

# Volkswagen Dynamic Oil Pressure Testing

The average driver relies on a dash warning light to keep track of his engine's oil pressure. He ignores the light as long it goes off when the engine is started. The problem is, the oil pressure warning light doesn't really provide much warning. By the time it lights up, at least some engine damage has probably been done.

Volkswagen found an answer to this problem beginning with 1982 models. Knowing that most drivers would pay even less attention to an oil pressure gauge, Volkswagen gave Americans something that they could understand—a loud warning buzzer.

Here's how Volkswagen's dynamic oil pressure warning system works:

- When the ignition is turned on (engine off), the oil pressure warning light comes on with the other warning lights for a bulb check.
- If the oil pressure drops below 0.3 bar (4.35 PSI) while the engine is running at any speed, the dash warning light comes back on.
- If the oil pressure drops below 1.8 bar (26.1 PSI) when the engine speed is 2000 RPM or more, the warning light will come on along with a warning buzzer.



We'll cover the diagnostic procedures for 1982-84 Westmoreland-built Rabbits. We've included a simplified wiring diagram of the system to help with troubleshooting. The gasoline engine Rabbit's oil pressure control unit is located on the fuse and relay panel. It's buried inside the speedometer assembly on other Volkswagen models which use the dynamic oil pressure warning system.

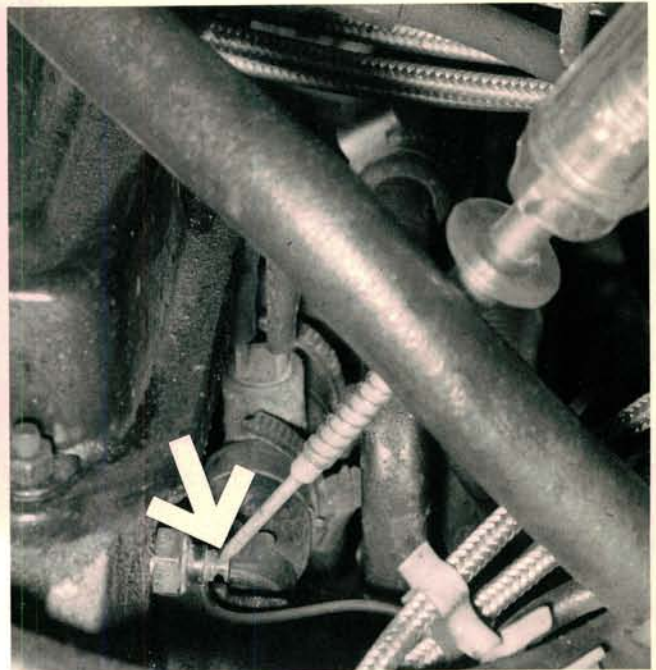
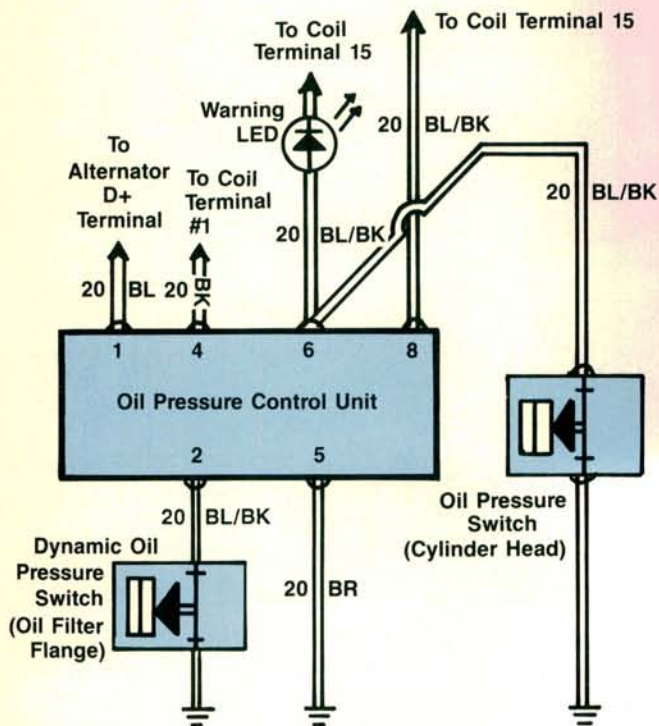
While the systems used on these other models aren't identical to the Rabbit's, their basic operating principles are the same. Consult a service manual for specific diagnostic information on other Volkswagen models.

