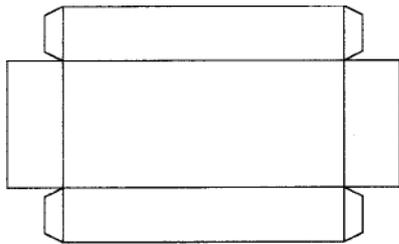


FORMING METAL – BENDING

Thin sheet metal (up to 1.5mm thick) can be bent, by hand, into boxes, trays and cylinders. The metal sheet needs to be prepared as a 'net' or 'development' before bending.

Note: It is a good idea to make a full size card model first, so that costly metal is not wasted if there is an error.

A typical net for a metal box



To make the edges more rigid and to make them less sharp, they can be folded to make a 'safe edge'.

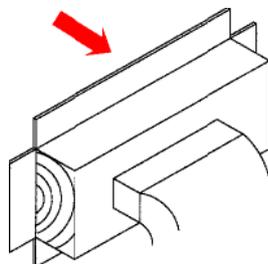


Hit with mallet and wooden striker



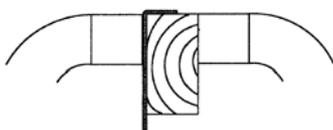
To bend an edge to 90° on a sheet of metal that is larger than the jaws of the vice, **folding bars** can be used to hold the sheet.

Hit with mallet and wooden striker



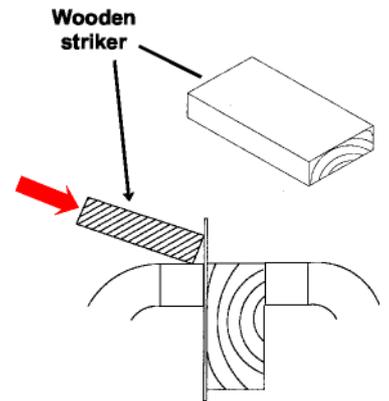
To enable both sides and ends of a box or tray to be folded, a wooden block can be cut to be the same size as the base.

Note: The wood has to be thicker than the height of the sides.



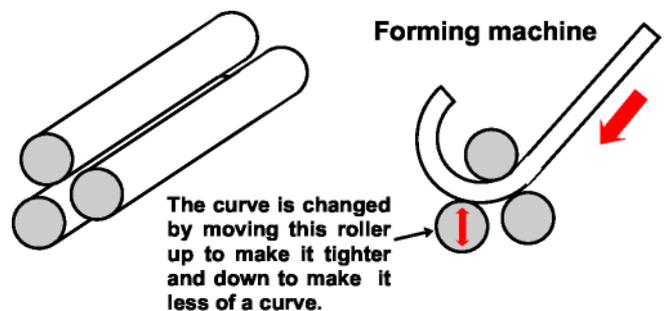
One edge bent to 90°

If the side is hit directly with a mallet it tends to end up with a wavy edge. It is better to hold a hardwood striker at a slight angle against the side and hit the striker with the mallet.



Forming a Cylinder

For bending curves, a machine that has three adjustable rollers is used. The tightness of the curve can be controlled by altering the position of each roller.



KEY WORDS Net: Folding Bars: Forming Machine:

1. What thickness of sheet metal can be bent by hand?
 2. Draw a net of a tray made from sheet brass. The tray is to be 200mm long, 150mm wide, with 20mm high sides, when finished.
 3. Why should a card model of the 'net' be made?
 4. How can the edges of the tray be made safer?
 5. What advantages are there in using folding bars for bending the edge of a sheet of metal, instead of vice jaws?
 6. How can both the sides and ends of a box or tray be folded up?
 7. How can you avoid the edge of the sides becoming wavy?
 8. Illustrate how a cylinder could be made from a sheet of copper.
- A** Make a paper or card model of a net that would be suitable for making a copper container for a house plant in a 100mm diameter flowerpot, that is 95mm tall.