

Section N (Electrical Equipment)

Page 19

An unduly high reading means that there is excessive resistance in the starter circuit, in which event each part of the circuit should be checked in turn with particular attention to the solenoid switch connections and all earth connections including the engine bonding strip.

On completion of the test, restore the original ignition connections.

Starter cranking voltage test

This test should be made after any defects previously located have been corrected. It is a valuable test because it gives an indication of the power absorbed in the starter, and also determines whether sufficient voltage is available to operate the ignition system when the starter motor is in operation.

1. Disconnect the contact breaker lead from the ignition coil to prevent the engine starting.
2. Using a zero to 20 range voltmeter, connect the positive lead of the voltmeter to the starter main terminal and the negative lead to an earth point on the starter mounting bracket. (This applies to vehicles with negative earth. For vehicles with positive earth, make the voltmeter connections in reverse order.)
3. Close the starter switch to crank the engine for a few seconds, and note the voltmeter reading.

The starter motor should crank the engine at a good rate of speed, and the voltage reading should be not less than 9.5 volts. On completion of the test, restore the original ignition connections.

Measuring light running current (on bench)

Secure the starter motor in a vice, then connect the motor in series with a starter switch, a zero to 600 range ammeter, and a 12 volt battery in good condition and fully charged.

Use heavy duty starter cable in the circuit, and utilise a fixing lug on the starter motor as an earthing point. Operate the switch and note the reading on the ammeter.

The motor should run at a high speed, and the light running current should be 45 amperes.

While the starter motor is running at speed, examine the brushgear and commutator for undue sparking or excessive brush movement.

Removing the starter motor from the engine

1. Disconnect the earth terminal on the battery to avoid any danger of short circuits.
2. Remove the heavy cable from the starter motor.
3. Remove the mounting bolts and withdraw the starter motor from the engine.

Dismantling the starter motor (See Fig. 16)

1. Remove the cover band, hold back the brush springs and lift the brushes from their holders.
2. Remove the nuts from the terminal post which protrudes from the commutator-end bracket.
3. Unscrew the two through bolts from the commutator-end bracket and remove the commutator-end bracket from the yoke.
4. Remove the drive-end bracket with armature and drive from the starter motor yoke.
5. If it is necessary to remove the drive-end bracket from the armature it can be slid off after the drive has been dismantled.

Bench inspection

After the starter motor has been dismantled, the individual items must be examined in the following manner.