Evolution of the Terminal Box and Cover Assembly

As of

July 26, 2014

By
Steve Plucker

Evolution chart

DATE E.I. NUMBER	PART NUMBER	DESCRIPTION
10/20/27 3762	A-14560 Terminal Box	Made from Fordite Compound “E” special.
10/20/27 3762	A-14561 Terminal Box Cover	Made from Fordite Compound “E” special.
03/28/28 7970	A-14561 Terminal Box Cover	Removed word “Ford” for convenience in exporting.
08/10/28 9912	A-14563 Terminal Box Wire Connector-Insert	Changed material from “CD Cold Heading Wire Type G (Steel) with Cadmium Plating” to “W Brass”.
09/12/28 10238	A-14560 Terminal Box	Changed radius in corners from 5/32 to 1/16 to insure clearance for projections in cover.
09/12/28 10238	A-14561 Terminal Box Cover	Added seven projections on inside.
10/09/28 10549	A-14561 Terminal Box Cover	Changed diameter of holes for terminal bolts from 7/32 to 1/4.
11/23/28 11126	A-14560 Terminal Box	Changed material from “Fordite Compound ‘E’ Special” to “Black non-blooming hard rubber” and added physical properties.
11/23/28 11126	A-14561 Terminal Box Cover	Changed material from “Fordite Compound ‘E’ Special” to “Black non-blooming hard rubber” and added physical properties.
02/21/29 12106	A-14560 Terminal Box	Specified 45 degree fillet in upper and lower corners at rear and upper corner at front.
04/10/29 12625	A-14560 Terminal Box	Specified length inside to be 2.800-2.808 and width inside 2.050-2.058. Changed inside radius of corner from 1/16 to 5/32 and radius in upper corner of center opening from ½ to 3/16.

04/10/29 12625	A-14561 Terminal Box Cover	Redesigned, specifying a flange instead of round lugs (projections) to prevent cover spreading when clamping in place, and change shape of ignition conduit hole (from 7/8 inch width to 1 inch width at widest point). Also changed width of ribs from 1/8 to 3/16.
09/05/29 13870	A-14560-A1 Terminal Box	Added suffix “A1” to symbol number. Specified use with A-14561-A1.
09/05/29 13870	A-14561-A1 Terminal Box Cover	Added suffix “A1” to symbol number. Specified use with A-14560-A1.
09/05/29 13870	A-14560-A2 Terminal Box	A-14560-A2 was “Adopted” but on 01/07/30 the Part Release indicated that it was “Obsolete. Part never produced”.
09/05/29 13870	A-14561-A2 Terminal Box Cover	A-14561-A2 was “Adopted” but on 01/07/30 the Part Release indicated that it was “Obsolete. Part never produced”.
09/09/29 13877	A-21569 Terminal Box Cover Nut	The Part Release indicated that “Changed class of Thread fit from N.F. #3 to N.F. #2” on the Terminal Box Cover Nuts…Would this also change the thread size on the Terminal Box?
05/19/30 16496	A-21569 Terminal Box Cover Nut	The “Brass Forging Design” nut (A1) became “Obsolete” and was replaced by the “Die Casting Design” nut (A2) “Effective at once”.

FORD'S WAY

Evolution of the Terminal Box and Cover Assembly (An Outside-Inside View of the Model A/AA Ford)

As of

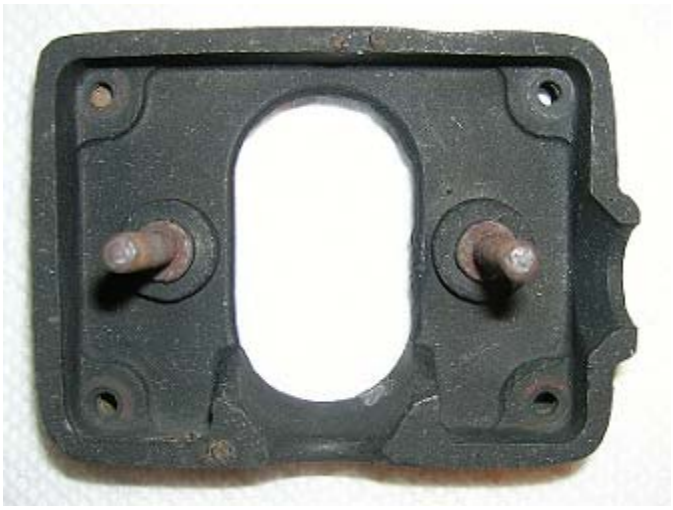
July 26, 2014

By
Steve Plucker

After going through some revisions, the Terminal Box, A-14560, and Terminal Box Cover, A-14561, became a fixture on the Model A/AA Ford bodies on October 20, 1927 with Part Release (PR) #3762.

