

**TIME LINE OF PARTS
ORIGINAL FORD DATA
As of
October 12, 2006**

The following is a timeline of the Model A /AA Ford Transmission main shaft bearing retainer, A-7085, and the Universal joint housing cap—outer, A-4520, and inner, A-4513 assemblies. The data follows the **engineering release dates** as Ford made improvements to the parts in the engineering department. It also follows other Ford data as the Ford Service Bulletins, Ford Service Letters and Parts Price Lists. Just when the new parts and/or assemblies ended up in the actual production assembly line of the Model A and AA is unknown and was dependent on several factors. Where the designation of “**Note:**” is or statements in parenthesis, are my thoughts about the part or assembly.

Equal spaced and **unequal spaced** refer to the spacing of the six (6) attachment bolt holes in each assembly.

Thin flanged (¼ inch) and **thick flanged** (5/16 inch) refer to the thickness of the six (6) bolt hole flanges on the Transmission main shaft bearing retainer, A-7085 only.

September 29, 1927 Release # 3062

A-7085: Transmission main shaft bearing retainer (Forging)
(equal spaced and thin flanged)
Changed diameter of holes from 11/32 to 25/64 and moved boss for oiler around 60 deg.
Specified all chassis instead of A chassis only.
(Go to November 10, 1927)

Note: Not sure if this is referring to the change of location of the grease zerk between A-7085 (A-7085-A) and A-7085-B which occurred in mid-November, 1927 when the part went from being equal spaced mounting holes to unequal spaced mounting holes. Whatever the case, there is about a 60 deg. difference in that situation.

October 15, 1927 Release # 3562

A-4514-C: Universal joint housing cap—outer (Forging)
New number adopted and released for production for 1000 cars.
(Go to October 24, 1927)

October 24, 1927 Release # 3924

A-4514-C: Universal joint housing cap—outer (Forging)
Added lug on outside at top.
(Go to November 10, 1927)

October 29, 1927 Release # 4111

AA-4520: Universal joint housing cap—outer assembly (Forging)
(equal spaced)
Specified 2 for Model “AA”.
(Go to February 4, 1928)

Note: This assembly was made up for the “AA” trucks. It consisted of two (2) A-4514-B’s. The halves were also known as AA-4514. They also have AA-4514 on the caps or nothing at all. They should make up the “equal spaced assembly”.

AA-4514: Universal joint housing cap, outer (Forging)
Changed symbol from A-4514-B (to AA-4514)
Removed 2 specified for Model "A" and specified 2 for Model "AA".
(Go to November 9, 1927)

PICTURE OF CAPS

Neil Wilson of the Ford Model AA Truck Club supplied these pictures.



November 9, 1927

Release # 4502

AA-4514: Universal joint housing cap, outer (Forging)
Removed B suffix from symbol to conform with records.
(Go to February 6, 1928)

November 10, 1927 Release # 4447

- A-4513: Universal joint housing cap—inner
(equal spaced)
 The suffix "A" was added to the symbol number (now A-4513-A).
 Changed requirements from 1 req. A Chassis and 2 req. AA Chassis to
 2 req. AA Chassis first 1000 cars and 1 req. AA Chassis after first 1000
 cars.
 (Go to March 29, 1928)
- A-4513-B: Universal joint housing cap—inner
(unequal spaced)
 New number, new design, adopted.
 1 req. on all chassis after 1000.
 (Go to December 19, 1927)
- A-4514-C: Universal joint housing cap—outer (Forging)
 Changed symbol number from A-4514-C to A-4514 (now A-4514).
 Changed name from Universal joint housing cap—outer by adding word
 "lower".
 Changed number required from 2 to 1.
 Note added "2 req. All chassis on first 1000 cars".
 Oil groove extended forward on spherical surface.
 (Go to November 16, 1927)

Note: Is this saying that some very early Universal joint housing caps—outer lower may not have the oil groove extended all the way on the extended arms?

- A-7085: Transmission main shaft bearing retainer (Forging)
(equal spaced and thin flanged)
 Added suffix to symbol number (now A-7085-A).
 Specified use on first 1000 cars only.
 (Go to February 11, 1929)
- A-7085-B: Transmission main shaft bearing retainer (Forging)
(unequal spaced and thin flanged)
 New number, new design, adopted.
 Differs from (A-7085-A) design only in position of bolt holes
 (that is from being **equal** spaced to **unequal** spaced).
 1 req. on all chassis after 1000 cars.
 (Go to March 28, 1928)

EQUAL VS. UNEQUAL SPACED ASSEMBLIES

The difference between equally and unequally spaced hole assemblies

There were two bolt hole configurations pertaining to the six (6) bolt holes which surrounded the circumference of the Universal Joint Housing Cap—inner (A-4513), and outer (A-4520), and the Transmission Main Shaft Bearing Retainer (A-7085) assemblies and related gaskets.

The equally spaced holes, on assemblies #1, #4 and #5, were from the top hole around the assembly clockwise hole to hole, are 2-3/4 inches respectively.

The unequally spaced holes, on assemblies #2 and # 3, were from the top hole around the assembly clockwise hole to hole, are 3 inches, 2-1/2 inches, 2-3/4 inches, 2-3/4 inches, 2-1/2 inches, and 3 inches respectively.

With this in mind, only the top half of each assembly was affected as far as the equal or unequal hole spacing was concerned.

The reason Ford did this is pointed out in the June, 1929, Ford Service Bulletin on page 350 which related that the change "eliminates the necessity of unequally spacing the bolt holes in both this part and its corresponding gaskets as the unequal spacing was used simply to insure that the housing cap being assembled with the extension lug toward the top".

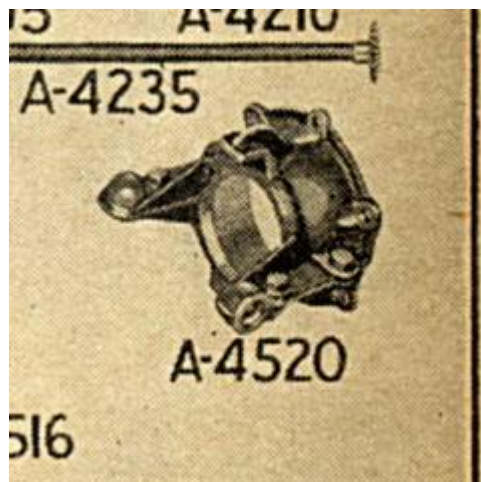
November 16, 1927 Release # 4834

A-4514: Universal joint housing cap—outer lower (Forging)
Diameter of spherical bearing for brake cross shaft changed 0.999/1.000 to 0.999/1.002.
(Go to December 2, 1927)

November 18, 1927 Release # 4931

A-4520: Universal joint housing cap—outer assembly (Forging)
(unequal assy.)
New number, new drawing, adopted.
1 req. all chassis.
(Go to December 22, 1927)

Note: If one were to look closely at the Parts Price List's up to October, 1, 1928, if you look closely at the picture of the A-4520, Universal joint housing cap—outer assembly, you can see the "T" type safety lug on the top half of the assembly. This would be Type 1, **variety 1** of the A-4520 assembly.



December 2, 1927 Release # 5440

A-4518: Universal joint housing cap—outer upper (Forging)
(unequal assembly)
 New number, new part (Cap without lug assembled), adopted.
 1 req. on all chassis after 3400 cars.
 (Go to December 30, 1927)

Note: All of the part releases for A-4518 were not included. However the part *should* coincide with A-4514 in its progression.

A-4514: Universal joint housing cap—outer lower (Forging)
 Changed design of oil grooves in upper face and specified same to be machined instead of forged.
 Specified use after 3400 cars instead of after 1000 cars.
 (Go to December 19, 1927)

Note: This release is reflective on the February 13, 1928, Release # 7200. That is the “design of the oil grooves” went from ¼ inch to 1/8 inch. All very early “lowers” viewed had ¼ inch grooves. These were changed to 1/8 inch as seen on an example owned by Ron Rude.

A-4519: Universal joint housing lug (Forging)
 New number, new part, adopted.
 1 req. all chassis after 3400 cars.
 (Go to December 30, 1927)

December 19, 1927 Release # 5926

A-4513-B: Universal joint housing cap—inner
(unequal spaced)
 Changed dimension from center of ball to rear face of flange from 0.341 to 0.343.
 Specified use after 3400 (cars) instead of 1000 cars.
 (Go to March 29, 1928)

A-4514: Universal joint housing cap—outer lower (Forging)
 Changed height of rib on arms from 1-1/16 to ¾ inch.
 Changed thickness of arms and height of bolt bosses from 9/32 to ¼ inch.
 (Go to February 9, 1928)

THE “1000/3400 CAR” CONCEPT

Interesting thought on the “3400 car” concept. Ford changed the “1000 car” usage to “3400 car” usage during this time more than likely to use up parts. Engine number *A3400* was stamped on December 21, 1927. So up to this point, the “equal spacing” assemblies were in use as the Transmission main shaft bearing retainer, A-7085, had to be bolted to the transmission in order to hold the rear bearing in place when it was assembled onto the engine.

So, why are there not more of these early, “equal spaced” assemblies around? Why do some of these early cars (start of production to mid-December, 1927) have the “later unequal spaced assemblies” on them where they should have the “equal spaced assemblies”? Were they changed out for some reason or did they actually go up to 3400 units? These are good questions which have been brought up by many early Model A

restorers today. Just where are these early assemblies? We are only dealing with about 3400 units. Could they have been replaced over the years? Who knows. Should we doubt the Ford Release information? I will leave that up to your own personal thoughts.

