

# JOINTING TECHNIQUES



FOR WOOD, METAL AND PLASTICS

# JOINING WOOD..... HOW TO JOIN WOOD?

There are 4 main ways to join wood; an adhesive, a joint, a nail or screw or using a knockdown fitting.

Common wooden products that you use every day will incorporate some of the joining techniques above.



# JOINING WOOD..... GLUING

The majority of the time Polyvinyl acetate (PVA) wood glue will be used to join wood. PVA glue is used in the workshop every day and is the glue you would use to make paper Mache.



# JOINING WOOD..... NAILS AND SCREWS

There are many types of nails and screws to fit your needs. Some common ones are below.



Panel Pin



Countersink (flathead) screw



Round (Dome) Head screw

# JOINING WOOD..... KNOCK-DOWN FITTINGS

Knock-down fittings are those that can be put together easily, normally using only a screwdriver, a drill, a mallet/hammer and other basic tools. They are temporary joints although many are used to permanently join together items such as cabinets and other pieces of furniture that are purchased in a flat pack.



# JOINING WOOD..... OTHER ADHESIVES

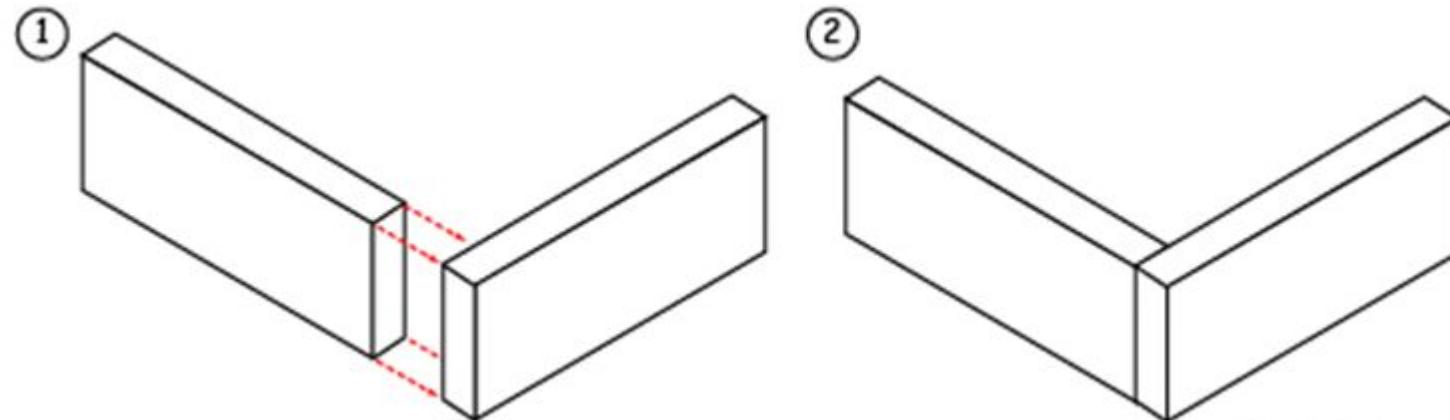
Other glues that could be used would be super glue, epoxy resin, hot glue, and a number of different resin glues; Phenol formaldehyde resin, Urea-formaldehyde resin.



# JOINING WOOD..... WOOD JOINTS

## Butt Joint

The most simple and easiest to make wood joint is the Butt joint. The joint relies solely on the strength of the glue to hold it together.



# JOINING WOOD..... WOOD JOINTS

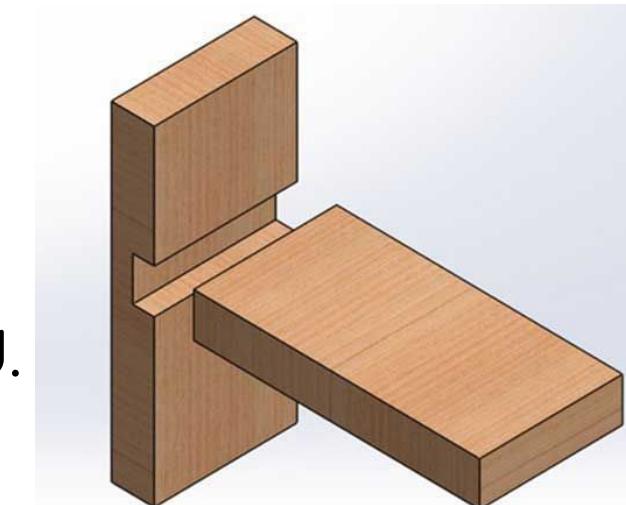
## Through Housing Joint

The trench of the through housing goes fully across the piece of wood so the joint can be seen.

