

Nothing is as good as good information

eXponentia's Steve Carter recounts troubleshooting faults on three very different cars with one common key to a successful repair; the availability of vehicle specific information.



Steve Carter, eXponentia

Boomerang BMW

Our first vehicle was a 2003 BMW X5 4.4L V8. This particular garage had quite a busy prestige used car sales area, along with its four ramps and MOT testing bay. The car in question had been sold by them some eight weeks before, but within a few weeks of the sale, the engine management lamp had come on. The customer, having spent a considerable sum of money on this vehicle, went back to the garage straight away, complaining of the appearance of the engine management light, although the car was driving perfectly well. The garage read the fault codes 26 and 27, "multi-adaptive fuel correction at end of control stop". Not truly understanding the definition of this fault code, they cleared the code and sent the customer on her way.

Two weeks later, the customer returned to the garage with the engine management light shining brightly. The garage interrogated the engine's ECU, only to reveal exactly the same fault code they had cleared two weeks before. This process went on for another four weeks, with the customer becoming ever more disillusioned with her purchase. The garage was reluctant to change any parts, as they didn't really understand the fault code in the first place. The fault code relates to lambda control, and in particular, attempts to achieve an optimum fuel/air mixture by altering the opening time of the injector.

With this information, it was possible to start evaluating some actual values, which would have the possibility of generating this particular fault code. While evaluating the reading from the air mass sensor, it became apparent that this was operating just over its prescribed range at idle speed. On further discussions with the garage,

they confirmed that this part had been changed recently, but not with a patterned part. Replacing the air mass sensor brought the air mass reading into the middle of the prescribed range at idle, curing the fault. As you can see from this example, technical information, whether it is detailed descriptions and explanations of complex fault codes, or specific component values for comparison with actual values, is going to become ever more vital just to stay one step behind the vehicle manufacturers.

Just the thing you need to know

The next two examples show how information plays a vital part in diagnosing and correcting faults. These examples do not require any diagnostic equipment or technical information, just the exchange of information between garages.

Making the right connection

The first was a VW Golf Mk4. When the ignition was switched on, the driver information display showed a warning of low oil level; however this level was satisfactory on



starting the vehicle. The oil warning light would stay on when the engine was running, but only as an orange glow rather than red. Having received several of these puzzling problems, eventually a solution was found whereby the car's ignition is switched off, the battery is disconnected completely and the battery's harnesses are removed from the battery and bridged together.

Putting out a fickering light

The second vehicle in question was a Fiat Punto Marea, and possibly the Stilo (although I have never encountered the latter personally). The common factor here is that they both share the same Marelli engine ECU. The problem is that the engine management light flashes rapidly, but does not present any serial fault codes and the car drives normally. A rapidly flashing engine management light is somewhat disconcerting for the driver of the vehicle.



The solution to this problem is incredibly simple but without this information, a garage could spend many hours trying to correct the fault. The solution? With the engine running and at operating temperature, the engine must be revved past 4000 RPM before allowing to return rapidly to idle RPM. This process must be conducted four times in order for the light to be put out. Why does this simple procedure work? It resets the crankshaft sensor.

As you can see on all of these examples, the one common factor shared is information. Whether this information is gained from technical publications or from real-life experiences, it is imperative that the independent automotive community shares their information in order to help one another but more importantly, to remain one step behind the vehicle manufacturers.

