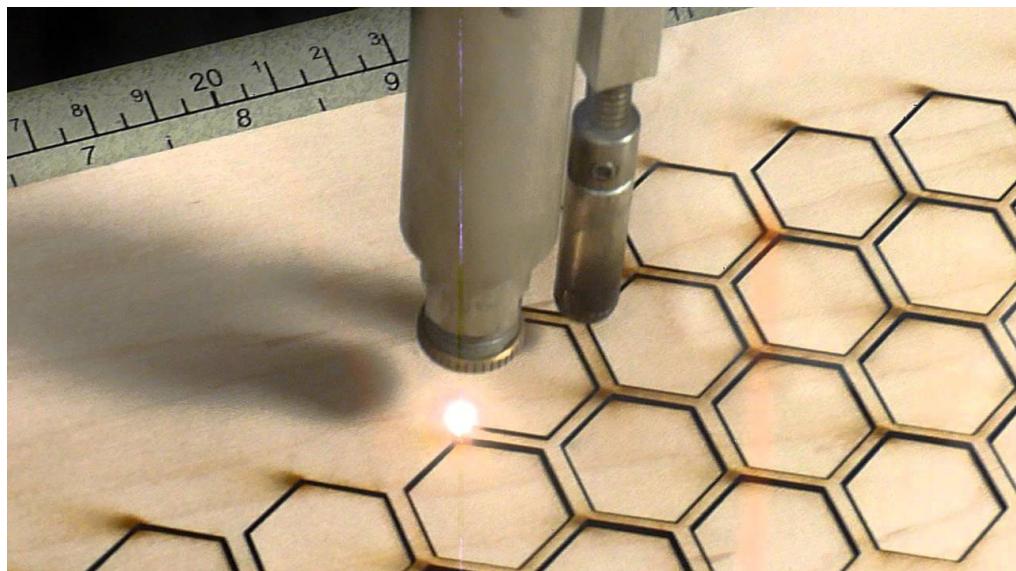


We can't guarantee your files will be successfully fabricated as there are many factors which can affect it.

The guideline will help you understand laser cutting, 3D printing and CNC milling in greater detail to help you achieve a successful result.

*There is usually a queue for fabrication, so make sure you bring in your files early.

(3-4 days for 3d printing and CNC, 1-2 days for laser cutting.)



What is Laser Cutting?

Laser cutting is the process of cutting a material using a laser beam. This can be done to either trim down a material or to help cut it into complex shapes that more conventional drills would struggle with.

A vast range of materials and thickness sizes can be cut with lasers, making it a handy and adaptable process.

Location: Level1, Architecture building Structure Studio



Cutting sizes

Small machine:

59 x 47 cm

Big machine:

89 x 59 cm

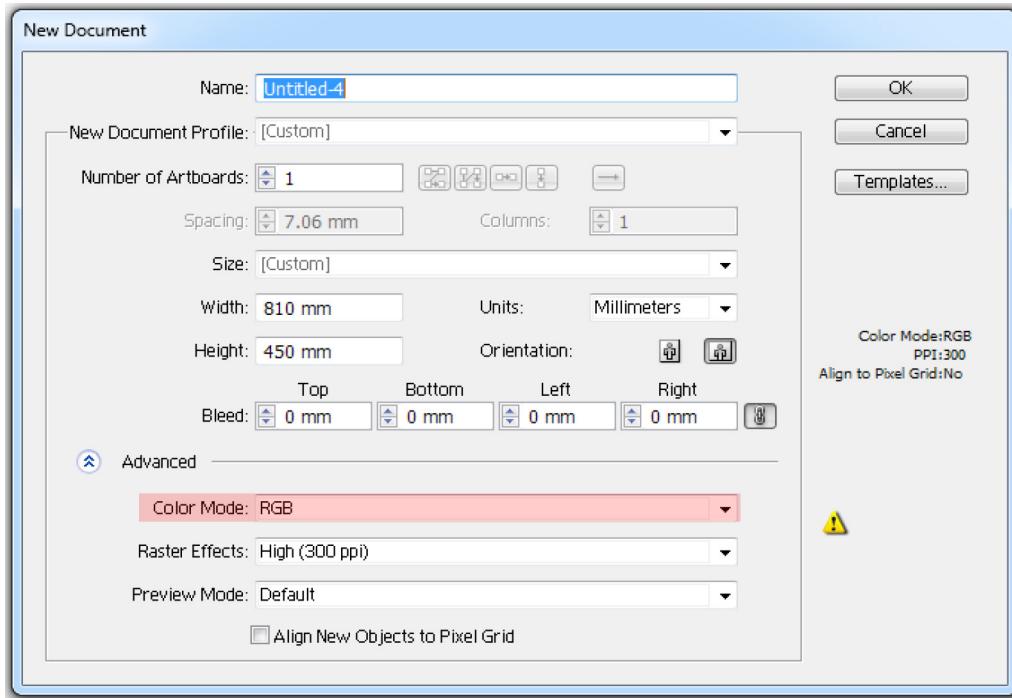
Materials we **don't** cut and engrave:

Stainless steel, Brass, Titanium, Bare metal, PVC, PVB, Vinyl, Carbon fibre, Fibreglass, Epoxy.

