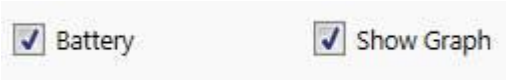
Battery Charge Volts

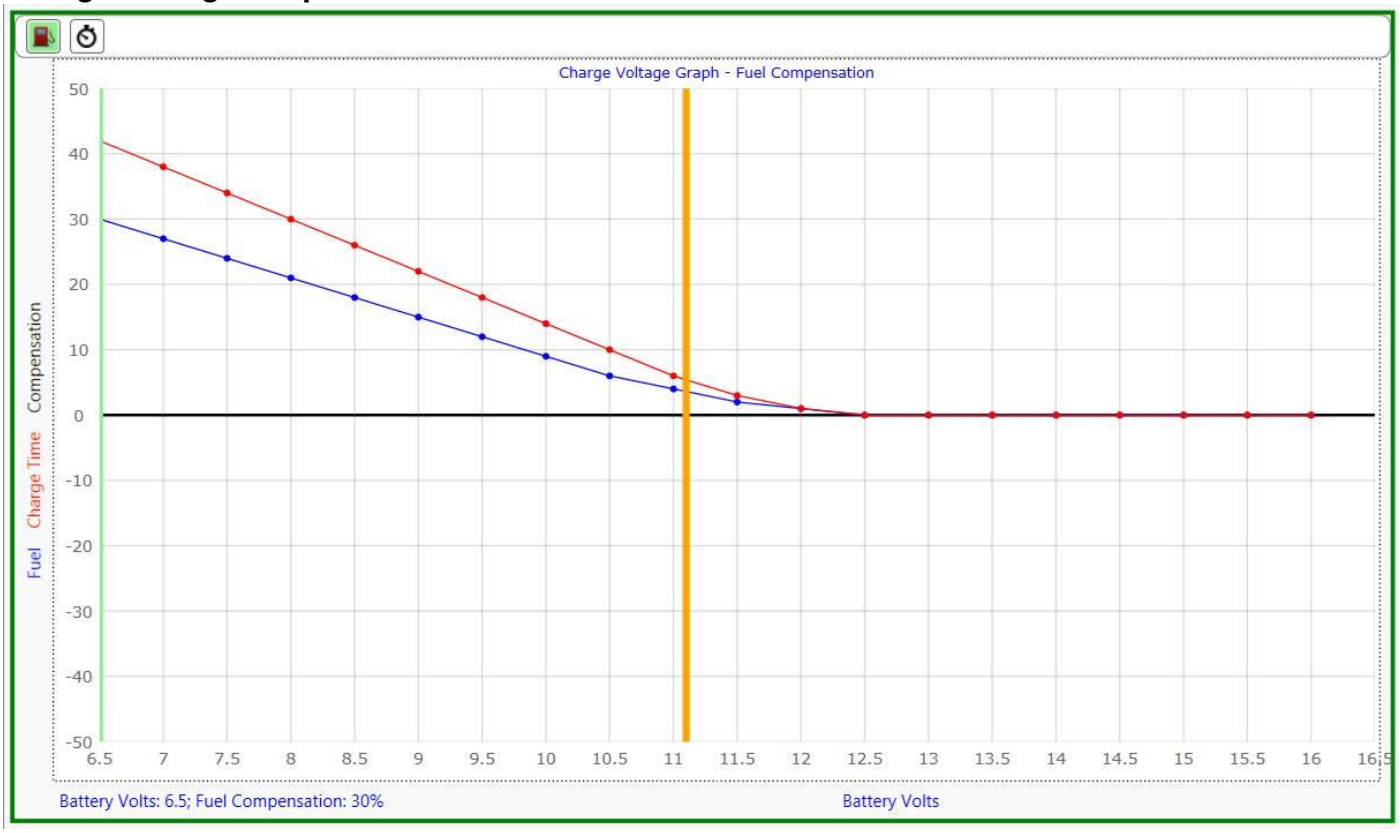
Settings and Tuning



Battery and alternator voltage have a great influence on ECU systems. When an engine cranks, battery voltage can fall as far as 9 volts on cold days and when the engine is running, voltage can go up to 14.3 volts. This difference has a big influence in coil energy and injector opening speeds. So to compensate for that the Spitronics ECU's has 2 graphs. One graph is a fuel compensation graph which adds more fuel during cranking. The other is a charge time compensation graph that will act on the charge time of the coils. This will improve spark energy to help the engine start. It is not a clear cut tune as you need to put a variable power supply in place of the battery.

What you can do is look at spark quality when the engine is hot and compare it to spark when it is cold. You don't want to overcharge a coil as it may get damaged. Always a good idea on a cold morning to look at the ECU voltage during cranking. A healthy battery should crank no less than 11 volts. Below is an example of a typical graph.

Charge Voltage Graph



The blue graph adds a certain percentage to the injector time and the red graph adds a certain percentage to the charge time. This is not an easy one to tune but it is recommended to lower the values and see if the result is worse or does not make a difference in starting. Always go for the lowest values. You may also decrease the values with higher battery charge. This may help protecting the coil drivers. These graphs are interpolated.