Add WW-02 Wheel Encoders to OPEN-ROBOT

Required Parts:

(2) WW-02 Wheel Encoders from www.Nubotics.com
(1) 8-Position Polarized header. Jameco# 232320, www.jameco.com
(1) 8-Position Polarized connector. Jameco# 234851, www.jameco.com
(8) Crimp pins for 8-Position Polarized connector. Jameco# 234923, www.jameco.com

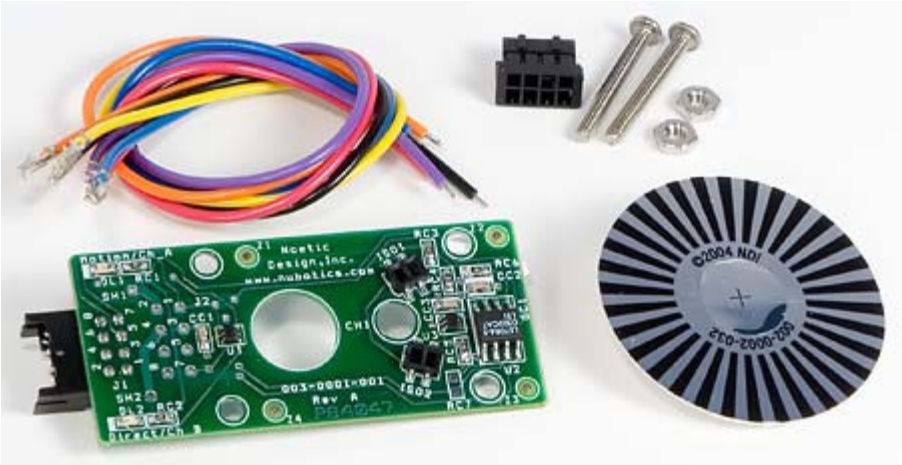
Required Tools:

(1) Hand Crimper. Jameco# 304928, www.jameco.com

Prerequisites:

This document assumes that you have already soldered the 100pF noise filtering ceramic capacitors to each GM8 motor. Please refer to step#29 in the OPEN_ROBOT_Assembly_Manual.pdf document.

WW-02 WheelWatcher™ Kit:



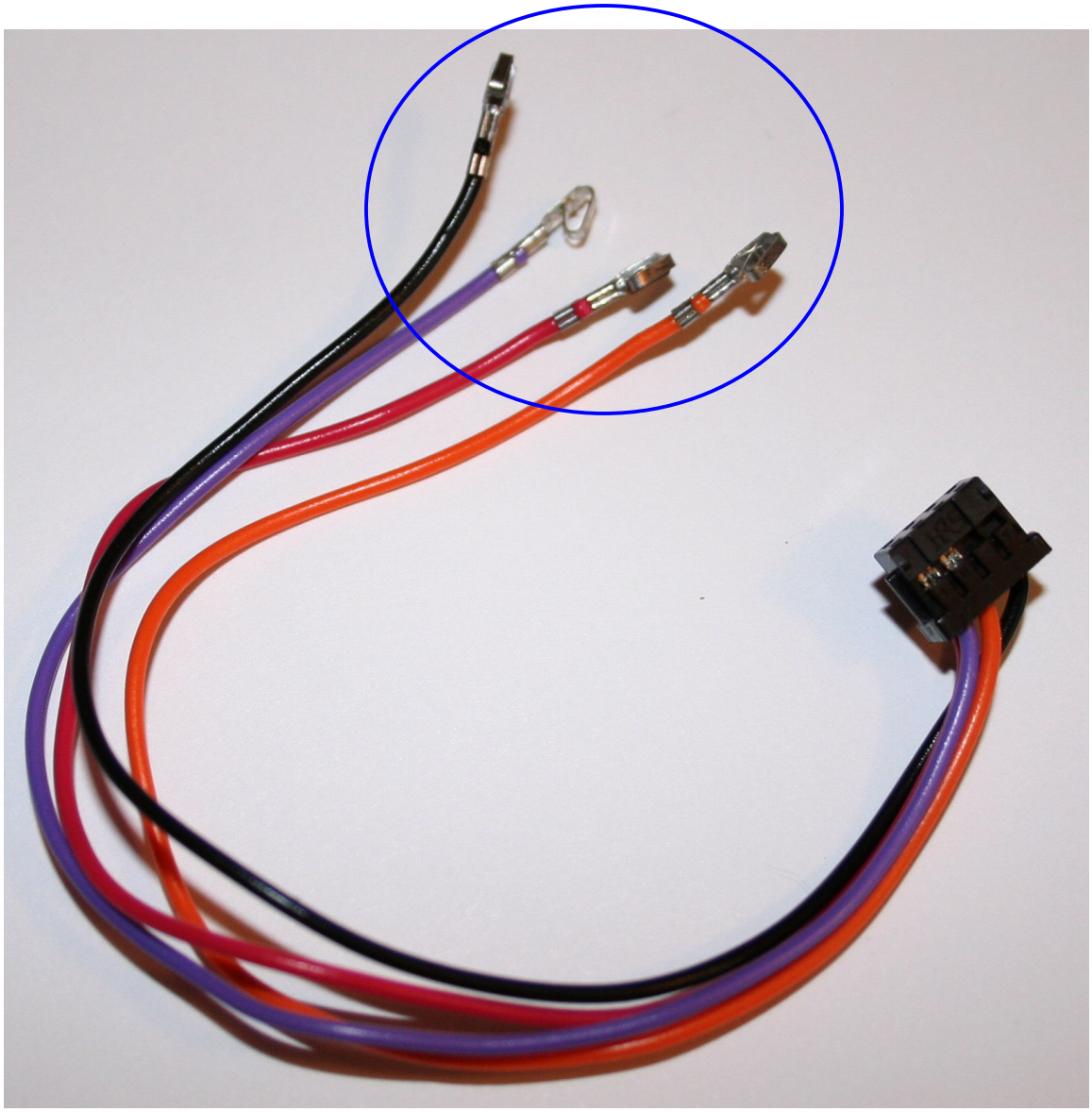
Figure#1. WW-02 Encoder Kit.