File format

Illustrator file with your upi, for example: "abc123lasercut.AI"

*One file must only contain **one page** of drawings.

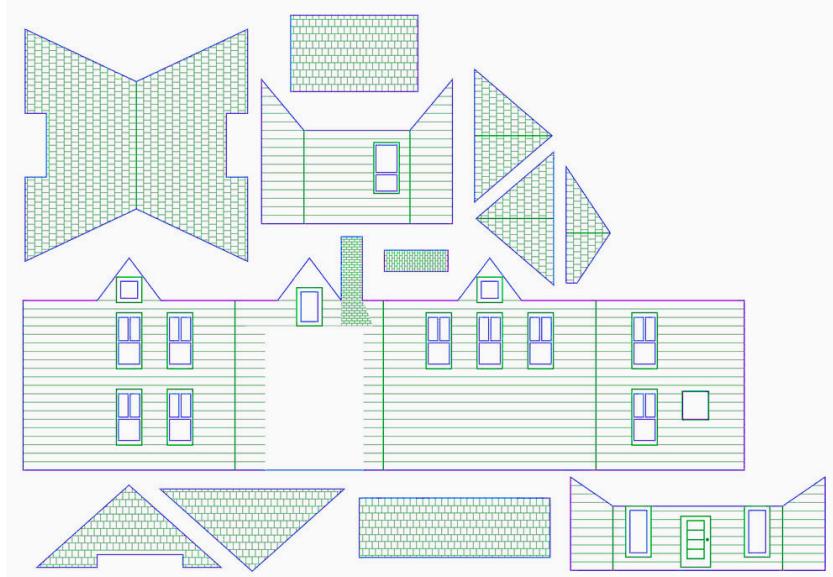


1. Start with opening a new document in illustrator. In the 'New Document' window you will need to have your Artboards sized to your material.

Colour Mode MUST be in RGB otherwise the line cannot be read by the laser cutter.

2. There are three colours that you can use to distinguish what needs to be done.
i.e. line engraving, raster engraving, and cutting.
The following table shows you what colours we use.

| Colour | Red Value | Green Value | Blue Value | Function |
|--------|-----------|-------------|------------|------------------|
| Black | 0 | 0 | 0 | Working Lines |
| Red | 255 | 0 | 0 | Raster Engraving |
| Green | 0 | 255 | 0 | Line Engraving |
| Blue | 0 | 0 | 255 | Cutting |



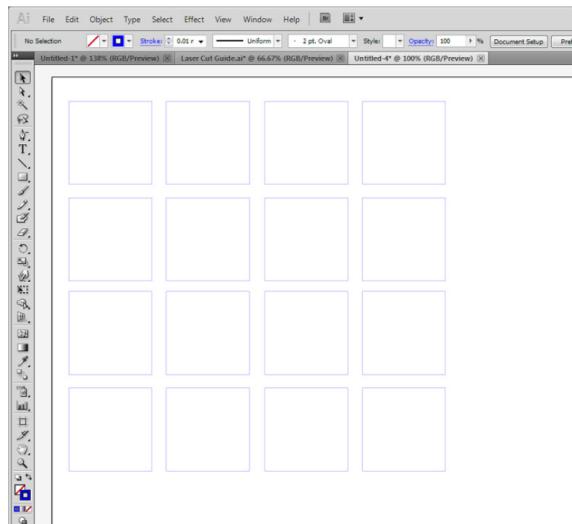
Laying out your file

Start by drawing a box the same size as your material and try align this to the top left corner of the artbox.

Note: If you require your cuts to be in a specific area on the material then please write a small note on the side of the artboard stating this.

When laying out your files, try to do it so there are no multiple lines sitting on top one another. This will be a problem when there are multiple engrave lines which may end up cutting through your material.

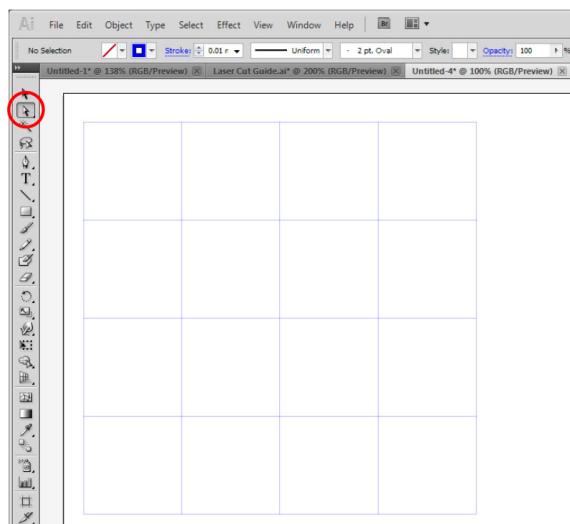
This isn't so much a problem with cutting but we still recommend you tidy up your line work anyway as more lines equate to longer cut time which in turn means more money spent.



