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TO BE NOTED AND INITIALED BY	

PACKARD MOTOR CAR COMPANY

DETROIT MICHIGAN

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To Packard Distributers

Subject, Instructions for Third Brush Regulated Generator on E-Trucks

The important features of this design is a third brush which collects the exciting current for the field directly from the generator armature. An automatic switch for opening and closing the circuit between the generator and storage battery is contained in a water tight box mounted on top of the generator.

The generators are all carefully tested, adjusted and sealed before they leave the factory and because of the inherent regulating qualities there is very little chance of their getting out of adjustment. In nearly all cases of generator trouble it will be found that the trouble is not the fault of the generator setting at all, but may be located by a systematic check for standard of the following points:

1. Check the dash ammeter to see if it is registering correctly. This may be done by connecting a standard ammeter in the circuit, as shown in the diagram, and checking the two readings.

2. Check the battery to see if it is fully charged. Use both a hydrometer and voltmeter for this test as presence of excessive acid will show high gravity on hydrometer but will not indicate the condition of the battery. A voltmeter when connected across the terminals of the battery should read 6 to 6.5 volts. A fully charged battery is the best indication of the proper functioning of the generator.

3. Check all wiring connections (at junction, at fuse blocks, at battery, etc.), making sure that they are not corroded and are making good electrical contact.

4. Remove window cover and inspect generator brushes to see that they are seated firmly upon the commutator and also have free movement in the holders. If dirt and grease are allowed to collect on the brushes it will interfere with their free movement up and down and the brushes will not keep in contact with the revolving commutator. Use No. 00 sand paper to seat the brushes on the commutator, being very careful to blow out all carbon dust from the generator after the operation is completed.

5. Inspect the commutator to see that it is free from dirt and grease.

Do not attempt adjustment on any slight indication of trouble as the instrument is sealed and adjustments are not sanctioned by factory except thru authorized Bijur service stations.

Disconnect battery cables at the battery when any work is being performed on the generator.

Automatic Switch:

The automatic switch is nothing more than a reverse current relay which operates to complete the circuit between the generator and the battery when the generator builds up a voltage between 6.5 and 7 volts, and to open this circuit when the generator voltage falls below the above amount.

The voltmeter connections necessary to make an adjustment are shown in the diagram. Insert a small fibre handled socket wrench in the adjusting hole on the inward side of the automatic switch box, and turn the nut which controls the tension spring until closing takes place at the correct voltage. The point at which the circuit closes is indicated by a sudden drop in voltage. The voltmeter should read from 6.5 to 7 volts at the instant before the drop occurs.

In adjusting the automatic switch the speed of the generator need not be considered, because the switch is automatically controlled by the voltage of the generator.

The automatic switch may be removed from the generator for repairs in the following manner: Insert a screw driver through the brush window holes and disconnect the two switch leads from terminal post No. 1 and main brush A respectively (see drawing), then remove the three screws which hold the box to the generator frame, and lift the assembly off the generator.

