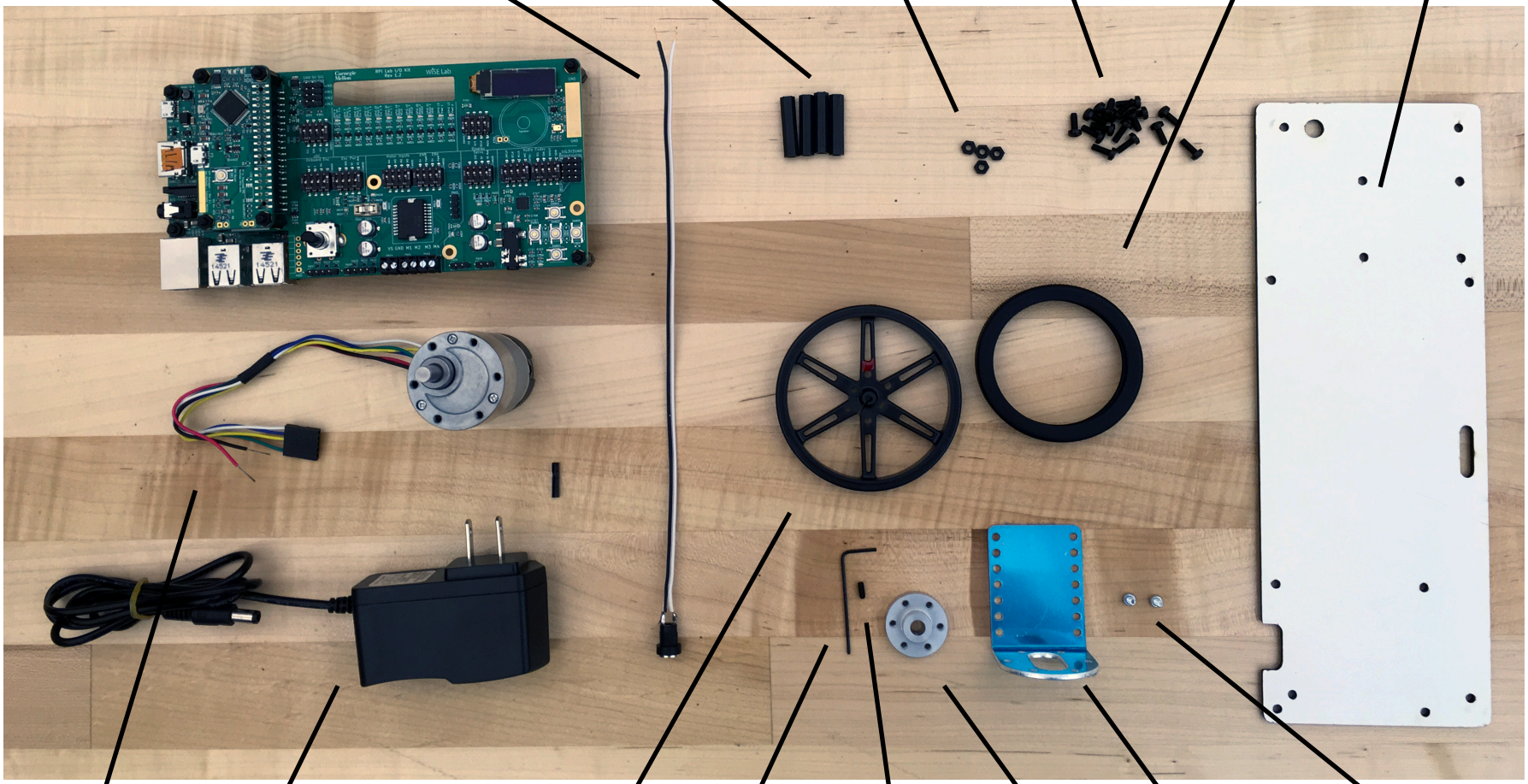
RPi Lab I/O Motor Kit

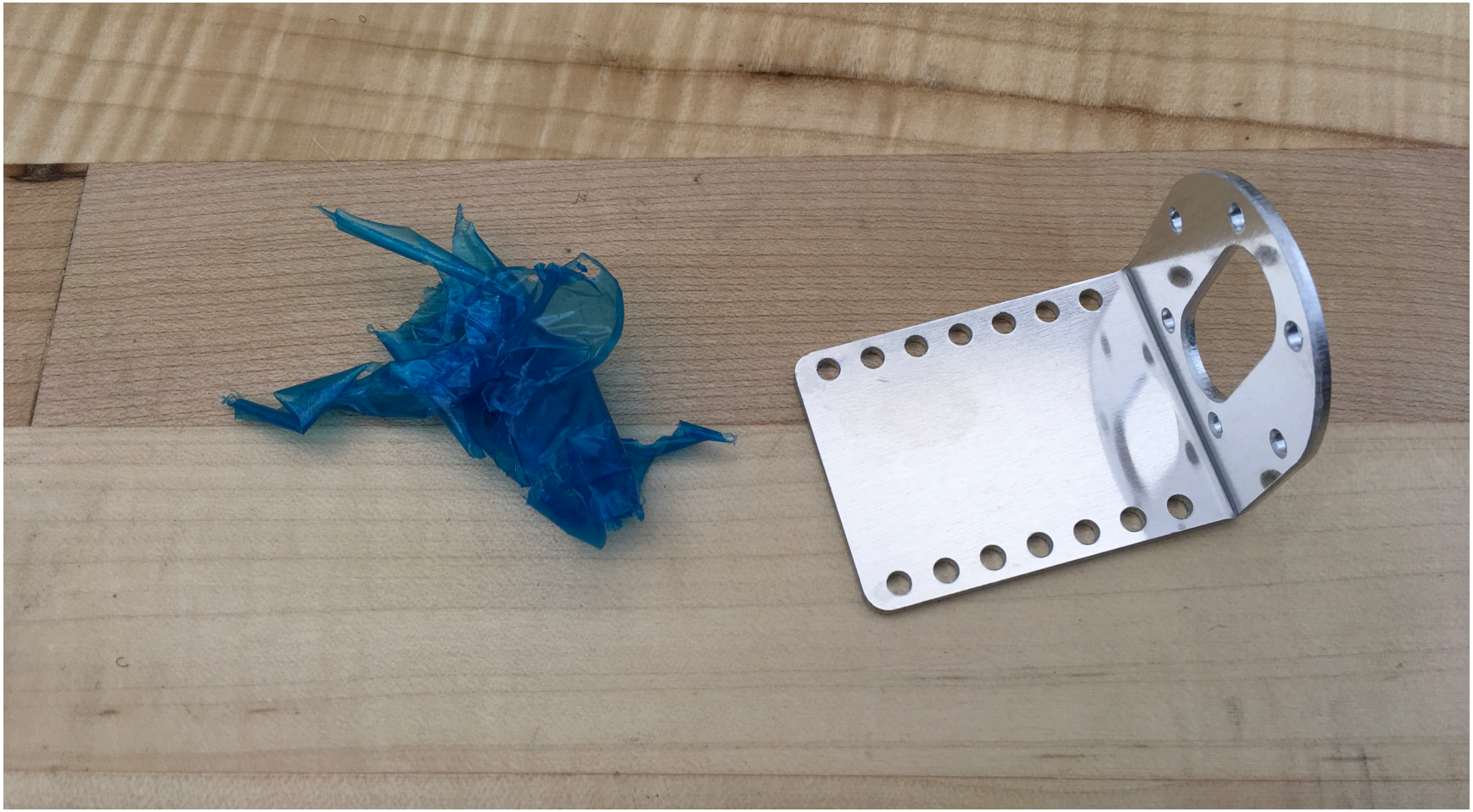
Assembly Guide

Check your parts

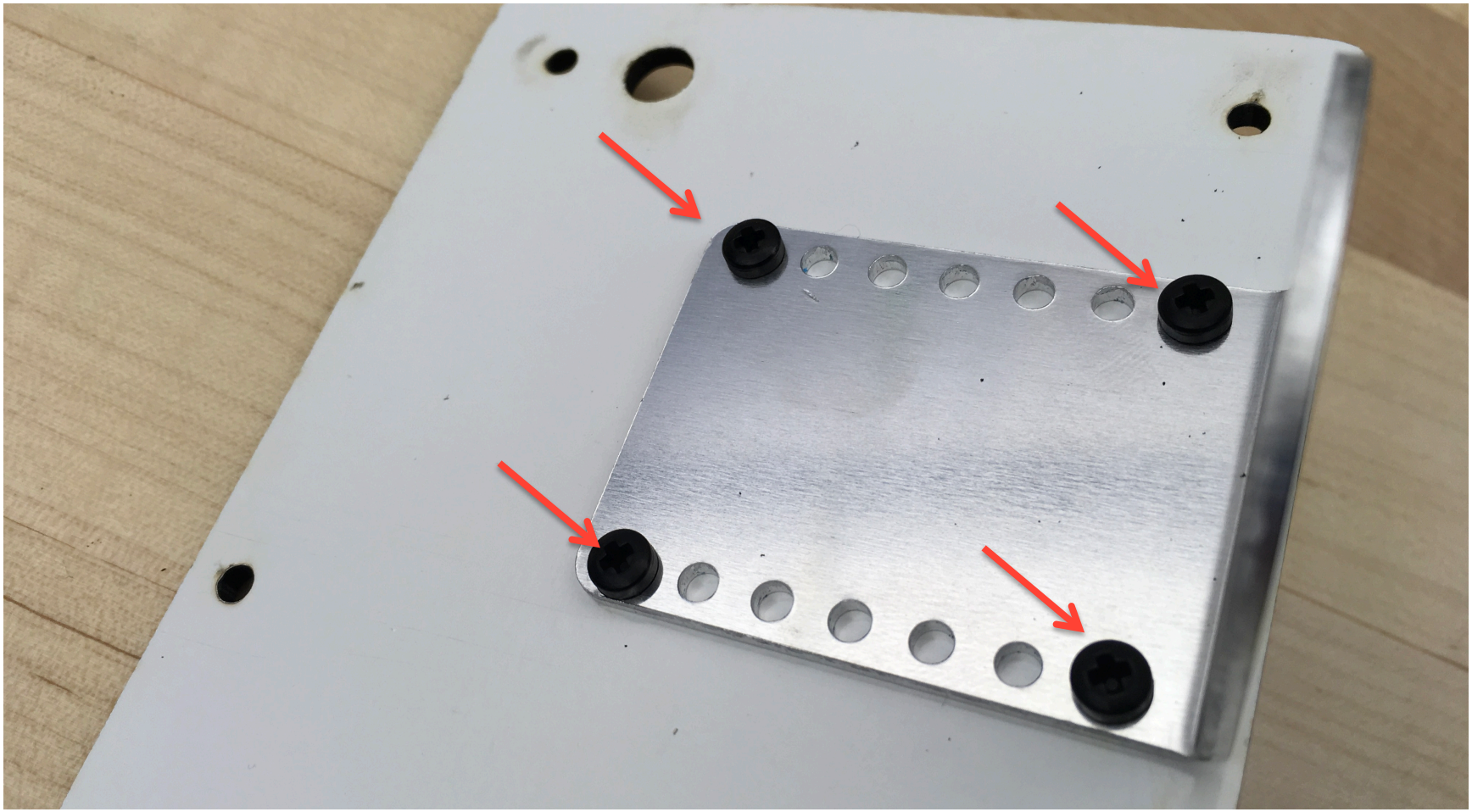
- 16 Nylon Screws
- 4 Nylon Nuts
- 4 Nylon Stand-offs
- 2 Metal Screws
- 1 Motor Mount
- 1 Plastic Wheel
- 1 Rubber Tire
- 1 DC Motor with encoder
- 1 Laser Cut Base
- 1 Motor Hub
- 1 Set Screw for motor hub
- 1 Allen Key (shared with another group)


