

Finding and Fixing Oil leaks on the LT5 Engine

Marc Haibeck

Most LT5's drip oil on the floor by the time 10,000 miles are covered. This may be disappointing, but it is not as bad as it may seem. Here's a review of six common and two not so common leaks.

The Oil Pan Gasket

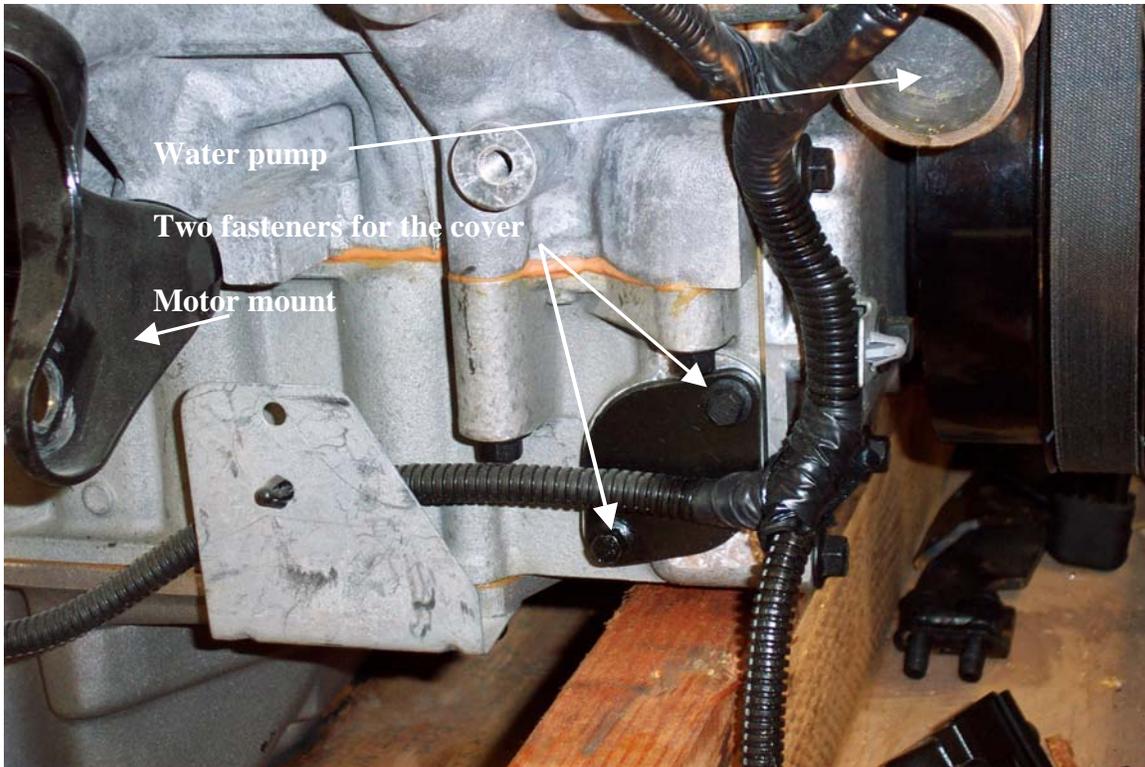
The most common source for an oil leak is the oil pan gasket. In my opinion the gasket shrinks during the first 10,000 miles causing the leakage. Usually the bolts are found to be loose in spite of the fact that they were installed with thread locker at the factory. The problem is compounded because the oil level at the back of the engine is about an inch above the gasket when the engine is not running. The good news is that the seepage can be reduced significantly by simply tightening the bolts. Most of the time, tightening the bolts will slow the leak by 90%. To tighten all of the bolts, the heat shields and frame cross braces need to be removed. Surprisingly, even though the thread locker is compromised when the bolts are tightened, most of the time the bolts will stay tight after one tightening. It's easy to follow-up at every oil change. Check the easy to reach bolts for tightness. They will usually be found as tight. The torque specification for the bolts with 10 mm and 13 mm heads is 23 ft. lbs. Be aware that extreme over tightening of an oil pan bolt can crack the flange on the oil pan. If a gorilla preceded you and the flange is cracked, there will be leakage in a semi-circle at about a 1/4" radius from the OD of the bolt head. An expert welder can repair the crack.