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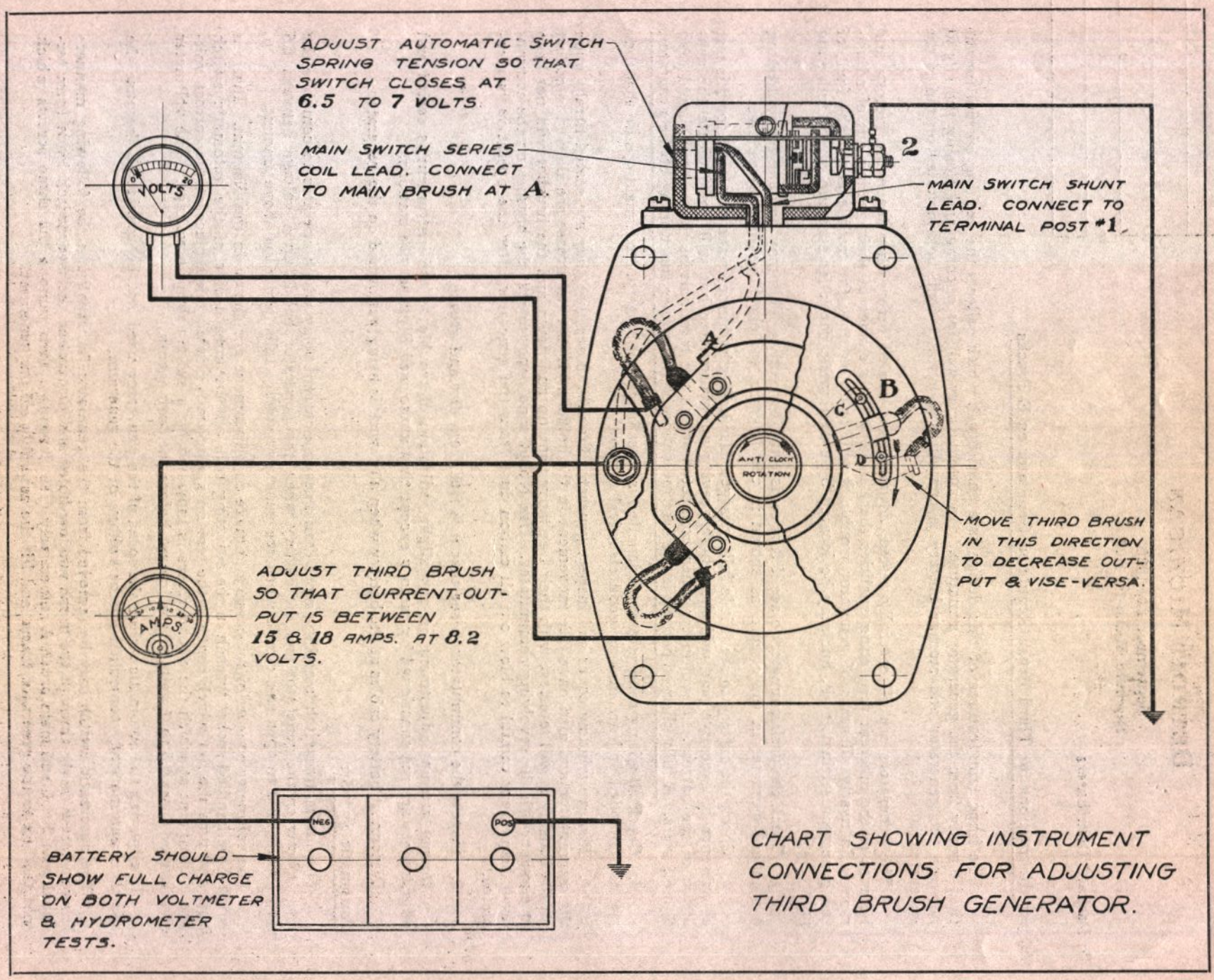

CHART SHOWING INSTRUMENT CONNECTIONS FOR ADJUSTING THIRD BRUSH GENERATOR.

Current Adjustment:

Make the connections for the third brush or current adjustment as shown in the drawing. When the settings are standard the current output of the generator (when cold) should be between 15 and 18 amperes at 8.2 volts.

If adjustment is necessary remove adjusting cover plate, insert screw driver thru slot in head casting and loosen the adjusting nuts C and D. The entire third brush assembly can now be moved in the direction required as shown in the diagram.

After adjusting the third brush care should be taken to tighten the nuts C and D so that the setting will remain permanent. If this is not done serious damage may result.

Care and Maintenance:

The generator's commutator end bearings should be lubricated every two weeks with a few drops of high grade lubricating oil. The driving end bearing is oiled automatically by the splashing of oil from the timing gear case.

Do not put any oil on the generator commutator.

Inspect the brushes once a month to see that they are properly seated on the commutator and that they are free from dirt and grease which will interfere with proper up and down motion in the holder. If dirty they may be cleaned by washing in gasoline.

Do not attempt to use the generator unless the storage battery is connected in the circuit. If it is ever found necessary to operate the motor with the battery disconnected the generator third brush should be removed to prevent the generator voltage from building up. Failure to do this may cause serious trouble by either burning out the lamp bulbs or damaging the generator.

Yours very truly,

PACKARD MOTOR CAR COMPANY.

H. N. Davock.

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