AC Adapter Jack
4 Stand-offs
4 Nuts
16 Screws
Rubber Tire
Laser Cut Hardboard
DC Motor
AC Adapter
Plastic Wheel
Allen Key
Motor Hub Set Screw
Motor Hub
Motor Mount
2 Motor Mount Screws

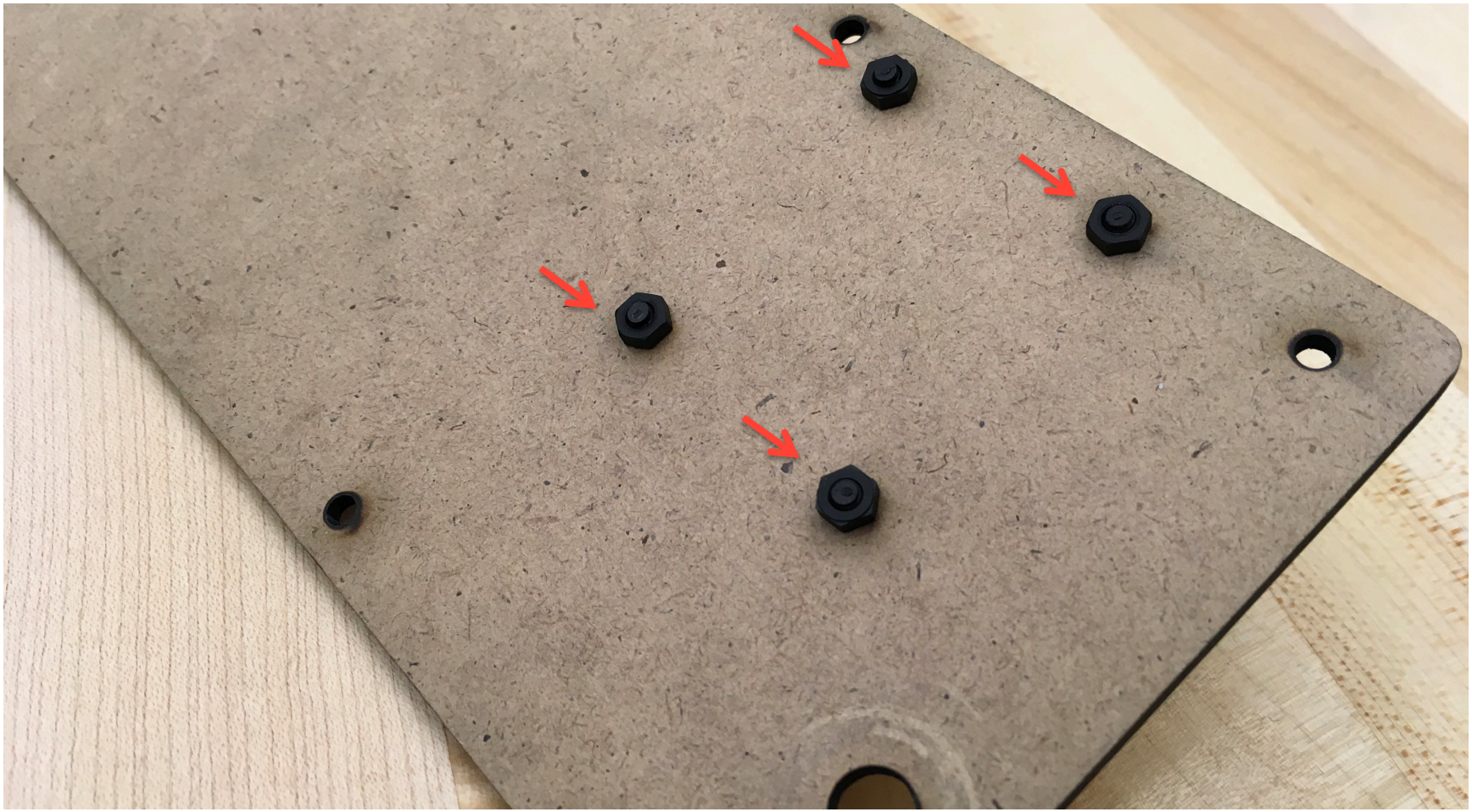
1) Remove motor mount cover



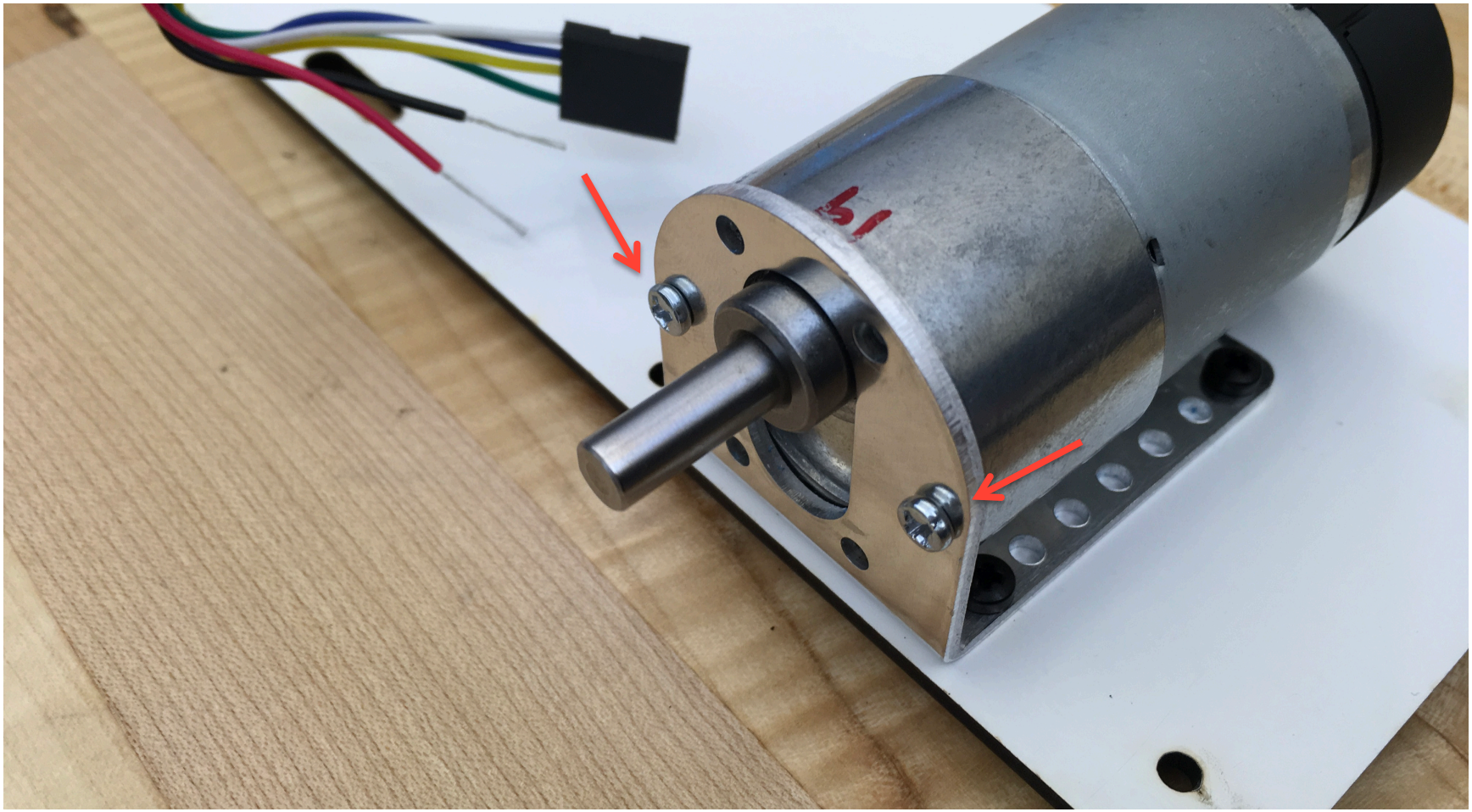
2) Insert 4 screws on top (white) side of board to connect motor mount