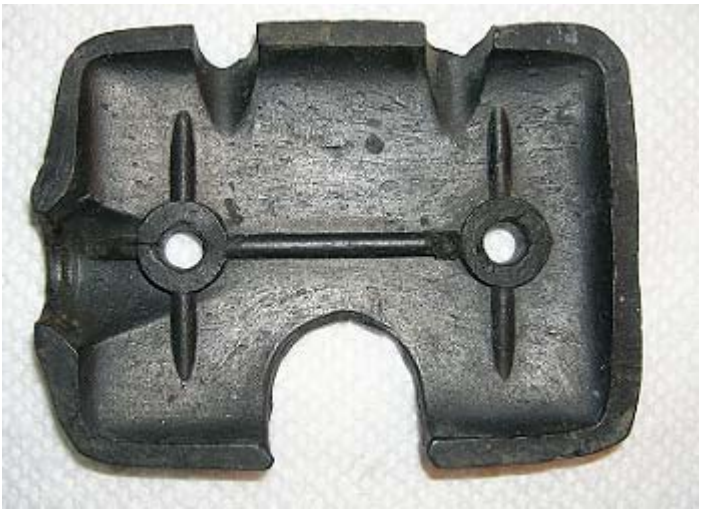
The first boxes and covers were made of a product Ford called "Fordite Compound "E" Special". According to Ford News, and although not named specifically, this material was just one of sixteen (16) separate rubber formulas which were used in the compounding the different types of rubber parts used on the Model A/AA Ford.

The box itself had 5/32 inch radius corners in the front of the box **(Fig. 5 Left)**; two (2) steel threaded bolts, known as A-14563 "Terminal Box Wire Connector-Insert", which had, according to Ford, "N. F. # 3" threads, and four (4) A-14562 "Terminal Box Insert(s)" that were all bonded into the "Fordite" material. The Terminal Box Wire Connector-Inserts were changed to brass on August 10, 1928 thus remaining as such for the rest of the production years. There was an opening in the center of the box that was 1-3/4 inches in length and 1 inch wide with the opposite ends having a ½ inch radius corners **(Fig. 1)** for the electrical wire and ignition conduit routing.



(Fig. 1)

The cover was of the same material as the box. There were two 7/32 inch diameter holes in the front of the cover for the Terminal Box Wire Connector-Inserts. On the back **(Fig. 2)**, there were “ribs” for strength. These ribs were 1/8 inch in width. Another feature was that the cover had no “projections” or “lugs” nor “flanges” to fully secure the cover to the box, which without the lugs and/or flanges, caused the cover to spread when clamping to the box with the terminal screws. Also the width of the ignition conduit hole was 7/8 inch at it’s widest point.



(Fig. 2)

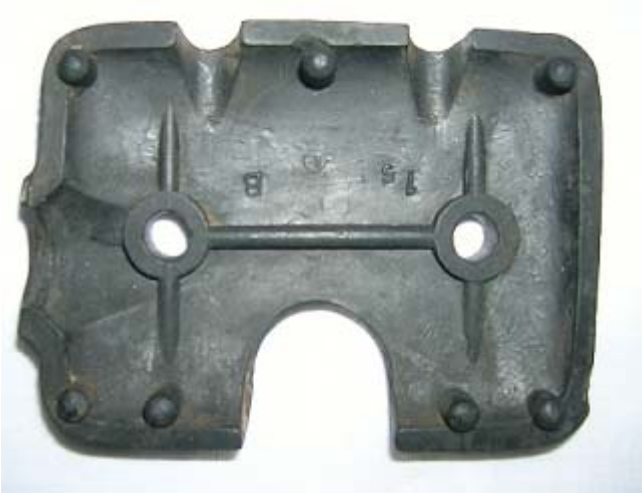
The cover also had on the front side the “FORD” script in the upper center of the cover **(Fig. 3)**. There were two known positions of the script. According to Hans “Doc” Kalinka, “the high script covers (seen in **Fig. 3**) to be very, very early production, perhaps under engine number 2500”, and there were the low script covers. “However there is no definitive text (found in the Ford Archives) regarding changes in location of the script”.

