KD FITTINGS, SCREWS, NAILS AND GLUES

This mobile revision pdf is based on detailed work found in the JOINTS section.

Tap on the green link button below to go to the complete website section

Tap the blue button to view areas covered by this Revision PDF

KD FITTINGS, SCREWS, NAILS AND GLUES

1. KNOCK-DOWN FITTINGS

2. TYPES OF SCREWS

3. TYPES OF NAILS

4. GLUES FOR WOOD

5. GLUES FOR PLASTICS

6. SUPER GLUE

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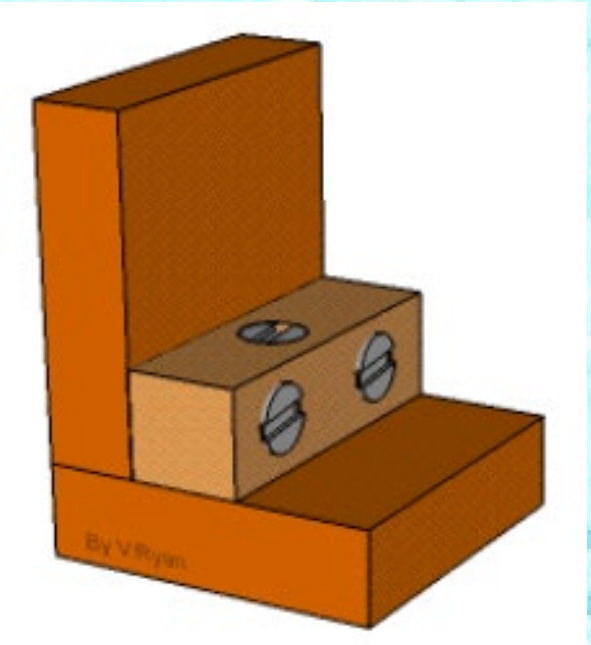
KD FITTNGS - PLASTIC CORNER BLOCK (FIXIT BLOCKS)

The corner block is pressed against the two pieces of material (normally wood based). Screws are used to fix the block into position. This type of joint is used to fit modern cabinets such as those found in a kitchen. It is a relatively strong joint although it has the advantage that it can be dismantled using a screwdriver.

Tap the image for more information and an exercise



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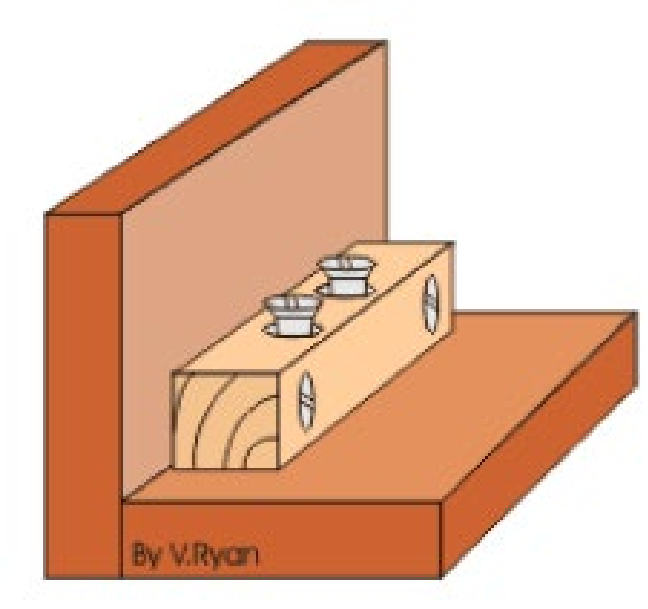
NATURAL WOOD FITTING (SQUARE SECTION BATTEN)

A piece of material such as pine can be drilled and screws can be passed through these holes. This gives a cheap and effective knock-down joint. The screws are normally countersunk into the knock-down fitting.

