

Tennessee T's



Model T Ford Club

Newsletter

April 2016



A message from Gary Tillstrom, our President:

Greetings T's

As promised by the buds on the trees and flowers popping up, winter is officially over! To a lesser bunch, that means spring cleaning and yard work that will consume great weather that could be better spent doing something you enjoy. Not this bunch however. To us it means dusting off the old car and going for a ride (making fun of those we see doing yard work). In your journeys, be looking for a place to plan a tour. I haven't had to time to look further into the Paducah / Metropolis area and will have to plan something closer for this year.

We had a great turnout for our 3rd "Lynn Cook Safety Day". Thanks to Ricky and Vandy for hosting it again. I can't help but think Lynn would have been pleased and enjoyed meeting the new comers. Through the year, when you see something that needs attention, give consideration to doing a demo of it next year. I know you guys are getting tired of having to watch Ralph and I. It's not too early to plan for the 4th annual "Lynn Cook Day". Give it some thought and let us know what you need.

Please give consideration to planning a tour in your area. If multiple families work on it taking numerous scouting trips it makes it much easier. That's it for this month, I have a car that needs dusting off! See you down the road. Gary

Officers of the Tennessee T's

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NEWSLETTER SUBMISSIONS

Announce future tours, tour and event pictures, tech articles, cars for sale, cars to buy, forgotten or incorrect birthday or anniversary listing. **Without input, there will be no newsletter.** email BillRobinson06@bellsouth.net (zero6)
***Note*:** Please.... photos should include at least one Model T and/or one Tennessee T's member.

Tours and Events

Contact Gary Tillstrom, our club President, if you have a tour planned to be sure the date is still open.

gtillstrom@aol.com

MAY the 7th- Gary Elam writes that he and his wife Marilyn, are planning a drive in their Model T from Shiloh National Military Park and drive to the Natchez Trace Pkwy. Their connecting point (with the Trace) will be near the Alabama-Tennessee state line, and travel the Trace north to Franklin, TN and back via another route. If anyone wants to join along you're welcome. He writes, "We do not plan an itinerary as we will be taking camping gear and stay in local mom-and-pop hotels along the way." Contact Gary Elam for more information garyelam60@gmail.com.

June 1-4 BlueGrass Backroad Ts Presents Tour 2016

Tour Dates: We will be touring on June 1, 2, 3, & 4. Plan to check in on May 31. The Host Motel: Holiday Inn Express in Corydon, IN. For those who are not familiar with Corydon- it is across the river, approximately 25 miles west of Louisville, KY.

For more information visit the tour's website <http://bluegrassbackroadts.weebly.com/about-the-tour.html>
Contact Linda Moorehead regarding the tour tomlinda@twc.com

Contact Kim Doty regarding the roads and routes kwdoty@earthlink.net

June 12-16 Poor Boy Tour 2016, Galax, VA
poorboytour@model-a-ford.com

JUNE 2-4 – Richmond, Indiana. The Model T Museum Homecoming Event [Website](#)

July 17 - 22, 2016, 60th Annual MTFCI Tour, Auburn, NY [Website](#)

On the mend

and other news

Both **Larry and Carolyn** had knee surgery back in the winter. Both are still recuperating. Then while mending, Carolyn came down with the flu towards the end of February.

I called to check their current conditions on March 24. They must be doing better because when Larry answered, he and Carolyn were in a hotel room in Nashville, going to catch a plane to California the next morning in order to meet with family members celebrating L&C's 60th Anniversary and Larry's 80th birthday. From California, then it's on to Vegas.

They deserve the vacation, in my book.

Gary Wheat had a procedure called heart ablation March 23rd. He seems to be healing quickly and is looking forward to touring this Summer.

Mark Gember's mother, Betty Gember, passed away on March 3, 2016.

Annette Tillstrom's mother, Laura Leslie, passed away on March 14, 2016. Annette would like to thank the many who sent cards and letters.

**The Tennessee T's
now has a
WEBSITE**

<http://tennesseets.weebly.com/>

Don't forget to attend Mac Flowers' 90th birthday party in New Johnsonville, TN, April 16, 2 pm to 5 pm. Trace Creek Baptist Church. Please, no gifts.

