

JOB ROLE – FIELD TECHNICIAN - OTHER HOME APPLIANCE

Sector – Electronics
(Qualification Pack Code: ELE/Q3104)



PSS Central Institute of Vocational Education
Shyamla Hills, Bhopal – 462013 , Madhya Pradesh, India

www.psscive.ac.in

UNIT 3: TOOLS AND EQUIPMENT

Content

Title	Slide No.
Unit Objectives	4
Introduction	5
Need of Tools and Equipment	6
Multimeter	9
Phase Tester	10
Screwdriver	11
Clamp Meter	12
Plier and Wire Stripper	13
Drill Bits	14

Title	Slide No.
Soldering	15
Megger	16
TDS Meter	18
Wire Stripper	19
Wrench	20
Hammer	21
Summary	22

Unit Objectives

The student will be able to:

- Describe the need of tools and equipment,
- Demonstrate the use of basic hand tools,
- Demonstrate the use of equipment.

Introduction

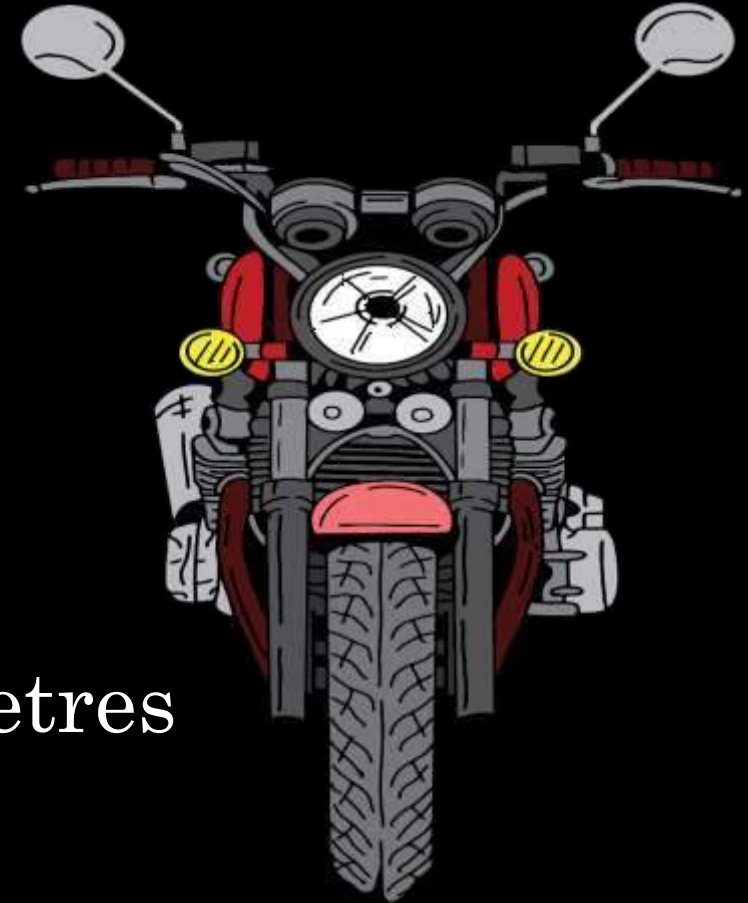
An ammeter measures current, a voltmeter measures potential difference (voltage) between two points and ohmmeter measures resistance. A multimeter combines these functions and possibly some additional ones as well into a single equipment. Various tools and equipment, such as screwdriver, phase tester, stripper and pliers are used to carry out electrical control panel installation.



Multimeter

Need of Tools and Equipment

Have you observed the **meters** on the **vehicle**?



Those meters are:

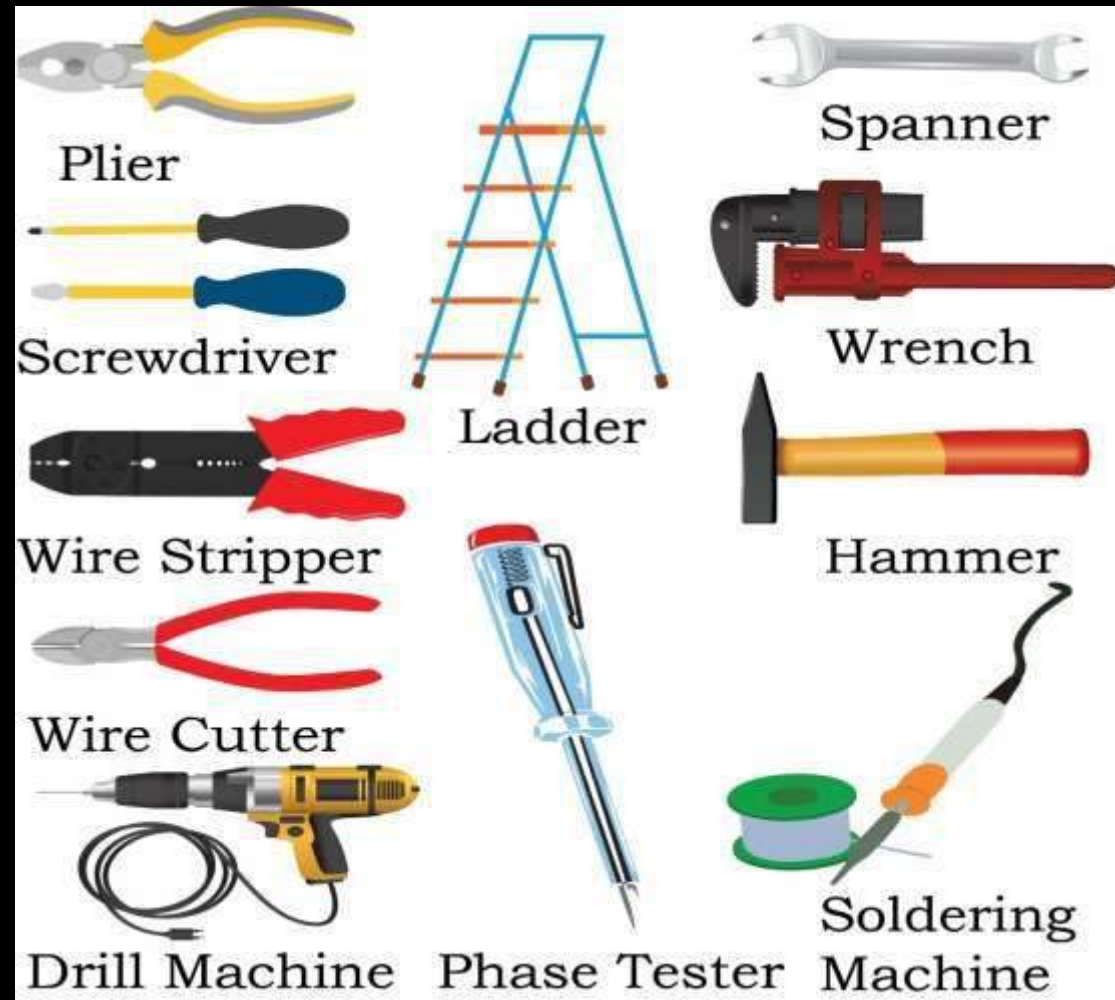
Odometer- Distance travelled in kilometres

Fuel meter- Fuel level indicator

Speedometer- Speed of the vehicle

Tools and Equipment

- Likewise, in our day to day life, one deals with many tools and equipment.
- They are the **driver, tester, measuring equipment and many more.**
- They are **used to install, maintain, repair the circuit and system.**





