



The majority of these tips have appeared in club newsletters over the years. Please note that you use them at your own risk as neither the Bristol Austin 7 Club nor the authors can be responsible for the results of trying to follow the instructions given.

The Dynamo - by John McKay

The quickest way to locate a fault causing a "no charge" situation is by a process of elimination. Firstly, disconnect the "F" and "D" leads from the dynamo and bridge the two dynamo terminals with a piece of wire. With a good quality voltmeter offering minimal impedance and engine revs equating to about 30 mph or so, the offload voltage on an efficient dynamo should be up to 30-40 volts between the terminals and earth. An alternative is to use a 12 volt bulb with its internal resistance that would simply indicate whether or not it is registering output.

Assuming that the dynamo is seen to be functioning, we obviously start looking for the cause elsewhere, in the Cut-out, fuses, loose or broken connections, or in the Switch Panel. With no indicated output, a glance at the commutator and brushes will offer the first clues of its state of health. If "appearing" to be fairly clean and operational looking, and to establish whether or not the dynamo has lost its residual magnetism; with the engine running with a few extra revs briefly connect a lead from the "live" battery terminal to the dynamo terminal to which the appropriate leads have been reconnected and switch on "Full Charge."

Any evidence of oil or grease on the commutator and brushes, which would act as an insulator, if a fair indication of a worn bearing and the incorrect lubricant being used in the distributor gearing department. It should be a high melting point type of grease, i.e. graphite grease.

With an otherwise dry environment and no evidence apparent for the lack of power - brushes badly worn and not seating, leads disconnected etc - removal of the dynamo to the bench is indicated.

Unless you have the skills and appropriate equipment, it is recommended you now consult the more experienced in this field. What follows is not necessarily a

blow by blow description of what to do, but an indication of what is involved.

Removal of the brushes and examining the bearing surfaces which should be of a shiny appearance over the entire surface, without any distortion of its shape. Disconnect the leads from the D (+ ve) terminal to the first brush, the lead from the field coils to the "Third Brush", remove the dynamo end plate having first removed the distributor drive gear.

The commutator should be checked for infinite insulation between the copper segments to the steel shaft. Whilst I use a high voltage pressure tester, I understand it is possible to use a torch battery connected in series with an ammeter, the two testing probes connected to the adjoining segments, one by one going round the commutator when all the readings should be the same, then finally from the segments to the shaft which should register no reading at all. If the commutator is at all worn, it will require to be skimmed to a clean straight surface in a lathe, after which the mica will have to be undercut.

A continuity and insulation test will also be required on the field coils and particular attention paid to the insulation quality of the leads leading from the coils.

Assuming all is well after any rectification, the dynamo can be reassembled preferably using new brushes if there is any doubt about the old ones, particularly if the commutator has been skimmed. The brushes can be bedded in if necessary by placing a piece of very fine or "worn" emery cloth round the commutator surface and the brush and rotate back and forth a few times.

Once complete, to "motor" the dynamo, bridge the two "F" and "D" terminals together and connect to a battery in accordance with the polarity of your car. i.e. If the car electrics have a "positive" earth system, connect the (+ ve) terminal of the battery to the casing of the dynamo and the (-ve) terminal to the bridged terminals. This will ensure that the dynamo will have the correct polarity when refitted to your car.

The armature should immediately rotate in the appropriate direction, completely spark free and comfortably overcome any attempt to partially stop the rotation. Run for two or three hours to help bed in the brushes. With a drain on your battery or around 8 amps, a battery charger will help.

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