3) Install 4 nuts on bottom

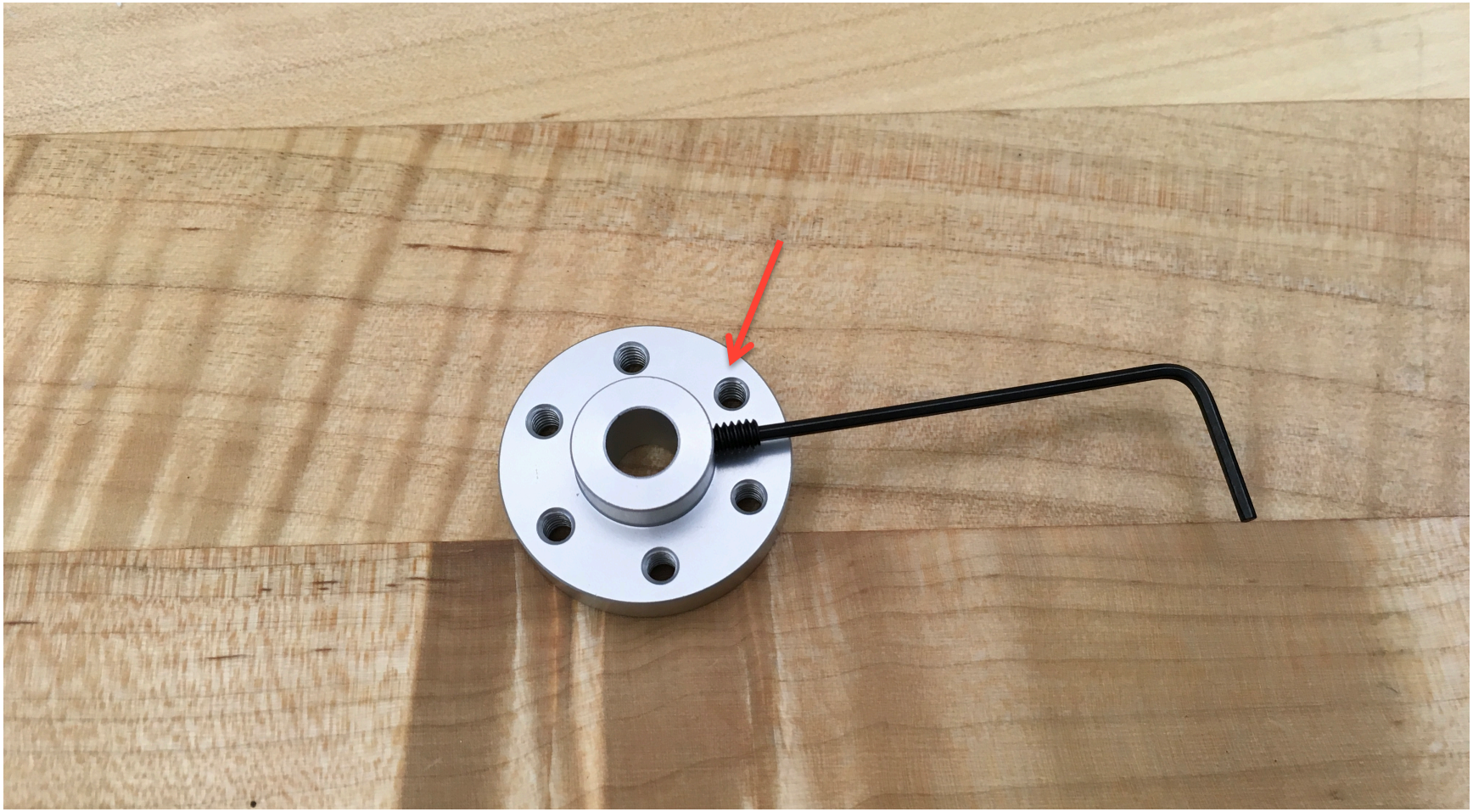


4) Screw motor to mount

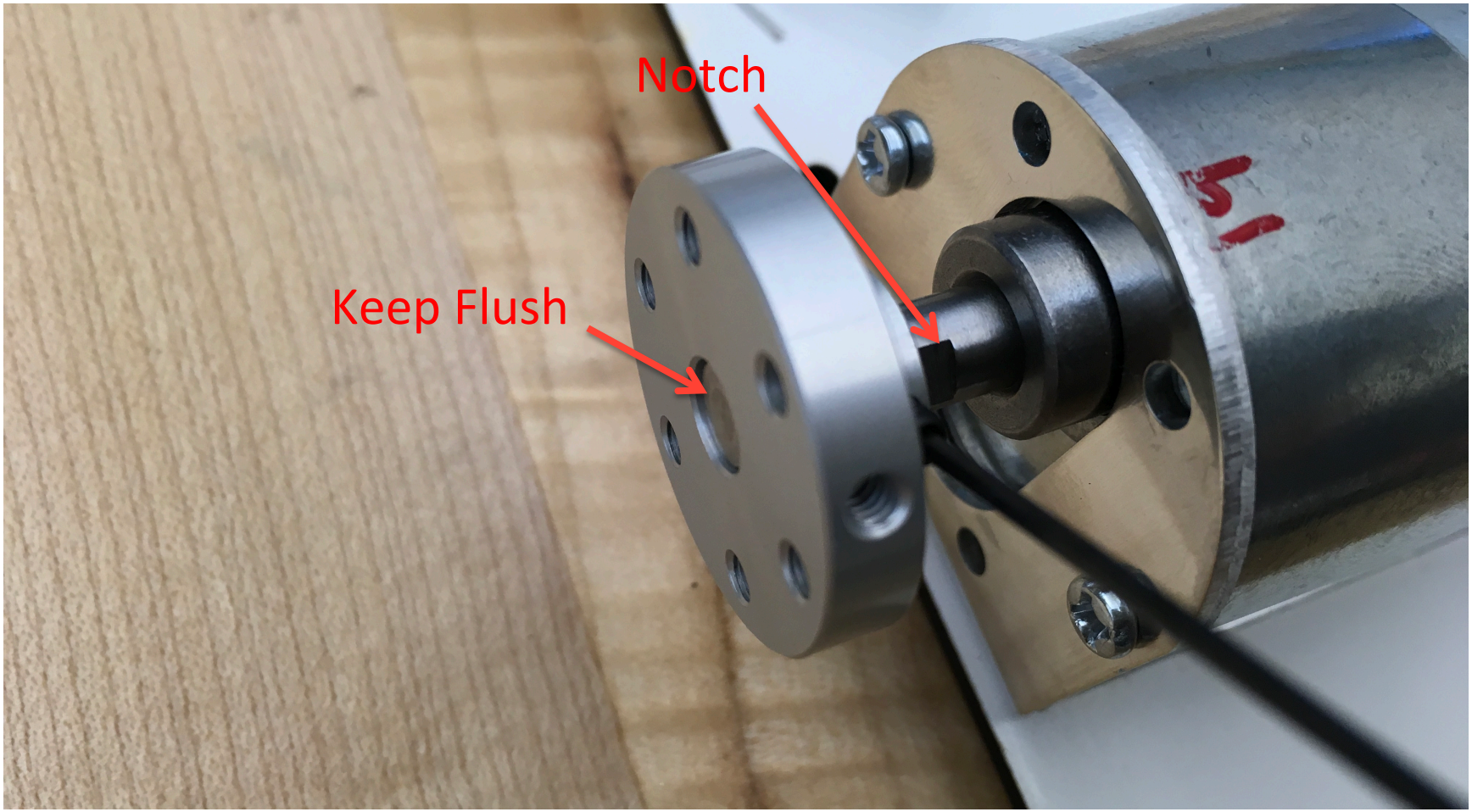


5) Slip tire onto wheel (stretch it)

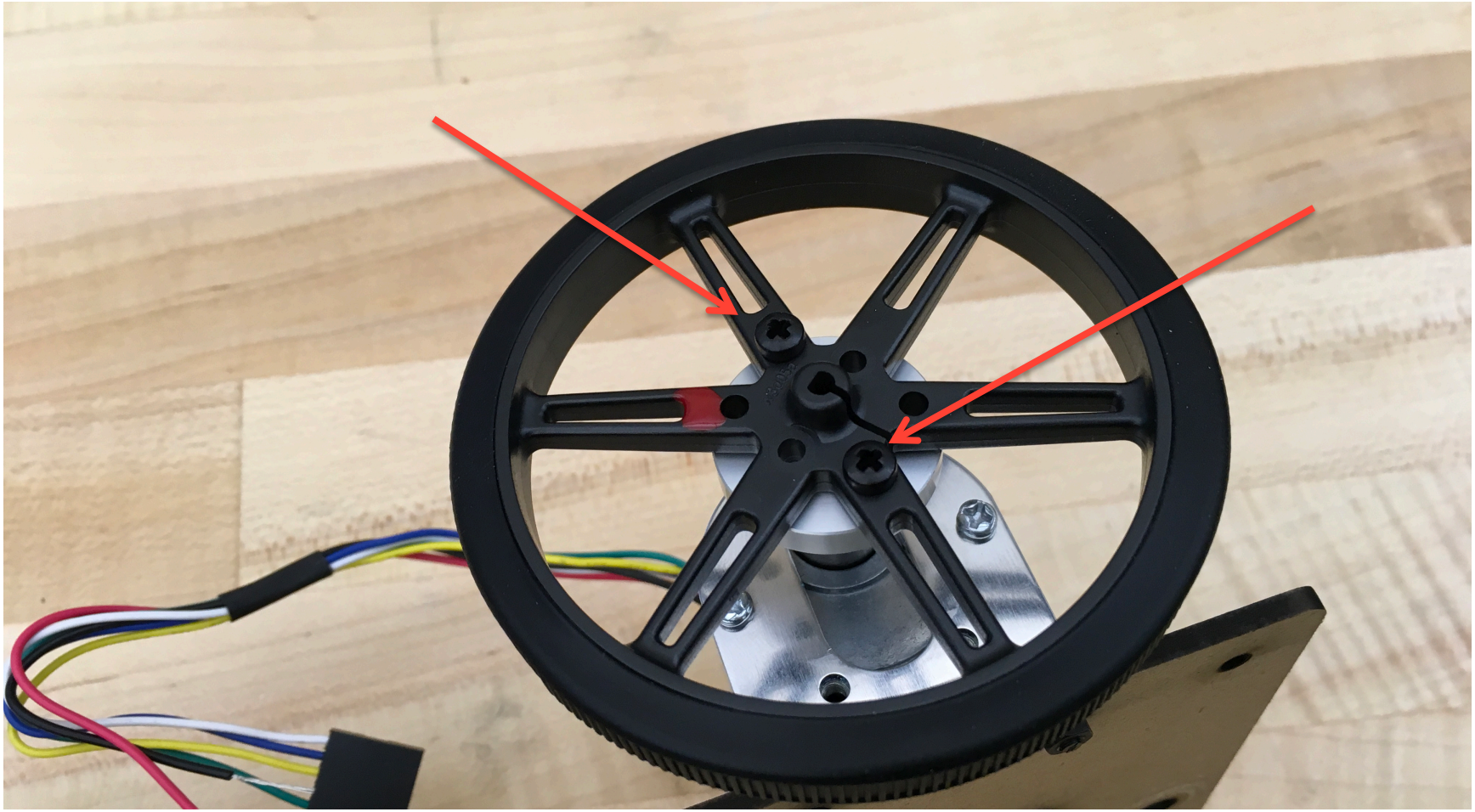
6) Seat set screw partially into motor hub (not all of the way)



