

Rapid Prototyping Centre

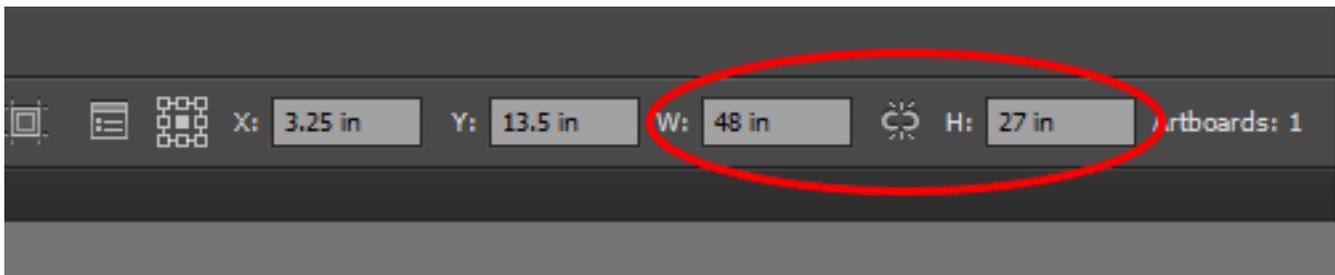
How to set up a file in Adobe Illustrator CS

We recommend downloading our drawing templates. Templates for Adobe Illustrator can be downloaded [here](#).

The "Art board" size of the template is set to 48"x 27". This is the size of the laser bed. Anything larger than 48"x 27" will not fit on the laser and therefore will not be accepted.

- Set art board to match the size of your material in inches

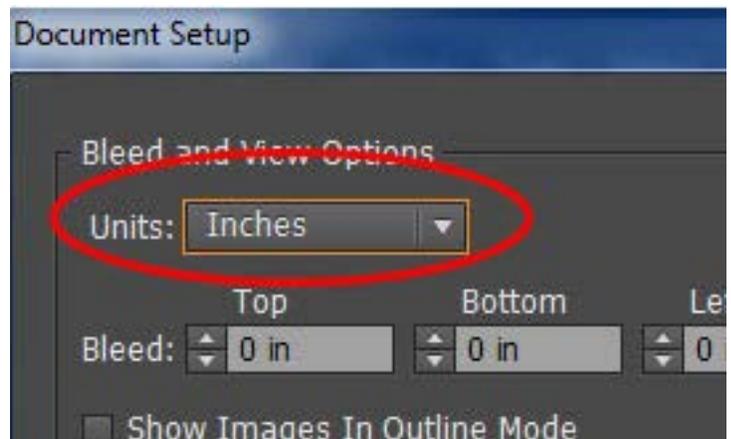
Go to File -> Document Setup -> Edit Artboards -> Set width/height of your material.



