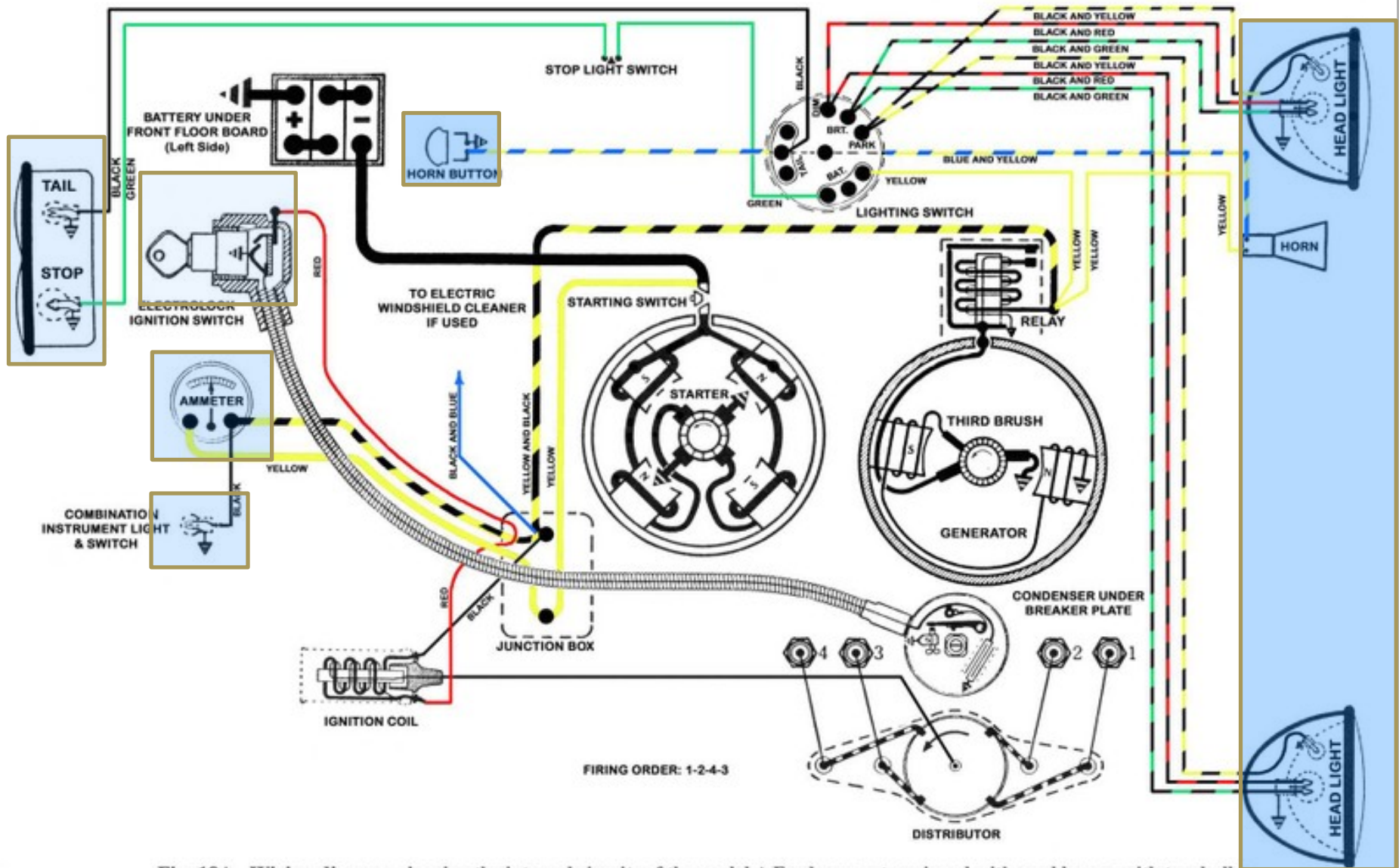


*JUDGING  
THE MODEL "A"  
AREA 2  
ELECTRICAL  
SYSTEM*

*Presented By  
James Wermes  
&  
Joe Lopez*

Area 2 Includes  
Battery cable, Starter, Starter  
Switch & Rod, Generator,  
Cutout, Terminal Box,  
Distributor, Spark Plugs, Coil,  
Ignition Cable, All Wiring, and  
Electrical Connectors  
(correctness, Finishes, Etc.)



**Fig. 18A.** Wiring diagram showing the internal circuits of the model A Ford cars not equipped with cowl lamps, with two bulbs in each headlamp.

When starting to trace one of the several electrical circuits, begin with the positive (+) terminal of the battery or generator. The battery is the source of supply when the engine is not running, or generator is running very slowly. When the generator speed is increased to the point where its voltage becomes greater than the battery voltage, the relay points close and then the generator is the source of electrical current supply and also charges the battery. See *Dyke's Automobile Encyclopedia*, pages 332, 448 and 427 explaining the principle of operation of the current cut-out (relay), how to trace circuits, etc.

*Starter*



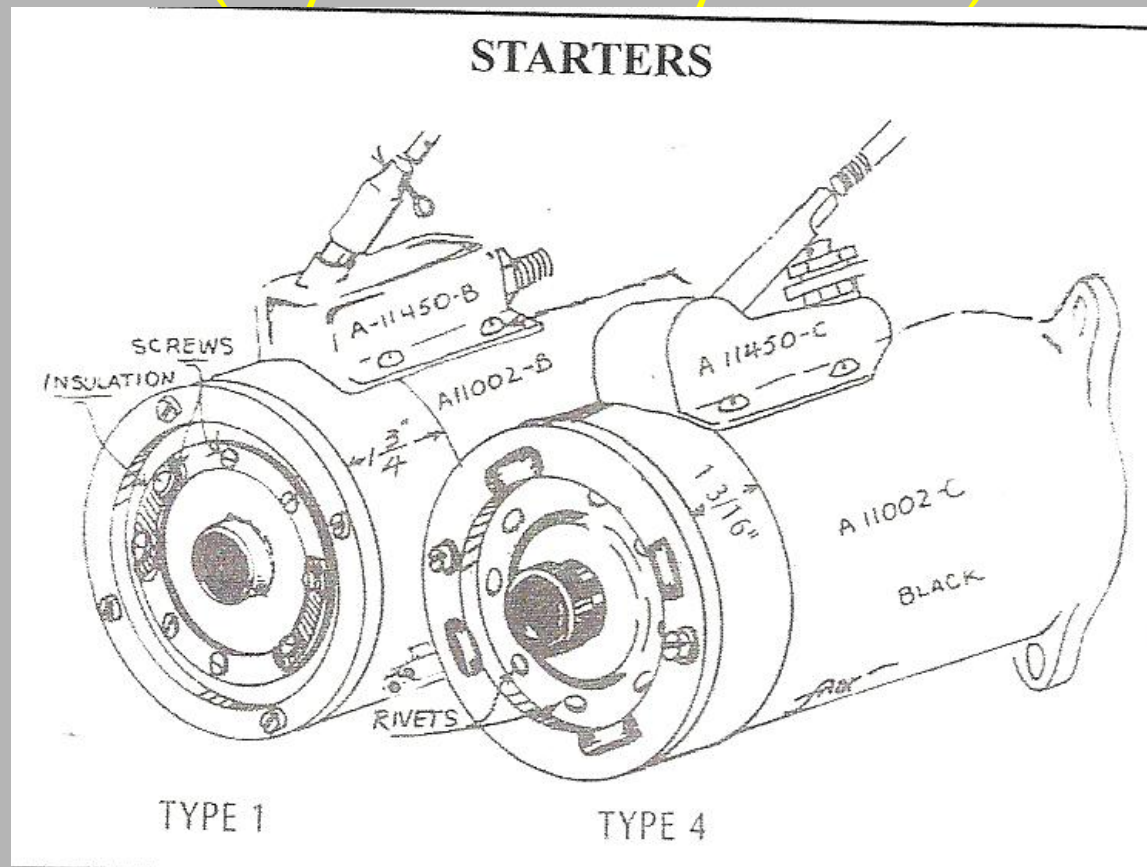
There were four types used during production. All removable end bearing caps were cadmium plated or painted black. The cover band screws and nuts were either unfinished or painted black. All starters were painted black. The early Able starters may or may not have one or more unfinished shims between the starter and flywheel housing.

# From Beginning until Mid 1928 (10/1927 - 7/1928)



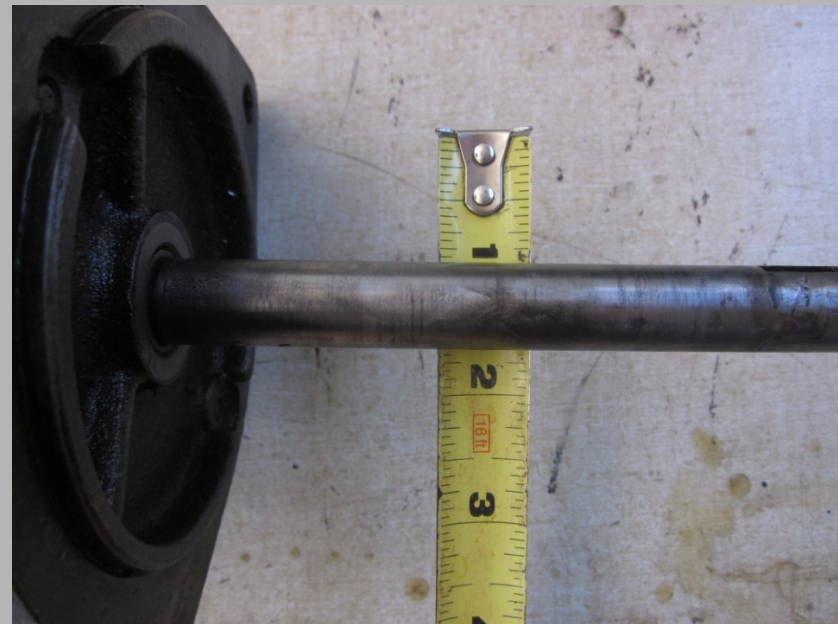
A ball bearing type Abel starter was used. It had a  $\frac{1}{2}$ " starter drive, brush holding brackets attached with a flat fillister head screws, a removable end bearing cap, and a  $1\frac{3}{4}$ " wide starter cover band W/ends bent up across the full width. Early (1928 only)

March 1928 till early 1929  
( 3/1928 - 1/1929 )



This starter is the same as the early starter except the brush holding brackets were riveted to the end plate. The 10-24 round-head cover band screw was changed from  $7/8$ " long to 1" long, the square nut was  $1/8$ " x  $3/8$ "

From Beginning until  
Mid 1928 (10/1927 -  
7/1928) The starter drive  
was  $\frac{1}{2}$  inch in diameter



From July 1928 till end of  
production The starter  
drive was  $\frac{5}{8}$  inch in  
diameter

