THE STARTING CRANK BEARING

A-5461

AND

THE 5/16 INCH "OIL" HOLE

(THE REST OF THE STORY)

BY

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Contained in the July/August 2007 issue of The Restorer was an article I did entitled "The Model A Ford Starting Crank Bearing A-5461 and Related Parts" which you can review or on my website www.plucks329s.org.

What remained a mystery was the introduction of the Starting Crank Bearing with the 5/16 inch vertical hole on the bottom center of the crank hole itself **(Fig. 1)**.

(Fig. 1)

According to the 2011 MARC/MAFCA Restoration Guidelines and Judging Standards, it related that: *"In June 1929 a 5/16 inch oil hole was added to the lower section of the starting crank bearing"*.

This may have been determined from the July 1929 Ford Service Bulletin, where it stated that *"all starting crank bearings, A-5461, now have a 5/16-inch oil hole through the lower part of the bearing".* The purpose of this hole, according to the Service Bulletin, was to *"eliminate any possibility of a squeak occurring between the Front Cross Member and the spring".* Some Starting Crank Bearings may have a hole for that purpose drilled on the face of the bearing which was done as a service job only and not during final assembly of the vehicle (see the July 1929 Ford Service Bulletin).

This feature of the 5/16 inch oil hole, however, was not mentioned in the Ford Part Release (PR), a.k.a Engineering Information (EI), of the part itself.

The Part Release related on October 3, 1928, PR # 10468, that the bearing was *"Redesigned, changing material from Hot Rolled Steel type E forging (Style 3), to: malleable iron (Style 4)".* That is all it said, nothing more…nothing less and nothing about the addition of the 5/16 inch hole.

At the time of the first article in July/August 2007, I did not have the part drawing of the bearing itself to determine a more exact date of release, let alone the specifics of the *"redesigned"* Starting Crank Bearing with the 5/16 inch hole. So for $30.00 I ordered the drawing.

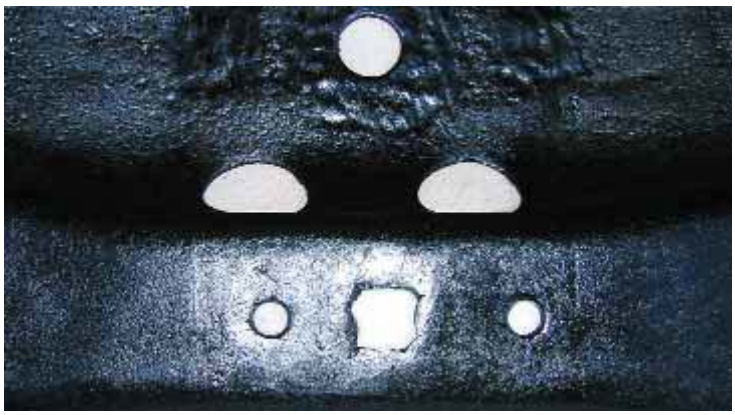
In viewing the drawing of the *"redesigned"* Starting Crank Bearing (Style 4), for which was acquired from the Benson Ford Research Center, it confirmed the fact that on October 3, 1928, Engineering Information (PR) # 10468, that in fact the *"5/16 inch Diameter Core"* hole was indeed one of the features of the new and *"redesigned"* Starting Crank Bearing.

If it was Ford's original intention during the redesigning of the Starting Crank Bearing to signify that the 5/16 inch hole was to be used as an *"oil hole"*, as described in the July 1929 Ford Service Bulletin, the thought was no where to be found. However Lee Watson, a research assistant at the Benson Ford Research Center, indicated that it was of his opinion that "As part of changing to a cast design, the 5/16 (inch) hole from the lower cored opening to the crank hole was added as a ***cast hole***". He goes on to say that the hole may have been "for use as a casting core support or tie between the lower core hole and the crank hole core where the two areas may have been part of one dry sand core…A-5461 may have been cast in multiples…thus the use of this hole for oiling purposes as stated in the Ford Service Bulletin may not be the only reason for it".

The first *"redesigned"* Starting Crank Bearing for which this *"5/16 inch Diameter Core"* hole was added was Style 4 **(Fig. 2)** which had two (2) 1/4-inch diameter ***non-symmetrical*** bosses/lugs on the bottom face **(Fig. 3)** of the bearing. A feature that was continued from Style 3 (a forging which did not have the 5/16 inch diameter hole) which was also associated with the Front Cross Member holes for proper placement of the bearing itself **(Fig. 4)**.