Always assume that the dynamic oil pressure warning system is telling the truth until proven otherwise. Even if it turns out to be a false alarm, a towing bill is still a lot cheaper than a new engine.

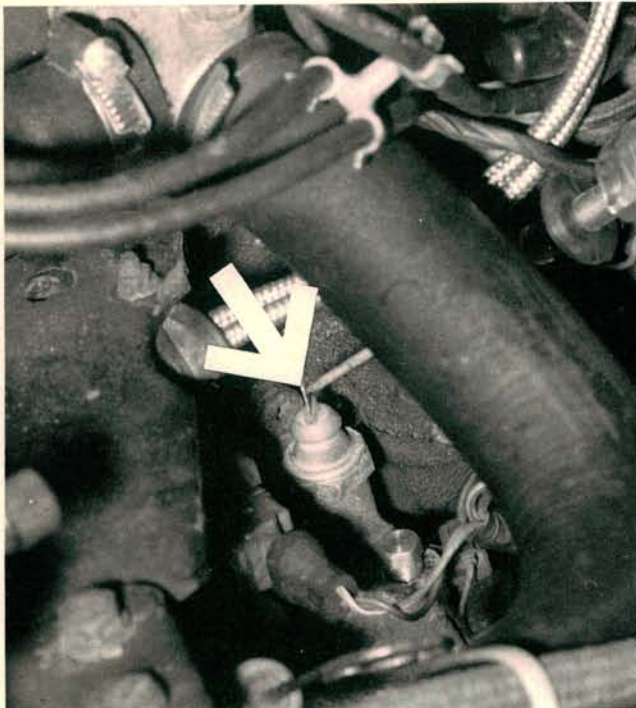
There might be one glitch in the warning system that you won't be able to fix. A transient voltage spike from the ignition system may cause a phantom signal from the oil pressure warning buzzer when the ignition is switched on. This is considered normal.

All oil pressure bar measurements used in this article can be easily converted to PSI readings by multiplying the bar measurement by 14.5.