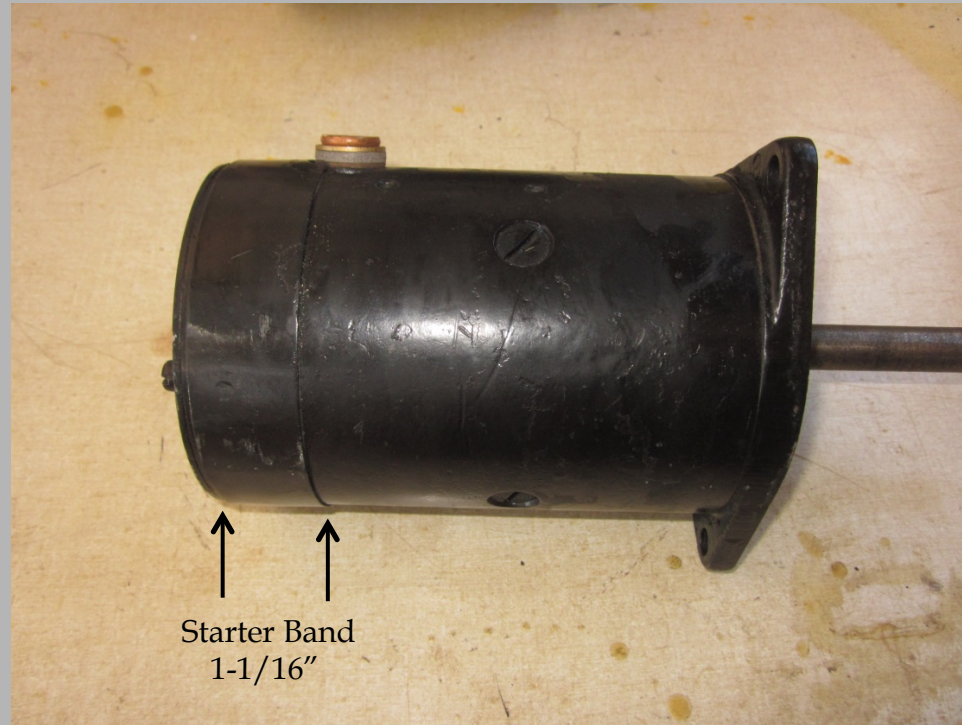
## *Fourth Style*

October 1928 (w/ Engine # 492511)  
thru end of Production

*It is the same as the third style except it had a 5/8" starter drive the removable end cap was eliminated in mid 1929 both styles are acceptable in judging in early to mid 1929, the cover band screws were 8-32 (10-32 after mid 1930) x 1-1/4" and used a 1/8" x 3/8" square nut.*



*June thru  
September 1928*

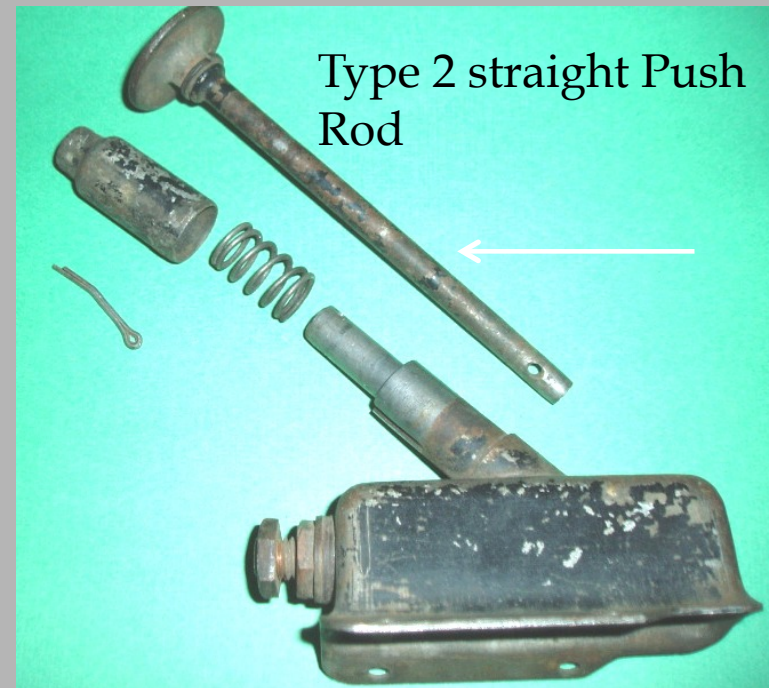
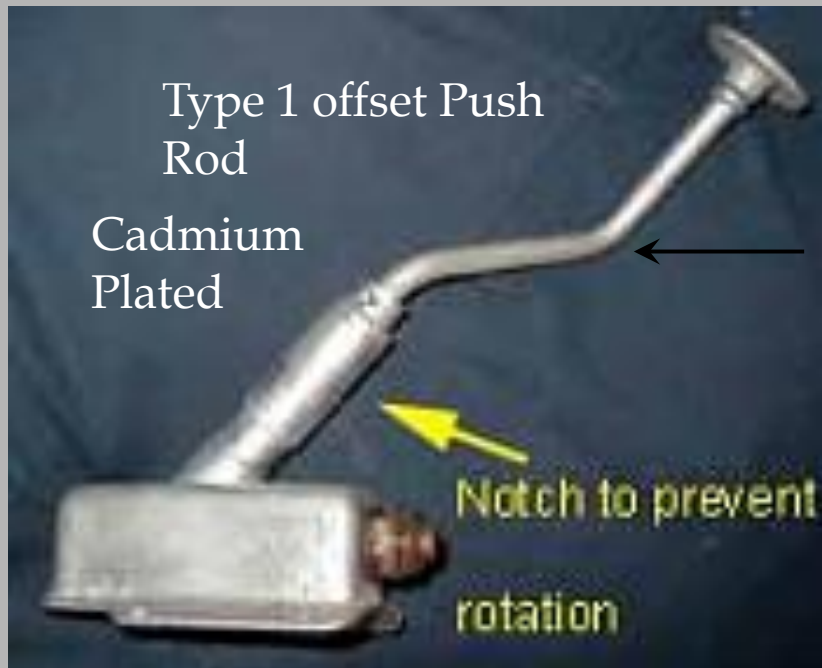


This starter had bushings,  $\frac{1}{2}$ " starter drive, a new style end plate attached with two long filister head bolts, a removable end bearing cap, a  $1\text{-}\frac{1}{16}$ " wide cover band with only the mid portion of the ends bent up and fastened with a 8-32 x  $1\text{-}\frac{1}{8}$ " round head bolt and  $\frac{1}{8}$ " x  $\frac{11}{32}$ " hex nut.



# *Starter Switch*

# Starter Switch



Type 1 & 2 November 1927 thru September 1928

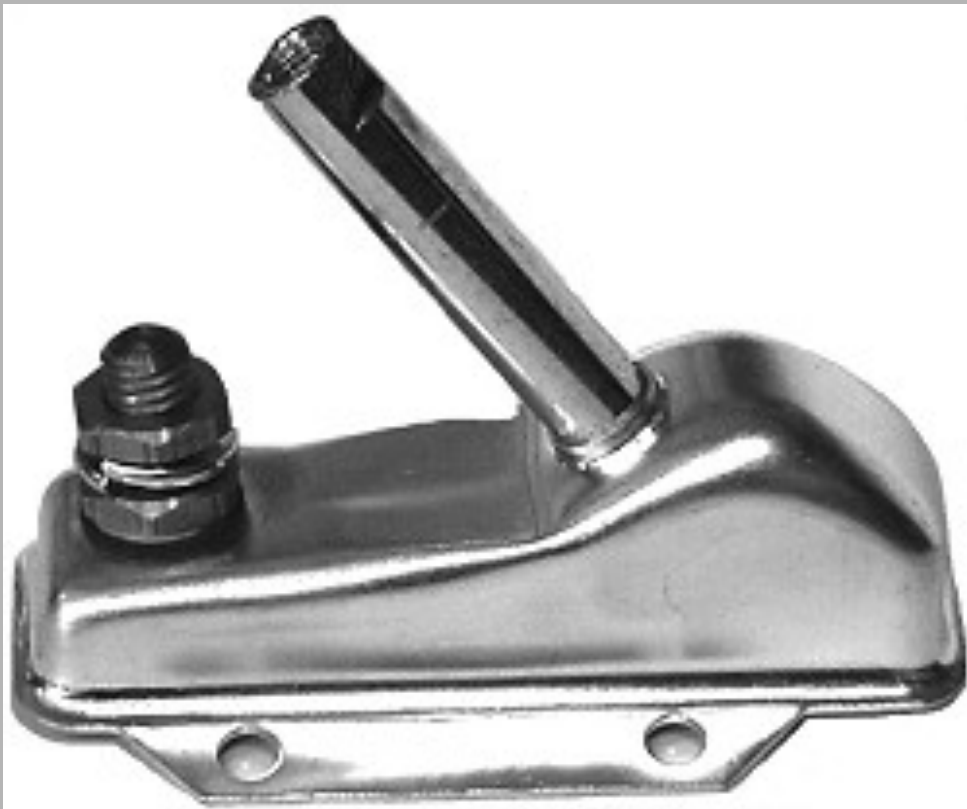


- The attaching screws 1929-1930 were raven finish 10-32 round head with unfinished tangle proof washers



Type 3 October 1928 thru end of March 1928 is 1-1/4" High with "ROUNDED" radiuses

Type 4 March 1929 thru end of production, are 1-3/8" high and had "SHARPER" radiuses, Both had a screw in Push Rod

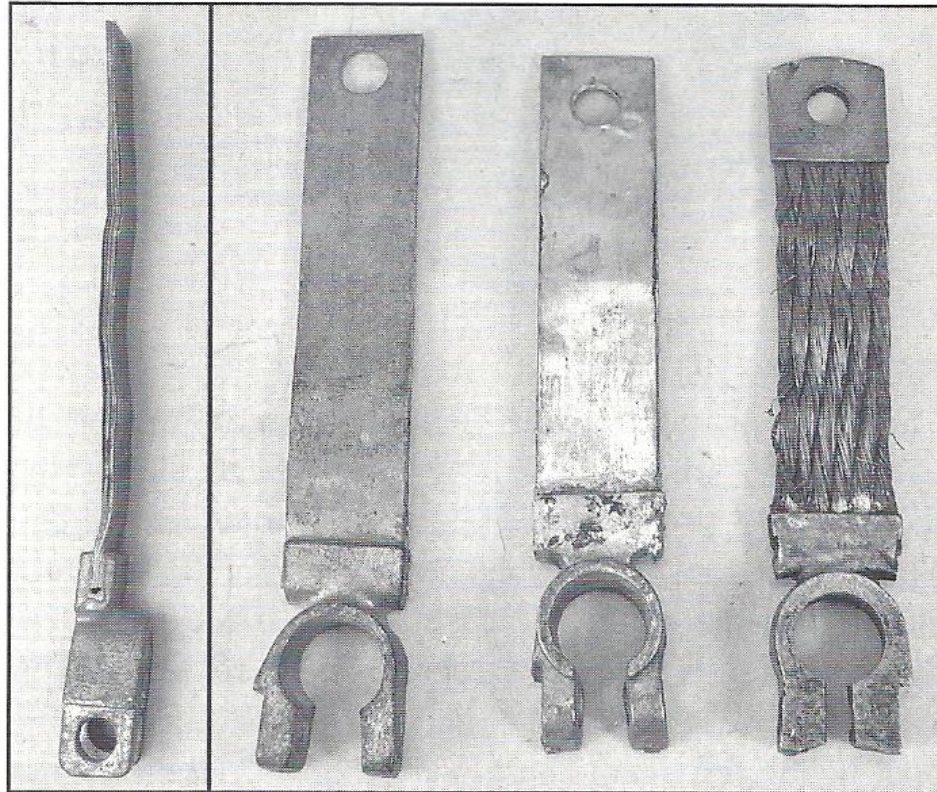


# *Battery Cables*



# *Positive Ground Straps*

- The attaching bolt end nut were zinc plated for all years
- The flat washer was cadmium plated and the lock washer was unfinished