If you are not using the template provided

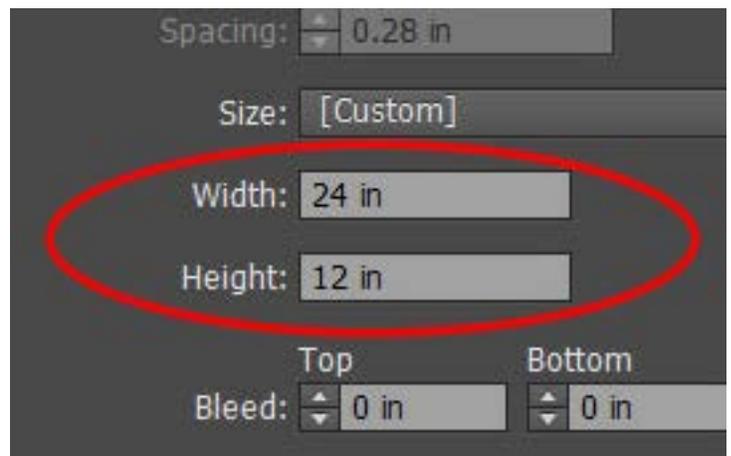
- Make sure you are working in inches

Select File -> Document Setup -> Units -> Inches

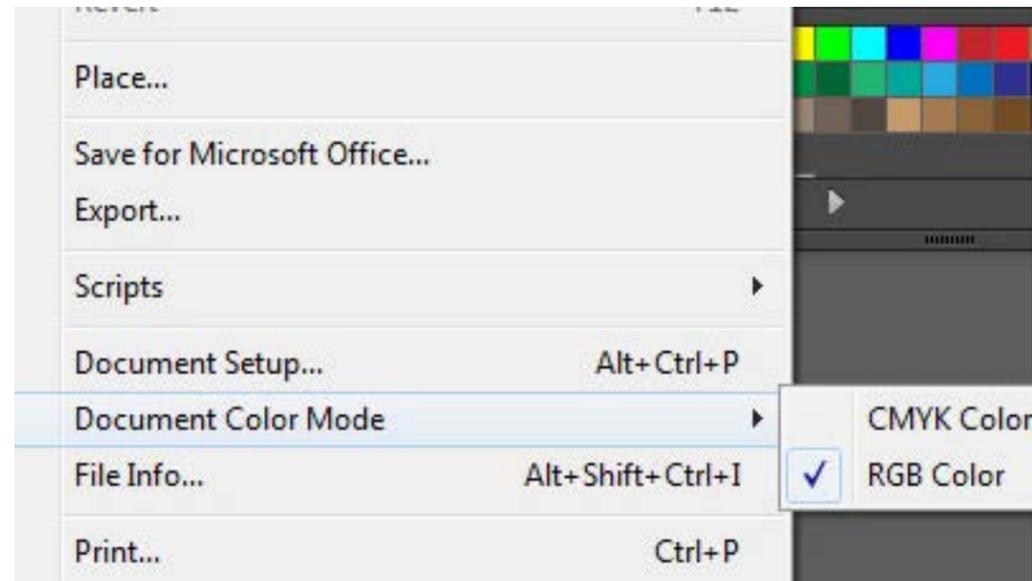


- Set art board to match the size of your materials

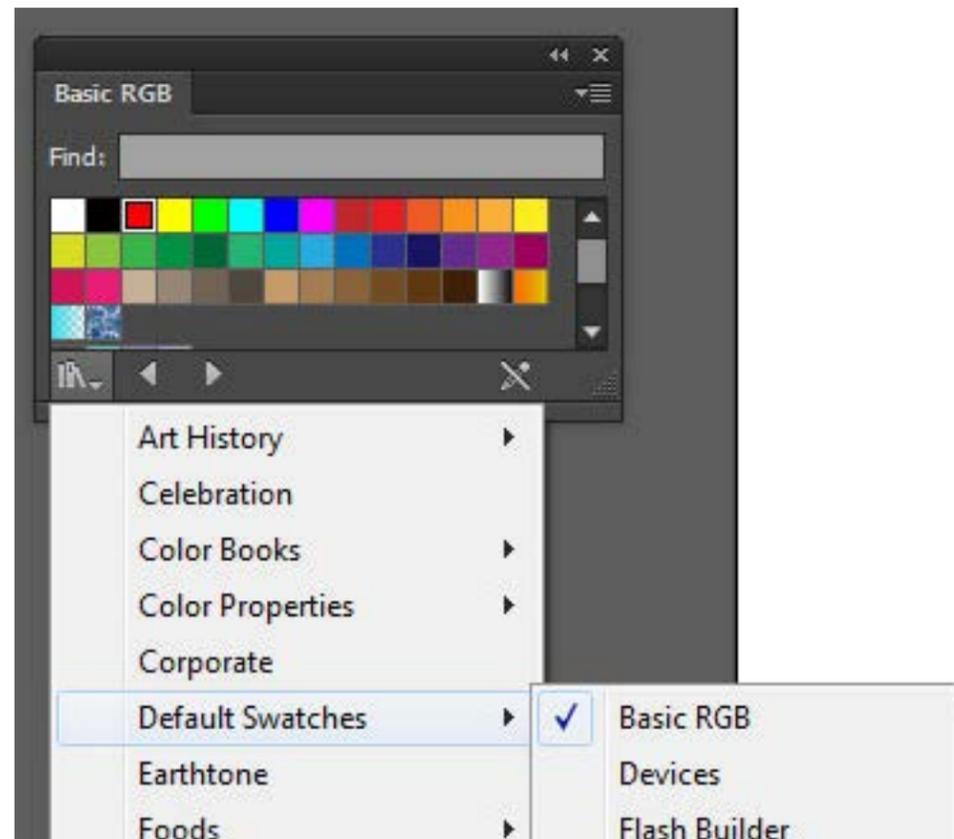
Select File ->New -> Set width/height from the menu



- Make sure you are working in RGB mode
Select File -> Document Colour Mode -> RGB



- Make sure you pull up the Basic RGB colour swatch
Select Swatch Library Menu -> Default Swatches -> Basic RGB



Laser Cutting/Engraving Lines

The pre-selected colour group: These colours are the four colour options for laser cutting. These are the only colours that the laser will recognize.

Use **Black (RGB: 0,0,0)** for everything you would like engraved.

The laser cuts the colours in order. Starting with **Red (RGB: 255, 0, 0)** followed by **Blue (RGB 0,0,255)**, and finally **Green (RGB 0,255,0)**. All interior cuts should be cut first and therefore should be red, with any further cuts being Blue, and the final exterior cuts being Green.

All laser cuts and engrave lines should have a **stroke weight of 0.01pt**

Raster Lines and Fills

All vectors you would like raster engraved must be indicated by a vector fill.

Set all fill colours to:
Black: RGB: 0,0,0

The Rastering Effect is achieved by leaving your paths filled with black. However, different depths of rastering can be achieved by using several tones of grey. Black will always be rastered the deepest, with White not being touched. The darkness of the Grey tone will determine how deep the raster will be. However to achieve the rastering effect, the laser passes over an object hundreds of times removing one beam width per pass. This means very large rastering jobs can get very expensive. So use this technique wisely.



example of laser rastering, engraving and cutting

Maintaining continuous vector geometry

Make sure that all your vector paths are continuous. If strokes / closed shapes are constructed from more than one path, make sure that you join / close the paths.

To do this, use the Direct Selection Tool and select the open endpoints.
Select **Object > Path > Join (Ctrl+J)** from the top menu

Using Text

All text used needs to be Outlined / converted to paths.

Select **Type > Font > Create outlines** from the top menu

This step converts the text to vectors and preserve your font. If you don't do this and we don't have your font installed on our computers, the file will open in default font Myriad or Arial.

Using a stencil font can prevent the middle islands of some letters to fall out when laser cut, making the word difficult to read.

Minimum Cut Widths

Nesting:

If compiling a file with lots of components on one sheet of material, make sure there is a gap of at least 5/64" or 2mm between the components.

Small details / cut widths:

We recommend that minimum cut widths be no smaller than 1/16" We can go smaller but things can get quite fragile and we cannot guarantee it will work.

Materials

The laser cutter can cut/engrave an abundance of materials including:

Acrylic, Abs, Acetal, Styrene, Polypropylene, Zotefoam, Solid Wood, Veneered MDF, Plywood, Paper & Card stock, Fabric and Rubber.

We do not cut materials that are thicker 1/4" with some exception.

Saving your file

Select **File > Save As**
File Format **Adobe Illustrator .ai**

IMPORTANT

This allows us to open the file in illustrator and make any necessary edits to your laser file. Please note there is a minimum 24 hour lead time.