

(1 June 2008)

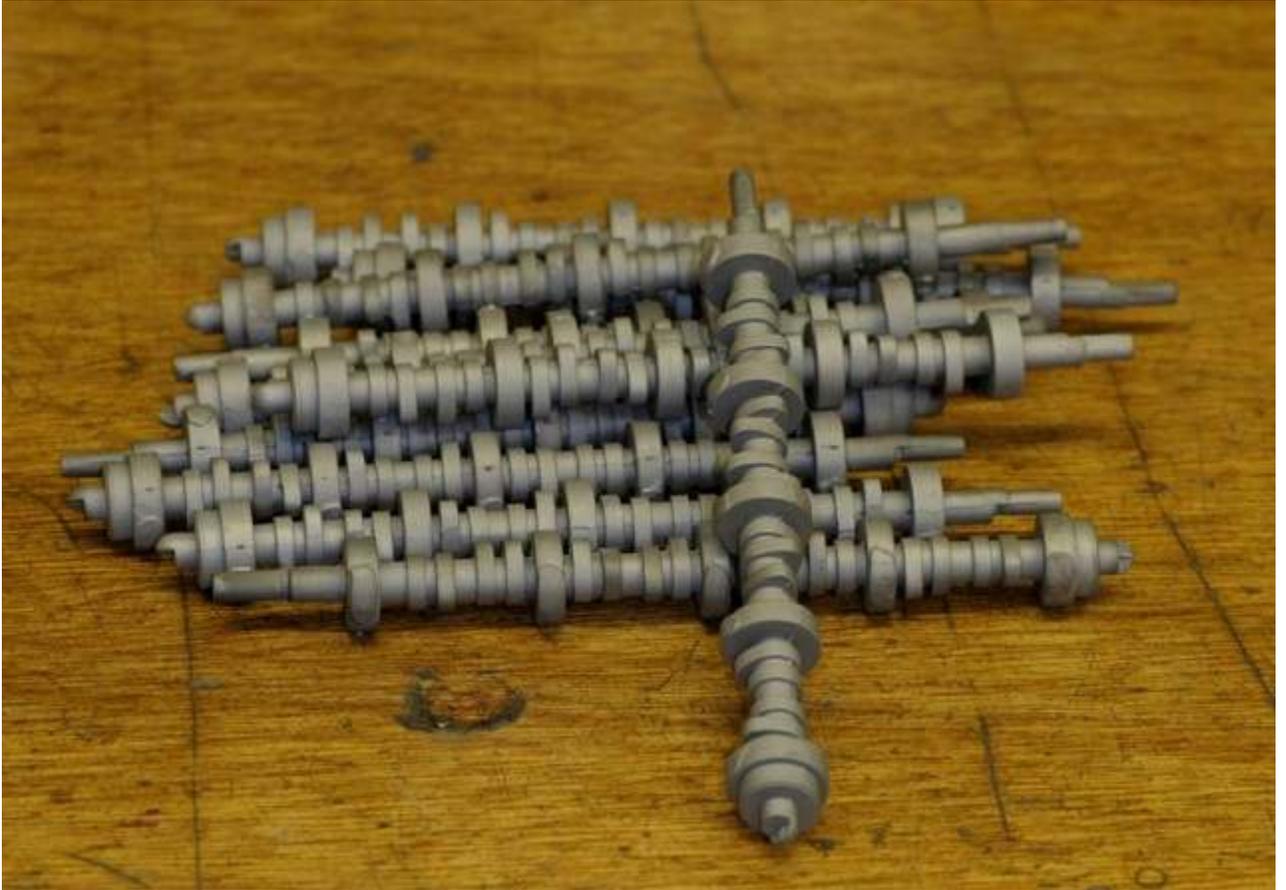
Pic #1



Pic #2



Pic #3



Pic #4



Pic#5



It is now June 1st, Sunday morning and I am finally getting around to a much needed update. There is both good and not so good news. The not so good is that I have been working nonstop for the past 11 weeks trying to control the excess smoking caused by the oil. I'm talking of 8 to 14 hours a day, every day, including weekends. As in the last update all the aluminum was changed for the pistons, rods, and main bearings, thinking that this was the only concern. Unfortunately, and much to my surprise this did not totally stop the problem. It did however, create better parts and the net result will be a stronger and more reliable engine. I should explain that it is not the lack of oil but the inability to remove the oil from the cylinder wall fast enough. In engines with relatively small bores, like 1" or smaller the piston speed is very fast. A "Gerotor" style oil pump was selected and because it is so efficient at pumping a large amount of oil, one can easily understand the problems associated with oil control. Keep in mind that this engine has all the same components that a full size engine has. The oil is pumped through the crankshaft to lubricate the rods and main bearings and is also being used to lubricate the 5 bearing surfaces of the camshaft. It must also be pumped through the lifters, up through the push rods, and finally into each rocker arm. Once the oil has been used it then returns to the pan where it is pumped out the the reserve tank. Everything must work together! If the tolerances

are too large or the oil passages are too large, there will not be enough oil pressure. And we all know what happens when there is not enough oil. These are things we do not even want to think or talk about. Another item that you might not think about, is the molecules of the oil do not get smaller. If the ring "free end gap" is increased, this causes excess friction. Conversely, too small of a "free end gap" has its own set of problems.

The first two pictures are boxes of rejected pistons, rings, and some connecting rods. It isn't just a matter of making new pistons and testing them. This process is extremely complicated, very time consuming, and can be a mental challenge, to say the least. The following is an idea of just what must be done;

1st. The program is written, checked, the CNC lathe setup, samples are made, the program changed to accommodate different ring configurations, and finally the piston blanks are machined.

2nd. The piston is placed on its side, in a special holding jig for the wrist pin hole, and then center drilled, drilled, and finally reamed.

3rd. They are then inverted and the CNC machining center machines the interior and creates the piston skirts.

4th. They are de-burred and the oil return holes are drilled on the lower oil ring groove.

