

A lot has happened since my last update. Sometimes it overwhelms me, with just how much effort, time, set-ups, planning, etc. etc. goes into building a production run of engines. Some people are under the misconception that you put a block of aluminum in a CNC milling machine and running engine comes out the other end. NOT! The CNC insures the all parts are interchangeable.

That being said, the crankshafts are being machined and getting ready for final grinding. Although the shape is already been cast into each crankshaft, there is still a lot of “pre” work which must be done. A lot of this was described in an earlier email. The bottom line is that everything must be checked and measured, then re-checked and re-measured. Once again, a lot of time is spent on all these operations.

The camshafts are in the process of grinding all the lobes. When finished then the outside diameter of the bearing surface is ground. If you remember, this tolerance must be held to within  $\pm .0005$  over the 5.5” length. Not an easy task! No complaints, just a statement of fact.

As you can see the pistons are back from OD grinding and in the process of being machined. If you notice, there are 3 separate jigs, which are all the same. While two of the jigs are holding the pistons either vertically or horizontally, the third jig is being loaded so the entire process does not slow down. Each piston must first be drill and reamed for the wrist pin. Next the bottom of each piston must be machined to the correct shape. The entire process takes 8.45 minutes to finish 5 pistons. Keep in mind I am machining 640 pistons. As the saying goes “do the math”.

The final three pictures are of the water passages being machined to the inside of each block. Keep in mind this must be done on both banks, front and back.

On a final note, on Monday morning, I will be going on a much needed vacation to Costa Rica and will return on the 24<sup>th</sup> of July. It will be nice to get away to “recharge the batteries” as the saying goes. Rest assured that my employees will be getting a lot of work finished when I am gone.















