05 February 2009

Once again another month has gone by. I have set down to do an update no less than 6 times and something always happen that takes me away from completing my task. As the last count I have no less than 19 different machining operations on just the blocks and they are still not completely finished. The main bearing caps proved to be far more demanding that originally thought. Picture #1 shows the stack of main bearing blanks after being cut to the proper length. Picture #2 shows a before and after shot. After machining the basic shape and drilling the initial bolt holes, they must then be fitted to each individual block. Once installed, each block must be place at 90 degrees for drilling and taping the cross bolt holes. Whereas this may sound easy, remember there are 5 holes per side. If you multiply this by 40 plus blocks it is easy to see how much time is involved. After this operation is finished then socket head cap screws are screwed into each main cap. The blocks must then be positioned so that each cap can be side milled to the exact thickness. Because of the close tolerance that this engine demands it would be virtually impossible to make them the exact thickness and then install them into the blocks. When I say close I mean that the center orientation of the mains must be no larger than .006. This is just about the thickness of 2 human hairs. As of this update all the blocks have the mains installed and I am now in the process of drilling the initial oil inlet passage. These may should easy, but each block must be positioned at 59.6 degrees. Not 60, not 59 but 59.6 degrees.

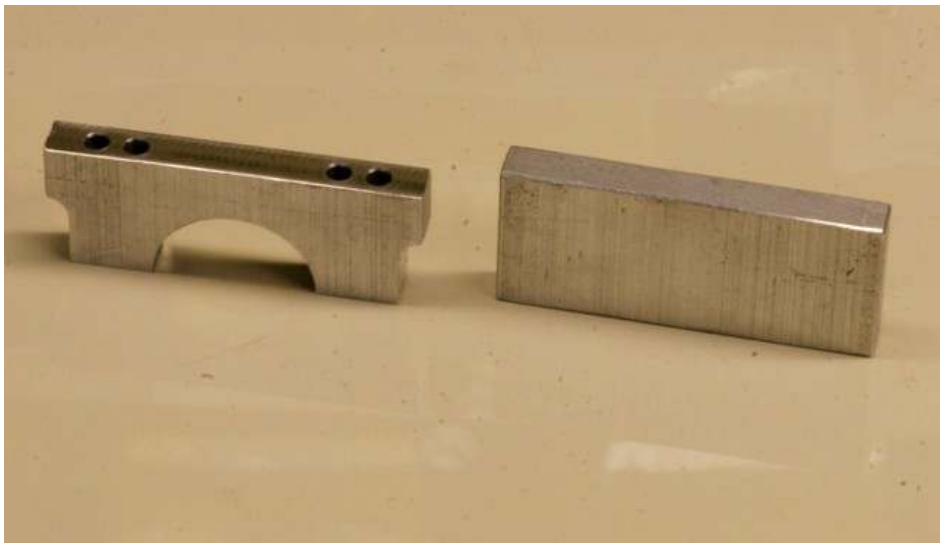
After reviewing the valve springs which I had custom made, I was not happy with the way the end of the spring was finished. I just received the latest updated samples. If you look closely you will see the end of the spring on the right has been ground flat. This may not seam like a "big deal" but it insures there is no side pressure to the valve as it goes up and down in the guide. Remember 10,000 rpm is very fast. I could have used the springs that I had in stock and probably would never had any problems, but remember "at Conley Precision, perfection is almost good enough". Needless to say that I also did not need the extra $850.00 expense at this time. I can probably make someone a good price on 10,000 springs. Ha. Ha.

The camshafts are back from heat treat and we have been working very diligently on trying to get them finish ground. Picture #4 shows the main bearing surface of the cams being ground. The final picture shows a partial box of cams with finished ground lobes and rough ground main surfaces. The next operation is to finish grind the main surfaces to .625 outside diameter. This will take a little time because the tolerance must be held to +/- .0003. For some of you who are not familiar with these measurements, it means 3 ten thousands of an inch. If the average human hair is about .003 this means that it would be 1/10 that size.

On a final note, it is nice to see a lot of parts nearing completion. The blocks and crankshaft are the two most difficult components. Once competed, the other castings should be rather easy in comparison. This is not to say that they require less attention to detail, but rather, the remaining parts have far fewer machining operations. This relates to less time needed to complete each piece.

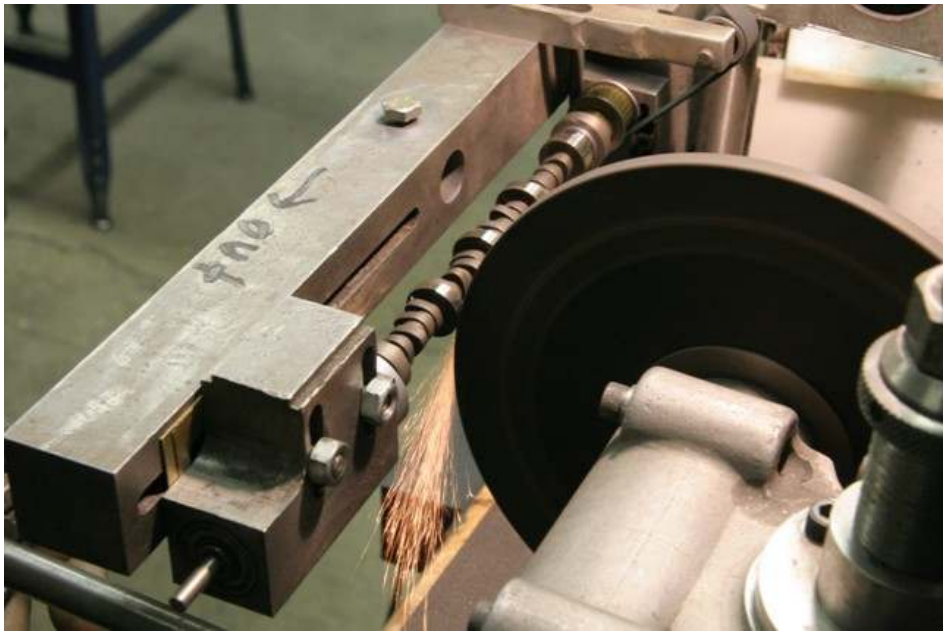
Pic #1

Pic #2



Pic #3

Pic #4



Pic #5