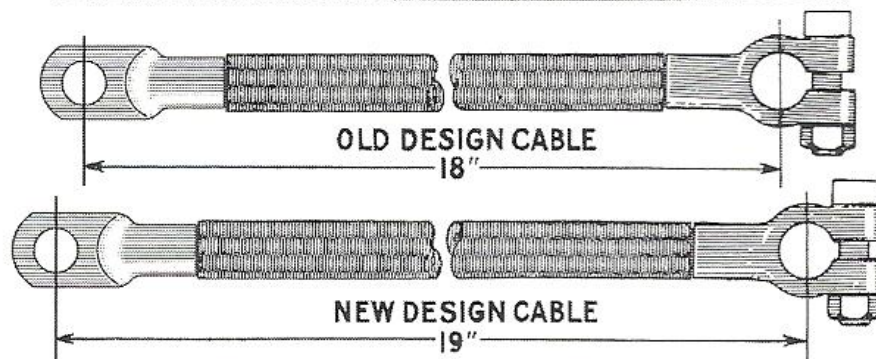
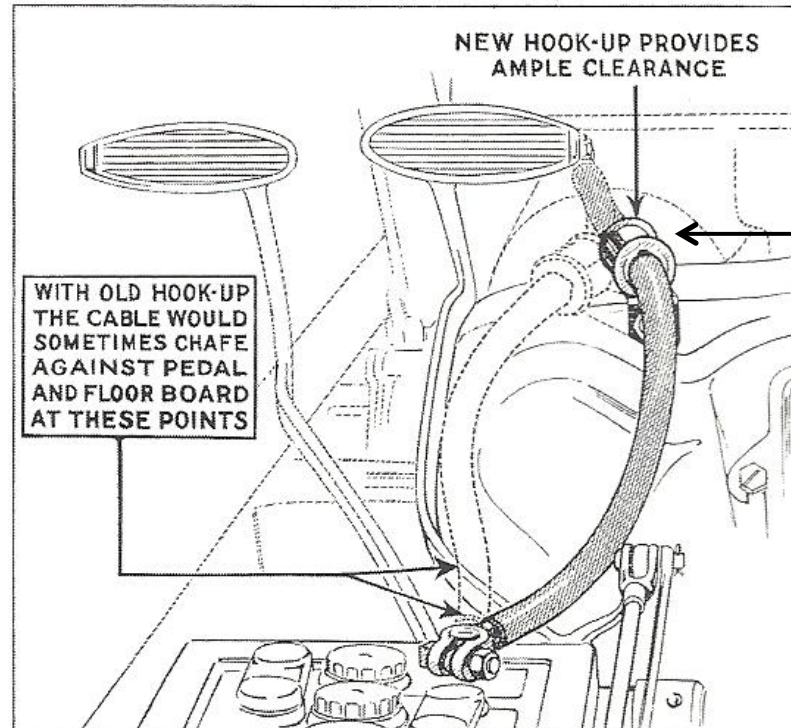


The ground strap assembly was 4-3/4" long through 1929 when it was reduced to 4-1/4" (measured on hole centers). Beginning June 1931 the braided strap was also used.



# Negative Battery Cable

## BATTERY CABLE ROUTING CHANGE November 1929

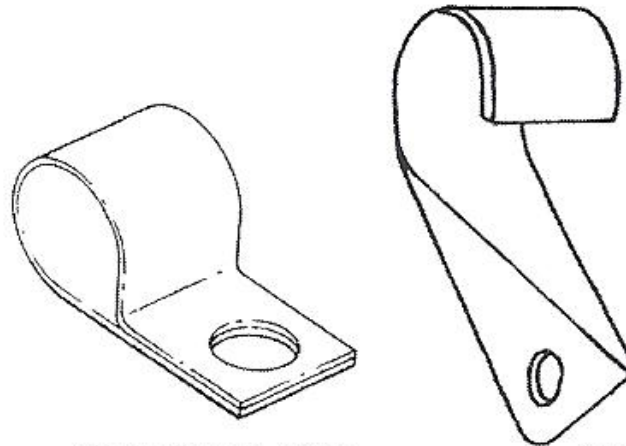


Note: The style of cable clamp varied through production. (There were three styles)

- All cables were black and 9/16" to 19/32" Diameter

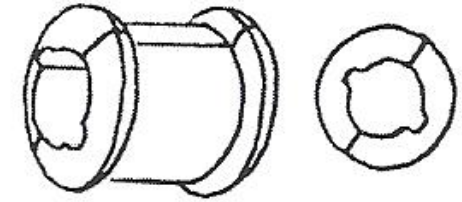
## Battery to Switch Cable Support Changes

- The cable support bushings were made of hard rubber and were unfinished.
- The Brackets were painted gloss black with cadmium plating optional after may 1928

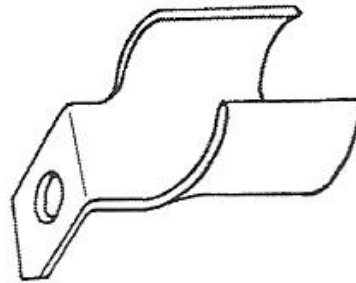


Thru March 1928  
bracket

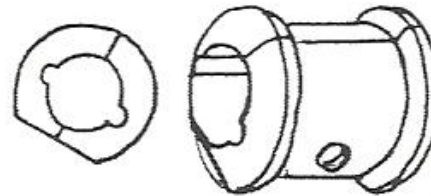
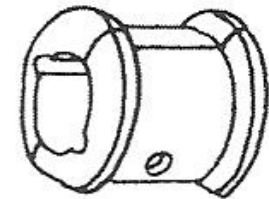
April 1928-Oct  
1929 bracket



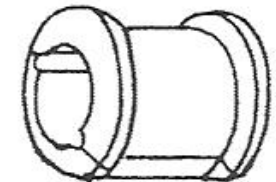
Thru October  
1929 bushing



November 1929-1931 bracket



November 1929-early 1930 bushing

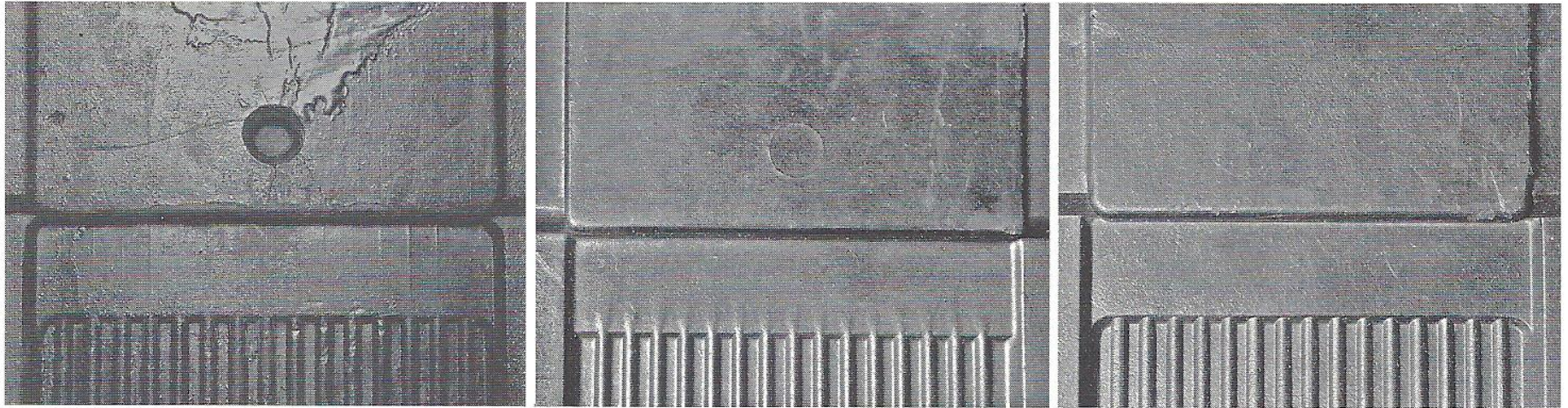


April 1930-1931 bushings

*Battery*







Left – Battery used from the beginning of production to November 1929. Center and right – Battery used from November 1929 to the end of production (center photo shows a faint circular line, right photo has no line)

Beginning production thru March 1928-  
negative post-left front corner, positive  
(ground) right rear corner.

March 1928-negative post moved to right  
front corner and positive post moved to  
left rear corner.

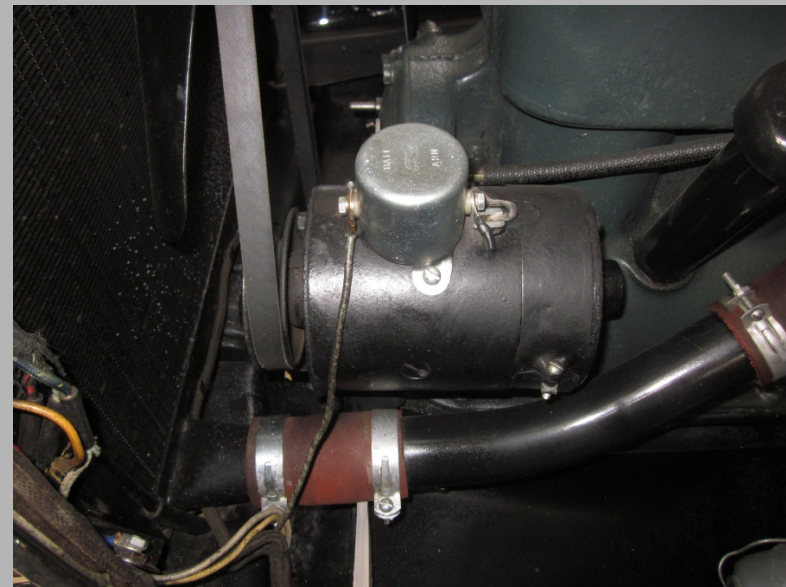
*Generator*



There were two types  
The Powerhouse with three changes ( P1 P2 P3 )  
used from December 1927 thru July 1929

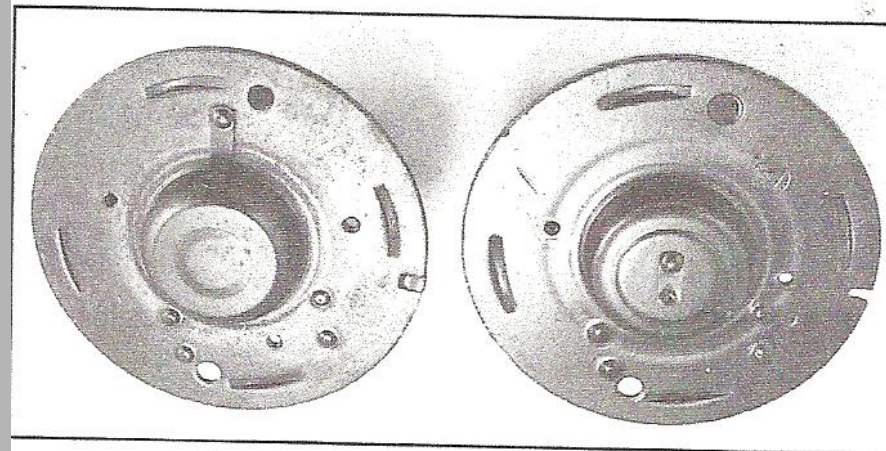
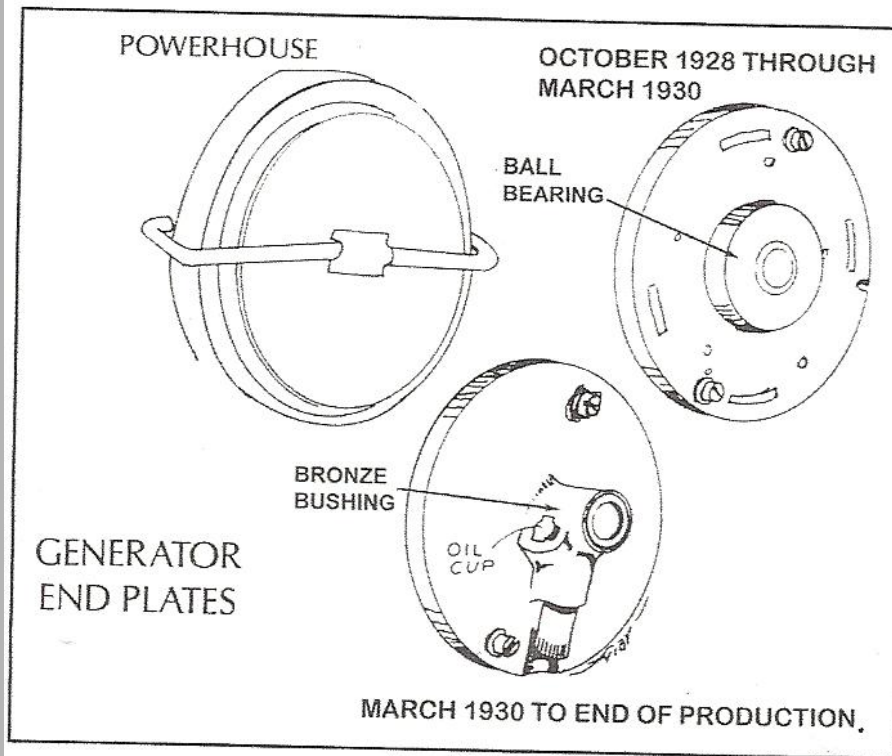
The Long Generator W/ two changes ( L1 L2 )  
Used from October 1928 thru end of production

All generators were painted black. They  
varied from satin to semi-gloss.



