Lone Star T's
Dallas/Ft. Worth Chapter
MODEL T FORD CLUB OF AMERICA

The Drip Pan – Electrical System

6V Battery

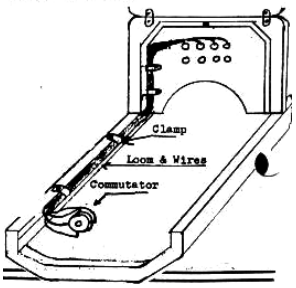
For you owners of an older Model "T", who require a 6 volt dry cell battery for starting, I have a solution for that always dead battery. Replace it with a small motorcycle or all-terrain, 6 volt lead-acid battery. They're small (3 x 3 -1/2 x5 inches tall) and inexpensive ($7 - $10 ... don't we wish that was still true Ed). I'm using a 4 amp-hour capacity battery on my 1911 Runabout and it works great.

Your regular battery charger can be used to recharge these small batteries, but it's output has to be reduced to .3 to .5 amp depending on the battery. I found a 2 ohm, 50 watt resistor in series with the battery works fine on my charger.

Dave Rosenow (Lone Star T Newsletter, 1988)

Add Life to Commutator Loom and Wires

Eliminate Short Circuits and Source of Spark Plug Misfire
I did this to my 1914 Model T in 1946. The wires and loom are in perfect condition today.



1) Using late model auto hot-water heater hose, cut hose so that it extends about 2” beyond the ends of the woven loom.

2) Lace commutator loom and wires through the hose. (Note measurement in Step 1.)

3) With electrical tape or a good substitute, tape hose to the protruding wires to seal the ends of the hose. This makes the new harness moisture-proof.

4) Route the new harness down along the hood support. Run it along the underside of the top flange of the frame.

5) Anchor hose to dashboard, using insulated clamps. This should also be done where the harness runs along the frame to keep it away from the fuel line and carburetor.

John Emmert, LaCrosse, WI

Battery Disconnect

Those of you in attendance at our January meeting heard that Gerald had experienced a "sudden, unexplained fire" in his dirt-track T Speedster. The car had been sitting, unattended, for several weeks. Gerald went to the garage to retrieve something form a cabinet in front of the T. Needing to move it only a few inches, he grabbed the rear wheel and turned it to move the car. After moving the car, he suddenly noticed smoke billowing from beneath the car and out of the cowl area. Upon disconnecting the battery, the smoke and fire subsided.

Looking at the car we found the "battery" wire from the starter switch to the terminal block on the cowl badly burnt. Further inspection found the same wire from the terminal block to the ammeter also burnt, but the wires on the other side of the meter looked perfect. The cause of the problem was an unexplained internal short in the ammeter (which looked "as new"). I might also mention that all of the wiring was in perfect condition and routed properly to avoid chaffing or shorts.

The above incident can and does occasionally occur due to frayed or un-insulated wiring, pinched or misrouted wires, defective or shorted cut-outs, headlight switches, ignition switches, top light switches, etc., when your battery is not disconnected by either a battery disconnect switch or manually removing a battery post when leaving the car unattended. This makes 5 cars that I have personally seen burning or burnt. Don't let yours be #6.

Battery Maintenance

If you have a battery in your Model T and you have noticed that the terminals are showing some corrosion, here is a sure fire method to keep those battery terminals clean. Clean the terminals completely with water and baking soda. Let the terminals dry thoroughly and then take Karo, or corn syrup and a paint brush and simply paint the terminals with the syrup. It dries in a short time to a clean, lacquer-like coat, and unless it is washed or rained off, it is good for years. You won't believe it until you try it.

Russ Furstenow, From T-Time in Canyon Country reprinted in LST News in 2000

Bendix Cover Bolts

Model T Ford Forum: Forum2005: Bendix cover bolts

By **Johncudd** on **Tuesday, May 31, 2005 - 08:09 am**:
I cannot seem to get the Bendix cover bolts on my '21 Touring to stay tight and I'm about to give up on Henry's bastard thread screws (are they really 1/4-24??)and change to socket head cap screws or something a-kin. Anybody else run into this problem? Is there a "tried & true" fix that might be buried somewhere in the old Forum? I'd appreciate any thoughts. TIA - John Cudd

