York Modelmaking Bespoke Laser-Cutting Information Sheet

We hope that the information below will answer most of your queries about our bespoke laser-cutting service, but please do get in touch with any questions.

Once you're ready to send us information for a quote you can email the details of your project, including any drawings and photos, or pop them in the post to us.

1. Laser-cutter details

Our laser-cutter beds are 600 x 900mm. However, when cutting groups of smaller items we prefer to work within a much smaller area (to keep the computer file size down). Unlike metal etching, we don't work in specific sheet sizes, so you will only be charged for exactly the amount of material you require. We will arrange individual components on a drawing to use the material in the most efficient way. Small items don't have to be attached to a fret, although this can be advantageous in some circumstances, such as for retail kits.

The laser can only cut vertically into flat sheet materials.

As well as cutting through materials we can laser-etch and engrave into the surface. The depth of the etch lines can't be precisely set but can be varied to be either a light "guide line", a deep "break line" or a mid depth line for adding detail to the surface. The width of the cut / etch line can't be varied (except by purposefully setting the laser-head out of focus). Similarly, the depth of an engraved area can't be set to a precise measurement, but can be varied from just removing the top surface of the material to almost the full depth of the material.

We are also architectural model-makers, so if required we can manufacture items using more traditional model-making techniques.

2. Information we need from you

In order for us to provide a free quote we need to see your drawings or sketches (please see 'drawing requirements' section below). Let us know if you haven't yet produced computer drawings, but intend to do so.

We need to know precisely what you require and how many pieces you need. Let us know what material you want us to use; or ask if you would like us to advise on the most suitable options. Please see our separate information sheet for material options.

Windows and doors – do you want them cut as a single layer, or in two or three layers to give extra depth e.g. for sash windows? Do they need to fit into an opening or can we add an outer border to fit behind the opening, as per our standard range? An outer border will prevent the frame from distorting. If you need to fit your windows into the window opening we may need to thicken the outer frame to stop distortion. Do you require clear acrylic glazing laser-cut to size, or any of our standard packs of acrylic glazing to cut yourself?

Buildings – do you want a kit of parts (butt jointed or with tab & slot construction) to put together yourself, a basic shell to add your own finishes to (usually the cheapest option) or a fully finished, coloured and detailed model (remember, that's a lot of man-hours!) Let us know what parts you require – window and door frames, glazing, chimneys, valances, signs etc. Do you need brickwork etching into the surface? (large areas are time consuming to laser-etch so cost more than a plain finish)

Coach sides - we would usually cut the sides from white Rowmark with etched outlines for frames round doors and windows etc, and cut overlays for the beading from Mylar with "double-sided" adhesive tape applied to it. The laser can only cut flat sheet materials so cannot produce the tumblehome – this can either be sanded if using thicker materials, or you may be able to bend thinner materials to give a slight curve, given a strong enough base structure to glue it to.

3. Drawing requirements

Hand drawings / sketches
If you require us to produce the computer drawings we can work from hand drawings, sketches or copies of photographs. If not drawn accurately to scale please clearly label them in mm (not imperial measurements) at your required model scale, and mark how many components you need. If you want any drawings or photographs returning by post please provide a stamped addressed envelope.

Computer drawings
Our laser-cutters use the programme CorelDrawX4. If you are providing CorelDraw files, if possible, please save the drawings as CorelDrawX4, but if not, we can change them to this version.
We can transfer CAD drawing files into our CorelDraw programme – DWG or DXF, preferably saved in 2009 or earlier, or Ai files (single page files only), or EPS files, which are usually the most reliable.
If using other drawing files please email a sample drawing so that we can check they are compatible. (PDF files, sometimes, but not always, transfer OK)

Please send the drawing to your required model scale and add either a scale bar or a single dimensioned box round the drawing, for us to check it has transferred correctly at the right size. Please don't label lots of individual parts of the drawing with dimensions, as these all have to be removed.

For the purposes of laser-cutting, the drawings need to be drawn as single lines. The laser cuts along each line drawn, either fully through or part way through as an etch line, depending on the colour of the line. Usually this would be black for a full cut and red for a partial cut (any colour will do, so long as we can differentiate, and your instructions are clear; but best avoiding yellow and pale colours that are hard to see or similar colours that are hard to distinguish between)

The order of cutting can be determined by using different line colours. If a box is drawn inside a larger box, the laser will cut the smaller inner box first, before it cuts the large outer box and it drops out of the sheet. However if the boxes / shapes are drawn as a series of single lines the computer won't recognise them as complete shapes and may cut the outer shape first (and then cut thin air instead of the inner box because there isn't anything there anymore!) So by you drawing inner shapes in a different colour we can programme the laser to cut the shapes in the correct order. If necessary you can use several colours.

