

UNIVERSITY MOTORS PRESS

RAISING OIL PRESSURE on an XPAG/XPEG ENGINE

The oil pressure on the XPAG engine should be about 60 psi running down the road, regardless of temperature. But a hot idle in a hot parking lot in August can result in as little as ten psi. As long as the oil pressure snaps up to about 60 when the engine is revved, you are A-OK. Here are some hints on raising the oil pressure.

1. For an **accurate reading**, the line to the oil pressure gauge should leave the block, not the head. The earlier XPAGs used a fitting from the head. This results in figures 10-40 psi lower than the true engine oil pressure.
2. Ensure that the **engine oil** is 20W/50. As an aside, ALWAYS use oil with ZDDP. While you can purchase a ZDDP additive, the net result is not always what is necessary. Rather than play home chemist, purchase high zinc oil. We use Brad Penn but many others are available.
3. Some **oil filters** restrict flow. If there is a chance of this, remove the oil filter element for a test. Run the engine without the filter element long enough to read the oil pressure. If the readings are greater by ten or more psi, seek another filter element.
4. **Cylinder head lubrication** can reduce oil pressure. The rockers receive an enormous quantity of oil. The racers will tell you that during high speed running the valve cover can nearly fill with oil (resulting in oil starvation). That quantity of oil is not necessary to lubricate the rockers. We place a restrictor in the line from the block to the head. Drill and tap the bore of the top banjo bolt to ¼-28. Fit a Holly jet 144-45 (0.045") to the end of the banjo bolt and reinstall. The Holley jet has a ¼-32 thread but will fit it satisfactorily.
5. The **oil pressure relief valve** is easily removed. You can change the spring, add a spring (inside the existing spring), shim the spring, or fit the adjustable oil pressure relief valve. This is not cheating! The oil pressure relief valve controls the upper limit of the oil pressure and if it's blowing off at 40 psi, you can change that to 60 psi.
6. Eventually the **rod and main bearings** fail. You can change the rod bearings and the bottom halves of the main bearings *in situ*.
7. The **oil pump** rarely fails to produce pressure. The gears are very long and move an enormous quantity of oil. Occasionally we find a gasket between the pump body and the pump head. That allows an internal leak in the oil pump. There is NO gasket in that location!
8. Wear in the oil pump driven shaft (the one fitted into the block) will allow the oil pump driven gear to sit too far away from the inside diameter of the pump body. This may result in a lower pressure.
9. If the main bearings are coppered up, then it's necessary to remove the engine from the car to change the top halves. Repairs to the oil pump nearly require the removal of the engine.