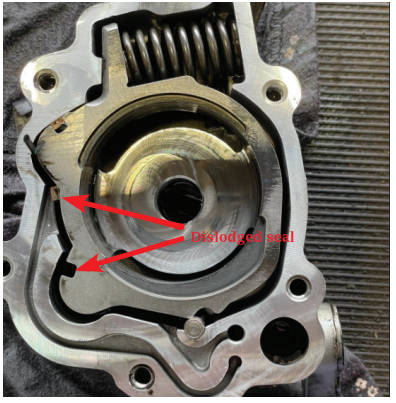
Variable oil pump **failures**



A dislodged apex seal had jammed the pump

A recent call to the Autobiz Technical Helpline confirms that variable oil pump failures are causing problems. Although this call was about an Opel Mokka 1.6 litre engine, this warning applies to many Makes and Models.

To increase engine efficiency, the oil pump has gone through some design changes over the years. This development has come with some issues regarding reliability.

The initial aim was to reduce mechanical load on the engine, to improve fuel efficiency. At idle and lower engine speed, the pressure could be significantly reduced. When high engine load and speed were required, the pump control would increase flow and pressure.

The design would use a pulse width control valve, operated via the engine control module.

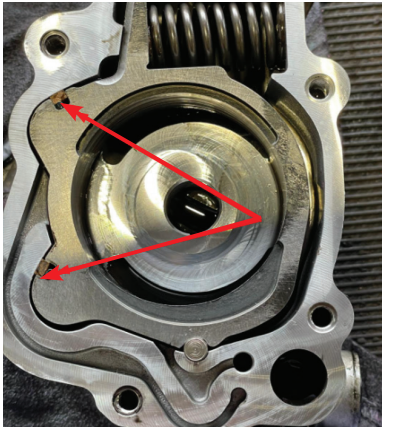
Two different locations are adopted, depending on the manufacturer. Variable oil pumps are either internally mounted on the oil pump, or externally on the outside of the block. External valves have the benefit of easy testing.

All valves have oil screens, to prevent contamination from affecting the valve operation, but they still suffer from sticking open or closed. This can affect the oil pressure. holding it permanently low or high. When this happens, it will generate a fault code for oil pressure out of range.

At the Autobiz Technical Helpline, we have found that engines that run a wet timing belt system, can produce fine powder contamination that blocks the filter screen.

A secondary issue can be a loss of electrical supply, or an open circuit within the valve and the control circuit back to the ECM.

We have also seen mechanical failures within the pump itself, due to the design of the internal components. No matter the cause, the failure has to be corrected properly.



Apex seals in the correct positions