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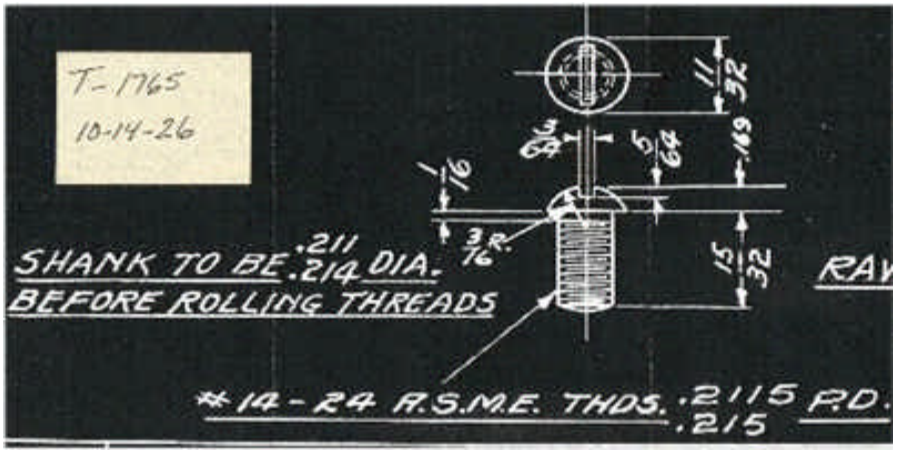
By **Ron Patterson** on **Tuesday, May 31, 2005 - 09:07 am**:
John Original Ford Bendix cover screws are 14-24 ASME thread not 1/4-24 SAE thread. See the following Ford print.



If your using lockwashers and the screws are still coming loose I suspect something else. I recently helped a fellow who had used the reproduction Bendix spring bolts. The heads were made too thick and rubbing on the inside of the Bendix cover loosening it up. The head of these screws should be no more than .163 thick excluding the shoulder. Original Ford lock washers were also thinner than the reporduction parts. This and or a bent starter armature shaft can cause the problem you described.
If this is not the problem and you do not have original screws, several folks have had luck with metric socket head (makes them easier to install) screws, but I forgot the size.
Hope this helps.
Ron the Coilman

By **Phillip Rendahl** on **Tuesday, May 31, 2005 - 09:14 am**:
When my bendix screws came loose, I discovered that whoever installed the cover did not install any lock washers. I purchased a set of new screws and a new gasket from LANG'S. Then I got some internal not external star washers from my local parts house. The only problem since is a slight amount of oil drip thru the bottom screw. Seems to come thru the threads. So I'll crawl back under and put ad dab of sealant on that screw's threads.

By **Richard G.Goelz** on **Tuesday, May 31, 2005 - 09:50 am**:
Try the part number T-5059-ss from Smith and Jones it is a socket head screw in the proper thread that makes installing them a lot easier, they come with a special wrench for installation but a long allen head will work.They are $2.50 per set, the phone number is 800-422-1928

By **Johncudd** on **Tuesday, May 31, 2005 - 01:13 pm**:
Thanx to all for the quick response.

Ron - I appreciate the info and will indeed check for a bent shaft, and correct Bendix bolts although I think they are all original. Fortunately I lost only one of the cover screws. There were lockwashers on them but I suspect that I have never been able to get them tight enough because the slots in the heads are pretty worn.

I must admit that I'm leaning toward Rick Goelz's suggestion - installation of the Allen head appeals to me, PLUS I can delay fixing it for a couple of days while the parts are enroute. I used up about all of my "fixin" yesterday lying alongside the parade route, dripping with oil and struggling with a too short screwdriver. Fortunately we made the full length of the parade without having to embarress Chimney Rock Park (whose banners I was flying) with a breakdown along the way. Wonder if they'll buy me a new low band.

Interestingly enough, with all of the stuff in the parade - including the Lake Lure Ya Ya Girls (a sight not to be missed) - the local ABC TV station chose a shot of our T for the evening news. My 0.5 seconds of fame I reckon.

By **Mack Jeffrey Cole** on **Tuesday, May 31, 2005 - 09:18 pm**:
Well before I learned what was right in regards to screws years ago I found I was missing 1. I tried a regular 1/4 screw and it didnt work, I thought the threads in the cast were messed up. I found what I call a "drugstore" grade bolt, grade 2 I think, and it was short. I put a wrench on it and it stripped to the threads in the cast. I later replaced it with the correct screws as I learned about it. The silicon idea, hadnt thought of that. Of course I learned the silicon trick for the radiator hoses and that works like a charm.

By **John Semprez** on **Tuesday, May 31, 2005 - 11:06 pm**:
John, I had the same problem with My '22 TT. I finally solved the problem with a few drops of blue lock tight. No more leaks and the screws stayed in place.

Submitted by: Dennis Sanford

Better Magneto Efficiency

In some instances it was found that the height of the magnets varied as much as .015". This condition results in using up all the allowable tolerance which is .025" to .040".

To improve the magneto efficiency, have a steel disc made as shown in Figure 1. Each Chapter could have one made for their members to use.

Place steel disc in flywheel as shown in Figure 3. This is for the purpose of placing the base of the dial indicator in the flywheel recess without interference from the dowel pins and magnets. With dial indicator, locate the lowest magnet. If it is .015" to .020" low, use a shim to make correction, Figure 2.

When readings are found to be on the high side; a copper, lead, or soft brass hammer can be used to tap the magnets down to the desired height, Figure 3. By this method, the heights of the magnets can be controlled to within .005" of each other.