Tap the image for more information and an exercise



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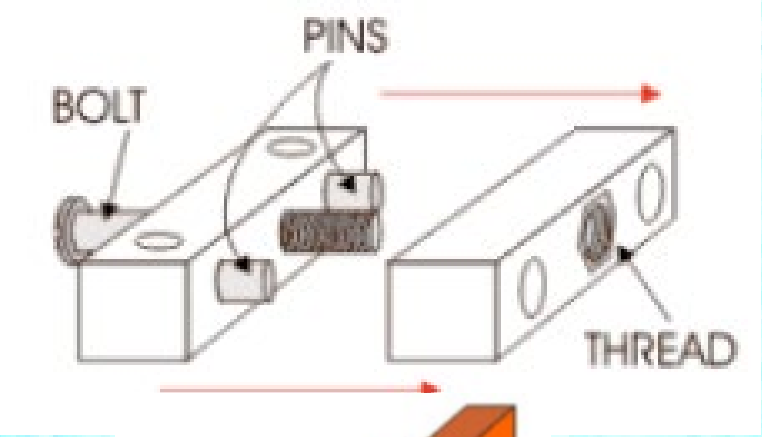
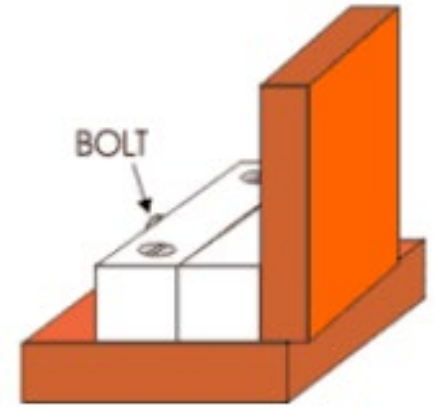
TWO BLOCK FITTING (LOK-JOINTS)

Made from plastic. A bolt passes through the first fitting into the thread of the second. As the bolt is tightened it draws the two fittings together. The pins help keep the fitting straight. A very strong joint and it can be dismantled using a screwdriver.

Tap the images for more information and an exercise





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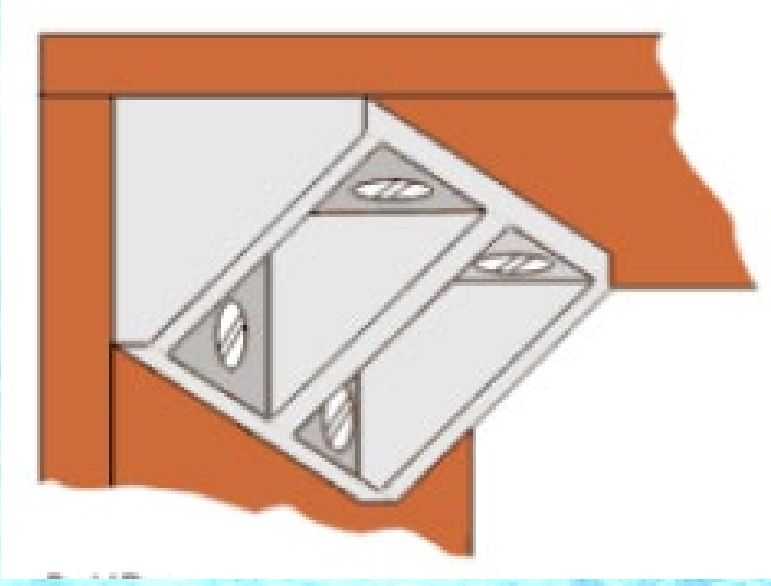
RIGID JOINT

These are normally moulded in plastic which makes them strong. Screws pass through the four holes which hold the sides at each corner firmly together.

Tap the images for more information and an exercise



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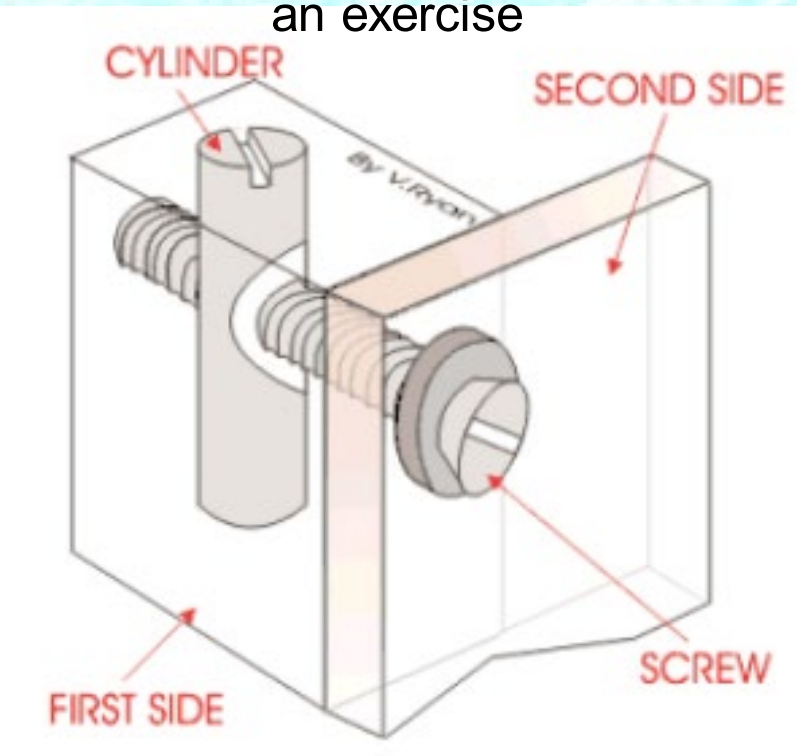
SCAN FITTINGS