Multimeter



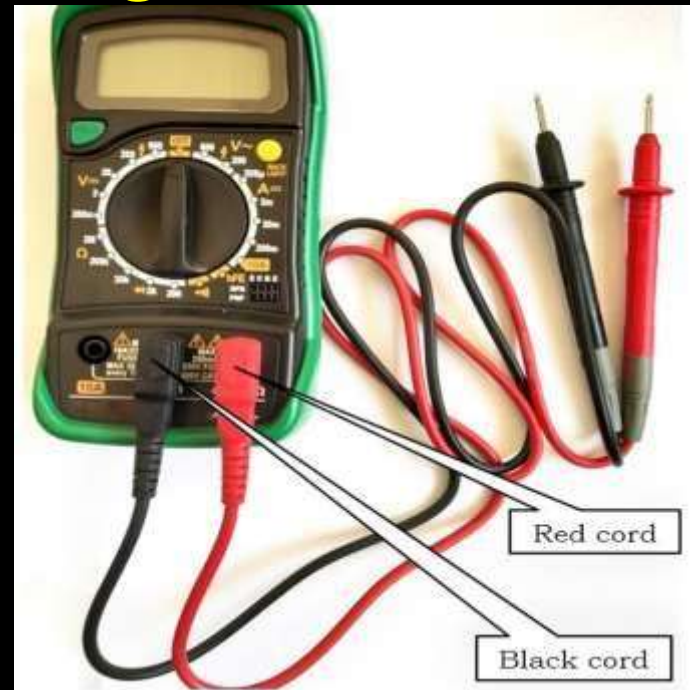
Clampmeter



Functions of a Multimeter

Multimeter

- It is a **test instrument**. It has a knob to switch in different functionalities.
- It can measure **AC or DC voltage, current, resistance** and also used for **diode testing**.

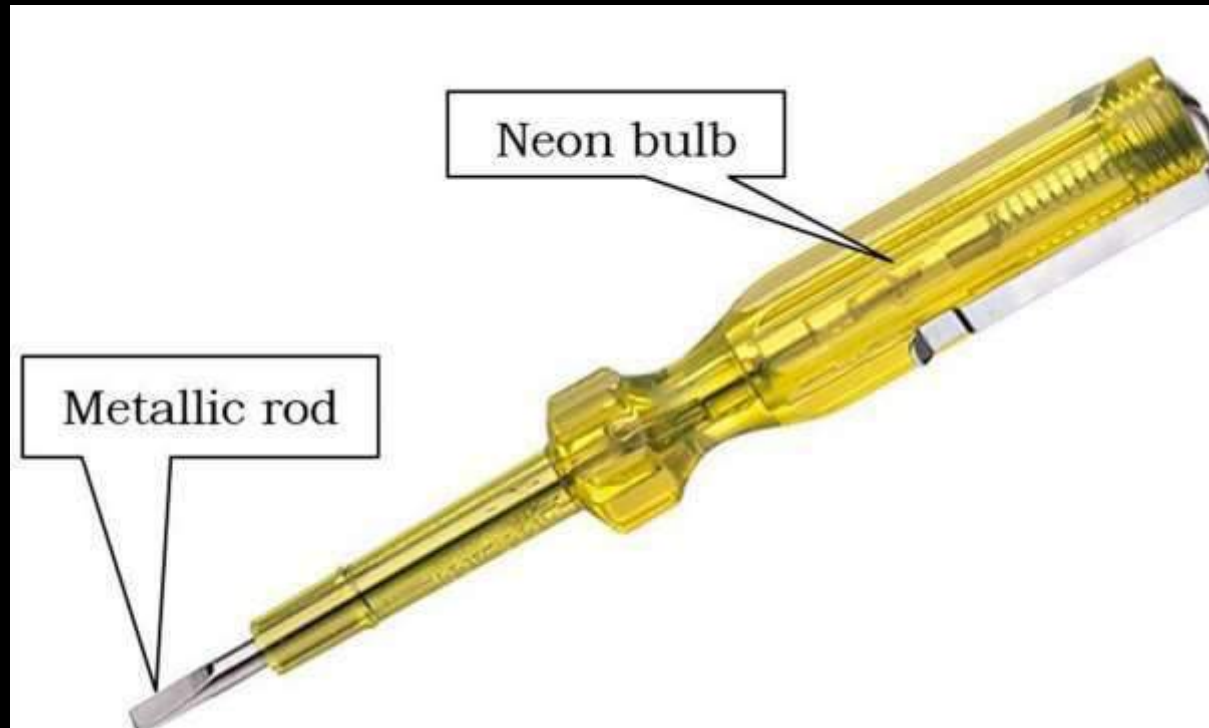


Terminals of Multimeter

Continue....