With this close alignment, it has been suggested that the magnets be assembled with .020" clearance between the magneto coil assemblies. The closer the magnets are to the coils, the better the efficiency.

TESTING THE MAGNETS ON THE FLYWHEEL
WHEN MOTOR IS DISASSEMBLED

Taken From 1918 Auto Encyclopedia.

To test the magnets, take a block of steel 1-3/8" x 1-3/8" x 3" and place it on each magnet clamp as shown above. The block should just hang by a corner. Failure to hold indicates weak magnets. The weight of the block is the same as that of the Ford camshaft gear.

FIG. 2

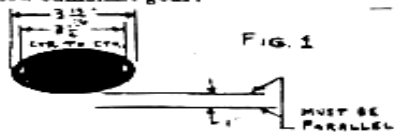
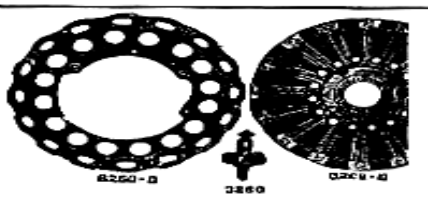
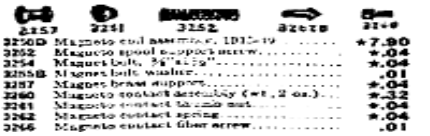


FIG. 1

FIG. 3





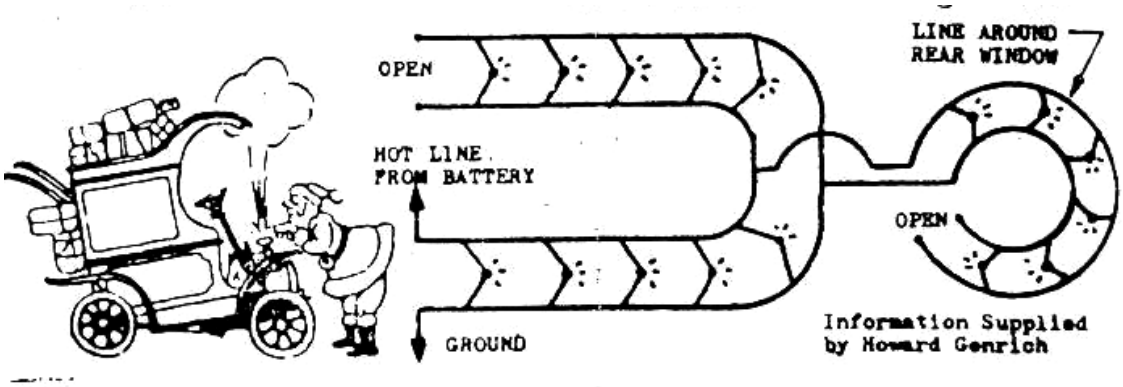
3250D	Magneto coil assembly, 1911-19			*7.90
3252	Magneto spool support screw			*.04
3254	Magnet bolt, 5/16"-24			*.04
3255B	Magnet bolt washer			.01
3257	Magneto brush support			*.04
3260	Magneto contact assembly (wt. 2 oz.)			*.32
3261	Magneto contact bronze nut			*.04
3262	Magneto contact spring			*.04
3266	Magneto contact fiber screw			.01

Christmas "T" Lights

EQUIPMENT NEEDED: a 30 light set of 110 volt miniature (3/4") bulbs on a loop cord, about 30 feet of two color bell wire or plastic coated lamp cord, two alligator clips, electric tape, and wire strippers help.

PROCEDURE: Splice light wires in parallel on the main line. Staggering the attachment points helps eliminate any possible short. The number of light possible is dictated by the capacity of the main line used -- 12-volts merely give a brighter light than 6-volts. Flasher lights will also work.