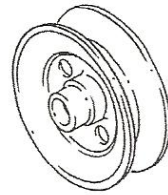




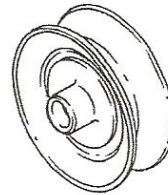


Generator end plate for L1 generator  
 Left – Oiler is located on top of bearing pocket (see text)  
 Right – Oiler is located in center of bearing pocket

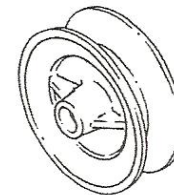
# Generator Pulleys



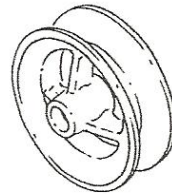
Type 1 used through December 1927



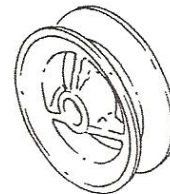
Type 2 used from early December 1927 until January 1929



Type 3 used January through June 1929



Type 4 used June 1929 through March 1930  
(Cast with long taper)



Type 5 used beginning April 1930 to end  
(cast with short taper)

- Type 1 – “hole 3/8”.
- type 2 – “used with most powerhouse generators”.
- All pulleys were 3-5/8” in diameter.



Style 2  
12/1927 through 1/1929



Style 3  
1/1929 through 6/1929



Style 4  
6/1929 through 3/1930



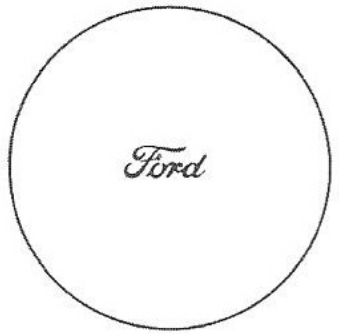
Style 5  
4/1930 through end of  
production

*Cutout*

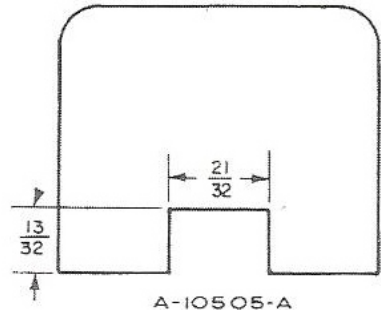


Zinc plated changed to terne plating  
 June 1929, some cadmium plated July  
 1930 Spot welded cover

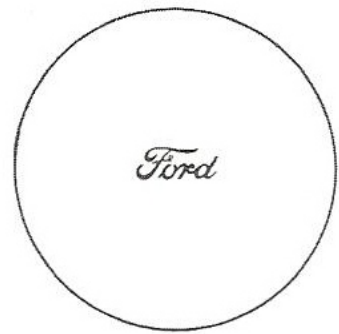
CUTOUT CHANGES



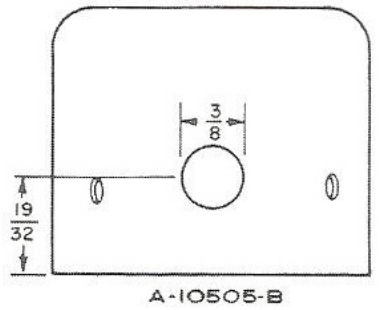
BEGINNING TO JANUARY 1929



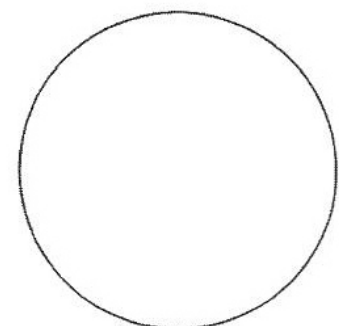
Copper or  
 Zinc plated



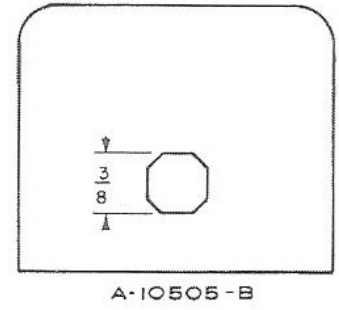
FEBRUARY 1928 ONLY



Zinc plated  
 Attached to  
 base with four  
 rivets

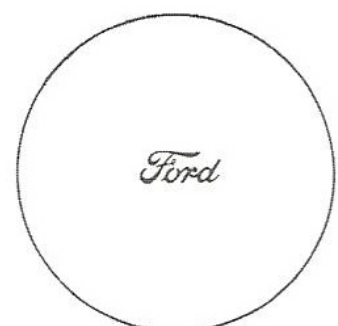


APRIL 1928 TO NOVEMBER 1930

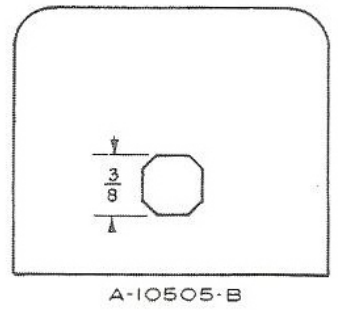


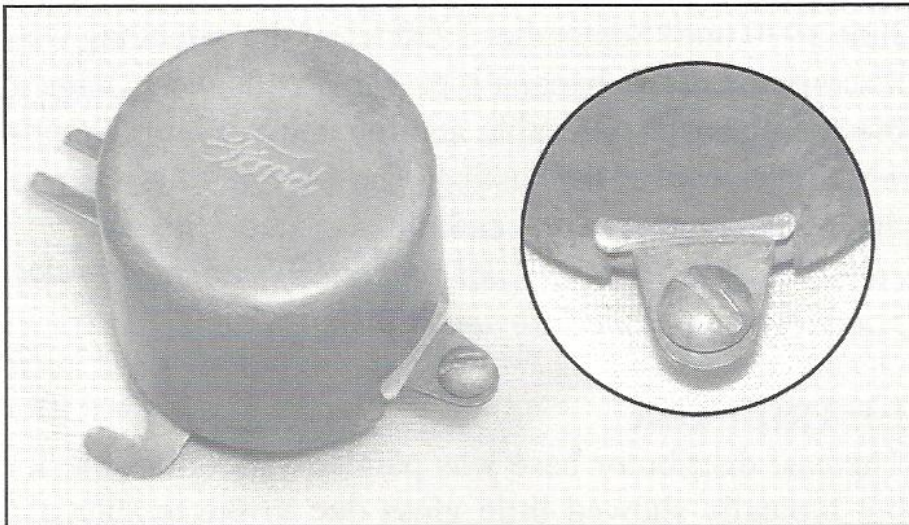
From *The Ford Model A — As Henry Built It*, by DeAngelis, Francis, and Henry — used with permission.

Three different cutouts were used during  
 Model A production.

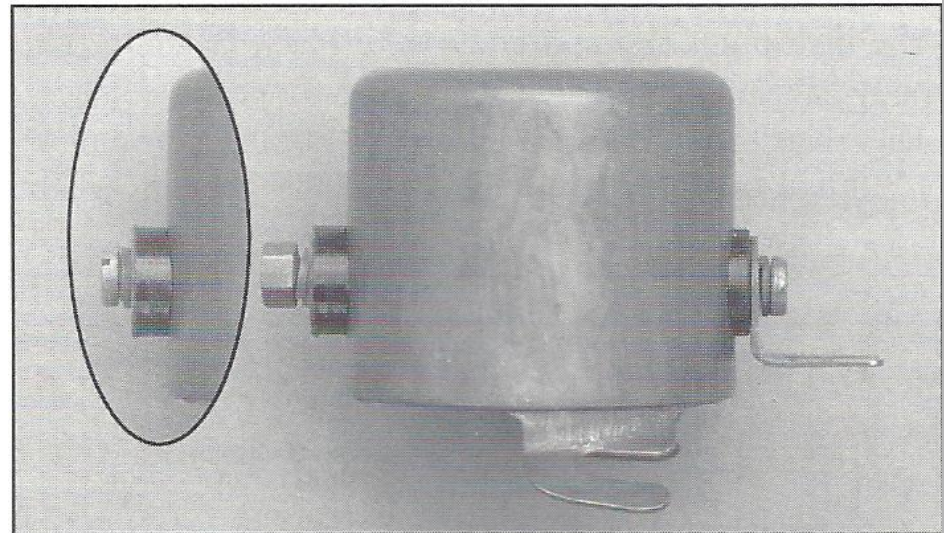


MARCH 1928 AND AFTER  
 NOVEMBER 1930



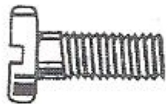


First style cutout used from the beginning of production. Its use continued on some vehicles to January 1929. (See Text)



Typical Cutout used from March 1928 to the end of production.

## CUTOUT SCREW CHANGE May 1930



A-20289-S8  
OLD DESIGN SCREW



A-10564 NEW DESIGN  
HEX HEAD BOLT

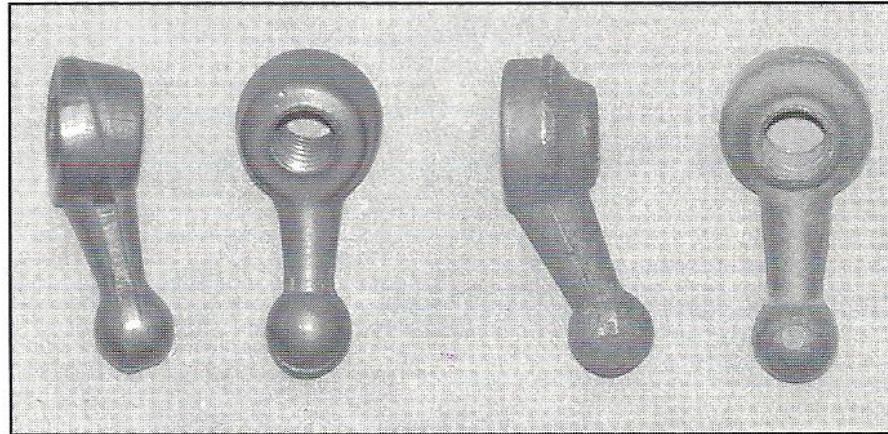
# *Terminal Box*



Change from  
(Fordite) to hard  
rubber late 1928".



Ford script terminal box covers used from the beginning of production to April 1928. The script location varied.



