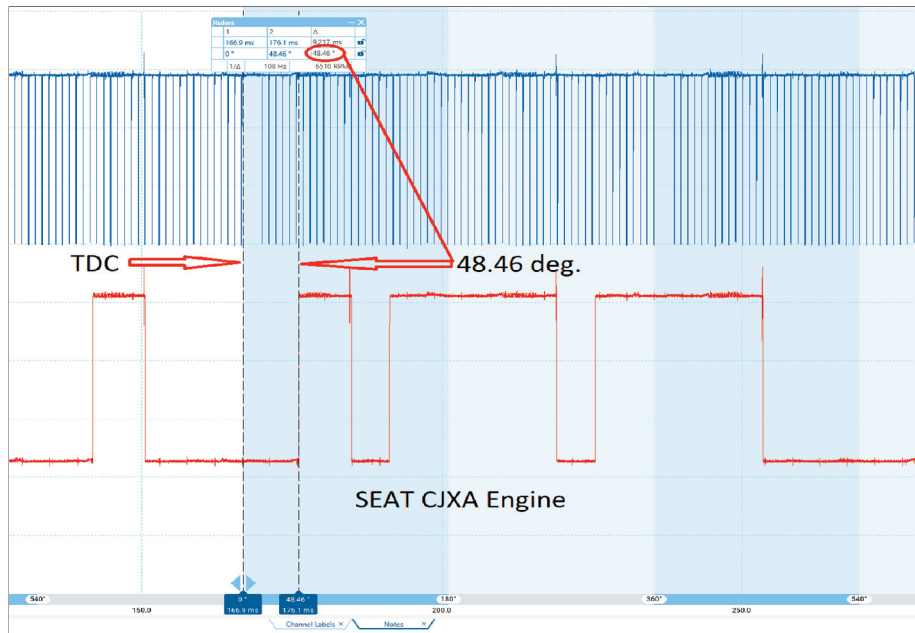




Tim Stock

Deciding on an ECU Fault can be a Tough Judgment Call



The scope trace showed that the Camshaft and Crankshaft were in synch

This week we had a very unusual issue with a Seat Leon Cupra, fitted with a CJXA 2.0 litre petrol engine.

A fault code for a Crankshaft sensor signal out of range was stored in the memory. Initial testing by the technician with a Picoscope revealed the Crank Sensor and Cam sensor signals were both present. Unsure if the issue

was a correlation fault between the signals, the technician decided to replace the timing chain kit.

After replacing the timing chain, the fault still persisted, the DTC P0335 Crank Sensor Circuit fault was still present. As the technician did not know what step to take next, the scope trace was sent to the Helpline for inspection.

We managed to source a known good Pico scope trace file for a VW Golf with the same engine code. Taking measurements of the Cam and Crank signals from the Golf file, it showed the cam signal pulling up 49 degrees after Top Dead Centre (TDC). On the Cupra scope trace, the signal pulled up 47.5 deg after TDC. This was not an issue, the timing points were within tolerance.

On serial data, the engine RPM signal was displayed correctly, but still the fault was present. So we decided to disconnect the crank sensor while the engine was running. There was no difference, even the engine speed data was still displaying. The crank sensor was reconnected and the cam sensor was disconnected. When this was done, the engine stopped.

It was just pure luck the garage had a Golf with the same engine code in for repairs. On removing the cam sensor connector on the second Golf, the engine continued to run but a cam sensor fault code was set. So the ECU was identified as the culprit.

A new ECU was fitted and programmed, and the fault was cured. So if all the tests prove a sensor is working correctly the hard call has to be the correct one.