December 22, 1927 Release # 6027

A-4520: Universal joint housing cap outer assembly (Forging)
(unequal assy.)
 Changed number required on A-20915 Bolt, A-21741 Nut and A-22245 Lock Washer from 4 to 2.
 1 req. all chassis.
 (Go to February 4, 1928)
 (Go to September 12, 1928)

December 30, 1927 Release # 6227

A-4518: Universal joint housing cap—outer upper (Forging)
(unequal assy.)
 Added 1/32 more finish on lower rear corner.
 Changed dimension governing height of rib on each arm from 15/16 to 13/16 inch.
 Changed vertical and horizontal dimensions locating welding line for A-4519 lug.
 1 req. on all chassis after 3400 cars.
 (Go to January 20, 1928)

A-4514: Universal joint housing cap—outer lower (Forging)
 New drawing showing forging size, adopted.
 2 req. on all chassis first 3400 cars.
 1 req. on all chassis after 3400 cars.
 (Go to February 9, 1928)

A-4519: Universal joint housing cap lug (Forging)
 Changed vertical and horizontal dimensions governing relation of $\frac{1}{4}$ radius with welding line (for A-4518-Cap) from 19/32 and 31/64 to 13/32 and 27/64 respectively.
 Changed length of horizontal portion of lug from 21/32 to 17/32.
 1 req. on all chassis after 3400 cars.
 (Go to February 9, 1928)

January 1, 1928 Parts Price List (Steve Plucker)

A-4513: Universal joint housing cap—inner
 A-4515: Universal joint housing gasket—2 used
 A-4516: Universal joint housing cap felt—1 used
 A-4520: Universal joint housing cap—outer assembly
 A-7085: Transmission main shaft bearing retainer (thin $\frac{1}{4}$ inch flanges)
 A-20915: Universal joint housing cap bolt—4 used
 3/8—24 S.A.E. x 1-1/16 hex head bolt
 A-21741: Universal joint housing cap bolt nut—4 used
 3/8—24 S.A.E. (21/64 x 9/16) hex nut
 A-22245: Universal joint housing cap bolt lock washer—4 used
 3/8 (.401-.411 3/32 x 21/32) lock washer
 A-20931: Universal joint housing cap to transmission bolt—6 used
 3/8—24 S.A.E. x 1-5/32 hex head bolt (W/cotter hole)

- A-21745: Universal joint housing cap to transmission bolt nut—6 used
3/8—24 S.A.E. x (13/32 x 9/16) castle nut
- A-23534: Universal joint housing cap to transmission bolt cotter—6 used
3/32 x 5/8 cotter

Note: No AA truck parts in this Parts Price List.

January 20, 1928: Release # 6719

- A-4518: Universal joint housing cap—outer upper (Forging)
(unequal assy.)
Added 7/32 dimension for thickness of metal around large ball seat.
(Go to February 9, 1928)

February 4, 1928: Release # 6978

- AA-4520: Universal joint housing cap—outer assembly (Forging)
(equal assy.)
New number, adopted (now AA-4514).
Consists of:
AA-4514: 2 Rear universal joint housing caps—outer.
A-20915: 2 Universal joint housing cap bolt.
A-21741: 2 Universal joint housing cap nut.
A-22245: 2 Universal joint housing cap lock washer.
(Go to September 12, 1928)

Note: AA-4514 (AA-4520) consisted of two (2) A-4514-B's. No safety lug on this assembly.

February 6, 1928: Release # 7028

- AA-4520: Universal joint housing cap—outer assembly (Forging)
(equal assy.)
Changed height of three bosses on front flange from 9/32 to 11/32 (Forging Size)
Changed height of three bosses on front flange from 1/4 to 5/16 (Finish Size)
Note: This was the AA-4514 part.
(Go to September 12, 1928)
- AA-4514: Universal joint housing cap—outer (Forging)
Changed height of three bosses on front flange from 9/32 to 11/32 (Forging Size).
Changed height of three bosses on front flange from 1/4 to 5/16 (Finish Size).
(Go to September 12, 1928)

FORGING SIZE VS. FINISH SIZE PARTS

Note: There were two release sheets for the same part. There was the “forging size” sheet and the “finish size” sheet. The “forging size” sheet was the information which was taken from the part *after* forging. The part was then finished and was referred to as its “finish size” which went on the car or truck. In this instance, the bolt bosses after forging the part were changed from 9/32 inch to 11/32 inch. BUT when the part was finished to its “finish size” the bolt bosses went from ¼ inch to 5/16 inch. That is the older part went from 9/32 inch “forging size” to ¼ inch “finish size”. The newer part, the one described above, went from 11/32 inch “forging size” to 5/16 inch “finish size”. Hope this is not confusing.

February 9, 1928: Release # 7153

- A-4518: Universal joint housing cap—outer upper (Forging)
(unequal assy.)
Removed undercut from outside of spherical bosses.
(Go to July 24, 1928)
- A-4514: Universal joint housing cap—outer lower (Forging)
Brought to date with change in forging size by removing undercut from outside of spherical bosses.
Specified spherical surface on inside to be finished smooth instead of ground.
(Go to February 13, 1928)
- A-4519: Universal joint housing cap lug (Forging)
Increased height 1/8 inch, changing dimensions affected to correspond.
(Go to March 15, 1929)

February 13, 1928: Release # 7200

- A-4514: Universal joint housing cap—outer lower (Forging)
Changed oil grooves in arms from 1/8 wide and 1/8 deep to 3/16 wide and 3/32 deep.
(See December 2, 1927, Release # 5440)
(Go to July 24, 1928)

Note: In a statement in Release # 5440 for December 2, 1927, it indicated “Changed design of oil grooves in upper face and specified same to be machined instead of forged”. This may have meant that the grooves went from ¼ inch to 1/8 inch and then changed again as Release # 7200 tells us.

February 28, 1928: Ford Service Bulletin, page 222, Fig. 451

Picture of “T” shaped extension lug on the Universal joint housing cap—outer (bottom half).

February 28, 1928: Ford Service Bulletin, page 223, Fig. 454

Picture of Transmission main shaft bearing retainer and placement of grease zerk on Type 1 retainer.

March 28, 1928: Release # 7970

A-7085-B: Transmission main shaft bearing retainer (Forging)
(unequal spacing and thin flanged)
 Removed the word "Ford" for convenience in exporting.
 (Go to April 3, 28)

March 28, 1928: Ford Service Bulletin, page 234, Fig. 475 and page 236, Fig. 484

Picture of Transmission main shaft bearing retainer and placement of grease zerk on Type 1 retainer.

Note: For those of you who wish to see a very good Ford picture of Type 1, A-7085, Transmission main shaft bearing retainer **(equal spacing and thin flanged)**, get a copy of the 1978 issue of Model A News, Vol. 25, Issue 2, page 6. To bad they did not include the Universal joint housing cap—outer assembly!

March 29, 1928: Release # 7993

A-4513-A: Universal joint housing cap—inner
(equal spacing)
 Changed symbol number from A-4513-AR to AA-4513 (no indication was made to add the suffix "R" to symbol number before this date) (now AA-4513).
 Removed finish from outside of ball and rear face of flange.
 Removed disc grind from front face of flange.
 Specified center hole to be 2-9/32 diameter and edge parallel with centerline instead of radial.
 (Go to May 22, 1928)

A-4513-B: Universal joint housing cap—inner
(unequal spacing)
 Removed finish from outside of ball and rear face of flange.
 Removed disc grind from front face of flange.
 Specified center hole to be 2-9/32 diameter and edge parallel with centerline instead of radial.
 (Go to March 18, 1929)

Note: The diameter of the center hole of the Universal joint housing cap—inner, **equal and unequal spacing**, up to this time, was about 2-1/8 inches in diameter. With Release # 7993, it was changed to 2-9/32 inches diameter.

April 3, 1928: Release # 8070

A-7085-B: Transmission main shaft bearing retainer (Forging)
(unequal spacing and thin flanged)
 Removed note "Equally spaced" from the 25/32 drill holes.
 (Go to April 27, 1928)

April 15, 1928 Parts Price List (Marco Tahtaras) (Model A)

A-4513-B:	Universal joint housing cap—inner
A-4515-B:	Universal joint housing gasket—2 used
A-4516:	Universal joint housing cap felt—1 used
A-4520:	Universal joint housing cap—outer assembly
A-7085-B:	Transmission main shaft bearing retainer (thin ¼ inch flanges)
A-20915:	Universal joint housing cap bolt—4 used 3/8—24 S.A.E. x 1-1/16 hex head bolt
A-21741:	Universal joint housing cap bolt nut—4 used 3/8—24 S.A.E. (21/64 x 9/16) hex nut
A-22245:	Universal joint housing cap bolt lock washer—4 used 3/8 (.401-.411 3/32 x 21/32) lock washer
A-20931:	Universal joint housing cap to transmission bolt—6 used 3/8—24 S.A.E. x 1-5/32 hex head bolt (W/cotter hole)
A-21745:	Universal joint housing cap to transmission bolt nut—6 used 3/8—24 S.A.E. x (13/32 x 9/16) castle nut
A-23534:	Universal joint housing cap to transmission bolt cotter—6 used 3/32 x 5/8 cotter

April 15, 1928 Parts Price List (Marco Tahtaras) (Model AA)

REAR AXLE—WORM TYPE

AA-4513:	Universal joint housing cap—inner—2 used
A-4520:	Universal joint housing cap—outer front assembly—1 used
AA-4520:	Universal joint housing cap—outer rear assembly—1 used
A-4515:	Universal joint housing inner cap gasket—2 used
A-4516:	Universal joint housing cap felt—4 used
A-20905:	Universal joint housing cap bolt—6 used 3/8—24 U.S.S. x 1" hex head screw
A-21741:	Universal joint housing cap bolt nut—6 used 3/8—24 S.A.E. (21/64 x 9/16) hex nut
A-22245:	Universal joint housing cap bolt lock washer—6 used 3/8 (.401-.411 3/32 x 21/32) lock washer
A-20931:	Universal joint housing cap to transmission bolt—6 used 3/8—24 S.A.E. x 1-5/32 hex head bolt (W/cotter hole)
A-21745:	Universal joint housing cap to transmission bolt nut—6 used 3/8—24 S.A.E. x (13/32 x 9/16) castle nut
A-23534:	Universal joint housing cap to transmission bolt cotter—6 used 3/32 x 5/8 cotter
A-20907:	Universal joint housing cap coupling shaft rear support bolt—6 used 3/8—24 S.A.E. x 1-13/32 hex head bolt (hole in end)
A-21745:	Universal joint housing cap coupling shaft rear support bolt nut—6 used 3/8—24 S.A.E. x (13/32 x 9/16) castle nut
A-23534:	Universal joint housing cap coup. shaft rear support bolt cotter—6 used 3/32 x 5/8 cotter

April 27, 1928: Release # 8461

A-7085-B: Transmission main shaft bearing retainer (Forging)
(unequal spacing and thin flanged)
 Reduced the radius at the top of six lugs to a depth of 7/64 from 3/8 to 5/16.
 Changed shape of lugs to agree with change in forging and changed counterbore from 7/8 to 3/4 diameter.
 (Go to October 9, 1928)

May 22, 1928: Release # 8826

AA-4513: Universal joint housing cap—inner (A-4513-AR)
(equal spacing)
 Changed diameter of bolt holes from 25/64 to 0.390-0.395 and specified concentricity of bolt holes.
 (Go to March 18, 1929)

May 25, 1928 Indianapolis Ford Service Letters:

A-7085: Transmission main shaft bearing retainer: During the handling and in transit of these parts, sometimes they become nicked and burred, which causes them to fit improperly when assembled to the transmission. Therefore, before installing such parts in any car in which it may be necessary, these burrs should be removed before the parts are assembled. Please pass this information on to your service organization.