(Fig. 3)

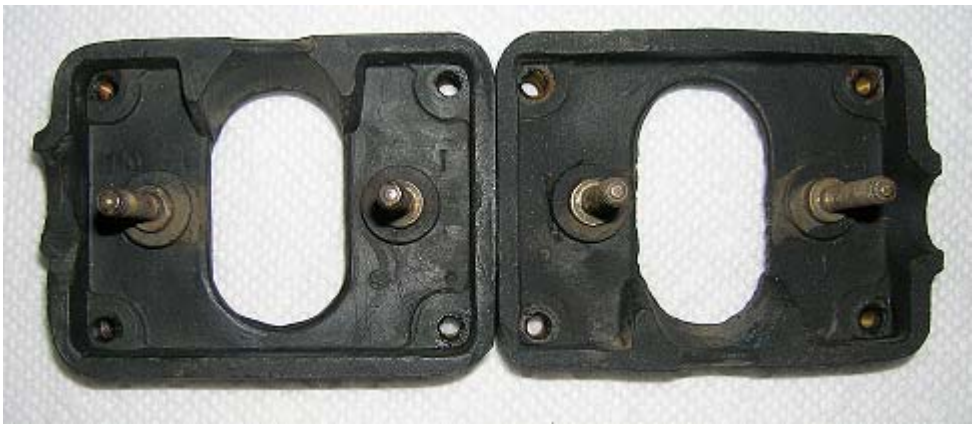
On March 28, 1928 with PR # 7970, the “FORD” script was removed from the front of the cover for the convenience of exporting and remained as such throughout the production period.

On August 10, 1928 with PR # 9912, the A-14563 Terminal Box Wire Connector-Inserts changed material from “CD Cold Heading (Steel) Wire Type G with Cadmium Plating to W Brass”.

On September 12, 1928, PR # 10238, both the cover and box were revised. The cover *“Added seven projections on inside”* **(Fig. 4)**; and the box *“radius in corners (changed) from 5/32 to 1/16 inch **(Fig. 5 Right)** to insure clearance for projections in cover”*. The cover still possessed the 1/8 inch reinforcement ribs on the back side.



(Fig. 4)



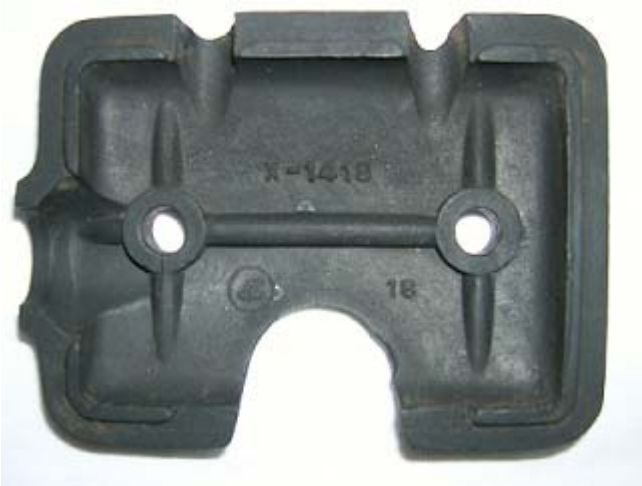
(Fig. 5)

It is believed that the hole diameter in the cover for the Terminal Box Wire Connector-Inserts still remained at 7/32 inch. But by October 9, 1928, PR # 10549, the *"diameter of holes for terminal bolts (changed) from 7/32 inch to ¼ inch"* for which they remained throughout production.