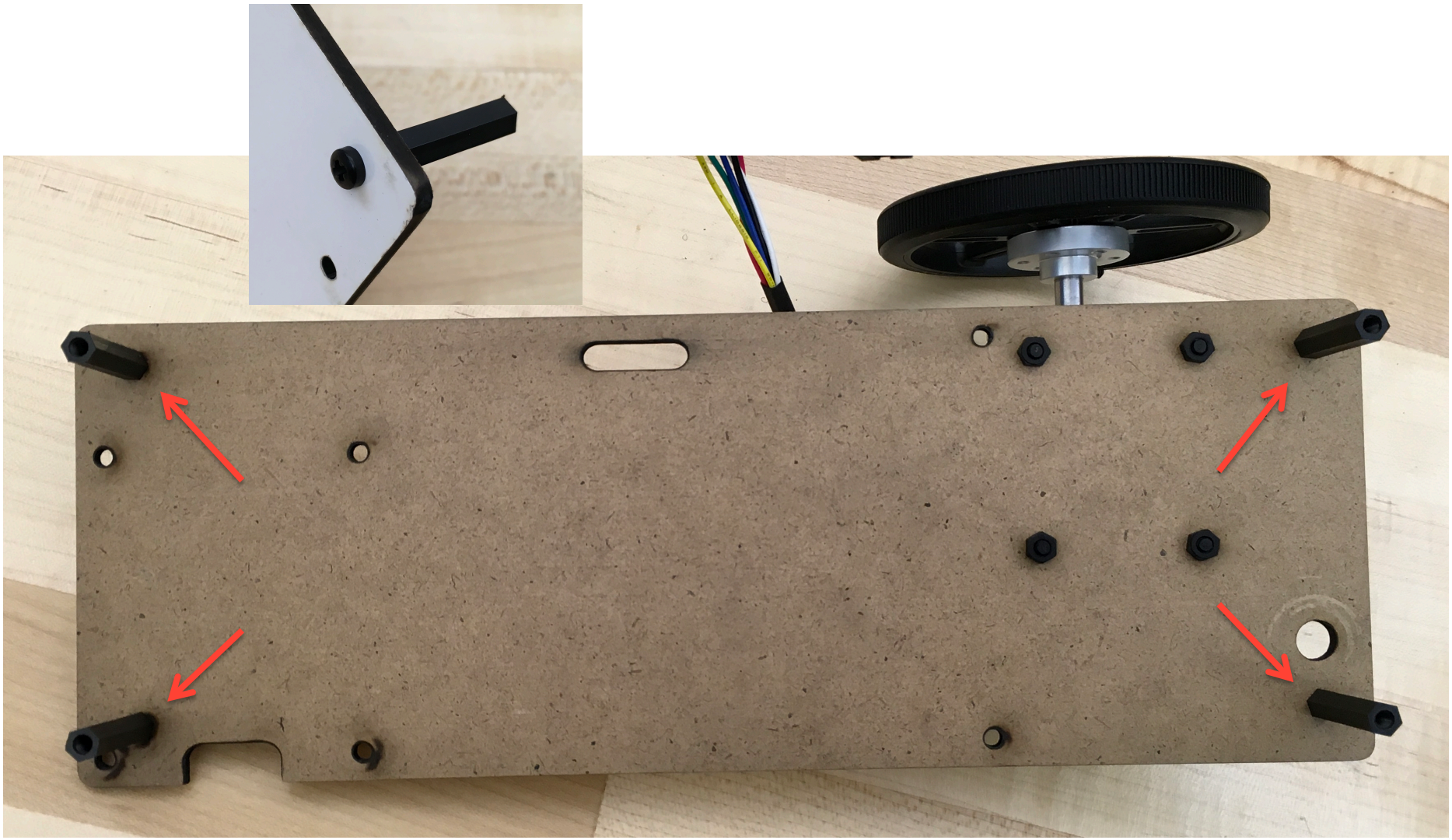
7) Lock wheel hub onto motor. Note the notch on the motor shaft…