The housing joint is used because:

- Its simple
- Its strong
- Only one component needs shaped.

The housing joint is normally used for shelves within cabinets.



# JOINING WOOD..... WOOD JOINTS

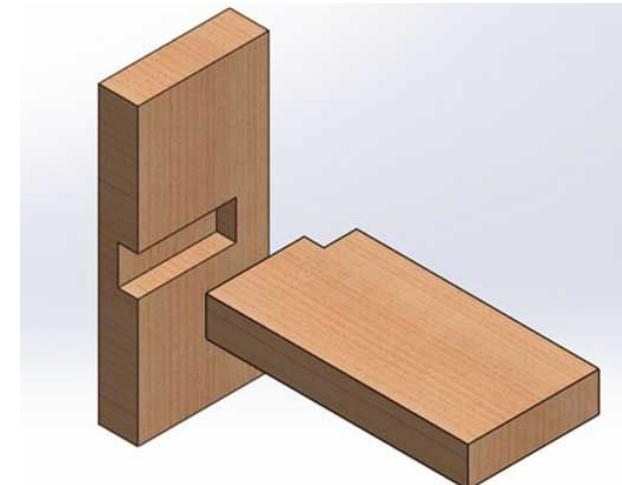
## Stopped Housing Joint

For decorative effect, the trench of the housing is often stopped short of the front edge of the side panel by some 9 - 12 mm.

The stopped housing joint is used:

- Because it's hidden.
- Because it's strong.

The housing joint is normally used for shelves within cabinets.



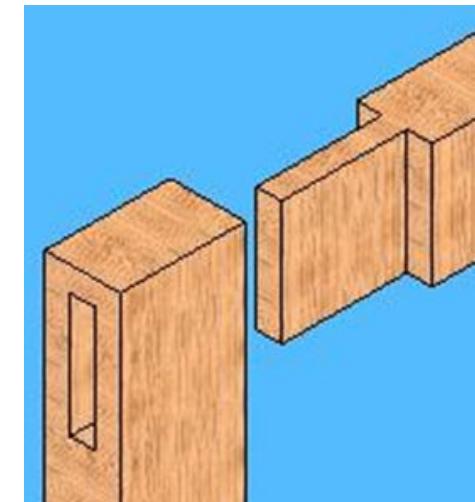
# JOINING WOOD..... WOOD JOINTS

## Through Mortise & Tenon Joint

The mortise and tenon is one of the most common joints used by woodworkers and is the traditional corner joint for sturdy frames.

The through M&T joint is used because:

- It's give a nice detail.
- It's strong.



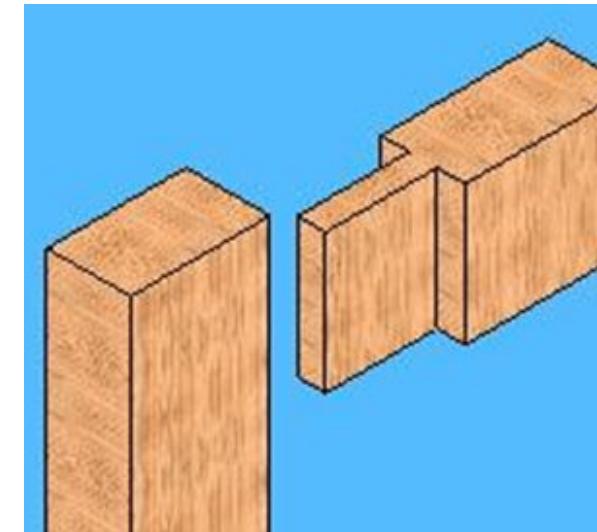
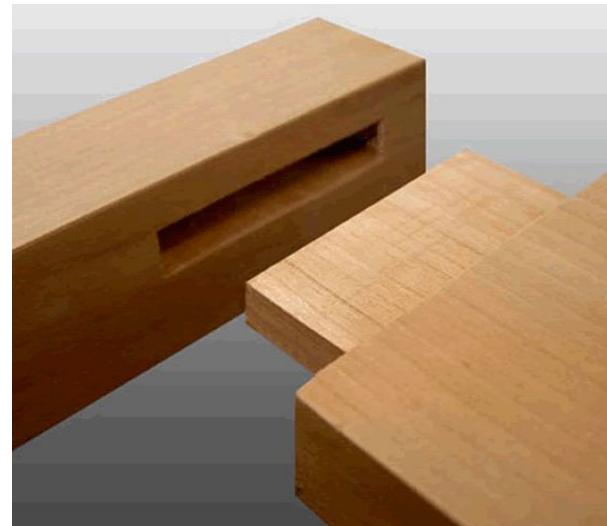
# JOINING WOOD..... WOOD JOINTS