Either permanent or temporary joints. The cylinder is inserted into the first side of a cabinet in a pre-drilled hole. The screw is then pushed through the hole in the second side until it meets the cylinder. It can then be tightened with a screw driver until both sides of the cabinet pull together.

Tap the images for more information and an exercise



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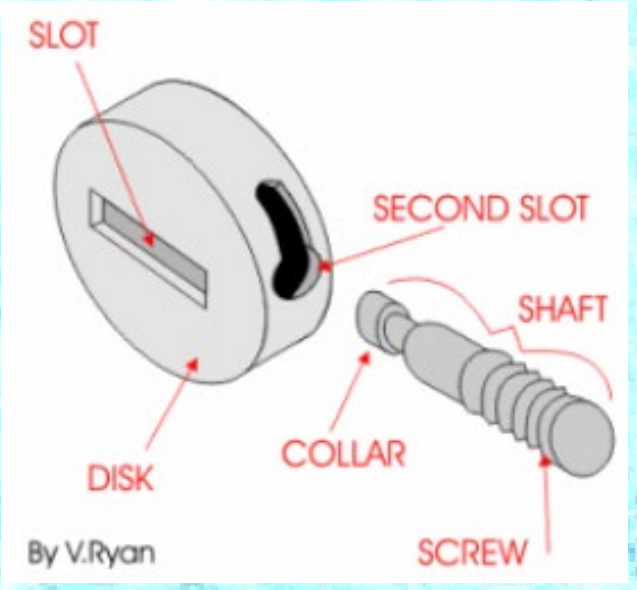
CAM LOCKS

The disk fits into a recess in the first side of the cabinet. It rotates by inserting a screwdriver into the slot in its side. The shaft is screwed into the second side of the cabinet. The collar of the shaft is passed through the hole in the second slot in the disk. When the disk rotates the shaft is locked in position. This keeps both sides of the cabinet locked together.

Tap the images for more information and an exercise



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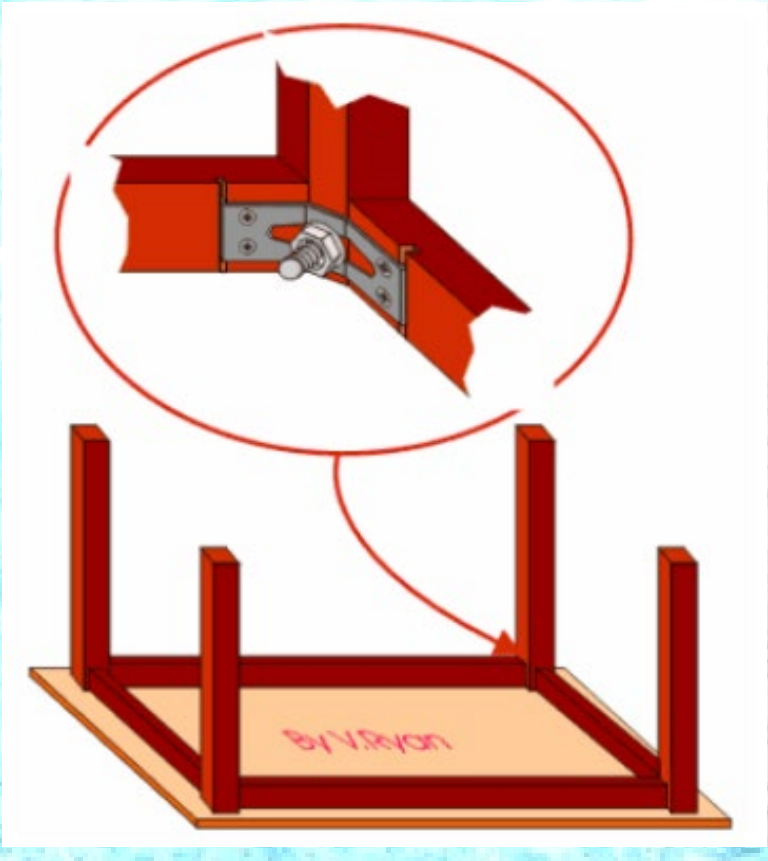
THE TABLE PLATE

The diagram below shows a typical table which has been permanently fixed together using mortise and tenon joints. The highlighted area shows an alternative way of fixing the parts together, using a table plate.

