

THE

EXTRA MILE

Engine Building and Power Techniques

BY SCOTT SEHR



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

Sehr Performance

going the

"EXTRA MILE"

Looking at the Angles to Build a Better Block

Last month we discussed the importance of having the main bore of the engine block correct, true, and straight. This month we will identify why this is the first machine procedure to be performed and why it is so very critical to all other block machine processes. The main bore centerline is the main basis for setting up and aligning the block deck height, camshaft centerline, and cylinder bores. All of these aspects are very critical in how an engine will perform, so let's dig in.

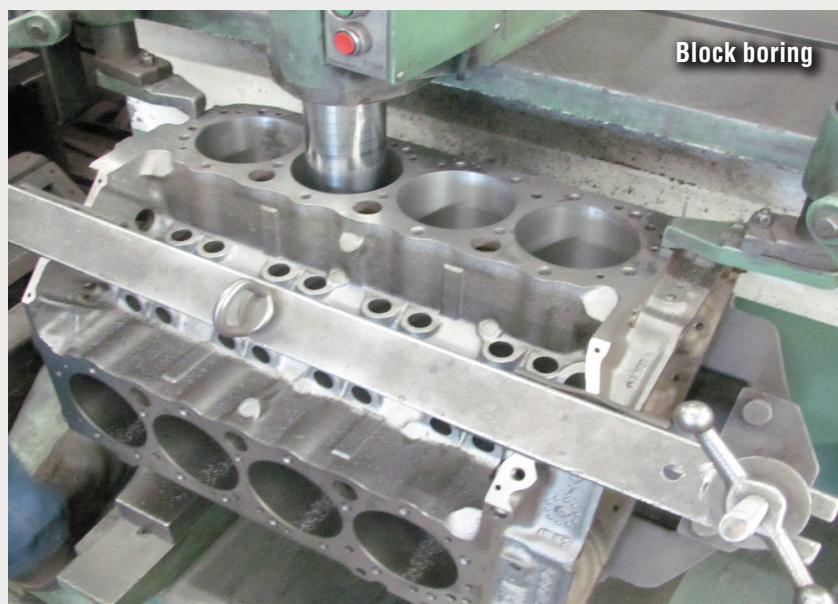
The deck of the engine block is the surface in which the head gasket and cylinder head is fastened. The deck of the block from the factory is machined to a loose tolerance that is adequate for a stock engine but a performance engine will not perform well with these factory tolerances. The deck must be in perfect alignment with the main bore center. The deck height is the

measurement from the main bore center to the deck surface. The deck height must be equal in height from front to back and in a V-configured engine must be equal from side to side as well. To add to this, the deck planes from side to side must be at an exact 90-degree angle from one to the other using the main bore to camshaft bore centerline as the median. I have seen engines be so far off that the block cannot be used. After establishing the original state of the engine block deck height, alignment, and angle then the decks can be machined to the desired specification. Creating an equal and parallel deck package will help balance the compression of all cylinders and will help the engine make better balanced power.

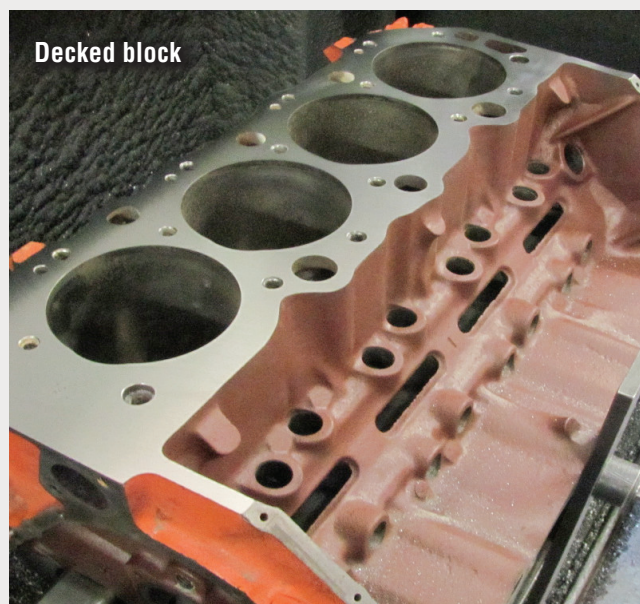
The cylinder bores are also corrected in alignment with the main bore center, in the 90-degree angle formation, and to the bore center specification.

This main bore alignment ensures that all the cylinders are 90 degrees from front to back to provide equal force to the crankshaft from cylinder to cylinder, less side load and stress on the connecting rods, and less cylinder drag friction. Placing the corrected cylinders in alignment on the 90-degree formation from bank to bank using the crankshaft-camshaft centerline median will ensure all of the engine cylinders will run equally in crankshaft degrees and will help equalize cylinder head flow by equalizing chamber shrouding.

By paying close attention to the details and understanding the many different angles of the block, we here at Sehr Performance can ensure our customer will get the most motor for their money and go the **"EXTRA MILE"**.



Block boring



Decked block