

# THE EXTRA MILE

Engine Building and Power Techniques

BY SCOTT SEHR



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

## Let's Get Things Cleared Up

When building today's 'hot rod' engine, there are clearances that must be attended to. An engine that has all the proper clearances for its particular use will give you the engine service that is expected from a properly, professionally build engine. In the next couple of months we are going to take a closer look at the benefits of getting these clearances right and the cost of getting them wrong. When most people think about clearances they think about the rods and mains but that is just the tip of the iceberg.

Here at Sehr Performance we pay attention to all the critical and often over-looked engine clearances. We check, set, and make allowances for all of these clearances as we machine and assemble an engine; it is not an after thought but an objective. Unfortunately, many of these crucial tolerances are often overlooked or don't get the attention that is deserved and needed from the novice engine builder. Failure to address these issues can result in premature failure and disappointment. Building a 'tight engine' might have worked for grandma's station wagon but not in today's performance or yesterday's high performance engines. Getting these clearances correct not only provides for a longer service life from your engine, it will ultimately provide more performance as well.

The most obvious clearances are for bearings. These clearances are measured in ten thousands of an inch and need to be in specific tolerances according to the planned use of a particular engine. A daily driver needs different clearances than an 'all out' drag race engine. Proper bearing clearances allow for an adequate hydraulic film of oil to protect the bearing surfaces. Too tight of clearance will cause bearing bind, scuffing and failure do to insufficient oil flow. This too tight condition will result in higher engine oil pressures

but will also rob performance. Too loose and oil pressure is lost, noises develop and premature failure is the end result. One of the most overlooked bearing clearances is in the cam bearings. In most engines this is the first area that should get addressed in improving engine oiling. Attention here results in better cam and lifter life and improved engine oiling overall.

Stay with us for a while and we will provide some insights and food for thought on what constitutes the right clearance.

To be continued...



Checking Cam Bearing Clearance



Checking Main Bearing Clearance