Darrel Carter from Steens, MS writes: . I have slowly started to restore a '24 Tudor. I need a closed car for Model T tours in cooler weather. This may take a while because I'm not sure if I'm missing any pieces (besides all the wood of course). (Note from the editor: Darrel- please keep us up-to-date on your project as you progress)



SAFETY/TECH WORKSHOP

3rd Annual Lynn Cook Safety Day by Gary & Ralph

Again, this year, the workshop was held at Ricky and Vandy Williams' home in Humboldt, TN on March 5, 2016. The workshop itself took place in Ricky's well equipped and well decorated red, barn-shaped shop behind his home. Within his barn is a newly built paint booth and the shop itself has no less than four current Model T projects that Ricky has in progress. If a person got bored looking at the projects, then shift gears and absorb all of the many period signs, old tools, watch the Three Stooges on his big screen TV, or shake hands with his well-preserved vintage mannequin.

Ricky provided biscuits and Gary brought his well-known and rather famous sausage gravy for those us who got there early. Personally, I hope this set up becomes an annual tradition.

The workshop began promptly at 8am, as promised. Gary spoke to the group and outlined the subjects that would be covered.



WHAT WE LEARNED and subjects covered:

****3 ways to adjust valves**

covered by Ralph Williams

Ralph brought a motor block for demonstration purposes, then detailed each of the three methods of setting valves in a Model T, and explained the pros and cons of each method. The three methods explained were:

- Piston position method
- Feeler gauge method
- Use of a dial indicator

****How to advance a stock timing gear by 7.5 degrees**

Covered by Gary Tillstrom

In this segment, Gary took a show of hands, to see how many in attendance currently run a 7.5 degree advanced timing gear. From where I was sitting, it appeared that approximately half of the group raised their hand.

Gary explained his opinion of the advantages of running a timing gear that has been advanced, mainly increased pulling power on hills.



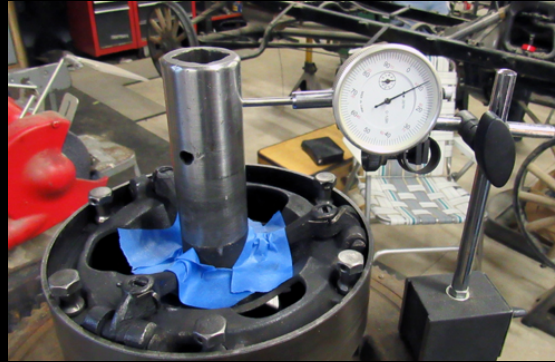
He detailed the steps for using a stock gear and where to drill new holes for this procedure. Using Gary's method, the gear can be run either as a stock gear or an advanced gear.

****Model T Transmission**

Covered by Gary Tillstrom

This segment was full of good information and details regarding:

- Transmission disassembly
- Balancing each component
- Assembly
- He actually charged a magnet
- Tailshaft alignment



****Coil rebuilding**

Covered by Gary Tillstrom and Ralph Williams

A wooden coil box was disassembled and an explanation was given as to which internal parts must be replaced with modern electronic parts so that the rebuilt coil will perform to its maximum potential.

A demo, using a Simpson voltage meter, Gary explained how to test the internal capacitor. Ralph followed by using the Stobo-Spark coil tester.

Then, Ralph and Gary gave us a hands-on demo of coil adjustment using both a HCCT (hand cranked coil tester) and a Stobo-Spark.



****Steering column rebuild**

Covered by Ralph Williams

Ralph had a complete steering column disassembled and laid out so that we could see the individual parts that make up the assembly. He explained :

- The different gear ratios
- Steering gear pin replacement
- Replacing the rivets in the steering quadrant if worn

We passed around various steering parts, so that we, individually, can recognize the difference between worn parts and new and/or usable parts.



****Generator rebuild**

Covered by Gary Tillstrom

Gary demo'd "how to test" a generator by applying 6 volts to test for an operational generator. In short, if the generator rotates like an electric motor when power is applied, then it is operational and may only need adjustment of the 3rd brush.

Generator rebuilding is detailed by 2 articles that Gary wrote, that are detailed deeper into this newsletter.



Model T folks present for the workshop (listed alphabetically)

Keith Barrier	Rick Moore
Bob Benedict	Charlie Owen
Peter Claverie	Dennis Plank
David Copeland	Bill Robinson
Paul Copeland	Charlie Swann
Keith Ellis	Gary Tillstrom
Mark Gember	Jerry Waller
Bob Kress	Ralph Williams
David Miller	Ricky Williams

Wives present (they went shopping! Sorry, none of the wives would submit photos for the newsletter.)