July 24, 1928: Release # 9657

A-4518: Universal joint housing cap—outer upper (Forging)
(unequal assy.)
 Changed thickness of bolt bosses used for bolting upper and lower halves together from 5/16 to 11/32.
 (Go to September 12, 1928)

Note: The part releases for A-4518 stop here as the rest were missing but is thought to continue in progression as A-4514 does.

A-4514: Universal joint housing cap—outer lower (Forging)
 Changed thickness of bolt bosses used for bolting upper and lower halves together from 1/4 to 9/32 (Finish Size).
 (Go to September 12, 1928)

Note: There were two release sheets for the same part. There was the “forging size” sheet and the “finish size” sheet. The “forging size” sheet was the information which was taken from the part *after* forging. The part was then finished and was referred to as its “finish size” which went on the car or truck. In this instance, the bolt bosses after forging the part were changed from 5/16 inch to 11/32 inch. BUT when the part was finished to its “finish size” the bolt bosses went from 1/4 inch to 9/32 inch. That is the older part went from 5/16 inch “forging size” to 1/4 inch “finish size”. The newer part, the one described above, went from 11/32 inch “forging size” to 9/32 inch “finish size”. Hope this is not confusing.

August 31, 1928: Release # 10155

A-2485-D: Service Brake Cross Shaft Assembly
New number, adopted.

Note: This was the new style “single” service brake cross shaft assembly which replaced the “multiple” service brake cross shaft equalizer assembly, which also did away with the support arms on the universal joint housing cap—outer assembly.

September 10-12, 1928: Release # 10155 (Supplement #'s 1 and 2 for August 31, 1928)

A-4520-B: Universal joint housing cap—outer assembly (Forging)
(unequal assy.)
New number, adopted (Supplement # 1).
1 req. all chassis.
(Go to March 18, 1929)

A-4517-B: Universal joint housing cap—outer upper (Forging)
(unknown spacing)
New number, adopted (Supplement #1).
1 req. all chassis.
(Go to September 19, 1928)

Note: **NOT** sure of the spacing on this part as I have **not** seen one. It may be that when added to the assembly that it makes the A-4520 assembly “**equal spacing**”??? to be used with the earlier **equal spaced** Transmission main shaft bearing retainer set up. Is there anyone who has this part? It would be A-4517-B or A-4517-B1 stamped on the part.

A-4518-B: Universal joint housing cap—outer upper (Forging)
(unequal assy.)
New number, adopted (Supplement # 1).
(With safety lug and with **unequally** spaced bolt holes).
(Go to September 19, 1928)

A-4518: Universal joint housing cap—outer upper (Forging)
(unequal assy.)
Added “AR” to symbol number indicating use for repairs (now A-4518-AR) (as with A-4514).
(Go to October 23, 1928)

A-4514: Universal joint housing cap—outer lower (Forging)
Added “AR” to symbol number indicating use for repairs (Supplement # 2) (now A-4514-AR).
Added note, “Used with Service Brake Equalizer”.
(Go to October 23, 1928)

AA-4520: Universal joint housing cap—outer assembly (Forging)
(equal assy.)
Changed detail symbol number of Rear Universal joint housing cap—outer from AA-4514 to A-4514-B (Supplement #2) (now A-4514-B).
AA-4514 became obsolete.
Superseded by A-4514-B, which is interchangeable for Model AA and has been released on Supplement #1.
2 req. AA chassis.
(Go to March 25, 1929)

- AA-4514: Universal joint housing cap—outer (Forging)
 Obsolete.
 Superseded by A-4514-B, which is interchangeable for models AA and has been released on Supplement #1.
- A-4514-B: Universal joint housing cap—outer lower (Forging)
 New number, adopted (Supplement # 1).
 1 req. all chassis. 2 req. AA chassis.
 (Go to September 19, 1928)
- A-4520: Universal joint housing cap—outer assembly (Forging)
(unequal assy.)
 Added “AR” to symbol number indicating use for repairs (now A-4520-AR).
 Added note, “Used with Service Brake Equalizer” (Supplement # 2).
 1 req. all chassis.
 (Go to October 23, 1928)

NOTE: “Supplement” data was usually added to the *original* release number at a later date. In this case, Supplement #s 1 and 2 were added to Release # 10155 which corresponded to the release of the new “Service Brake Cross Shaft Assembly, A-2485-D” on August 31, 1928. With the release of this new cross shaft, it eliminated the Universal Joint Housing Cap—Outer Assembly with the arms for the old style service brake equalizer system.

September 19, 1928: Release # 10319

- A-4518-B: Universal joint housing cap—outer upper (Forging)
(unequal assy.)
 Changed thickness of web between bolt boss and rear corner, making it the same thickness as boss.
 Specified that the edge between bolt boss and rear corner be straight instead of curved.
 (Go to March 15, 1929)
- A-4517-B: Universal joint housing cap—outer upper (Forging)
(unknown assy.)
 Changed suffix of symbol number from “B” to “B1” (now A-4517-B1) and added note indicating forging design.
 Changed thickness of web between bolt boss and rear corner, making it same thickness as boss.
 Specified that edge between bolt boss and rear corner be straight instead of curved.
 (Go to March 15, 1929)

Note: **NOT** sure of the spacing on this part as I have **not** seen one. It may be that when added to the assembly that it makes the A-4520 assembly “**equal spacing**” to be used with the earlier **equal spaced** Transmission main shaft bearing retainer set up. Is there anyone who has this part? It would be A-4517-B or A-4517-B1 stamped on the part.

- A-4517-B2: Universal joint housing cap—outer upper (Malleable Iron Design)
(unequal assy.)
 New number, new alternate design to replace forging design, (A-4518-B), for full production, adopted.
 (Go to March 18, 1929)

- A-4514-B: Universal joint housing cap—outer lower (Forging)
 Changed suffix of symbol number from “B” to “B1” and added note indicating forging design (now A-4514-B1).
 Changed thickness of web between bolt boss and rear corner, making it the same thickness as boss.
 Specified that the edge between bolt boss and rear corner be straight instead of curved.
 1 req. all chassis. 2 req. all AA chassis.
 (Go to March 15, 1929)
- A-4514-B2: Universal joint housing cap—outer lower (Malleable Iron Design)
 New number, new alternate design to replace forging design (A-4514-B1) for full production, adopted.
 1 req. all chassis.
 3 req. all AA chassis.
 (Go to March 18, 1929)

THE DIFFERENCE BETWEEN “FORGING DESIGN” AND “MALLEABLE IRON (CASTING) DESIGN” PARTS.

In 1930, Mr. Murray Fahnestock, who was known and respected for his writings about Ford technical data, wrote a book called “Know the Ford”. One of the chapters in the book was titled “How Quality Steel Forms The Quality Car”. Mr. Fahnestock indicated that there was over 40 different kinds of steel used in the construction of the Model A Ford. One of these was Drop Forgings and Castings.

Forgings, he indicated, was a process which the red-hot metal (not melted) was worked so that the “grain” of the metal was compacted and refined to increase the strength of the part which made it very strong. In other words, the forgings “preserves and intensifies the original fibrous structure of the rolled bar, thus increasing the strength and toughness of the steel”. Another advantage of forgings as compared to castings was that the forged parts were much more reliable and thus could be made lighter with the assurance of ample strength in the part itself. Another advantage of forgings over castings were that the forgings contained no “hidden blow-holes or seams which sometimes occur in castings, making castings far less reliable. The problem, however, was that forged parts were expensive to make as compared to the cheaper castings.

Apparently Ford discovered that the parts in question, the Transmission main shaft bearing retainer, A-7085; the Universal joint housing cap—outer assembly which included the Universal joint housing cap—outer upper, A-4518 and A-4517, and the Universal joint housing cap—outer lower, A-4514, could be made cheaper since the parts in question did not need that extra “strength” to do the job they were required to do.

So by converting the parts to a casting design, otherwise called the “Malleable Iron Design”, new parts were made by castings. “Malleable” means that it is capable of being extended or shaped by hammering or by pressure from rollers. It also exhibits good ductility meaning it has the ability to flex without breaking.

As Mr. Fahnestock related in his book, “Castings, which are formed by pouring molten metal into molds, have more weight than that of forged steel, lack its toughness, and may have flaws which cannot be detected on the surface. So their use should be limited to more or less bulky, compact parts”. Thus the reason why Ford switched from forgings to castings on the above parts.

