

Helpful hints – ECU Diagnostic Options

When installing an ECU and wiring harness for the first time, it is normally quite straightforward with our systems to get them up and running. They are normally pre-programmed by us ready to start your engine, using the information you have provided when ordering your new system.

Before the ECUs and wiring harnesses are dispatched, they all go through rigorous tests. They are tested in manufacture and then when the ECU is programmed, the ECU is also tested to ensure that it is working correctly with the loaded program. All the wiring harnesses are electronically tested after manufacture so once everything arrives with you, they are ready to run.

If problems are encountered, they are normally down to just one or two basic issues so we have created this document to help you.

Although the issues that you may encounter can be overcome without the Easimap software but it is recommended that you purchase the basic mapping hardware and then download the free Easimap software from our website. This will give you access to what the ECU is seeing and allow you to diagnose any reasons why the engine may not be starting much easier.

If you wish to access and change more advanced settings within the ECU, if you either have a map provided new with the ECU or a map from another source, you would need to change the access you have from 'Basic' to 'Advanced Level 1', this done simply by clicking on the bottom right hand side of the screen where the profile is currently shown, you will then be able to select from the list 'Advanced Level 1'. This gives access to all settings within the ECU (there may be other profiles in there which are for MBE use only and are not accessible).

Please read the information supplied with your kit or refer to the website where you will find information associated with installation and wiring.

Testing with Easimap software:

It is always recommended to have the basic mapping equipment as you will then be able to see what the ECU is seeing and not have to guess what is going on. Even if you only use the software as a tool to diagnose issues that may arise, simple problems can then be overcome, for example if your engine does not start it could be a problem with the crank sensor or battery voltage. When you install the software and connect it to your MBE ECU with the basic mapping equipment, the basic page which will be displayed will show the engine rpm and battery voltage, so when you attempt to crank the engine you will be able to see if engine speed is being seen and battery voltage is sufficiently high enough for the ECU to perform correctly. You should then use the information described above to help diagnose your problems.

MBE-MAP-KIT-3-CAN
Basic CAN mapping kit



If you have problems resolving your issues, then it is recommended firstly that you take your vehicle to one of our recommended dealers as they will be able to diagnose your problem faster or you can contact us and arrange telephone technical support with one of our engineers but this will normally take longer and be a less efficient way of resolving your problems. This can be bought in hour slots, but we only recommend this service if you have gone through all of the below suggestions and have the software and hardware connected to your vehicle.

Testing without Easimap software:

- 1) Remove the spark plugs from the engine and reconnect to HT leads or coils resting all the spark plugs on top of one another (ensure that all fuel is turned off) and crank the engine. If sparks are then seen at the spark plugs, this is an indication that the battery supply to the ECU is indeed too low, since removing the spark plugs allows the engine to turn over much easier and therefore the starter motor uses less current.
- 2) The next test is to then to fit another set of spark plugs to the coils or HT leads leaving the original plugs fitted to the engine, this will then give compression and apply extra load to the starter motor. This is to simulate normal compression loads. Then crank the engine and see if you get any sparks, if you only get a few sparks or one spark and then no further spark or indeed no sparks at all, this proves that the current supply available is insufficient when the starter motor is put under normal cranking load and your wiring needs to be investigated along with your battery size.
- 3) A good way to confirm that the ECU and wiring harness are performing correctly is to get a second battery, disconnect our wiring harness from the onboard battery and connect it to a separate battery that is not connected to the car, attach the negative and the positive ring terminals. Ensure that you have permanent supply to your fuel pump and if running coil on plug that there is an earth from the engine block to the negative of the second battery. Then crank the engine over carrying out above tests, this way the starter motor is not draining the battery that is providing power to the ECU and wiring harness.
- 4) Once this test has been carried out, it could be assumed that if still no sparks are seen that it is likely that the crank sensor or trigger wheel are creating an issue. Please refer to information below.

Ignition Drive Testing - Coil Wiring

There is a test output function in the software for testing the ignition drives. If you select each ignition drive in turn, should be ignition drive A and B. (C & D if coil on plug) The ECU will then generate an output for each coil drive which will make the spark plugs produce sparks. This will then prove that you have connected the coil correctly.

Fuel Injector Testing


If your engine does not start, even once you have confirmed your engine produces a spark, it is advisable to check the injectors are working. This can be done by using the injector output test function, which is available on MBE9A* ECUs.

If you do not feel comfortable with making these tests, you could take the vehicle to one of our recommended mapping agents. Alternatively, we can provide help and support remotely using Team Viewer, one of our engineers could log in remotely provided you have all the mapping hardware and run tests to try to assess your problem.

Please be aware that Technical Support involving our Technicians is chargeable

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