



TECHNICAL BULLETIN

Standard Volume vs High Volume Oil Pumps –

Which one is correct for my application?

Modern automobile engines can present many challenges to an engine's oiling system. Oil pumps are designed to supply a sufficient flow of oil to meet the engine's specific rate of demand. Not only are lubrication requirements of the engine at its full operating conditions factors in this calculation, most modern engines have incorporated sophisticated accessories to increase fuel efficiency and reduce emissions. These accessories can include Displacement on Demand or Active Fuel Management Lifters, Camshaft Phasers, Hydraulic Timing Tensioners, and Piston Coolers. All of these components are hydraulically actuated and operated based on a certain level of oil pressure produced by the oil flow that is created by the oil pump.

Before we go any further, we must first remind ourselves that oil pumps DO NOT create oil pressure. Pumps create a flow of oil and the resistance to that flow is what creates oil pressure. Resistance to the oil flow in an engine is created from the bearing and lifter bore clearances, the wear to these clearances can be accelerated in modern engines due to variables such as extended oil change intervals, and the abrasive soot commonly formed in direct injected engines.

New engines, or engines rebuilt to factory tolerance specs, will be able to create higher oil pressure when compared to a used engine with larger clearances. If an engine is showing low oil pressure, simply replacing a used oil pump with a brand new oil pump will most likely not solve the low oil pressure issue. Why? The root cause of the low pressure has not been diagnosed and fixed!

Obviously, low oil pressure can be detrimental to the proper operation of the hydraulically actuated components mentioned earlier, specifically camshaft phasers. If the engine is setting phaser codes or the engine is experiencing timing issues, one must verify that the phasers are the actual problem. Not enough proper oil pressure in the system because of wear and increased bearing tolerances can cause the phasers to act erratically. Just like replacing the oil pump without fixing the root cause, simply replacing the phasers will most likely not fix the issue.

Does Melling offer a solution to low oil pressure without a complete engine rebuild? YES! Melling created the High Volume Oil Pump, going as far back as the M-15 (HV pump for 1939 to 1953 Flathead Ford engines). Melling recognizes the need to supply cost effective solutions for high mileage engines to keep automobiles operating. Whether your engine is from the 1940s or 2021, Melling offers High Volume oil pumps for the most popular applications.

In summary, if your engine is experiencing VVT (Cam Phasers) or Timing concerns and a complete engine rebuild is not possible, Melling may offer a high volume oil pump for your application that could potentially assist with these concerns. Replacing the original cam phasers and timing set is also recommended maintenance during this time as well.