

Title: Carpentry

Objective:

In carpentry section one can practice planning, cutting, grooving, chiselling of wood with the help of various hand tools and also make a pattern for moulding shop.

Introduction:

Carpentry is the process of shaping Timber, using hand tools. The products produced are used in building construction, such as doors and windows, furniture manufacturing, patterns for moulding in foundries, etc. Carpentry work mainly involves the joining together of wooden pieces and finishing the surfaces after shaping them.

Raw Material:

Soft wooden block of ___x___x___ mm³

Tools for wood working:

The principle hand tools used in a carpentry workshop can be classified into

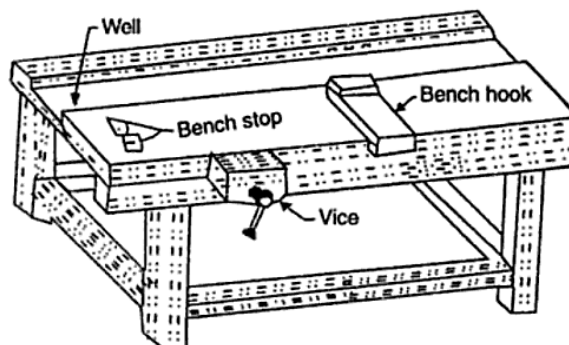
i. Holding tool

a) Work Bench

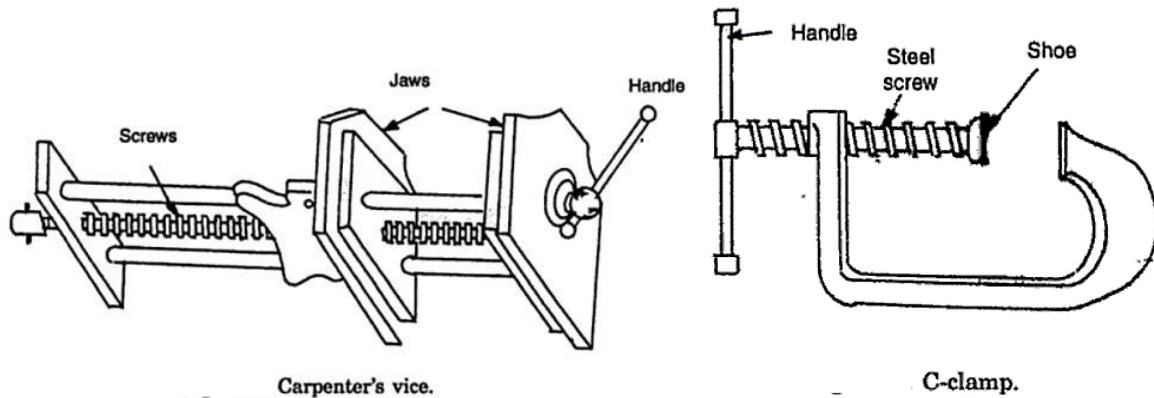
This is a table of having size and raised construction made of hard wood. The size ranges from 50- 80 cm in length and about 90cm in width. Two or four carpenters can work at a time on the work bench.

b) Bench Vice

It consists of jaw fixed on the table side and movable jaw kept in position by means of screw and handle. The body of vice is made of cast iron or steel. The jaws are lined with hard wood which can be removed when it is damaged. The screw moves inside the fixed half nut which can be engaged or disengaged by operating the lever. This is made up of a bar of steel. The work is clamped between jaws by rotating the screw using the handle. It is used for clamping glued pieces or holding the work piece of larger size together for various operations.



Work Bench with Bench Hook.