Howard Genrich

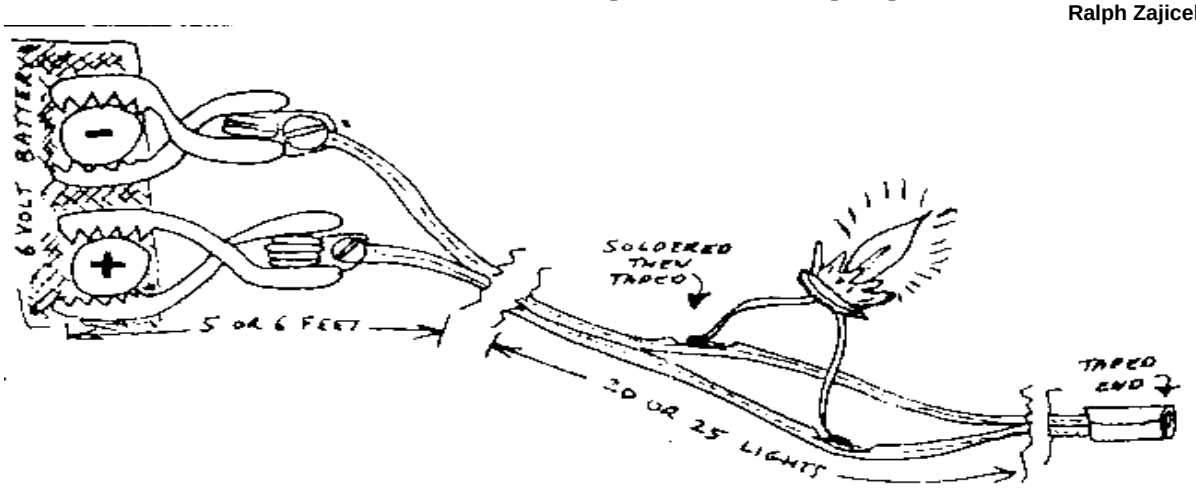


Instructions for Installing Lights for Christmas Light Tour

ITEMS NEEDED: One string of approximately 25 twinkle lights, 30 or 40 feet of regular lamp cord, two large alligator clips and tape.

Attach one clip to each wire for your battery. Leave 5 or 6 feet and then cut the rubber away so you can see the wire – one inch apart on one foot centers (or where you want them). Cut twinkle lights off with a one inch tail and (tin) solder 1/4 inch on each one – then solder one side to one side of the lamp cord and the same on the other side. Then tape them. Also tape up the finished end.

Ralph Zajicek



Ralph Zajicek

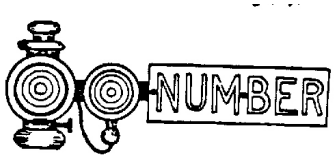
Dead Timer Roller

After all the driving had been done at the last Texas T Party, it was necessary to drive the Model T one more time for this year's picture. The car started with the usual one pull of the crank, ran for a couple of seconds then died as if out of gasoline. Two or three repetitions of this then not a whisper, not a buzz from the coils. The gasoline tank was full just thirty miles earlier. The gasoline had not been shut off. A simple check verified that there was power to the coils from the ignition switch.

The problem was solved by replacing the timer roller and cleaning the timer interior. It seems that the oil had caked around the rivet which forms the axle of the timer roller, effectively insulating the rolling element from the remainder of the roller assembly. No ground, no buzz, no ignition, no start!

Hugo Richter, Lone Star T Newsletter 1988

Electric and Oil Tail Lamps



As the regular oil tail lamp is only too apt to go out just as the "cop" appears, an electric tail lamp is a "safety first" addition to the Ford car. But it is also nice to have the oil lamp, to fall back on in an emergency.

The two tail lamps can be mounted on the same bracket, by drilling a hole through the bar that holds the license plate, and bolting the electric tail lamp to the bar.

Contributor Unknown

Generator Problem

If you have difficulty keeping the generator of your Model T working, this might be the solution – use the magneto as an alternator. This will keep the battery charged so you can use the starter and lights. With this set-up, you can set the generator to a low output rate to improve its reliability, or eliminate it completely. If you bypass the generator completely, either remove it from the car or ground the output (cutout) terminal on the generator. If you operate without the generator, it will be necessary to boost the battery from a trickle charger from time to time.

Hugo Richter

How To Turn Off Your Generator

By Gary Vriezen (October 2005)

Photo 1

I made this modification to my Model T generator some years ago. I read about it in the Tinkerin' Tips section of the Vintage Ford Magazine.

There is very little required to make this modification. The major part to be purchased is a toggle switch that is rated 20 amps at 125 volts. This switch is a SPST switch. This should be more than adequate to do what we want it to do. This switch is available from MSC Industrial Supply outlets under part number 06489041, the cost is approximately $3.50 at the time of this writing. MSC has a facility in Dallas at 9225 King James Drive, Dallas, Texas 75247, phone 214-638-0900 or 800-521-0389. A suitable switch could also be found at electronic supply stores or electrical supply outlets.

Photo 2

Just be sure the ratings are close to the same as the specified switch. The other materials required are a couple of short lengths of #14 stranded copper wire and 4 crimp-on eye terminals.

Now for the method to turn off your generator. The switch should be mounted in a convenient place for the driver to have access to it while driving. I mounted mine next to the steering bracket on the dashboard, see photos 1 and 2. I used a small piece of a shelf bracket for the switch bracket. You will have to fabricate a bracket to fit wherever you want to mount the switch. This is where the ingenuity of the Model T owner comes into play.

