
Jan 2020 New Model A Engine Update

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Hello to All,

24 January 2020

Updates

In case someone gets this Email without seeing the article on the new Model A engine, the article can be found at <http://www.modelaengine.com>

If anyone has a question, concern, comment, or suggestion, please let me know at model.a.engine@hotmail.com and I'll do my best to resolve the issue.

New Engine

This project started in 2007 and stalled in 2015 because of sky-rocketing cost and the lack of quality control at foundries in California.

Previous updates, pictures, and videos can be found at www.modelaengine.com

I use the term "new engine" loosely because the only new parts are the cylinder block, crankshaft, and connecting rods. All interfaces for mating parts are identical to original and have been documented from original Ford drawings.

In the 2 July 2019 update, I was happy to state that the project was resurrected and I would be working with others (John, Leonard, and Bill) to have the "new engine" manufactured in China.

A lot has happened since the last update on 26 Nov 2019.

As mentioned before, the cylinder block and main caps will be manufactured in one factory and the crankshaft and connecting rods will be manufactured in another factory. Both factories will be working together so that there are no conflicts.

Cylinder Block and Main Caps

SolidWorks models of all internal cores, main bearing caps, machined surfaces, an original cylinder block, and the one good cylinder block from Lodi Iron Works were provided to the factory in China and the instructions were to follow the machined model exactly, revise the internal cores if needed and to use a laser scan of the original cylinder block for the exterior.

The machined surfaces drawing made from my SolidWorks file is close to being acceptable. One more iteration is needed because their fore and aft tooling holes need to be moved inward.

During December, I asked to review and markup the 3-D model of the exterior cylinder block created by the engineers in the factory we are using. Unfortunately, many small details did not look right, and it became obvious that the factory was attempting to model the cylinder block exterior using 3-D drawing instead of laser scanning. The previous update (26 Nov 2019) addressed the need for laser scanning to capture every minute detail.

To confirm this, John had a friend overlay the raw laser-scanned cylinder block on the drawn 3-D cylinder block from the factory. It was clear that more refinement was needed to match the exterior surfaces of the new cylinder block to the original casting.

Fortunately, John understands these differences and the problem. He is currently working on another project that requires having a complex sheet metal assembly laser scanned in preparation for manufacture in China.

To get the exterior of the new cylinder block correct, John has contracted with CAM Logic Inc located in Oxford, MI to clean up the laser-scanned file of the original cylinder block. This cleaned up file will then be used to create the exterior pattern for the new block. The first 2 figures show the laser-scanned cylinder block. The next 2 figures are of a model from CAM Logic that will be used to create the pattern.

CAM Logic will also combine the core assembly with the laser-scanned model to verify exterior wall thickness.

It is Chinese New Year right now so factories throughout the country are shut down until mid-February. After the holiday, John will meet with the factory and work with them to have the models from CAM Logic integrated into the design.

Unfortunately, the timing of these design changes along with the Chinese New Year is going to delay us at least 2 months. John will have a better idea of schedule after his return from China in late February.

Crankshaft and Connecting Rods

SolidWorks models of the crankshaft and connecting rods have been provided and the instructions to the factory in China are to follow the SolidWorks models.

The machined crankshaft drawing with dimensions and tolerances is shown in the fifth figure. The drawing looks good.

Rolled fillets, balancing, hardening, bearing inserts, and the rear main seal was discussed in the previous update (26 Nov 2019).

The crankshaft factory asked and was granted permission to have the connecting rods forged from steel instead of cast from malleable iron. We agreed as long as there would not be any increase in price. Preliminary drawings of the connecting rod have been marked up and returned to China.

Next Update and Other Comments

There have been no changes that will have an effect on pricing. The pricing goal is to provide these parts at a price that is competitive with the cost of machine work for the rebuild of a stock Model A engine.

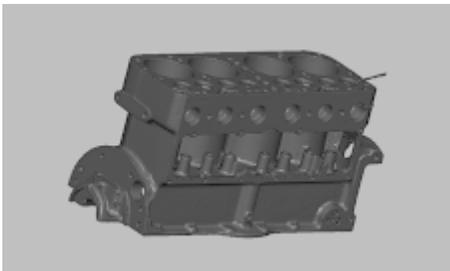
Regarding the schedule delay, please be patient and understand that hiccups can happen in any project. We have high standards and insist on quality even if it means a schedule delay.

Our goal is to provide the parts that will allow an engine builder to provide a much better product that looks identical to stock on the exterior.

The next update will be in about 2 months.

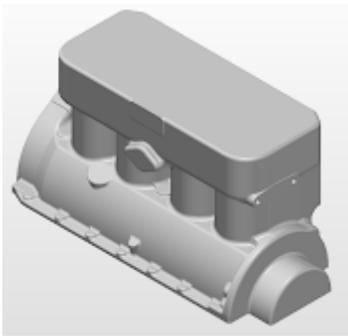
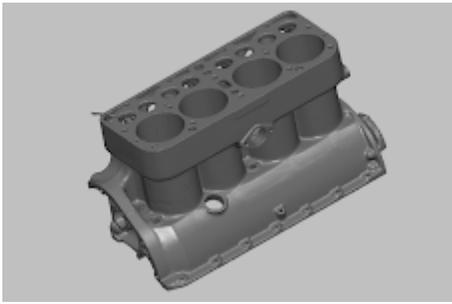
Terry Burtz, Campbell, Calif.

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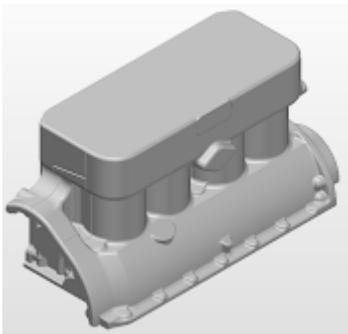


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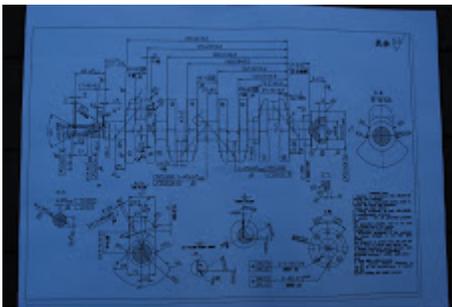
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