A factory installed rear seal is very reliable and normally seals well for 100,000 miles. It's easy to misdiagnose oil drips on the oil pan as coming from the rear seal. Sometimes the oil bridges onto the sheet metal front cover for the bell housing. Then it drips from the front of the bell housing, again calling the rear seal into question. I recommend tightening the oil pan bolts first. Most of the time the leaking will diminish greatly.

I have never seen a factory installed front seal leak.

The Oil Pressure Regulator Cover

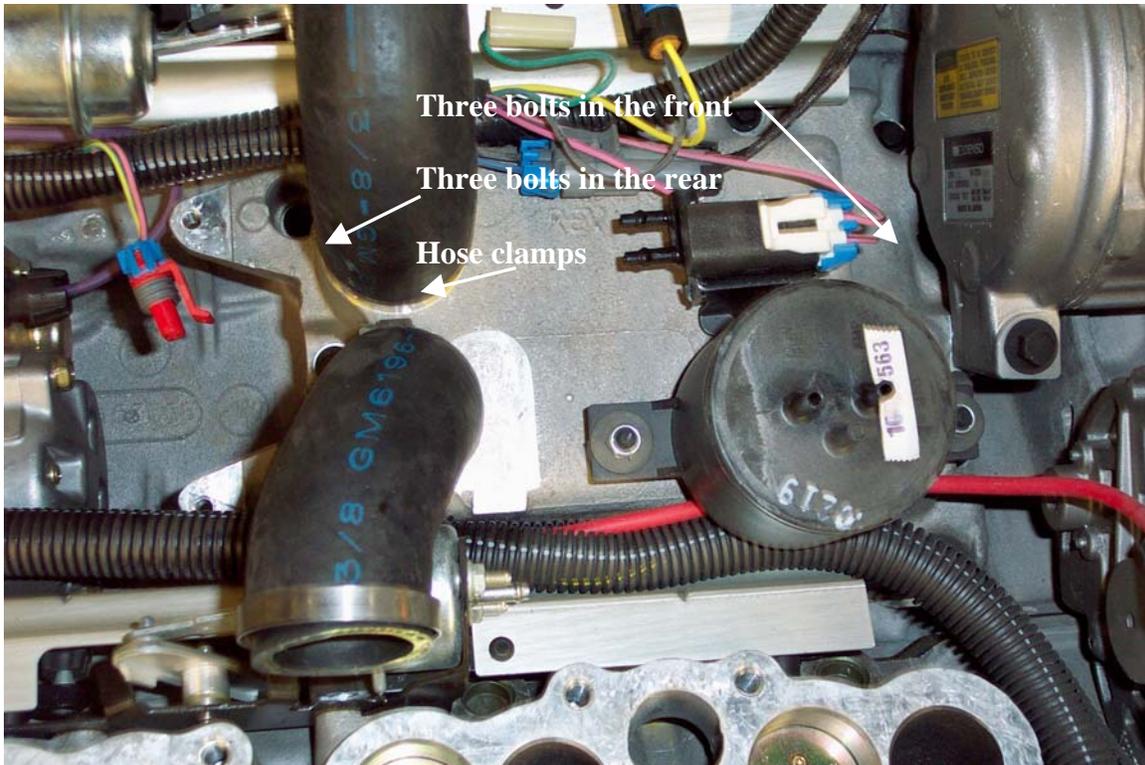
Often accompanying an oil pan gasket leak, is leakage from the little cover that is located on the right side front just above the oil pan flange.



The cover is often found to be loose. The little cover can't be seen when the engine is installed in the car. To reach it, I like to jack up the right front of the engine and reach down from the top. It's still difficult to see. I often tighten it by feel. The two fasteners with 8 mm heads need to be tightened.