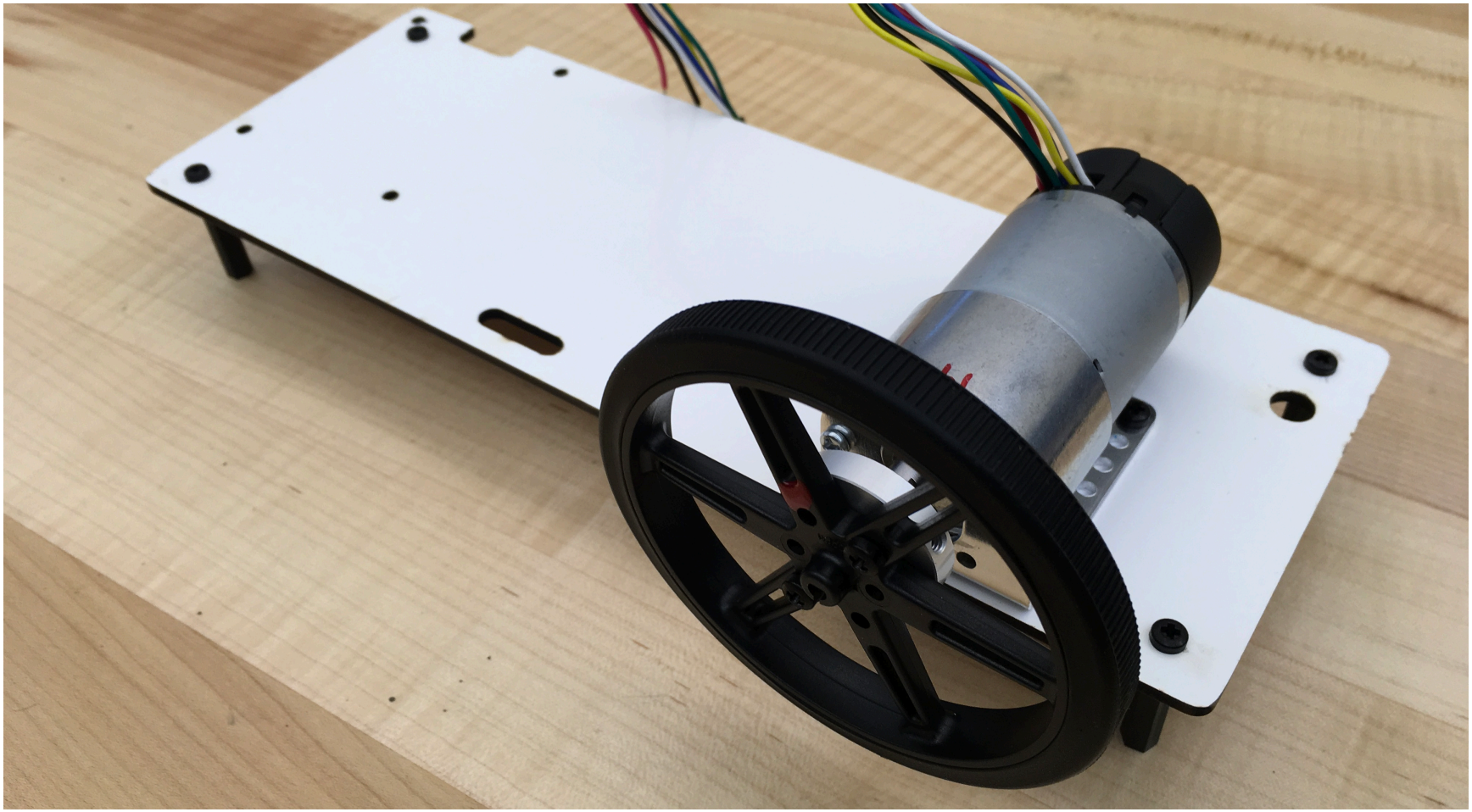
8) Attach wheel with 2 nylon screws



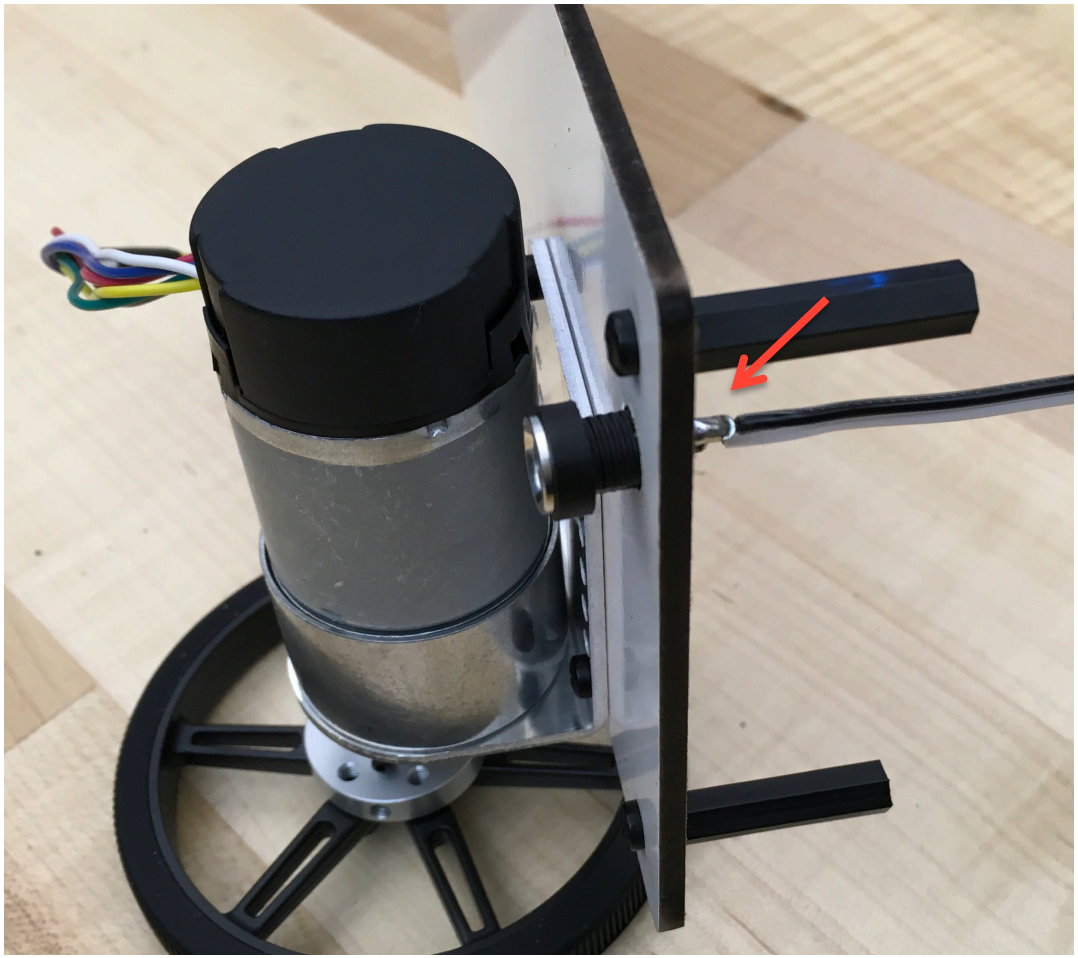
9) Attach 4 stand-offs with 4 screws



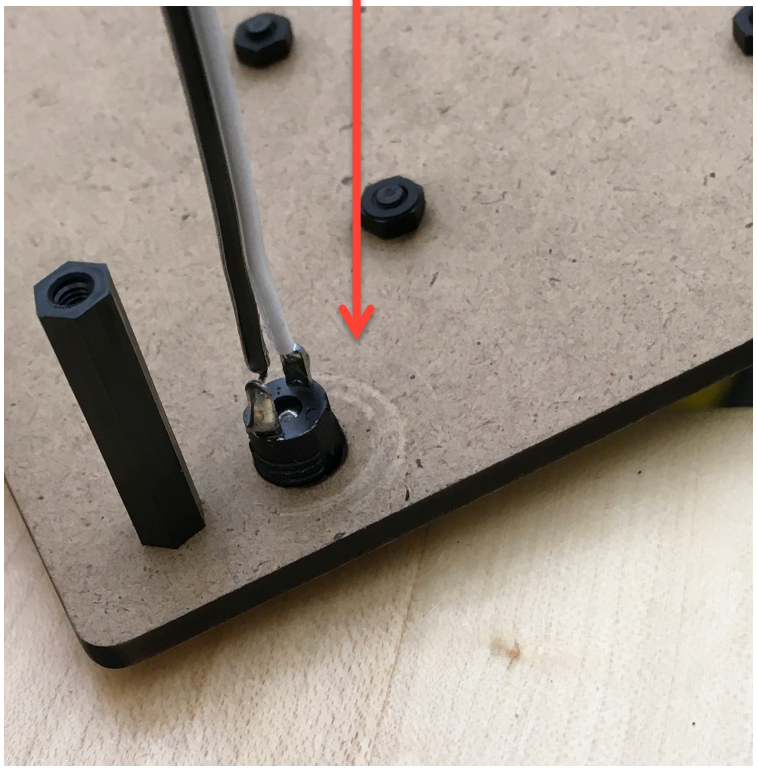
10) Sanity check everything…



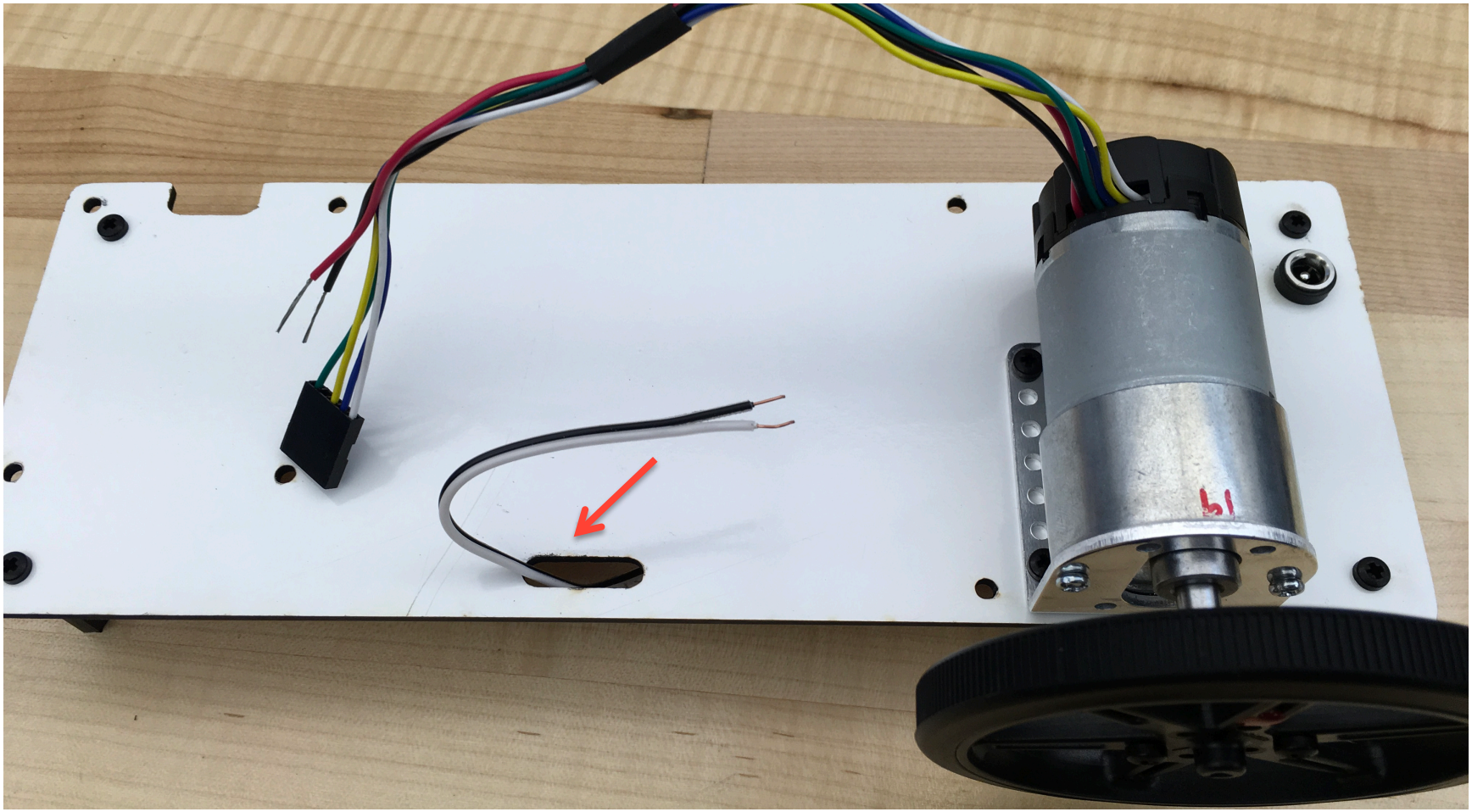
11) Mount AC adapter jack. Push down using a table to force it through. Note, the direction (wire comes out of brown side of board and jack plugs into white side)