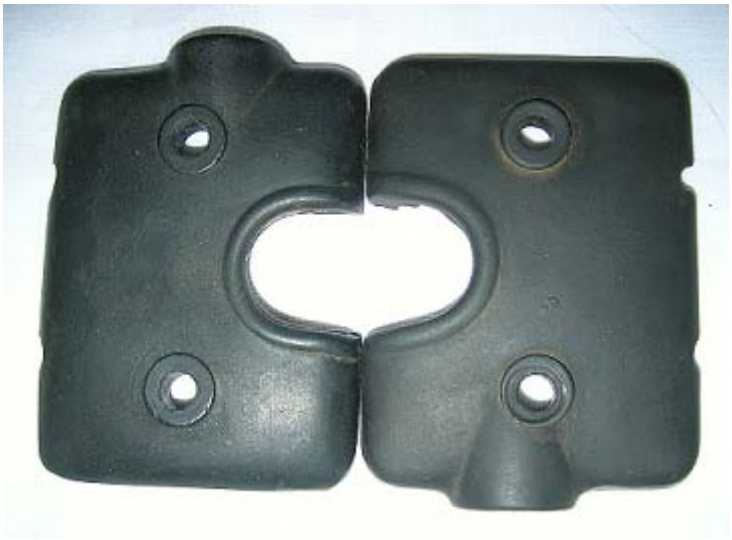
On November 23, 1928, PR # 11126, it was specified that both the box and the cover change *"material from 'Fordite Compound E Special to Black Non-Blooming Hard Rubber and added physical properties"* to both.

On February 21, 1929, PR # 12106, a "fillet" was added in various areas within the box. The part release *"Specified 45 degree fillet in upper and lower corners at rear and upper corner at front"*. Up to this time, all the boxes were formed to have 90 degree angled edges between the sides and the face of the box. The "fillets" then, were added or "filled-in" to the mold in order to strengthen or reinforce the box in these areas. Some boxes have more prominent "fillets" than others but are still there.

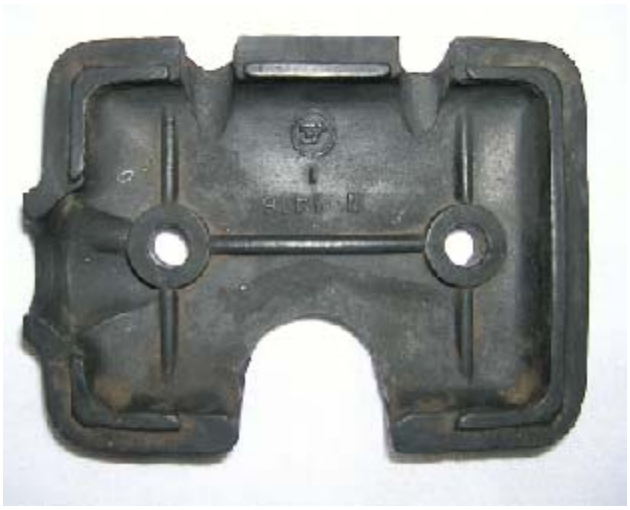
On April 10, 1929, PR # 12625, saw a major inside change of both the cover and the box. The cover was *"Redesigned, specifying a flange instead of round lugs (projections) to prevent cover spreading when clamping in place **(Fig. 6)**, and change shape of ignition conduit hole (from 7/8 inch width to 1 inch width at it's widest point) **(Fig. 7)**. Also changed width of ribs from 1/8 inch to 3/16 inch"* **(Fig. 6)**. And remained as such throughout production. However, as seen in **(Fig. 8)**, there are covers of this type that still possessed the 1/8 inch ribs and flanges.



(Fig. 6)

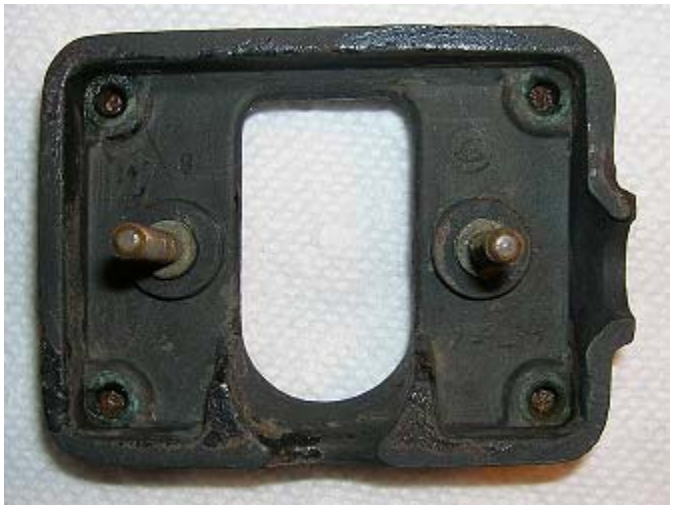


(Fig. 7)



