

Service BULLETIN

Don't Generate Trouble

Generator trouble is indicated by a failure of the ammeter to register a charge. Occasionally, it is indicated by a magnetic or singing sound in the generator.

If this condition occurs, the reason may be in the cutout. Often times the trouble is due to a dirty or oily commutator. The usual practice if the ammeter fails to register a charge is to place the ends of a pair of pliers across the cutout terminals as shown in Figure 1, while the engine is running at a speed equivalent to 20 miles per hour. If the ammeter stops registering when the pliers are removed, the trouble lies in the cutout, and a new cutout should be installed. However, if the problem is caused by a dirty commutator, and it happens frequently, a simple solution would be to install an "usually off" switch such as a door bell button between both terminals of the cutout. This switch is located near the driver's seat, and eliminates the need to keep opening the hood. To clean the commutator, loosen the dust cover bolt "A" and take off the cover as shown in Figure 2. With engine running, hold a strip of fine grade 00 sandpaper against commutator "B" until commutator is clean and bright. Never use emery cloth, as this will short out the slots in the commutator.

Occasionally generators fail to charge because of dirt or carbon deposits from the brushes lodging in the slots between the commutator bars. This condition can be noted by visual inspection, and the foreign matter removed with a small stiff wire.

A generator which functions properly should run steadily, and draw approximately three to five amperes. When the speed of the generator is slackened by holding the coupling, a reading of 18 to 20 amperes will be obtained before the armature stops revolving.

If ammeter registers two amperes or less, check for broken or loose field connections. Make sure that all connections are soldered tight.

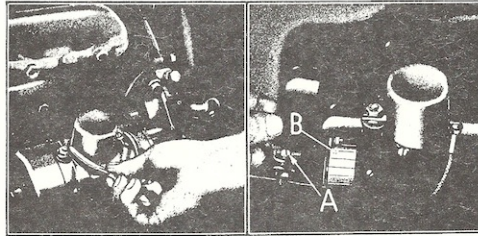


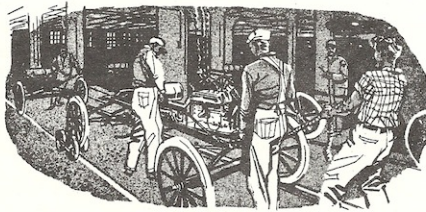
Fig. 1

Fig. 2

If the generator runs, but the ammeter hand flutters, it indicates armature trouble. The armature should be removed and checked for shorts and grounds using a test light.

If the generator runs and the ammeter registers over five amperes, it indicates either a ground in the fields, which can be checked with a test light, or a tight bearing. If a bearing is tight, it should be removed and either cleaned or replaced.

Brush and spring troubles can be noted by visual inspection. If brushes are worn, undersize, chipped, or springs are broken or weak, they should be replaced. When new brushes are installed, it is necessary to sand them to insure brushes seating squarely on the commutator. The brush ends should have a 75% or better bearing on the commutator. When brushes stick in the brush holders, the insides of the holders should be checked to see that they are smooth and have no burrs. An oversize brush should be dressed down until it fits the holder evenly.

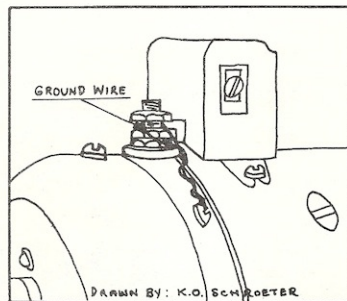


The Model T Ford Its Service And Repair

by Lester A. Klee, Technical Editor

Preventing Generator Damage

Every time the storage battery is disconnected or removed from your Model T, it is all important that the generator be grounded at the same time. If the generator is not grounded, it may be severely damaged. The sketch below shows a method that can be used to properly ground the generator. Usually a double strand of bailing wire or equivalent is used. The wire is fastened to the cut-out terminal and grounded on the brush assembly screw.



DRAWN BY: K.O. SCHROETER

Setting 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 and 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 toward 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 all 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.