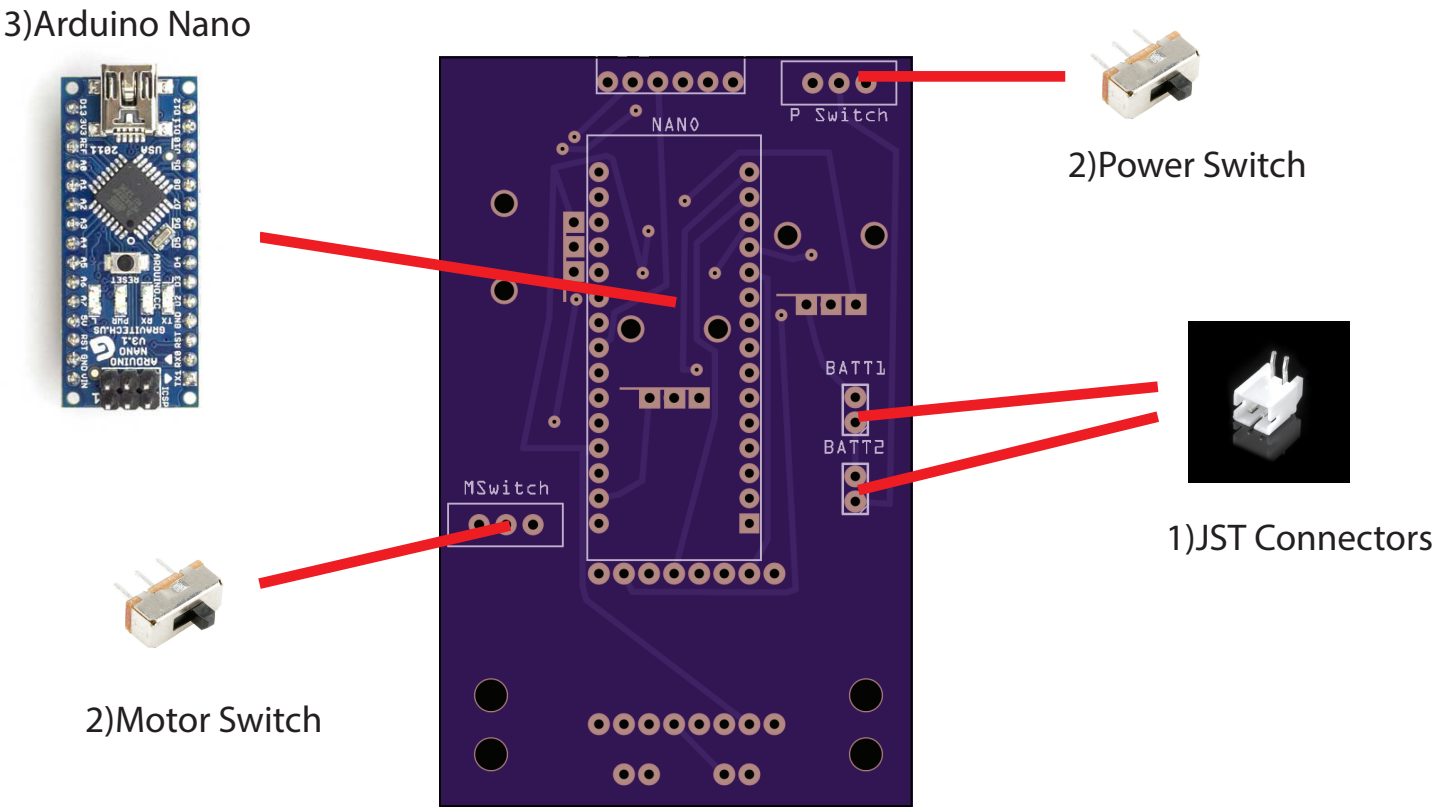
PCB Back



1) Install the two battery JST connectors into the locations Batt1 and Batt2 and solder in place. Make sure both of these are facing away from the Arduino(open side out) so that the polarity is correct and the arduino does not interfere with install and removal of battery connectors.
2) Install and solder the PSwitch and the MSwitch, orientation does not matter.
Hint: MSwtich should turn the motors off when you are running on only USB power to the arduino. Both will have to be on to run with batteries. None have to be on when powered by Arduino.
3)Install Arduino Nano in PCB in orientation shown above, USB port will be facing up. Soldering this can be tricky on the potentiometer side as there are a few close solder

