Klima Ko-op

Week ending 24 Jan 2016

Wheel Progress Report

# Achieved Mon 18 Jan – Sun 24 Jan 2016

Designed jig to hold metal pieces in place while cutting them with my electric saw. This jig has three parts: end stop, stock support and main body. I’ve designed the OpenSCAD for the first two and 3D printed them, with the first being an OK print. I bought the right saw blades. The jig fits my saw exactly.

Determined how to use household wiring copper wire for detecting all and any non-ball-bearing touch events. The wire on the rotor is not connected to any electronics. It can be threaded through printed holes and twisted tight. The twist can be safely and symmetrically concealed under a spoke attachment point. There will be 12 spokes, as there will be 12 tocuh detection points.

About to do

1. Buy
   1. Amp meter – at least 10 amps, if not 20 amps
   2. Insets to screw metal into, and inset into plastic.
   3. Bolts for spokes
   4. Iron stock (saw blade is 1mm wide)
      1. 6mm rod – 100mm
      2. *12mm square rod – Need 13 \* 48 \* 2 = 1248mm – I have 2m x 2 is enough.*
      3. 10x3mm rod – Need (121mm \* 48) + (14mm \* 48 \* 2) = 7152mm , ie 8mMetalbits, provided 2m with 8 free cuts of 120mm – need to order 6m more, which I’ll cut.

Features in Wheel Mark I

* Traction
* Photo sensors for position, with Grey’s Disk.
* Manual monitoring of temperature and humidity, by hand only.
* Software: Polled, without delays, without interrupts

Features in Wheel Mark II+

* Waterproof
* Electronic monitoring of temperature within hub
* Electronic monitoring of humidity within hub (to detect leaks)
* Hall effect sensor to back up photo sensors for position
* Accelerometer
* Interrupt based software, where all 12 touch sensors feed through an OR gate into one interrupt. The interrupt then polls the 12 touch sensors (very quickly) to see which one or ones have touched.

# To Do Next Week

Need to design and implement measurement of volts, amps by electronics and reporting of it from the wheel, up to the Raspberry Pi in-car management computer.

# To Do After That