Construction Trades Virtual Learning

Project Book 2
Chapter 2

April 16, 2020

Construction Trades
Lesson 9: April 16, 2020

Objective/Learning Target:

What You Will Know

— The importance of tools to a carpenter

— How to use measuring, marking, and layout tools.

Review of Tools, Materials, and Fasteners

What You Know Now:

- Tools make it easier to accomplish a task
- Safety is an important part of tool use

What You Will Know

- The importance of tools to a carpenter.
- How to use measuring, marking, and layout tools

Handling Tools with Care

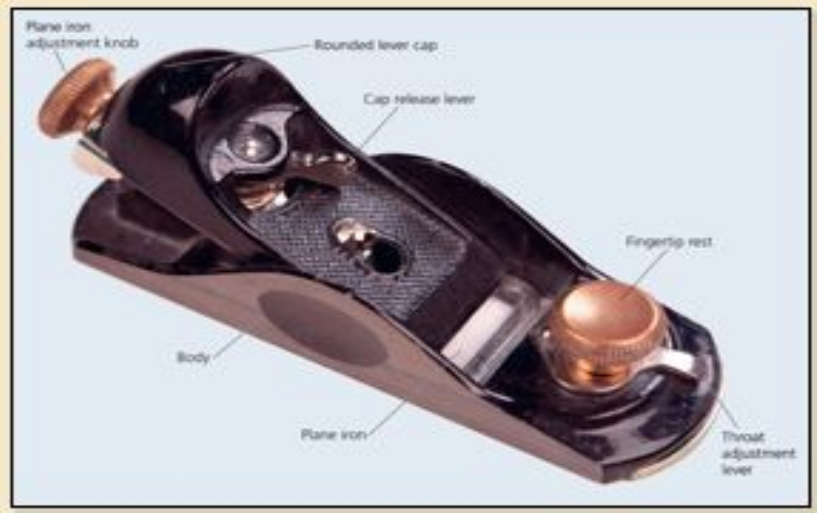
Experienced carpenters observe the following

- Know your tools
- Keep tools clean
- Keep tools in good repair
- Properly store tools when not in use
- Keep hands away from cutting edges
- Keep power cords out of walkways
- Guard against accidental startups
- Take precautions atgainst electric shock

Hand Tools

Block Plane

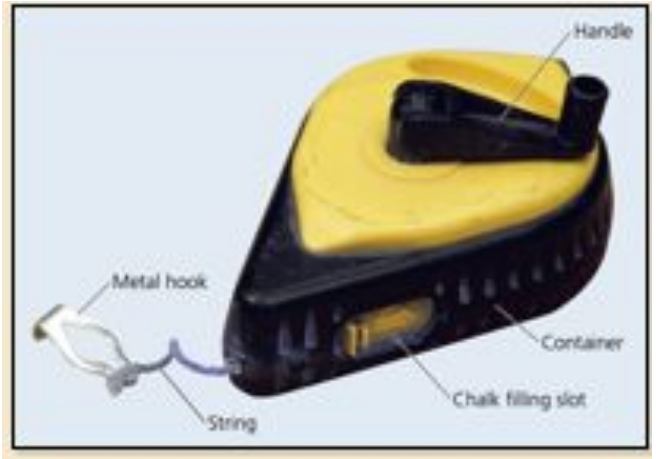
- Shaping tool used to smooth the surface of wood or remove material
- Designed to be used with one hand
- Has a fingertip rest and rounded lever cap
- Beveled blade at a 20-25 degree angle.
- Bevel points upward



Hand Tools cont.

Chalk Box

- Used for marking long, straight lines
- String wound inside a container filled with powdered chalk
- String stretched between two marks
- String is snappe to create a line



Hand Tools cont.

Chisel

- Chisels are used for cutting, trimming, fitting, and shaping wood
- Consists of a handle and a blade, called an iron
- Blade is a flat steel bar with a 25-30 degree beveled end
- Sharpened end held against the material; other end struck with a hammer.

Hand Tools cont.

Nail Set

- Striking tool with a round, tapered metal shaft
- Usually 3 ½” long
- Used to drive the nail head below the finished surface of the material
- Hold nail set directly in line with the nail or brad
- Strike lightly with a hammer
- Depth of the set should be roughly equal to the diameter of the nail

Hand Tools cont.

