

## GM's Active Fuel Management Diagnosing Low Oil Pressure Symptoms

Symptoms of a low oil pressure condition have become a common complaint on GM vehicles equipped with active fuel management, sometimes referred to as displacement on demand. The symptoms may be the result of one of two malfunctioning pressure regulating valves or from a restriction in a filter screen positioned beneath the oil pressure sensor. The small screen prevents contaminants from collecting in the valve lifter oil manifold and its related solenoids. A contaminated screen results in reduced oil flow to the oil pressure sensor, resulting in a low oil pressure symptom. Read on to determine the cause of the low oil pressure symptom.

### Pressure Regulating Valves

The low oil pressure condition may be the result of one of the pressure regulating valves being stuck in the open position. The uncertainty is...which pressure regulating valve is the cause. In case you were not aware, in addition to the engine oil pump pressure regulating valve, the active fuel management system has a pressure regulating valve mounted in the oil pan.

Locating the malfunctioning pressure regulating valve can be accomplished with the use of some basic shop items, including an adapter to replace the oil filter, a fitting to replace the oil pressure sensor and two mechanical oil pressure gauges. We will reference Kent-Moore part numbers; however, other tool companies such as OTC offer equivalent adapters and fittings. Following is GM's recommended diagnostic procedure to isolate the cause of a low oil pressure condition for applications equipped with RPO LH6/LMG/LY5/LC9/L76/LY2/LY6/L9H engines:

- 1) Remove the oil filter and install Kent-Moore EN-47971 (or equivalent) oil pressure gauge adapter, which allows the attachment of a mechanical oil pressure gauge.
- 2) Attach the mechanical oil pressure gauge to the EN-47971 adapter.
- 3) Remove the oil pressure sensor and install Kent-Moore J-21867-16 adapter (or equivalent), which allows the attachment of a mechanical oil pressure gauge.

- 4) Attach the second mechanical oil pressure gauge to the J-21867-16 adapter.

### Pressure Readings

With the engine running, observe the pressure readings on both oil pressure gauges. The pressure readings should respond to changes in throttle position.

GM states that with the engine running and the lower pressure gauge (at the oil filter adapter) measuring below 55 psi, both gauges should reflect the same pressure reading. If the two readings vary and the lower gauge has a higher pressure reading, the active fuel management oil pressure relief valve (located in the oil pan) is stuck in the open position or the valve lifter oil manifold filter (mesh filter screen located below the oil pressure sensor) is plugged.

If both gauges display equal pressures and they are both low, the oil pressure regulating valve in the oil pump may be stuck in the open position. Check the oil pressure relief valve for the presence of debris, which can restrict valve movement, causing a low pressure and volume condition.

With the engine running and the lower pressure gauge reading above 55 psi, the upper gauge should not reflect a reading greater than 55-75 psi. If the upper gauge reading is greater than 75 psi, the active fuel management oil pressure relief valve (located in the oil pan) is stuck in the closed position.

The procedure illustrated is an accurate means of identifying the cause of a low oil pressure reading, preventing the replacement of some unnecessary parts and reducing the diagnostic time.

Timely maintenance is imperative in keeping the engine free of contaminants. It is imperative that the vehicle manufacturer's recommended lubricant is installed when performing vehicle maintenance to prevent accelerated engine and component wear and to prevent the formation of sludge. Sludge deposits or flakes of metal have the potential to stick the pressure regulating valves, resulting in a high or low oil pressure condition. Where applicable, use the extended life oil filter to prevent filter by-pass.



By Larry Hammer  
Technical Services



Following two days of failed diagnostics, Leonard's **OWN** internal pressure-regulating valve is about to **BLOW!**