Beverly Benedict
Penny Ellis
Paula Gember
Carolyn Miller
Anita Owen
Connie Plank
Suzi Robinson
Jana Swann
Diane Waller
Teresa Williams
Vandy Williams



Generator Repair

Things electrical intimidate many people. I know some folks feel they have reached their technical limits if they have installed flashlight batteries correctly but they are really selling themselves short. There is a term used throughout the aviation community known as, "IRAN". It stands for, **I**nspect, **R**epar **A**s **N**ecessary. When dealing with generators, some folks think they have to have the armature rewound, fields changed, etc. in order for these parts to be reliable and function correctly. I am certainly not one of those. These items have to be checked to ensure they are still serviceable but wholesale replacement is a bit extreme without first testing. Ask yourself this, if the armature checks out good, what do you stand to gain by spending another \$75 having it rewound? Same goes for the field windings.

If you have an old T generator lying around, the chances are you can go through it yourself and have an excellent working unit for very little money and effort. Don't accept defeat before you start, you can do this with basic tools even if you have never worked on one before!

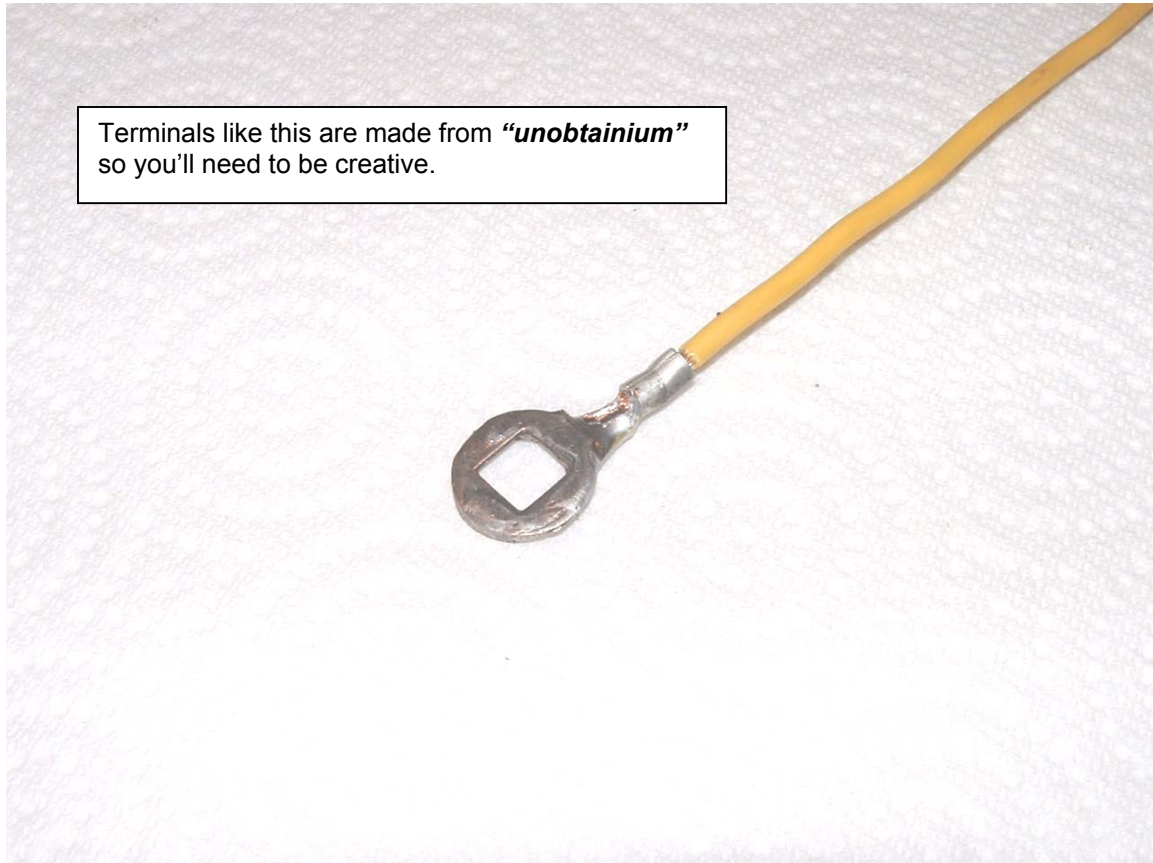
There are a few common faults that cause problems with the T generator that need to be checked. You will need an ohmmeter to make a couple of test and you can pick up an el-cheapo from Harbor Freight for around \$10 if you don't own one. These are for the little analog style meter; I don't care for the digital ones. Basically, all model T's should have one of these in the tool kit anyway.

