

# THE EXTRA MILE

## Engine Building and Power Techniques

BY **SCOTT SEHR**



**Absolutely, The Most Motor For Your Money! Guaranteed**

## The Lubrication Situation

When a customer brings in an engine to get it machined one of the questions asked is "Do you want the main bore and connecting rod housing bores checked?" A common response is 'No they should be fine the bearings looked good.' The connecting rod and main bore housings must be the correct sizes as well as round to obtain the proper bearing crush when the caps are installed, this holds the bearings tightly in place and provides sufficient oil clearance as distortion occurs at higher RPMs. If the housing bores are too big or not perfectly round, a bearing can spin or move around in the housing bore causing scuffing, premature wear and failure. Equally important as correct housing bore size and concentricity is alignment. If the bore is not aligned with the journal, scuffing and wear will occur as the crankshaft itself flexes under load due to the extreme forces applied. Another issue with not having proper alignment and housing bore size is a loss of power. Here at Sehr we check, measure and set main bore and connecting rod bore sizes and alignment so our customers get all the useful life and performance from their engines. In all of my years building engines I have found very few that meet my specs before correcting.

Oil pressure in an engine is comparative to blood pressure in the human body however; pressure is not the only measure. Adequate flow and delivery to all the components is imperative.

When we assemble an engine and prime the oil system we observe not only oil pressure, we confirm that there is sufficient flow to all areas including rocker systems and valve springs. A common practice is to restrict oil flow to the top end in order to keep more oil around the rod and main bearings, however this restriction can starve the rockers of needed lubrication and the valve springs of oil needed to carry away heat. This can cause rocker failure and loss of spring pressure and ultimately performance lost. Tighter bearing clearances will provide higher pressure but reduced flow. Looser clearances will lower oil pressure and increase flow and allow the engine to run more freely but the oil pump has to be up to the task assigned.

At Sehr we dyno the oil pump before installation to confirm that volume and pressure are adequate. It's another one of the little things that we do in Going The Extra Mile.

If anyone has a question they would like us to address let us know.

Let us help you get the  
**"EXTRA MILE"**  
out of your next build.