(Fig. 8)

Also on this date, the box *"Changed inside radius of corner(s) from 1/16 to 5/32 inch and radius in upper corner(s) of center opening from ½ inch **(Fig. 1)** to 3/16 inch"* **(Fig. 9)**. This was the elimination of the upper ½ inch radius to where it was made straight to allow for better electrical wire and ignition conduit placement thus it remained as such throughout production. However, there were different variations of the boxes, as with the covers, that were noted during the change as seen in the chart.



(Fig. 9)

By September 5, 1929, PR # 13870, Ford added the suffix “A1” to the Terminal Box and the Terminal Box Cover part number which became A-14560-A1 and A-14561-A1. This was due to a new style box and cover that the Ford technicians were working on which was to become A-14560-A2 and A-14561-A2. However something prevented Ford from producing the “A2” because on January 7, 1930 it was specified that the “A2” box and cover was *“Obsolete. Part never produced”*.

Also, a few days later, on September 9, 1929, PR # 13877, the Terminal Box Cover Nut, A-21569, *“Changed class of Thread fit from N.F. #3 to N.F. #2”*. Did this change have anything to do with the production of the “A2” box? It is not known at this time. If not, then the change was done with the “A1” box.

On May 19, 1930, PR # 16496, the *“Brass Forging Design” nut “A1”, (A-21569) became “Obsolete” and was replaced by the “(Zinc) Die Casting Design” nut “A2” “Effective at once”*. Please refer to the MARC/MAFCA Restoration Guidelines and Judging Standards for an excellent description of the Brass and Zinc Terminal Box Cover Nuts (A-21569) and other excellent subject matters pertaining to the restoration of your Model A/AA Ford.

THE CODES

On the front of the Terminal Box and on the back of the Terminal Box Cover, there were codes. These codes were probably specific for the different companies that made the Terminal Box and Cover Assemblies. As of this writing, no information on these codes or what they mean, other than the fact that they were possibly “batch” codes, are known.

As of this writing, the following list of “codes” are shown in the following charts. If you have any that you can add, please contact me at steve@plucks329s.org or pif@bmi.net so we can include them also.

TERMINAL BOX
A-14560

P.R. DATE	P.R NUM.	CORNER RADIUS	OVAL MIDDLE CONDUIT HOLE	STEEL OR BRASS WIRE CONN.	45 DEGREE FILLETS	"U" MIDDLE CONDUIT HOLE	CODES
10-20-27	#3762	5/32"	YES	STEEL	NO	NO	No markings (3) No markings (4) No markings (11, 11) No markings (12)
08-10-28	#9912	5/32"	YES	BRASS	NO	NO	No markings (7) No markings (11) No markings (12, 12) No markings (13) H AE 2 (11) H AE 7 (11) I AE 6 (12) I AE 10 (11) J AE 14 (11) N AE 3 (11) N AE 16 (11) Q AE 3 (11) Q AE 11 (1) Q AE 12 (2) Q AE 14 (11) Q AE 15 (11) S AE 1 (11)
9-12-28	**#10238**	**1/16"**	**YES**	**BRASS**	**NO**	**NO**	**13 (1)** **C 9 (12)** **D 12 (11)** **E 6 (7)** **F 11 (11)** **G 16 (11)** **M 10 (2)** **P 16 (11)** **F AE 6 (11)** **G AE 1 (14)** **G AE 5 (11)** **R-1417 AE 2 (1)** **S-1417 AE 2 (11)** **T-1417 AE 2 (12)** **T-1417 AE 9 (10)** **T-1417 AE 14 (2)**
2-21-29	#12106	1/16"	YES	BRASS	YES	NO	J AE (9)
UNKNOWN	?	1/16"	NO	BRASS	NO	YES	
UNKNOWN	?	1/16"	NO	BRASS	YES	YES	P-1417 AE 11 (11) T-1417 AE 4 (11)
4-10-29	**#12625**	**5/32"**	**NO**	**BRASS**	**YES**	**YES**	**C 11 (1)** **C 22 (1, 11)** **C 35 (11)** **C 44 (12)** **C 48 (11)** **C 49 (11)** **C 59 (11)** **C 66 (11)** **C 74 (5)** **C 79 (1)** **C 93 (10)** **C 108 (14)** **3 (8)** **8 (1, 1)** **19 (14)** **M AE 8 (6)** **A-1417 AE 4 (5)** **A-1417 AE 9 (1)** **B-1417 AE 16 (9)**

