

Figure 7
Test on motor only
to frame or earth

BRUSHES
LIFTED OFF
COMMUTATOR

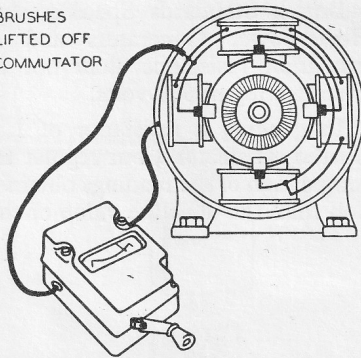


Figure 8
Test on field windings
and brush gear
(armature excluded)

BRUSHES
LIFTED OFF
COMMUTATOR.

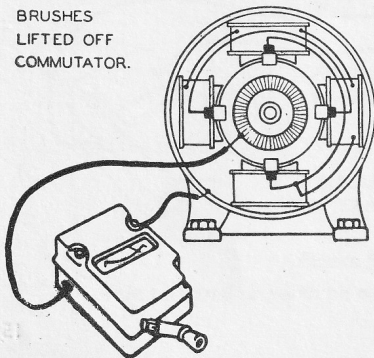


Figure 9
Test on armature only

Making routine tests on motors and generators

(a) D.C. motors and generators

Disconnect the supply of electricity from the motor circuit by opening the main switch and withdrawing the main fuses.

Join together *both* terminals on the motor side of the double pole main switch (Figure 6) and connect these to one terminal of the Megger Insulation Tester.

Connect the other terminal of the Megger Tester to earth, using the frame of the motor or switch.*

If the insulation resistance between the terminals and the frames is found to be unsatisfactory, it must be ascertained whether the defect is in the starter, in the motor, or in the cables connecting the starter to the motor.

To do this, disconnect the cables at the motor, and repeat the test. If after this disconnection the defect is no longer apparent, then it is evident that the fault does not lie in the starter and cables but in the motor.

Repeat the test on the motor only.

1. With the armature and field windings all connected together (Figure 7);
2. With the brushes lifted from contact with the commutator (Figure 8);
3. On the armature only, between the commutator and frame, the brushes being lifted (Figure 9).

From these tests it can be deduced whether the defect is in the field coils and brush gear, in the armature or in both.

If it is not in the armature, separate out sections of the field windings and components and test individually until the defect is located.

*The metal frames of all the electrical apparatus in the circuit should be permanently connected together and earthed to a good earth. This is essential to ensure that the protective fuses will operate in the event of an earth occurring on the circuit. The efficacy of the earth-continuity conductor may be tested with a Megger Insulation and Continuity Tester (see page 31).