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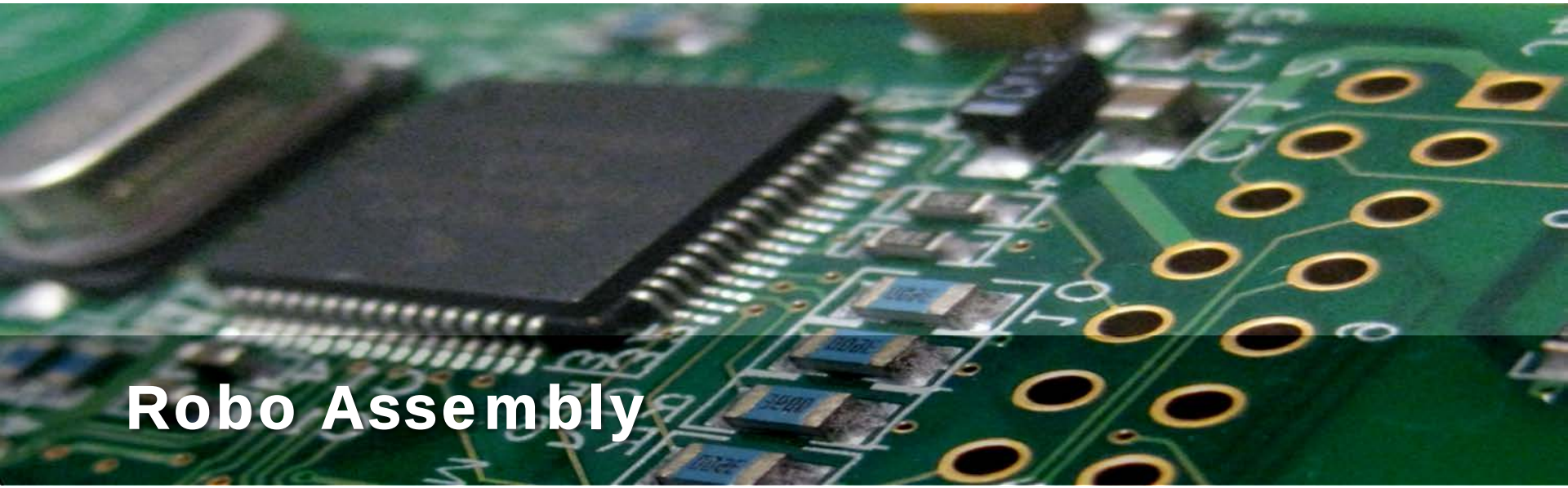

Robo Assembly

“Hopefully that works…”

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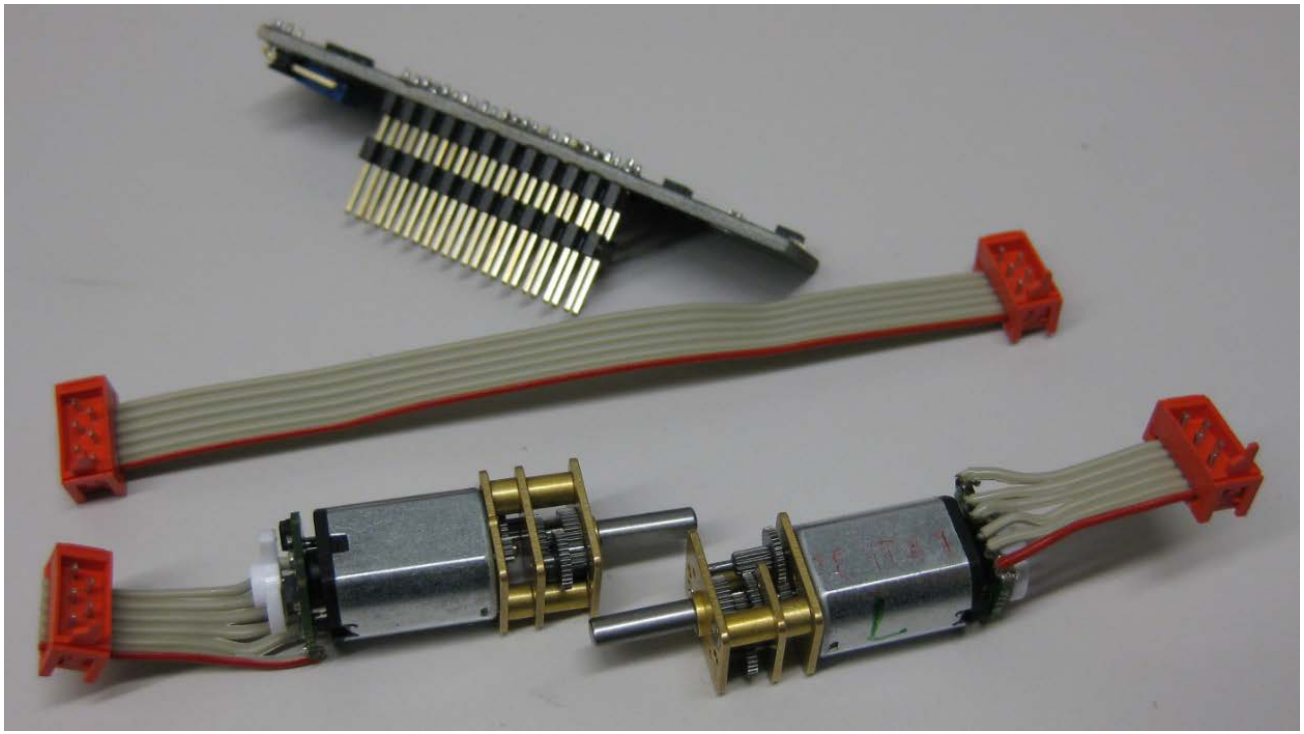
Material

- 1x #2591 (Optical Encoder Pair Kit 3.3V)
- 2x #2215 75:1 Micro Metal Gearmotor HP (ext. Shaft)
  - Check motor gears!
- 1x Micromatch connection cable
- 1x PCB with 2 2x6 SMD Headers
- 1x #1035 Stackable Headers

