

Mass Production

When producing lots of a particular product we often use the term 'mass production'. This can mean a number of different things;

- Job Production (or Project Production / One Off Production) is making one of an item.
- Batch Production is making a number of identical products, such as a batch of 50 CD racks. The key to batch production is that there are differences in the products being made, for example, making a batch of 50 red CD racks, followed by 50 yellow CD racks, followed by 50 blue CD racks etc.
- Continual Production is making large quantities of identical products that do not change.

To help make sure that the quality of each product we make in a batch is good we can make use of Templates, Jigs and Moulds.

Templates

A template is something that you draw around. They can be made of card or paper, but if you want them to last a bit longer it is better to make them from a more durable material such as metal.

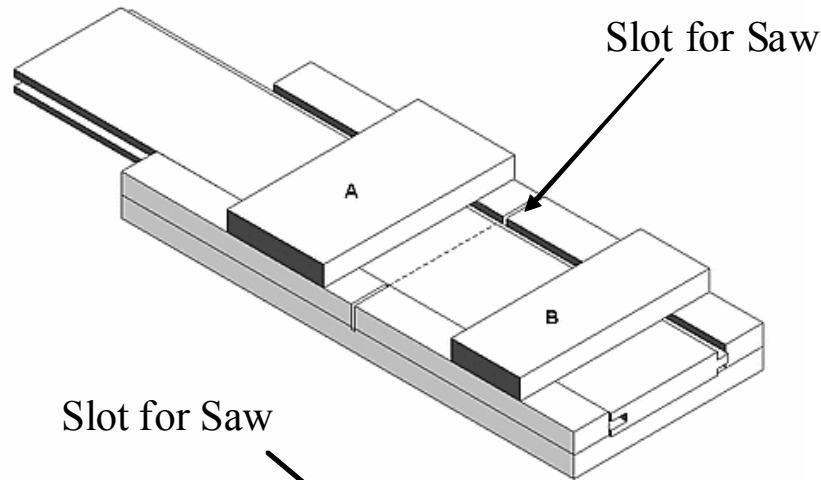


This picture shows a template for marking out the neck of a harp. The template is at the top and is made from thick card.

Mass Production - Templates

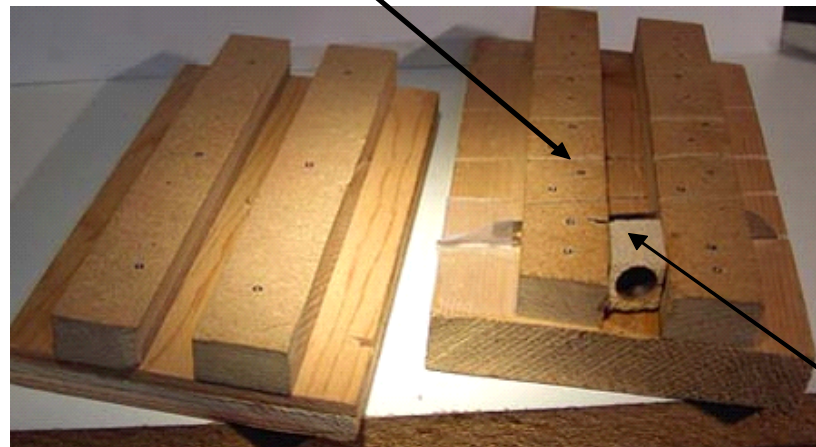
Jigs are used when we want to repeat a process consistently. Jigs are commonly used to help us;

- Cut material to the same length.
- Drill holes in material in the same place.
- Bend material to the correct shape.



These pictures both show cutting jigs.

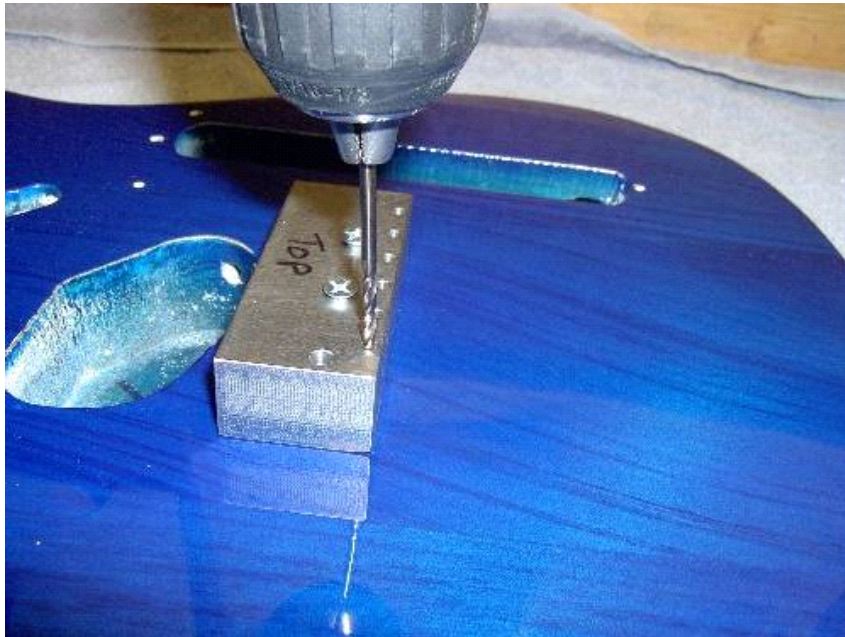
In the top picture the piece of wood to be cut is pushed into the jig. The parts labelled 'A' and 'B' hold the wood in place. A saw is then placed in the slot and the wood is cut.



