

I keep seeing the same question about this problem being asked again and again, so I am hoping that this short explanation will finally put things to bed.

If you have a van that has problems with the oil light flashing at low engine speeds or high engine speeds along with the buzzer or indeed flashing all the time then you may have a problem with the dynamic oil pressure warning system (DOP).

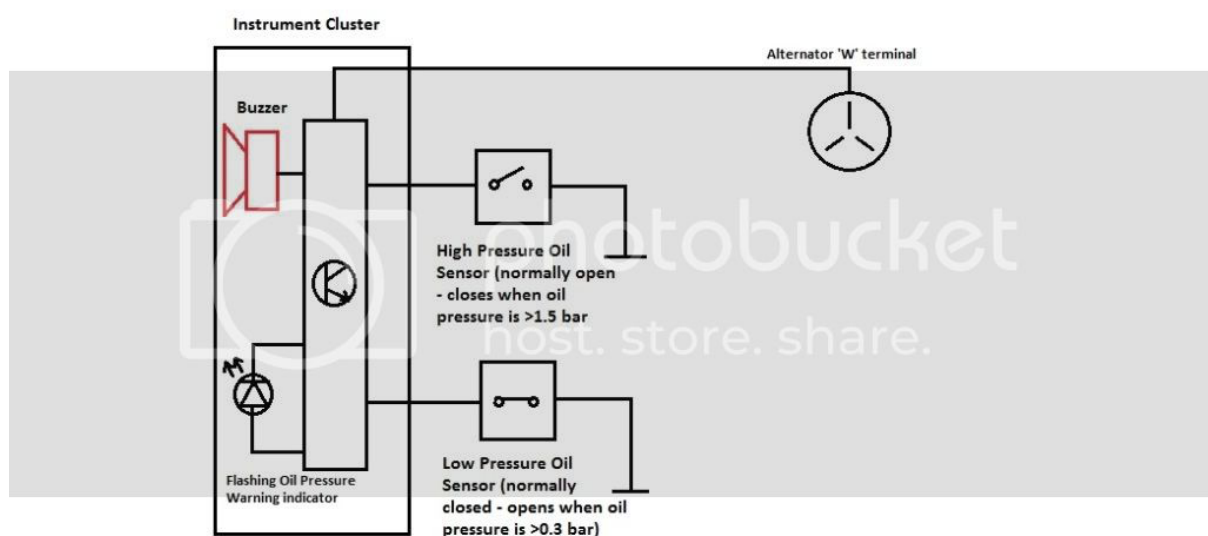
Why are there so many oil pressure warning problems on VW vehicles?

As usual VW has designed an overly-complex solution to a relatively simple problem - oil pressure monitoring. Because of the complexity of the DOP system, it has led to lots of problems with system itself rather than real oil pressure issues. Although it has to be said that such is the unreliability of DOP, that real oil pressure problems are sometimes ignored based upon the assumption that it is a 'wiring fault' or indeed vice-versa. It should be noted that VW abandoned DOP on later vehicles after about 2000/2001 and also on later (1999 onwards) 2.5TDI T4's. So, if you have a problem with oil pressure on one of these it is likely to be oil pressure sensor, wiring or an actual mechanical problem.

So what is DOP?

VAG vehicles have been using the DOP (dynamic oil pressure warning) system since the 1980's, this means that two oil pressure switches and engine RPM are used to determine oil pressure rather than the system of a single switch.

The VW rationale behind the DOP system is that low oil pressure problems are typical of high-mileage VAG engines with worn bearings and oil that is hot (and thin). The combination of thin oil and worn main bearings means that the oil pressure is marginal at lower RPM where the oil pump is not spinning as fast at idle speeds as it does when driving.



In order to address this perceived problem, the system basically monitors the low pressure sensor when the engine is below 2000 rpm and the high pressure sensor above 2000 RPM. This is done via the instrument panel which uses the 'w' terminal on the alternator to measure engine RPM and two switches - one on the head - It is normally closed and opens at (I think) ~0.3 bar ...



and one on the oil filter housing - this is normally open and closes at a fairly high

pressure depending on engine type (1.4 bar for normally aspirated diesels and some TDs, and 1.9 bar for MK3 tdi (again - I think))...



Diagnosing faults with the DOP system

The instrument cluster only monitors the oil filter housing sensor when the engine is over 1800 - 2000RPM and if this sensor is not switched by 1800-2000 RPM the oil buzzer will sound and the oil pressure light will also flash. The body of the sensor is typically white, grey, or black in colour and is connected to the wiring harness with a yellow wire.

A. To test the high pressure sensor circuit and wiring (sensor for this is on the oil filter housing):

1. Disconnect the wire to the high pressure sensor on the filter housing and let it float (un-connected).
2. The oil buzzer should now come on and indicator will flash *when the van engine speed is above 2000 RPM*.
3. Now connect the yellow wire to ground and rev the engine past 2000 RPM... the buzzer should not sound at all.
4. If you fail either of these tests you have sensor issues, wiring, alternator wiring, or instrument cluster issues.

To test the sensor itself:

A test light between the sensor and the positive battery terminal should be 'off' at warm

idle and come 'on' as you rev to 1800-2k RPM, if the sensor on the flange is working properly. If the buzzer still sounds with the wire to the sensor grounded the problem is most likely the wiring to the instrument cluster.

B. To test the low pressure sensor (sensor for this is on the cylinder head):

1. Disconnect the wire to the sensor and leave it float.
2. Connect a test light between +12V batt and the sensor.
2. Start the van and leave it idle - the light should go off - if it doesn't then you have a faulty sensor.
3. If it does and the oil light is still flashing then you have either a wiring fault or the engine speed signal from the alternator is missing.

So, the long and short is:

- **A flashing oil light, on its own at engine speeds of <2k RPM is a function of the low pressure sensor on the cyl. head. If the indicator stops flashing at engine speeds over 2k RPM then you should look at the low pressure sensor and associated wiring**
- **A flashing oil light and buzzer are both a function of the high-pressure sensor on the filter housing. If this is happening you should look at the high pressure sensor and associated wiring**
- **The high pressure sensor on the oil filter flange is only monitored when the engine is running at or over 1800-2000 RPM.**
- **A flashing oil light at all engine speeds (and without buzzer above 2k RPM) is indicative of a missing engine speed signal (alternator 'w' terminal) - check to make sure that the instrument cluster is getting the correct engine speed signal from the w terminal of the alternator**

I hope this has cleared-up any confusion regarding this common query.