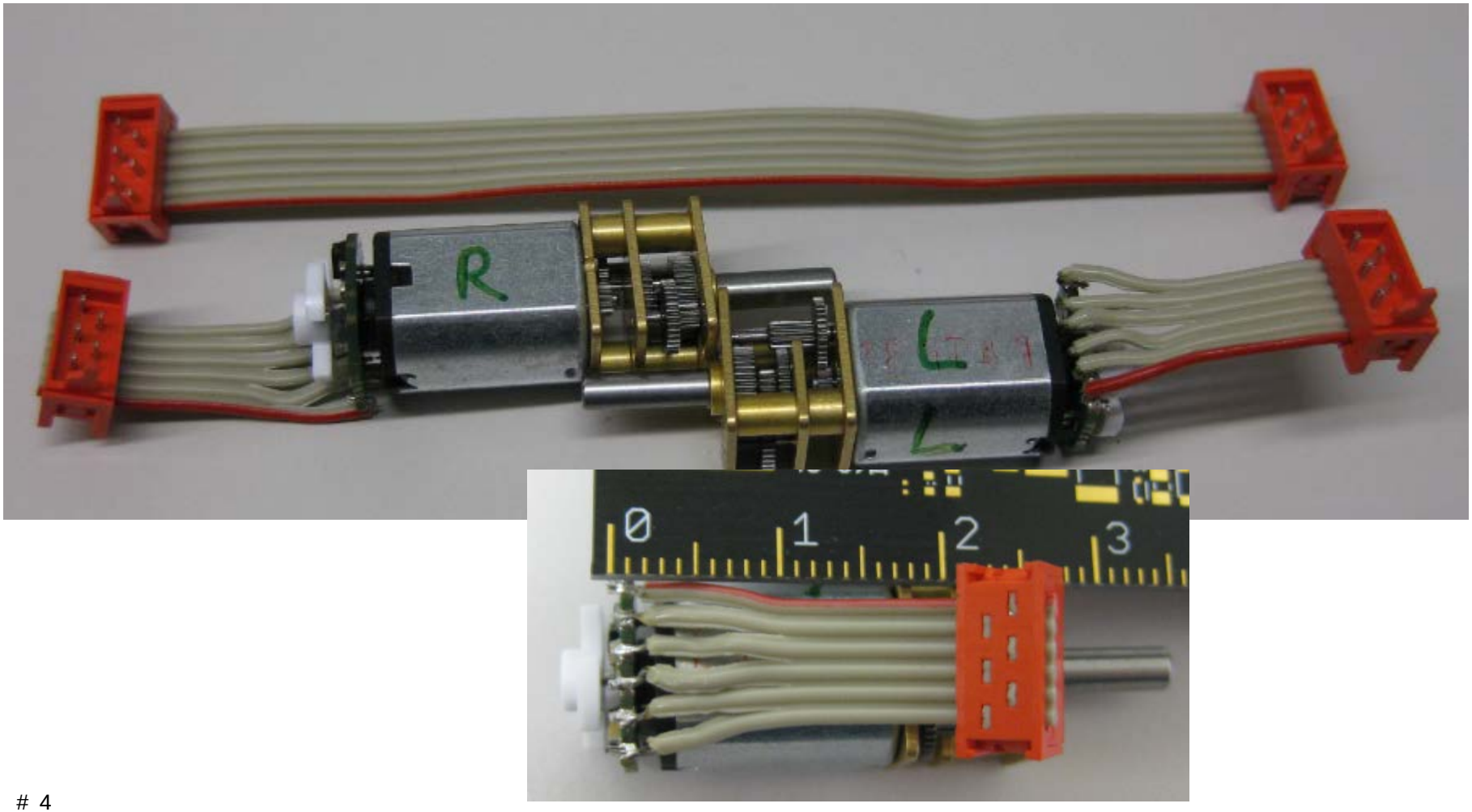
Assembling the Robot

- Optical Encoders on Motors and with Cables
- Line Sensor/Reflectance Array

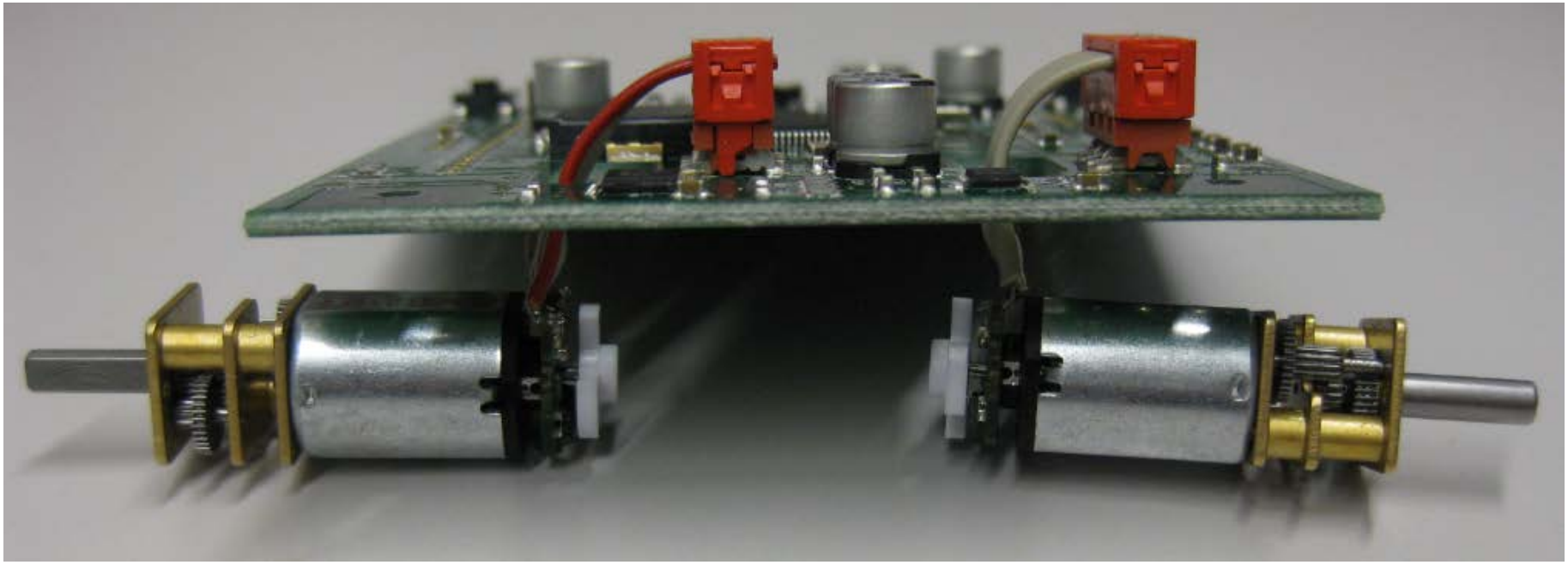


Motor Connector Cable

- 2 cm wire (end to connector start)