Assemble Cables:

Follow the WW-02 instructions and assemble the cables by connecting the appropriate wires to the included black connector. You will only need to connect the orange, violet, black and red wires since OPEN-ROBOT only uses the clock and direction signal.

Failure to properly assemble the WW-02 cables may result in damage to the WW-02 encoders and/or the OPEN-ROBOT controller board.

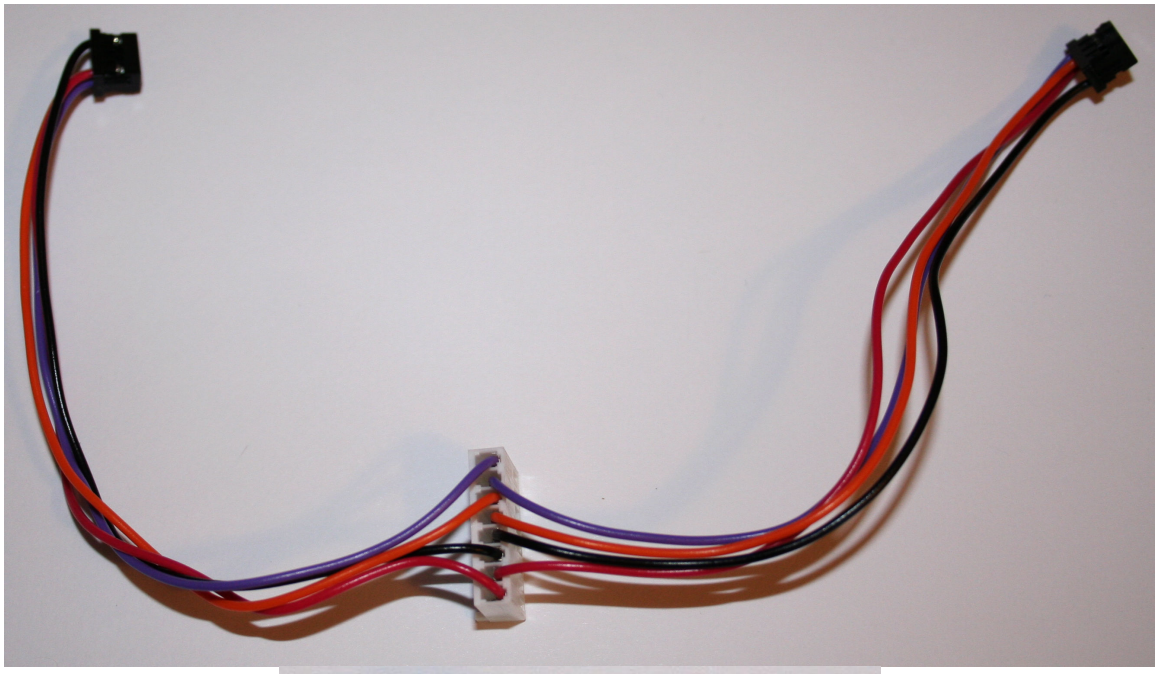
Crimp (8)-Female Crimp Pins:

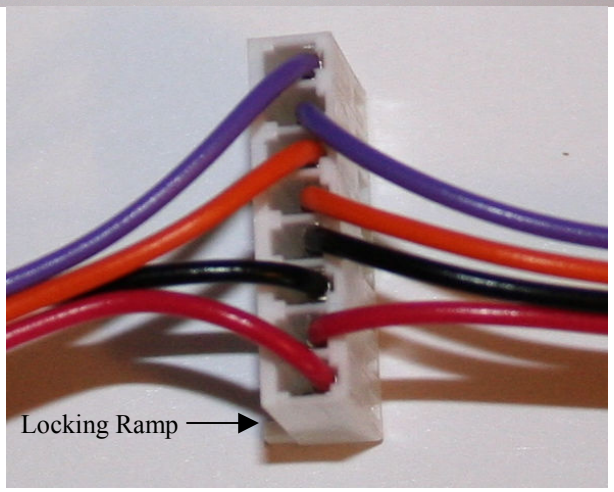


Figure#2. Crimp female crimps to the WW-02 cable.

Crimp the (8)-female crimp pins to the orange, violet, black and red wires.

Insert Female Crimps into 8-Pin Polarized Connector:



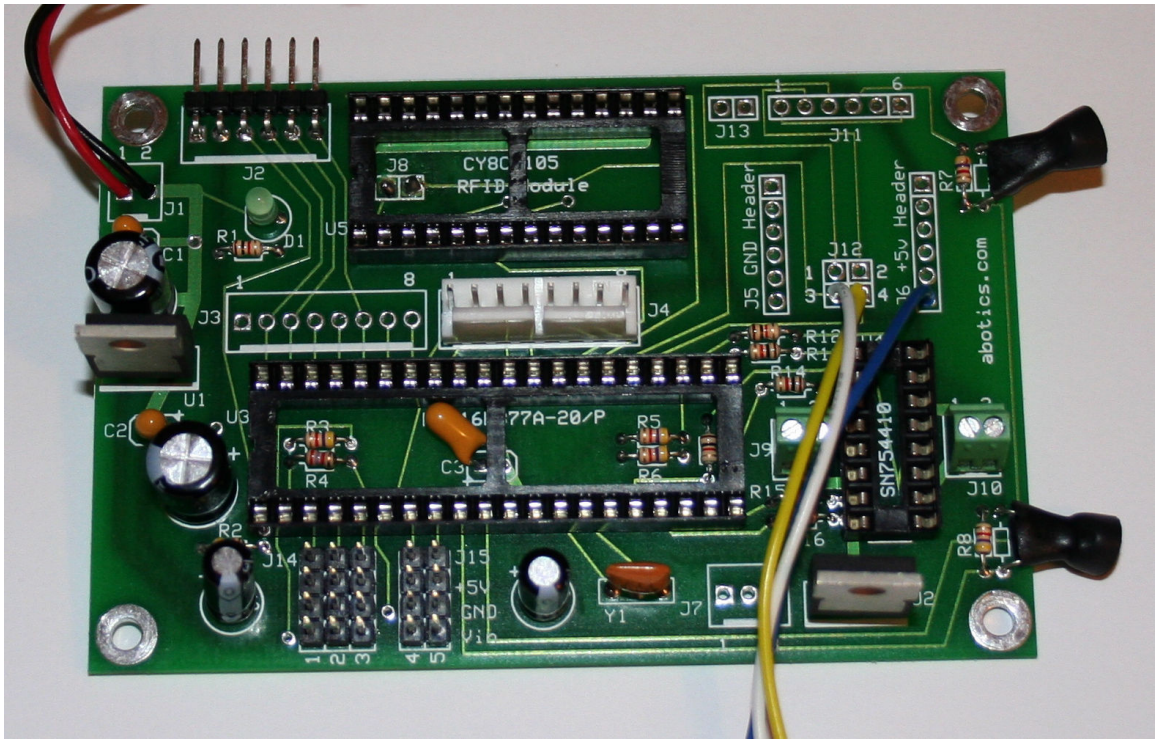


Figure#3. Insert female crimps into 8-pin polarized connector.

Insert the WW-02 cable ends with the just crimped female crimps into the 8-pin polarized connector according to figure#3. Notice the locking ramp is on the left side.

Failure to properly insert the wires into the correct location may result in damage to the WW-02 encoders and/or the OPEN-ROBOT controller board.