							R-1417 AE 8 (11) R-1417 AE 10 (7) S-1417 AE 6 (11) S-1417 AE 16 (9) T-1417 AE 2 (11) T-1417 AE 12 (7) U-1417 AE 1 (1) U-1417 AE 3 (1) U-1417 AE 12 (8, 11) U-1417 AE 13 (14) X-1417 AE 3 (10, 11, 14) X-1417 AE 4 (12) X-1417 AE 8 (1) X-1417 AE 15 (12) Y-1417 AE 10 (2, 8) Y-1417 AE 15 (10) Z-1417 AE 6 (6) Z-1417 AE 7 (1) Z-1417 AE 8 (1) Z-1417 AE 9 (11) Z-1417 AE 12 (12, 14) Z-1417 AE 14 (2) Z-1417 AE 15 (11) Z-1417 AE 16 (7) Z-1417 AE 18 (8) A-1417-A AE 6 (12) A-1417-A AE 11 (1) A-1417-A AE 14 (11) A-1417-A AE 15 (2) A-1417-A AE 17 (6) B-1417-B AE 2 (11, 14, 14) B-1417-B AE 18 (9) ADRUCO 4 (12, 14)

CORNER RADIUS: The inside corners of the box are either 5/32 inch or 1/16 inch radius. The 5/32 corners have more of a "swoop" to them in appearance where the 1/16 corners are more "L" shape or at a 90 degree angle.

FILLETS: The "fillets" within the box were established on 2/21/29. In the beginning where the inside flat surface comes in contact with the inside outer surrounding edge, those areas mated at 90 degrees to each other. When the "fillets" were added to the box, one then can see the "filled-in" areas. Some boxes have more prominent "fillets" than others but are still there.

TERMINAL BOX WIRE CONNECTORS: Terminal Box Wire Connectors were Steel from Start of Production to 08/10/28 and Brass from there through the end of production.

TERMINAL BOX COVER
A-14561

P.R. DATE	P.R NUM.	FORD SCRIPT	7 LUGS	BOLT HOLES	FLANGS	RIB WIDTH	IGN. CABLE OPNG*	CODES
10-20-27	#3762	YES	NO	7/32"	NO	1/8"	7/8"	No markings (3, 4, 12)
3-28-28	#7970	NO	NO	7/32"	NO	1/8"	7/8"	No markings (9, 9, 11, 12, 14)
9-12-28	**#10238**	**NO**	**YES**	**7/32"**	**NO**	**1/8"**	**7/8"**	**No markings (5)**
10-9-28	**#10549**	**NO**	**YES**	**¼"**	**NO**	**1/8"**	**7/8"**	**AE (6) 1 (8) 10 (8) 12 (8) 13 (8) A AE 2 (2) A AE 7 (14) B AE 15 (1) E AE 15 (10) F AE 2 (13) F AE 14 (12) C AE 2 (9) C AE 3 (1) C AE 6 (1) C AE 11 (14) C AE 12 (11) D AE 3 (2) D AE 10 (14) G AE 5 (11) H AE 6 (14) H AE 8 (1) I AE 2 (11) J AE 9 (11, 11) J AE 15 (13) K AE 1 (7) K AE 8 (9) L AE 2 (14) L AE 3 (14) L AE 11 (12) O-1418 AE 18 (11) P-1418 AE 4 (1) P-1418 AE 8 (1)**
UNKNOWN	?	NO	YES	¼	NO	1/8"	1"	No markings (14)
UNKNOWN	?	NO	NO	¼"	YES	1/8"	7/8"	M-1418 AE 10 (12) N-1418 AE 1 (1) N-1418 AE 5 (11) N-1418 AE 15 (6) O-1418 AE 6 (12) O-1418 AE 13 (1, 11) O-1418 AE 14 (2) O-1418 AE 15 (11) O-1418 AE 18 (10) P-1418 AE 7 (1) P-1418 AE 10 (1) P-1418 AE 14 (11)
4-10-29	**#12625**	**NO**	**NO**	**¼"**	**YES**	**3/16**	**1"**	**C (1, 5, 9, 7, 11, 11, 12, 12, 13, 14, 14, 14) 9 (1) 11 (8) T-1418 AE 3 (14) T-1418 AE 10 (1, 5) T-1418 AE 11 (11) T-1418 AE 13 (11) T-1418 AE 17 (11) U-1418 AE ? (2) U-1418 AE 10 (11) U-1418 AE 11 (2, 5) U-1418 AE 15 (14) V-1418 AE 2 (7) V-1418 AE 14 (11)**