One major area of trouble is in the leads coming out of the field. These were originally insulated with a cotton fabric, which is often in worse shape than your favorite pair of blue jeans. The fix for these is to cut off the terminals and slide heat shrink tubing over the wire (after you have crumbled all the cotton away). Then it is just a matter of crimping on new terminal ends. It is almost impossible to get the heat shrink to the very end so I insulate the ends using a non-corrosive RTV. After the RTV sets, I use my heat gun and shrink the sleeving.



Using your ohmmeter, check to see that there is continuity between the two terminals shown. If your meter doesn't move then the fields are open and need replacing. Then, check to see that there is no continuity between either terminal and the generator housing. If the needle moves during this check the fields are shorted and need replacing. Obviously, you want to make these checks before you go through the effort of repairing the insulation.

Now that you have that accomplished, there is another lead that is sometimes a problem but it is better to make a new one if badly disintegrated. The lead going to the positive brush often has rotten insulation as well. One of the terminals on that lead has a square hole in it. I have never found these but instead cut the “washer” portion of the old terminal and solder it on to the new one. I use # 14 wire to make this lead, as that is what I believe the old one was. The terminal on the other end is just a standard ring terminal.



When these cars were new folks understood the generator bearings needed oil from time to time. These are often neglected and by the time a bearing is making enough noise to let you know it needs oil, it’s too late. Modern sealed ball bearings can be had for \$5 each. Don’t buy the stock bearings that the vendors sell (unless you just like oiling them).

Before pressing on new bearings, take the armature to a generator shop. You can test it for shorts with your ohmmeter but you’ll need a growler to check it for opens. The generator shop will also turn and polish the armature and undercut the mica segments all for around \$15.

If you have an armature that you want tested, I’ll do them for postage. Ask real nice and I’ll true it on the lathe and polish it for you. This may cost you a Coke one day!



This armature is ready to install with new bearings. Truing the commutator (if needed) and polishing will ensure the new brushes make full contact after initial seating in.

One of the most common problems is with the brush holder assembly. The insulators become brittle and often, the third brush will ground itself out as it has been over tightened somewhere along the line. The age old fix has been to cut a piece of insulator and replace just the bad portion. While this is still a valid fix, it is no more work to repair it permanently. Many of the vendors now sell the good insulators made from electrical grade fiberglass. This is the only type to consider buying! They are riveted in place and you don't cut them.

To replace the insulators, you will have to remove the positive brush and then drill out the three rivets that hold the two insulation portions on. Place the two segments on and using 1/8 X 1/8 pop rivets and one thin #6 washer per rivet, rivet them in place. You can also use 1/8 diameter rivets X 3/16 length rivets. I use the aluminum rivets with the aluminum mandrels to keep from hurting anything. This type rivet sets with not a lot of pressure.

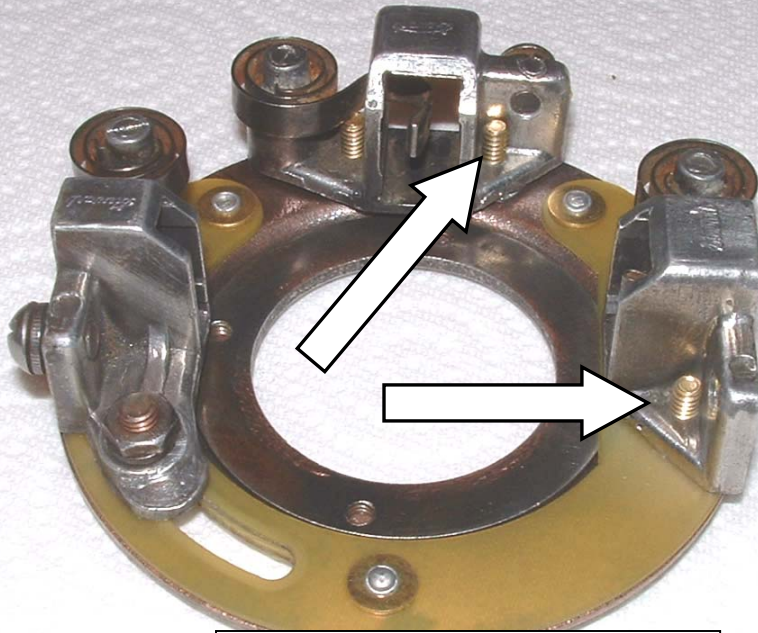
Inspect the springs that hold pressure on the ends of the brushes. If these are touching the sides of the holder then they aren't applying pressure to the ends of the brush. Bend the springs as necessary.