## Stopped Mortise & Tenon Joint

The mortise and tenon is one of the most common joints used by woodworkers and is the traditional corner joint for sturdy frames.

The stopped M&T joint is used because:

- It is hidden.
- It's strong.



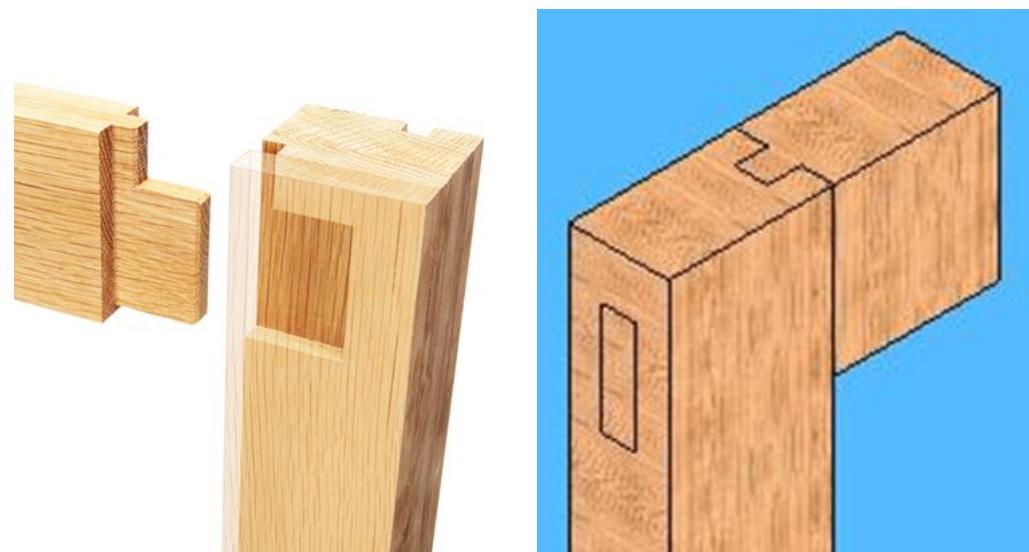
# JOINING WOOD..... WOOD JOINTS

## Haunched Mortise & Tenon Joint

The mortise and tenon is one of the most common joints used by woodworkers and is the traditional corner joint for sturdy frames.

The haunched M&T joint is used because it:

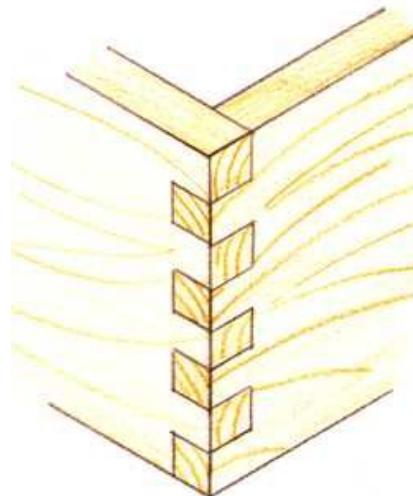
- Is hidden.
- Gives extra strength and gluing area.