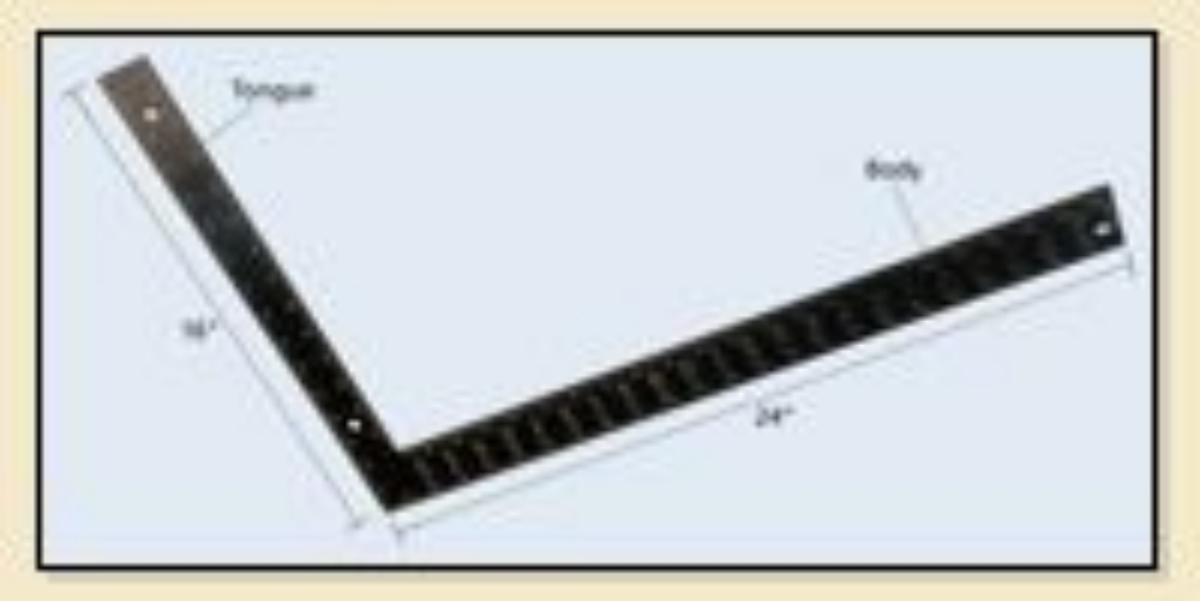
Combination Square

- Measure length, width, and depth
- Lay out 90 degree angles and 45 degree angles
- Test for square or the accuracy of a 90 degree angles both inside and outside an object

Hand Tools cont.

Framing Square

- Flat, L-shaped measuring and layout tool
- Used to check and mark 90 degree angles
- Body is 24” long and 2” wide
- Tongue is 16” long and 1 ½” wide



Hand Tools cont.

Speed Square

- Draw straight lines
- Lay out angles
- Guide the cuts of saws

Hand Tools cont.

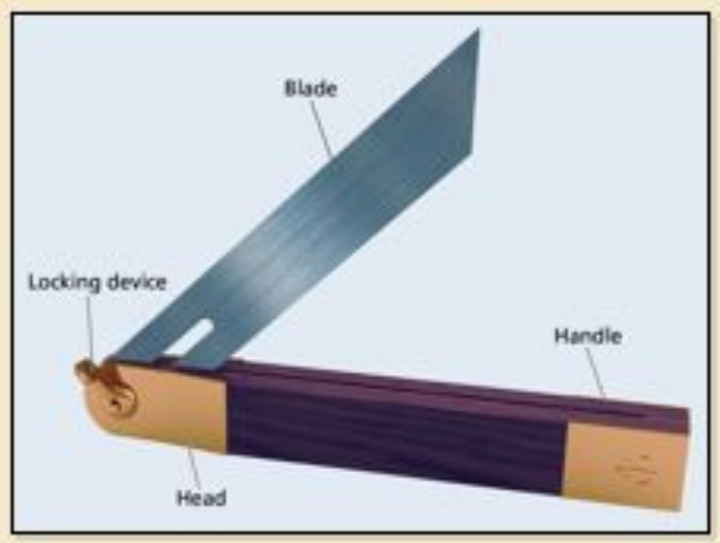
Retractable Tape Measure

- Blade marked off in feet, inches, and fractions of an inch.
- Inch marks between each foot mark

Hand Tools cont.

Sliding T-Bevel

- Metal blade attached to a wood or metal head, has a locking device
- Slot in blade allows the length and angle to be adjustable



Hand Tools cont.

Wood Rasp

- Shaping tool similar to file
- Blade riss-crossed with coarse ridges or teeth

Hand Tools cont.

