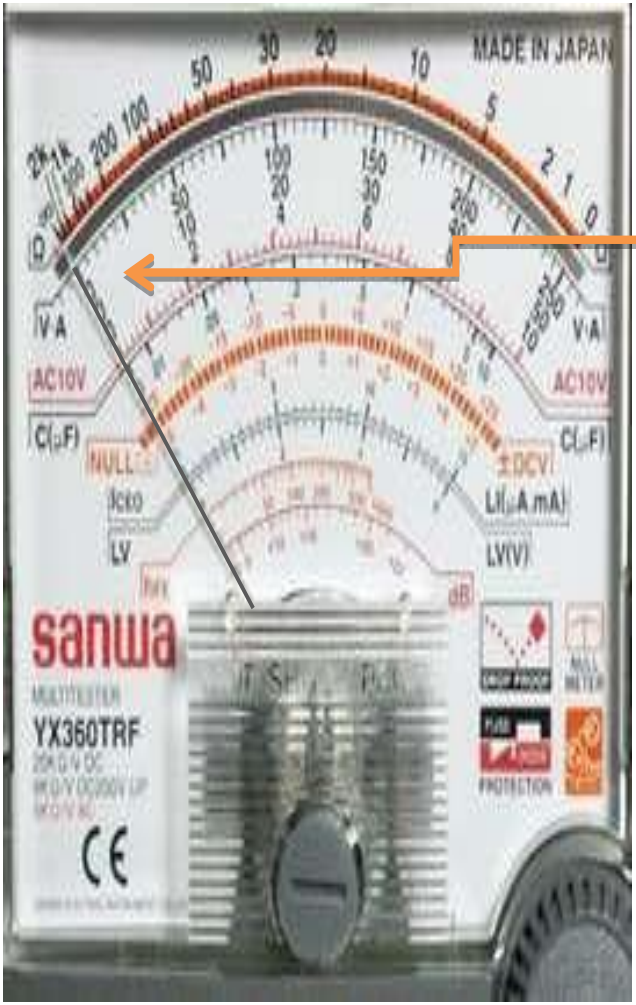
THE MULTITESTER

INTRODUCTION

The **Multitester** or **multimeter** is sometimes called the VOM (voltmeter, ohmmeter, milliammeter). It is the best instrument that can measure voltage, resistance and current. It is generally made of two types: the analog and the digital.

