

When to make tests

It is a good plan, therefore, to make the test of a machine as soon after it has been shut down as possible, when the insulation resistance is likely to be lowest. If, after the motor has just been shut down, the insulation resistance is found to be satisfactory, it may be assumed that it will be better at any other time, provided that the machine does not stand idle for long in a humid atmosphere.

If machines are regularly and consistently tested, if these various relevant points are noted in the diary or log, and if these tests are taken whether the machine is behaving well or not, then the work of diagnosing any trouble when it does arise is much simplified. Further, the likelihood of any trouble developing to such an extent that breakdown occurs is remote.

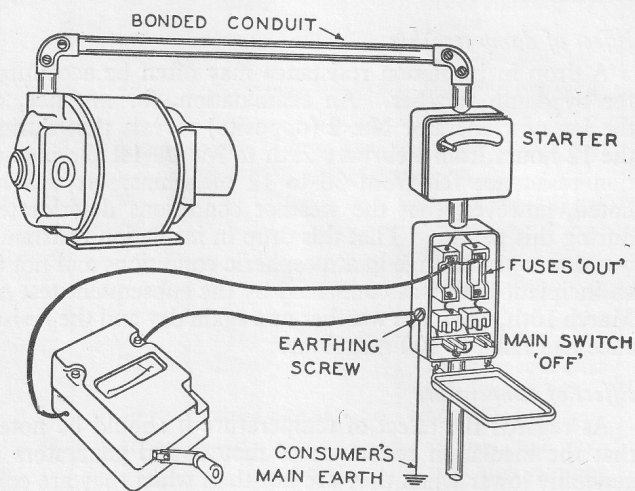


Figure 6

Test to frame or earth on motor and switchgear

Insulation values

British Standards Specification No. 2613 (which supersedes the former Standard Specification Nos. 168 and 169) states that where requested "Test Certificates shall record the insulation resistance and the temperature at which it was measured."

When a test is made on a new machine, this figure should be obtained at the end of a run at full load when the machine is hot and the insulation resistance is likely to be at the lowest value.

It should be noted that the insulation resistance of a machine which is in good order and has been in use for a substantial period should be higher than the original value.

British Standards Specification No. 170 for Fractional Horse-power Generators and Motors states that the insulation resistance shall not be less than 1 megohm when testing at 500 volts.

In general, a resistance of 1 megohm would be considered satisfactory, but regular tests should be made, as a comparison of the readings obtained will give more information than the absolute value of the insulation resistance.