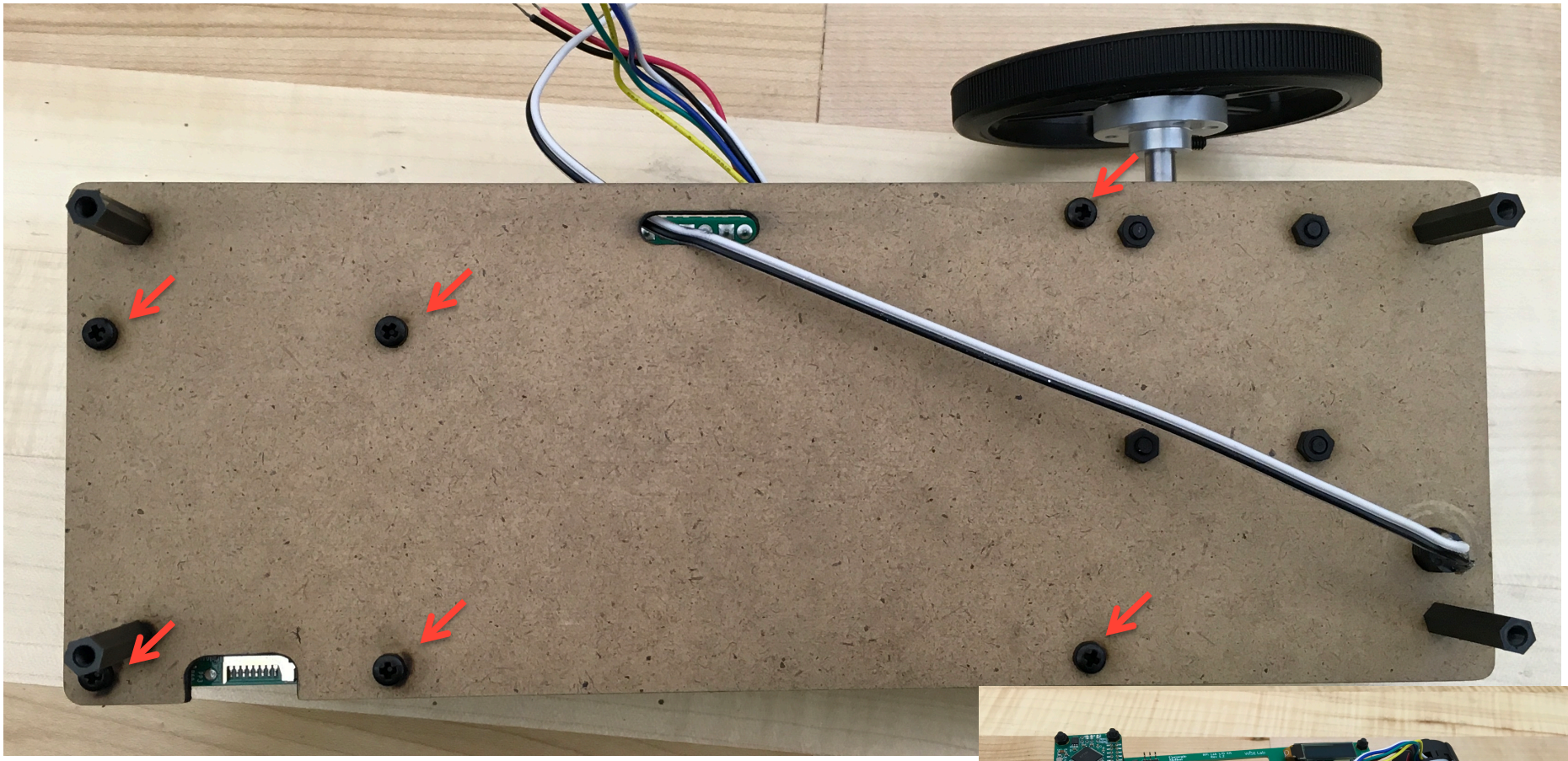
Apply Pressure on Board

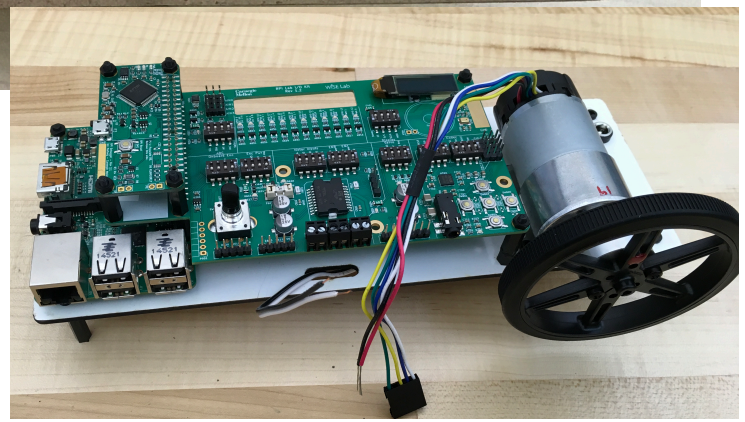


12) Pull the AC Adapter wire through

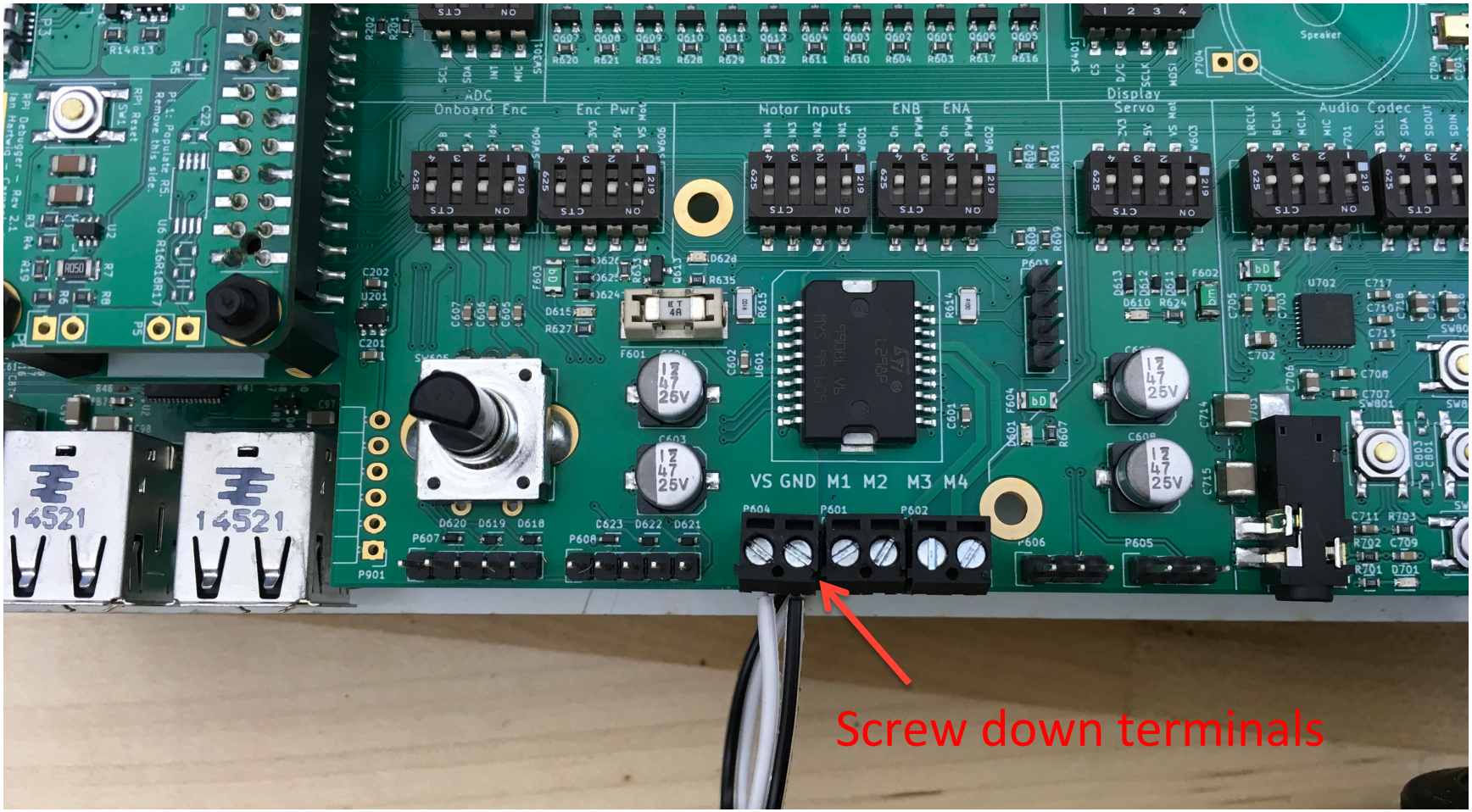


13) Screw RPi board on top with 6 black nylon screws.



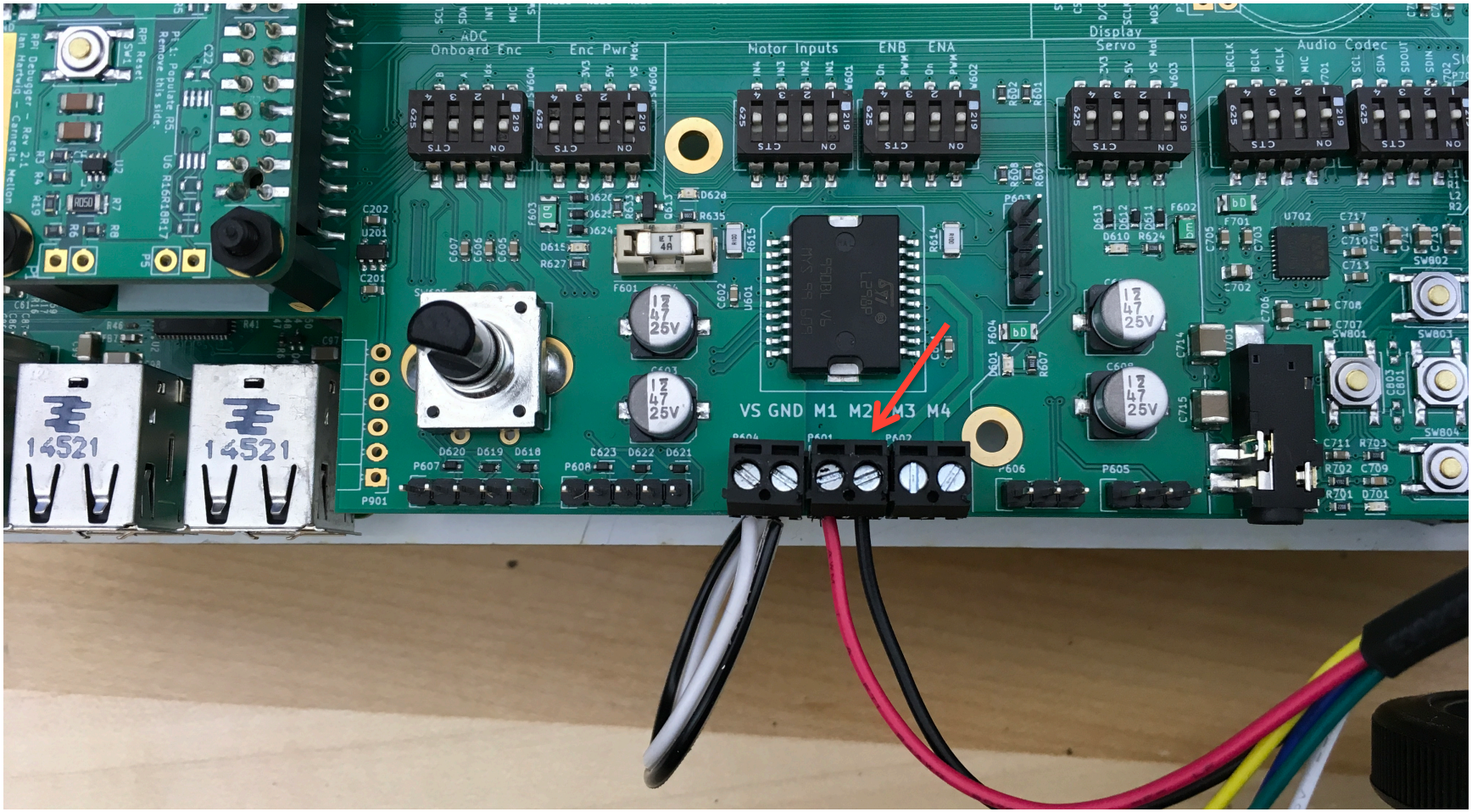


14) Connect motor. Orientation is critical! (Dark color like green or black goes to GND)



