

DRAWING CONSIDERATIONS.

INTERNAL CORNERS – All cutters are circular. The radius of your chosen cutter will be equal to the radius left on any internal corner. E.g. an 8mm diameter cutter will leave a 4 mm radius on any internal corner.

DEPTH OF CUTS – Generally, the thicker your chosen material, the more passes are required to cut through it. The greater the diameter of the cutter, the deeper we can cut in one pass. **By using a wider diameter cutter you can save yourself both time and money as more material can be removed faster.**

Also remember, our machine is capable of making cuts at any specified depth into your material. Not just all the way through.

SPACING COMPONENTS ON YOUR SHEET – You must leave a 5mm border between any part and the edge of the sheet. This is to make sure that we don't miss any edges off your components.

The way your parts are laid out on the sheet will have a large effect on material efficiency and cutting time, so it's important to get as much from your materials as possible. The main limitation of "nesting" parts for CNC cutting is as follows:

- The distance from your parts to the edge of the sheet (part to sheet nesting) should be

No less than 5mm.

- The distance between parts on a sheet (part to part nesting) should be

No less than 10mm.

- The distance between smaller parts on the sheet (see "small parts" criteria) should be

No less than 20mm.

SMALL PARTS - Allow extra room between smaller components (anything smaller than 300x300mm or narrower than 100mm). Small components have a tendency to want to move during cutting. The small surface area of these components makes our vacuum less effective at holding them to the machine bed. We combat this by adding thin holding tabs so secure them in place (like an Airfix kit) You must therefore allow 20mm spacing around small components as they will require holding tabs.

CUTTING AREA – Our machine bed is 3050x2050mm so we are able to cut sheets that will fit within those parameters.

You illustrate your sheet and its dimensions on your CAD file.

REBATES/POCKETS – The machine can cut an internal region of any shape to any specified depth. This is called a 'pocketing' operation.

- Be aware, 'pocketing' can make for a lot of cutting if the area is large.
- Internal corners of pocketing operations will have a radius equal to the cutter.

HOLES – When illustrating a hole on your drawing, you must draw both the hole diameter (circle) and the centre point.

e.g.



CUTTERS – There is a cutter for every purpose.

Standard cutters include 3mm, 4mm, 6mm, 8mm diameter... etc

If you need a specific type of cutter or advice on your choice we would be happy to consult you. Do not hesitate to contact us.

See the following for available types :

<http://www.vortextool.com/>

http://www.wealdentool.com/acatalog/Router_Cutters_1.html

OFFSETS – Our machine can interpret a line in three ways:

- Cut directly on the line ('engraving') - e.g. If you cut on the line with a 6mm cutter, there will be 3mm cut on each side of the line
- Offset, outside the line – e.g. Cutter diameter will be offset and cut directly up to the outside of the line
- Offset, inside the line – e.g. Cutter diameter will be offset and cut directly up to the inside of the line

COLOUR CODING KEY:

BLUE – INTERNALS/REBATES

RED - OUTLINES

MAGENTA -

GREEN – HOLE CENTREPOINT

DARK GREEN – DRILL CIRCUMFERANCE

WHITE - ENGRAVING