Tap the images for more information and an exercise



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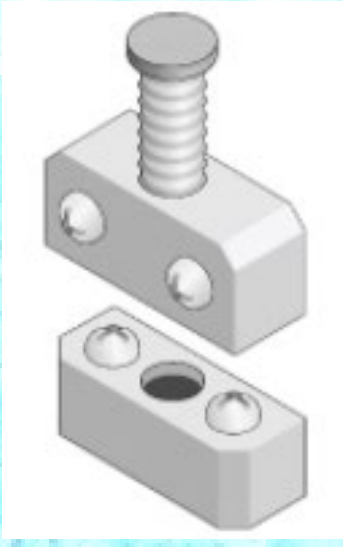
KNOCK DOWN JOINTS
ADVANTAGES TO CUSTOMERS

Knock Down Fittings - can be put together easily, using only a screw driver, allen key, drill, mallet/hammer and other basic tools.

Advantages to user - easy to assembly by everyone, no need for technical knowledge. Can be disassembled and reassembled. Spares are readily available. Faster to put together, than traditional joints



Tap the images for an exercise

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KNOCK DOWN JOINTS ADVANTAGES TO MANUFACTURERS

Advantages to manufacturer - Joints manufactured in large numbers and therefore cheap. Made from different materials to suit the flat pack furniture. They are tried and tested joints and work efficiently. Customers often already know how to use these joints and do not need help putting furniture together.

Tap the images for an exercise

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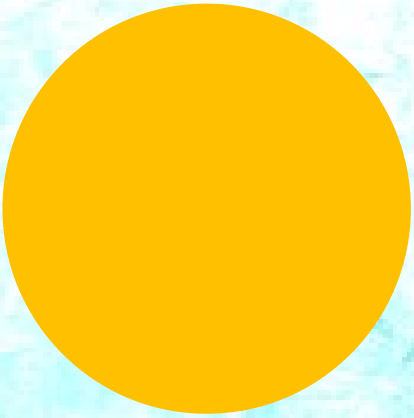
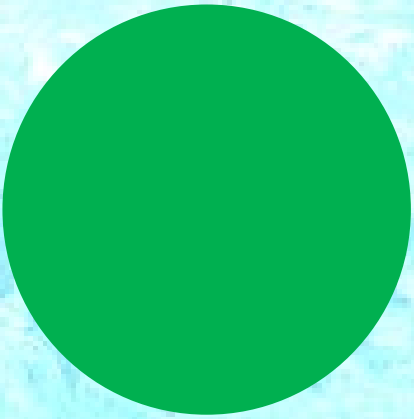
REVISION EXERCISES

Tap the images for two exercises relating to Knock-Down Fittings





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TYPES OF SCREWS

Screws are used to fit materials such as chipboard, MDF and natural woods together, although there is a type of screw called a self-tapping screw that can be used for joining thin metal sheet. Screws can be used to join materials together permanently, although as they can be unscrewed with relative ease, they are also good as a way of fixing materials temporarily.

Tap the images for more information and an exercise

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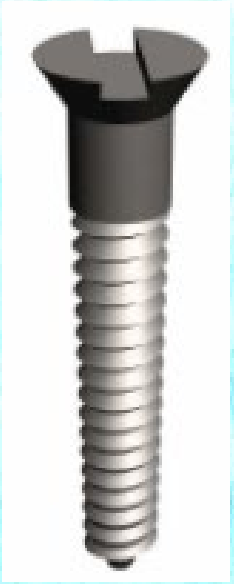
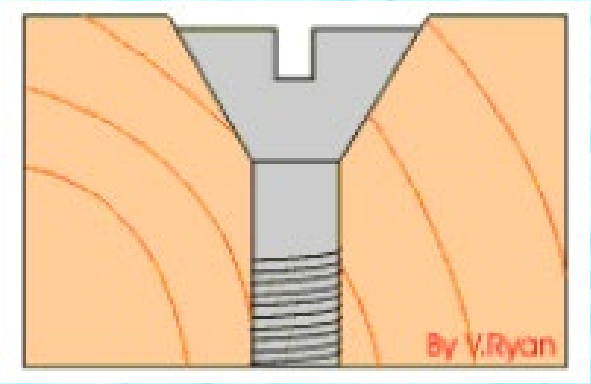
COUNTERSUNK - SLOT HEAD

These can be used for general woodworking for example fitting hinges to doors. Because the screw is countersunk it can be tightened 'flush' to the surface of the material.