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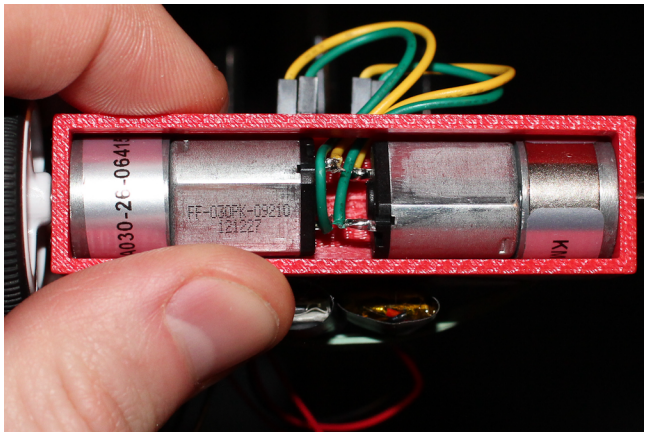
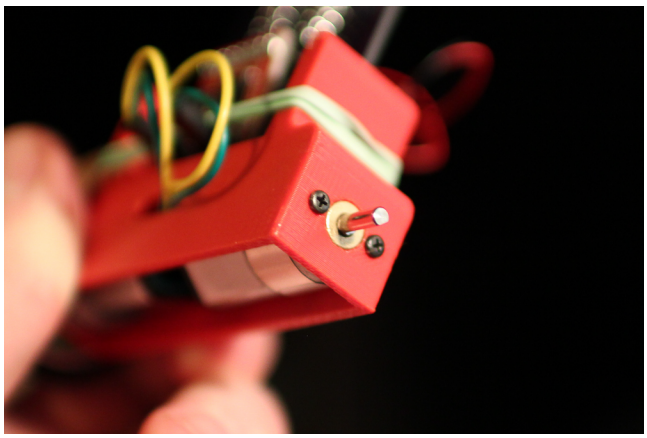
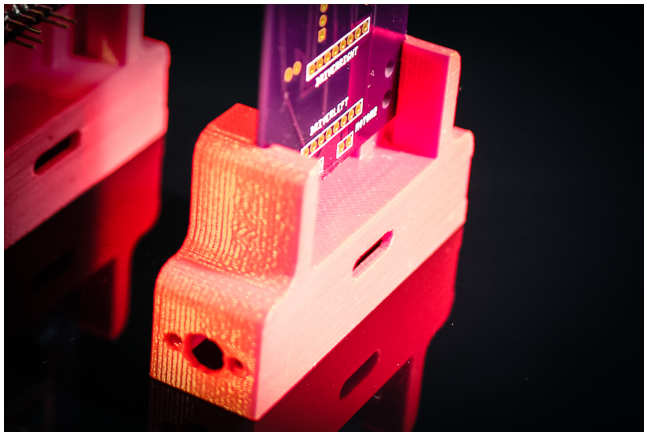
Motors



Before you install the motors you need to take two female jumpers and cut them in half. You will want to solder these halfs onto the motors. Try to do this as neat as possible as there will be little room for error on the connections; this means short wire leads and no overhanging solder. You can see in the picture that the space is tight. Once both jumpers are soldered you will have to manipulate the motors into place. This can be tricky if your holes in the chassis aren't quite round or the right size for the motor.



First feed the wires through the hole in the front of the chassis and insert the motors. Once you get the motor in you will have to align the screw holes. Once aligned install 2 x M2 screws to secure the motors then pop on the wheel. Finally slide the PCB into the slots on the chassis and connect the two motor jumpers on the headers you previously soldered on. Upload the program and getting PIDDYING, thats a word right? Enjoy.



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