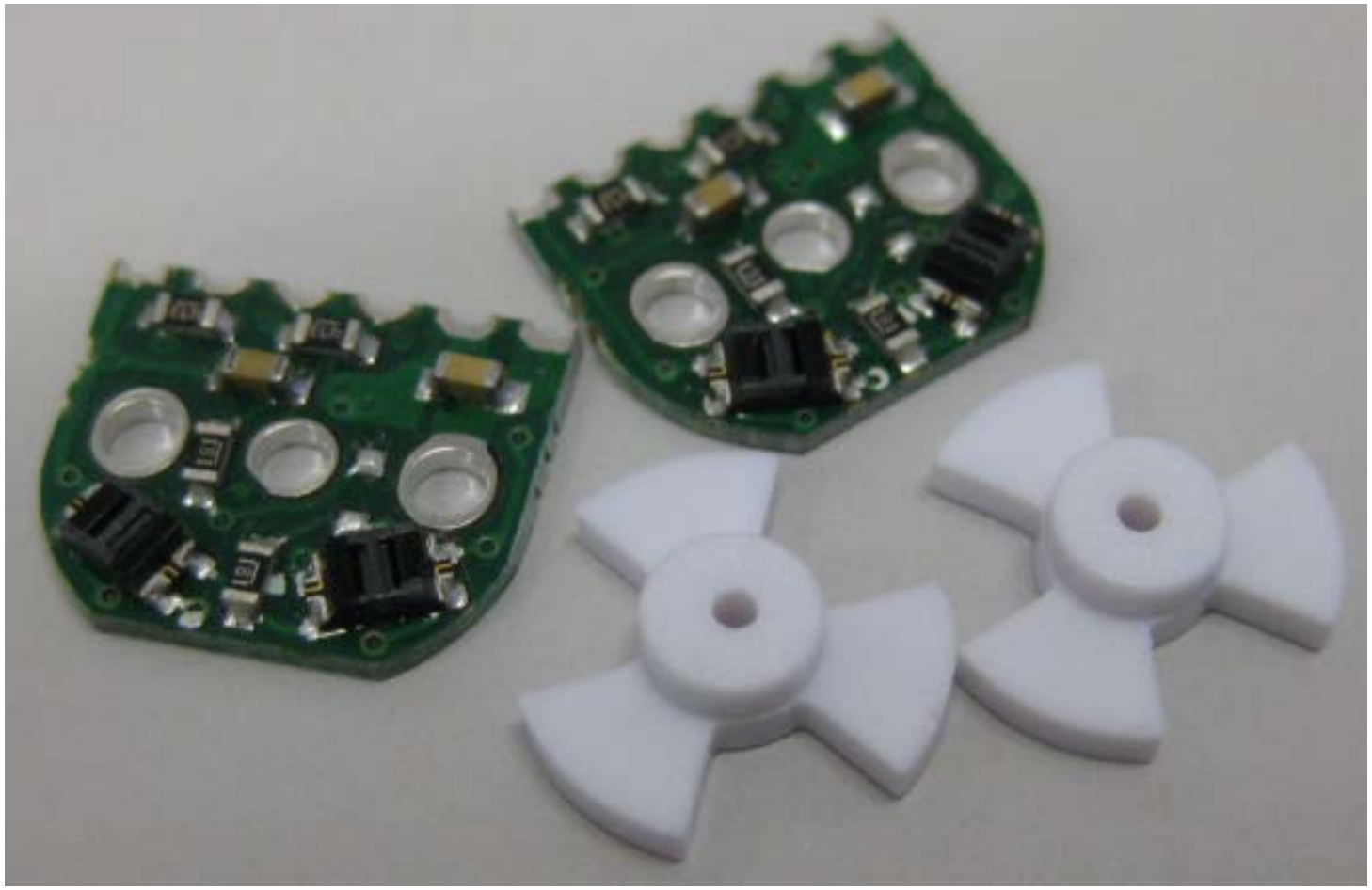


Motors with Cables connected to Board

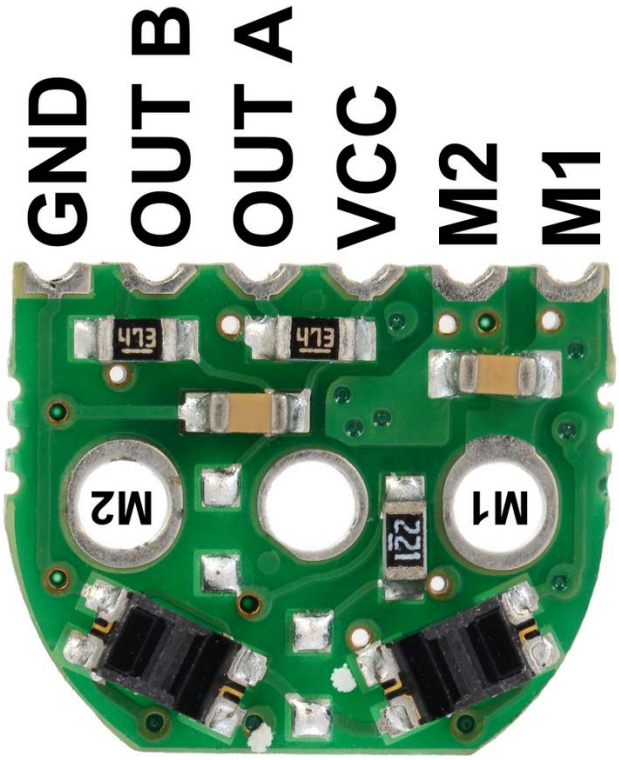


Optical Wheel Encoder

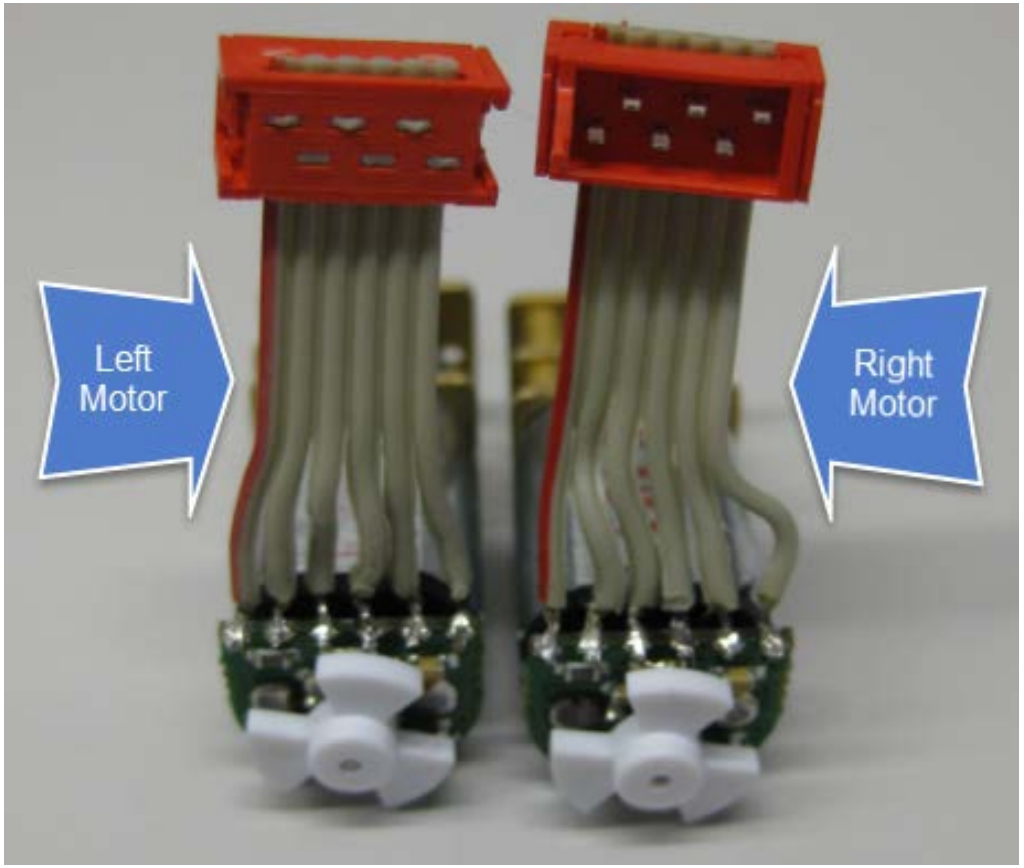
- Use 3-Wheel Encoder Wheel