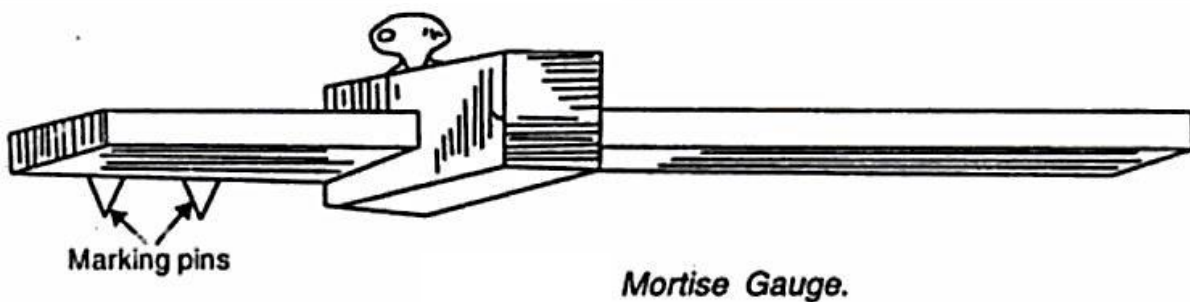
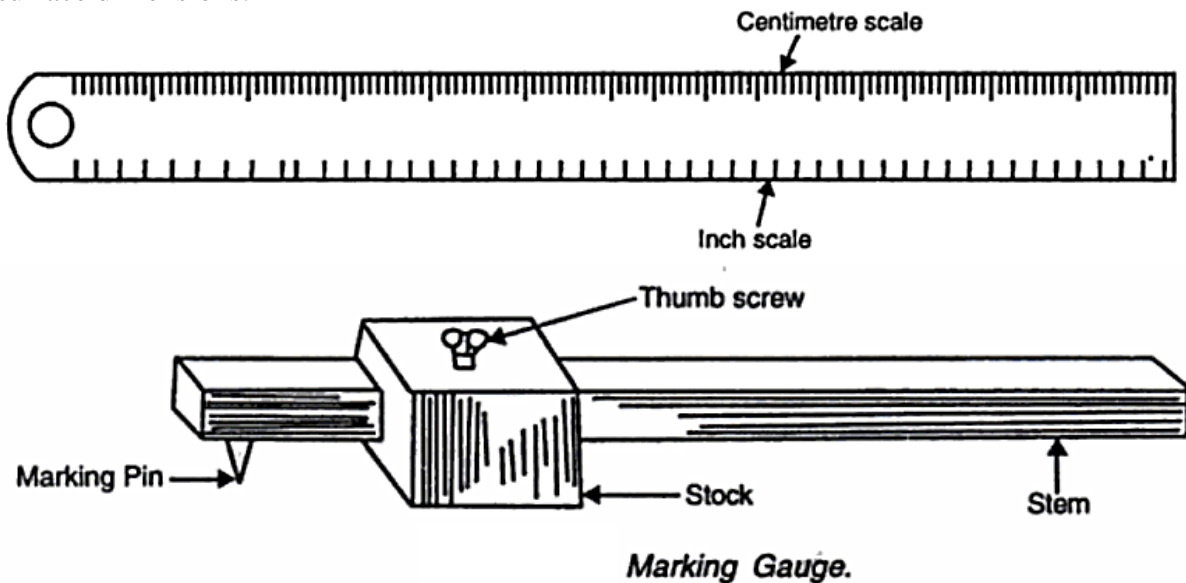
c) C Clamp or G Clamp:

The clamp of the shape of letter C or G is used to clamp short pieces together as the bar clamp. These clamps are available in sizes varying from 70 mm to 800 mm. It is used for holding the planks after gluing.

ii. Marking and measuring tool

a) Rules

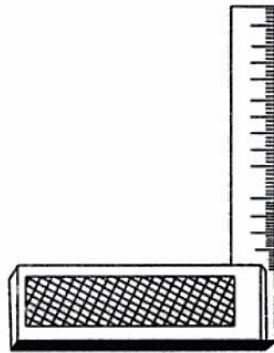
Rules are used for measuring dimensions. For measuring and setting out dimensions various types of rules are used in carpentry shop. **Steel Rule**- Stainless Steel Rule of length 30cm and 60cm. **Flexible Measuring Rule**- for measuring large dimensions as well as curved or angular surface dimensions.



b) Gauges

Gauges are used to mark lines parallel to the edges of a wooden piece. It mainly consists of a wooden stem sliding inside a wooden stock. The stem carries a steel point for marking lines. The stock position on the stem can be varied and fixed rigidly by tightening the thumb screw.

