Champion Oil Pressure help

It was not my idea. Racing engine people have been using it for a long time.

If you have a Champion engine that has been rebuilt and you are confident all the crankshaft and camshaft clearances are where they should be and you still have low oil pressure, here is an idea.

Over time your Champion engine may not have had the regular oil changes that were recommended. Dirty oil in an unfiltered engine gets recycled and used over and over again with the dirt still in the oil. Even partially filtered oil is a good thing but some of it will also be used in its unfiltered composition.

Dirt is abrasive. Abrasive causes premature wear to all moving parts.

It seems one of the areas of high wear in a Champion engine is the lifter bore. There was a time when one could buy oversize lifters to fill the wear gap between the lifter and the bore. That time is past as no one is willing to make oversize lifters at this time.

Before we go further I am not telling you this will cure all your oil pressure problems, but if your engine is in good shape this could help in a big way.

What is it? It is a restrictor that reduces the amount of oil that is pumped into the lifter bore. That is important because Studebaker made a large galley front to back in the Champion engine that absorbs a large volume of oil. If your lifter bores are badly worn there is then little to restrict this large volume of oil from escaping around the lifters. When this happens there is a chain reaction, first you loose oil pressure, second if your valve guides are badly worn, or your rebuilder did not reinstall the baffle plates your Champion engine begins to smoke and burn oil.

The restrictor fits into the rear of the engine at the top oil galley plug. The plug is removed and the restrictor is turned in with a screw driver as far as it will go then the plug is re-installed. The bell housing and flywheel must be removed for this procedure.

I install this restrictor in all Champion engines when I remanufacture them with good results. They are available for $45 postage paid by writing me at. Theodore Jensen, 525 Penny Rd. Pawling, NY 12564. This is what it looks like.

Here is what one customer wrote about the restrictor.

Story of the 170-cu. in. engine for my 1947 M-5.

In the Spring of 2020, I had a local machine shop do the machine work on a 1951 car 170 cu. in. engine for my 1947 M-5. I was responsible for disassembly and reassembly. I have excellent mechanical skills so this wasn't a problem.

The shop bored the engine .040 over and the crank .010 under. NOS head to replace the cracked head and a NOS camshaft. New pistons, rings, bearings, oil pump gears and shaft, timing gear, valve lifters, valve guides, valves, valve springs, harden valve seats, valves lapped, oil pressure valve. I rebuilt the carb, fuel pump and distributor and had the starter and generator rebuilt. I brought the engine home and reassembled it.

Put the engine on a test stand and started it October 2020 with a disappointing result. Very low oil pressure 5 to 10 lbs. and a rhythmic squeaking sound coming from the crankcase near the rear camshaft bearing. When I installed the camshaft, I had to use a rubber mallet to tap it into place. I took the engine apart and found the rear cam bearing was installed at an angle and the camshaft had worn a grove in the bearing. Back to the machine shop for new cam bearings.

Again, I reassembled the engine and started it. The same problems, oil pressure 40 lbs. at start and 5 to 10 lbs. at idle. Still the squeaking from the crankcase. Apart the engine comes and I carefully plastic gauged and check all the tolerances looking for the problem. Everything checks out fine. I can't figure out what's wrong with this engine.

I had talked to local mechanics, sent letters to the Studebaker Drivers Club Co-Operator Advisors and couldn't get a solution to the problems. At this point I called Ted Jensen using the contact information from the Vendor Issue of Turning Wheels. Mr. Jensen correctly identified the problems as excessive wear of the lifter bores. He sent me his Restrictor to be installed in the camshaft oil galley.

I installed the restrictor, put the engine back together and started it. Cold start fast idle oil pressure now was 60 to 65 lbs. and at normal idle 20 to 25 lbs. Plus, the squeaking noise from the crankcase was gone. A great improvement from the 40 lbs. at start and 5 to 10 lbs. at idle.

Thank you, Mr. Jensen, for supplying this restrictor,
Charlie Tetkoski