I like to install new brushes in generators (starters are a different story, different article). New brushes should be checked to ensure they make full contact with the armature. I wrap 600 paper around the armature and turn it back and forth to correctly contour the brushes. This ensures they seat correctly.

Pop rivets installed from rear side. The brush holders themselves are tapped for 6/32 screws, drill them with a # 36 drill bit. I use a # 10 washer under countersunk screws when installing if the original assemble didn't have a backing plate. The washer will self-center the screw. Ensure the screw head is low enough that it won't ground out in the end cap.



If you were careful when you drilled the brush holders, the screws will go in easy. There isn't a lot of room to screw up here so be careful.



6 washer to prevent rivet from ruining insulator.

Once you have the generator put back together and have set the brushes to neutral, you can test it (sort of) even without a test bench for generators. I use my battery charger connecting the positive lead to the output terminal and ground the negative lead to the generator housing. I set my charger to six volt and once you turn it on it should run like a motor drawing four to six amps.

Now on the car, adjust the 3rd brush to so the generator is putting out around 8-10 amps (assuming you have a six volt battery) with the engine running at a speed equal to 25-30 MPH. If your running 12 volt, reduce the output by half. The reason is the T generator will only dissipate about 100 watts of energy before it starts tossing solder. 12 volt at 10 amps = 120 watts, reduce a 12 volt T to 4-5 amps.

Now, you have about \$ 25 - \$ 40 in fixing up this unit. If you insist on running the standard Ford cutout, you'll get to put more into it eventually. If the cutout ever goes open, the generator will self-destruct. Put one of the electronic regulators on it or at least a diode to replace the cutout. Your battery will last longer as well using a regulator, as the generator won't be trying to boil the water out of it.

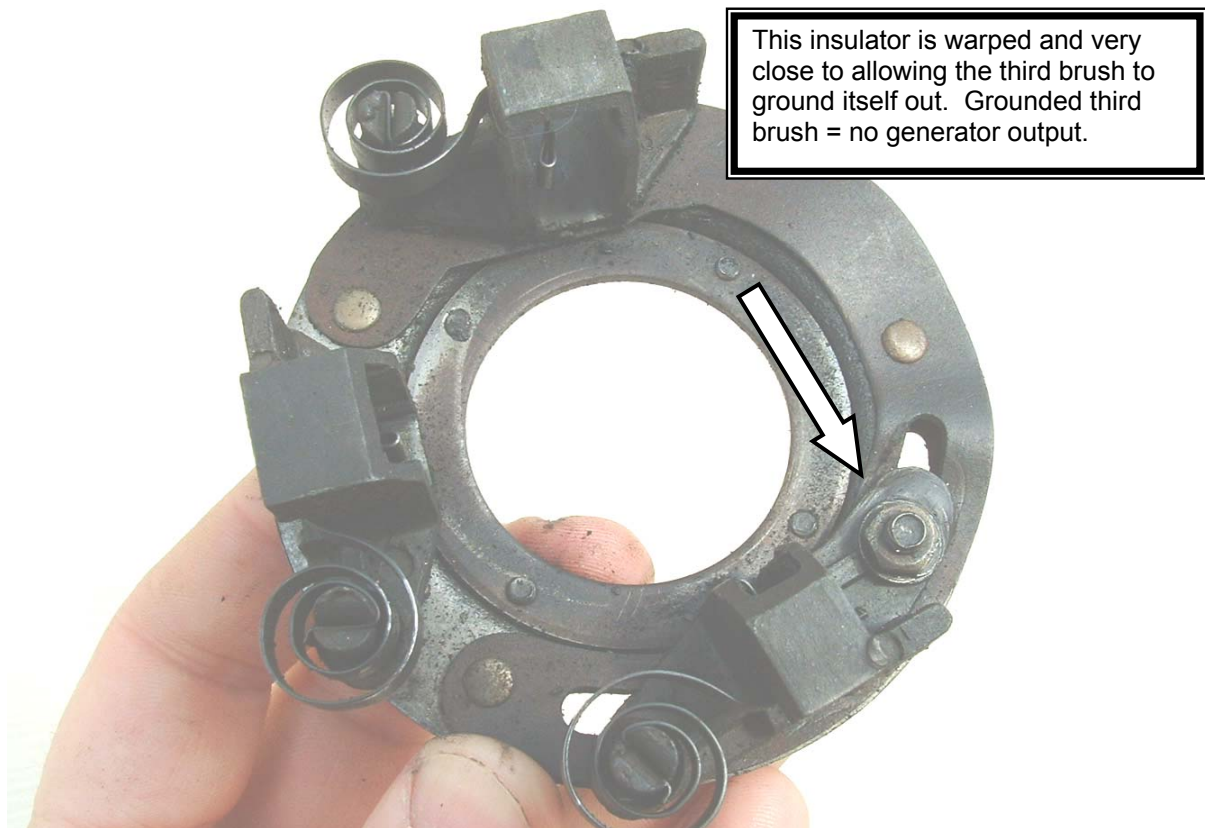
You should be able to fix a generator now that is plagued with the most common problems. Even if you still feel intimidated by them, ask a club member to help you with one. Look at it this way, your really just making small mechanical repairs along with a couple of minor electrical test. Remember, there is only one moving part. You will see there is nothing to it and your confidence level will go way up.