Do NOT lay your files out like above. This will result in multiple cut lines and taking a lot longer than required.

If you are cutting a lot of similar or same objects, do not lay them out as separate objects.

Instead, try to organise them so they share one or more cut lines like above. Please do not copy and paste objects so that there are multiple overlapping lines.



To remove overlapping lines, use the white cursor (circled in red) and select all the overlapping lines and delete.

You can check if you have double lines by closely inspecting the colours of the lines.

If they appear darker than the other lines of the same colour then it means you have overlapping lines.

Other points

Make sure we know you have dropped off your materials.

Materials must be as **flat** as possible.

Bring extra material if you can. We make mistakes too.

Advise us if you need your materials taped up.

If you can, cram everything on to your page as **tightly** as possible. This will save you material in the long run.

If you are using a whole piece of acrylic, please take off the protective layer.

Try not to cut strips of acrylic. The acrylic heats up and warps resulting in very curved strips of acrylic.

Try not to cut anything smaller than **5mm x 5mm**. Small pieces tend to fall through the honeycomb on the lasercut bed.



How to pay for a job through NICAI creative store

*Ask the staff for an estimated cost before the job processes

1. Go to <https://store.creative.auckland.ac.nz/>

2. Log on or create an account

3. Choose the ArchPlan Cutting and Printing category

The screenshot shows the Creative Arts and Industries website with the following details:

- Header:** My Account, Order Status, View Cart, Sign out.
- Logo:** THE UNIVERSITY OF AUCKLAND Te Whare Wānanga o Tāmaki Makaurau NEW ZEALAND
- Title:** CREATIVE ARTS AND INDUSTRIES
- Search Bar:** Search, Advanced Search, Search Tips
- Breadcrumbs:** Home > ArchPlan Cutting and Printing
- Sort by:** Price: Low to High
- Current Top Sellers:**
 - Category 1:** ArchPlan Laser Cutting (\$3.35, Not Rated) - Choose Options
 - Category 2:** 3D Print Material Category 1 (\$1.50, Not Rated) - Choose Options
 - Category 3:** 3D Print Material Category 2 (\$2.00, Not Rated) - Choose Options
 - Category 4:** 3D Print Material Category 3 (\$2.50, Not Rated) - Choose Options
 - Category 5:** 3D Print Material Category 4 (\$3.00, Not Rated) - Choose Options
 - Category 6:** 3D Print Material Category 5 (\$3.75, Not Rated) - Choose Options
 - Category 7:** CnC Machining (\$3.75, Not Rated) - Choose Options
 - Category 8:** 3D Print Material Category 6 (\$4.00, Not Rated) - Choose Options
 - Category 9:** 3D Print Material Category 7 (\$1.50, Not Rated) - Choose Options
 - Category 10:** 3D Print Material Category 8 (\$2.50, Not Rated) - Choose Options
 - Category 11:** 3D Print Material Category 9 (\$2.00, Not Rated) - Choose Options
 - Category 12:** 3D Print Material Category 10 (\$3.50, Not Rated) - Choose Options
- Shop by Price:**
 - \$0.00 - \$3.00
 - \$3.00 - \$3.00
 - \$3.00 - \$4.00
 - \$4.00 - \$4.00
 - \$4.00 - \$5.00
- ArchPlan Laser Cutting:** (\$3.35, Not Rated) - Choose Options

Laser Cut Jobs: Select the number of minutes

3D printing: Select the category

Each unit represents 10 grams of material

Category 1 Includes 0.2 (Fast) printing of PLA and ABS materials

Category 2 Includes 0.15 (Good) printing of PLA and ABS materials

Category 3 Includes

0.1 (Fine) printing of PLA and ABS materials.

0.2 (Fast) printing of Nylon & Polycarbonate

Breakaway support. (All qualities)

If you are not sure, ask a DRH staff for help.

ArchPlan Laser Cutting

**Price:** \$10.05**SKU:** 650030-1019I*** Time available:**

- 5 Min
- 10 Min
- 15 Min
- 20 Mins
- 25 Mins
- 30 Mins
- 35 Mins
- 40 Mins
- 45 Mins
- 50 Mins
- 55 Mins
- 60 Mins

Quantity:

1

Add to cart**SHARE**

4. Select “add to cart”, then select “proceed to checkout”.
5. Comfirm the billing address and shipping detail, tick “ Pick Up from Student Centre \$0.00 ”
6. Fill in payment details. You will recieve a confirmation email from NICAI for your puirchase

* All jobs has to be paid before collection, otherwise a receipt must be forwarded to **digitalresearchhub@gmail.com**

OK, 1 item was added to your cart. What next?

ArchPlan Laser Cutting (Time available:
15 Min)
\$10.05
Quantity added: 1

Proceed to checkout

Order Subtotal: \$11.55
Your cart contains 3 items
[Continue Shopping](#) or
[View or edit your cart](#)