

THE MODEL A FORD STARTING CRANK BEARING

A-5461 and Related Parts

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The Model A Ford Starting Crank Bearing, A-5461-A, B, was attached to the middle of the Front Cross Member, A-5020, with two Front Spring Clips, A-5455-A, B, along with four Front Spring Clip (Castle) Nuts, (A-21841 and A-21839) and four Front Spring Clip Cotter Pins, (A-23550 and A-23531) including two varieties of the Front Spring Clip Bar, A-5458. Its main function was to act as a guide for the starting crank. The assembly itself was to hold the front spring assembly to the front cross member.

Note: this study is not only focusing on the starting crank bearing itself, but also that area where the starting crank bearing is situated on the front cross member only and nothing else.

There were six different styles of Starting Crank Bearings, which were produced during the Model A Ford era and are described according to the information provided in the part releases provided by the Benson Ford Research Center and The Henry Ford Museum at Greenfield Village in Dearborn, Michigan. Five with the designation of A-5461-A, and one with the designation of A-5461-B.

Style 1, (**Fig. 1**), which was released for production on July 26, 1927, EDF 1471, had the following features. The hole diameter was 45/64 inches with the width of the bottom pocket being 15/16 inches; the ends of the slots were rounded, but the slots themselves were 21/64 inches in width; there was a slight curve to the bottom; and the thickness of the plate at the center was 3/16 inch. The top of the bearing was sloped on both sides and was a forging.

This bearing was used with the three-piece Front Cross Member with the punched up “tabs” on both sides (**Fig. 2**) of the square hole for the spring “I” bolt. The “tabs” were to prevent the Starting Crank Bearing from shifting right or left as there were no locating holes in the cross member for the bearing itself.

On November 16, 1927, Release Number 4851, the bearing again was changed. Style 2, (**Fig. 3**), had the hole diameter

changed to 23/32 inches with the width of the bottom pocket being 15/16 inches; the ends of the slots were squared with a 1/16 inch fillet, but the slots themselves were 21/64 inches in width; the bottom was to be flat; and the thickness of the plate at the center was 7/32 inch due to the slight change in the surface for the spring clips. The top continued to be sloped on both sides and was a forging.

This bearing, Style 2, was also used with the three-piece Front Cross Member with the punched up “tabs” on both sides of the square hole for the spring “I” bolt.

On December 7, 1927, Release Number 5555, a “new” style Front Cross Member, A-5020-A, was developed by the engineering department. This cross member still retained the punched up “tabs” to hold Style 2, Starting Crank Bearing and still no locating holes (cross member not confirmed). Shortly after this, the “tabs” were replaced by punched up bosses, which have the appearance of a rivet head and no locating holes for Style 2, Starting Crank Bearing (**Fig. 4**).

On January 6, 1928, Release Number 6079, two non-symmetrical holes for locating a new Starting Crank Bearing were added to the Frame Front Cross Member, which still retained the two punched up bosses as described above (**Fig. 5**). Thus Style 3 bearing (**Fig. 6**) came about on January 23, 1928, Release Number 6354, which added two non-symmetrical 1/4-inch diameter bosses on the bottom, which were to mate up with the holes in the Frame Front Cross Member. The width of the slots in the bearing also increased to 11/32 inch and that both sides of the bearing taper 7 degrees instead of one side tapering 15 degrees. The top continued to be sloped on both sides and was a forging. By being “non-symmetrical,” it is meant that the two holes in the Front Cross Member and the two bosses on the bottom of the Starting Crank Bearing were of unequal distance from the center of each.

Sometime between mid-December 1927 and February 1928, the two large punched up rivet-head type bosses on the front cross



SPRING CLIP NUTS AND COTTERS ACCORDING TO THE FORD PARTS PRICE LIST'S

	Jan 1928	Oct 1928	Oct 1929	Dec 1929	Oct 1930	Jul 1931
NUT	A-21841	A-21839	A-21839	A-21839	A-21839-S1	A-21839-S1
COTTER	A-23550	A-23531	A-23531	A-23531	A-23531	A-23531

member, which took the place of the two earlier “tabs,” were spaced out slightly and were not as pronounced as before.

On September 19, 1928, Release Number 10295, it indicated that the two spherical bosses were removed from top at center, thus the two rivet head type bosses were deleted from the Front Cross Member (**Fig. 7**).

The bearing was redesigned to Style 4 (**Fig. 8**) on October 3, 1928, Release Number 10468. The top was changed from being sloped on both sides to a more square looking top and was thicker in appearance. It was also changed from a Hot Rolled Steel forging to Malleable Iron and continued to have the two 1/4-inch diameter non-symmetrical bosses on the bottom.

