

same compartment. Access to the capacitors is gained by removing the contact breaker cover and detaching them from the supporting bracket.

The best method of approach to a faulty ignition system, is that of first checking the low tension circuit for continuity as shown in Subsection 79, and then following the procedure laid out in Subsection 80 to locate the fault(s).

Failure to locate a fault in the low tension circuit indicates that the high tension circuit or sparking plugs are faulty, and the procedure detailed in Subsection 84 must be followed. Before commencing any of the following tests, however, the contact breaker and sparking plugs must be cleaned and adjusted to eliminate this possible source of fault.

#### 79. Checking the Low Tension Circuit for Continuity

To check whether there is a fault in the low tension circuit and to locate its position, the following tests should be carried out:

Remove the white lead which connects the "SW" terminals of the left and right ignition coils. Then, with the wiring harness white lead connected to the SW terminal of the left ignition coil only, turn the ignition switch to the "IGN" position. Slowly crank the engine and at the same time observe the ammeter needle, which should fluctuate between zero and a slight discharge, as the contacts open and close respectively.

Disconnect the wiring harness white lead from the left ignition coil and connect it to the SW terminal of the right ignition coil and then repeat the test. If the ammeter needle does not fluctuate in the described way then a fault in the low tension circuit is indicated.

First, examine the contact breaker contacts for pitting, piling or presence of oxidation, oil or dirt etc. Clean and ensure that the gap is set correctly to .014 in.–.016 in. (.35–.40 m.m.) as described in Subsection 23.

#### 80. Fault Finding in the Low Tension Circuit

To trace a fault in the low tension wiring, turn the ignition switch to "IGN" position and then crank the engine until both sets of contacts are opened, or alternatively, place a piece of insulating material between both sets of contacts whilst the following test is carried out.

Disconnect the Zener Diode. To do this remove the white lead from the Diode centre terminal.

For this test, it is assumed that the wiring is fully connected as shown in the appropriate wiring diagram. With the aid of a D.C. voltmeter and 2 test-prods (Voltmeter 0–15 volts) make a point to check along the low tension circuit starting at the battery and working right through to the ignition coils, stage by stage, in the following manner, referring to the wiring diagram.

(1) First, establish that the battery is earthed correctly by connecting the volt meter across the battery negative terminal and the machine frame earth. No voltage reading indicates that the red earthing lead is faulty (or the fuse has blown, in —ve lead). Also, a low reading would indicate a poor battery earth connection.

(2) Connect the voltmeter between the left ignition coil SW terminal and earth and then the right ignition coil SW terminal and earth. No voltage reading indicates a breakdown between the battery and the coil SW terminal, or that the switch connections or ammeter connections are faulty.

(3) Connect the voltmeter between both of the ammeter terminals in turn and earth. No reading on the "feed" side indicates that either the ammeter is faulty or there is a bad connection along the brown and blue lead from the battery, and a reading on the "battery" side only indicates a faulty ammeter.

(4) Connect the voltmeter between ignition switch input terminal and earth. No reading indicates that the brown and white lead has faulty connections. Check for voltage at the brown/white lead connections at rectifier and ammeter.

(5) Connect the voltmeter across ignition switch output terminal and earth. No reading indicates that the ignition switch is faulty and should be replaced. Battery voltage reading at this point but not at the ignition coil SW terminals indicates that the white lead has become "open circuit" or become disconnected.

(6) Disconnect the black/white, and black/yellow leads from the C.B. terminals of each ignition coil. Connect the voltmeter across the CB terminal of the left coil and earth and then the CB terminal of the right coil and earth. No reading on the voltmeter in either case indicates that the coilprimary winding is faulty and a replacement ignition coil should be fitted.

(7) With both sets of contacts open reconnect the ignition coil leads and then connect the voltmeter across both sets of contacts in turn. No reading in either case indicates that there is a faulty connection or the internal insulation has broken down in one of the capacitors.

If a capacitor is suspected then a substitution should be made and a re-test carried out.

(8) Finally, reconnect the Zener Diode white lead and then connect the volt meter between the Zener Diode centre terminal and earth (with ignition "ON"). The volt meter should read battery volts. If it does not the Zener Diode is faulty and a substitution should be made. Refer to Subsection 101 for the correct procedure for testing a Zener Diode on the machine. Ignition coil check procedure is given in Subsection 81.