The Crankcase Breather Box

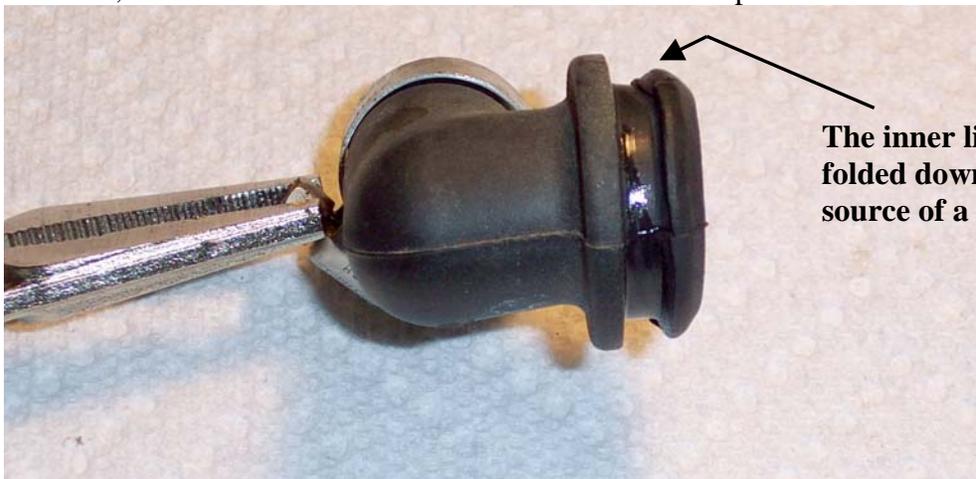
The crankcase breather box is located under the plenum. Leaks from the breather box and anything under the plenum will drip from the drain tube located behind the right side of the oil pan.



Leakage can be reduced significantly if the six easy to reach bolts are tightened. The lower ends of the crankcase breather hoses can leak. The hose clamps can be tightened.

The PCV Vent Tube Grommet

If oil is found pooled under the injector housing it likely that the PCV vent tube grommet is leaking. About half of the grommets were installed incorrectly at the factory. When removed, it can often be found with a folded over inner lip.



The inner lip has been folded down. It's the source of a leak.

The grommet can be replaced. The GM part number is 14078872. Or it can be cleaned and sealed with gasket sealer.

The Camshaft Covers

Factory assembled camshaft covers may leak on the '90 – '93 engines after about 50,000 miles. View the rear corners of the covers from under the car. The problem is not with

loose bolts, but with failure of the gasketless seal. The anaerobic sealer fails. The solution is to remove the covers and reseal them. Removing them is a huge task.

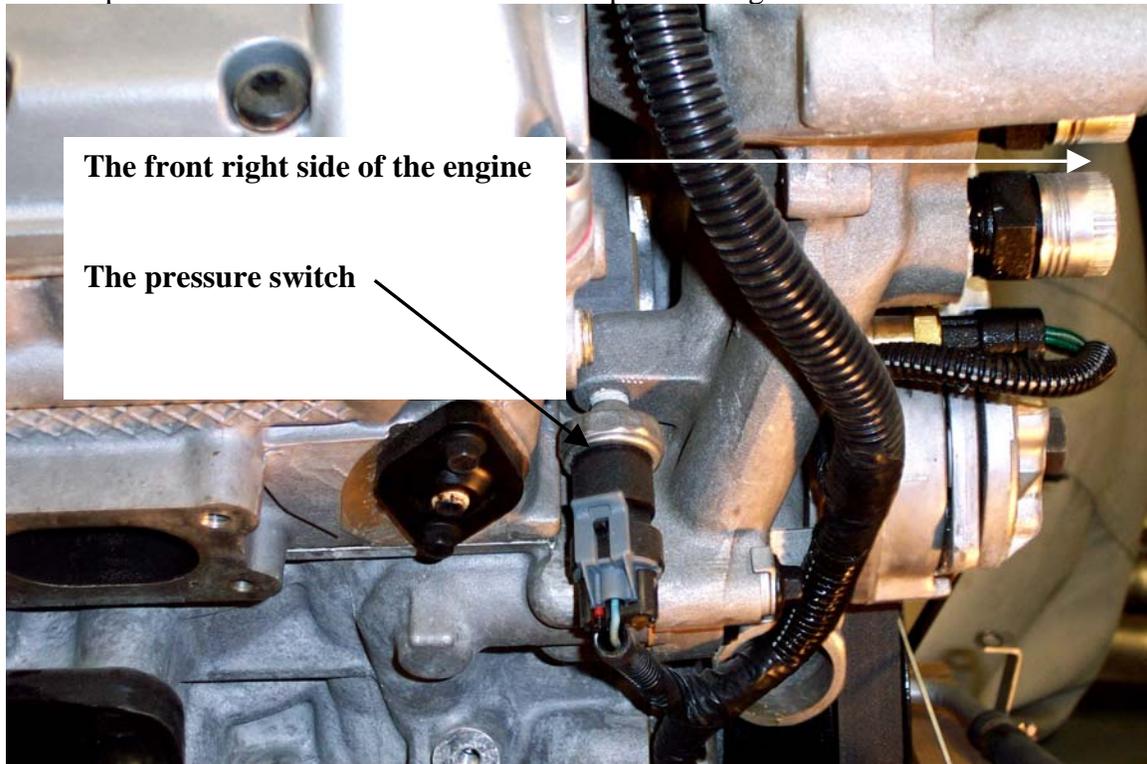
For an unknown reason, the '94 –'95 camshaft covers may leak after only 5,000 miles.

