

MORE TOOLS AND EQUIPMENT

This mobile revision pdf is based on detailed work found in the **EQUIPMENT AND PROCESSES** section. Tap on the green link button below to go to the complete website section



Tap the blue button to view all joining metal techniques, covered by this Revision PDF



MORE TOOLS AND EQUIPMENT

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3. THE BLOCK PLANE

4. SCREWDRIVERS

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6. PIPE VICE (HINGED TYPE)

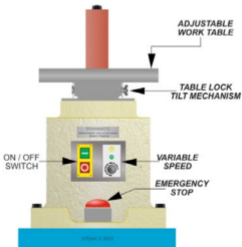
THE BOBBIN SANDER

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A Bobin Sander is a table-top sanding machine, for smoothing edges. The spindle rotates at high speed and also oscillates up and down, making it ideal for sanding curved surfaces. It is perfect for 'tight' curves, which cannot be accessed by a normal sanding disk or belt sander.

The drum / spindle and sanding sleeves (see diagram below) , are supplied in a range of sizes.

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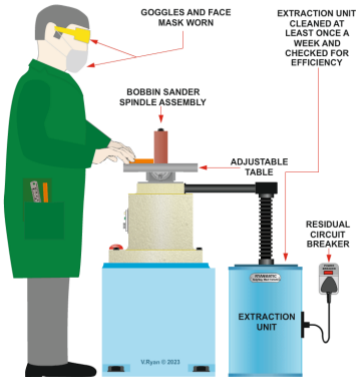
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THE BOBBIN SANDER

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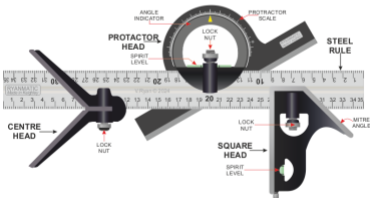


THE COMBINATION SQUARE

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Combination squares are common in engineering and cabinet making. The tool is used to measure and mark out accurately, being three tools in one. A protractor for marking angles, a centre head often used to mark 'centres' of round section material and a square head for ninety degree angles.

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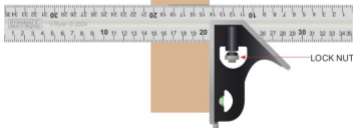
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THE COMBINATION SQUARE

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Below are two examples of marking out by the centre square. For more detail and examples **click on the images**



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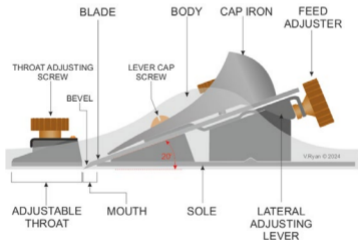


THE BLOCK PLANE

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A block plane is small compared to other planes. It is used to 'plane' end grain and is useful when producing chamfers and smoothing surfaces. The block plane is held in one hand, with the second hand sometimes applying pressure to the front. The blade angle of a typical block plane is 20 degrees, with the bevel angle being 22-25 degrees.

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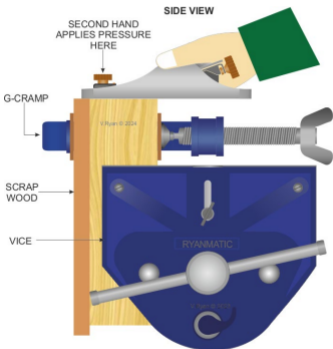
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BLOCK PLANE BEING USED TO PLANE END GRAIN

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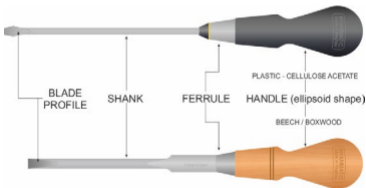
SCREWDRIVERS

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THE CABINET SCREWDRIVER

Cabinet screwdrivers have either a tapered, flared or parallel blade profile. They have been designed, for use by cabinetmakers and allow access to tight spaces. They are perfect for turning screws in confined areas. The handle has an ellipsoid shape / form, making it comfortable in the hand, especially when applying pressure.

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SCREWDRIVERS

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THE ENGINEER'S SCREWDRIVER

Engineer's screwdrivers were once regarded as specialized tools, used in the automotive industry.

They tend to have a long thin shaft, capable of accessing difficult areas. Originally they were supplied with a parallel tip, although today they are supplied with a variety, including pozidrv and tapered tips. The engineer's screwdriver has a slim handle with grips, that help finger tips to control the rotation of the screwdriver. The translucent plastic handle is manufactured from cellulose acetate butyrate. This is a durable and tough material.

