

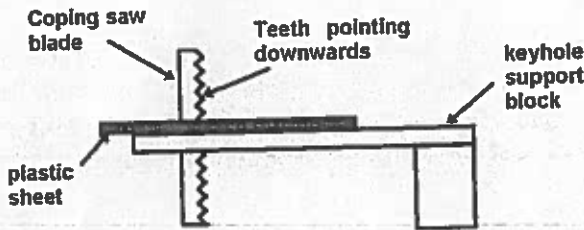
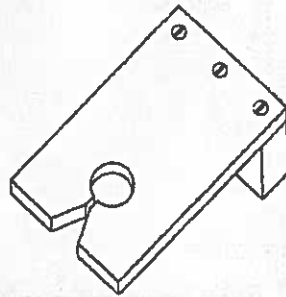
SHAPING PLASTICS - WASTING

Sawing

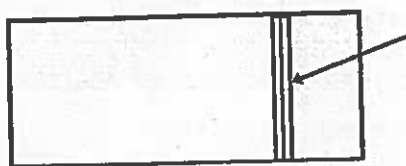
There are two main problems that occur when sawing plastics.

1. Hard, rigid plastics such as Acrylic and Polystyrene can crack easily if they are not well supported.
2. Power saws tend to create so much friction heat that the cut plastic softens and welds itself back together again behind the blade.

A keyhole support block
The block is held in a vice.



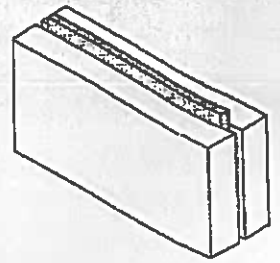
When using a scroll saw or bandsaw the heat problem can be solved by sticking 'sellotape' over the line to be cut, or draw the line on masking tape that was put on for marking out. The tape takes away enough heat from the plastic to stop it welding together behind the blade.



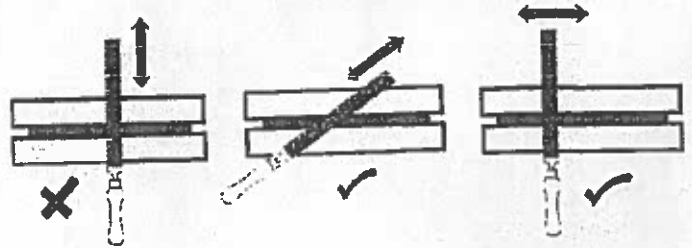
Planing and Filing

A woodwork plane can be used on the edges of most plastics, provided the blade is set to make a very fine cut. Hard plastics like Acrylic will blunt the blade very quickly. It is best to have a plane set aside for use on plastics only. It is very important to support the plastic when it is in the vice to stop it cracking when pressure is put on it by the plane.

For support, when planing or filing, sandwich the plastic sheet between two wooden blocks with the plastic only just showing above the wood. This is then held in a vice.

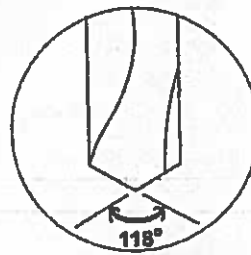


When filing the edge of a sheet of plastic, never file at right angles to the edge, because the plastic may crack. Always file at an angle or drawfile.

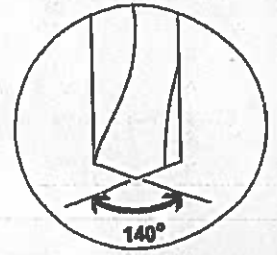


Drilling

Normal jobber drills that can be used for wood and metal are not suitable for plastic unless they are reground to a different angle. A standard drill will catch the plastic as it breaks through the bottom of the hole and cause cracking around the hole.



Normal jobber drill



Reground jobber drill

Any hole over 6mm diameter is best drilled using the pilot hole method. First drill the hole with a 4mm drill and then redrill with a 6mm drill and continue using drills that are 2 or 3mm larger in diameter until the correct size is reached.

1. What problems do you need to overcome when sawing plastic?
2. Why do you think the keyhole support block works so well?
3. When using a support block, why do the teeth of the blade need to be pointing towards the block?
4. Why should you stick tape over a saw line when cutting plastic with a power saw?
5. Illustrate how you would support a sheet of plastic for planing or filing.
6. Show how you should file the edge of a sheet of plastic to avoid cracks occurring.
7. Why is it not a good idea to use a jobber drill from the store to drill a hole in plastic?
8. Explain how you would plan to drill a 10mm diameter hole in a sheet of plastic.