Solder 8-Pin Polarized Header to OPEN-ROBOT Controller, J4:

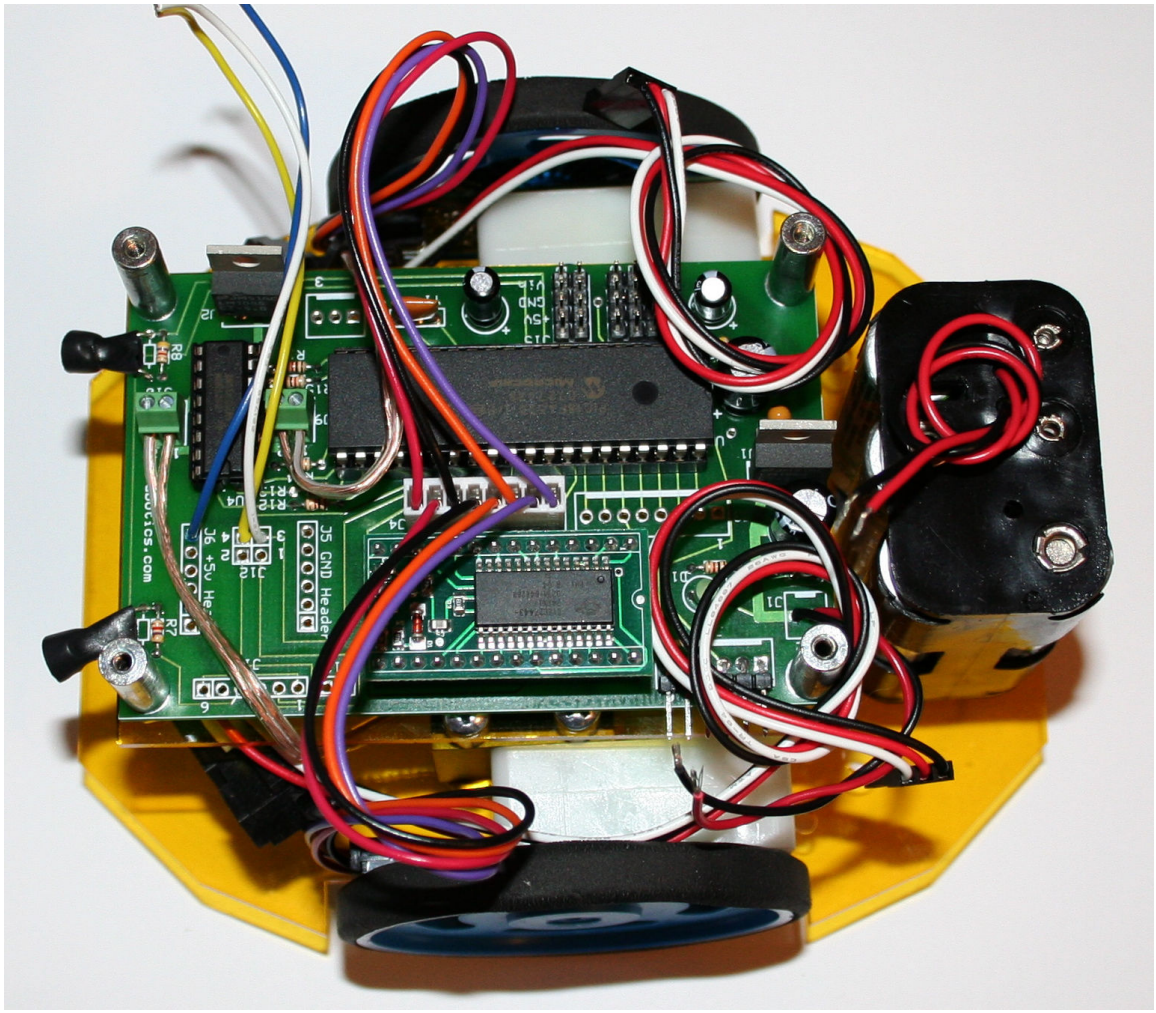


Figure#4. Solder 8-Pin Polarized Header, J4

Solder the 8-pin polarized header to the J4 location on the OPEN-ROBOT controller board. Please note the orientation of the locking tab since this is what polarizes the connector.

Improper orientation may result in damage to the WW-02 encoders and/or the OPEN-ROBOT controller.

Connect WW-02 Cables to OPEN-ROBOT Controller:



Figure#5. Connect WW-02 Cables to OPEN-ROBOT Controller, polarized header J4.

Connect the 8-pin polarized connector to the 8-pin polarized header on the OPEN-ROBOT controller board, J4.

Attach WW-02 Encoders to GM8 Gear Motors:

Figure#6. Attach WW-02 Encoder to GM8 Gear Motor and plug in WW-02 cable.

Attach the WW-02 encoders to OPEN-ROBOT's GM8 gear motors using the #2-56 x 1" long machine screws and supplied #2 fiber washers. Also, be sure to plug the WW-02 cable into the encoder.

Attach WW-02 Encoder Discs to OPEN-ROBOT Wheels:

Figure#7. Attach WW-02 Encoder Disc to GM8 Wheel.

Finally attach the WW-02 encoder discs to each wheel by peeling off the protective paper that covers the sticky-back adhesive. Then align the encoder disc over the back of the wheel and press into place. Finally attach the rubber wheel band and mount the wheel onto OPEN-ROBOT's GM8 motor.