

# Engine Starting Help

- When diagnosing a hard start or no start issue, there are several things you want to address.
  - First, are you using the correct firmware for you application. The Firmware decoder is located under setup/Instructions in the software. The breakdown of the ProEFI labeling structure walks you through ensuring you have chosen the correct firmware for the engine configuration you are using.
  - Ensure power stays live to the ECU while the key is in the CRANKING position. If you have wired your ECU up without using a plug and play kit, you may have tied your switched ignition power to a power source that is not 'Hot' when in the key cranking position.
  - Ensure all of your Chassis grounds are to good clean chassis ground (unpainted surfaces).
  - Watch your encoder fault count
    - It is normal to get a few fault counts when the engine first starts to spin. The Firmware has specific tooth counts it is looking to see coming from the crank sensor and cam sensor. Since the engine isn't going to stop in the same spot every time, short counts will be made indicating a fault until the correct pattern is seen by the ECU. Once the engine speed has stabilized under cranking or running, this count should in most all cases quit counting and hold a value less than 10. If you are having a problem getting the engine running, or if the engine is randomly misfiring or hitting a wall

at a given rpm, look and see if this value starts to count up.

- Watch your sensors
  - Make sure the values coming in from the various sensors read a rational value. I.E. Map at Key on is somewhere near atmospheric conditions (100 kpa on a normal day close to sea level), Coolant temp, Inlet air temp, Fuel pressure sensor, TPS, etc... all read rational values. NOTE: The map sensor updates based on an engine cycle, so putting air pressure to the map sensor without the engine running will NOT change it's keyed on value, the ECU must see engine rpm to update the map sensor.
- Injector pulse width – Watch your injector pulse width (not duty cycle) to make sure you are getting rational values while cranking. The design of the ProEFI's fueling strategies will prevent you from being too far off with ANY decent base calibration after the setup procedures are followed (located on the first gauge screen under getting started). So if you are seeing pulse widths that don't make sense, most likely you have overlooked a sensor malfunction or calibration, and it needs to be addressed.
- Use the cranking tab template for logs to help out.
  - The default Cranking log template is setup to capture the important data in determining a no start situation. If you are unable to determine the cause of your no start, and your encoder fault counts are climbing, you will need an Oscilloscope to determine what is going on

with your cam/crank signals. There isn't much that can be done over the phone to diagnose this type of issue. If the fault counts are low and NOT increasing, and you are still having a hard time determining the cause. A log of these parameters will help us determine your issue.