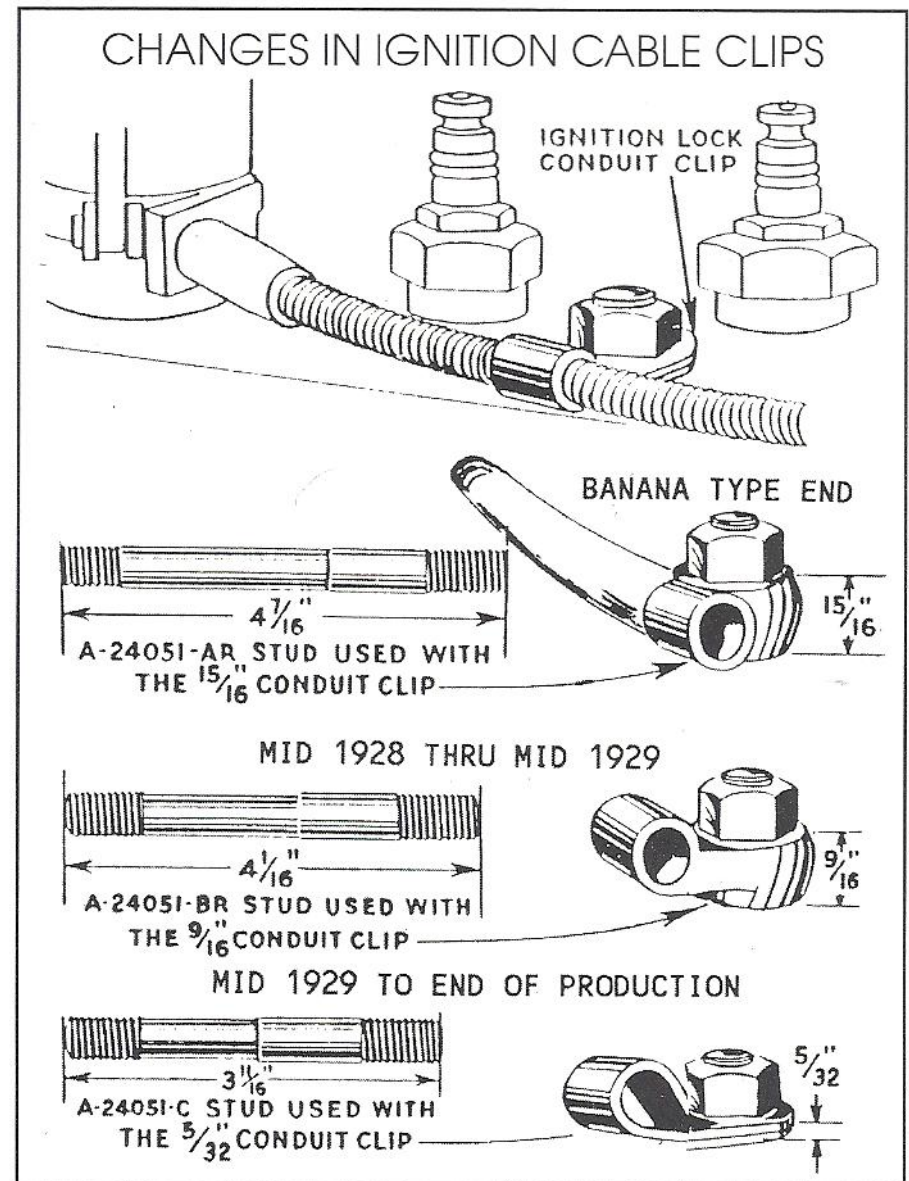
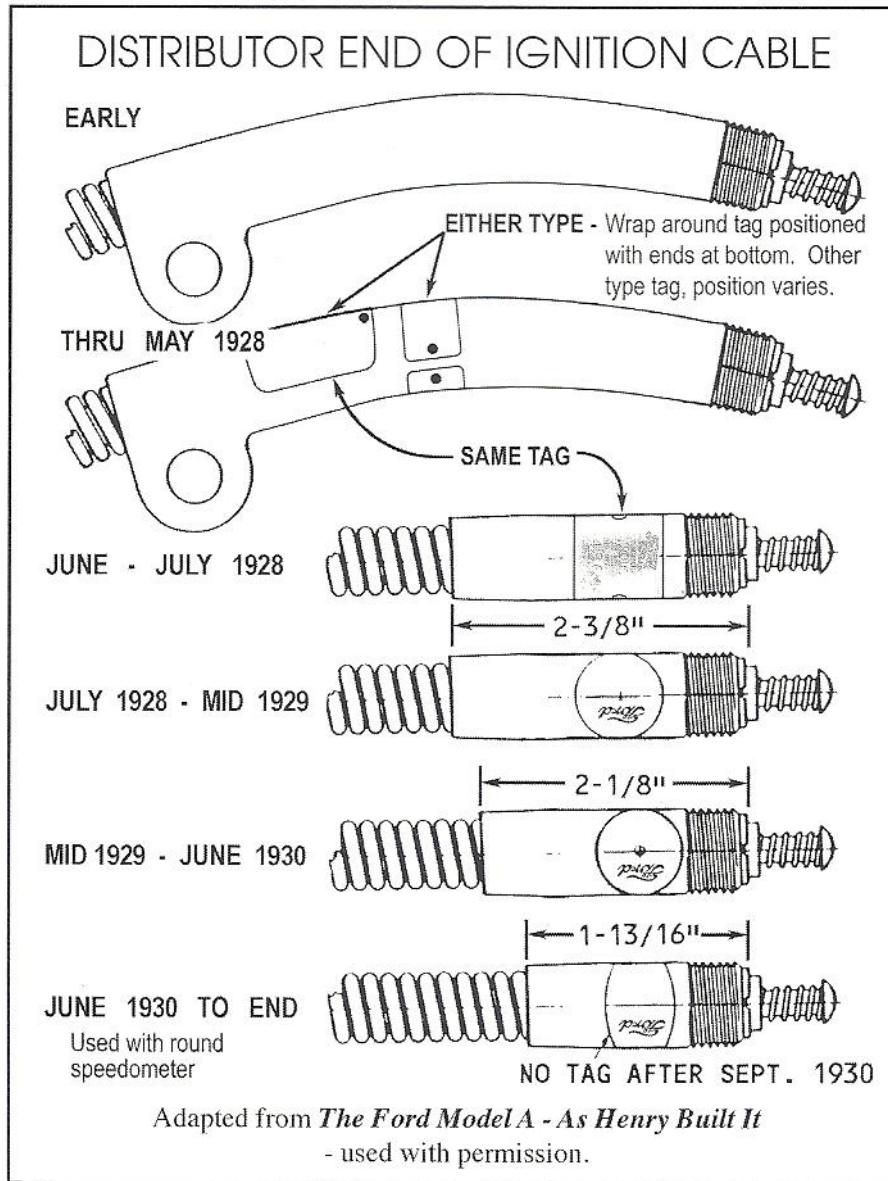
Terminal box wing nuts - Brass (left) used throughout production, Die-cast zinc (right) optional after May 1930



# *Ignition Cable*

Banana type "End was painted black along with the cable and clamp".

Straight cables "End of fittings and conduit clamp were cadmium plated (cable black)".



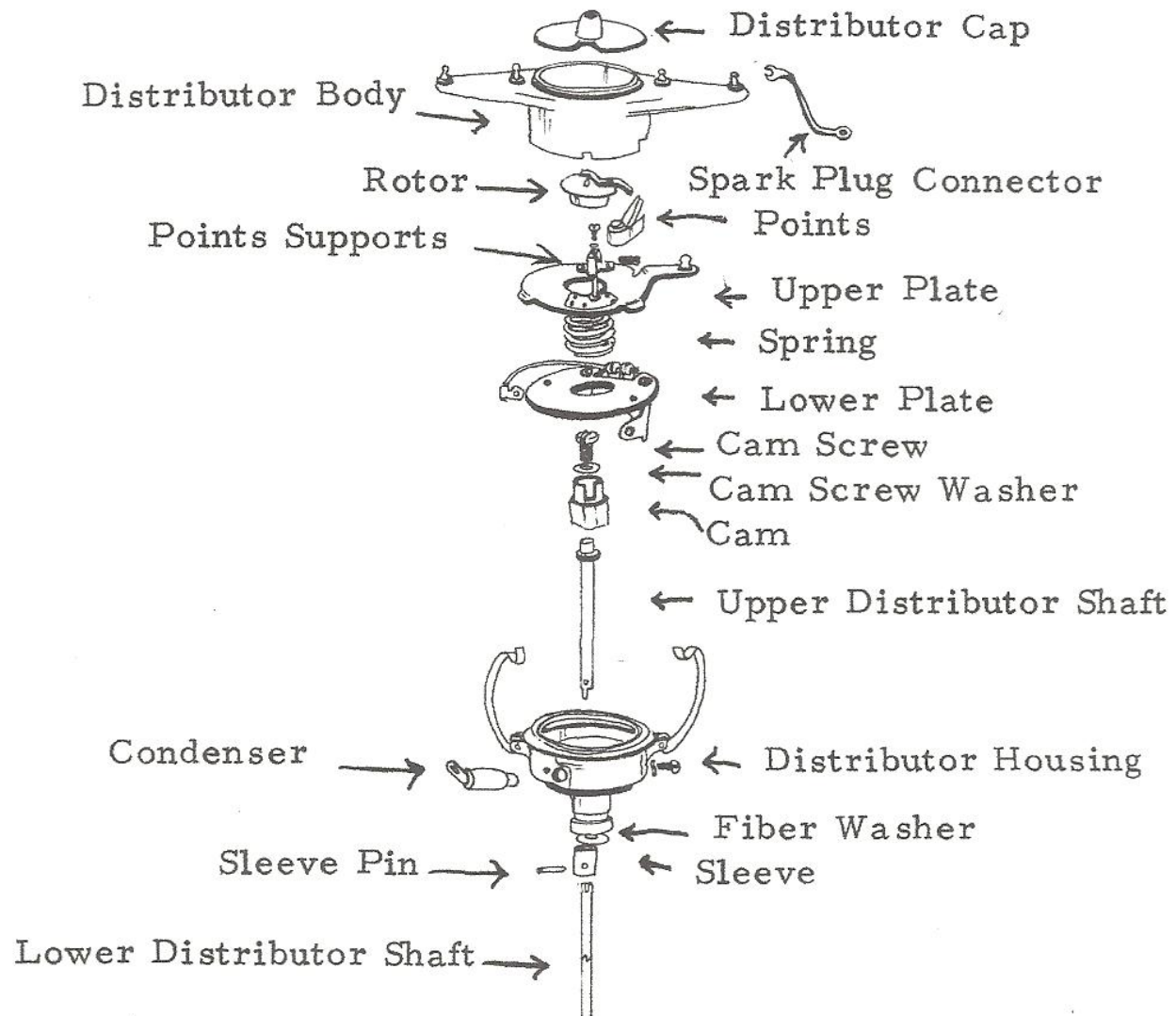
All patent tags were oriented to be read from the left (drivers) side of the vehicle.