# JOINING WOOD..... WOOD JOINTS

## Finger Joint

A finger joint or comb joint is a woodworking joint made by cutting a set of complementary rectangular cuts in two pieces of wood, which are then glued. It is stronger than a butt or lap joint, and often contributes to the aesthetics of the piece.

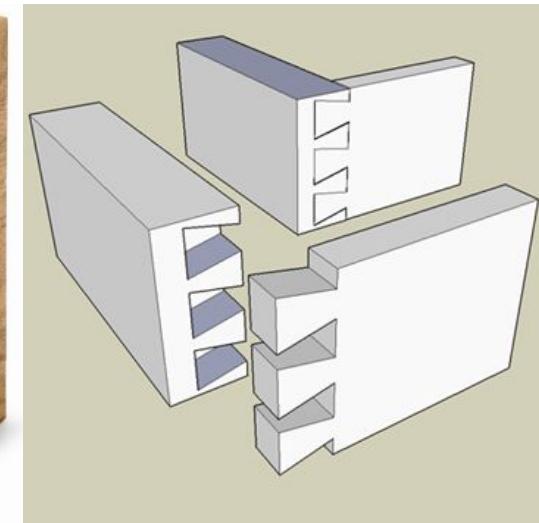


# JOINING WOOD..... WOOD JOINTS

## Dovetail Joint

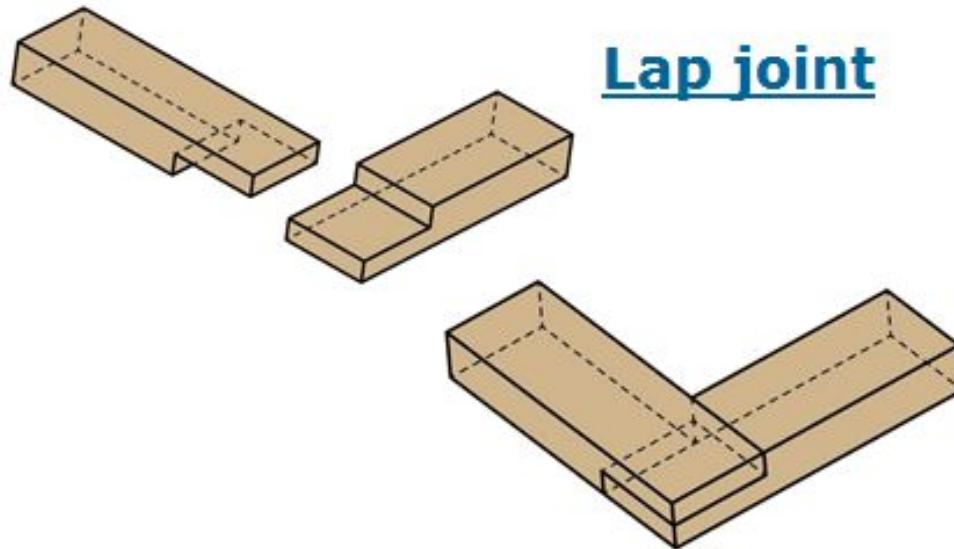
Dovetails are the strongest of all joints. This joint looks attractive and, if well made, the decorative quality can be used to enhance projects.

In other projects the joint can be hidden completely. The most common application of the dovetail joint is in drawer making.