Once all this is done then the old cylinders must be removed. Not an easy task. New cylinders must then be honed and reinstalled. The block is set in a special jig and then a vertical milling machine cuts the top of each cylinder to the exact height. This is a critical operation as it takes some time to set-up. The engine is then totally reassembled. A test run is made to evaluate all of the above changes. If the results are not satisfactory, the engine is then disassembled and the entire process must start all over again! Add to this equation any new changes that must be made in the pistons and rings. To give you an example of what I mean; should the spacing of the rings change, should the oil return holes be larger or smaller, should there be more or less oil holes, should the piston have a "oil slit" instead of return holes, if so where and how large should it be, should the ring tension be increased, should the end gap be altered, etc. etc. etc! Since this process started over 11 weeks ago, I have replaced all of the cylinders 6 times! They cannot be reused. Although the smoking cannot ever be totally eliminated, I have however, made some significant improvements. Rest assured, the problem will be solved!!! Once again, you the customers, will sometime in the future, reap the rewards of all the long hours and changes to the engines. Because I have an engineering staff of 1, all the changes and modifications take a lot of time. I can say that all of the other components in the engine are working perfectly. After close inspection and evaluation of all the internal parts, at the present time I do not see any other areas that need further changes. This is very important, when the engines are finally ready for assembly. I know all of you are wondering when, exactly the initial engines are ready for delivery, but unfortunately, I cannot give a definitive answer. Had it not been for the recent setback I was hoping for the start of delivery the end of August. For what it is worth, the emails that I have received from current customers states that they would like to have the engine as soon as possible but all agree they "want me to continue to take all time that is needed" to make and create the ultimate model V-8 engine.

I sincerely hope that the above information will be helpful in explaining what is going on. As for weekly updates, it has been very difficult to stop everything, take pictures, modify them, and explain everything that is going on. Although, this is extremely important, it is sometimes difficult. For those of you who I have had the pleasure to talk with, know that I only deal if

"facts" and never in "ambiguities". The major "fact" is that this project has taken me far longer and cost much more than I ever anticipated, but slowly, things are getting done and the extensive amount of inventory that is needed is increasing every week.

As for the third picture, it shows the second set of camshaft castings from the foundry. I can say, they are all perfect (with no porosity) and extremely straight. Once again, a better part makes a better engine. During all this time spent on the new pistons, I was also making other components. Picture #4 shows the water pump pulley, idler, rocker arms and pivots. Picture #5 is of the clutch adaptors.