Gary

**Note from the
Editor:
Special thanks to
Gary Tillstrom
for this submission**

Repairing the Model T Generator Brush Holder

Many times, a Model T generator will quit working as the insulators in the brush holder assembly have decided that 80 some years of service is enough. At this point, you must either fix it yourself or send it off to be repaired. The accepted practice in the past was to take a new paper insulator and cut only the bad portion out and replace that portion. While this is still a valid repair, there is a permanent repair that requires basically the same effort and will cost you \$6 vice \$3.



Most vendors now carry the new style insulator that is made from electrical grade fiberglass. These are excellent quality, require no cutting or fitting to install as they fit right out of the box. These are not as susceptible to cracking from over tightening the third brush like the old brittle paper ones when making a generator adjustment.

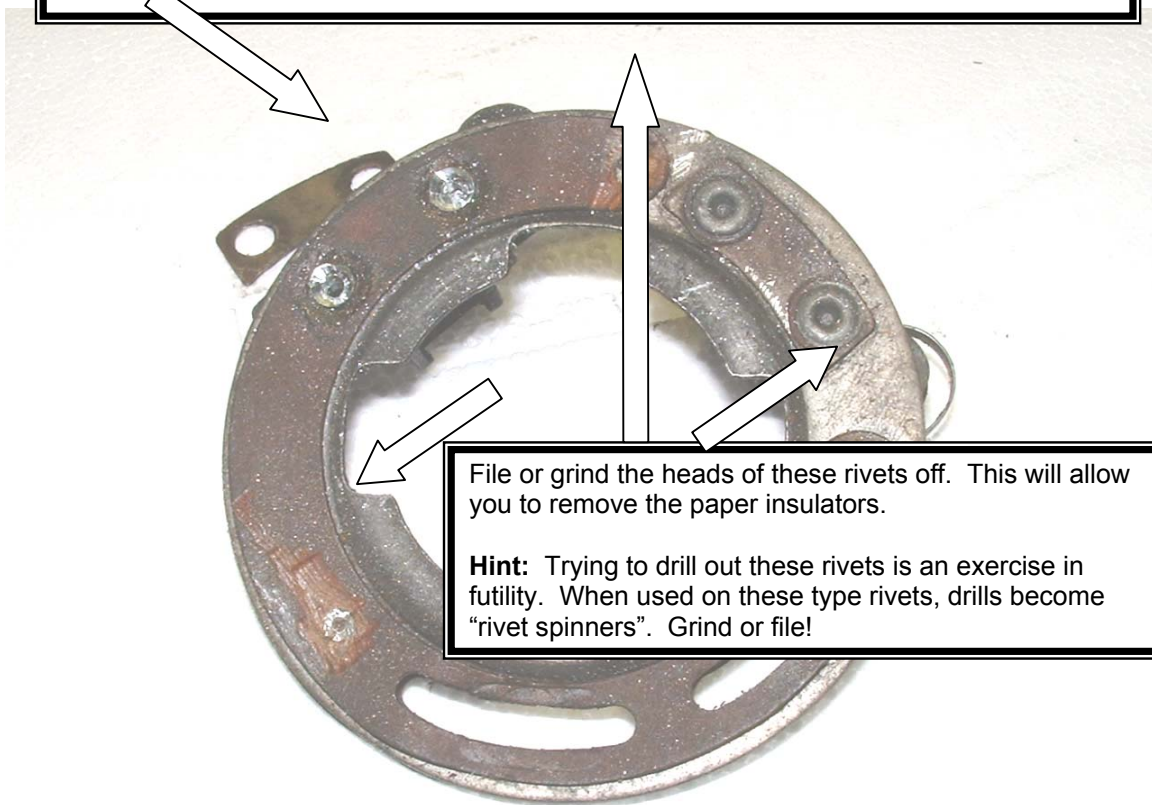
To replace these, you will need to remove the end cap from the generator. This is also a good time to inspect the rear bearing; inspect/replace brushes, and clean up the commutator as required. After removing the end cap, remove the four screws and washers securing the brush holder to the end cap.