October 1, 1928 Parts Price List (Steve Plucker) (Model A)

A-4513-B:	Universal joint housing cap—inner
A-4515-B:	Universal joint housing cap gasket—2 used
A-4516:	Universal joint housing cap felt—1 used
A-4520:	Universal joint housing cap—outer assembly
A-7085-B:	Transmission main shaft bearing retainer (thin ¼ inch flanges)
A-20915:	Universal joint housing cap bolt—4 used 3/8—24 S.A.E. x 1-1/16 hex head bolt
A-21741:	Universal joint housing cap bolt nut—4 used 3/8—24 S.A.E. (21/64 x 9/16) hex nut
A-22245:	Universal joint housing cap bolt lock washer—4 used 3/8 (.401-.411 3/32 x 21/32) lock washer
A-20931:	Universal joint housing cap to transmission bolt—6 used 3/8—24 S.A.E. x 1-5/32 hex head bolt (W/cotter hole)
A-21745:	Universal joint housing cap to transmission bolt nut—6 used 3/8—24 S.A.E. x (13/32 x 9/16) castle nut
A-23534:	Universal joint housing cap to transmission bolt cotter—6 used 3/32 x 5/8 cotter

October 1, 1928 Parts Price List (Steve Plucker) (Model AA)

REAR AXLE—WORM TYPE

AA-4513:	Universal joint housing cap—inner—2 used
A-4520:	Universal joint housing cap—outer front assembly—1 used
AA-4520:	Universal joint housing cap—outer rear assembly—1 used
A-4515-A:	Universal joint housing inner cap gasket—2 used
A-4516:	Universal joint housing cap felt—4 used
A-20905:	Universal joint housing cap bolt—6 used 3/8—24 U.S.S. x 1" hex head screw
A-21741:	Universal joint housing cap bolt nut—6 used 3/8—24 S.A.E. (21/64 x 9/16) hex nut
A-22245:	Universal joint housing cap bolt lock washer—6 used 3/8 (.401-.411 3/32 x 21/32) lock washer
A-20931:	Universal joint housing cap to transmission bolt—6 used 3/8—24 S.A.E. x 1-5/32 hex head bolt (W/cotter hole)
A-21745:	Universal joint housing cap to transmission bolt nut—6 used 3/8—24 S.A.E. x (13/32 x 9/16) castle nut
A-23534:	Universal joint housing cap to transmission bolt cotter—6 used 3/32 x 5/8 cotter
A-20907:	Universal joint housing cap coupling shaft rear support bolt—6 used 3/8—24 S.A.E. x 1-13/32 hex head bolt (hole in end)
A-21745:	Universal joint housing cap coupling shaft rear support bolt nut—6 used 3/8—24 S.A.E. x (13/32 x 9/16) castle nut
A-23534:	Universal joint housing cap coup. shaft rear support bolt cotter—6 used 3/32 x 5/8 cotter

REAR AXLE—BEVEL GEAR

AA-4513:	Universal joint housing cap—inner rear—2 used
AA-4520:	Universal joint housing cap—outer rear assembly—1 used
AA-4515:	Universal joint housing cap gasket—rear—2 used
A-4516:	Universal joint housing cap felt—4 used
A-20915:	Universal joint housing cap bolt—6 used 3/8—24 S.A.E. x 1-1/16 hex head bolt

Note: I believe A-20915 is a mistake in the PPL. I believe it should be A-20905..Universal joint housing cap bolt..3/8—24 U.S.S. x 1” hex head screw.

- A-21741: Universal joint housing cap bolt nut—6 used
3/8—24 S.A.E. (21/64 x 9/16) hex nut
- A-22245: Universal joint housing cap bolt lock washer—6 used
3/8 (.401-.411 3/32 x 21/32) lock washer
- A-20931: Universal joint housing cap to transmission bolt—6 used
3/8—24 S.A.E. x 1-5/32 hex head bolt (W/cotter hole)
- A-21745: Universal joint housing cap to transmission bolt nut—6 used
3/8—24 S.A.E. x (13/32 x 9/16) castle nut
- A-23534: Universal joint housing cap to transmission bolt cotter—6 used
3/32 x 5/8 cotter
- A-20907: Universal joint housing cap coupling shaft rear support bolt—6 used
3/8—24 S.A.E. x 1-13/32 hex head bolt (hole in end)
- A-21745: Universal joint housing cap coupling shaft rear support bolt nut—6 used
3/8—24 S.A.E. x (13/32 x 9/16) castle nut
- A-23534: Universal joint housing cap coup. shaft rear support bolt cotter—6 used
3/32 x 5/8 cotter

October 9, 1928: Release # 10529

- A-7085-B: Transmission main shaft bearing retainer (Forging)
(unequal spacing and thin flanged)
Obsolete.
Superseded by A-7085-C.
(Go to March 18, 1929)
- A-7085-C: Transmission main shaft bearing retainer (Forging)
(unequal spacing and thick flanged)
New number, adopted.
(Go to March 18, 1929)
- A-20931-S1: Universal joint housing cap to transmission bolt
3/8—24 S.A.E. x 1-5/32 hex head bolt (W/cotter hole)
Obsolete.
Superseded by A-20953 (3/8—24 x 1-7/32 hex head bolt (W/cotter hole).
(Go to March 18, 1929)
- A-20953: Universal joint housing cap to main shaft bearing retainer screw
3/8—24 x 1-7/32 hex head screw (W/cotter hole)
New number, adopted.
3/8—24 x 1-7/32 hex head bolt (W/cotter hole)
(Go to May 13, 1929)

Note: A-20953 is used with the “**thick flanged**” Transmission main shaft bearing retainer while A-20931-S1 is used with the “**thin flanged**” retainer.

THIN FLANGED VS. THICK FLANGED TRANSMISSION MAIN SHAFT BEARING RETAINERS

For some unknown reason, Ford changed the thickness of the six bolt hole flanges on the Transmission main shaft bearing retainers. At the start of production, the flanges were about $\frac{1}{4}$ inch in thickness. By October, 1928, Ford went to thicker flanges which made them about $\frac{5}{16}$ inch thick. An increase of $\frac{1}{16}$ inch in thickness. This also changed the bolt lengths which were used to connect the Universal joint housing caps—inner and outer by $\frac{1}{16}$ th of an inch as seen in the data above.

One thought for the change in thickness was the change from forged designed parts to the malleable iron designed parts. The malleable iron designed parts were made cheaper and were not as strong as the forged parts thus the thicker flanges for that extra strength.

The Universal joint housing caps—inner and outer flanges, remained the same thickness throughout production.

October 23, 1928: Release # 10735

- A-4520-AR: Universal joint housing cap—outer assembly (Forging)
(unequal assy.)
Obsolete.
Note: This assembly must be held for repairs as upper and lower caps are machined in pairs and are not serviced individually.
- A-4518-AR: Universal joint housing cap—outer upper (Forging)
(unequal assy.)
Obsolete.
- A-4514-AR: Universal joint housing cap—outer lower (Forging)
Obsolete.

November 28, 1928 Ford Service Bulletin

NEW SOLID BRAKE CROSS SHAFT: A new service brake cross shaft assembly has been designed and is now standard on all cars and trucks. The new shaft replaces the old style cross shaft and equalizer assembly (which included the Universal joint housing cap—outer assembly).

Note: This “new solid brake cross shaft”, Service Brake Cross Shaft Assembly, A-2485-D, was adopted on August 31, 1928 with Release # 10155, about 90 days earlier.

January 28, 1929: Ford Service Bulletin, Page 311

- AA-4521: Universal joint housing shim
To insure ample housing clearance for the truck universal joint knuckle a new shim AA-4521 has been released. This shim must be installed whenever the distance between the center of the universal joint knuckle ring and the rear face of the coupling shaft housing exceeds $\frac{15}{32}$ inch (see Fig. 627 in FSB's). Occasionally it may be necessary to install two shims at this point in order to secure this $\frac{15}{32}$ inch dimension. Unless this dimension is carefully checked, there is a possibility of the universal joint knuckle striking the housing and causing a knock.

Note: This shim makes its *first known* appearance in the October 1, 1929 Parts Price List.

February 11, 1929: Release # 10529 (Supplement # 1)

A-7085-A: Transmission main shaft bearing retainer (Forging)
(equal spacing and thin flanged)
 Obsolete.
 (Go to March 15, 1929)

March 15, 1929: Release # 12326

A-4518-B: Universal joint housing cap—outer upper (Forging)
(unequal assy.)
 Obsolete.
 Superseded by A-4514-B2 (Malleable Iron Design) without safety lug and with **equally** spaced bolt holes.

A-4517-B1: Universal joint housing cap—outer upper (Forging)
(unknown spacing)
 Obsolete.
 Superseded by A-4514-B2 (Malleable Iron Design) without safety lug and with **equally** spaced holes.

Note: **NOT** sure of the spacing on this part as I have not seen one. It may be that when added to the assembly that it makes the A-4520 assembly “equal spacing” to be used with the earlier equal spaced Transmission main shaft bearing retainer set up. Is there anyone who has this part? It would be A-4517-B or A-4517-B1 stamped on the part.

A-4519: Universal joint housing cap lug
 Obsolete.
 Superseded by A-4514-B2 (Malleable Iron Design) without safety lug and with **equally** spaced bolt holes.

A-4514-B1: Universal joint housing cap—outer lower (Forging)
 Obsolete.
 Superseded by A-4514-B2 (Malleable Iron Design).
 1 req. all chassis.
 2 req. all AA chassis.

A-7085-C: Transmission main shaft bearing retainer (Forging)
(unequal spacing and thick flanged)
 Obsolete.
 Superseded by A-7085-A1 (Identical except with **equally** spaced bolt holes).

A-7085-A: Transmission main shaft bearing retainer (Malleable Iron Design)
(equal spacing and thick flanged)
 Redesigned and reinstated.
 Changed suffix of symbol number from “A” to “A1” (now A-7085-A1).
 Was Forging, now Malleable Iron Design.
 Supersedes A-7085-C (which was identical except that bolt holes were **unequally** spaced).
 (Go to June 22, 1929)

Note: All forged designed parts were now being replaced with the Malleable Iron Design.

