



Laser Cutting

How To

What is Laser Cutting? <<



Laser cutting is a process where a focussed laser beam is used to precisely and accurately cut unique shapes in sheet materials.

This beam moves on an X and Y axis stepper motor around a sheet, creating cuts scores and rasters onto a given material. Generally our laser cutters can cut almost anything up to a depth of 12mm.

Our Machines <<



We have two laser cutting machines on site with a bed size of 1200 mm x 900 mm.



What Can We Cut? <<



What we can cut:

- + Plywood
- + Solid Basswood
- + Basswood Ply
- + Box Board
- + Screen Board
- + Corrugated Card
- + Paper
- + Acrylic
- + Card
- + MDF

What we cannot cut:

- Foam
- Metal
- Foamcore
- PVC / Vinyl
- Styrene

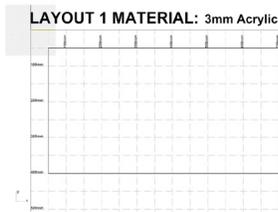


Laser Cutting Walkthrough



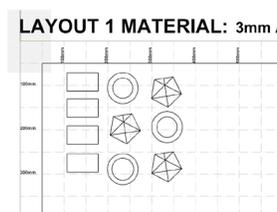
STEP ONE
Download our template

MAKE FAB:
You can find our laser cutting template on our website. This file is available to download in a range of file types.



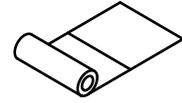
STEP TWO
Create and label your material

MAKE FAB:
Draw a rectangle that corresponds to the size of your preferred material and create a label specifying that material.



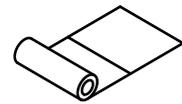
STEP THREE
Place your objects within the sheet

CAD PROGRAM:
Place your objects within the rectangle you just drew, making sure you leave a 10mm gap from the border.



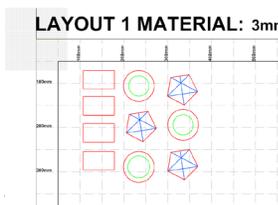
PROTECTIVE FILM ?

By request, we can apply a protective film to your material to minimise the burn marks on the surface of the material.



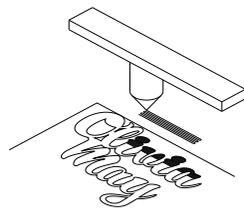
DOUBLE-SIDED TAPE?

By request, we can apply double-sided tape to the underside of your material before it is cut for quick assembly of stacked elements.



STEP FOUR
Place your linework on layers

CAD PROGRAM :
Specify which lines you want to cut, scored or engraved by placing them on their respective layers.



STEP FIVE
Position your rastering together

CAD PROGRAM:
Rastering is a method of deep scoring a shape, in tiny increments. As a result it is important try keep all rastering close together if possible.



STEP SIX
Send your file for a quote

MAKE FAB:
Save your file, shoot us an email with it as an attachment and we'll get a quote to you as soon as possible!



MODEL MAKING SUPPLIES?

Urgently need glue or model trees but don't have the time to go shopping? No dramas, take a look at our optional extras price list and add these items to your laser cutting order!



Make Fab → You

Laser Cutting - Tips and Tricks



Did you know we offer free delivery to Sydney Unis?

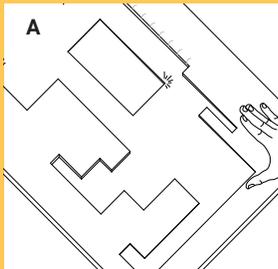
Make Models organizes **FREE WEEKLY DROP OFFS** to universities in Sydney during your peak presentation times.

Ask one of our friendly staff if you're interested, and they'll be able to tell you more details about when the next drop off at your uni is. Alternatively, see below for the price of same-day couriers!

Design. Cut. Make.

The laser will follow exactly what you set it up to cut, it doesn't have a brain of it's own. As a result, following the previously mentioned steps is highly recommended for great cuts every time. Somethings however, there are several questions which come up quite regularly, which we've tried to answer here for your convenience!

Frequently Asked Questions



WHAT IS THE 'INTERNAL CUT' LAYER FOR?

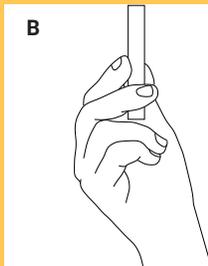
When laser cutting, sometimes the sheet will warp, meaning that parts will fall slightly when they're cut off the sheet. If you have parts that sit within other parts, it's important that these internal cuts cut first.



Standard and express delivery options available!

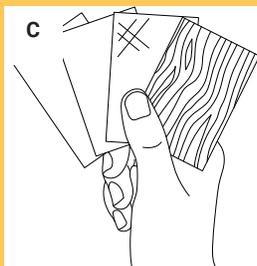
Make Fab delivers to the Sydney region with same day (express) and next business day delivery for a flat rate of \$13.00.