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SCREWDRIVERS

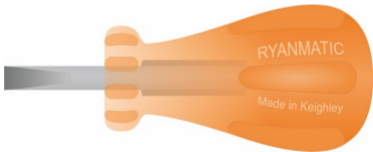
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THE STUBBY SCREWDRIVER

Stubby screwdrivers tend to have short blades, as they are designed to access spaces, inaccessible by other types of screwdriver. The handle tends to be rather 'chubby' and feels comfortable in the hand.

The moulded finger grips of the handle, allow accurate / fine control of rotation. This type of screwdriver is found in screwdriver sets, because of their general usefulness.

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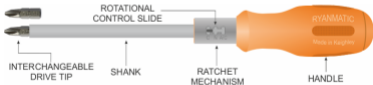
SCREWDRIVERS

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RATCHET SCREWDRIVER

After each turn of a normal screwdriver (such as a cabinet screwdriver), the tip of the screwdriver blade has to be repositioned, so that the following turn can be made. This can be inconvenient and wastes time. However, a ratchet screwdriver has an internal mechanism, that allows the screwdriver tip to stay in the slot of the screw. A quick reverse turn of the handle, and the user can apply force again.

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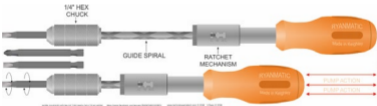
SCREWDRIVERS

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PUMP ACTION - SPIRAL RATCHET SCREWDRIVER

This screwdriver also has a ratchet mechanism. Its overall length is much greater, due to the guide spiral. When using the screwdriver, the handle is pushed down and the guide spiral converts this pressure into rotary movement of the drive tip. A strong internal spring returns the handle to its original position. This is why it is sometimes called a pump action screwdriver

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SCREWDRIVERS

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Offset screwdrivers are useful when working in confined spaces, not suitable for a screwdriver with a handle. The offset design provides excellent torque, acting as a lever and increasing mechanical advantage. They are usually purchased as a set of five, each one having a different drive tip. The traditional offset, has a knurled central portion for grip. Some modern offset screwdrivers, have a comfortable 'rubber' grip. Offsets tend to be manufactured from high carbon steel, with hardened and tempered drive tips.

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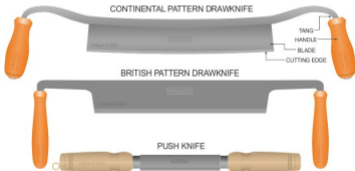
DRAWKNIVES

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A drawknife is used to 'shave' wood, until the desired shape is reached. They all have a handle at each end of a hardened steel blade.

Drawknives are ideal when forming arcs and curves in wood, or 'cylindrical shapes'. The user sits astride a special bench called a 'shaving horse', pulling the drawknife towards himself / herself, working with the grain of the wood. It is possible to remove a large amount of materials quite quickly. However, practice is required.

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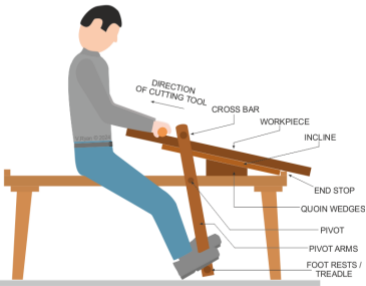


DRAWKNIVES

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Natural wood can be supplied as boards. These are a rectangular section and vary in length.

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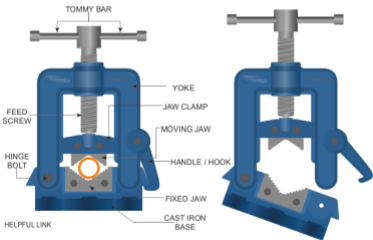
PIPE VICE (HINGED TYPE)

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The pipe vice is designed to hold, pipe / tube and cylindrical sections securely. It is the ideal vice when cutting pipe, threading and even welding.

The pipe vice has two ridged jaws. The moving jaw is controlled by turning the feed screw with the tommy bar and it is adjusted according to the diameter of the pipe being held. The pipe is secured between the moving and fixed jaws.

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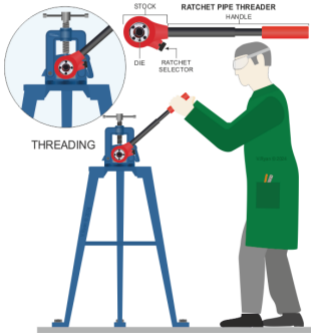


PIPE VICE (HINGED TYPE)

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RATCHET PIPE THREADER BEING USED TO
THREAD THE END OF PIPE. PIPE SECURED IN
THE PIPE VICE (WITH STAND)

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