Line Tester

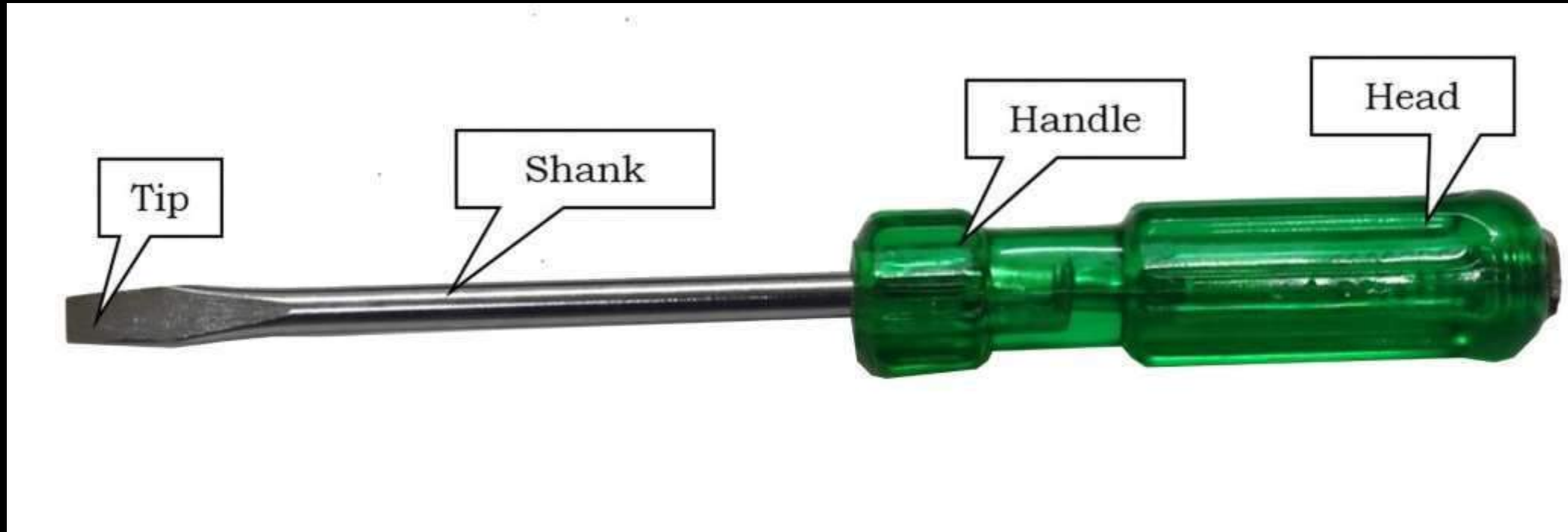
- It is also known as **phase tester**.
- Used to identify or test **phase or live wire**.



Continue....

Screwdriver

- Used to **tighten or loosening** the **screw**.



Continue....

Clampmeter

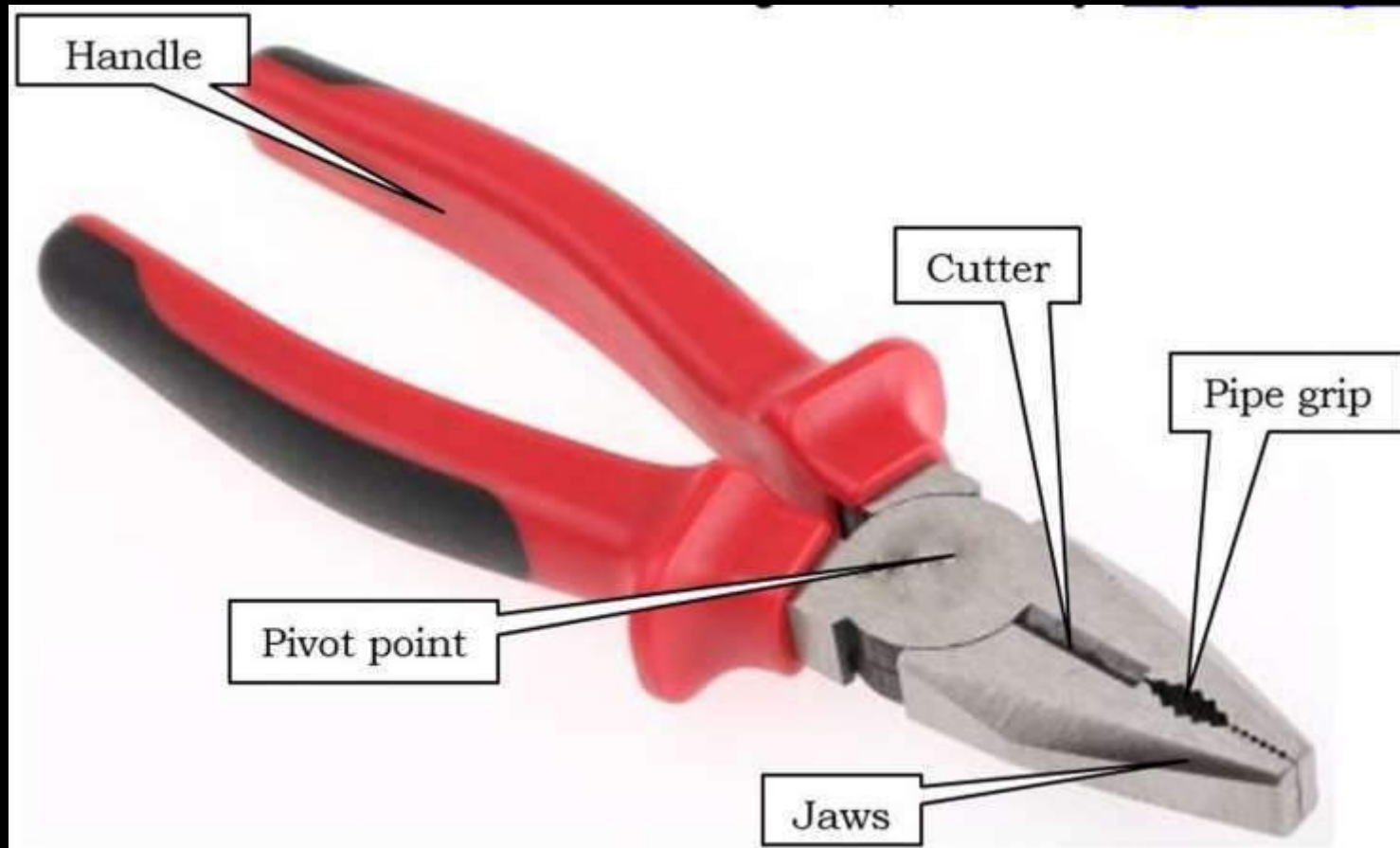
- Used to measure **current without breaking or cutting the wire.**