Pololu Optical Encoder

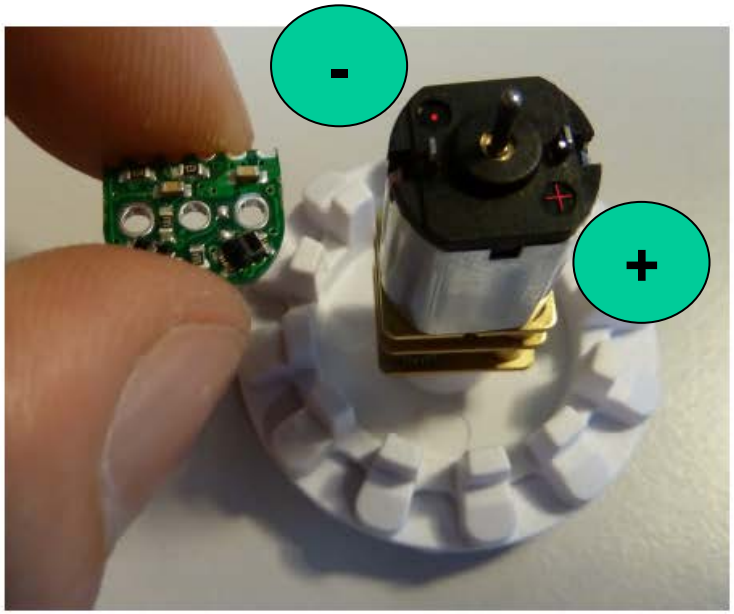


http://www.pololu.com/product/2590

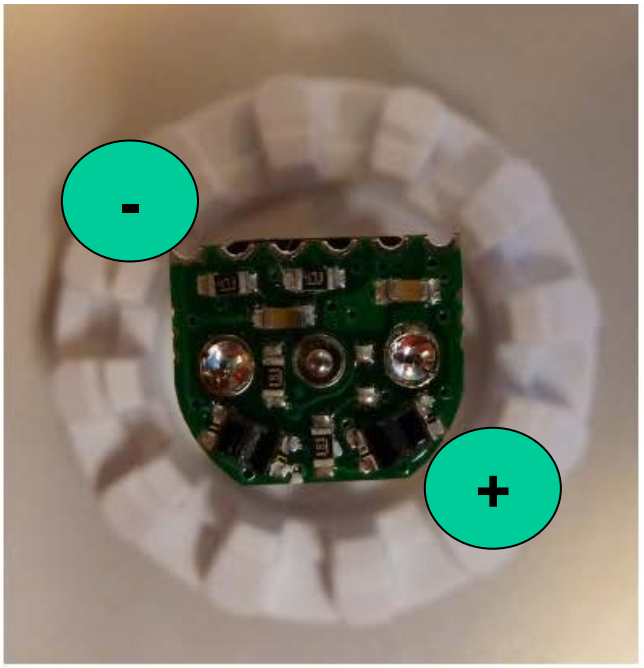


Encoder on Motor

- Take care of (+) and (-) signs on Motor!



