SERVICING

Testing in position

1. If the starting motor does not operate or fails to crank the engine when the starting button is used, switch on the lamps (or connect a moving coil 0 to 20 voltmeter between the battery terminals) and again operate the starter.

   The lamps dim (or the voltmeter reading falls appreciably) but the motor does not crank the engine.

2. This may be caused by the starter drive pinion being jammed in mesh with the engine flywheel. The pinion can usually be freed by removing the cap and applying a spanner to the squared extension of the shaft at the commutator end. It is advisable to remove the starter motor from the engine and inspect the starter drive.

3. Sluggish action of the starter motor may be due to a discharged battery. Check by disconnecting the existing cables and reconnecting the motor to a battery known to be fully charged.

   If the starter motor now gives normal cranking of the engine the vehicle battery must be examined.

   If the starter motor still does not operate satisfactorily, it must be removed from the engine and the starting motor and starter drive examined.

The lamps do not dim (or the voltmeter reading remains unaffected) and the motor does not crank the engine

1. Check by means of a voltmeter or battery-voltage test lamp that the circuit up to the supply terminal on the motor is in order.

   If no voltage is indicated (or the test lamp does not light), check the circuit from battery to motor via the starter switch. Ensure that all connections are clean and tight. If the switch is found to be faulty, a replacement must be fitted. A reading of battery voltage (or the test lamp lighting with full brilliance) at the supply terminal indicates that the starting motor has an internal fault and must be removed from the engine for examination.

2. If the motor operates but does not crank the engine, the starter drive is in need of cleaning or may have developed some other fault. In either event the motor must be removed from the engine.

Starter cranking circuit test

The most convenient method of testing the circuit is by taking voltage drop readings, using a low range voltmeter. This procedure will locate any excessive resistance due to poor connections or bad cables, which would prevent the delivery of the normal amount of current to the starter motor.

For the purpose of the test, it will be necessary to disconnect the contact breaker lead from the ignition coil to prevent the engine starting. Before carrying out the test, ensure that the battery is in good condition and fully charged.

Voltage drop readings (Negative earthed vehicles)

1. Using a low range voltmeter, connect the negative lead of the voltmeter to the starter terminal, and the positive lead to the positive terminal of the battery. Operate the starter switch and note the voltmeter reading.

2. Connect the positive lead of the voltmeter to the starter commutator end bracket, and the negative lead to the negative terminal of the battery. Operate the starter switch and again note the voltmeter reading.

The sum of these two readings must not exceed ·5 volt. The procedure is the same for vehicles with positive earth, except that the voltmeter connections must be made in reverse order.