March 18, 1929: Release # 12326

- AA-4513: Universal joint housing cap—inner
(equal spacing)
 Changed symbol number from AA-4513 to A-4513-A (now A-4513-A).
 Added two 3/8 punched holes (located same as A-4513-BR) for lubrication.
 Specified 1 req. for A chassis.
 Specified 2 instead of 1 req. for AA chassis.
 This supersedes A-4513-B, **(unequal spacing)**, for all production requirements.
 (Go to May 13, 1929)
- A-4513-B: Universal joint housing cap—inner
(unequal spacing)
 Added “R” to symbol number and specified for repairs (now A-4513-BR).
 This part, (A-4513-B), was used after 3400 cars.
 Superseded by A-4513-A **(with equal spacing)**.
- A-4520-B: Universal joint housing cap—outer assembly
 Changed to conform with details **(what details?)**.
 (Go to March 25, 1929)

Note: This may mean that the “details” of the Universal joint housing cap--outer assembly, A-4520-B, are now of the Malleable Iron Design and unequal spaced holes.

- A-4514-B2: Universal joint housing cap—outer (Malleable Iron Design)
 Removed “lower” from title.
 Specified 2 req. instead of 1 req. on A chassis.
 Specified 4 req. instead of 3 req. on AA chassis.
 This replaces A-4517-B1 and B2 (Upper Cap with Safety Lug) forging (B1) and malleable iron designs (B2).
 Also replaces A-4514-B1 (Forging Design).
 (Go to May 13, 1929)
- A-4517-B2: Universal joint housing cap—outer upper (Malleable Iron Design)
(unequal spacing)
 Added “R” to symbol number and specified for repairs (now A-4517-B2R).
 Removed safety lug.
 Superseded by A-4514-B2 (which makes an **equal spacing assembly**).
- A-7085-B: Transmission main shaft bearing retainer (Forging)
(unequal spacing and thin flanges)
 Reinstated.
 Added suffix “R” to symbol number for repair (now A-7085-BR).
 Specified 1 req. on all chassis.
 This is so that all present malleable iron patterns can be converted for use with caps having **equally** spaced bolt holes.
- A-20931-S1: Universal joint housing cap to transmission bolt
 Reinstated.
 Specified 6 req. on all chassis for repairs.
 To be used with A-7085-BR due to different thickness of bolt bosses between forging and malleable iron design.
 (Go to April 21, 1930)

- AA-4520: Universal joint housing cap—outer assembly (used with Solid Service Brake Cross Shaft) (Malleable Iron Design)
(equal assembly)
 Changed symbol number from AA-4520 to A-4520-C (now A-4520-C).
 Changed requirements from 1 AA Chassis to 1 A Chassis and 2 AA Chassis.
 (Go to September 9, 1929)
- March 25, 1929: Release # 12326 (Supplement # 1 see March 18, 1929)**
- A-4520-B: Universal joint housing cap—outer assembly (Forging)
(unequal assy.)
 Added suffix “R” to symbol number for repairs only (now A-4520-BR).
 Specified 1 req. A-4517-B2R Universal Joint Housing Cap—outer upper (upper cap without safety lug and with **unequally** spaced bolt holes).
 Changed number required to 1 instead of 2 A-4514-B2, Universal Joint Housing Cap—outer lower.
NOTE: This assembly must be held for repairs as upper and lower caps are machined in pairs and are not serviced individually.
- May 13, 1929: Release # 12932**
- A-4513-A: Universal joint housing cap—inner
(equal spacing)
 Changed number req. on AA chassis from 2 to 1.
 1 req. on A chassis.
- A-4514-B2: Universal joint housing cap—outer lower (Malleable Iron Design) Changed number req. on AA chassis from 4 to 2.
- A-20953: 3/8—24 NF 2 x 1-7/32 hex head screw
 Specified that 6 req. as Universal Joint Housing Cap to Main Shaft Bearing Retainer Screw, be used on A Chassis instead of all chassis.

June 1, 1929 Parts Price List (Tom Wesenberg) (Model A)

A-4513-B:	Universal joint housing cap—inner
A-4515-B:	Universal joint housing gasket—2 used
A-4516	Universal joint housing cap felt—1 used
A-4520-B:	Universal joint housing cap—outer
A-7085-C:	Transmission main shaft bearing retainer (thick 5/16 inch flanges)
A-20905:	Universal joint housing cap bolt—2 used 3/8—24 U.S.S. x 1" hex head screw
A-21741:	Universal joint housing cap nut—2 used 3/8—24 S.A.E. (21/64 x 9/16) hex nut
A-22245:	Universal joint housing cap lock washer—2 used 3/8 (.401-.411 3/32 x 21/32) lock washer
A-20953:	Universal joint housing cap to transmission bolt—6 used 3/8—24 N.F. 2 x 17/32 hex head bolt (W/cotter hole)* should be 3/8—24 x 1-7/32 hex head bolt (W/cotter hole)
A-21745:	Universal joint housing cap to transmission bolt nut—6 used 3/8—S.A.E. (13/32 x 9/16) castle nut
A-23534:	Universal joint housing cap to transmission bolt cotter—6 used 3/32 x 5/8 cotter

****The bolt size was a mistake in the Parts Price List***

June 1, 1929 Parts Price List (Tom Wesenberg) (Model AA)

REAR AXLE—WORM TYPE

AA-4513:	Universal joint housing cap—inner—2 used
A-4520-B:	Universal joint housing cap—outer front assembly—1 used
AA-4520:	Universal joint housing cap—outer rear assembly—1 used
A-4515-A:	Universal joint housing inner cap gasket—2 used
A-4516:	Universal joint housing cap felt—4 used
A-20905:	Universal joint housing cap bolt—6 used 3/8—24 U.S.S. x 1" hex head screw
A-21741:	Universal joint housing cap bolt nut—6 used 3/8—24 S.A.E. (21/64 x 9/16) hex nut
A-22245:	Universal joint housing cap bolt lock washer—6 used 3/8 (.401-.411 3/32 x 21/32) lock washer
A-20931:	Universal joint housing cap to transmission bolt—6 used 3/8—24 S.A.E. x 1-5/32 hex head bolt (W/cotter hole)
A-21745:	Universal joint housing cap to transmission bolt nut—6 used 3/8—24 S.A.E. x (13/32 x 9/16) castle nut
A-23534:	Universal joint housing cap to transmission bolt cotter—6 used 3/32 x 5/8 cotter
A-20907:	Universal joint housing cap coupling shaft rear support bolt—6 used 3/8—24 S.A.E. x 1-13/32 hex head bolt (hole in end)
A-21745:	Universal joint housing cap coupling shaft rear support bolt nut—6 used 3/8—24 S.A.E. x (13/32 x 9/16) castle nut
A-23534:	Universal joint housing cap coup. shaft rear support bolt cotter—6 used 3/32 x 5/8 cotter

REAR AXLE—BEVEL GEAR

AA-4513:	Universal joint housing cap—inner rear—2 used
AA-4520:	Universal joint housing cap—outer rear assembly—1 used
AA-4515:	Universal joint housing cap gasket—rear—2 used
A-4516:	Universal joint housing cap felt—4 used
A-20905:	Universal joint housing cap bolt—6 used 3/8—24 U.S.S x 1 hex head screw
A-21741:	Universal joint housing cap bolt nut—6 used 3/8—24 S.A.E. (21/64 x 9/16) hex nut
A-22245:	Universal joint housing cap bolt lock washer—6 used 3/8 (.401-.411) (3/32 x 21/32) lock washer
A-20931:	Universal joint housing cap to transmission bolt—6 used 3/8—24 S.A.E. x 1-5/32 hex head bolt (W/cotter hole)
A-21745:	Universal joint housing cap to transmission bolt nut—6 used 3/8—24 S.A.E. x (13/32 x 9/16) castle nut
A-23534:	Universal joint housing cap to transmission bolt cotter—6 used 3/32 x 5/8 cotter
A-20907:	Universal joint housing cap coupling shaft rear support bolt—6 used 3/8—24 S.A.E. x 1-13/32 hex head bolt (hole in end)
A-21745:	Universal joint housing cap coupling shaft rear support bolt nut—6 used 3/8—24 S.A.E. x (13/32 x 9/16) castle nut
A-23534:	Universal joint housing cap coup. shaft rear support bolt cotter—6 used 3/32 x 5/8 cotter

June 22, 1929: Release # 13297

A-7085-A1:	Transmission main shaft bearing retainer (Malleable Iron Design) (equal spacing and thick flanges) Added flange at center thus changing the diameter of the hole from 2-1/2 to 1-27/32.
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June 28, 1929 Ford Service Bulletins, page 350

CHANGE IN UNIVERSAL JOINT HOUSING CAP: The extension lug on the universal joint housing cap outer assembly has been removed as with our present construction, the lug is no longer necessary. This change eliminates the necessity of **unequally** spacing the bolt holes in both this part and its corresponding gaskets as the **unequal** spacing was used simply to insure that the housing cap being assembled with the extension lug toward the top.

The old style A-4520-BR cap assembly with the lug and the A-4513-BR inner cap are held for repairs for those cars equipped with A-7085-BR or C transmission main shaft bearing retainers which have **unequally** spaced bolt holes.

In present production we are using:

A-4520-C:	Outer cap (Universal joint housing cap—outer) (holes equally spaced) (Old number AA-4520)
A-4513-A:	Inner cap (Universal joint housing cap—inner) (holes equally spaced) (Old number AA-4513)
A-7085-A:	Bearing retainer (Transmission main shaft bearing retainer) (holes equally spaced) (thick flanges)

The bolt holes in all these parts are equally spaced.

Equal spacing of the bolt holes and elimination of the lug on the cap assembly permits using the same outer and inner caps (A-4520-C and A-4513-A) at both front and rear of coupling shaft or dual high assembly on trucks.

Note: An interesting notation about A-4513-A was the following: "Two 3/8 inch holes have been added to this part for lubrication, the same as in A-4513-BR. Any old style caps you have on hand without these holes may be used at the front end of trucks where the coupling shaft or dual high connects to the transmission." This, along with the elimination of the safety lug, was brought forth by Release # 12326 on March 18, 1929 about 100 days earlier.