(a) Put together of motor and encoder PCB



(b) The encoder PCB soldered

Shaft on Wheel

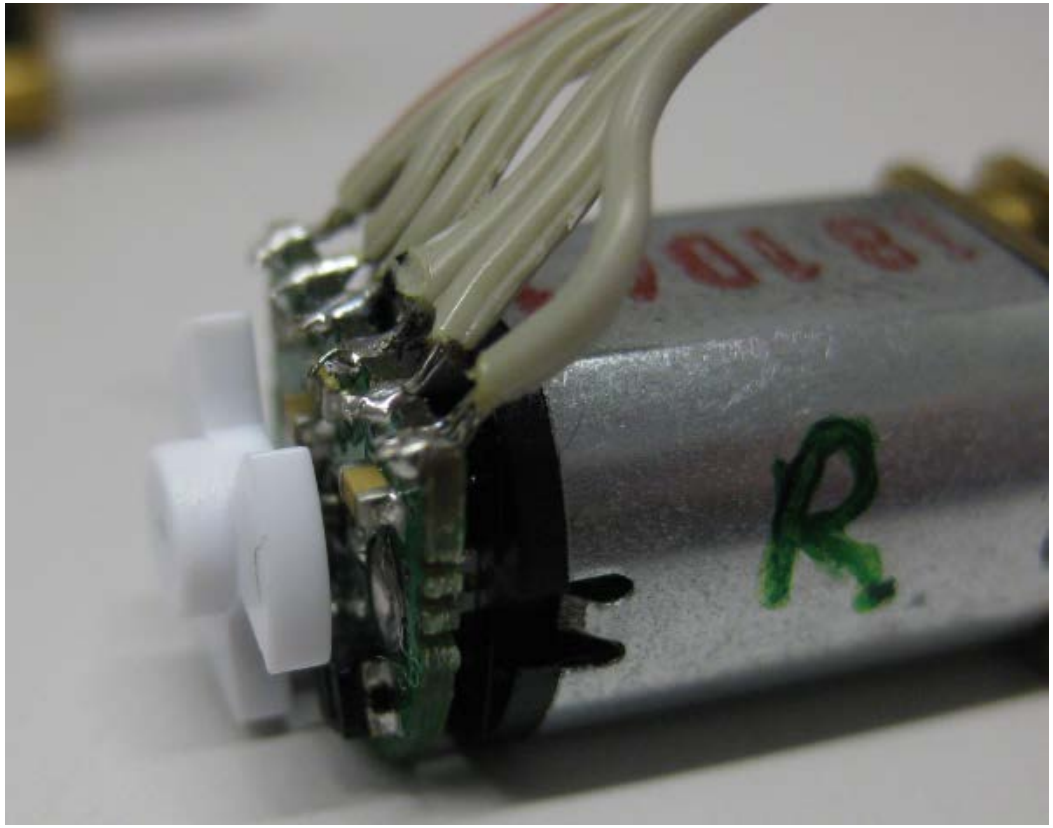
- WAIT with this step! Careful, not too much force!