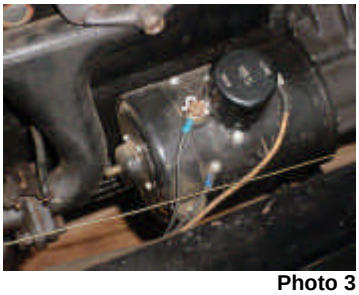


Photo 3

Refer now to photo 3. This shows the wiring connections required at the generator. One is simply a length of the #14 stranded copper wire with a crimp-on terminal on the end of the wire. Be sure to use a terminal with a 1/4" eye so it will fit the generator terminal. Attach this wire to the generator output terminal as shown in photo 3. The other end of this wire will go to one of the terminals on the switch inside the car, see photos 1 and 2. Use a crimp-on terminal for a #6 screw here. A second piece of wire will be attached to the second terminal on the switch, again using a crimp-on terminal for a #6 screw. This wire will be attached to a suitable ground at the other end, I attached mine to the generator case, as can be seen in photo 3. Use a crimp-on terminal for a #10 screw here. So, there are two connections at the generator and two connections at the switch.

You have now completed the modifications required to turn off you generator. As you are driving your T, you can simply turn off the toggle switch and it will in effect turn off your generator from charging the battery. You will be able to verify that this works by watching the amp gauge on the dash. It will show a zero reading when the generator is turned off. This is a handy thing to do for two reasons, first, it will stop the generator from robbing power from your engine as you climb a hill, as it takes power to generate electricity. As the Model T only has around 22 horsepower, we can use all the power we can get going up a hill. The second benefit is that you will not overcharge your battery if you are driving your Model T for an extended distance, as on a National T Tour.

There is a lengthy and technical explanation as to why and how this modification works, but that is beyond the scope of this article. Just trust that it does indeed work and go forward with the modification if you desire. In use, I usually start driving my Model T with the switch turned on. If I approach a hill, I turn off the switch until I have crested the hill, then turn it on again. I drive for about 10 minutes, then turn off the switch for the remainder of my driving time. I turn on the switch at the end of my drive so it is ready for the next portion of the drive. This method has worked for me for many years, I hope it will be a good feature for your T also. *Happy motoring!!*

Generator Output – Too Many Amps

*Posted by **Fred Jones** on **Wednesday, 20 November 2002, at 9:26 a.m.***

What would make a T generator put out too many amps even when the third brush is retarded all the way? The brush plate is rebuilt - no grounds. The coils are replaced, no grounds. The post is not shorted or grounded to anything else. The brush plate is set at the neutral point. There is full travel on the third brush - not hanging up on anything to limit its travel. The armature is one I had on hand - no idea where it came from, but it looks new or rewound. It's the cleanest one I've ever seen. It checked okay on the growler before I installed it. At half throttle I'm getting nearly 15 amps with the third brush backed off to the limit. Full advance of the third brush gives another 2 amps or so. Same results with 2 different amp gauges. I'm running a 12 volt battery but have done that before and never ran into anything like this. Anybody know what might be going on?

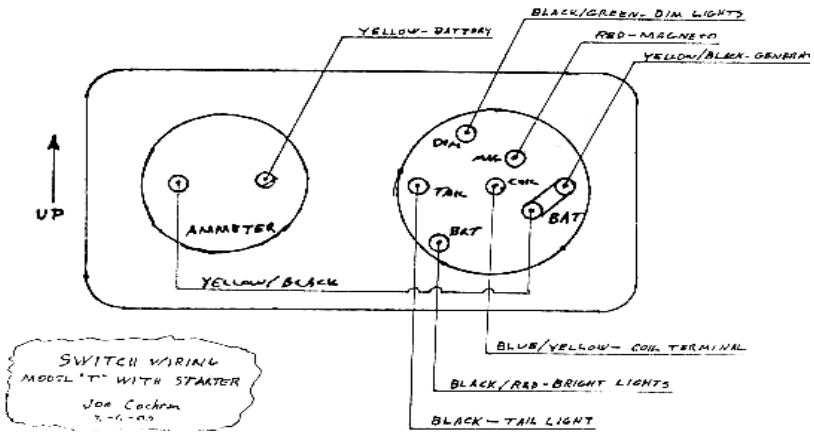
*Posted by **Ron Patterson-Medway, Ma** on **Wednesday, 20 November 2002, at 11:30 a.m.**, in response to generator output, posted by Fred Jones on Wednesday, 20 November 2002, at 9:26 a.m.*

Fred

The brushplate neutral adjustment is very tricky especially when operating on 12 volts. I think you will find if you retard the brushplate (counterclockwise when viewed from the gear end) a bit you get the generator to work correctly. Remember do not allow the generator to charge greater than 7-8 amps with a 12 volt battery or it will be toast pronto. The lower the better.

Ron the Coilman

Model T Ignition Switch Wiring



I recently had a problem installing new switch wires on my "T". After taking the old harness off I looked in various books for a wiring diagram that showed switch connections. No soap. The old wiring was too old and faded to reliably indicate the original color codes. I tore another switch apart to see how it worked. Finally figured out a diagram and it works. Hope this helps with your wiring job.