A. PARTS OF A MULTI TESTER

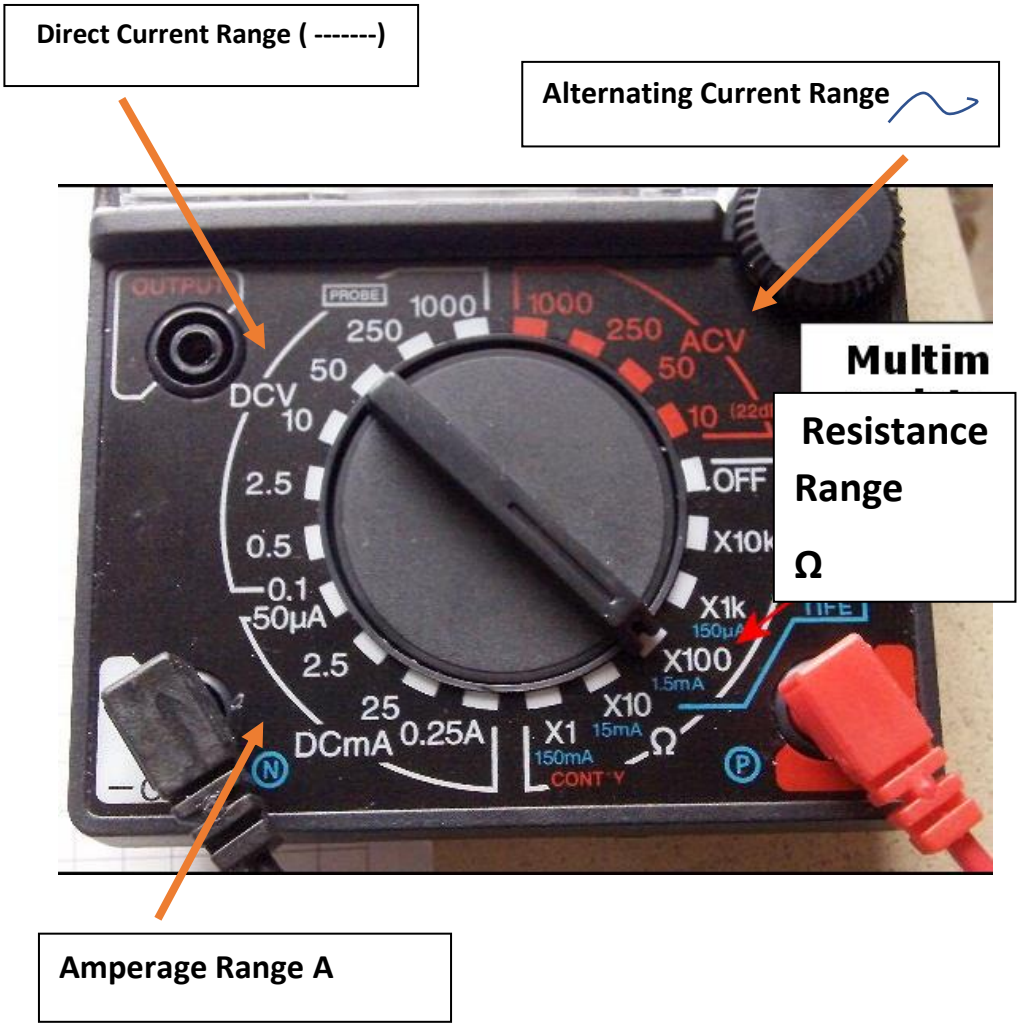


POINTER. The needle-shaped rod that moves over the scale of a meter.

Pointer It is mechanically connected to the moving coil. it indicates the measured values on the multimeter scale.

RANGE SELECTOR KNOB (Selector switch) makes it possible to select different functions and range of the meter.

Adjustment screw makes it possible to adjust the pointer to the zero position of the scale.



The **range selector knob** must be set according to what to be measured, accuracy of selecting range is very important.

Important Things to Remember in Setting Range

Resistance

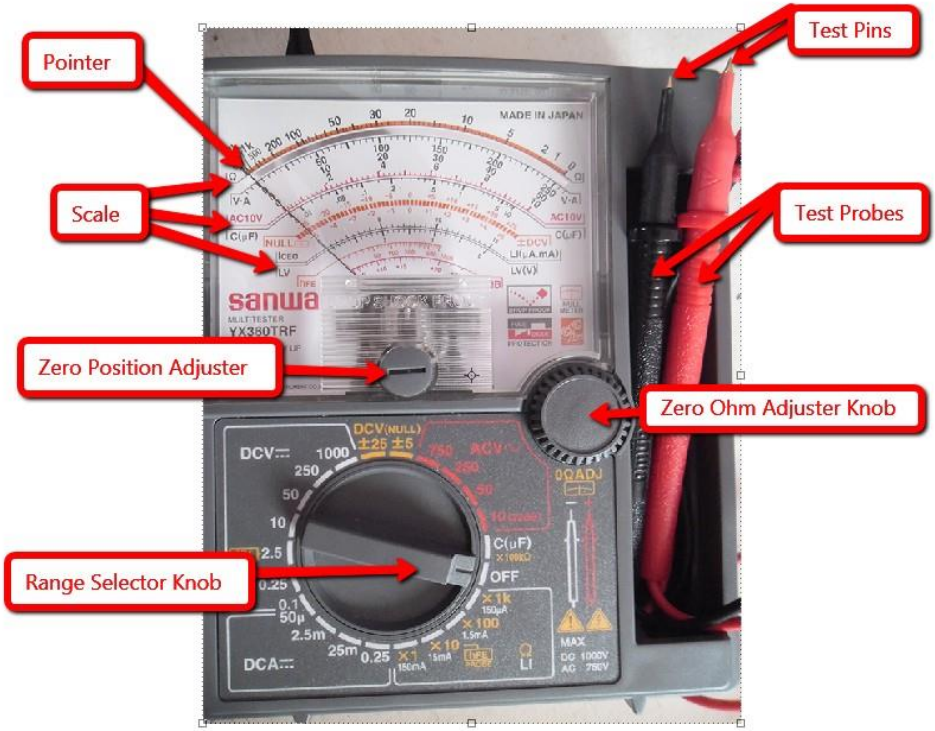
1. Make sure that the device to be measured is not energized or connected to voltage source.