Domestic delivery to most capital cities is \$18.00 and remote areas is \$30.00. Please ask our friendly staff for a price for your area!



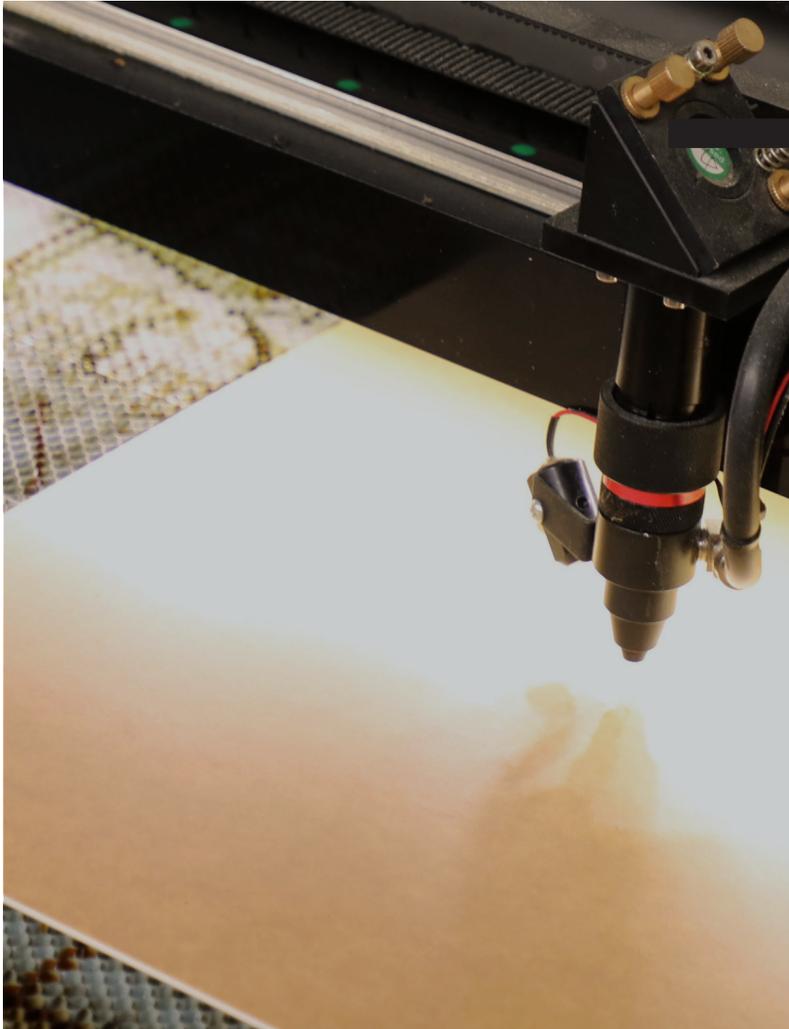
WHAT IS THE THINNEST AN OBJECT CAN BE?

We recommend that you should keep your objects at least 2mm in its thinnest sections as these parts are prone to breakage. We can't ensure that pieces smaller than 2mm will be of any use to you due to the extremely fragile size.



CAN I SUPPLY MY OWN MATERIAL?

Sure can! But check with us first. When the laser interacts with your material, it creates fumes. If your material isn't on our material list, chances are that it may create a fume that can be hazardous to our health, or hazardous to the health of our machines.



Pro-Tips

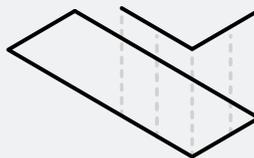
From the Laser Cutting Experts



ADD TABS TO SECURE PARTS

Note: Do not add tabs to acrylic pieces, as it won't be easy to cut through.

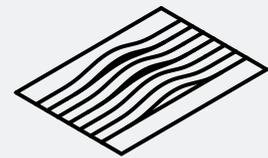
When laser cutting, once a cut is complete, that piece will simply fall through. For larger pieces this is generally fine. But if you want to keep tabs (pun intended) on your smaller pieces, we recommend adding 1 mm line breaks to the external cut. This means that there is still material holding the cut piece to the rest of the sheet and you will only need to cut a 1 mm tab to access that piece.



AVOID DOUBLE CUTS

Sometimes your file will have lines overlapping other lines. As the laser cutter responds to lines, you can sometimes get the laser cut the same object out twice. This creates unnecessary burn and flashback.

To avoid potential double cuts in your material, run a duplicate line check in the CAD program of your choice to ensure that the laser will not unnecessarily back-track over your work.



AVOID ACRYLIC WARPING

When cutting acrylic, the laser melts the material. Because of the heat generated, if you are cutting acrylic pieces that are close together in succession it can actually warp that portion of the material.

To avoid this from happening, we recommend you set up alternating cut layers (even introducing new coloured layers). This will ensure that the cuts are spaced out enough to prevent the material from overheating and warping.