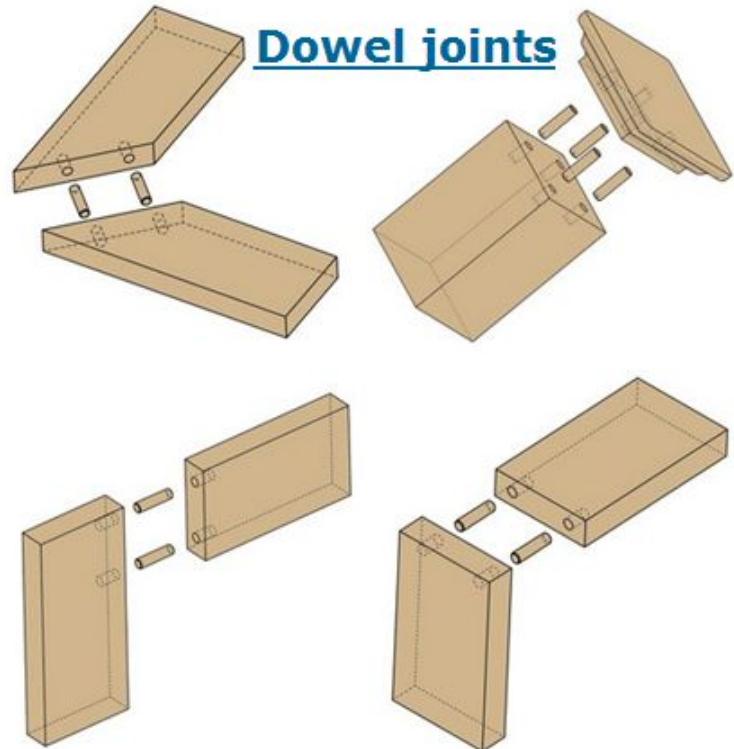


# JOINING WOOD..... WOOD JOINTS

## Other Common Wood Joints



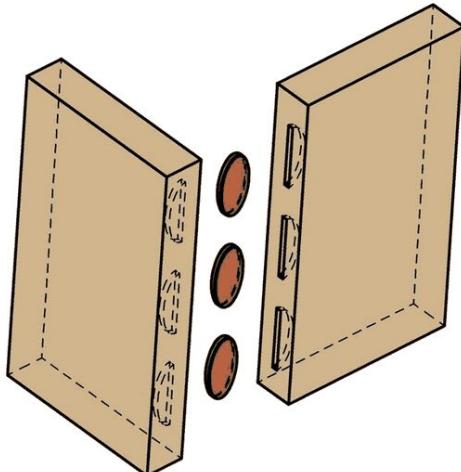
Lap joint



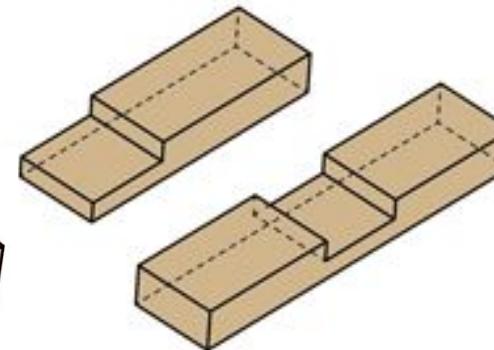
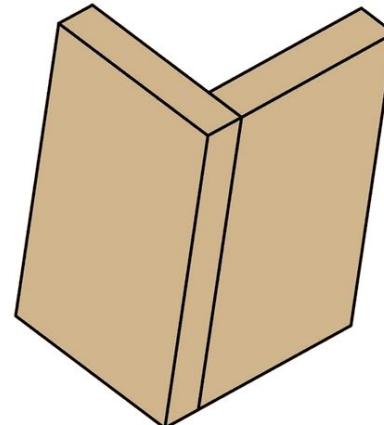
Dowel joints

# JOINING WOOD..... WOOD JOINTS

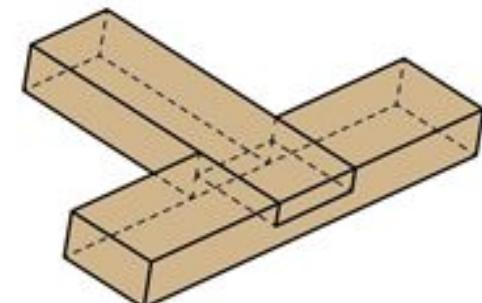
## Other Common Wood Joints



Biscuit Joint



T joint



# JOINING METAL..... HOW TO JOIN METAL?

There are a number of ways to join metals. Some common joining techniques are, rivets, adhesives and thermal joining.



# **JOINING METAL..... RIVETING**

Rivets are used to join plates together and they have been used for hundreds of years. Before the widespread use of welding, rivets were used in heavy industries such as shipbuilding.