Before going any further, remove the third brush and the attaching bolt, washer, and nut. With the third brush removed, take the retaining ring out (this is the ring that the four screws secure themselves into).

The remaining instructions are for the most part in easy to follow picture format with notes where necessary.

In the picture below, I drilled the two riveted portions of the insulated brush using a #36 drill bit. Be very careful to ensure the bit is going straight, a drill press works great. Once you have drilled these with the #36 bit, use a larger bit to drill the head off so the rectangular washer can be removed.

The small drill bit is the right size to accept a 6/32 tap. Drilling the heads off after drilling the tap holes also creates a counter sink, which is important. After the heads are drilled off, remove the brush holder. Tap both holes with a 6/32 tap and set it aside.



Once you have the insulated brush off, remove and discard the old paper insulators from both sides. Clean up the pieces that will be reused. I cleaned mine using electrical contact cleaner and wiped them all clean using a rag. If you are repairing a brush holder that is corroded, a quick blasting with glass beads or a visit to the wire brush might be in order.

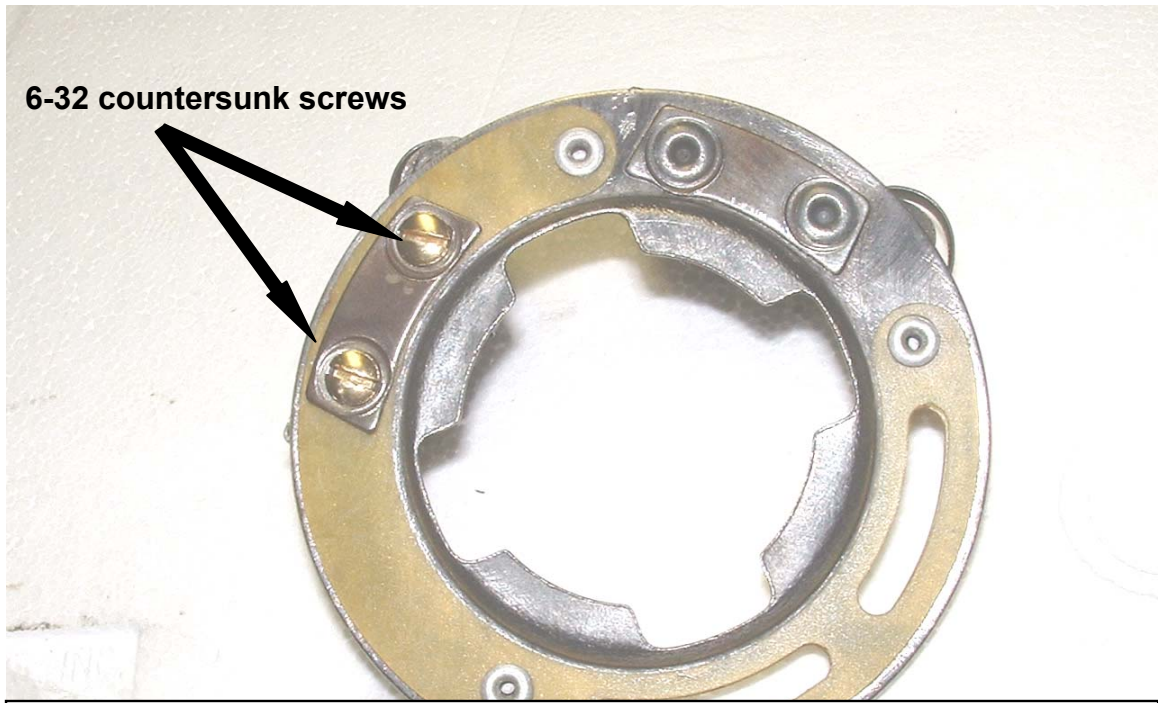


Back side.

Front side. They only fit one way!

Assemble the two insulators to the brush holder as shown below. I used 1/8 X 1/8 aluminum pop rivets and #6 washers. The pop rivets go in from the back, the washer goes over the end of the rivet on the front.





6-32 countersunk screws