Tap the images for more information and an exercise





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POZIDRIV HEAD

Used with special screw drivers which will not slip when pressure is applied. This is ideal when using screws in corners or confined spaces.

Tap the images for more information and an exercise

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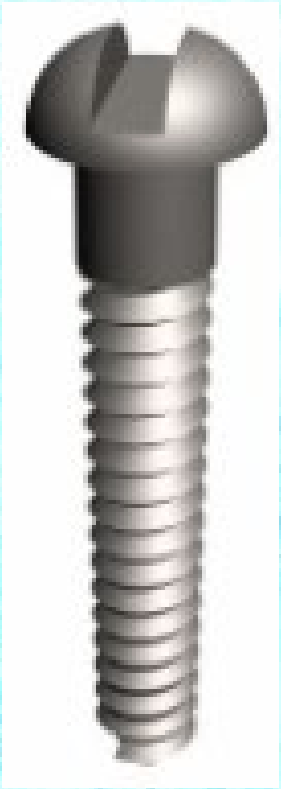
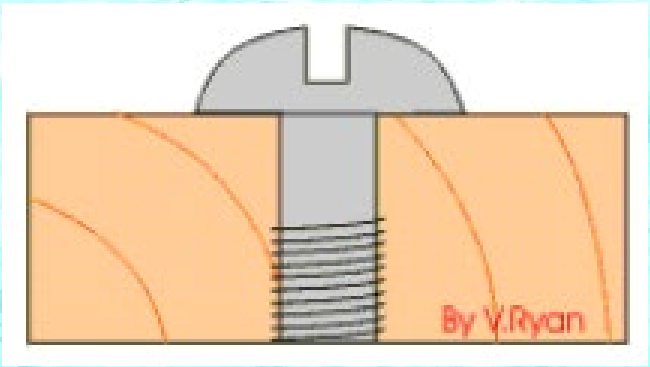
ROUND HEAD SCREW

These are used for fixing pieces of material together, where countersunk holes are not being used. Round head screws can look quite decorative, especially if they are made of brass.

Tap the images for more information and an exercise





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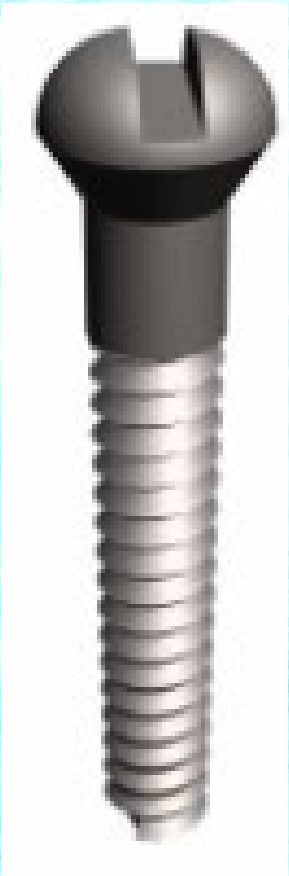
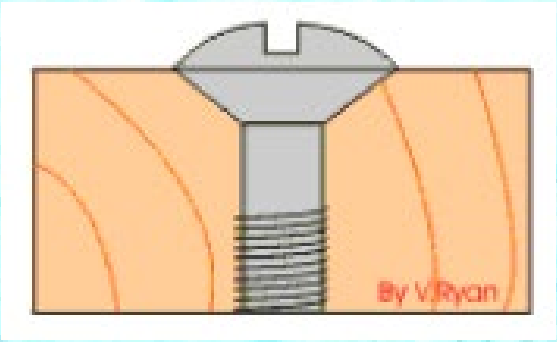
RAISED HEAD SCREW

Used to fit door handle plates and decorative features that must look good. Usually manufactured from steel and brass.