August 1, 1929 Parts Price List (Marco Tahtaras) (Model A)

A-4513-A:	Universal joint housing cap—inner (holes equally spaced) (Old No. AA-4513)
A-4513-BR:	Universal joint housing cap—inner (holes unequally spaced)
A-4515-A:	Universal joint housing gasket—2 used (holes equally spaced) (Old No. AA-4515)
A-4515-BR:	Universal joint housing gasket—2 used (holes unequally spaced)
A-4516:	Universal joint housing cap felt—1 used
A-4520-C:	Universal joint housing cap—outer (assembly) (holes equally spaced) (Old No. AA-4520)
A-4520-BR:	Universal joint housing cap—outer assembly (holes unequally spaced)
A-7085-A:	Transmission main shaft bearing retainer (holes equally spaced with 5/16 inch thick flanges)
A-7085-BR:	Transmission main shaft bearing retainer (holes unequally spaced with 1/4 inch thin flanges)
A-20905:	Universal joint housing cap bolt—2 used 3/8—24 U.S.S. x 1" hex head screw
A-21741:	Universal joint housing cap nut—2 used 3/8—24 S.A.E. (21/64 x 9/16) hex nut
A-22245:	Universal joint housing cap lock washer—2 used 3/8 (.401-.411 3/32 x 21/32) lock washer
A-20953:	Universal joint housing cap to transmission bolt—6 used 3/8—24 N.F. 2 x 17/32 hex head bolt (W/cotter hole)* should be 3/8—24 x 1-7/32 hex head bolt (W/cotter hole)
A-21745:	Universal joint housing cap to transmission bolt nut—6 used 3/8—S.A.E. (13/32 x 9/16) castle nut
A-23534:	Universal joint housing cap to transmission bolt cotter—6 used 3/32 x 5/8 cotter

****The bolt size was a mistake in the Parts Price List***

August 1, 1929 Parts Price List (Marco Tahtaras) (Model AA)

REAR AXLE—WORM TYPE

- A-4513-A: Universal joint housing cap—inner—2 used (holes **equally** spaced)
(Old No. AA-4513)
- A-4520-B: Universal joint housing cap—outer front assembly—1 used
- A-4520-C: Universal joint housing cap—outer rear assembly—1 used (holes
equally spaced) (Old No. AA-4520)
- A-4521-B: Universal joint housing shim—1 used
- A-4515-A: Universal joint housing inner cap gasket—2 used (holes **equally** spaced)
(Old. No. AA-4515)
- A-4516: Universal joint housing cap felt—4 used
- A-20905: Universal joint housing cap bolt—6 used
3/8—24 U.S.S. x 1" hex head screw
- A-21741: Universal joint housing cap bolt nut—6 used
3/8—24 S.A.E. (21/64 x 9/16) hex nut
- A-22245: Universal joint housing cap bolt lock washer—6 used
3/8 (.401-.411 3/32 x 21/32) lock washer
- A-20931: Universal joint housing cap to transmission bolt—6 used
3/8—24 S.A.E. x 1-5/32 hex head bolt (W/cotter hole)
- A-21745: Universal joint housing cap to transmission bolt nut—6 used
3/8—24 S.A.E. x (13/32 x 9/16) castle nut
- A-23534: Universal joint housing cap to transmission bolt cotter—6 used
3/32 x 5/8 cotter
- A-20907: Universal joint housing cap coupling shaft rear support bolt—6 used
3/8—24 S.A.E. x 1-13/32 hex head bolt (hole in end)
- A-21745: Universal joint housing cap coupling shaft rear support bolt nut—6 used
3/8—24 S.A.E. x (13/32 x 9/16) castle nut
- A-23534: Universal joint housing cap coup. shaft rear support bolt cotter—6 used
3/32 x 5/8 cotter

REAR AXLE—BEVEL GEAR

- A-4513-A: Universal joint housing cap—inner rear—2 used (holes **equally** spaced)
(Old No. AA-4513)
- A-4520-C: Universal joint housing cap—outer rear assembly—1 used (holes
equally spaced) (Old No. AA-4520)
- AA-4521-R: Universal joint housing cap shim--
- A-4515-A: Universal joint housing cap gasket—rear—2 used (holes **equally**
spaced)(Old. No. AA-4515)
- A-4516: Universal joint housing cap felt—4 used
- A-20905: Universal joint housing cap bolt—6 used
3/8—24 U.S.S. x 1" hex head screw
- A-21741: Universal joint housing cap nut—6 used
3/8—24 S.A.E. (21/64 x 9/16) hex nut
- A-22245: Universal joint housing cap lock washer—6 used
3/8 (.401-.411 3/32 x 21/32) lock washer
- A-20931: Universal joint housing cap to transmission bolt—6 used
3/8—24 S.A.E. x 1-5/32 hex head bolt (W/cotter hole)
- A-21745: Universal joint housing cap to transmission nut—6 used
3/8—24 S.A.E. x (13/32 x 9/16) castle nut
- A-23534: Universal joint housing cap to transmission cotter—6 used
3/32 x 5/8 cotter

- A-20907: Universal joint housing cap coupling shaft rear support bolt—6 used
3/8—24 S.A.E. x 1-13/32 hex head bolt (hole in end)
- A-21745: Universal joint housing cap coupling shaft rear support nut—6 used
3/8—24 S.A.E. x (13/32 x 9/16) castle nut
- A-23534: Universal joint housing cap coup. shaft rear support cotter—6 used
3/32 x 5/8 cotter

September 9, 1929: Release # 13080 (Supplement # 20)

- A-4520-C: Universal joint housing cap—outer assembly (Malleable Iron Design)
(equal assembly)
Used with Solid Service Brake Cross Shaft.
Specified 1 req. instead of 2 req. for AA chassis.

September 28, 1929 Ford Service Bulletin, page 379

NEW RETAINER AND OIL BAFFLE: To reduce any possibility of oil leakage through the rear transmission bearing, a flange has been added at the center of the A-7085-A1 transmission main shaft bearing retainer, which changes the diameter of the hole in this part from 2-1/2 inches to 1-27/32 inches.

Note: This was brought forth by Release # 13297 on June 22, 1929 about 100 days earlier.

October 1, 1929 Parts Price List (Steve Plucker) (Model A)

- A-4513-A: Universal joint housing cap—inner (holes **equally** spaced)
(Old No. AA-4513)
- A-4513-BR: Universal joint housing cap—inner (holes **unequally** spaced)
- A-4515-A: Universal joint housing gasket—2 used (holes **equally** spaced)
(Old No. AA-4515)
- A-4515-BR: Universal joint housing gasket—2 used (holes **unequally** spaced)
- A-4516: Universal joint housing cap felt—1 used
- A-4520-C: Universal joint housing cap—outer (assembly) (holes **equally** spaced)
(Old No. AA-4520)
- A-4520-BR: Universal joint housing cap—outer assembly (holes **unequally** spaced)
- A-7085-A: Transmission main shaft bearing retainer (holes **equally** spaced with
5/16 inch **thick** flanges)
- A-7085-BR: Transmission main shaft bearing retainer (holes **unequally** spaced with
1/4 inch **thin** flanges)
- A-20905: Universal joint housing cap bolt—2 used
3/8—24 U.S.S. x 1" hex head screw
- A-21741: Universal joint housing cap nut—2 used
3/8—24 S.A.E. (21/64 x 9/16) hex nut
- A-22245: Universal joint housing cap lock washer—2 used
3/8 (.401-.411 3/32 x 21/32) lock washer
- A-20953: Universal joint housing cap to transmission bolt—6 used
3/8—24 N.F. 2 x 17/32 hex head bolt (W/cotter hole)*
should be 3/8—24 x 1-7/32 hex head bolt (W/cotter hole)
- A-21745: Universal joint housing cap to transmission bolt nut—6 used
3/8—S.A.E. (13/32 x 9/16) castle nut
- A-23534: Universal joint housing cap to transmission bolt cotter—6 used
3/32 x 5/8 cotter

****The bolt size was a mistake in the Parts Price List***

October 1, 1929 Parts Price List (Steve Plucker) (Model AA)

Note: This list was in the October 1, 1929 PPL and was listed as "Effective June 1, 1929".

REAR AXLE—WORM TYPE

- A-4513-A: Universal joint housing cap—inner—2 used (holes **equally** spaced)
(Old No. AA-4513)
- A-4520-B: Universal joint housing cap—outer front assembly—1 used
- A-4520-C: Universal joint housing cap—outer rear assembly—1 used (holes
equally spaced) (Old No. AA-4520)
- A-4521-R: Universal joint housing shim—1 used
- A-4515-A: Universal joint housing inner cap gasket—2 used (holes **equally** spaced)
(Old. No. AA-4515)
- A-4516: Universal joint housing cap felt—4 used
- A-20905: Universal joint housing cap bolt—6 used
3/8—24 U.S.S. x 1" hex head screw
- A-21741: Universal joint housing cap bolt nut—6 used
3/8—24 S.A.E. (21/64 x 9/16) hex nut
- A-22245: Universal joint housing cap bolt lock washer—6 used
3/8 (.401-.411 3/32 x 21/32) lock washer
- A-20931: Universal joint housing cap to transmission bolt—6 used
3/8—24 S.A.E. x 1-5/32 hex head bolt (W/cotter hole)
- A-21745: Universal joint housing cap to transmission bolt nut—6 used
3/8—24 S.A.E. x (13/32 x 9/16) castle nut
- A-23534: Universal joint housing cap to transmission bolt cotter—6 used
3/32 x 5/8 cotter
- A-20907: Universal joint housing cap coupling shaft rear support bolt—6 used
3/8—24 S.A.E. x 1-13/32 hex head bolt (hole in end)
- A-21745: Universal joint housing cap coupling shaft rear support bolt nut—6 used
3/8—24 S.A.E. x (13/32 x 9/16) castle nut
- A-23534: Universal joint housing cap coup. shaft rear support bolt cotter—6 used
3/32 x 5/8 cotter