Install insulated brush and the square retaining washer that was retained after removal. If your particular brush holder didn't have this square retainer, use two thin #10 flat washers. Secure using #6-32 countersunk screws.

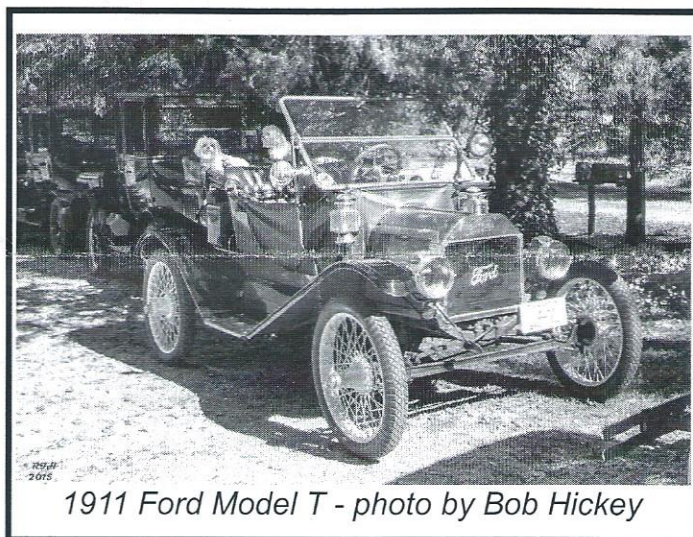


Install the third brush holder and you're in business. Reverse the steps that you did to remove the holder assembly and put the generator back together.

Note from the Editor:
Special thanks to
Gary Tillstrom
for this submission

MODEL T FORD CAR CLUB VISITS FALLS MILL

On Thursday, October 29th, several members of the Tennessee "T's" car club visited Falls Mill on their weekend tour through the valley. Our friend Bill Robinson coordinated the tour, and all the cars participating were pre-1927. Bill regularly drives one of his Model T Fords to Huntland. He and Tim Snitger of Huntsville have helped keep our 1923 Model T in running condition.



Check your museum membership card, and if it is time to renew, please join us at the Museum of Power and Industry, Inc., at Falls Mill for another year! Your membership fee and any donation you care to make are so important to us in continuing the work we have undertaken these last 31 years. Thank you for your contribution.

Check the contact/calendar page of the website fallsmill.com for special events.

INDIVIDUAL/FAMILY MEMBERSHIP \$25.00 per year _____

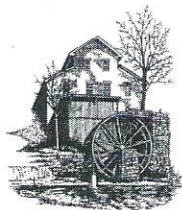
TAX DEDUCTBLE MUSEUM DONATION \$ _____

The Museum of Power and Industry, Inc.

Falls Mill

134 Falls Mill Rd.

Belvidere, TN 37306



CHATTANOOGA
TN 374 3 T
09 FEB 2014

NOTE:

A card received in the mail
by Bill and Suzi following our club's
tour stop at Falls Mill.



M 7/15
Bill & Susan Robinson
Model T Club
1190 Salty Bottom Rd.
Gurley, AL 35748