Continue....

Plier and Wire Stripper

- Used to **cut** and **grip** the wire.



Continue....

Drill Bits

- Used to remove the material to create the hole.



Continue....

Soldering

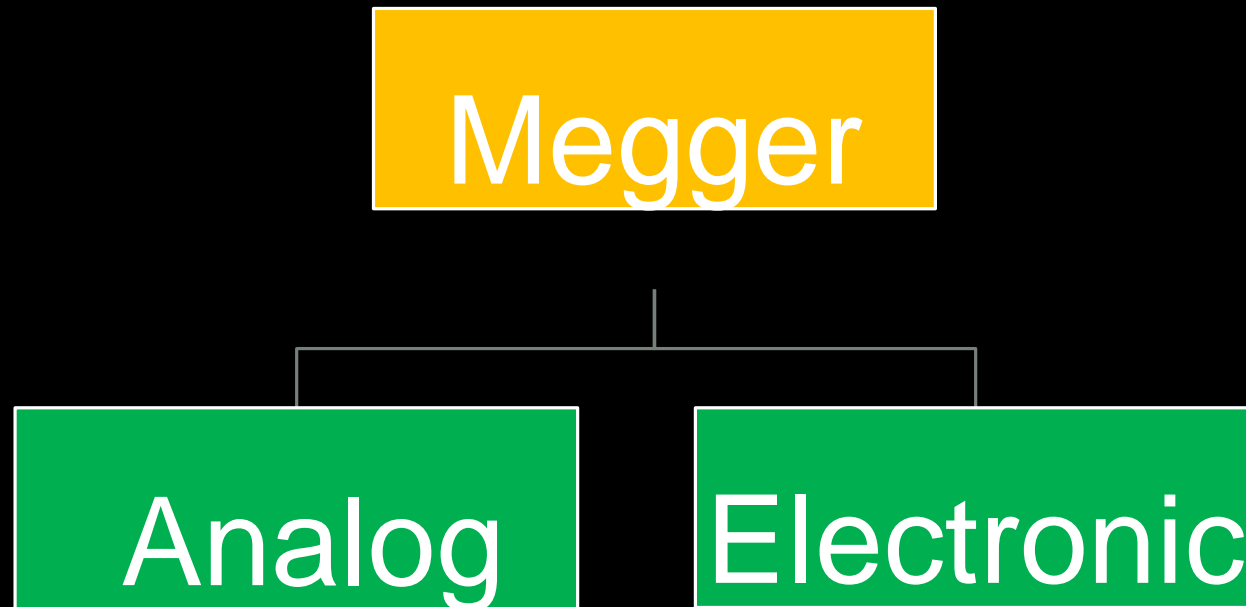
- Used to bind metal components.



