

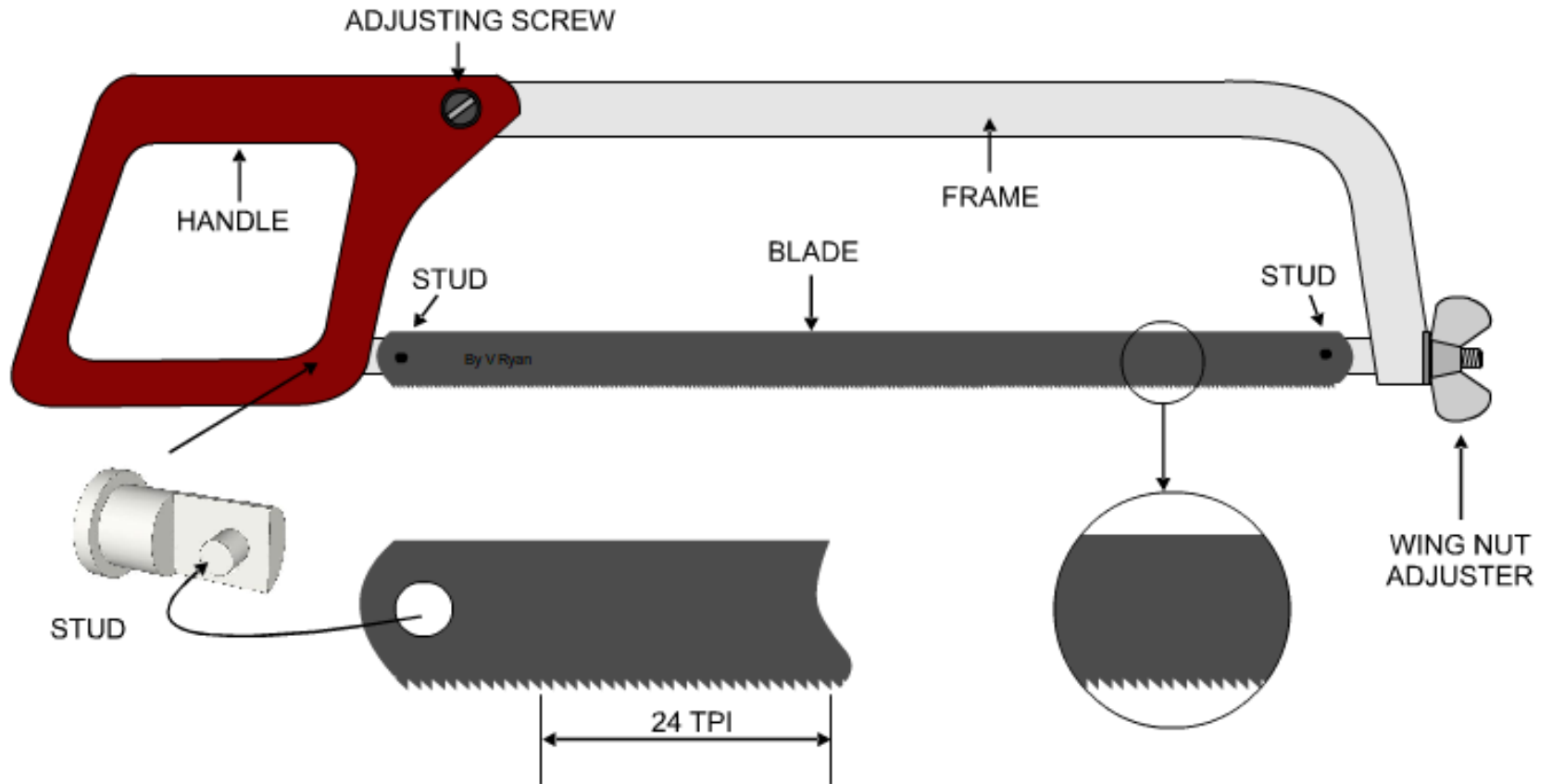
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**HACKSAW**