**Rivet and Rivet Set**



**Pop Rivet Gun**



# JOINING METAL..... ADHESIVES

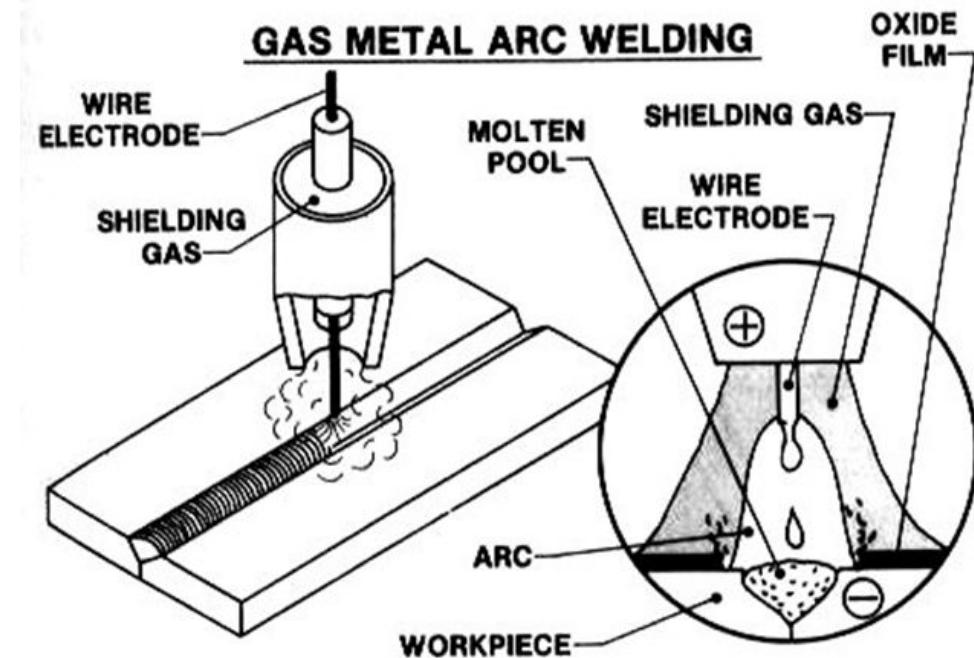
Glues like in wood can also be used with metals. Glues like the epoxy resin can also be used to glue together sections of metal.



New use for resin - being used  
to complete a table top

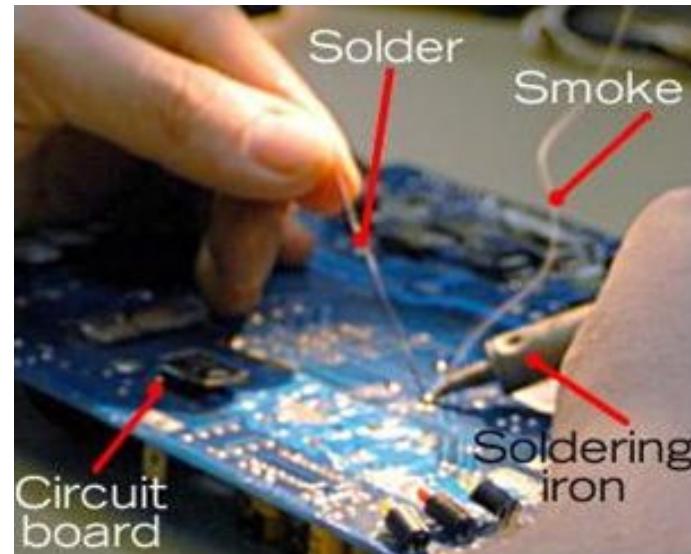
# JOINING METAL..... ARC WELDING

Arc welding is a type of welding that uses a welding power supply to create an electric arc between an electrode and the base material to melt the metals at the welding point to create a permanent joint.



# JOINING METAL..... SOLDERING

Soldering is a process in which two or more metal items are joined together by melting and flowing a filler metal (solder) into the joint, the filler metal having a lower melting point than the adjoining metal. Soldering differs from welding in that soldering does not involve melting the work pieces. Soldering is commonly used in electronics to create circuits.



# JOINING METAL..... BRAZING

Brazing is a metal-joining process whereby a filler metal is heated above melting point and distributed between two or more close-fitting parts by capillary action. It is similar to soldering, except the temperatures used to melt the filler metal are higher for brazing.

