Before you engage the starter Validate these settings

- Firmware is correct for your application-Unless requested when ordering, all ECU's come with blank calibrations. The Help tab has Configuration Notes\Engine Configuration Notes
- A base calibration is loaded for your application – These are available at www.proefi.com by application. If you don't see your application, email tech@proefi.com
- **Swept Cylinder Volume** (ccs) - is set correctly – this CAN NOT be overlooked.
- **Throttle Scaling** is correct
- **Manifold Pressure sensor** settings are accurate and working
- **Fuel Pressure sensor** settings are accurate and working.
- **Coolant temp sensor** is working correctly
- **Air Temp Sensor** is working correctly
- **Injector characterization** is correct for the injectors that are installed
- **Maf Source** is selected appropriately
- **Load Type** is selected appropriately
- **Low Octane/High Octane Primary Stoich Setpoint –** Is set appropriately for the fuel you are using.
- **Fault Settings –** Make sure you cover the necessary settings here.
- **Ignition timing Sync** - If timing is mechanically adjustable, make sure you perform the Ignition timing Sync following the procedure in the getting started help BEFORE you introduce fuel to the engine.
- **Swept Cylinder Volume**
    - This is the Individual cylinder displacement in CC's and is an INTEGRAL part of the fueling calculation and can NOT be overlooked. Enter this in value in cc's per cylinder
- **Throttle Scaling**
    - Make sure your tps is properly scaled 0 to 100
    - If you have Electronic throttle – Make sure both TPS sensors are properly scaled as well as both APP sensors
- **Manifold Pressure sensor**
    - Make sure you have the correct map sensor range for the sensor you are using
        - 500kpa = 5bar
        - 350kpa = 3.5 bar
        - Offset should be .5v
        - High Fault should be 4.75
        - Low Fault should be .25
        - Make sure the sensor reads what outside barometric pressure is (roughly) at key on. The sensor does NOT update until the engine is

rotating after key on. So unplugging it while the ecu is live won't display a change. You will need to cycle the key to check that change.

- **Fuel Pressure sensor**
    - Check to make sure its setup correctly
    - Range should be 150psi or 1034 Kpa
    - Offset should be .5volts
    - Hight Fault should be 4.75
    - Low Fault should be .25
    - Override the fuel pump and check the sensor is reading correctly. At this point would be a good time to note your base fuel pressure. Turn the override back off
- **Coolant temp sensor**
    - Make sure it is reading an appropriate value
- **Air Temp sensor**
    - Make sure it is reading an appropriate value
- **Injector characterization** – EVERY OPTION IS VITALY IMPORTANT DO NOT SKIP ANY STEPS
    - Primary Injector Characterization
        - Flow rate – Should be the flow rate of the injector being used as specified by ProEFI along with the following
        - Primary Injector Offset
        - Primary Injector Min duration
        - Primary Injector Battery Offset Table
        -
    - Primary Base fuel Pressure – Enter the value noted in the Fuel pressure test
    - Primary Fuel System Type – Select the appropriate fuel system type from the drop down menu.
    - Injector current select and Peak Hold duration – This applies to the Pro128/48 only – Select the appropriate setting for the injector you are using. Contact ProEFI tech support if you have any questions on this setting.
- **Maf Source** – You must select the appropriate source here. Understanding these options will help you have greater success and accuracy in getting the engine to run optimally under all conditions.
    - **Throttle V.E.** – This option applies throttle reference to the 'Y' axis (Vertical axis) on the V.E. table. Since pressure does NOT affect V.E. and throttle angle DOES, this is the most accurate way to setup and calibrate the engines ability to process air without an actual mass airflow sensor. Perfect for supercharged, N/A, or Nitrous engines. When a turbocharger is introduced, using this method, you must also add an exhaust backpressure sensor to properly account for varying exhaust manifold pressure against intake manifold pressure (Pressure/Ratio)

    - **Model From Map** – This method uses manifold pressure for the 'Y' axis (vertical axis) and while your rows will be relatively the same by map, at higher pressures the values in the v.e. table (efficiency of the engine will drop when exhaust manifold pressure increases (Pressure Ratio drops).
    - **Use MAF sensor** – This option will turn on the MAF calibrations and use Mass air flow for fueling calculations. A proper maf calibration must be entered and calibrated for. Target A/F and Ignition timing are still targeted based on Manifold pressure unless Ignition timing is otherwise defined in the **LoadType** option.
- **LoadType** – This option sets either MAP Based or APC based load for ignition timing
    - **MAP_Based** – This is the most common setting. The Spark Maps will be set to reference Manifold Pressure for their 'Y' axis scaling.
    - **APC_Based** – This will set ignition timing to be more of a demand 'Torque' based ignition timing. This it the most optimal way to achieve the best all around performance from and engine. READ the help notes on this carefully so you understand it's function and how to set it up as timing advance will NOT be based on manifold pressure alone.
- **Low Octane/High Octane Primary Stoich Setpoint**
    - These options relate to the stoich of the fuel you are using. This is a KEY element in the fuel calculation and should not be overlooked. If you are using a **flex fuel sensor** make sure that it is setup and functioning correctly.
- **Fault Settings –** Make sure you have checked the appropriate faults for the strategies and sensors you are using. Doing this before you run the engine will help ensure a safe tuning session and enable the ECU's fail safes to prevent engine damage. See the Protection tab/Protection help for more detailed information.
- **Ignition timing Sync**
    - Validate what the ECU says timing should be with what the actual timing is on the timing light. Adjust TDC Offset accordingly. DO NOT USE A DIAL BACK LIGHT FOR THE ADJUSTMET!!!! See Getting Started Help for more information on this.
- The Help tab has Configuration Notes\Engine Configuration Notes
    - This document will help you validate Firmware, Firing order, Cam/Crank Edge selection, any Vcam settings, and TDC offset for fixed Timing mechanics.
- Now you are ready to spin the engine over
    - Go to the cranking screen
        - Validate you are getting EncoderSync_CAMSync from the Egnine Sync State Probe. If you are getting that, and your encoder fault counts have stopped…you should be up and running ready to set up your idle