# Definition

- **A hacksaw is a fine-toothed saw, originally and mainly made for cutting metal. The equivalent saw for cutting wood is usually called bow saw.**
- **Most hacksaws are hand saws with a C-shaped frame that holds a blade under tension. Such hacksaws have a handle, usually a pistol grip, with pins for attaching a narrow disposable blade. The frames may also be adjustable to accommodate blades of different sizes. A screw or other mechanism is used to put the thin blade under tension.**
- **On hacksaws, as with most frame saws, the blade can be mounted with the teeth facing toward or away from the handle, resulting in cutting action on either the push or pull stroke. In normal use, cutting vertically downwards with work held in a bench vice, hacksaw blades are set to be facing forwards.**

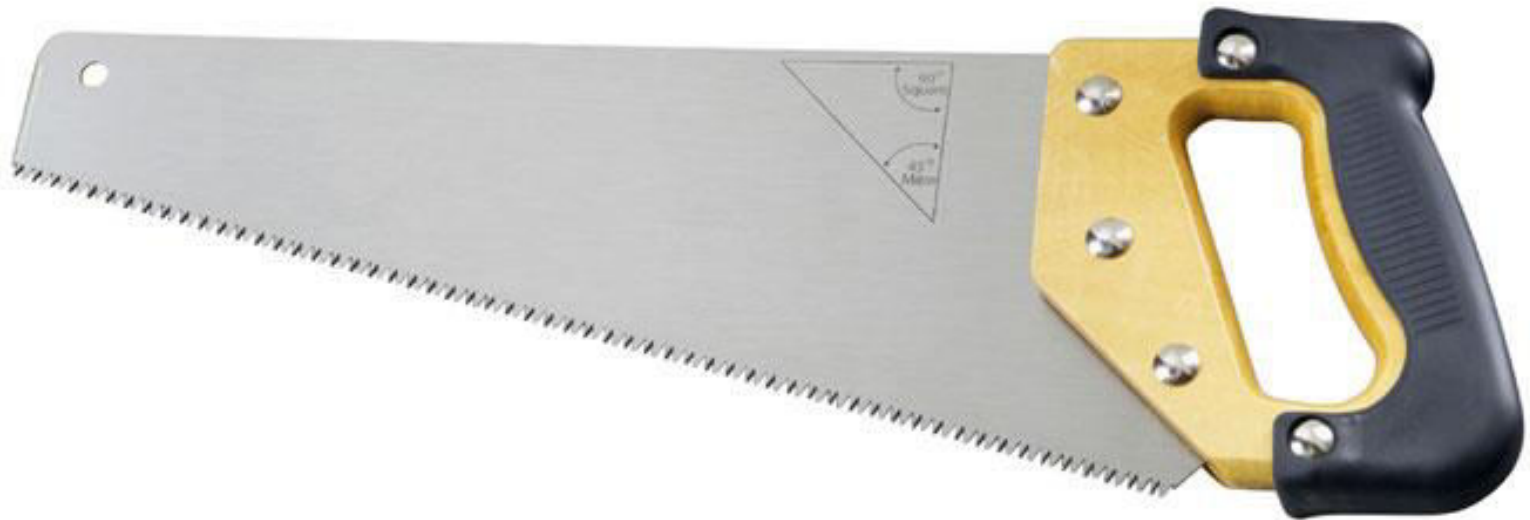
# Nomenclature



# **TYPES OF HACKSAW**

## 1. Basic Handsaw

Arguably the most iconic and reliable of all wood saws, it's no doubt that this tool has changed the world. They're also useful for reminding you that you're out of shape when cutting a simple 2×4.



## 2.HackSaw

This type of handsaw features a fine-toothed blade tensioned in a C-frame. Commonly used for cutting metals and plastics. Take special care to clean it when cutting aluminum, as it will often gum up on softer metals.



### 3. Japanese Saws

A family of pull saws known for a thinner blade with crosscut teeth on one side and rip teeth on the other. These saws make cutting dense wood easy by first starting a guide path with the crosscut edge, then switching over to finish the cut with the rip-teeth edge. The Ryoba style is the most useful type.