Utility Knife

- Metal or plastice handle with fixed or retractable blade
- Cut away from yourself
- Keep blade completely retracted when not in use
- Store fixed blade knoves properly

Power Tools

Belt Sander:

- Make sure the belt is in good working order.
- Usa a sander with a dust-collection system, when possible
- Keep body parts, clothing , hair, and jewelry clear of the moving belt
- Make sure the sander is off before connecting it to the power source.
- Check the plug for damage
- Always wear a dust mask
- Always wear eye protection
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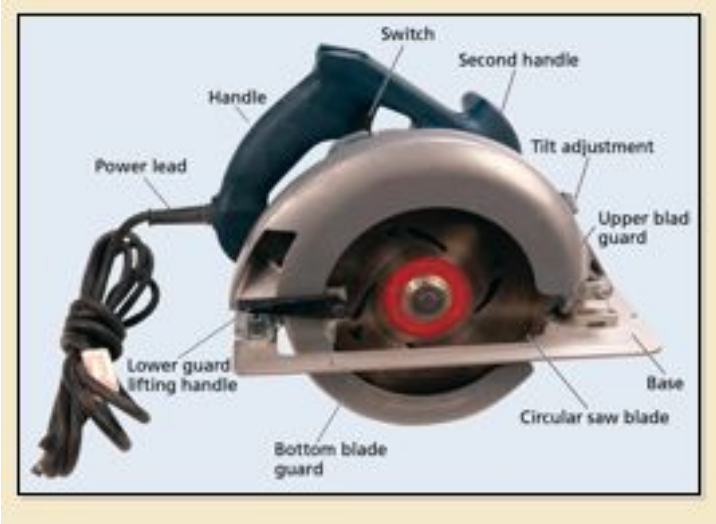
Power Tools cont.

Portable Circular Saw

- Support the material being cut
- Keep the power cord behind the saw
- Minimize blade exposure
- Do not allow the blade to touch the material before it is turned on
- Always use two hands



Power Tools cont.

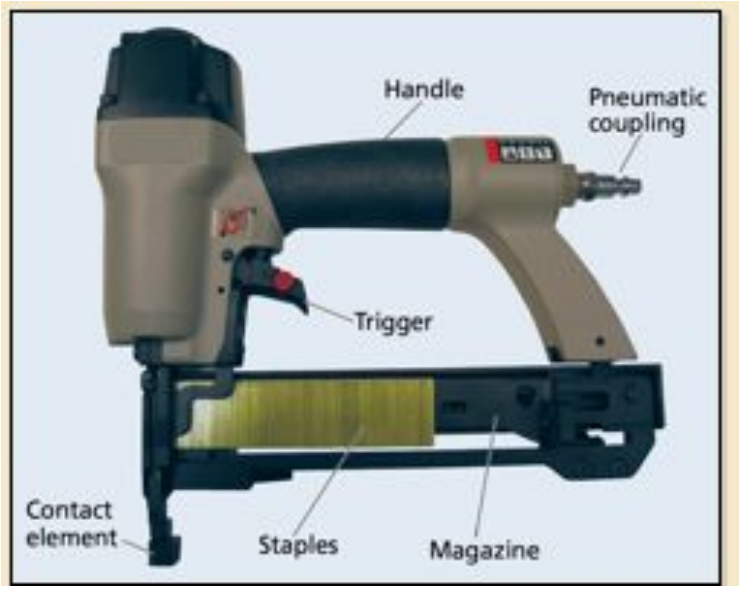
Miter Saw

- Make sure the arrow on the lade is set for clockwise rotation
- Make sure the workpiece is supported
- Do no make ripcuts or cuts along the grain
- Keep any auxilary fences out of the way

Power Tools cont.

Pneumatic Staple Gun

- Uses air pressure to drive staples
- Air pressure supplied by an electric compressor or pump
- Staples in a long matal magazine
- Staples fired with considerable force



Power Tools cont.