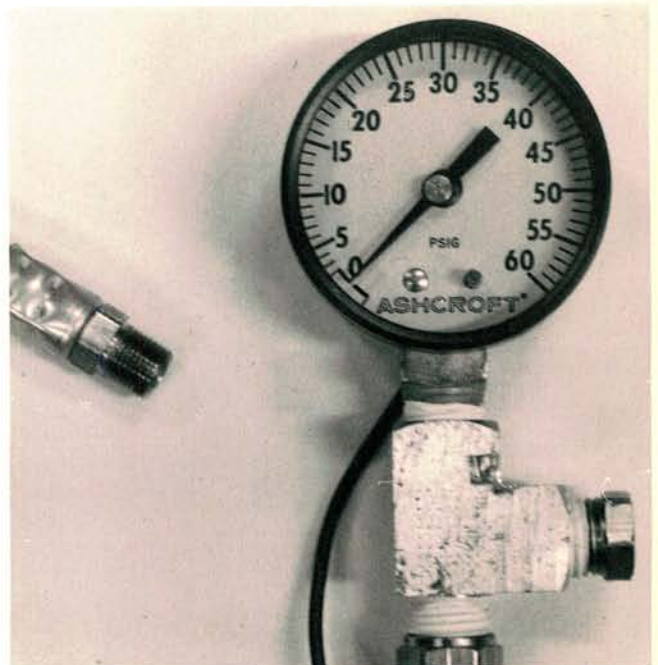
## Volkswagen Wiring Diagram



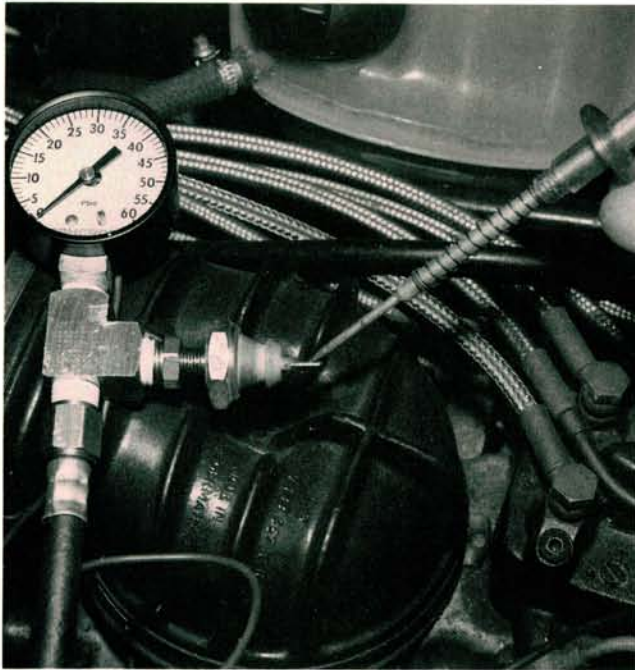
We'll do a quick check on both pressure switches first. Connect a test light between the positive battery terminal and the cylinder head pressure switch terminal. With the ignition off, the test light should be lit. With the engine running at fast idle, the test light should be off.



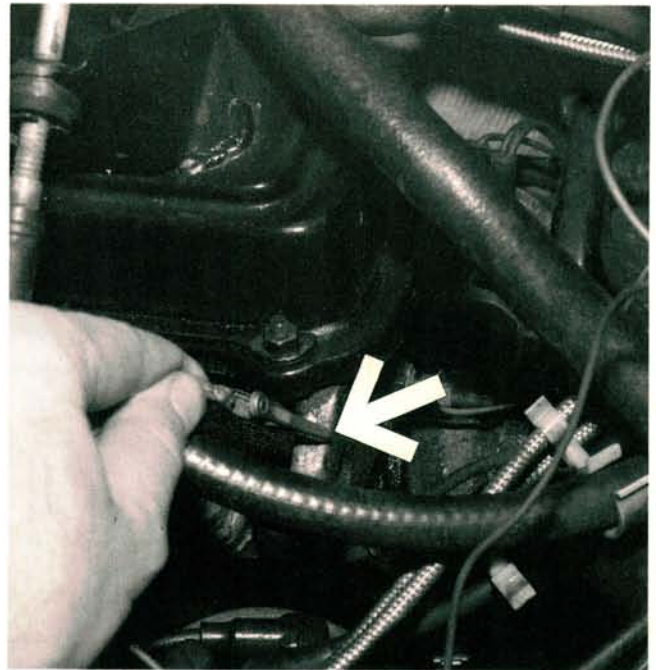
Move your test light to the dynamic oil pressure switch mounted on the oil filter adapter housing. With the engine not running and the ignition off, the test light should be off. The test light should be lit when the engine is running at fast idle.



This poor man's version of VW's combination oil pressure gauge and oil pressure switch tester lets you check engine oil pressure and the pressure switches at the same time. Remove the oil pressure switch from either the cylinder head or the oil filter housing and install it in the tester.



Install the tester hose in place of the pressure switch and ground the tester. Connect a test light between the battery positive terminal and the pressure switch terminal. The cylinder head switch must open (light goes out) at 0.15-0.45 bar. The filter housing switch must close (light comes on) at 1.6-2.0 bar.



To test the rest of the system, remove and ground the cylinder head pressure switch's harness connector, then turn the ignition on. The LED warning light should light. If it doesn't, check for a bad LED, or a break in the wiring between the LED and the pressure switch.



Now run the engine at less than 2000 RPM. Remove and ground the cylinder head oil pressure switch harness connector a second time. The LED oil pressure warning light must light. If it doesn't, check the LED and wiring between the LED and the pressure switch.