This picture shows two jigs. The one on the left is for marking out a piece of wood to the correct length (you simply put the wood in the slot along to the end and then mark off the length).

The picture on the right is the cutting jig. The wood is pushed along until it hits the stop. As before there are slots for the saw.

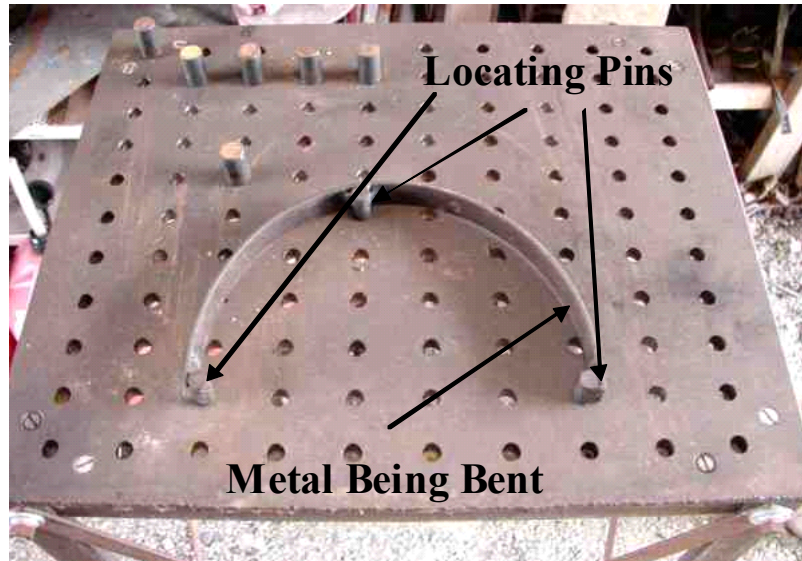
Mass Production - Jigs



This picture shows a drilling jig used to accurately drill holes in a guitar.

The jig is made from a block of metal (to make it more hard wearing) and has holes already drilled in it in the correct place. The jig is then placed on the guitar and held in place. The drill bit is then inserted into each hole in the jig and the hole drilled.

In this way only one jig needs to be made to drill the holes in any number of guitars accurately and without the need for marking out.



This picture shows a piece of flat metal bar being bent into shape.

A series of locating pins are attached to the board in the desired shape. Commonly two pins are used, one either side of the piece of metal. The metal is then simply placed between the pins and bent around them.

The same principle applies to round bar as well.

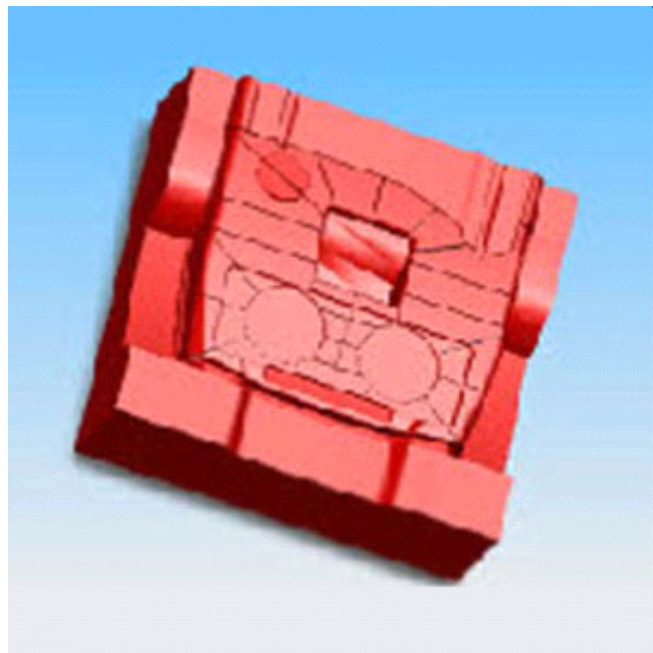
Mass Production - Jigs

A mould is a pre-shaped object that allows exact copies to be produced. Shown in the pictures are two common ways in which moulds are used.

The left hand picture shows a mould used for vacuum forming.

The right hand picture shows a mould for a plastic chair that is to be made by injection moulding.

Refer to your notes on plastics for descriptions of these two processes.



Mass Production - Moulds