Continue....

Megger

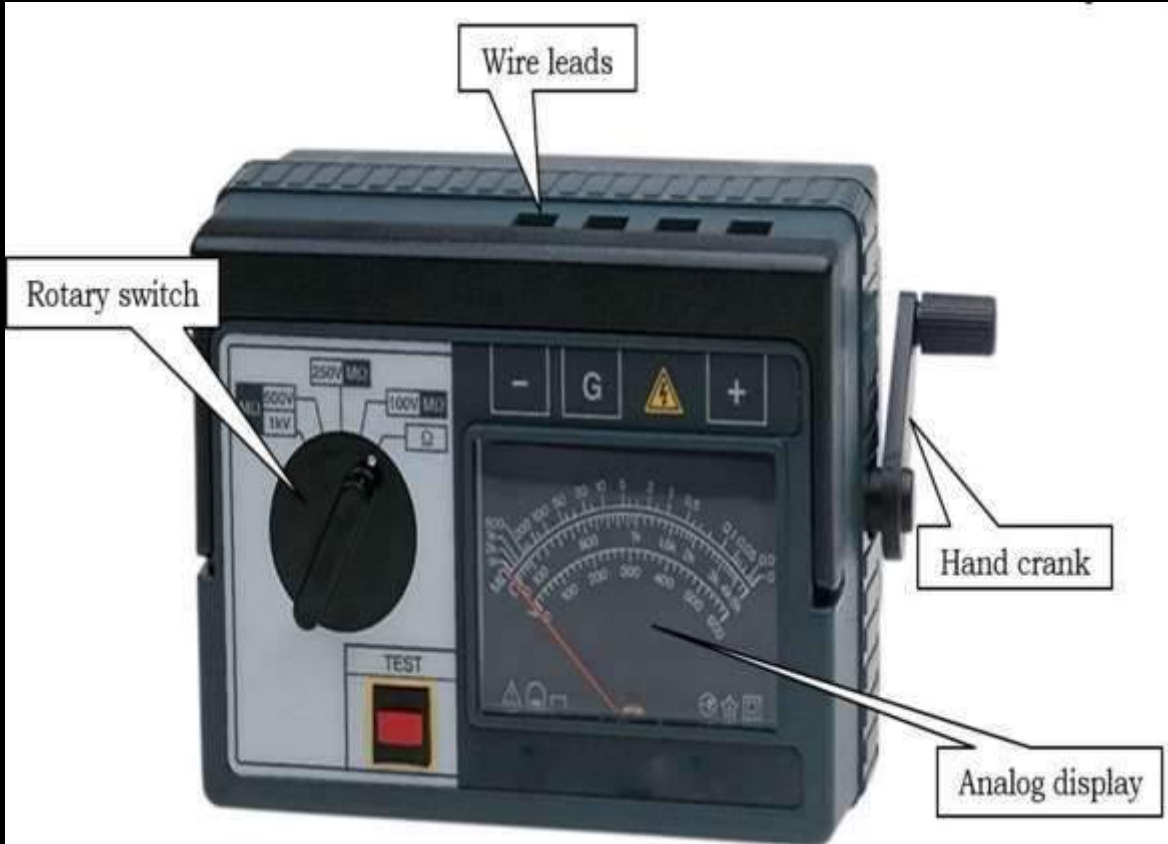
- Used to measure insulation resistance of wires, cables and equipment.
- Types of megger meter are:



Digital Megger Meter



Analog Megger Meter



Total Dissolved Solids (TDS)

Meter

- Use to measure the quality of water.



Continue....

Wire Stripper

- Used to strip the insulation of wire.



Continue....