Covers on refinished engines can leak if the bolt pads have a layer of the finish. The finish coating becomes soft from engine heat and the bolts lose their clamping force. Surprisingly, tightening loose bolts will seal the cover if the problem is discovered before too long.

The OE Permabond A136 sealer is no longer available. Loctite 518 has a slightly higher viscosity but works great. Apply a paper thin layer.

The Oil Pressure Switch

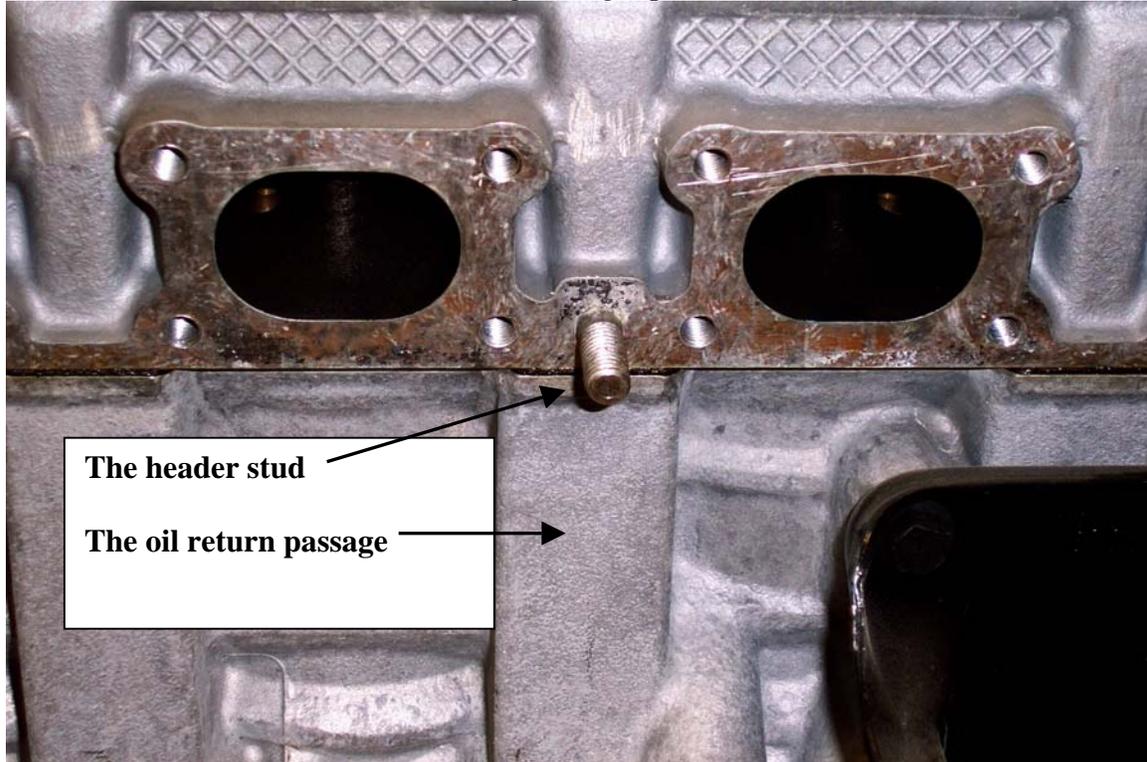
The oil pressure switch is located under the oil pressure regulator.



Oil from the switch connector can run down the cable and drip a few inches away, under the front pulley of the engine. To view the switch and service the switch, lift the right side of the engine.

The Header Stud

The '90 – '92 engines have an exhaust manifold stud that screws into an oil return passageway. About 50% of the studs leak. When the leak is small there will be an acrid burning smell inside the car. Sometimes the stud leaks enough to drip on the floor. The factory used Loctite 620 retaining compound, but it does not seem to work too well. I recommend Loctite 565 sealer for a long lasting repair.



Two Uncommon Leaks

The camshaft position sensor can leak down the cable. When it does, it's easy to spot.

The oil level sensor can leak from the connector socket. It's located on the oil pan.