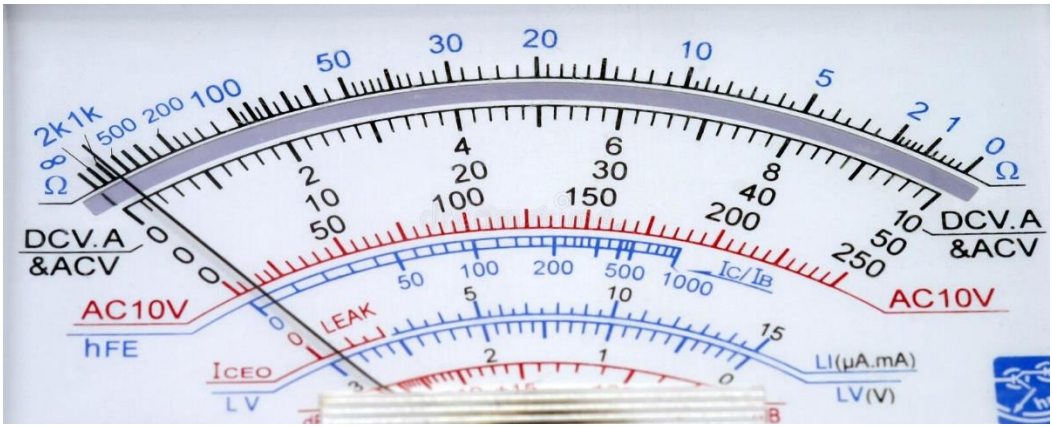
Voltage

1. Identify the device if it is AC or DC
2. Make sure that the range is set in higher range of multimeter than the voltage the device to be measured.

Current

1. Make sure that the range selector knob is correct.





Scale

To read the analog multimeter it is very important to know the proper reading in scale, aside from the correct setting of range selector knob, it is important to ensure the correctness of reading in scale since multimeter consist of many graduations for the 4 different range.

1. Resistance
2. Voltage (Direct Current)
3. Voltage (Alternating Current)
4. Amperage/Current

Ω - represents resistance.

DCV – represents the Direct Current Voltage

ACV – represents the Alternating Current Voltage

mA - stands for milliampere.

2 types of Multimeter

Digital Multimeter

Analog Multimeter

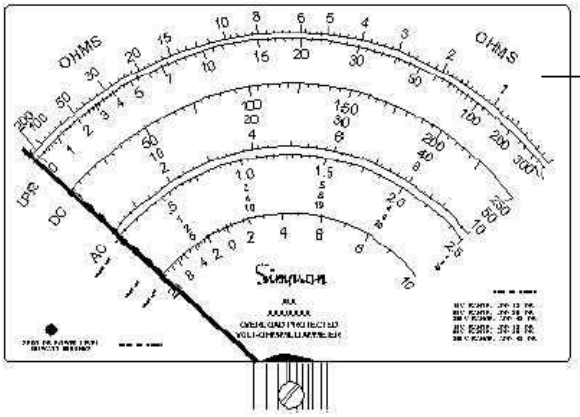
A. Proper care and maintenance of the multi tester

1. Read manual of instructions on how to operate the multi-tester.
2. In reading the amount of voltage, always start with the highest range to avoid reading voltage higher than the tester setting.
3. Be sure that the tester is set to the correct range setting: resistance range when measuring the ohm, voltage range when measuring voltage and ammeter range when measuring the value of electric current.
4. Always check the condition of its battery. Worn out batteries will damage the internal setting of the tester.
5. When the tester is not in used or will be stored, set the selector switch to 1000V or to OFF position.
6. Never drop the tester.

B. How to read the meter scale of the multi tester

To read the resistance range of the multi-tester, the given table below will be used. The unit of measurement to be used to determine its resistance is **ohm**.

