

THE EXTRA MILE

Engine Building and Power Techniques

BY SCOTT SEHR



Absolutely. The Most Motor For Your Money! Guaranteed



Oil pump and pick-up installed



Ready to install another piston

When all the pieces come together

Now that all the critical clearances have been checked and set, it's time to fully assemble our engine. There are many procedures that must be done correctly and in the proper sequence to have a successful engine build. If one step is overlooked or not done right the engine's useful life and power will be compromised. From using the right sealants and correct lubricants in the right place to following the torque sequences and torque specs, it's all essential to the finished product,

When we left, our crankshaft and camshaft had been installed and bearings and valve to piston clearances had all been checked. Now it's time to install the pistons and rods. Be sure to properly lube the wrist pins and bearings and use the appropriate ring compressor and follow the torque specs.

Now it's time to set the cam thrust. If the engine does not use a thrust plate the front cover is temporarily installed with the gasket and measuring the clearance between the cover and the cam thrust button. If the cover is pushing on the thrust button the camshaft can wear into the block and create filings that can destroy an engine. Too much clearance the camshaft is allowed to walk front to back at certain rpms which will scatter the ignition timing radically which leads to power loss and possible bearing damage. When the cam thrust has been set, the front cover is installed using a very thin layer of sealant on both sides of the gasket and it gets torqued to specs.

The oil pump and pump drive are next to be installed. After lubricating the pump rotors with assembly lube and installing the pump drive we install the pick-up tube being sure that it is parallel with the bottom of the pan and suspended about 1/2" above the floor of the pan. The pan goes on next, the correct torque, sequence and specs are important here to avoid a leak.

The cylinder heads are next in the assembly using the correct head gasket, torque sequence and values. Next the valve train gets lubed up and installed on our engine. The rocker arms are adjusted according to the cam specifications and the intake manifold is installed using the correct sealant. Sometimes the intake manifold needs to be milled to the correct angle to insure a good fit to the cylinder heads to avoid an intake leak and a lean condition in one or more cylinders. Here again using the correct torque sequence and specs are very important.

As you can see, a lot of things have to be done right and in the proper sequence to have a successful engine build. Here at Sehr we always go "The Extra Mile" so our customers experience the best finished product that money can buy.



Ready to install heads

722 E. 8th St. | Sioux Falls, SD | 605-334-4191
sehrpower.com