Tap the images for more information and an exercise





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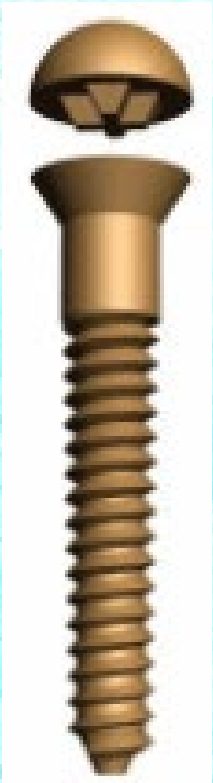
DOME HEAD SCREW

Can be used for fitting fixtures such as mirrors. The 'cap', which is the dome shape is usually chromed or made from brass and this can be a good feature. It also makes the head of the screw safe as the doom has no sharp edges to catch and cut hands/fingers.

Tap the images for more information and an exercise



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CHIPBOARD SCREWS

The thread on this type of screw extends all the way along the length. It is best used with chipboard

Tap the images for more information and an exercise

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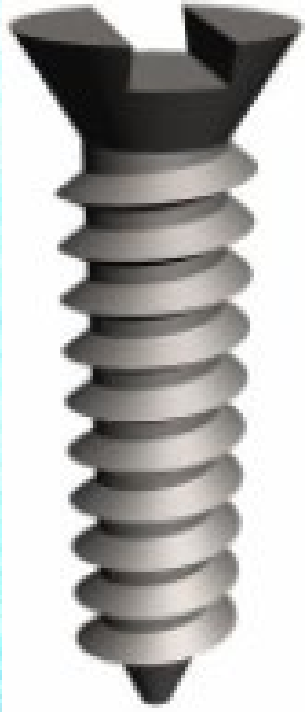
SELF-TAPPING SCREWS

These are normally used to cut a thread in metal. A hole is drilled in the metal, a fraction smaller than the width of the screw. The self-tapping screw is then turned into the hole cutting a thread.

Tap the images for more information and an exercise



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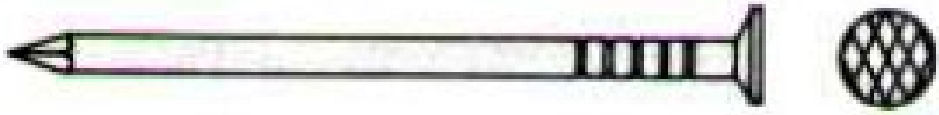
Tap the images for more information

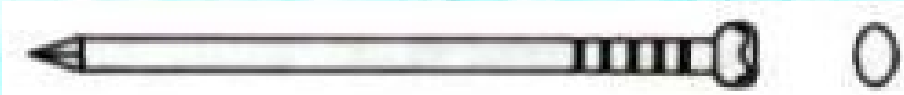
ROUND WIRE NAIL

This is used for general work. It is not attractive in shape and it can split wood when hammered in position



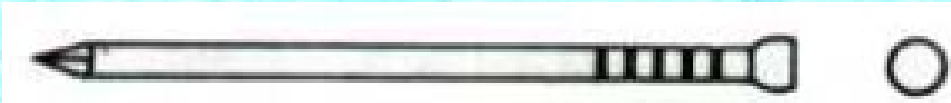
OVAL WIRE NAIL

This is a long nail and care must be taken when it is hammered into the wood. It is unlikely to split the wood.



LOST HEAD NAIL

This is ideal if it is necessary to hide the head of the nail as a punch can be used to hammer the head beneath the surface level.



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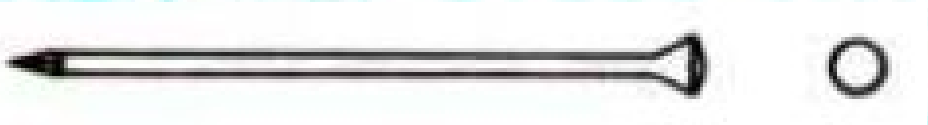
Tap the images for more information

PANEL PIN

A very popular way of joining woods although glue is usually included as part of the join.

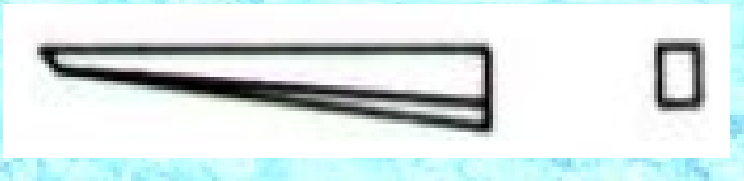


TACK

Can be used for fixing textile materials to wood for example, fixing upholstery to furniture.

SPRIG

This no head and is generally used for fixing glass to glass in wood frames.



