Simple causes are often overlooked

OBD faults due to insufficient vacuum

System	Product
Vacuum system	Vacuum pump, EGR valve, secondary air valve, electro-pneumatic valve

Potential complaints:
- Engine misfires in part load
- Sawing engine
- Limp home function
- Decreasing braking power
- Lack of performance in full load

During troubleshooting, we can often rely on the OBD fault code memory and overlook simple causes.

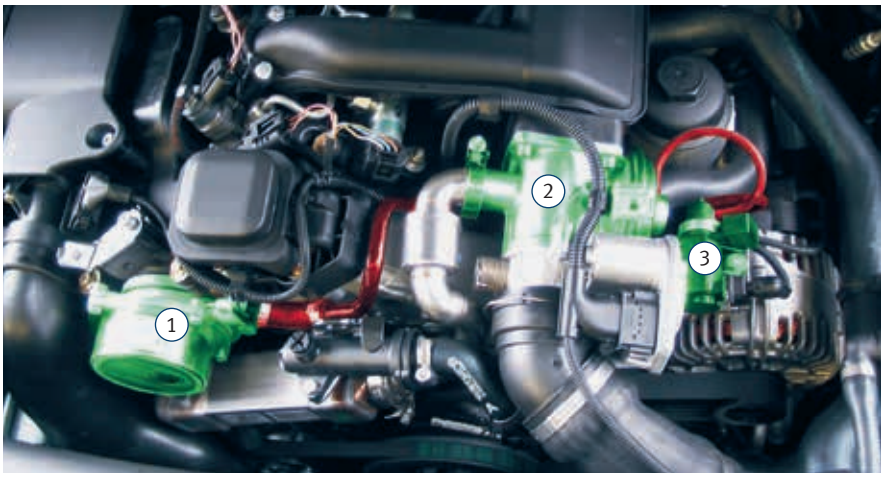
One possible cause of the fault can be found in the vacuum system of the vehicle.

Vacuum is used as auxiliary energy in many vehicles.

Each component in the vacuum system may have a leak where vacuum is escaping. Pay particular attention to the following:
- Faulty hoses (porous, marten bites, leaking connections)
- Electro-pneumatic valves (e.g. boost pressure control valve)
- Leaking non-return valves/vacuum reservoir
- Defective/porous diaphragms or seals on pneumatic actuators

The following malfunctions can also point to faults in the vacuum generation:
- Components of the exhaust gas recirculation and in the secondary air system fail. Because these are pollutant-relevant faults monitored by the on-board diagnostics, the vehicle can enter limp home function (with petrol engines).
- The braking power reduces markedly during multiple braking in quick succession (downhill driving).
- Turbocharger control and diesel throttle are not working. This can lead to the complaints "sawing engine" or "engine misfires".
- Some comfort devices will fail partly or completely.
- Reduced performance due to failed length or flap adjustment in the intake manifold.

In the event of damage, check all components in the vacuum system for leaks and replace the damaged part.



Example BMW 118d (E87): Components in the vacuum system (green), vacuum hoses (red)

1 Vacuum pump
2 EGR valve
3 Electropneumatic pressure transducer