Joe Cochran, April 1990

Paraffin as a Preservative (Electric Wire Insulator)

Chewing gum pays it tribute to paraffin, and the success of a world-known biscuit came from the discovery that when paper was immersed in hot paraffin it became moisture-proof and would protect the biscuits and cracker from dampness in any climate. When it was found some years ago that the surface of Cleopatra's Needle in Central Park was flaking off somebody suggested that a coating of paraffin might stop the damage. It did. Stone fronts of fine houses are protected in the same way. Paraffin is made into colored

crayons and it is used in laundries to whiten clothes. Good housekeepers know its value for sealing canned fruit or anything put up in bottles. The task of insulating electric wires is made simpler by this product.

Gas Power Magazine, October 1913

Replacing Side Lenses – Pepsi Cola Hits the Spot

Replace that dingy or missing electric tail light side lens. After 50 or 60 years, the clear plastic side insert may turn yellow or brown and crumbly with age. Here's the fix. Hop in old "Liz" and run down to the neighborhood grocer. Purchase some Pepsi Cola in the 2 liter clear plastic bottle. When you get home, break out the ice cubes and fix mom and the kids a nice big glass of Pepsi! Rinse, then tuck the empty bottle under your arm and head for the garage. Use your old lens for a pattern or make a pattern out of thin, stiff cardboard. If your lens is completely missing it may take a few trial patterns to get just the right length so it will "pop" into place. Next, use our pattern or old lens to cut out the new lens from the bottle. Scissors will do the job. For a nicer fit, match the natural curvature of the bottle with the curvature needed for the lens. With your new lens installed, more careful attention must now be given to your top speed at night. For not only does you tail light look pretty spiffy, but now the cops can clearly read your tag number!

From a 1983 Issue of the T Bone Times (Tulsa, OK)

Replacing (ignition coil) Capacitor

Model T coils can prove to outsmart the amateur rebuilder. Part of the rebuilding of the T coils ignition coils involves replacing the capacitor. This requires a good quality brand with a high enough voltage capacity. Julius uses Sprague #6P5P47, 47 +10% at 600DC for his rebuilding. He has found some lower voltage ones in coils that will work on DC (battery), but they won't run worth a darn on AC (magneto) voltage. He has found this out by testing one on a battery and on an original magneto coil tester. So don't buy cheap one, especially Radio Shack ones. They give out real soon after they are installed.

From Julius Neunhoffer and the Texas Hill Country Chapter, MTFCI

Running Engine with Generator Disconnected From Battery

If for any reason the engine is run with the generator disconnected from the battery, as when battery has been removed for repair or recharging, be sure that the generator is grounded by running a wire from the terminal on generator nearest dash to one of the dust cover screws in the yoke. Two strands of shipping tag wire may be used for this purpose. Be sure the connections at both ends of the wire are tight. Failure to do this when running the engine with the generator disconnected from the battery will result in serious damage to the generator. NEVER GROUND THE GENERATOR THROUGH THE CUT-OUT.

Ford Instruction Manual

Setting the Ford Generator Brushes

The majority of Ford owners make their own repairs. Even the repair of the generator does not daunt them, though it must be admitted that at times the repair is far from successful. When the generator has been removed and dismantled, care must be taken when it is again assembled. Though most workers will mark the wires and their connections so that they may be replaced properly, the brush holder assembly receives very little attention and when replaced, it is simply located in such a position that the third brush is at the top and therefore readily accessible. The brush holder, however, should be replaced in its proper position, so that the main brushes will always be at the neutral point. Due to the wide range that the brush holder can be shifted, it often happens that the brushes are set far from this point.

The proper procedure for the setting at the neutral point is as follows: After the repair has been made, the third brush is lifted from contact with the commutator and held in that position during the adjustment. A battery is now connected to the generator terminals and if the brushes are not at the neutral point, the generator will run as a motor. If the brush holder, which is held by the four small screws in the commutator end plate, has been shifted to the right, the armature will revolve to the right; while, if the holder has shifted to the left, the armature will turn towards the left. The proper position is that in which the armature will not revolve at all. If the brushes are off neutral, though the advance may be but a few segments, the output of the

generator will be excessively high and the third brush will not be able to keep the output within safe limits. The third brush is the control brush and if the main brushes are so set that it cannot fulfill its duty, the high charging rate may, in time, cause the destruction of the armature. It Will be found when seeking the neutral point that there is one position of the brush holder in which the armature will not revolve.

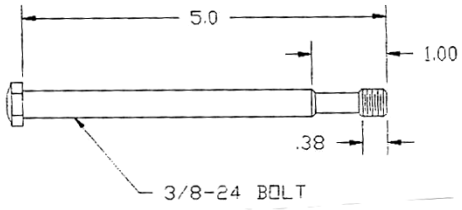
In some cases, the armature will vibrate with a low hum, an indication that the exact neutral has been found. Sometimes, however, the hum cannot be obtained. The armature, however, remains stationary, resisting any attempts to turn it contrary to its normal direction of rotation, yet evidencing a slight tendency to rotate in the normal direction should it be given a slight turn in that direction. The main brush holder should be securely fastened when this point has been found and the third brush is returned to its normal position. After the generator has been placed on the car, its output is adjusted by shifting the third brush in the proper direction.

