

# A heavily smoking Mercedes C350e

An Autobiz Helpline member, had a 2014 Mercedes C350e in their workshop, suffering with excessive smoke from the exhaust.

On initial investigation, the intake system was completely saturated with engine oil, and the intercooler was also full of oil. The diagnosis led the technician to the turbocharger that was leaking oil through the bearings.

On removing the boost side pipe from the compressor side of the turbocharger and running at idle, oil was seen to be leaking from the bearing.

After a lengthy intake system cleaning of all the oil residue and replacement of the turbocharger with an OE part, the vehicle was returned to the customer working as expected.

Within a few hours, the customer was back in the workshop with the same symptoms. A deeper look into the scan data revealed rather higher than normal oil pressure. From cold, the pressure exceeded 9.5 bar, far above the specified pressure.

This vehicle is fitted with a variable oil pump control system. Checking with known issues on these vehicles, the pump control solenoid and loom, were replaced with



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genuine parts.

After this repair, the vehicle was rechecked from cold for the correct oil system pressure. But the pressure was still far too high on cold start. The expected idle pressure is 2 bar, rising to 4 bar under full engine load.

Engine oil pressure is controlled by the ECM, utilizing a ground-controlled signal to the solenoid. This is normally a pulse width modulated signal working from the oil pressure sensor information. This system is implemented to reduce the load on the engine when high oil pressure is not required, further saving on fuel and emissions.

The signal to the solenoid was checked and was deemed to be correct, for the operating conditions of the engine.



**Tim Stock,**  
Autobiz Helpline

These pumps also incorporate a mechanical pressure relief valve, to limit the maximum pressure.

We decided to replace the oil pump. On contacting the dealer to order the pump, we were told this pump had been superseded, and the modified part is on backorder. Surprisingly, this one dealer had sold 20 of these oil pumps in just over 2 months.

Confident in the final diagnosis of a failed oil pump, this Mercedes is now awaiting the modified part that is on backorder.

**Technical Helpline** 

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