(a) Exert only vertical pressure

(b) The shaft should reach the outer side of the wheel

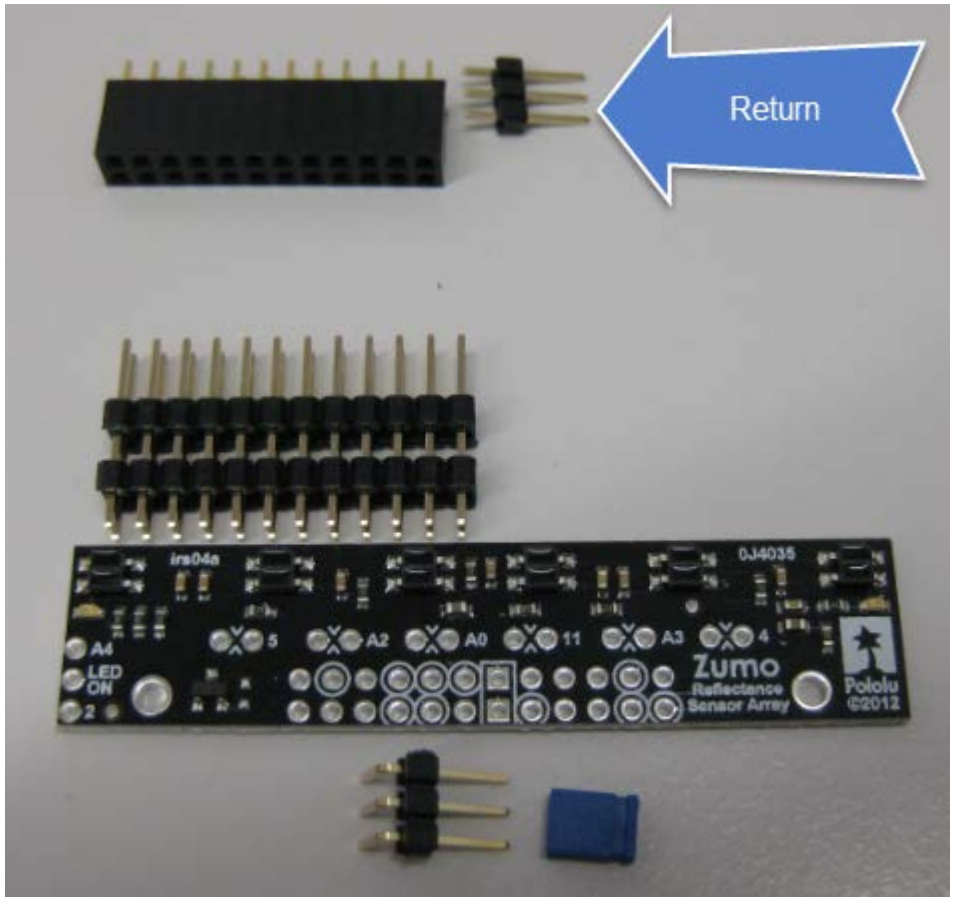
Mounting Details

- Evenly aligned
- To not interfere with encoder wheel



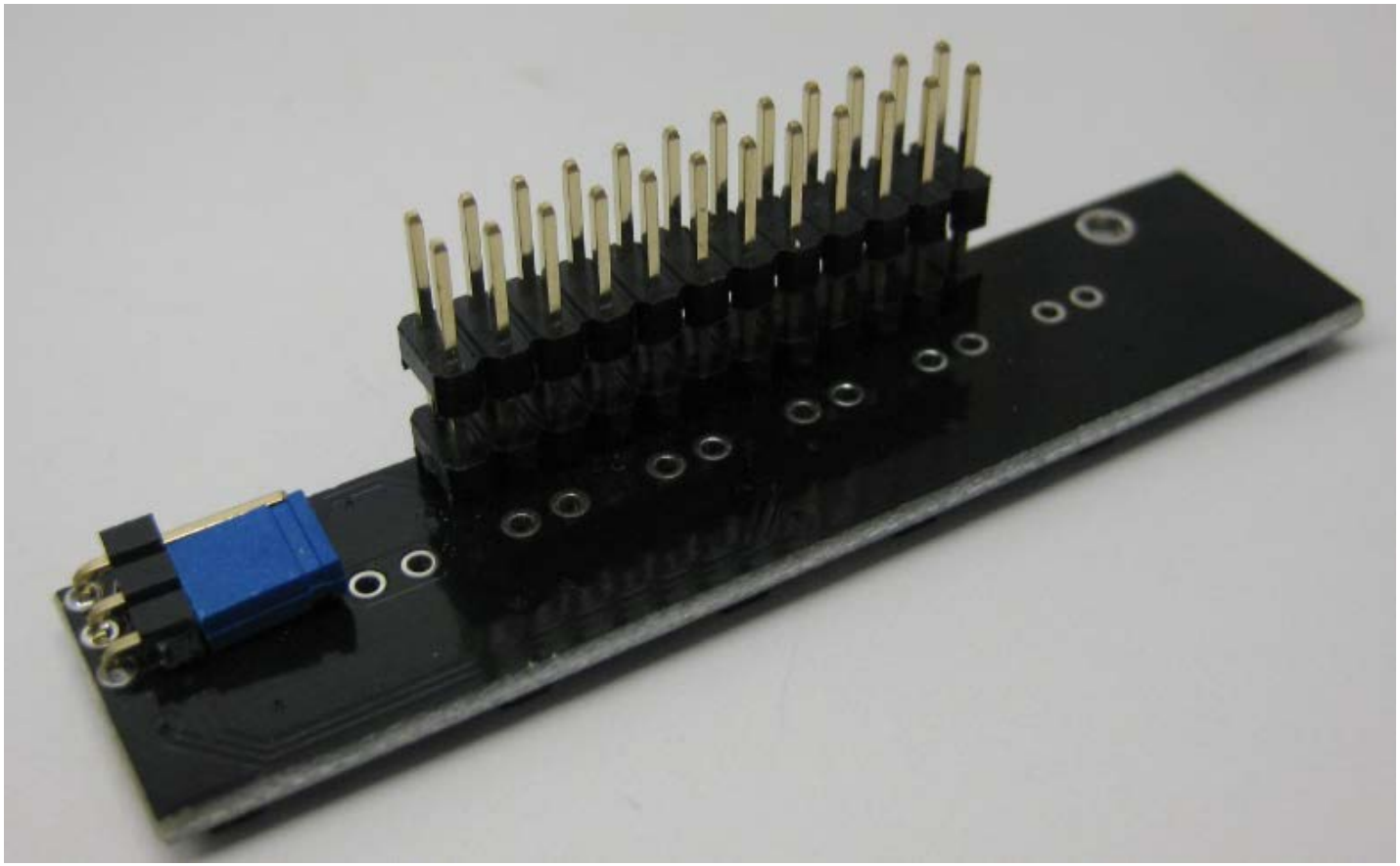
Reflectance Sensor Array

- Return straight 3-pin and female connector