To mark a line parallel to an edge the gauge stock is held freely against the edge and pushed along it, pressing the steel points to the surface.



c) Try square

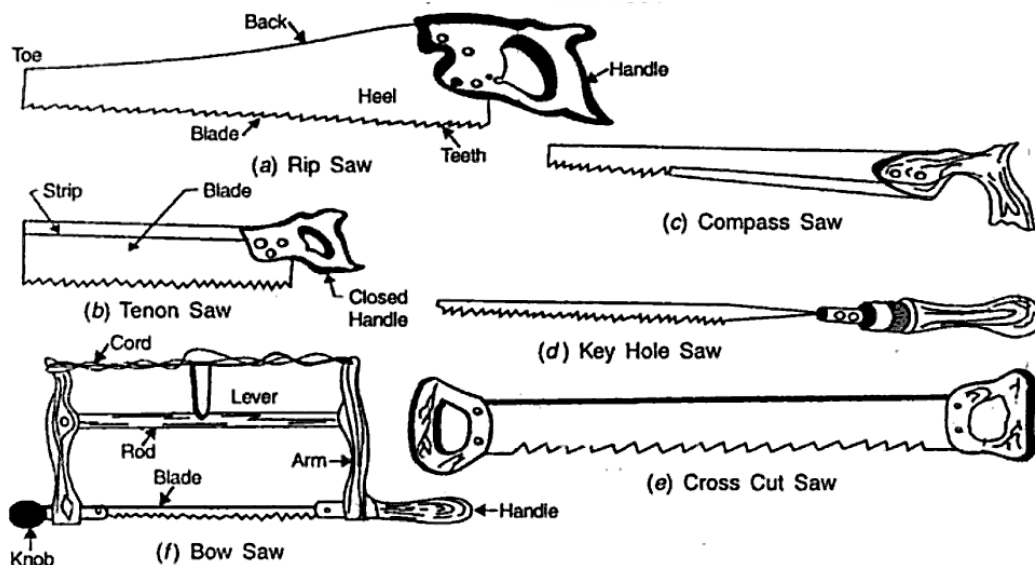
Try square consists of rectangular steel blade fixed rigidly to cast iron stock. The length of blade varies from 150mm to 300mm.

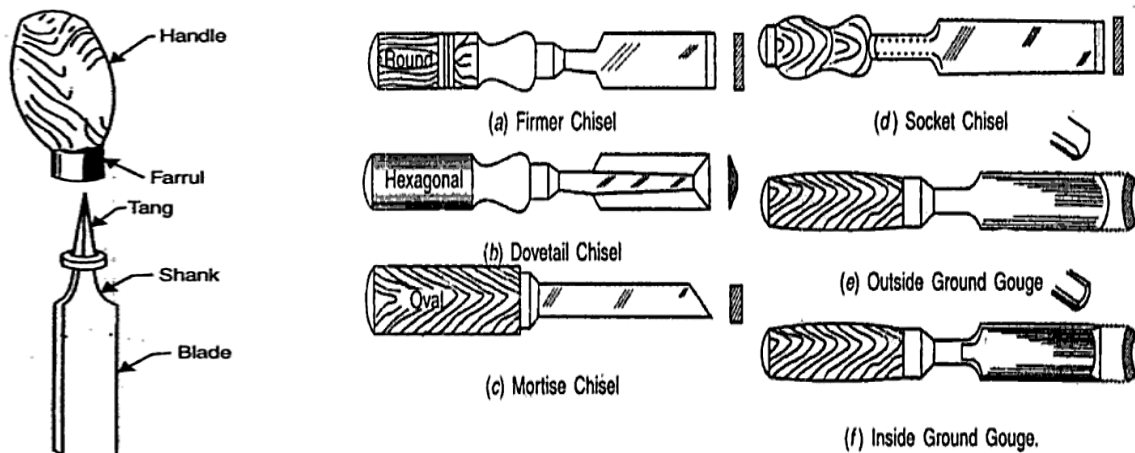
iii. Cutting tool

a) Saws

Saw is a cutting tool which has teeth on one edge and cutting is affected by reciprocating motion of the edge relative to the work piece. Cutting occurs during the forward motion; such a saw is called push type saw, the cutting occurs during the backward motion.