								W-1418 AE 3 (11, 13) **W-1418 AE 4 (11, 14)** **W-1418 AE 10 (1)** **W-1418 AE 13 (13)** **W-1418 AE 14 (1)** **X-1418 AE 10 (9)** **X-1418 AE 11 (12)** **X-1418 AE 14 (1)** **X-1418 AE 18 (1)** **W-1418 ADRUCO 11 (7)** **W-1418 ADRUCO 13 (9)** **W-1418 ADRUCO 5R (5)** **W-1418 ADRUCO 8R (6, 7, 14)** **W-1418 ADRUCO 15R (6)**

* Opening of ignition conduit hole at widest point is 7/8 inch;
* Opening of ignition conduit hole at widest point is 1 inch.

1. Tom Moniz; 2. Steve Plucker; 3. Dean Drenzek; 4. Ron Rude; 5. Marco Tahtaras; 6. Dudley Moordigian; 7. Ray Archer; 8. Derek Thomason; 9. Walt Jones; 10. Dan Partain; 11. Steve Becker (Bert's Model A's); 12. Mike Gooding; 13. Jack Remillard; 14. Steve Schmauch.

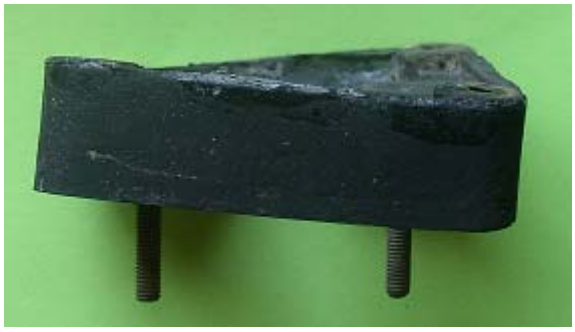
I would like to thank all the above who contributed towards this project and especially the Benson Ford Research Center, The Henry Ford.

Fixing a Warped Terminal Box and/or Terminal Box Cover

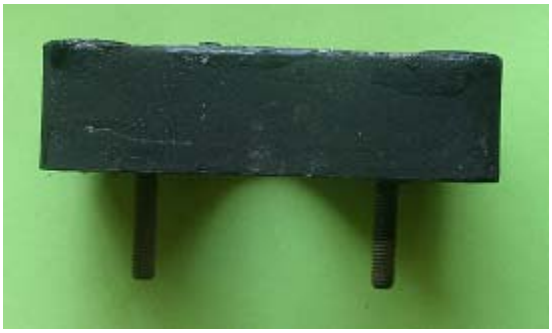
Lots of original Terminal Box's and Terminal Box Covers are slightly, or very warped and do not fit correctly. What then, can one do to make the boxes and covers fit correctly?

Thanks to Bob Johnson, the answer is simple.

Put the warped terminal box **(Fig. 10)** into boiling water for a few minutes. Then clamp to a board until cool. Once they are cool, they should be straight **(Fig. 11)** or turn the box so the Terminal Box Wire Connector-Inserts go through some holes on a hard, flat surface then put something heavy on the box so as to reconfigure and remove the warpage.



(Fig. 10)



(Fig. 11)

I tried this with some covers that were significantly warped to the point where there was about 1/8 inch gaps on some of the corners. Put the cover into boiling water for about 4 to 5 minutes then I removed the cover and with leather gloves put the cover onto a good box and pressed down on all four corners of the cover for about 2 minutes. It turned out perfect…no gaps.