

READING COMPREHENSION

Gripping Tools

Gripping Tools are present in all repair shops. They allow you **to handle and secure an object in position for a limited period of time, while you are working on it**. There are many types, some are hand-held and others are attached to the workbench. Here are some examples:

CLAMPS & VISES

These tools have **two parallel jaws; one fixed and one movable by screw, lever or cam mechanism**. You should choose one type or another depending on the repair job and the type of material they are designed to hold.

Clamps or Cramps are **small**; they apply pressure to hold objects tightly in place onto a work surface, or to hold objects together.



Vises or Vices function similarly to clamps but they are **bigger and heavier, with larger contact areas**. They are usually **attached to a workbench**; they are ideal for tasks such as sawing, drilling and filing.



TONGS AND TWEEZERS

They are hand tools used for **picking up or handling objects safely**. **Tongs** are **bigger and less precise than Tweezers**, which are slender, tapered and often equipped with ridged tips.



PLIERS

Pliers are hand-held gripping tools that can **cut, bend or straighten wire and remove nails or other objects**. They are available in a variety of designs for different specialist tasks. Electrical repair shops usually have these:

- **Lineman's Pliers or Combination Pliers** are heavy-duty tools for general use in cutting, bending, crimping and pulling wire.
- **Long Nose Pliers or Needle Nose Pliers** are ideal for gripping small objects and reaching into small areas which are difficult to access by other means.
- **Diagonal Pliers, Snips, Dikes, Side Cutters or Wire Cutters** are intended for the cutting of metal objects such as wires, staples and screws.
- **Water-Pump Pliers, Slip Joint Pliers or Tongue-and-Groove Pliers** are ideal for use with nuts, bolts and fasteners. The span of the grip is adjustable because they have a movable lower jaw. 'Channellock®' is a famous manufacturer of this tool.
- **Locking Pliers, Mole Grips or Vise-Grips** are tools that can be locked into position with an over-center cam mechanism. Acting like a "third hand", they allow the user to apply great force in a controlled manner.
- **Crimping Pliers** are used for joining pieces of metal or other ductile materials without soldering or welding. They use pressure to create a "crimp" or deformity that connects one piece of material to another.



REMEMBER:

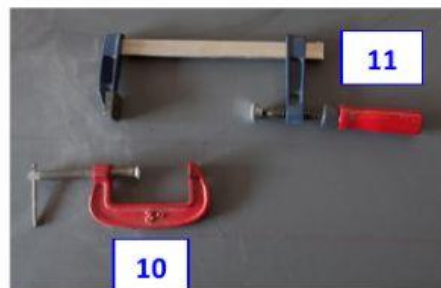
We use **Gripping Tools** for picking up and holding objects in position for **short periods of time**. For **long time periods of time**, we should use **Fastening tools and Fasteners**.

QUIZ:

Activity 1. What type of Gripping Tool are they? Choose an option: **Clamps/ Vises/ Tongs/ Tweezers/ Pliers.**



Activity 2. Identify the Gripping Tools. Write the number next to the name.



- Bench Vise
- C-Clamp
- Crimping Pliers
- Diagonal Pliers/ Snips/ Dikes/ Side Cutters/ Wire Cutters
- F-Clamp
- Lineman's Pliers/ Combination Pliers
- Locking Pliers/ Mole Grips/ Vise-Grips
- Needle nose Pliers/ Long nose Pliers
- Spring Clamp
- Tongs
- Tweezers
- Water-Pump Pliers/ Slip Joint Pliers/ Tongue-and-Groove Pliers