Practically ail generators with third brush control are designed to operate with the main brushes at the neutral point and any improper setting, therefore, lessens the efficiency of the generator and sometimes leads to its destruction. When the armature overheats, or the brushes arc excessively, or the commutator develops a tendency to continually blacken shortly after being cleaned, the position of the main brushes is at fault and they should be tested to see if they are at the neutral point.

American Automobile Digest, September 1924 (Submitted by Bill Peterson, February 2001)

Special Distributor Mounting Bolt

When I installed the accessory distributor (from Bill Rader, Vintage Authentic Reproductions) on my '26 Roadster, I made a special bolt and mounting clip to give the assembly a more solid attachment to the engine. The distributor drive case has a mounting flange that is about 1/4 inch thick. This additional thickness left only a couple of threads engaged on the stock generator bolt which passes through the flange. When I tried to fit a longer bolt, the radiator turned out to be in the way. I solved the problem by making a bolt to just 'turn the corner' as it is fitted into the front engine case.



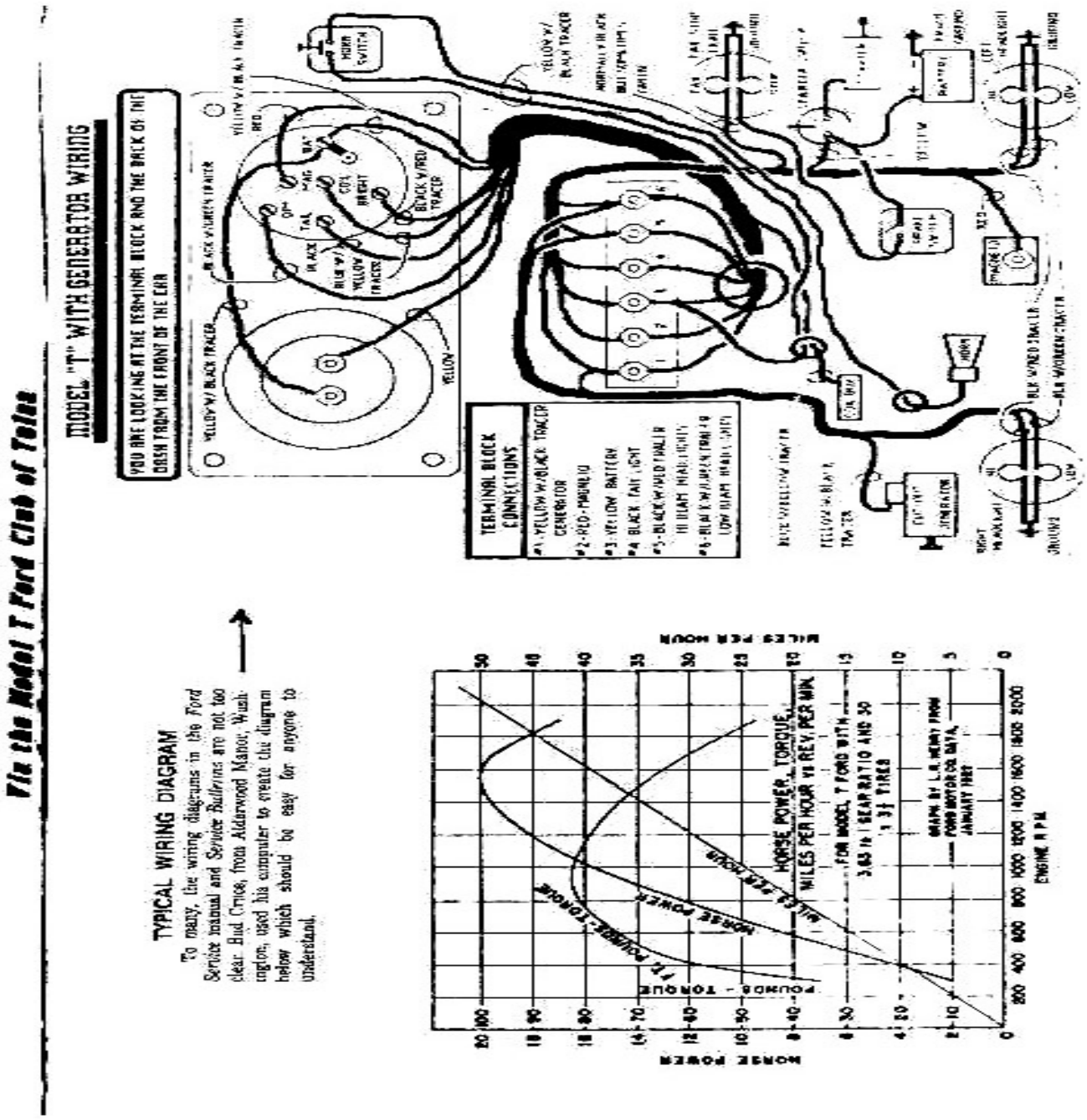
The second addition was a heavier version of the stock timer clip. This was made from 3/16 sheet steel bent to the same shape as the timer clip. This heavier clip was retained by the large bolt at the top of the timing gear cover, instead of the small bolt which normally fastens the timer clip. The thicker clip holds the distributor body solidly to the engine front cover.