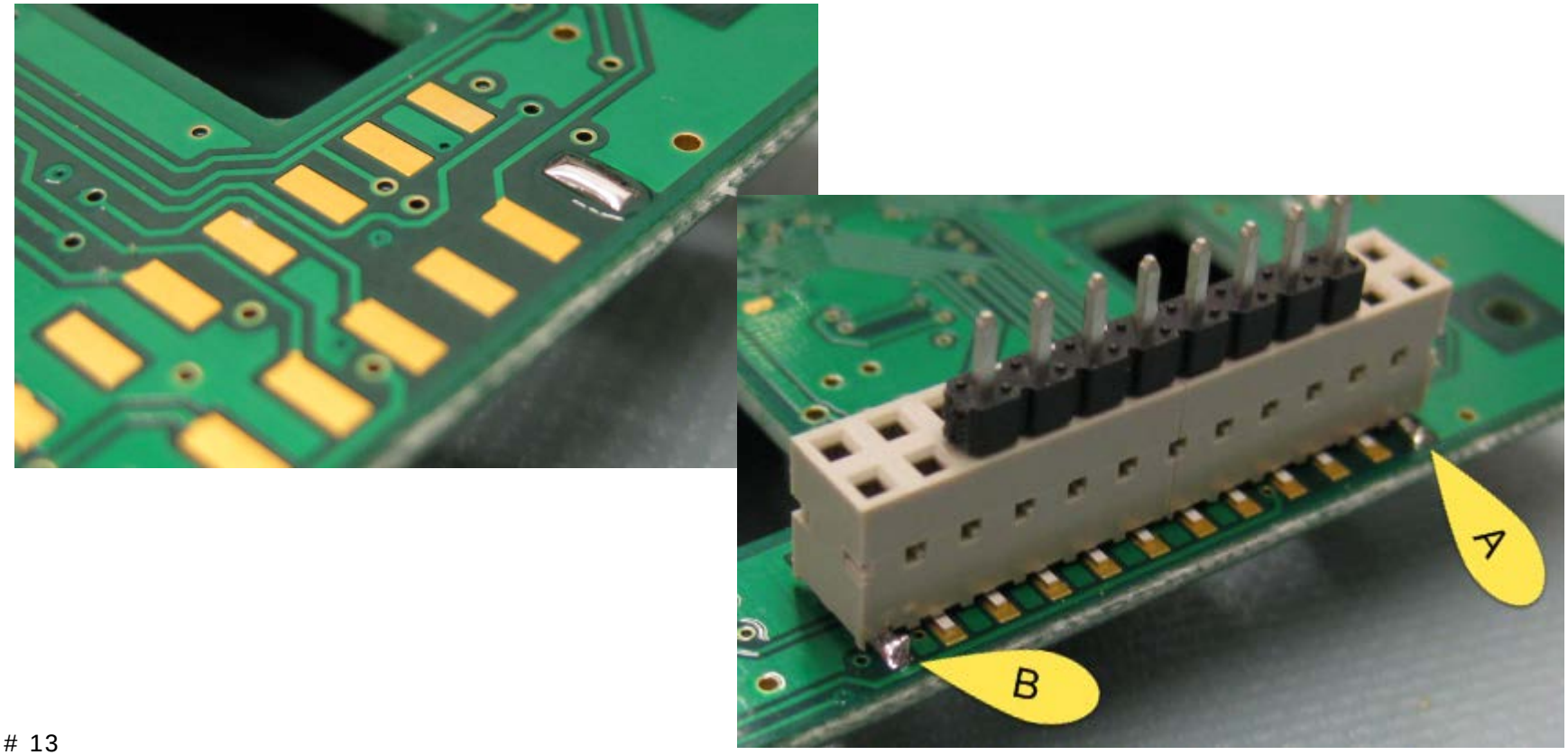
Reflectance Sensor Assembled

- Solder angle header and place jumper
- Solder male connector (long side up)



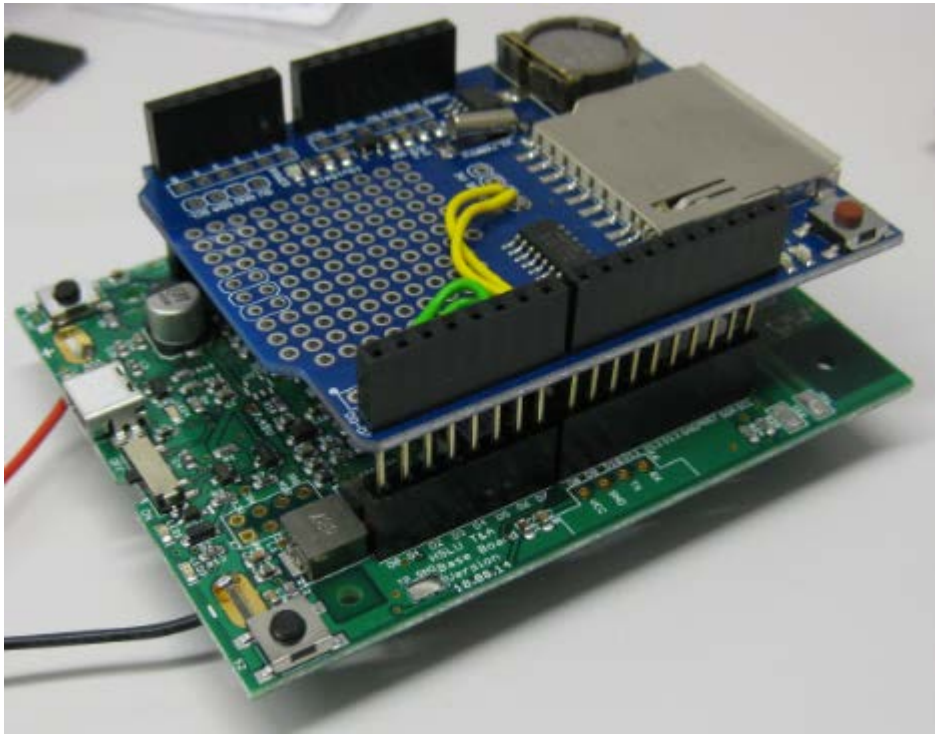
Reflectance Board Connector

- Align two headers with pin row
- Apply solder on one pad, then solder header
- Solder other pad and align, then solder remaining pads