REAR AXLE—BEVEL GEAR

- A-4513-A: Universal joint housing cap—inner rear—2 used (holes **equally** spaced)
(Old No. AA-4513)
- A-4520-C: Universal joint housing cap—outer rear assembly—1 used (holes
equally spaced) (Old No. AA-4520)
- AA-4521-R: Universal joint housing cap shim--
- A-4515-A: Universal joint housing cap gasket—rear—2 used (holes **equally**
spaced)(Old. No. AA-4515)
- A-4516: Universal joint housing cap felt—4 used
- A-20905: Universal joint housing cap bolt—6 used
3/8—24 U.S.S. x 1" hex head screw
- A-21741: Universal joint housing cap nut—6 used
3/8—24 S.A.E. (21/64 x 9/16) hex nut
- A-22245: Universal joint housing cap lock washer—6 used
3/8 (.401-.411 3/32 x 21/32) lock washer
- A-20931: Universal joint housing cap to transmission bolt—6 used
3/8—24 S.A.E. x 1-5/32 hex head bolt (W/cotter hole)
- A-21745: Universal joint housing cap to transmission nut—6 used
3/8—24 S.A.E. x (13/32 x 9/16) castle nut

- A-23534: Universal joint housing cap to transmission cotter—6 used
3/32 x 5/8 cotter
- A-20907: Universal joint housing cap coupling shaft rear support bolt—6 used
3/8—24 S.A.E. x 1-13/32 hex head bolt (hole in end)
- A-21745: Universal joint housing cap coupling shaft rear support nut—6 used
3/8—24 S.A.E. x (13/32 x 9/16) castle nut
- A-23534: Universal joint housing cap coup. shaft rear support cotter—6 used
3/32 x 5/8 cotter

October 7, 1929 Indianapolis Ford Service Letter

A-7085, The Transmission main shaft bearing retainer has been redesigned. This can be used on both the old and new type transmission cases. This subject is covered in detail in the September issue of the Service Bulletin.

Note: This was brought forth with Release # 13297, June 22, 1929 about 110 days earlier.

December 1, 1929 Parts Price List (Steve Plucker) (Model A)

- A-4513-A: Universal joint housing cap—inner (holes **equally** spaced)
(Old No. AA-4513)
- A-4513-BR: Universal joint housing cap—inner (holes **unequally** spaced)
- A-4515-A: Universal joint housing gasket—2 used (holes **equally** spaced)
(Old No. AA-4515)
- A-4515-BR: Universal joint housing gasket—2 used (holes **unequally** spaced)
- A-4516: Universal joint housing cap felt—1 used
- A-4520-C: Universal joint housing cap—outer (assembly) (holes **equally** spaced)
(Old No. AA-4520)
- A-4520-BR: Universal joint housing cap—outer assembly (holes **unequally** spaced)
- A-7085-A: Transmission main shaft bearing retainer (holes **equally** spaced with
5/16 inch **thick** flanges)
- A-7085-BR: Transmission main shaft bearing retainer (holes **unequally** spaced with
1/4 inch **thin** flanges)
- A-20905: Universal joint housing cap bolt—2 used
3/8—24 U.S.S. x 1" hex head screw
- A-21741: Universal joint housing cap bolt nut—2 used
3/8—24 S.A.E. (21/64 x 9/16) hex nut
- A-22245: Universal joint housing cap bolt lock washer—2 used
3/8 (.401-.411 3/32 x 21/32) lock washer
- A-20953: Universal joint housing cap to transmission bolt—6 used
3/8—24 N.F. 2 x 17/32 hex head bolt (W/cotter hole)*
should be 3/8—24 x 1-7/32 hex head bolt (W/cotter hole)
- A-21745: Universal joint housing cap to transmission bolt nut—6 used
3/8—S.A.E. (13/32 x 9/16) castle nut
- A-23534: Universal joint housing cap to transmission bolt cotter—6 used
3/32 x 5/8 cotter

****The bolt size was a mistake in the Parts Price List***

December 1, 1929 Parts Price List (Steve Plucker) (Model AA)

REAR AXLE—WORM TYPE

- A-4513-A: Universal joint housing cap—inner—2 used (holes **equally** spaced)
(Old No. AA-4513)
- A-4520-B: Universal joint housing cap—outer front assembly—1 used
- A-4520-C: Universal joint housing cap—outer rear assembly—1 used (holes
equally spaced) (Old No. AA-4520)
- A-4521-R: Universal joint housing shim—1 used
- A-4515-A: Universal joint housing inner cap gasket—2 used (holes **equally** spaced)
(Old. No. AA-4515)
- A-4516: Universal joint housing cap felt—4 used
- A-20905: Universal joint housing cap bolt—6 used
3/8—24 U.S.S. x 1" hex head screw
- A-21741: Universal joint housing cap bolt nut—6 used
3/8—24 S.A.E. (21/64 x 9/16) hex nut
- A-22245: Universal joint housing cap bolt lock washer—6 used
3/8 (.401-.411 3/32 x 21/32) lock washer
- A-20931: Universal joint housing cap to transmission bolt—6 used
3/8—24 S.A.E. x 1-5/32 hex head bolt (W/cotter hole)
- A-21745: Universal joint housing cap to transmission bolt nut—6 used
3/8—24 S.A.E. x (13/32 x 9/16) castle nut
- A-23534: Universal joint housing cap to transmission bolt cotter—6 used
3/32 x 5/8 cotter
- A-20907: Universal joint housing cap coupling shaft rear support bolt—6 used
3/8—24 S.A.E. x 1-13/32 hex head bolt (hole in end)
- A-21745: Universal joint housing cap coupling shaft rear support bolt nut—6 used
3/8—24 S.A.E. x (13/32 x 9/16) castle nut
- A-23534: Universal joint housing cap coup. shaft rear support bolt cotter—6 used
3/32 x 5/8 cotter

REAR AXLE—BEVEL GEAR

- A-4513-A: Universal joint housing cap—inner rear—2 used (holes **equally** spaced)
(Old No. AA-4513)
- A-4520-C: Universal joint housing cap—outer rear assembly—1 used (holes
equally spaced) (Old No. AA-4520)
- AA-4521-R: Universal joint housing cap shim--
- A-4515-A: Universal joint housing cap gasket—rear—2 used (holes **equally**
spaced)(Old. No. AA-4515)
- A-4516: Universal joint housing cap felt—4 used
- A-20905: Universal joint housing cap bolt—6 used
3/8—24 U.S.S. x 1" hex head screw
- A-21741: Universal joint housing cap nut—6 used
3/8—24 S.A.E. (21/64 x 9/16) hex nut
- A-22245: Universal joint housing cap lock washer—6 used
3/8 (.401-.411 3/32 x 21/32) lock washer
- A-20931: Universal joint housing cap to transmission bolt—6 used
3/8—24 S.A.E. x 1-5/32 hex head bolt (W/cotter hole)
- A-21745: Universal joint housing cap to transmission nut—6 used
3/8—24 S.A.E. x (13/32 x 9/16) castle nut
- A-23534: Universal joint housing cap to transmission cotter—6 used
3/32 x 5/8 cotter
- A-20907: Universal joint housing cap coupling shaft rear support bolt—6 used
3/8—24 S.A.E. x 1-13/32 hex head bolt (hole in end)

- A-21745: Universal joint housing cap coupling shaft rear support nut—6 used
3/8—24 S.A.E. x (13/32 x 9/16) castle nut
- A-23534: Universal joint housing cap coup. shaft rear support cotter—6 used
3/32 x 5/8 cotter

April 21, 1930: Release # 12326 (Supplement # 3 of March 18, 1929)

- A-20931-S1: Universal joint housing cap to transmission bolt
- Obsolete.
Replaced by A-20953 when using A-20953 for repairs on jobs with forged transmission main shaft bearing retainer.
Use lock washer A-22257-S2 under nut.

October 20, 1930 Parts Price List (Steve Plucker) (Model A)

- A-4513-A: Universal joint housing cap—inner (holes **equally** spaced)
(Old No. AA-4513)
- A-4513-BR: Universal joint housing cap—inner (holes **unequally** spaced)*
- A-4515-A: Universal joint housing gasket—2 used (holes **equally** spaced)
(Old No. AA-4515)
- A-4515-BR: Universal joint housing gasket—2 used (holes **unequally** spaced)
- A-4516: Universal joint housing cap felt—1 used
- A-4520-C: Universal joint housing cap—outer assembly (holes **equally** spaced)
(Old No. AA-4520)
- A-4520-BR: Universal joint housing cap—outer assembly (holes **unequally** spaced)*
- A-7085-A: Transmission main shaft bearing retainer (holes **equally** spaced with
5/16 inch **thick** flanges)
- A-7085-BR: Transmission main shaft bearing retainer (holes **unequally** spaced with
1/4 inch **thin** flanges)
- A-20905: Universal joint housing cap bolt—2 used
3/8—24 U.S.S. x 1" hex head screw
- A-21741: Universal joint housing cap bolt nut—2 used
3/8—24 S.A.E. (21/64 x 9/16) hex nut
- A-22245: Universal joint housing cap bolt lock washer—2 used
3/8 (.401-.411 3/32 x 21/32) lock washer
- A-20953: Universal joint housing cap to transmission bolt—6 used
3/8—24 x 1-7/32 hex head bolt (W/cotter hole)
- A-21745: Universal joint housing cap to transmission bolt nut—6 used
3/8—S.A.E. (13/32 x 9/16) castle nut
- A-23534: Universal joint housing cap to transmission bolt cotter—6 used
3/32 x 5/8 cotter

*When used to replace bolt 1-5/32" long, also use 1
A-22257-S2 3/8 (1/16 x 41/64) lock washer

October 20, 1930 Parts Price List (Steve Plucker) (Model AA)

REAR AXLE—WORM TYPE (1928-1929)

- A-4513-A: Universal joint housing cap—inner—2 used (holes **equally** spaced)
(Old No. AA-4513)
- A-4520-BR: Universal joint housing cap—outer front assembly—1 used
- A-4520-C: Universal joint housing cap—outer rear assembly—1 used (holes
equally spaced) (Old No. AA-4520)