Starter Switch Relay

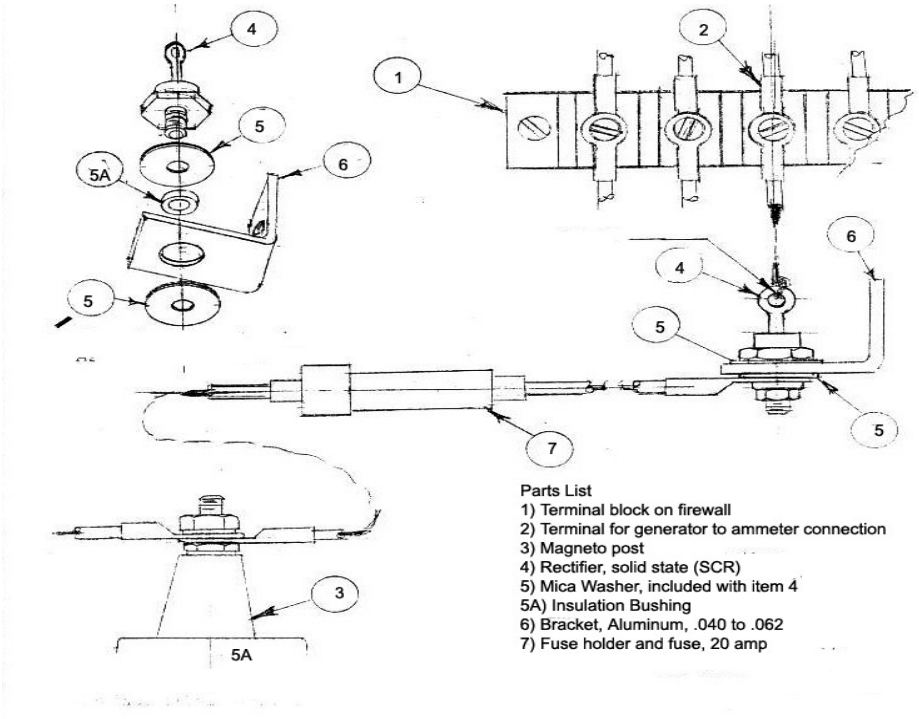
Jerry Davis found out the hard way that a jammed switch can cause of lot of damage. His switch stuck in the closed position which resulted in his burning out his entire wiring harness. A few of the dealers are carrying reproduction switches but have admitted that in the past few years they have had a lot of complaints about failures. The major failure is the inability of the switch to carry the heavy current load demanded by the starter. This means that you can test the switch on the bench with an ammeter and it will test good but, when you install it the starter won't kick over. If you're a bug for the authentic you can stop reading right here, but, if you want to use the starter without sending switches back and forth through the mail – read on. Use the switch that won't carry the load but tests OK to activate a 6V starter relay. The relay is available at your favorite parts house. This way it looks original from the driver's seat but it works without any problems.

Contributor Unknown (198?)

Typical Wiring Diagram with Generator



Use Your Model T Magneto to Substitute for a Generator



Item 4 SCR, Motorola No. IN 3212 or IN 3214. Parts by other manufacturers may be substituted. These are 500 volt, 15 Amp and 600 volt, 15 amp., respectively.

Item 7 Fuse holder and fuse are optional. Their purpose is to prevent demagnetizing the magnets in the event of SCR failure.

Item 6 Bracket serves as a heat sink, and if feasible should be located outside the engine compartment. It should be bolted in place.

This arrangement will work with either a 6 or 12 volt battery. Charging rate for a 12 volt battery is 5-7 amps.

Contributor Unknown

When Coil Units Fail (And You Still Need to Get Home)

Because one cylinder is ready to exhaust when another is firing, it is possible to operate a Model T with the spark plugs in two cylinders firing from the same coil. The firing order of 1, 2, 4, 3 makes it feasible to fire either Nos. 1 and 4 or 2 and 3 simultaneously.

For example; consider the non-functioning coil in No. 3 position in the coil box. The timer wire connection can be moved from No. 3 position to the No. 2 connection on the coil box. Likewise, No. 3 spark plug wire can be connected to the same terminal as No. 2 spark plug. No 2 coil will now fire both No. 2 and No. 3 spark plugs. Instead of running with 75% power you will have nearly full power, and no miss.

I will point out that this obviously not a permanent fix, but it will get you back to home base when you have a coil breakdown and no back up.

Hugo Richter