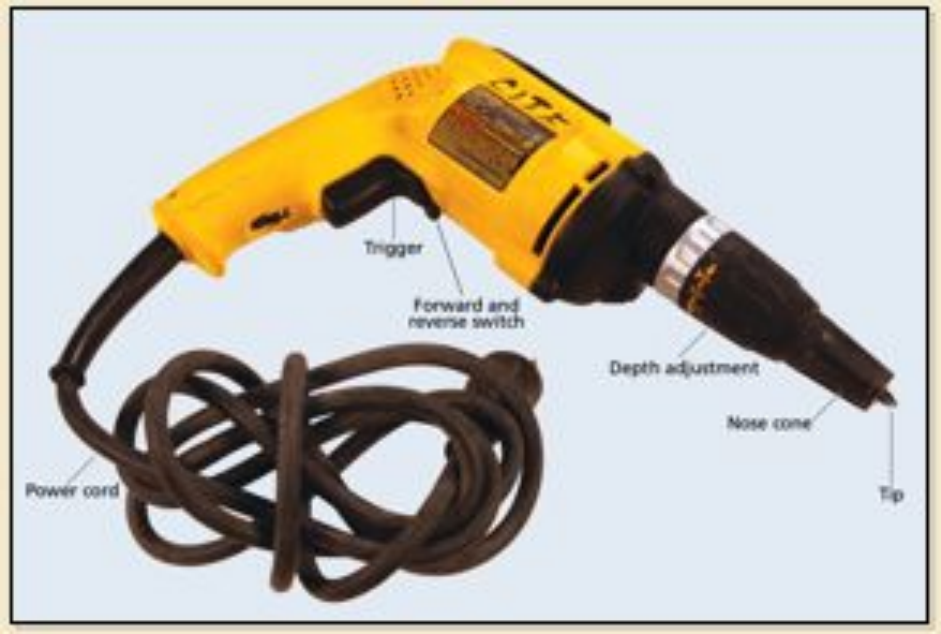
Pneumatic Nail Gun

- Uses air jpressure to drive nails
- Air pressure supplied by an electric compressor or pump
- Foot is a safey catch
- Two types: framing and finishing
- Nail guns load differently, according to the design of the manufacturer
- Disconnect hose before loading the nails
- Dual action system
- Sequential trip system

Power Tools cont.

Screw Gun

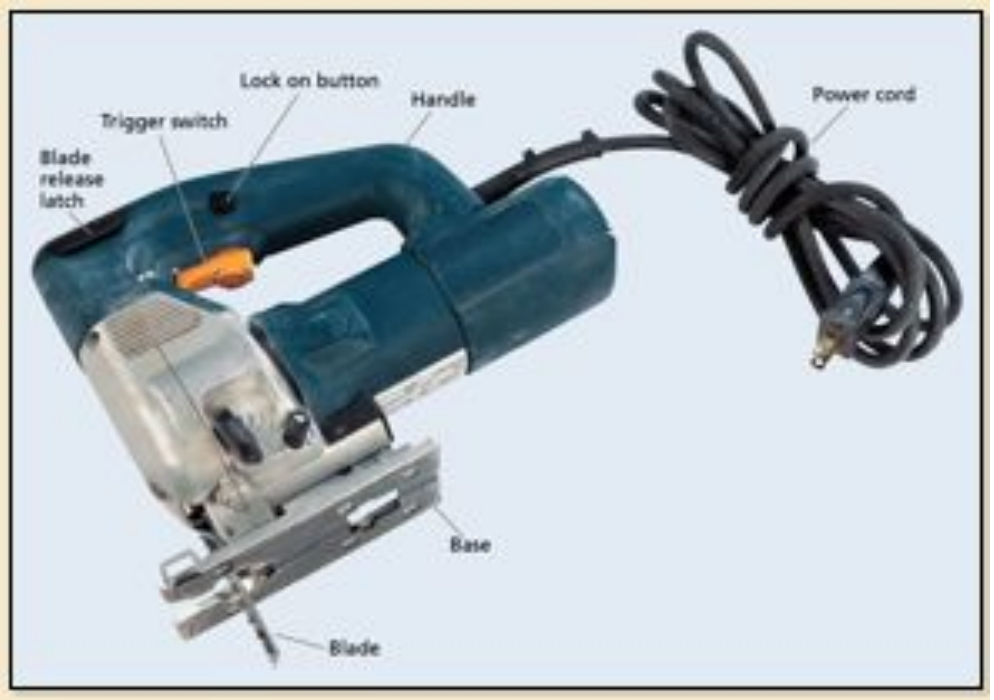
- Used to install screws
- Shaft can rotate clockwise or counter-clockwise
- Interchangeable tips
- Adjustable nose cone



Power Tools cont.

Saber Saw

- Blade moves up and down or in an oval motion
- Different blades cut different materials
- May have variabkle speeds
- Blad inserted into the chuch



Power Tools cont.

Router

- Cutting tool with a revolving vertical shaft
- Use proper wrenches to tighten the nut that holds the bit
- Hold router firmly when turning on and off - let it come to a complete stop
- Always move router in proper cutting direction

Materials

Cedar

- Resistant to rot and decay

Douglas Fir

- Color ranges from white to yellow-brown

Oak

- Hard and dense

Pine

- Grain is straight, fine and smooth
- Easy to cut and machine

Materials

Plywood

- Thin layers of wood glued and stacked together at right angles

Oriented Strand Board

- Layers of thin wood shavings

Pressboard

- Dense panel product made from wood fibers under heat and pressure

Fasteners

Nails

- Nail size - 2d to 20d
- Nail lengths - 1: to 3 ½”

Brads

- Thin guage anil
- Used to avoid splitting the grain of the wood

Framing screws

- Cylindrical fasteners with spiral threads
- Threads bit into the material