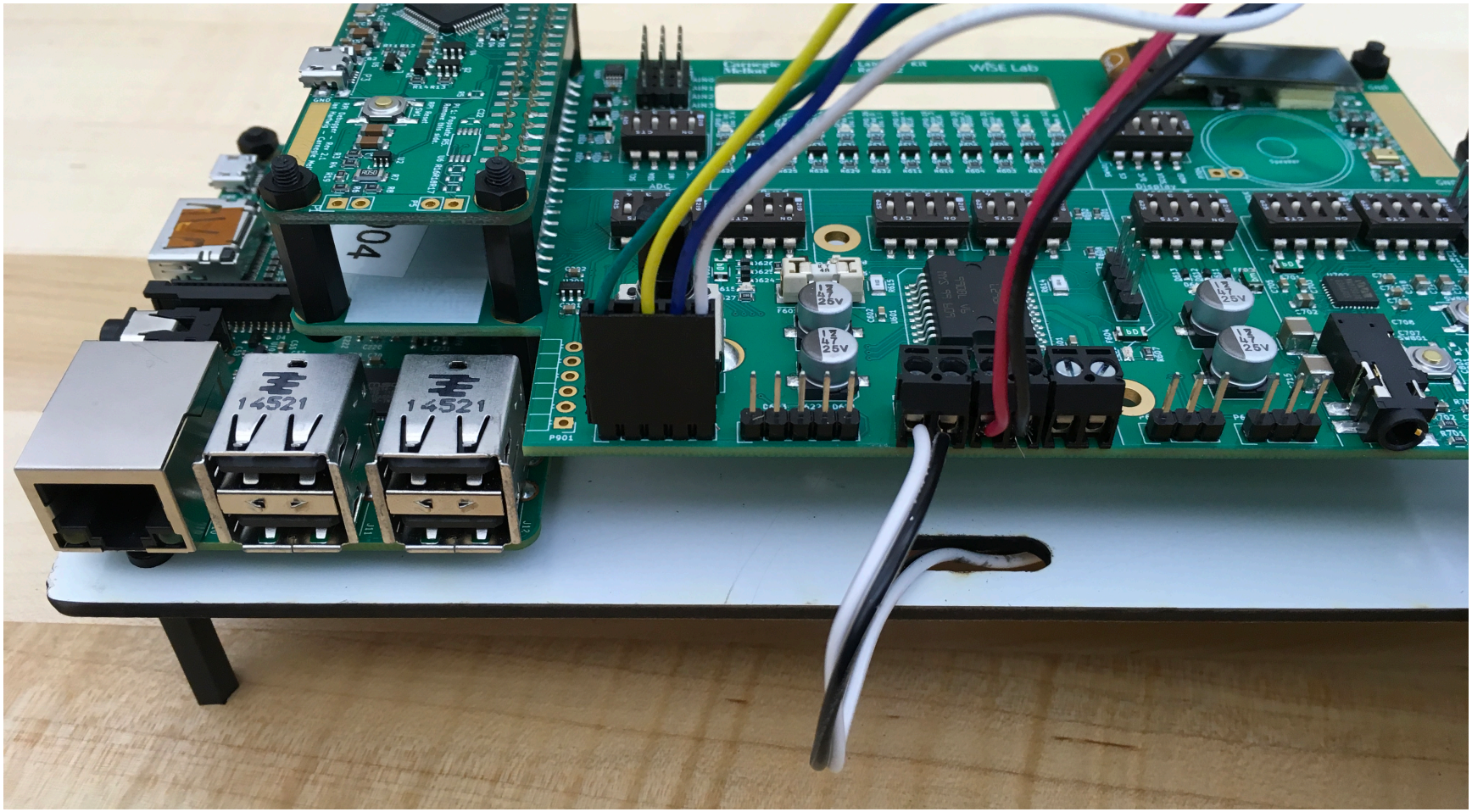
15) Fold back motor power wires if they are longer then a few centimeters….

16) Connect motor power wires. For consistency, we connect the red wire to M1.

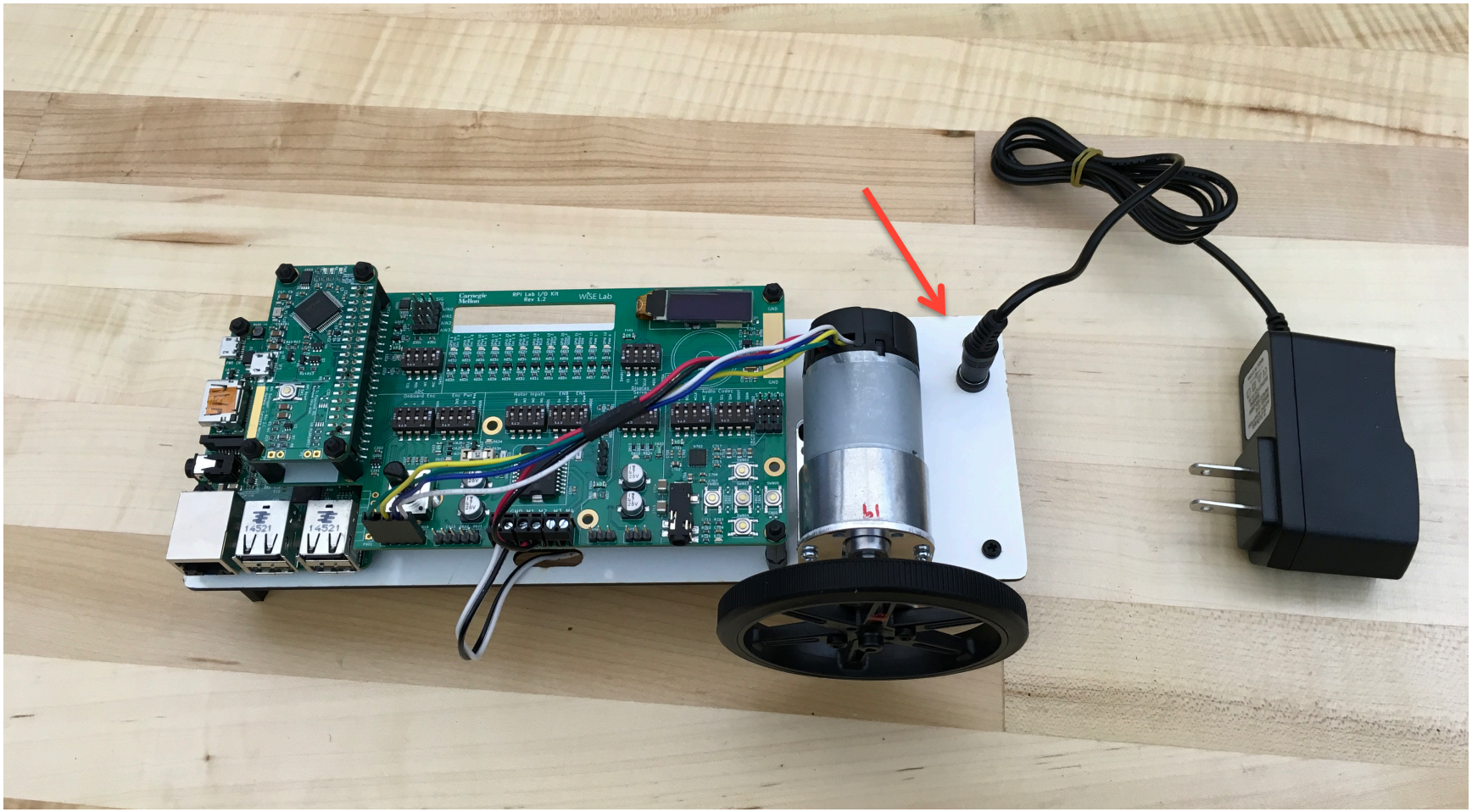


17) Plug in encoders (green wire towards Rpi).

