

## OPERATING INSTRUCTIONS

ensure that when the leads are joined together the meter actually indicates zero ohms, irrespective of the condition of the battery (within the limits of adjustment). The method of adjustment is described later.

Owing to the nature of the scale, it is not easy to define the accuracy, but it should be within 3% of the reading about centre scale, increasing up to about 10% of the indication around deflections corresponding to 10% and 90% of full scale deflection.

Resistance tests should never be carried out on components which are already carrying current.

On three ranges which utilise the internal source of voltage, it should be remembered that a positive potential appears at the negative terminal of the instrument when set for resistance tests. This fact may be important because the resistance of some components varies according to the direction of the current through them, and readings, therefore, depend upon the direction in which the test voltage is applied, quite apart from its magnitude. Such cases include electrolytic capacitors and rectifiers.

When measuring the leakage resistance of an electrolytic capacitor, the negative lead from the meter should be connected to the positive terminal of the capacitor, and the ohms  $\times 100$  range employed.

Before making resistance tests the pointer should be adjusted to zero in the following sequence:

1. Set left-hand switch at 'RESISTANCE'.

2. Join leads together.

3. On the  $\Omega$  range, adjust to zero by means of the knob marked 'ZERO  $\Omega$ '.

4. On the ' $\Omega \div 100$ ' range, adjust to zero by means of the knob marked 'ZERO  $\Omega \div 100$ '.

5. On the ' $\Omega \times 100$ ' range, adjust to zero by means of the knob marked 'ZERO  $\Omega \times 100$ '.

To test a resistance, set the right-hand switch at the range required, the leads being connected across the unknown component.

Resistance is read directly on the ' $\Omega$ ' range, but indications should be divided or multiplied by 100 on the other two ranges.

If on joining the leads together it is impossible to obtain zero ohms setting, or if furthermore the pointer position will not remain constant, but falls steadily, the internal battery or cell concerned should be replaced. It is important that a discharged unit should not be left in the instrument, since the electrolyte might seep through and cause damage to the meter. If it is impossible to obtain readings on the  $\Omega \div 100$  range, the 1A fuse located in the battery box should be checked.

**NOTE:** It can so happen that a 15-volt battery may age in such a manner that although it indicates a potential of 15 volts, its internal resistance has increased so much that some loss of accuracy can occur on the high resistance