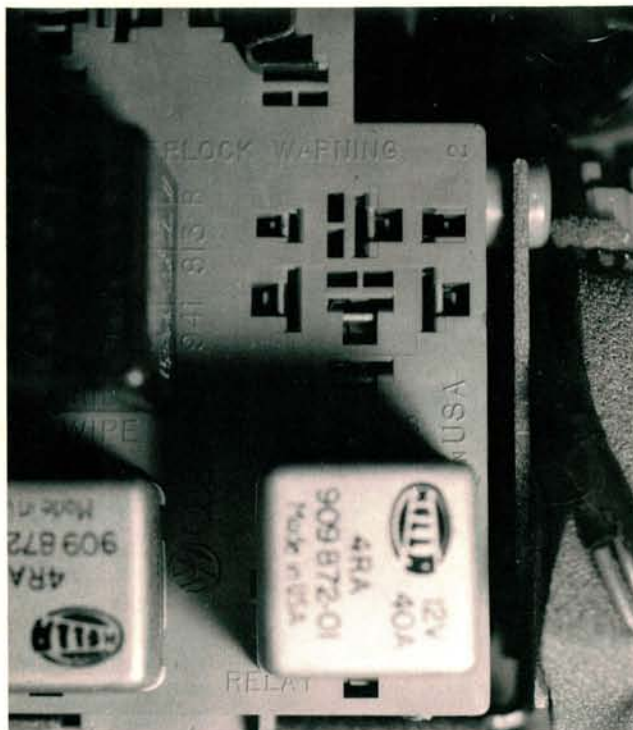
Keep the engine speed below 2000 RPM and reconnect the harness connector to the cylinder head pressure switch. The warning light must go off. If it doesn't, either the pressure switch is stuck, or the engine has low oil pressure at low engine speeds.



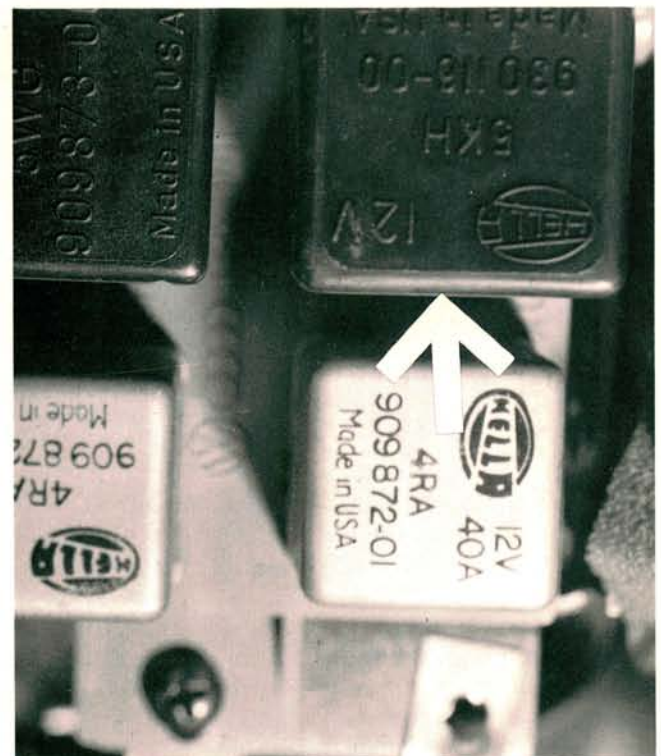
Now raise the engine speed to more than 2000 RPM, then remove the harness connector from the cylinder head sensor. The LED warning light must come on. If it doesn't, check the LED and the wiring between the LED and the pressure switch.



Maintain the engine speed above 2000 RPM and remove the harness connector from the dynamic oil pressure switch on the oil filter bracket. The warning light must come on and the buzzer must sound. If it doesn't, check the LED and wiring.



Remove the oil pressure control unit from the fuse block for harness continuity and voltage testing. The terminal numbering on the relay matches our wiring diagram. Terminal 5 is connected to a body ground behind the fuse panel. Also test terminals 1, 4, and 8 for battery voltage with the ignition on, engine not running.



If the system wiring and LED checked good in the previous tests, replace the oil pressure control unit (arrow). For a final test, ground the oil pressure switch harness connector while engine speed is above 2000 RPM. The oil pressure light must go off and the warning buzzer must stop sounding.