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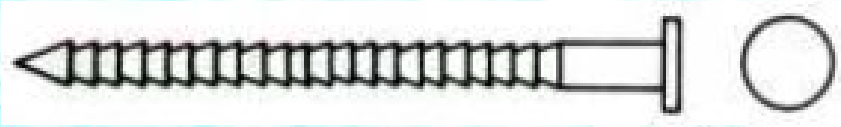
Tap the images for more information

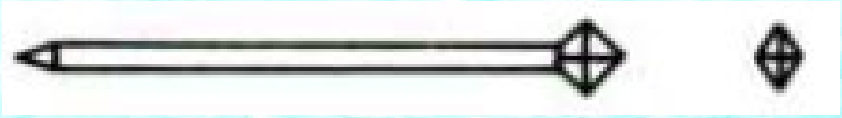
ANNULAR NAIL

The teeth of this nail hold it in place firmly. Therefore, it is used for fixing plywood and other materials.



HARDBOARD PIN

The diamond shaped head is hidden when used in materials like hardboard



CORRUGATED FASTENER

This will hold the corners of wood frames firmly together

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P.V.A. (Polyvinyl Acetate)

These glues are very popular, as they do not need preparation. They are usually supplied in a plastic container and can be applied straight away. A good example of this is 'Evo-stik Woodworkers Resin'.

Tap the image for more information and the stages of application and an exercise.

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CASCAMITE

Cascamite is a waterproof glue and is probably the must effective glue of all. It is a white powder and is resin based and should be mixed in a glass or plastic container, two parts water to one part cascamite. It must be stirred thoroughly until it becomes a smooth/creamy paste. Cascamite is a quality glue and is suitable for all furniture especially if used outside as it resists rain water.

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TENSOL CEMENT

Perhaps the best glue is Tensol Cement which joins plastics such as perspex together permanently. The glue is applied to the surfaces to be glued and they are pressed together. They should be clamped for 24 hours and this gives a permanent joint.

Tap the image for more information and the stages of application and an exercise.

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CONTACT ADHESIVE

Contact adhesive can be used to join plastics. The adhesive is applied to both surfaces and when the surfaces appear to be dry they are pushed together. If the two pieces of material are left for a number of hours, they are virtually impossible to take apart.

Tap the image for more information on glues.

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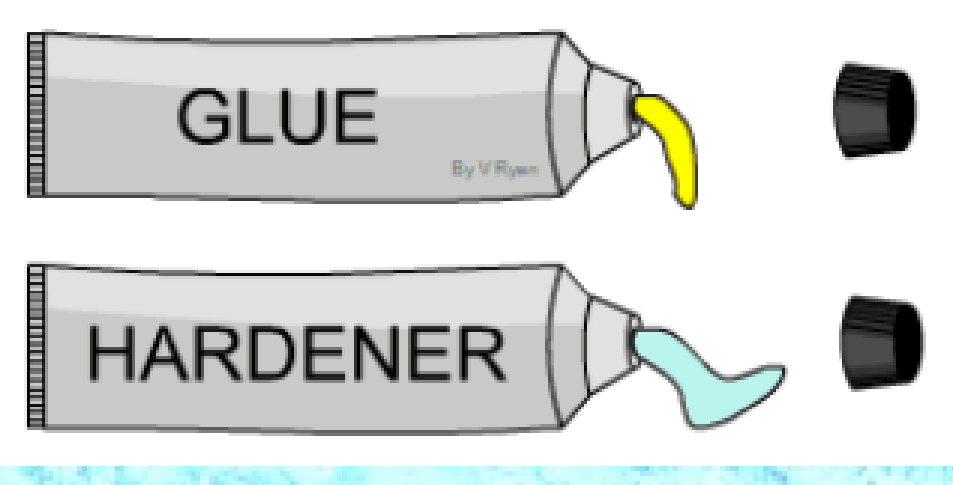
EPOXY RESIN

Many adhesives are plastics themselves. A good example is 'Araldite' which is an epoxy resin that hardens when a second chemical is added (called a catalyst). It can bond most materials including some plastics. The two tubes can be seen in the diagram. An equal amount of each tube are mixed together and then applied to the material to be glued

Tap the image for more information and the stages of application and an exercise.