(Fig. 2)

(Fig.3)



(Fig. 4)

The bearing itself, in its beginning (start of production), was designed as such to where the slots and hole for the starting crank had a 1-1/2 degree angle, upward, front to back, toward the crankshaft pulley assembly. However on December 6, 1928, PR # 11250, it *"Specified that slot and hole for starting crank be parallel to bottom face instead of being at 1-1/2 degree angle"*. This was incorporated into the next revision (Style 5) bearing and may have been incorporated into Style 4 also.

There also may be "combinations" of vehicles which had both Style 3 and Style 4 bearings through March of 1929.

On March 15, 1929, PR # 12280, it specified that the Starting Crank Bearing, therefore, be changed (to Style 5) **(Fig. 5)** thus changing the distance between the center line of the bearing and one locating boss/lug from 1-1/8 inch to 1-3/8 inch, making the location of the two (2) bosses/lugs ***symmetrical*** **(Fig. 6)**. In other words, equal distance from each end and center of the Starting Crank Bearing. It also specified in the same Part Release pertaining to the A-5020 Frame Front Cross member that one hole for the lug on the Starting Crank Bearing was to be elongated instead of being round **(Fig. 7)**. This bearing (Style 5), along with the *"5/16 inch Diameter Core"* hole, continued through 1929 when Style 6, A-5461-B, **(Fig. 9)** was released for the 1930-1931 vehicles which also has the *"5/16 inch Diameter Core"* hole **(Fig. 10)**.

(Fig. 5)

(Fig. 6)

(Fig. 7)

(Fig. 8)

(Fig. 9)

(Fig. 10)

One thing that was interesting in all this and can not explain the reason for it, was that all of the Model A frames that I looked at had the elongated hole for the bearing on the passenger side of the front cross member **(Fig. 7)** and all of the Model AA frames that I looked at had the elongated hole for the bearing on the drivers side of the front cross member **(Fig. 8)**. And they all used the same Starting Crank Bearing. However in the March 1, 1930 Parts Price List, a new Starting Crank Bearing was listed for the Model AA vehicles as AA-5461.

As far as the placement of the Starting Crank Bearing in mating correctly with the Front Cross Member: 1) A non-symmetrical bearing **(Fig. 2)** will fit on a non-symmetrical cross member **(Fig. 4)** either way but it must be centered correctly for proper alignment with the starting crank and crankshaft pulley assembly; 2) A non-symmetrical bearing **(Fig. 2)** will fit on a symmetrical cross member **(Fig. 7, 8)** but must be centered correctly for proper alignment with the starting crank and crankshaft pulley assembly; 3) A symmetrical bearing **(Fig. 5, 9)** will not fit on a non-symmetrical cross member **(Fig. 4)**; 4) A symmetrical bearing **(Fig. 5, 9)** will fit on a symmetrical cross member **(Fig. 7, 8)** either way for proper alignment with the starting crank and crankshaft pulley assembly.

In review, the following timeline dates were taken from the Part Drawing's and the Part Releases. In no way do they represent the exact date of release for the specific assembly due to the time it took to make the part and get it out on the assembly line which may have taken up to 1-3 weeks (give or take a few weeks or more).

DATE	PR NUMBER	DESCRIPTION OF CHANGE
July 26, 1927	1471	No hole for oiling; Both right and left slots were round; Flat bottom face of bearing (No bosses/lugs); (Forging) (Style 1)
November 16, 1927	4851	No hole for oiling; Both right and left slots were square; Flat bottom face of bearing (No bosses/lugs); (Forging) (Style 2)
January 23, 1928	6354	No hole for oiling; Two non-symmetrical bosses/lugs added to bottom face of bearing; Addition of two non-symmetrical round holes in front cross member for bearing placement (January 6, 1928); (Forging) (Style 3)
October 3,1928	10468	Redesigned with 5/16 inch diameter hole; Non-symmetrical bosses/lugs on bottom face of bearing; Two non-symmetrical round holes in front cross member for bearing placement. (Casting) (Style 4)
March 15,1929	12280	5/16 inch diameter hole; Symmetrical bosses/lugs on bottom face of bearing; An elongated, instead of round, hole was added to the front cross member for bearing placement. (Casting) (Style 5)
July 1929	Ford Service Bulletin	Reported that "All starting crank bearings, A-5461, now have a 5/16 inch oil hole through the lower part of the bearing"
September 30,1929	14053	Style 5 became "Obsolete" and was "Superseded by A-5461-B for production and service" for use on the 30-31 vehicles. (Casting) (Style 6)
February 1930	Ford Service Bulletin	Reported that a new style starting crank bearing (Style 6) was released for production.

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