- Hand Saw- This saw is used for short straight cuts. It has a blade of 25-40cm length 6-10cm width. The number of teeth per cm length ranges from 3-5.
- Tenon Saw (Back Saw)- It has a parallel blade of 25-40cm length and 6-10cm width. The number of teeth per cm length ranges from 5-8.





b) Chisels

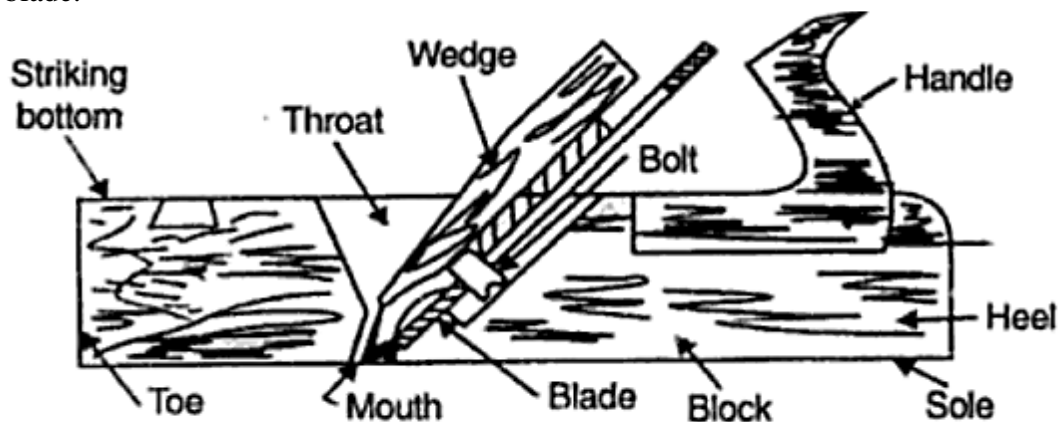
The common type of chisels used is briefly explained below.

- Firmer Chisels- they are most common and general-purpose chisel used by a carpenter. They have flat blade of 15-50mm width and 125mm length.
- Dove Tail Chisel (beveled edge firmer chisel) - These chisels are used for fine and delicate works as well as for cutting corners.
- Mortise chisel – These chisels are used for heavy and deep cut to remove large quantity of wood. These chisels have width of about 15mm but the blade thickness may range from 6- 15mm.

iv. Planning tool

a) jack plane

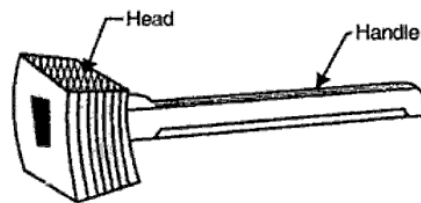
This is the most commonly used plane in carpentry shop. The main part of a wooden jack plane is a wooden block called sole, in which steel blade having knife edge is fixed at an angle with the help of wooden edge. The angle of the blade is kept about 45° to bottom surface of the blade.



v. Striking tool

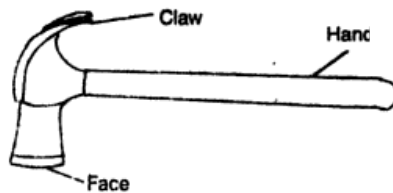
a) Mallet

This is wooden headed hammer of round or rectangular cross section. The striking face is made flat. Mallet is used for striking the cutting tools and has wooden handle.



b) Claw Hammer

This is a hammer having steel head and wooden handle. The flat face of the head is used to drive nails and claw portion for extracting nails out of the wood.



Procedure:

(Write in your own words)

Precautions:

(Write in your own words)

Conclusion:

(Write in your own words)