Diary

**Apr 13 2016**

I was not able to get the fancy transistors to work – I am glad I had some IRF840. I was able to shoot the spark using Arduino.

**Apr 18 2016**

Connected the starter relay so now we are not welding when cranking :) Works pretty well. Hooked it up to the handlebar switch with a little light indicating that we're ON.

Got some sparks going: <https://www.youtube.com/watch?v=MUAXOBBR70E> theoretically timed correctly. There's plenty of noise visible on the scope though...

**Apr 19 2016**

Tried with MK02. I was able to pretty much reproduce the ignition functionality BUT… there was lots of missed time slots, plenty of noise (a lot of it caused by having macbook connector to the wall). … AND … 3.3 V ain’t enough to drive IRF840 to fire a spark…

Fabricated some wiring for the VRS sensors (both cam and crank with ground straight to the battery).

**Apr 21 2016**

Built some additional harnesses and ran out of the black wire [sic!, lol]. Figured out the fuel pump relay, tried to start the motor but I could not get it running. After modifying some of the code (mostly by removing ALL computations from the ISRs) it seemed like it wanted to start. Started some spreadsheets to come up with equations for the reference REQ\_FUEL.

**Apr 25 2016**

Just measured the output impedance of the VRS on the cam and crank and it is **550 ohm**.

**Apr 26 2016**

TDC happens IN BETWEEN the crank teeth (in our case on the rising edge of the crank signal).