

FuelTech

QUICK INSTALL GUIDE

9556

Introduction:

When turbocharging a naturally aspirated engine or increasing boost pressure on stock turbo engines, some sensors on the stock ECU might generate errors. This happens because some of these sensors were not designed to read positive pressures. Technically speaking, when the MAP (or MAF) sensor reads the positive pressure, the output signal goes up to a value that the stock ECU is not programmed to read. The FuelTech Clamper is installed in parallel with the signal wire from the MAP or MAF sensor, and prevents the signal from these sensors to go beyond what the stock ECU can read. In other words, it "clamps" the signal, and limits the sensor to work within the range it was designed for. It does that by draining any excess voltage as the signal goes above the adjusted value.

How to adjust:

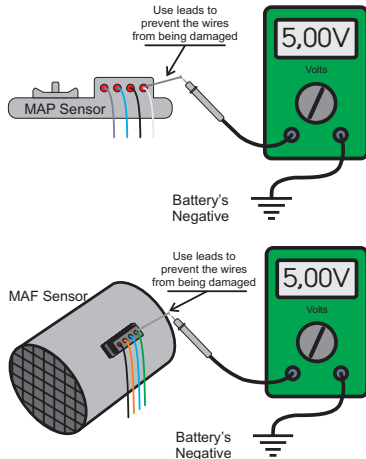
MAP: With the Clamper installed, leave the adjustment screw in 5v and with a multimeter probe the signal wire (as show in the drawing) then turn the ignition ON but don't start the engine.

The sensor should be reading atmospheric pressure and normally the voltage reading should be around 4.2v.

Turn the adjustment screw counter-clockwise until the reading on the multimeter starts to drop.

The value that normally eliminates MAP related errors is the one slightly below the reading with the engine off, in our example here, the ideal value is around 4.1v.*

MAF: To begin the procedure, it is recommended to leave the adjustment screw about halfway of it's total range and go for a drive. Then driving around, the same principle as described for the MAP sensor should be applied, find the reading just before the stock ECU register the error then adjust to freeze it and check if the error won't be detected at both low load and full throttle.*



**After the correct value to keep the stock ECU error free has been found, it is still possible to experiment with different adjustments, as the Clamper limits the range of signal from the sensor, the stock ECU can be limited to read vacuum only, which should also change the ignition timing tables depending on the maximum value frozen by the Clamper, drastically changing the engine performance.*

It's interesting to perform tests with this, as it's possible to obtain considerable gains in performance with a proper adjustment in the FuelTech Clamper.

Identifying the signal wire on the sensor:

The two drawings on the right show how to measure the wires on the sensor. The wires should not be cut, and to prevent damage to their insulation, they must be probed with a thin needle from behind the seal.

To find the correct wire, use a multimeter set to 20VDC as shown in the drawing, with the black lead in the battery negative and the red lead to one of the wires. With the engine running, rev it a few times, the signal wires will be the one in which the multimeter has a reading ranging from 0 - 5v.

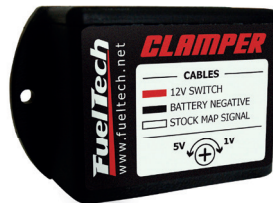
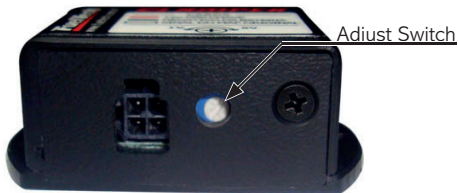
After finding the signal wire, install the FuelTech Clamper following the color coded wires:

Red: Switched 12v

Black: Battery ground

White: Parallel in the signal wire

The signal wire from the sensor must not be cut. just stripped and tapped in with the white wire from the FuelTech Clamper.



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