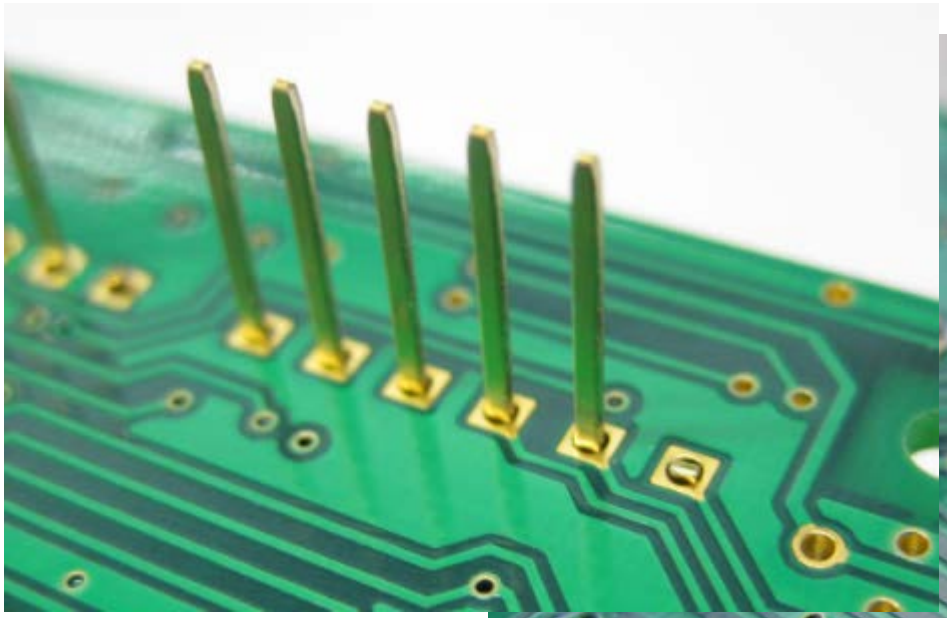
Stackable Headers

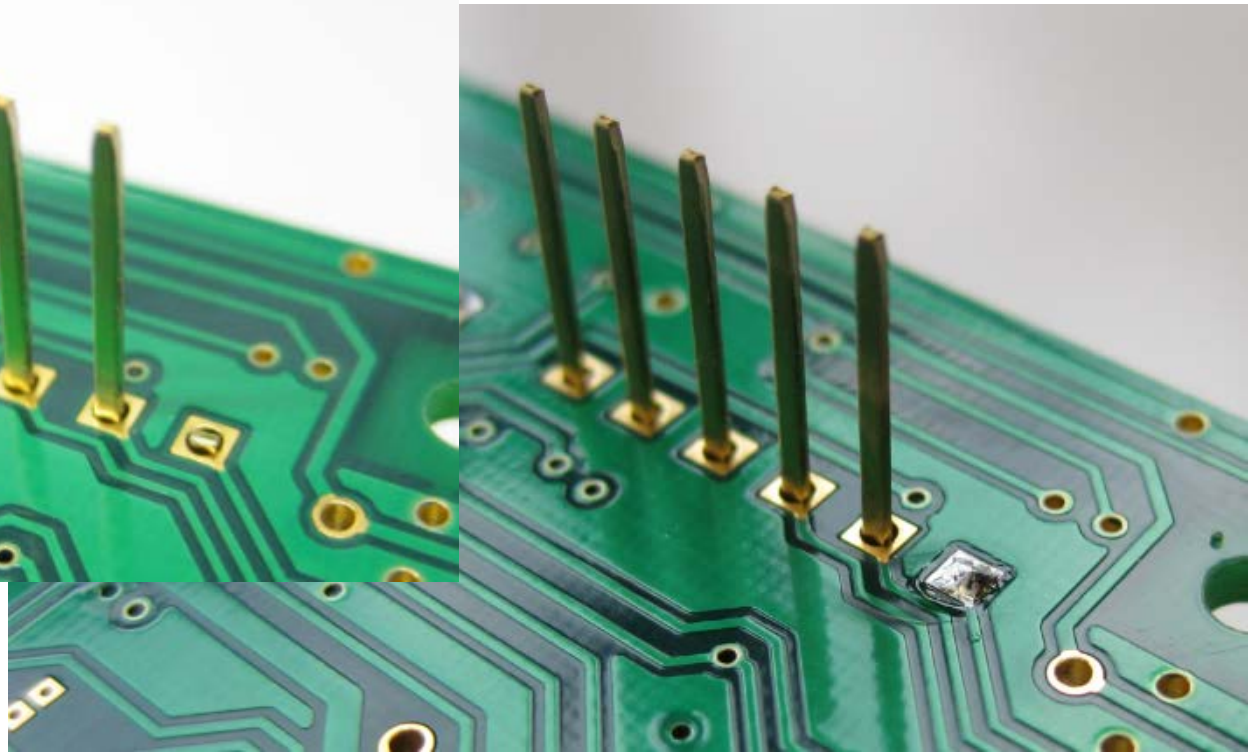
- Wire-Wrap
- One header (1x6pin) not needed: return
- Use Arduino Shield for alignment



Header Clipping

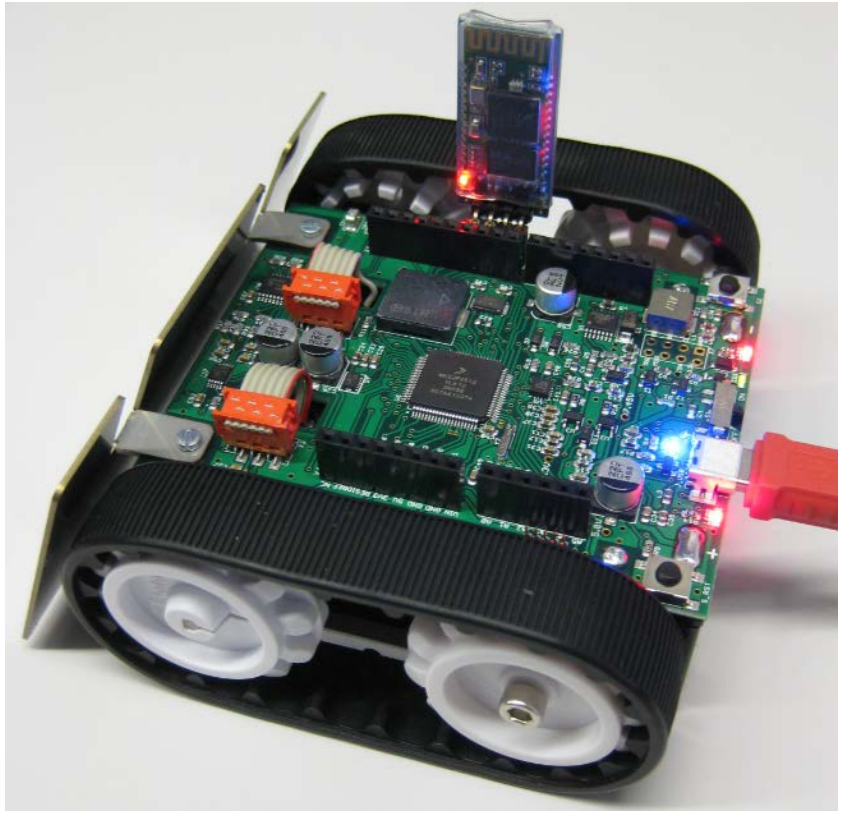
- PCB shall be flat on chassis as much as possible
- Clip above PCB
- Make sure solder flows properly around pin!





Remaining Assembly

- Chassis, Wheels, Tracks
- Blade
- Bluetooth



Bluetooth Module

- Shield/Base PCB
- Two types
  - Straight
  - Right Angle
    (use Header)