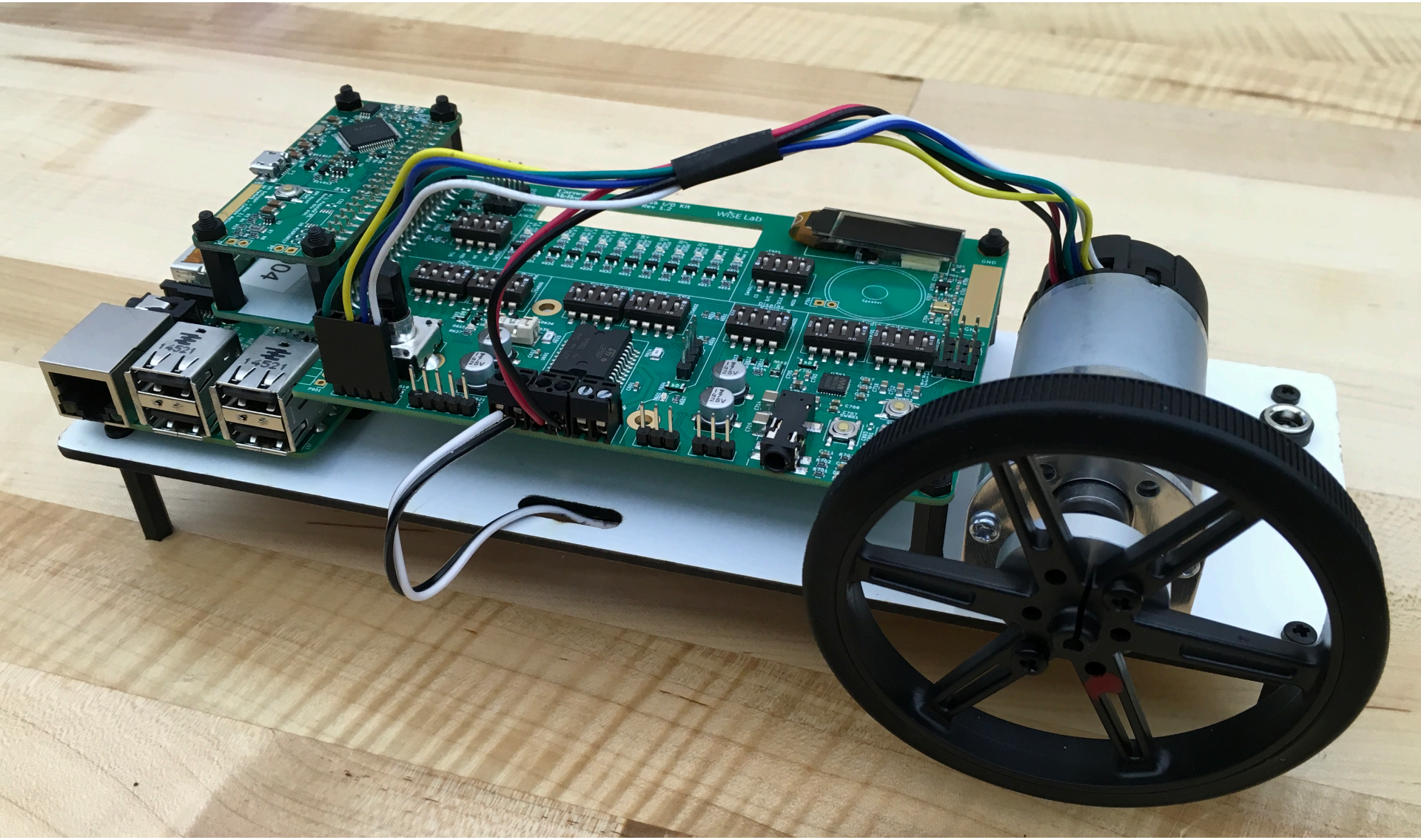
Double check wire colors!

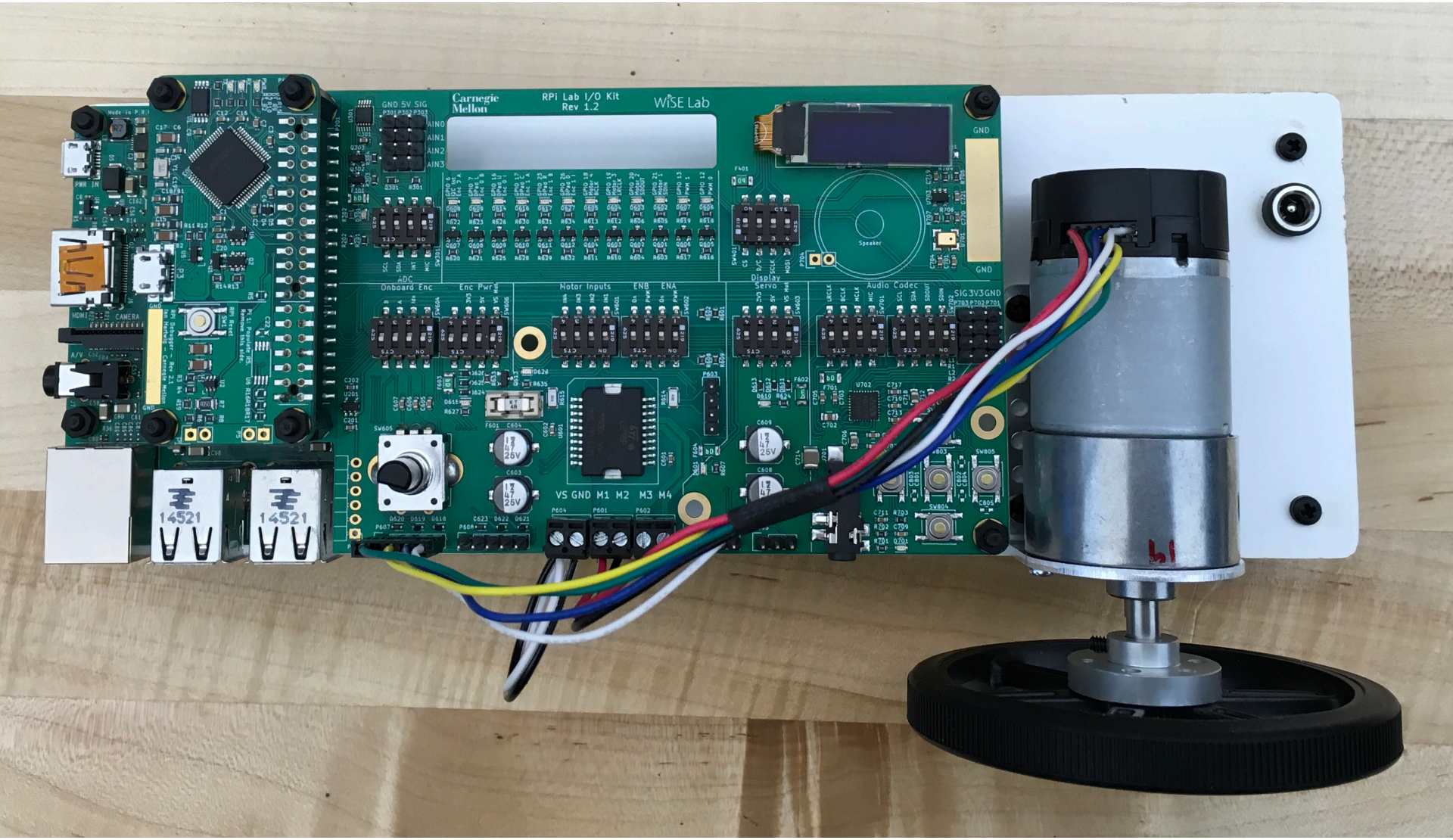


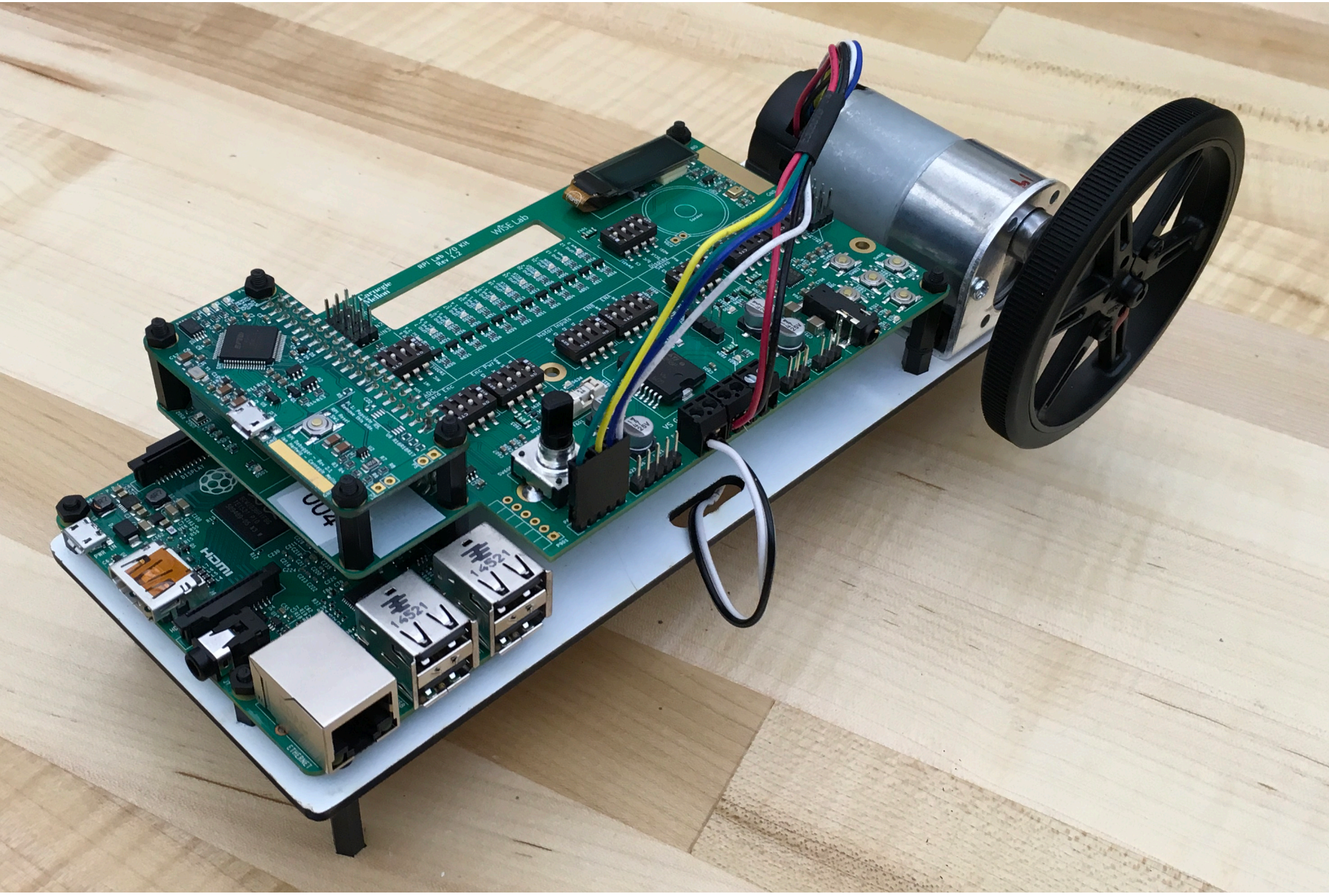
18) Plug in AC adapter



Done, double check the following photos!


WiSE Lab


Carnegie Mellon
RPi Lab I/O Kit
Rev 1.2
WiSE Lab
GND 5V SIG
AIN0
AIN1
AIN2
AIN3
ADC
Onboard Enc
Enc Pwr
Motor Inputs
ENB
ENA
Servo
Audio Codec
SIG3V3GND
Display
Speaker
VS GND M1 M2 M3 M4
14521
14521


WiCE Lab
RPi Lab I/O Kit
Rev 1.2
HDMI
ETHERNET