

Wheel Encoder Assembly Guide. Updated 11.10.2005

Hardware:

- 1 x GHM Motor 7.2vdc 50:1 175rpm (6mm shaft) ([GHM-04](#))
- 1 x Quadrature Motor Encoder ([QME-01](#))

Goal:

- Install a wheel encoder on a motor.

Specs:

- GHM-04 motor RPM under load = 7500 rpm
- Encoder = 120 cycles per revolution
- Encoder = 480 quadrature counts per revolution
- Frequency = 15khz
- 3428 quadrature counts per inch with a 2.5" tire



Image of encoder on motor.

Step 1.

If you going to solder to the motor tabs, it's a good idea to bend them out of the way before installing the encoder. If you're going to use push on connectors this step isn't necessary. Be sure to orient the motor as shown EXACTLY as the raised plastic (name, logo and plus sign) will prevent the adhesive from making good contact if the encoder is not applied with the proper orientation.



Figure 1.

Step 2.

Before removing the adhesive backing material, fit the sensor to the motor as shown. It has to be oriented EXACTLY as shown for proper fit. When you are happy with the placement, remove the backing and carefully press it in place. I have not needed the expensive alignment tool from US Digital to do this, but you have to be careful not to press it firmly until it is exactly centered. If you are good with your hands this will be easy. If you have ten thumbs, you might want to ask for help.



Figure 2.

Step 3.

Simply press the encoder disk onto the motor shaft. Press it down firmly and this step is complete.

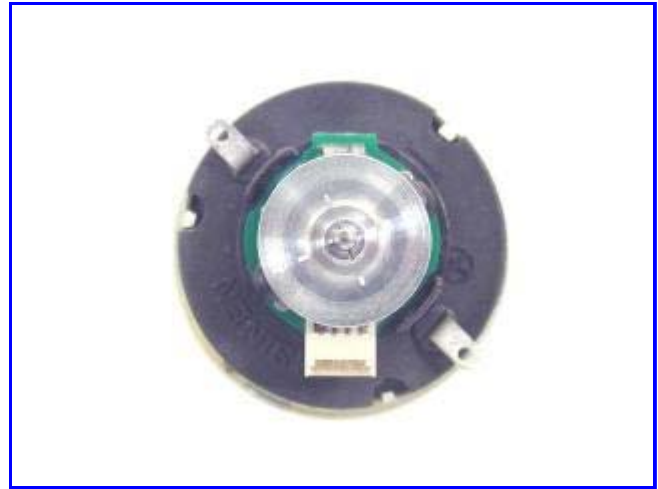


Figure 3.

Step 4.

Snap on the top plastic part.



Figure 4.

Step 5.

Insert the cable as shown.



Figure 5.

Step 6.

Red = +5vdc

Black = Ground

Green = Output A

Yellow = Output B

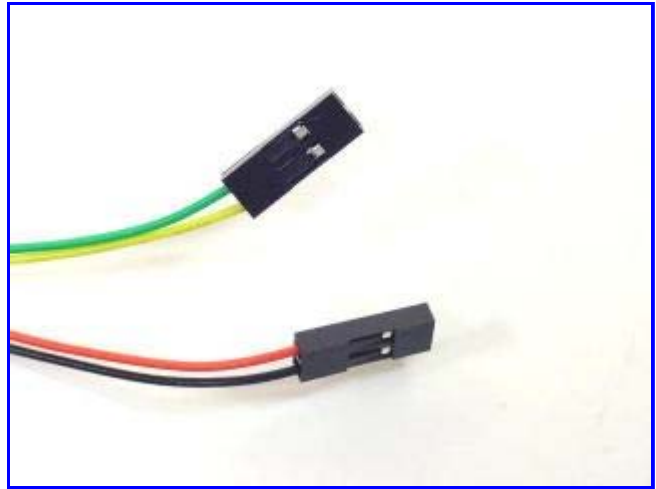


Figure 6.