- A-4521-AR: Universal joint housing shim—1 used
 A-4515-A: Universal joint housing inner cap gasket—2 used (holes **equally** spaced)
 (Old. No. AA-4515)
 A-4516: Universal joint housing cap felt—4 used
 A-20905: Universal joint housing cap bolt—6 used
 3/8—24 x 1" hex head bolt
 A-21741-S8: Universal joint housing cap bolt nut—6 used
 3/8—24 (21/64 x 9/16) hex nut
 A-22245: Universal joint housing cap bolt lock washer—6 used
 3/8 (.401-.411) (3/32 x 21/32) lock washer
 A-20931: Universal joint housing cap to transmission bolt—6 used
 3/8—24 x 1-5/32 hex head bolt (W/cotter hole)
 A-21745: Universal joint housing cap to transmission bolt nut—6 used
 3/8—24 x (13/32 x 9/16) castle nut
 A-23534: Universal joint housing cap to transmission bolt cotter—6 used
 3/32 x 5/8 cotter
 A-20907: Universal joint housing cap coupling shaft rear support bolt—6 used
 3/8—24 x 1-15/32 hex head bolt (hole in end)
 A-21745: Universal joint housing cap coupling shaft rear support bolt nut—6 used
 3/8—24 x (13/32 x 9/16) castle nut
 A-23534: Universal joint housing cap coup. shaft rear support bolt cotter—6 used
 3/32 x 5/8 cotter

REAR AXLE—BEVEL GEAR (1928-1929)

- A-4513-A: Universal joint housing cap—inner rear—2 used (holes **equally** spaced)
 (Old No. AA-4513)
 A-4520-C: Universal joint housing cap—outer rear assembly—1 used (holes
equally spaced) (Old No. AA-4520)
 AA-4521-R: Universal joint housing cap shim--
 A-4515-A: Universal joint housing cap gasket—rear—2 used (holes **equally**
 spaced)(Old. No. AA-4515)
 A-4516: Universal joint housing cap felt—4 used
 A-20905: Universal joint housing cap bolt—6 used
 3/8—24 x 1" hex head bolt
 A-21741-S8: Universal joint housing cap nut—6 used
 3/8—24 (21/64 x 9/16) hex nut
 A-22245: Universal joint housing cap lock washer—6 used
 3/8 (.401-.411) (3/32 x 21/32) lock washer
 A-20953: Universal joint housing cap to transmission bolt—6 used
 3/8—24 x 1-7/32 hex head bolt (W/cotter hole)
 A-21745: Universal joint housing cap to transmission nut—6 used
 3/8—24 x (13/32 x 9/16) castle nut
 A-23534: Universal joint housing cap to transmission cotter—6 used
 3/32 x 5/8 cotter
 A-20907: Universal joint housing cap coupling shaft rear support bolt—6 used
 3/8—24 x 1-15/32 hex head bolt (hole in end)
 A-21745: Universal joint housing cap coupling shaft rear support nut—6 used
 3/8—24 x (13/32 x 9/16) castle nut
 A-23534: Universal joint housing cap coup. shaft rear support cotter—6 used
 3/32 x 5/8 cotter

REAR AXLE—BEVEL GEAR (1930)

- A-4513-A: Universal joint housing cap—inner rear—1 used (holes **equally** spaced)
 (Old No. AA-4513)

- A-4520-C: Universal joint housing cap—outer rear assembly—1 used (holes **equally** spaced) (Old No. AA-4520)
 A-4515-A: Universal joint housing cap gasket—rear—2 used (holes **equally** spaced)(Old. No. AA-4515)
 A-4516: Universal joint housing cap felt—2 used
 A-20963: Universal joint housing cap bolt—rear—6 used
 3/8—24 x 1-1/2 hex. head bolt (with cotter hole)
 A-20907: Universal joint housing cap coupling shaft bolt—6 used
 3/8—24 x 1-15/32 hex head bolt (hole in end)
 A-21745: Universal joint housing cap coupling shaft nut—6 used
 3/8—24 x (13/32 x 9/16) castle nut
 A-23534: Universal joint housing cap coupling shaft cotter—6 used
 3/32 x 5/8 cotter

July 1, 1931 Parts Price List (Steve Plucker) (Model A)

- A-4513-A: Universal joint housing cap—inner (holes **equally** spaced)
 (Old No. AA-4513)
 A-4513-BR: Universal joint housing cap—inner (holes **unequally** spaced)
 A-4515-A: Universal joint housing gasket—2 used (holes **equally** spaced)
 (Old No. AA-4515)
 A-4515-BR: Universal joint housing gasket—2 used (holes **unequally** spaced)
 A-4516: Universal joint housing cap felt—1 used
 A-4520-C: Universal joint housing cap—outer assembly (holes **equally** spaced)
 (Old No. AA-4520)
 A-4520-BR: Universal joint housing cap—outer assembly (holes **unequally** spaced)
 A-7085-A: Transmission main shaft bearing retainer (holes **equally** spaced with
 5/16 inch **thick** flanges)
 A-7085-BR: Transmission main shaft bearing retainer (holes **unequally** spaced with
 1/4 inch **thin** flanges)
 A-20905: Universal joint housing cap bolt—2 used
 3/8—24 U.S.S. x 1" hex head bolt
 A-21741: Universal joint housing cap bolt nut—2 used
 3/8—24 (21/64 x 9/16) hex nut
 A-22245: Universal joint housing cap bolt lock washer—2 used
 3/8 (.401-.411) (3/32 x 21/32) lock washer
 A-20953: Universal joint housing cap to transmission bolt—6 used
 3/8—24 x 1-7/32 hex head bolt (W/cotter hole)**
 A-21745: Universal joint housing cap to transmission bolt nut—6 used
 3/8—24 (13/32 x 9/16) castle nut
 A-23534: Universal joint housing cap to transmission bolt cotter—6 used
 3/32 x 5/8 cotter

**When used to replace bolt 1-5/32" long, also use 1
 A-22257-S2 3/8 (1/16 x 41/64) lock washer

July 1, 1931 Parts Price List (Steve Plucker) (Model AA)

REAR AXLE—WORM TYPE (1928-1929)

- A-4513-A: Universal joint housing cap—inner—1 used (holes **equally** spaced)
 (Old No. AA-4513)
 A-4520-BR: Universal joint housing cap—outer front assembly—1 used
 A-4520-C: Universal joint housing cap—outer rear assembly—1 used (holes
 equally spaced) (Old No. AA-4520)

A-4521-AR:	Universal joint housing shim—1 used
A-4515-A:	Universal joint housing inner cap gasket—2 used (holes equally spaced) (Old. No. AA-4515)
A-4516:	Universal joint housing cap felt—4 used
A-20905:	Universal joint housing cap bolt—6 used 3/8—24 x 1" hex head bolt
A-21741-S8:	Universal joint housing cap bolt nut—6 used 3/8—24 (21/64 x 9/16) hex nut
A-22245:	Universal joint housing cap bolt lock washer—6 used 3/8 (.401-.411) (3/32 x 21/32) lock washer
A-20931:	Universal joint housing cap to transmission bolt—6 used 3/8—24 x 1-5/32 hex head bolt (W/cotter hole)
A-21745:	Universal joint housing cap to transmission bolt nut—6 used 3/8—24 x (13/32 x 9/16) castle nut
A-23534:	Universal joint housing cap to transmission bolt cotter—6 used 3/32 x 5/8 cotter
A-20907:	Universal joint housing cap coupling shaft rear support bolt—6 used 3/8—24 x 1-15/32 hex head bolt (hole in end)
A-21745:	Universal joint housing cap coupling shaft rear support bolt nut—6 used 3/8—24 x (13/32 x 9/16) castle nut
A-23534:	Universal joint housing cap coup. shaft rear support bolt cotter—6 used 3/32 X 5/8 cotter

REAR AXLE—BEVEL GEAR (1928-1929)

A-4513-A:	Universal joint housing cap—inner rear—2 used (holes equally spaced) (Old No. AA-4513)
A-4520-C:	Universal joint housing cap—outer rear assembly—1 used (holes equally spaced) (Old No. AA-4520)
AA-4521-R:	Universal joint housing cap shim--
A-4515-A:	Universal joint housing cap gasket—rear—2 used (holes equally spaced)(Old. No. AA-4515)
A-4516:	Universal joint housing cap felt—4 used
A-20905:	Universal joint housing cap bolt—6 used 3/8—24 x 1" hex head bolt
A-21741-S8:	Universal joint housing cap nut—6 used 3/8—24 (21/64 x 9/16) hex nut
A-22245:	Universal joint housing cap lock washer—6 used 3/8 (.401-.411) (3/32 x 21/32) lock washer
A-20953:	Universal joint housing cap to transmission bolt—6 used 3/8—24 x 1-7/32 hex head bolt (W/cotter hole)
A-21745:	Universal joint housing cap to transmission nut—6 used 3/8—24 x (13/32 x 9/16) castle nut
A-23534:	Universal joint housing cap to transmission cotter—6 used 3/32 x 5/8 cotter
A-20907:	Universal joint housing cap coupling shaft rear support bolt—6 used 3/8—24 x 1-13/32 hex head bolt (hole in end)
A-21745:	Universal joint housing cap coupling shaft rear support nut—6 used 3/8—24 x (13/32 x 9/16) castle nut
A-23534:	Universal joint housing cap coup. shaft rear support cotter—6 used 3/32 x 5/8 cotter

REAR AXLE—BEVEL GEAR (1930-1931)

- A-4513-A: Universal joint housing cap—inner rear—1 used (holes **equally** spaced)
(Old No. AA-4513)
- A-4520-C: Universal joint housing cap—outer rear assembly—1 used (holes
equally spaced) (Old No. AA-4520)
- A-4515-A: Universal joint housing cap gasket—rear—2 used (holes **equally**
spaced)(Old. No. AA-4515)
- A-4516: Universal joint housing cap felt—2 used
- A-20963: Universal joint housing cap bolt—rear—6 used
3/8—24 x 1-1/2 hex. head bolt (with cotter hole)
- A-20907: Universal joint housing cap coupling shaft bolt—6 used
3/8—24 x 1-15/32 hex head bolt (hole in end)
- A-21745: Universal joint housing cap coupling shaft nut—6 used
3/8—24 x (13/32 x 9/16) castle nut
- A-23534: Universal joint housing cap coupling shaft cotter—6 used
3/32 x 5/8 cotter