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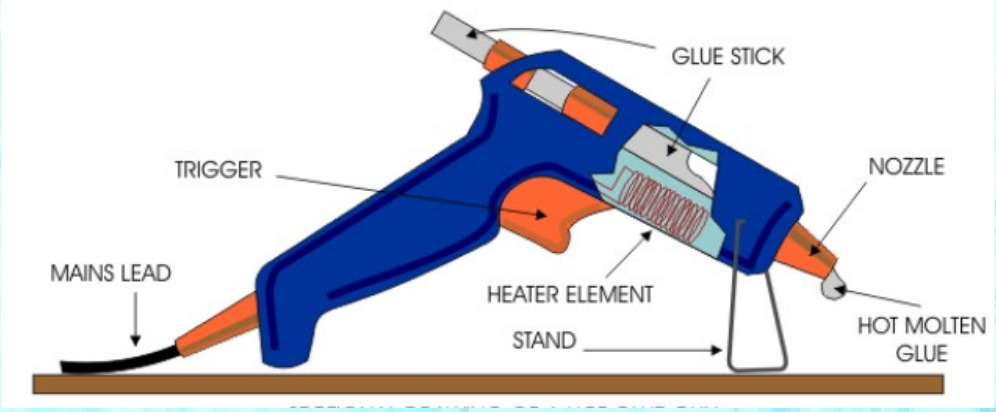
THE HOT GLUE GUN

A hot glue gun is a very useful tool for joining modelling materials and even more substantial materials can be fixed together with it. ‘Sticks’ of solid glue are pushed into the back of the gun, the trigger is pressed pushing the glue stick forward and molten glue comes out of the nozzle. The glue is manufactured from thermoplastics.

Tap the image for more information and the stages of application and an exercise.



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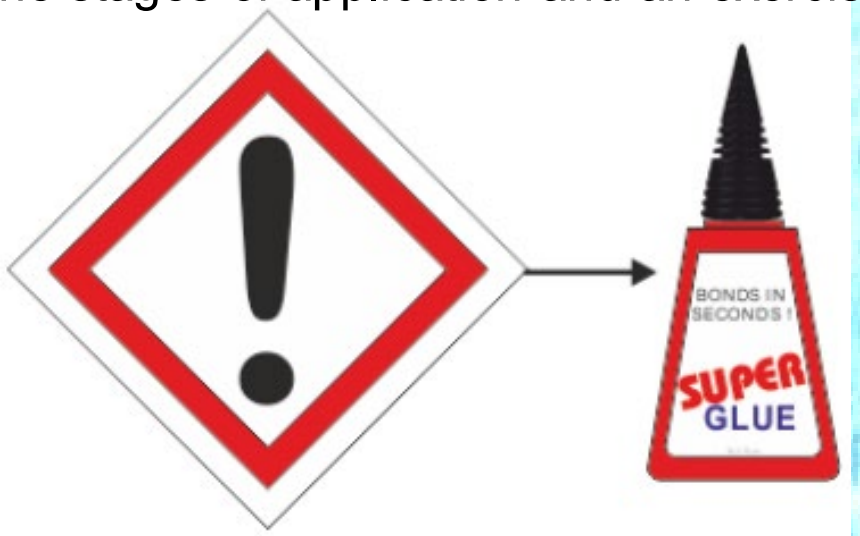
CYANOACRYLATE (SUPER GLUE)

Cyanoacrylate is the original name for super glues. Discovered / invented in the 1940s, it was only in the 1950s that it's commercial potential was realised. It has a range of applications from joining materials to sealing wounds (medical), as seen in the Vietnam war of the 1960s and 1970s. Today, cyanoacrylate is an extremely popular glue and it is found in almost every household, with a variety of different trade names.

Tap the image for more information and the stages of application and an exercise.



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ADVANTAGES OF SUPER GLUE

Cyanoacrylate (super glue) has a number of advantages:

It dries very quickly, which means there is usually no need to clamp materials together for a long time, unlike many other types of glue. Simply apply a little pressure for a few seconds.

It is extremely strong, although early super glues were relatively weak when a shear force is applied.

It is a clear substance, leaving little trace on the materials being joined.

Tap the image for information and an exercise

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DISADVANTAGES OF SUPER GLUE

It dries so quickly, that repositioning the materials being glued, once super glue has been applied, is usually impossible. Materials must be lined up accurately before applying the glue.

The user must take great care, so that 'fingers' are not glued together. This applies to any contact with skin. A visit to a hospital may be required to separate glued skin. Super glue can be an irritant if contact is made with skin.

Once the tube is open, the remaining glue in the tube will only last a few days / weeks, before it becomes unusable.

Tap the image for information and an exercise

Tap the red button to return to the Contents page