A slight change to Style 4 occurred on December 6, 1928, Release Number 11250, where it specified that the slot and the hole for the starting crank be parallel to the bottom face instead of being at a 1-1/2 degree angle.

On March 15, 1929, Release Number 12280, it specified that on the Frame Front Cross Member, one hole for the lug on the Starting Crank Bearing be elongated instead of being round (**Fig. 9**). The Starting Crank Bearing, therefore, changed to Style 5

A-21841 – 1/2-20 SAE (9/16 x 3/4) Castle Nut, “Cyanide” (unfinished)
 A-21839 – 1/2-20 SAE (9/16 X 3/4) Castle Nut (unfinished)
 A-21839-S1 – 1/2-20 SAE (9/16 X 3/4) Castle Nut, (Black Paint)

A-23550 – 1/8 X 1 Cotter
 A-23531 – 3/32 X 3/4 Cotter

(**Fig. 10**) thus changing the distance between the centerline of the bearing and one locating lug from 1-1/8 inch to 1-3/8 inch, making the location of the lugs symmetrical. It also specified that the 3/4-inch diameter cored hole be rounded with a two-inch radius instead of being straight (not sure what that means).

According to the August, 1929, Ford Service Bulletin, the Front Spring Clip Bar, A-5458, was redesigned. The ends of the spring clip bars went from being machined flat (**Fig. 11 and 12**) to a beveled design (**Fig. 13 and 14**). This was to prevent any possibility of the front cross member coming in contact with the spring clip bar.

All of the above Starting Crank Bearings used Front Spring Clip, A-5455-A, (**Fig. 15**).





Fig 7



Fig 11



Fig 8



Fig 12



Fig 9



Fig 13



Fig 10



Fig 14



Fig 15

Contained in the July 1929 Ford Service Bulletin, it stated that “all starting crank bearings, A-5461, now have a 5/16-inch oil hole through the lower part of the bearing.” This feature, however, was not mentioned in the Ford Part Release of the part. The purpose of this hole 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 and not during assembly.

By August, 1929, a new style Starting Crank Bearing, A-5461-B, Style 6, (Fig. 16), along with the “new” style Front Spring Clip, A-5455-B, (Fig. 17), had come into play. It was referred to as “A-5461-B-Exp. Mfg. design.” It is not immediately known just when this part showed up on the assembly line, maybe with the introduction of the “new” style Frame Front Cross member, A-5020-B with the lowered radiator pads, but on January 27, 1930, the “Exp. Mfg.” was removed from the symbol numbers and it was specified for full production on 1929-1930 A and AA Chassis. The part is also represented in the February 1930 Ford Service Bulletin as a “new” part and continued as such through production for use on vehicles with the 10-leaf Front Spring Assembly.

On July 1, 1930, Release Number 16984, the width of the section through the crank bearing hole was changed from 7/8 inch to 27/32 – 29/32 inch.

On September 2, 1930, the locating lugs on the bottom of the bearing were changed slightly from 1-3/8 to 1-25/64 inch of centerline of hole and centerline of locating lugs.

Those vehicles that utilized a 12-leaf Front Spring Assembly, A-5310-B, had Front Spring Clip, A-5455-C, which was a longer clip. Those Frame Front Cross Members, which had the Cross Member Reinforcement, A-5347-R, added to them and for which also utilized the 12-leaf Front Spring Assembly, used Front Spring Clip, A-5455-DR which was longer yet.



Fig 16

“CYANIDE” TREATED PARTS

Cyanide, which is considered a deadly gas, was also used in the treatment of certain parts on the Model A such as nuts which were used in “high-stressed” situations. Since external threads are rolled for strength, the internal threads of nuts were machined via a tap thus making the two parts not compatible strength wise. By treating the low carbon steel nuts in a hot cyanide bath of about 1,500° F, which creates a case hardened part, the problem was solved getting the strength of the nuts closer to the rolled threads. NOTE: FOR SAFETY REASONS, DO NOT TRY THIS PROCESS AT HOME! Besides the Front Spring Clip, other parts where Cyanide hardened nuts were used were the Front Spring Hangers, Rear Spring Hangers, Crankshaft Front, Center, and Rear Bearing Bolts and the Rear Axle Shaft.

For a more precise view of actual “assembly” dates, please refer to the MARC/MAFCA Restoration Guidelines and Judging Standards, which is available through the Club, Model A Ford Club of America.

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Fig 17