## 4. Coping Saw

Popular with artists, this simple but useful cutting tool consists of a thin blade tensioned in a C-shaped frame that uses interchangeable blades for both metal and wood. It can cut tight radiuses but perhaps its most useful feature is the ability to remove the blade and thread it through a drilled hole to cut inside profiles.



## 5. Jigsaw/Reciprocating Saw

If you've ever needed to cut a custom shape out of a sheet of plywood or even polycarbonate, you know how useful this tool can be. If a perfectly straight line is what you need, then leave this tool on the shelf. Even in the hands of a skilled operator the blade will drift easily.



## 6. Circular Saw

There are two types of electric circular saws, the worm drive and the sidewinder. The worm drive saw has enough torque to cut through wet lumber and concrete. The behind-the-blade handle placement reduces kickback, and the blade's left-side position makes it easy to see your cut line if you're right-handed. The sidewinder's motor, attached directly to the blade, weighs less but also has less torque.



TEETH PER INCH (25mm)	SUITABLE FOR CUTTING
14 TPI	LARGE SIZES, ALUMINIUM AND OTHER SOFT METALS.
18 TPI	SUITABLE FOR GENERAL WORKSHOP CUTTING.
24 TPI	FOR CUTTING STEEL PLATE UP TO 5/6mm.
32 TPI	FOR CUTTING HOLLOW SECTIONS AND TUBING.

# Safety Tips When Working With a Hacksaw

- **Power hacksaws** are invaluable when cutting through hard or thick pieces of metal which are too substantial to cut by hand. However, as with all power tools, extra care should be taken to avoid any accidents. Observe the following safety tips and you will get the job done quickly and without incident.
- **Blades**
- Consider the type of blade to be used. Depending on the material to be cut, the blade should be changed accordingly. Power hacksaw blades are available with varying tooth counts. A higher tooth count means the blade is actually finer. Softer materials will require a blade with a lower tooth count, whereas harder materials require a finer blade. Choosing the wrong blade could result in it snapping and shattering.

- **Personal Safety**

- Never attempt to use a power hacksaw until you have prepared yourself adequately for the task. Make sure that long or loose hair is tied back or covered securely. All kinds of jewelery should be removed to help eliminate the risk of snagging. Protective clothing such as overalls or aprons should be worn to prevent loose clothing from being caught in the blade. Protect your ears with adequate hearing protection such as plugs or mufflers. Also, Protect your eyesight with safety glasses. Because metals can be heavy, always wear steel-toe capped boots.

- **Before Cutting**

- Whether you are cutting pipe, sheet metals or blocks, always make sure the material to be cut is securely fastened into clamps or a vice. Never attempt to secure materials by hand.
- Constant motion causes power hacksaw blades to overheat making them brittle and prone to breaking so make sure adequate coolant is being supplied to the blade. Before switching on a power hacksaw, check that the machinery is in good working order. If you do discover any faults, don't switch on the power until they have been rectified.
- Be aware of where the emergency stop buttons are located; most machines should have a foot switch and you should always be ready to use it. Always be ready to turn the machine off by making a mental plan of action before starting.
- At least 3 teeth must be in contact with the work piece at any times or the blade will snag. This will eventually damage the teeth and flying shards can be extremely hazardous

## While Cutting

- When in use, stay well away from the blade and any other moving parts. Never attempt to remove cuttings or adjust the material while the blade is in action. If there is an obvious problem, turn off the machine and wait until it has stopped before attempting to adjust it. Should the blade break, don't attempt to replace it until the machine has been switched off and come to a halt.
- Be aware of the safety of others; don't allow anyone to stand in front of the power hacksaw when cutting and make sure that oversized materials are adequately highlighted. Never leave the power hacksaw unattended whilst cutting. Ignore distractions whilst cutting. If a situation arises which demands your attention, turn the power off before responding. Ensure the machine is switched off after use and remove loose cuttings. Never use a power hacksaw to cut anything other than metal and never cut small objects.







**Today's Amazing Fact???????**



**The BrahMos is the world's fastest cruise missile in operation which travels a speed of 2.8 to 3.0 Mach (1km/s). It can carry 300kg warhead & range is 290 km.**



**Do you Have any  
questions???**

# धन्यवाद

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