

INTRODUCTION

Portable electrical equipment is used everywhere in the factory. It is essential that this equipment be tested at regular intervals, because faulty electrical equipment is extremely dangerous.

To protect your self against electric shock caused by faulty electrical equipment, one of Sasol's safety rules stipulates that all portable electrical equipment must be tested for the correct earth connections, before it is issued for use.

Some portable electrical equipment is provided with double insulation and has a higher safety standard. The earth connection of this type of equipment cannot be tested, and is identified by the following sign.

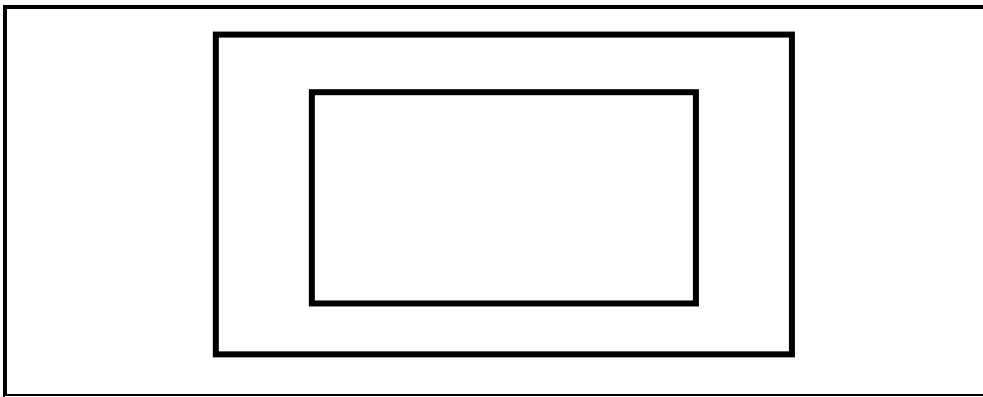


FIG. 1

The sign is found on the data plate, which is attached to the equipment. In cases where the data plate is missing or the sign is not visible, the equipment must still be tested with a multimeter. If it is found to be defective it must be sent to the electrical department for repairs or to be certified as being double insulated.

Remember that the multimeter must be tested before it is used to test any portable electrical equipment.

THE TESTING OF EARTH CONNECTIONS ON ELECTRIC EQUIPMENT

The test for earth connections on all the above mentioned equipment is exactly the same.

STEP 1

Set the multimeter to the buzzer function.

STEP 2

Press the point of the test cords against the earth pin (the longest pin) of the plug.

STEP 3

Press the point of the other test cord in turn on all the metal parts of the electrical equipment (See Fig. 2). The buzzer will ring if the earth connection is unbroken.

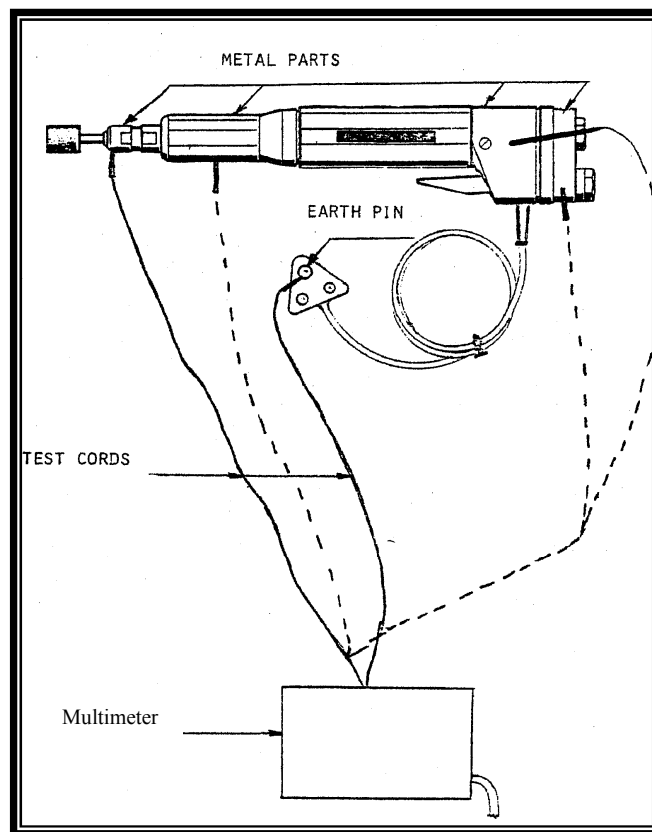


FIG. 2

THE TESTING FOR EARTH CONNECTIONS ON AN EXTENSION CORD.

Two types of extension cord spools are generally used, namely:

- a) The metal spool.
- b) The plastic spool.

In the case of the plastic spool, the spool is not tested, and only steps 1, 2 and 3 are carried out.

STEP 1

Set the multimeter to the buzzer function.

STEP 2

Press the one test cord against the earth pin of the plug.

STEP 3

Insert the other test cord in the earth holes, which are the largest holes, on each of the sockets mounted on the side of the spool. The buzzer will sound if the earth connections are unbroken.

STEP 4

Press the test cord (which was used in step 3) against the metal spool. The buzzer will sound again.

NB: If the metal spool has a coat of paint, a small spot of paint must be scraped off so that the test cord can make proper contact with the metal.

INSPECTION OF PORTABLE ELECTRIC EQUIPMENT

The following needs to be inspected to determine if the equipment is safe for use. This inspection should be done every time the equipment is used. Officially these equipment need to be inspected every six months.

- a) Is the condition of the connections of the plug in a good order?
- b) Is the plug broken?
- c) Is the electric cord free from any joints?
- d) Is the insulation of the electric cord cracked or broken?
- e) Is the body of the equipment damaged in any way?
- f) Is the switch of the equipment in good order?
- g) Is the polarity of the plug correct?
- h) Is there earth continuity to all metal parts of the electrical equipment?
- i) Has the equipment been registered?

Note: If there is any defect on the electrical portable equipment, do not try to repair it your self. Report the defect to the electrical department and have it repaired as soon as possible.

PRACTICE SECTION

Practice the testing and inspection procedures on all the equipment discussed in this module until you carry it out 100% correctly.

If you are certain that you can do all the tests described in this module correctly, you can request your instructor to perform an assessment on you while you perform an inspection on the above mentioned electrical equipment.