Wrench

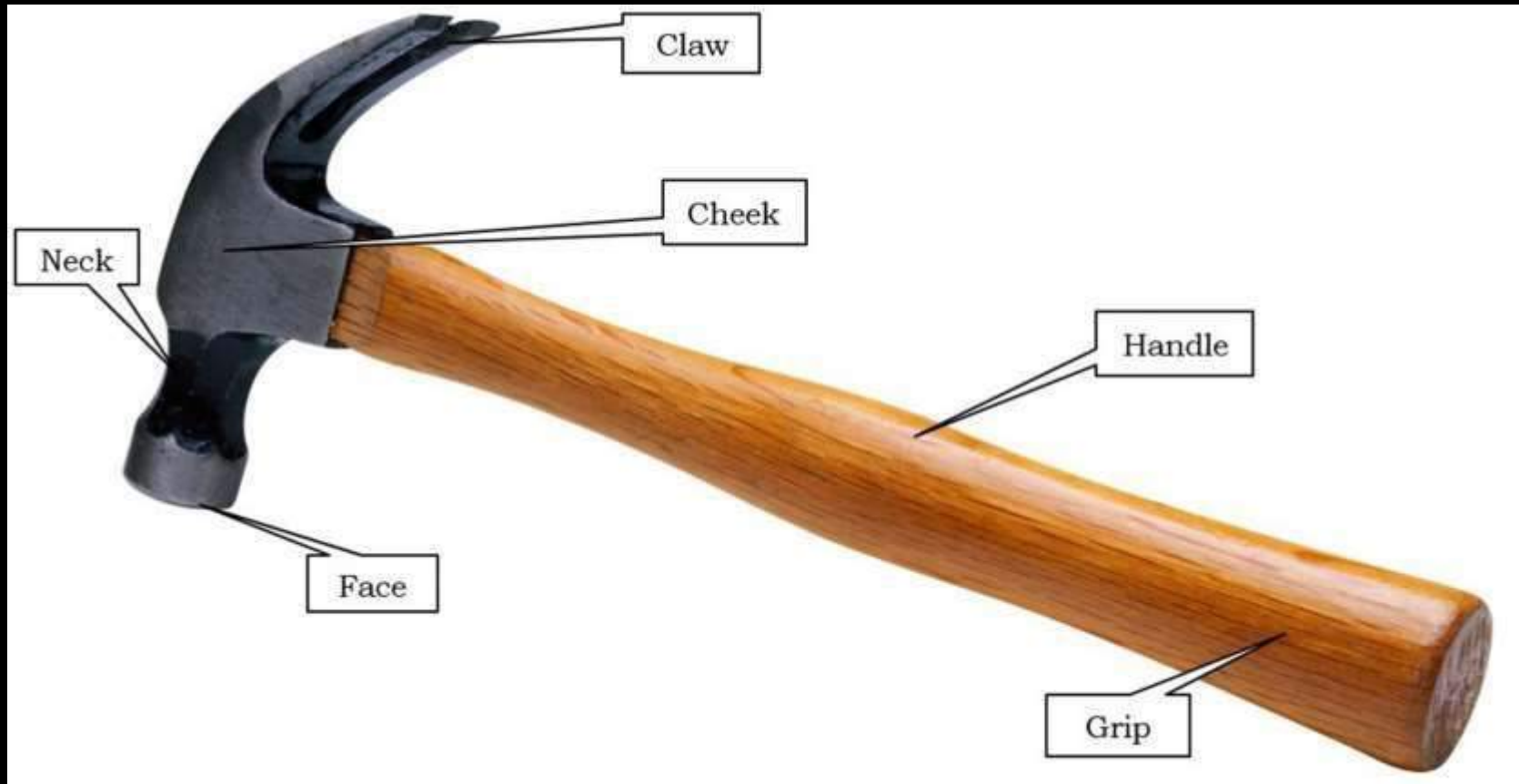
- Used to provide grip and mechanical advantage in applying torque to turn objects such as nuts, bolts, fasteners and many more.



Continue....

Hammer

- Used to hit things, shaping of metal sheets.



Continue....

Summary

- Tools and equipment help technician in installation, maintenance, repair.
- Each tool have specific use, which must be known to a technician.
- Technician must carefully operate the tools and equipment at the workplace.
- Each tool and equipment have number of parts, technician must be aware of each part.

Project Coordinator : Dr. Dipak Shudhalwar

Assistance
Mr. Parag Shrivastava



Joint Director
PSS Central Institute of Vocational Education
Shyamla Hills, Bhopal – 462013 , Madhya Pradesh, India

E-mail: jdpscive@gmail.com
Tel. +91 755 2660691, 2704100, 2660391, 2660564
Fax +91 755 2660481
Website: www.psscive.ac.in