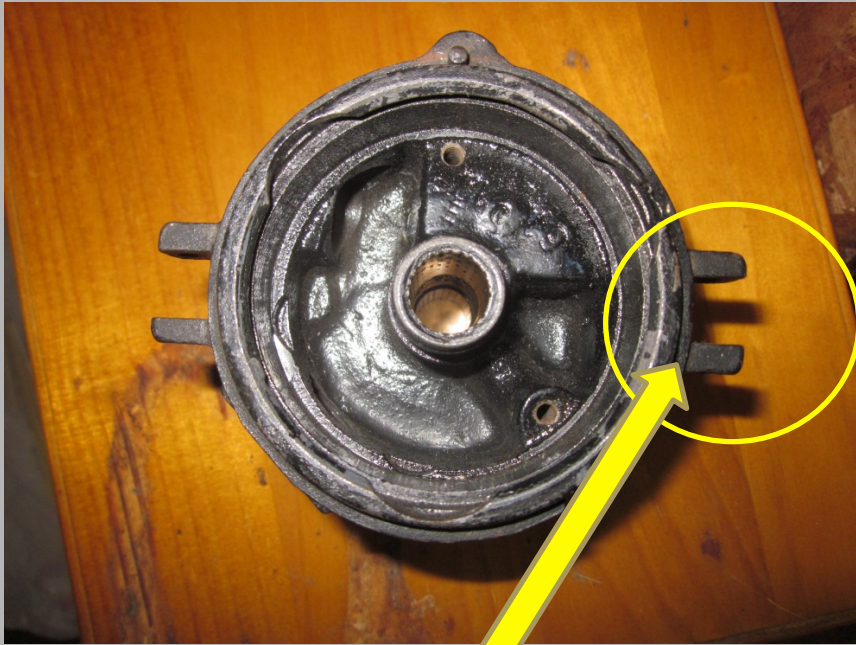
Mid 1929 thru June 1930 2-1/8" Long



*Distributor*

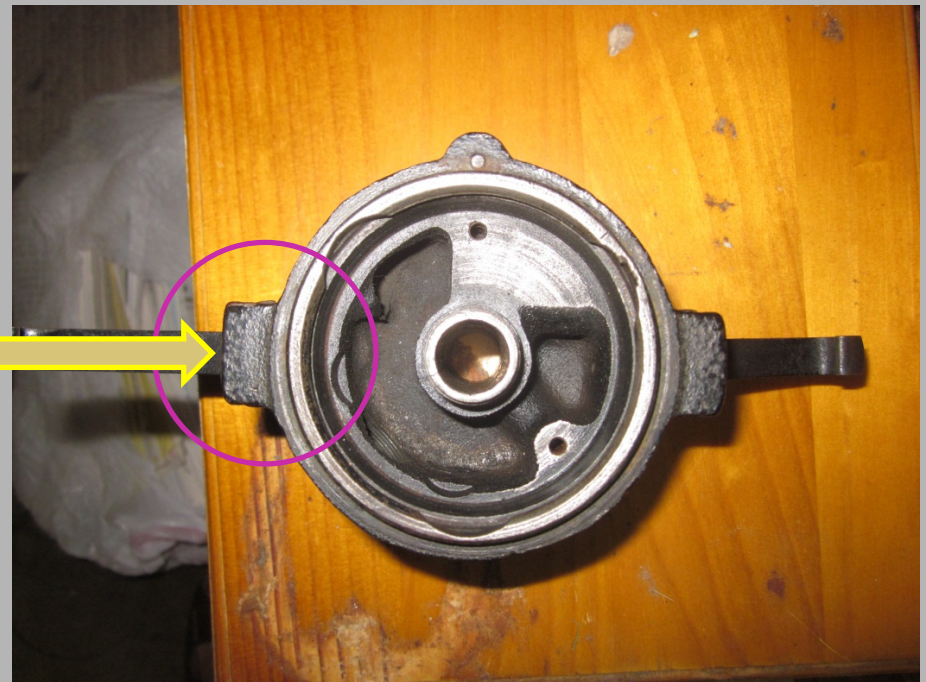






Bail Ears were open  
thru 1931

Some Bail Ears were bridged  
solid in 1931 for greater  
strength.







From Start to March 1928  
Manufacturer stamp in  
round indent & Square  
notches on top



Round Indent  
from April  
thru Mid  
1928

The oilers were  
made of brass  
with a dull  
nickel finish



No Indent Mid 1928 thru  
end of production

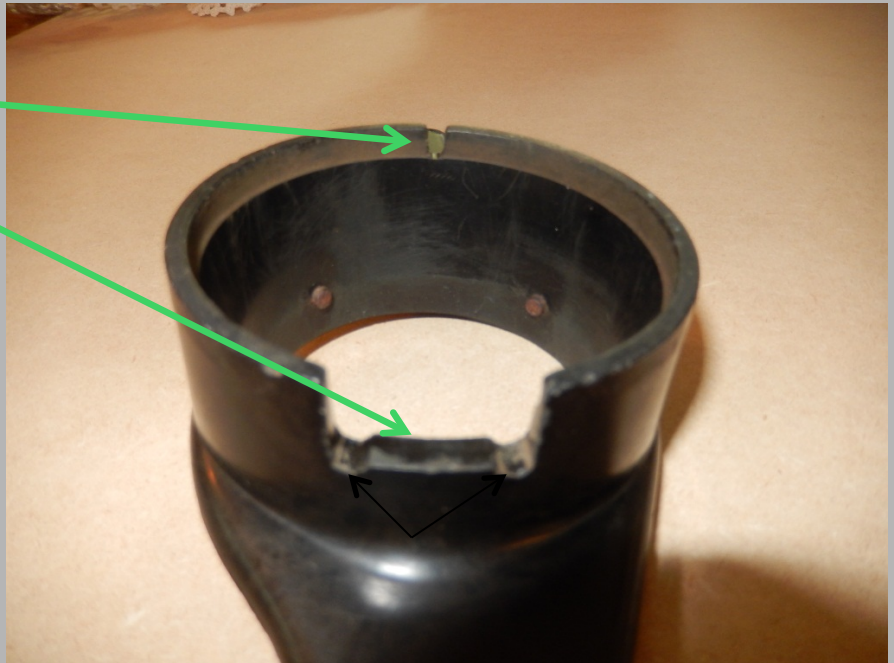
The cast  
distributor base  
was painted semi  
gloss black

The Distributor  
cap clamps were  
Blued steel.

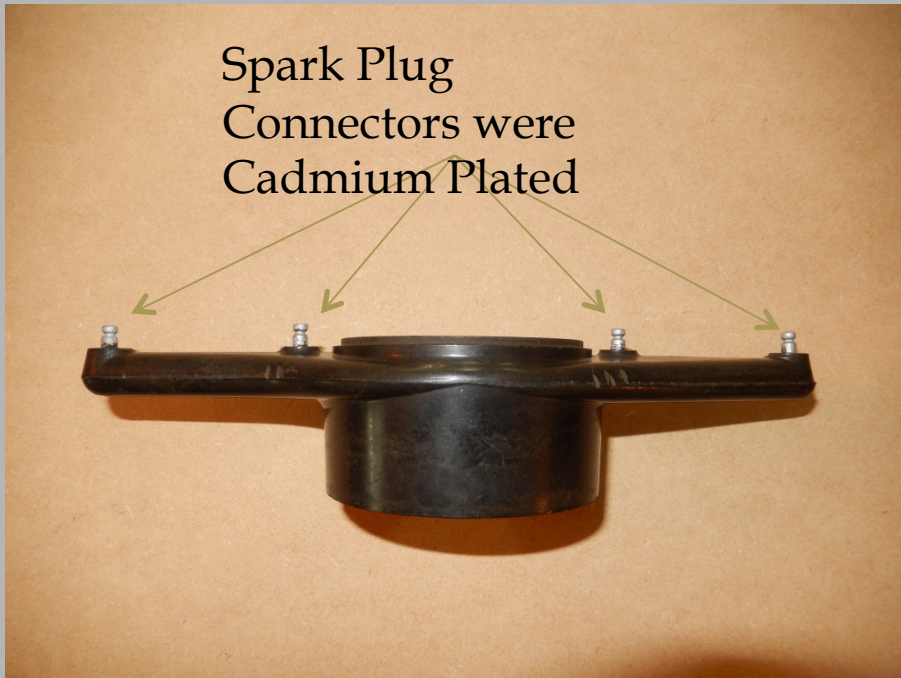
The Rivets were  
oval-headed  
plain steel,  
cadmium, nickel  
plated or brass



- The Cap and body were black Bakelite
- All bodies had only one alignment notch
- From 1928 thru December 1930 the body had two notches where the control arm came through
- In July of 1931 Ford script was added to the body between #1 and #2 contact points. In August 1931 U.S.A. was added below the Ford script
- The distributor cap had a double Ford Script thru March 1928 and was plain thereafter



Spark Plug  
Connectors were  
Cadmium Plated





# *Spark Plugs*

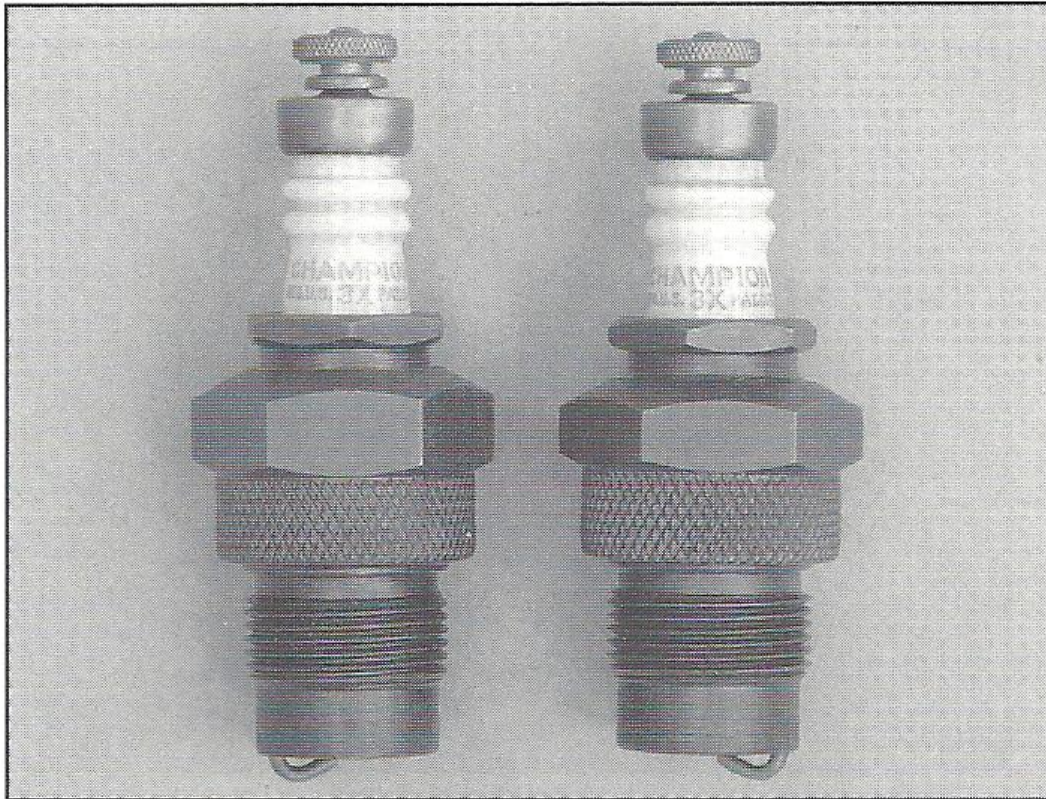


*Champion 3X spark plugs were used throughout production.*

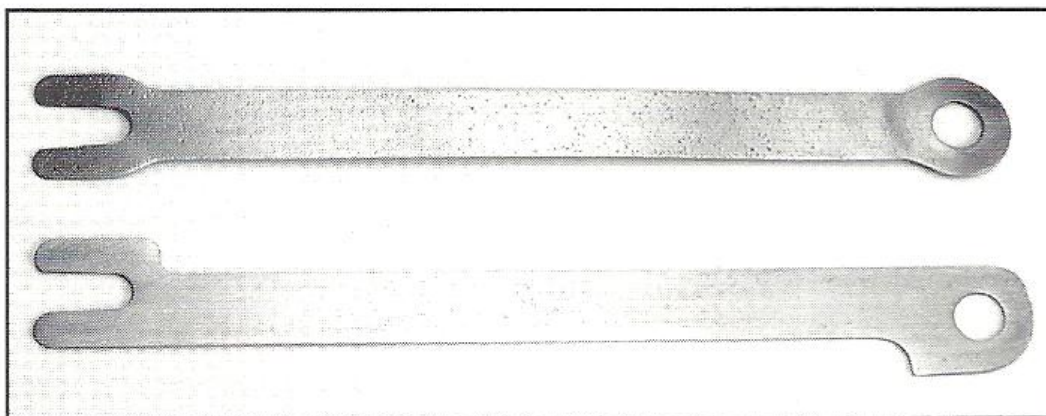
- Bases had blued finish.
- The knurling on base had deep pattern which extended from the base to the bottom of the plug.