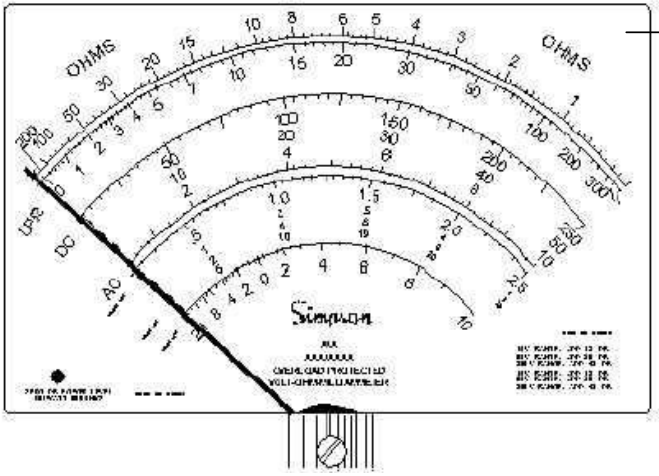
Range	**0-2**	**2-10**	**10-20**	**20-50**	**50-100**	**100-200**
Range x1	0.2	0.5	1	2	5	20
Range x10	2	5	10	20	50	200
Range x1k	20	50	100	200	500	2K
Range x 10k	200	500	1K	2K	5K	20K



Pointer deflection

Range setting is X1

Reading is 2.5ohms



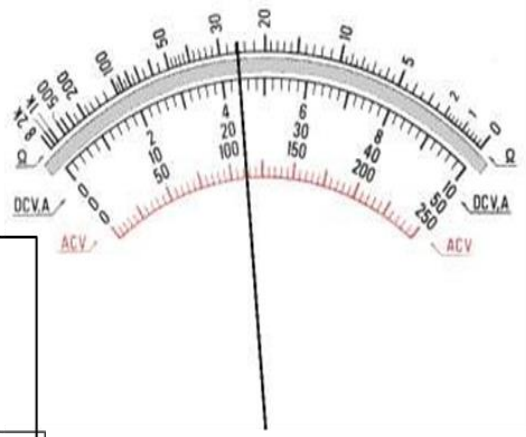
Pointer deflection

Range setting is X10

Reading is 25 ohms

Voltage scale

Range	Value/div
Range 10V	0.2V
Range 50V	1V



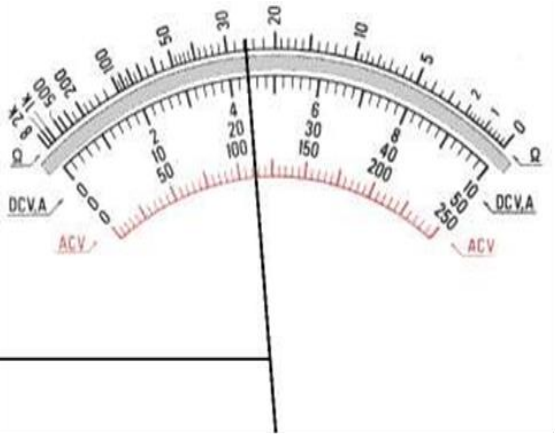
Range setting is 10 V
(used 0-10 scale)
Reading is 4.4V

Range	Value/div
Range 10V	0.2V
Range 50V	1V
Range 250V	5V
Range 100V	20V

Voltage scale

Range setting is 50V (used 0-10

Reading is 24V

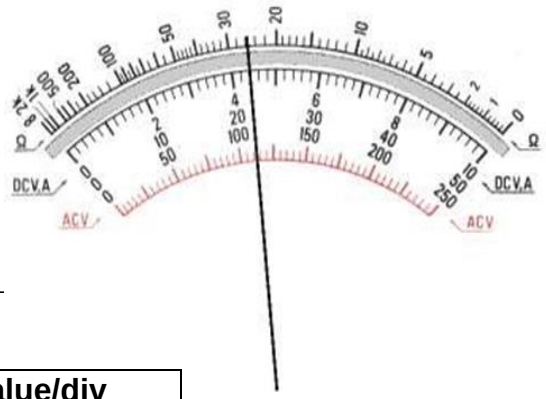


Range	Value/div
Range 10V	0.2V
Range 50V	1V
Range 250V	5V
Range 100V	20V

Voltage Scale

Range setting is 250V (used 0-10 scale)

Reading is 110V



Range	Value/div
Range 10V	0.2V
Range 50V	1V
Range 250V	5V
Range 1000V	20V