For etching brickwork or stonework please use a different colour for the horizontal mortar lines to the vertical mortar lines, as we can run the laser a lot faster for the continual horizontals than the broken vertical lines (saving time and money).

The depth of the etch lines cannot be precisely set but can be varied to either be just a light “guide line”, a deep “break line” or a mid depth line for adding detail to the surface. The width of the cut / etch line cannot be varied (except by purposefully setting the laser head out of focus).

The laser will cut EVERY line drawn. So you must make sure you don't have any lines drawn on top of each other or hidden layers of drawing behind the drawing you can view on screen. (Any etch lines drawn on top of each other would be re-cut for each line drawn, and subsequently be cut all the way through)

The laser removes approximately 0.15mm either side of the cut line; this should be taken into account when drawing fine detail. The minimum width between two lines will depend on the type of material and thickness. (As a rough guide, for thin materials the minimum drawn width between two lines should not be less than 0.7mm). For designs requiring long thin sections, putting them on a fret can help stop distortion. Lasers do not cut absolutely vertically; this is indiscernible on thin materials but a slight chaffer will be noticeably on thicker materials such as 4mm acrylic or MDF.

Any areas to be engraved (etched away from the surface) need to be drawn as closed polygons in a different colour to the rest of the drawing. They should not be filled in with a solid colour, although this is a good way to just test whether the shape is a closed Polygon. If it is important to your design that the engraved depth is consistent across an area, the outer shape should be drawn over size horizontally by a couple of mm. However, the engraved area won't have a smooth finish and the depth can only be set by trial and error by changing the cut speed and power, so can't be guaranteed to be accurate, or the same on a later repeat order. Different coloured polygons can be used for different depths. It is OK to draw a cut line directly over a different coloured engraving line - the laser will be set to engrave first and then cut out the shapes.

If possible, it is preferable to use separate layers of laminated material to produce depth, rather than to engrave away an area (and also cheaper).

4. Cost

The cost of laser-cutting bespoke items is made up of several factors, including the cost of materials, length of time the laser runs and P&P etc, but the most expensive element is “man-hours” - so in order to keep the cost down, you need to compile the drawings and photographs as clearly as possible, to save us studying lots of information before we can start. Providing your own computer drawings will save money, but we can work from sketches and photographs. Material costs vary considerably (plastics, acrylic and plywood cost more than MDF and card) but unless the job is large you won't see a big difference overall.

Once drawn and set up on the computer, the cost of multiple copies is less, so it is always worth considering asking fellow modellers if they would like copies of the same items and share the set up cost. Repeat orders at a later date will cost less than the original order, but more than having the full order made in one go.

Our minimum charge for initial bespoke orders is £30.00.

5. Payment

We accept payments made by bank transfer (BACs), cheques, cash or postal orders. If non of these options are available to you, we can take payment by card over the phone, or by PayPal.
Cheques should be made out to York Modelmaking and posted to York Modelmaking, Unit 13, The Bull Centre, Stockton-on-the-Forest, York, YO32 9LE

The cost of postage for bespoke orders will be given with the quote.

For small orders payment upfront is required; for large orders a deposit is required, with the final payment due before delivery or collection.

6. Delivery Times

Delivery times for bespoke items will vary depending on how busy we are. Most orders for laser-cutting from computer drawings provided by the customer are supplied within a week or two. Jobs requiring design work and drawing can take longer. Please ask for a time scale before ordering. Let us know if you have a specific deadline and we will endeavour to meet it if at all possible.

7. News and Feedback

To keep up-to-date with our latest products, see examples of customers projects, take advantage of special offers and receive useful tips and information please sign up to receive our newsletters (we promise not to inundate you with emails and you can opt out at any time) You can use the link on the home page of our website or send us a request by email.

We would be most grateful to hear how you found out about our services and any feed back on our products, bespoke services, website and advertising would be much appreciated; helping us help you.

We are always delighted to receive photographs of your models incorporating our laser cut parts. Please let us know if you are happy for us to use them on our website, in our newsletters or in social media. We won’t publish any addresses or contact details (unless you ask us to do so).