THE EXTRA MILE

Engine Building and Power Techniques

BY SCOTT SEHR

Sehr PERFORMANCE MACHINE

Absolutely, The Most Motor For Your Money! Guaranteed

Gearing Up for a Good Time

When building performance engines one commonly overlooked component is the use of the correct distributor gear. Distributor gear wear will cause the engine to run improperly and to have power loss. Many things like improper alignment, gear material compatibility, and improper engine components can cause premature wear. We will discuss proper and correct procedures so your hot rod engine will have good time.

Correctly machining your engine to blueprint, gain reliability and gain horsepower include milling the block and heads to raise compression. Often the intake manifold needs to be machined for proper port alignment. All of these machining processes will drop the distributor into the block further and closer to the oil pump. This can cause the distributor to be bottomed out on the oil pump and tight gear meshing. Precise measuring and fitting is required for proper alignment but one can check using the distributor upon engine assembly. Install the distributor using no gasket and check to see if the distributor flange is seated on the intake. Then using the top plate where the advance springs sit see if the shaft has vertical play, if not then a distributor shim using the correct thickness must be used to achieve clearance. A gasket must always be used with the shim. In the machine shop we use precise measuring equipment to insure correct gear mesh and alignment. Using a high volume oil pump is a common requirement for a high performance engine. The engine must be machined and clearanced correctly for the use of this style oil pump. Driving a high volume oil pump increases the gear tension dramatically and can cause gear wear. Certain engine designs are noted for having distributor gear wear problems but these issues can be dramatically reduced by oil system modifications. Camshaft walk can also cause excessive gear wear. Using a cam button will stabilize the cam walk, ignition timing, and wear.

There are many different materials used in camshaft cores and distributor gears. The correct material compatibility is essential for life and accuracy. Camshafts are available in cast iron, austempered ductile iron, and billet steel. Distributer gear material available is cast iron, melonized, bronze, and composite. Iron cams will require an iron gear, austempered cams require a melonized gear, and billet cams require a bronze gear. Composite gears can be used with all camshafts and will minimize wear but is a higher dollar option. When using a bronze gear it must be checked yearly for wear because it is softer than the billet material and will wear instead of wearing the camshaft.

At Sehr Performance we pay close attention to all aspects of your engine so our customers get all the performance out of the engine for a real good time.

From left to right: Cast, Melonized, Bronze, and Composite Gears

Abnormal wear from misalignment on left. Normal wear from correct alignment on right.

And that's why we go the

"EXTRA MILE"

at Sehr Performance Machine!

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