Early style  
1928 to early 1930  
The head is  $\frac{1}{4}$ " measured from the corner thereafter they were  $\frac{3}{16}$ "





Champion 3x plugs - Early (left) and late (right). See text



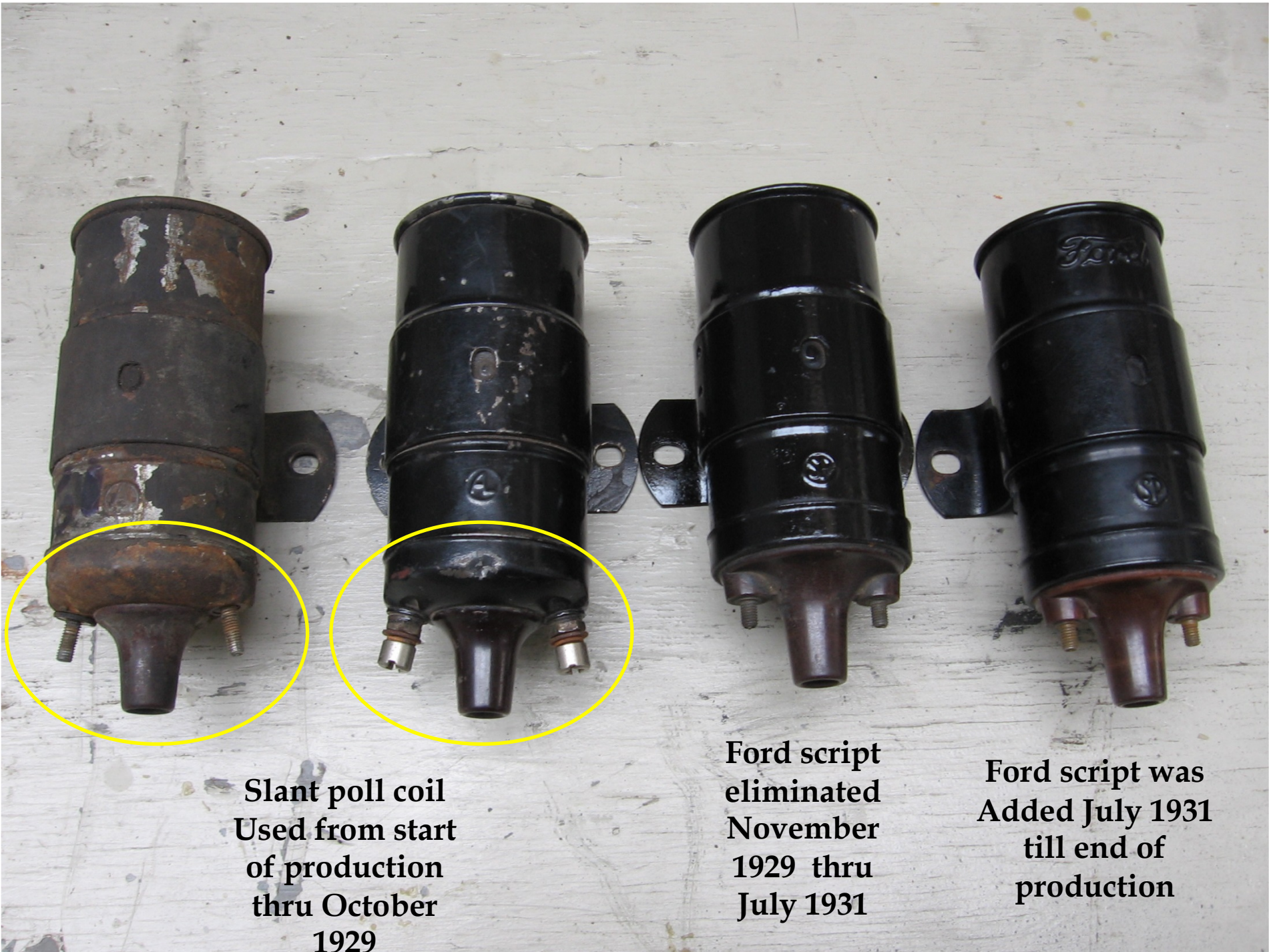
Spark plug connectors – Beginning of production through May 1930 (top) and June 1930 to the end of production (bottom).

- *Original plug gasket was copper wrapped asbestos washer.*
- *Spark plug nut was round knurled brass, 7/16" in diameter and 7/32" high.*
- *The connectors were 26 gauge bronze (with copper color) and 3-1/8" long from center hole to end of prongs.*

# Ignition Coil

- All coils had steel bodies and painted black(satin or glossy) with dark reddish brown Bakelite base.





**Slant poll coil  
Used from start  
of production  
thru October  
1929**

**Ford script  
eliminated  
November  
1929 thru  
July 1931**

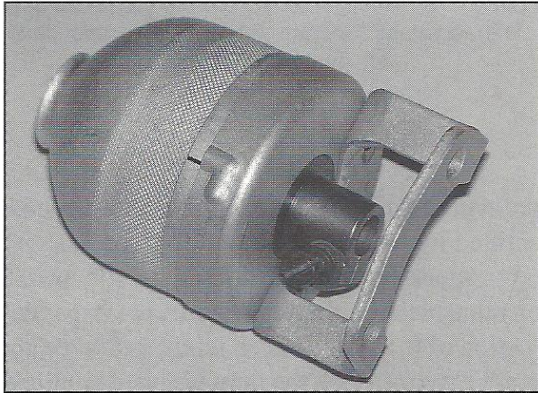
**Ford script was  
Added July 1931  
till end of  
production**

# *Light Switch*

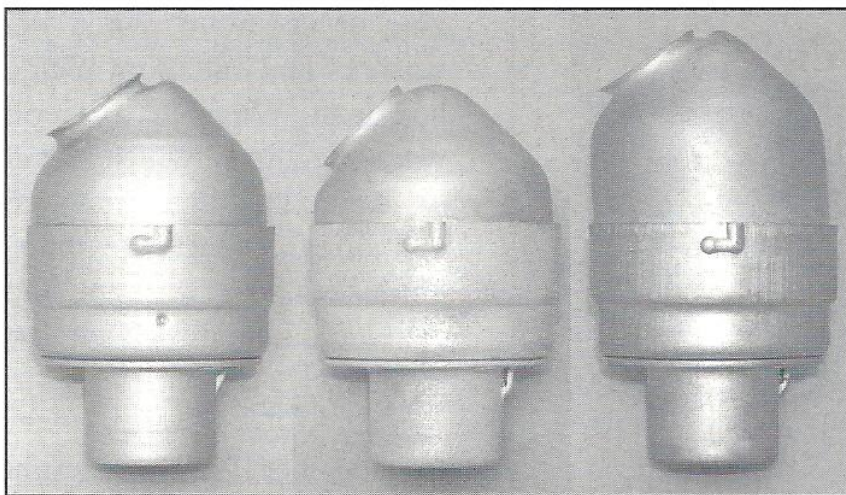
- *All switch bodies –cadmium plated.  
Bails unfinished or cadmium plated.*
- *Drain hole in switch cover—must face down.*



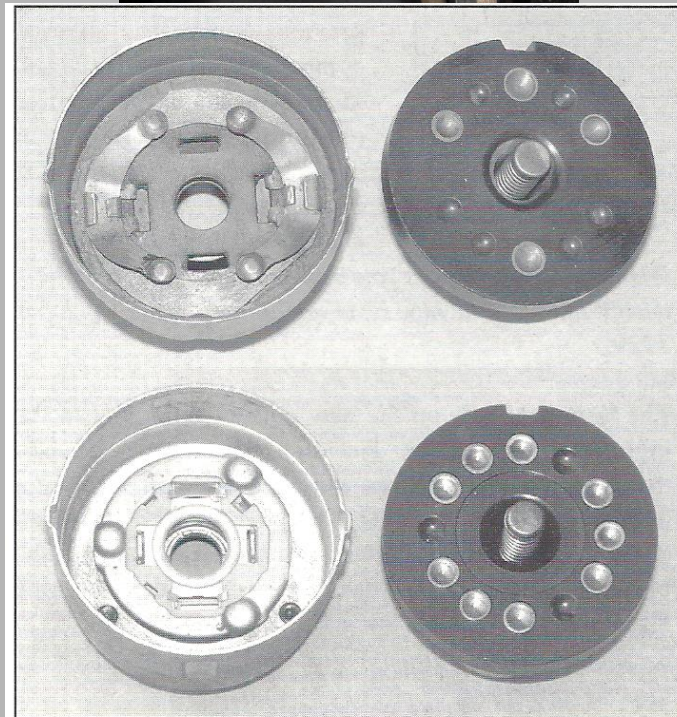
ie coil for cracks.



First design light switch (open bail)



Left - Light switch used after Feb. 1928 with Ford "H" headlamps. Center - Used with Twilight headlamps to April 1930. Right - Used after February 1930.



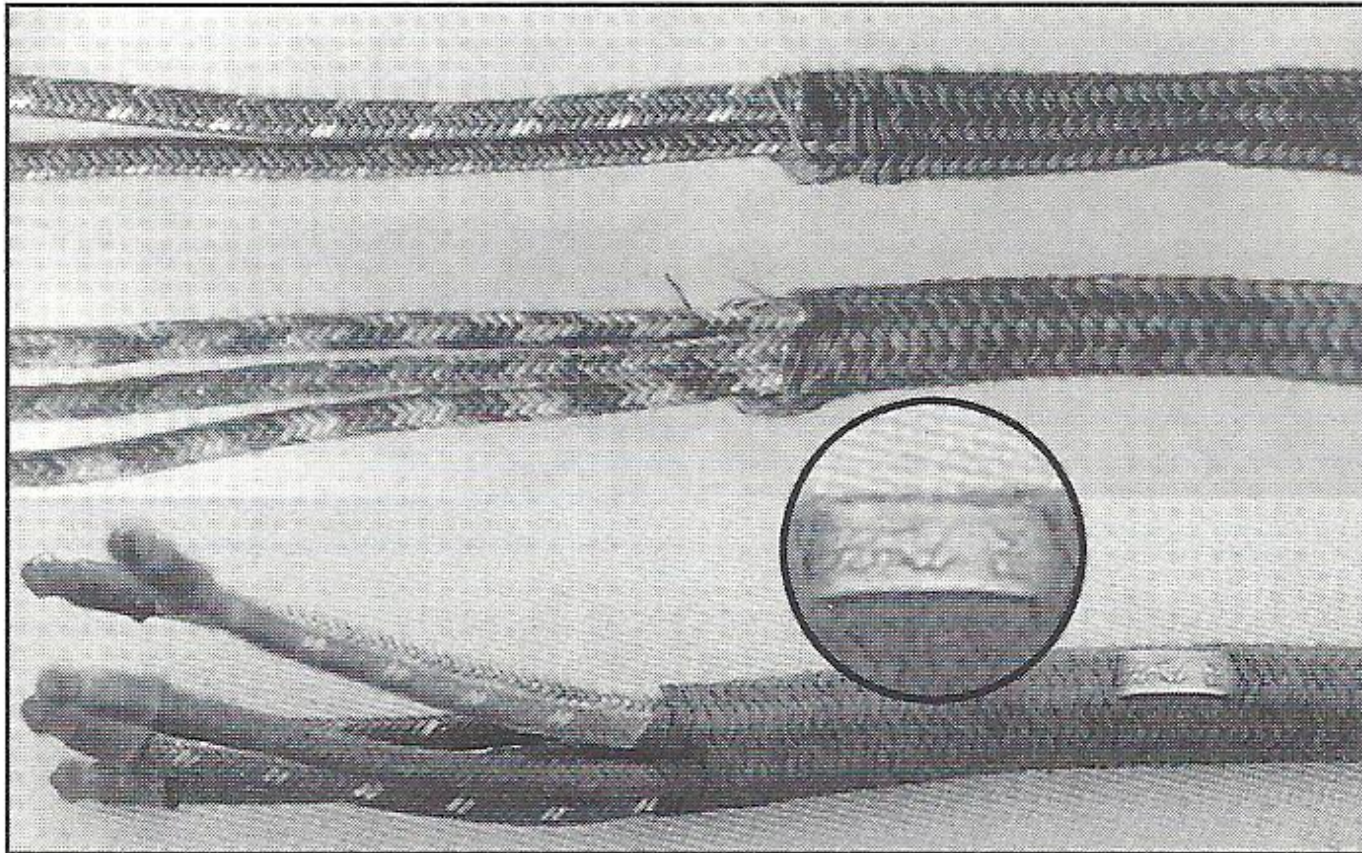
Top - Second version light switch and contact plate used with Ford "H" headlamps. Bottom - Switch and contact plate used with Twilight Headlamps

*Wiring*



- General Wiring
- *Both spiral tracer or checkered tracer to head lamps were used to end of production.*
- Front Harness Head lamp wiring – 16 gauge wire.
- Rear Harness
- Terminal Box Conduit *Terminal box to cutout and battery connection – 12 gauge wire.*
- Coil
- Cowl Lamp wiring
- Stop Light Switch

# WIRING



Top - Original spiral tracer pattern used throughout production.  
Center - Original checkered tracer pattern used on headlamp leads only. Alternate design used from early 1930 to end.  
Bottom - Early 1928 with Ford tag. See *Front Harness*



## *Terminal Box To Cutout Conduit*



Metal Conduit  
Start thru  
February 1930

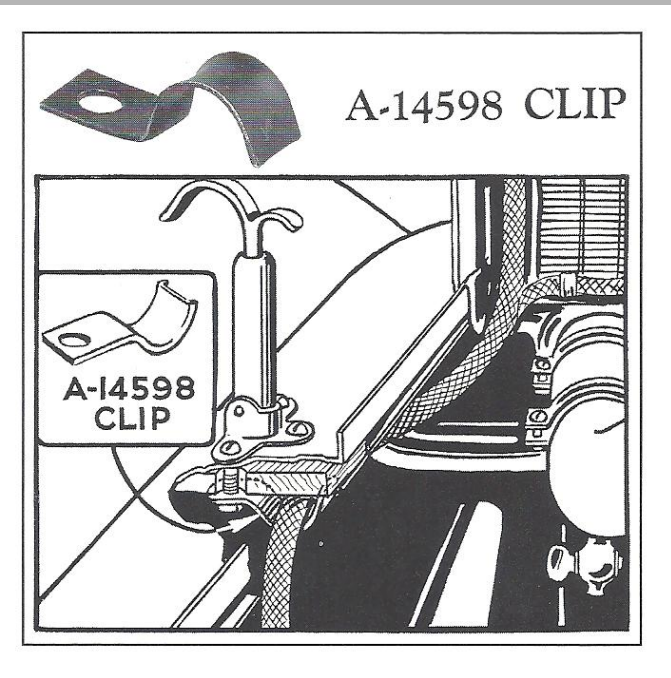
Black lacquered  
loom  
March 1930 till  
end

# Coil Wiring

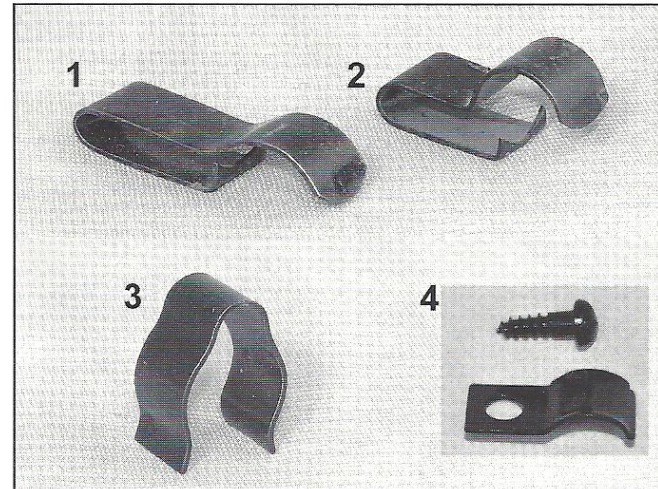
From start until  
October 1929 the  
RED wire was on  
the left Terminal  
(Viewed From  
Drivers Seat)

From October  
1929 The Polarity  
was changed  
The red and black  
wires were  
reversed

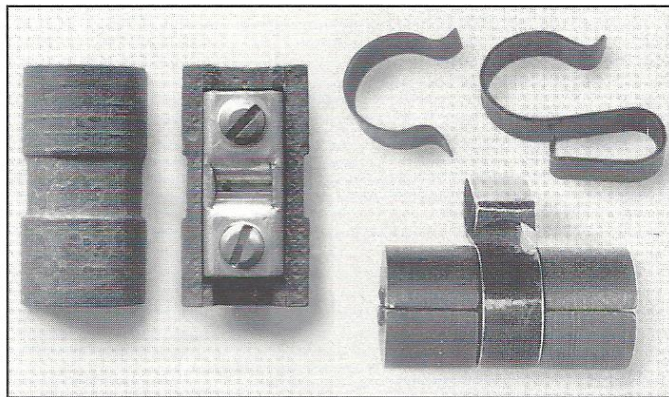




### Rear Lamp Wiring Clips



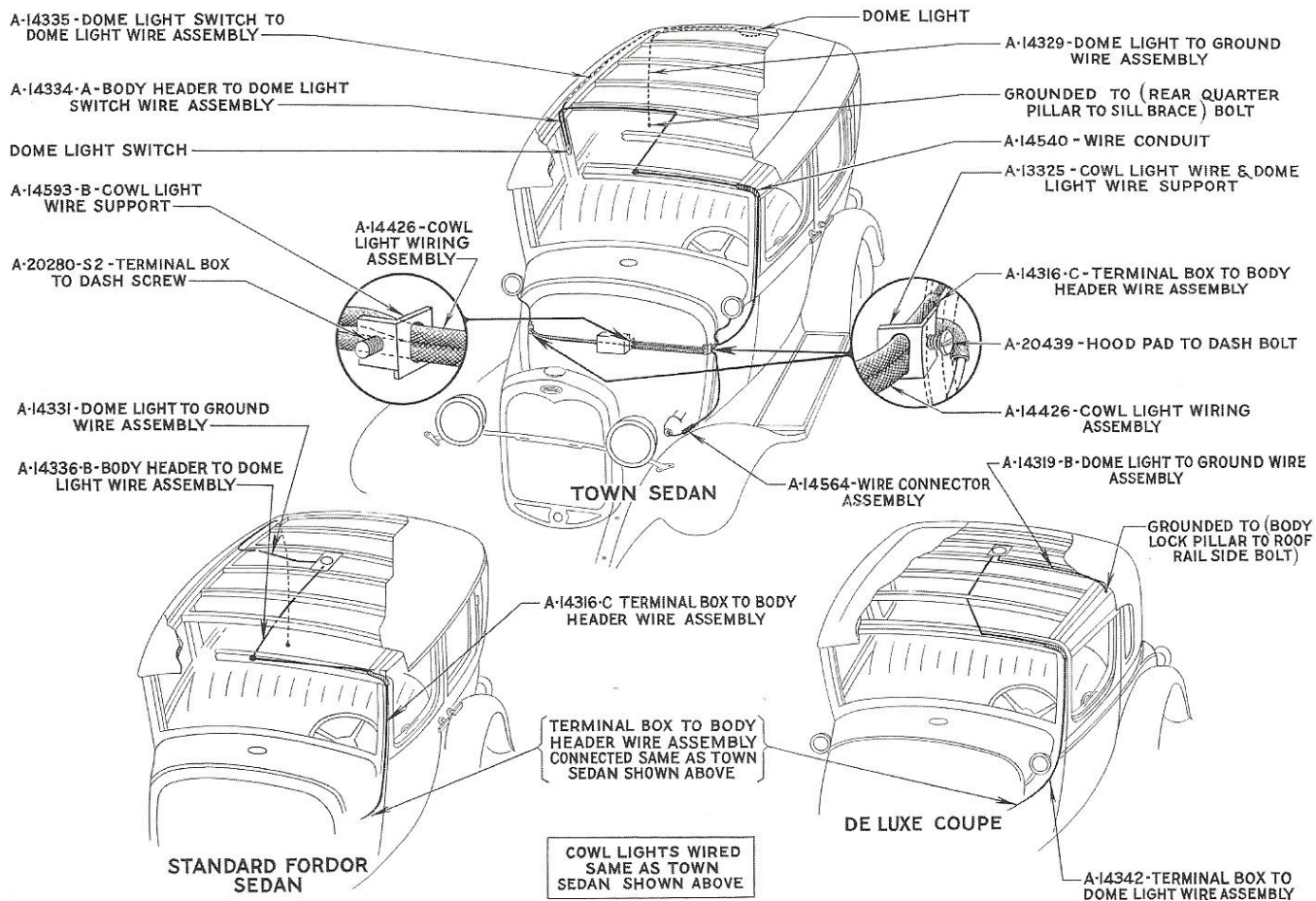
- 1 - A-14585 Rear harness to frame clip. 5 req.
- 2 - A-14565 Rear harness to fender bracket or skirt. Used with teacup style rear lamp. 1 req.
- 3 - A-14595-A Rear harness to lamp bracket. Used with drum style rear lamp. 2 req.
- 4 - A-14592 Rear lamp harness to body. Used on most Fordor bodies and many commercial bodies. See text



Cowl lamp harness connector (1929-31) and frame clip. "C" shaped connector clip was used in 1929. The "S" shaped frame clip was used on 1930-31 models.

- Beginning April 1929—special clip added (head lamp support) left side hood fastener, front fastener, rear screw.

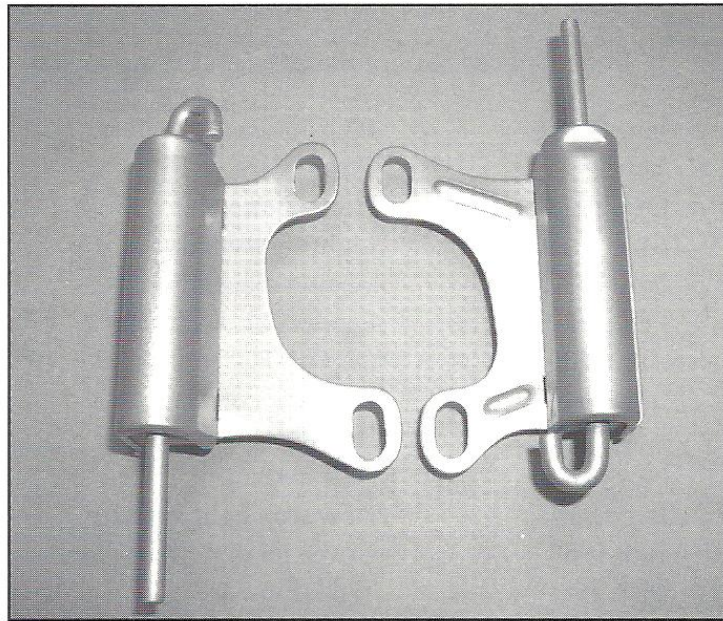
## WIRING DIAGRAMS FOR COWL AND DOME LAMPS



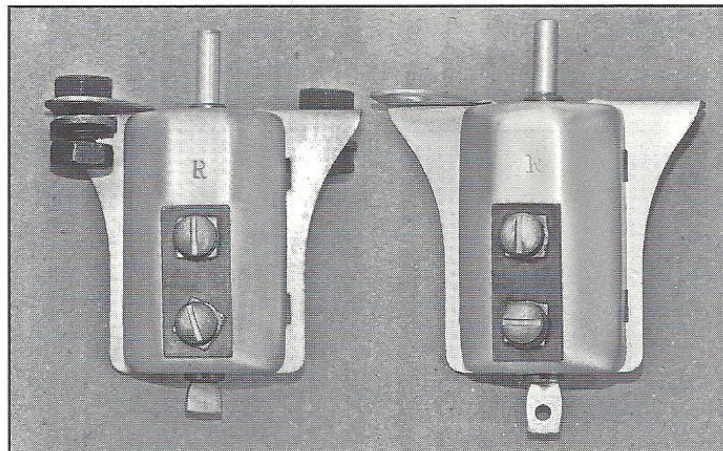
*Wiring Diagram of Town Sedan, Standard Fordor Sedan and DeLuxe Coupe*

# *Stop Light Switch*





The transmission mounted stop light switch was used from the beginning of production through October 1929. The strengthening ribs (switch on the right) were added June 1928.



The cross member mounted stop light switch was introduced in October 1929. The center rod was lengthened September 1930.

All light switch assemblies were cadmium plated or (zinc plated August 1929 thru September 1929).