

Rapid Prototyping Centre

Laser File Creation Using Adobe Illustrator

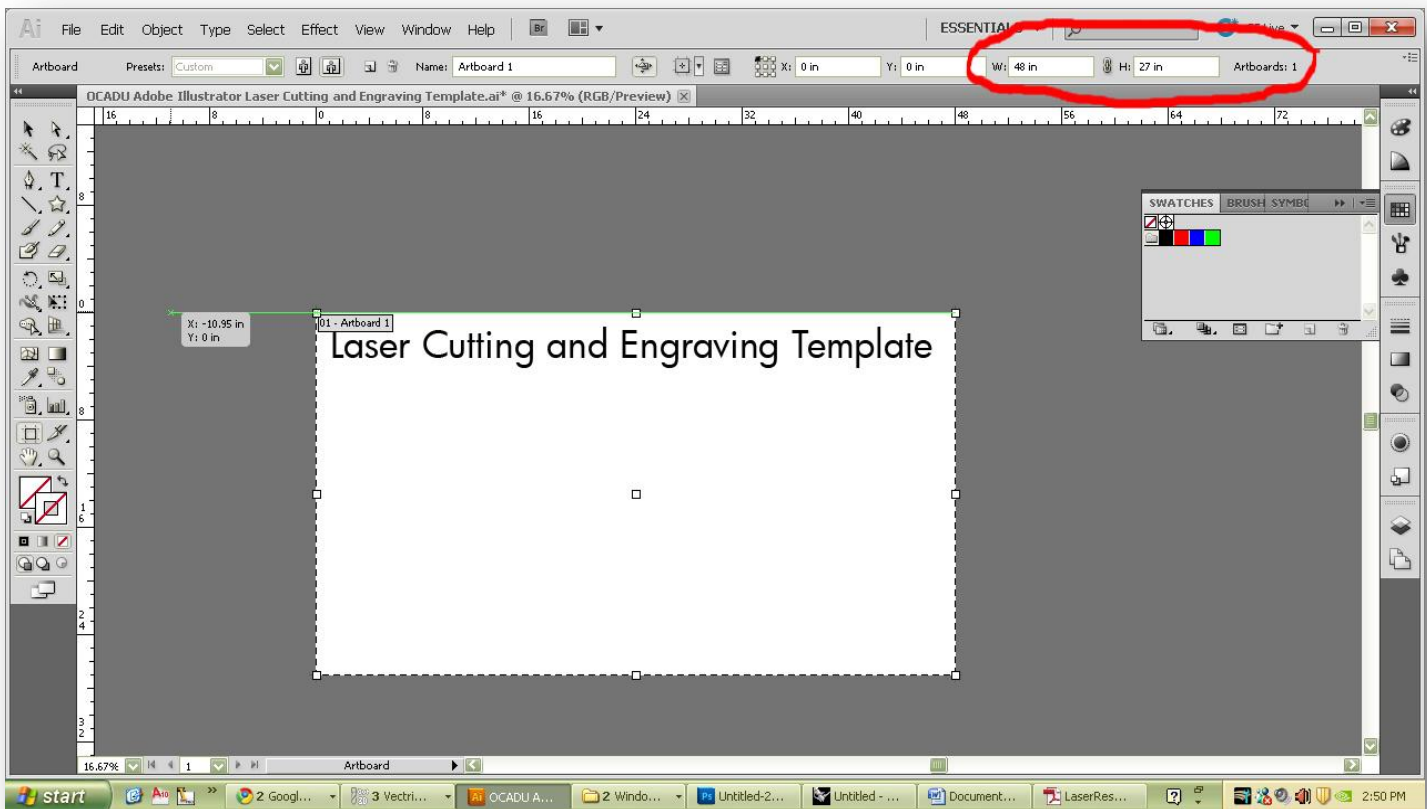
This guide has been developed to assist you in the creation of proper files for laser cutting and engraving using Adobe Illustrator. A template file is available on OCADU's website. You can find this file by following this link:

http://www.ocad.ca/about_ocad/shops_studios/rapid_prototyping_centre.htm .

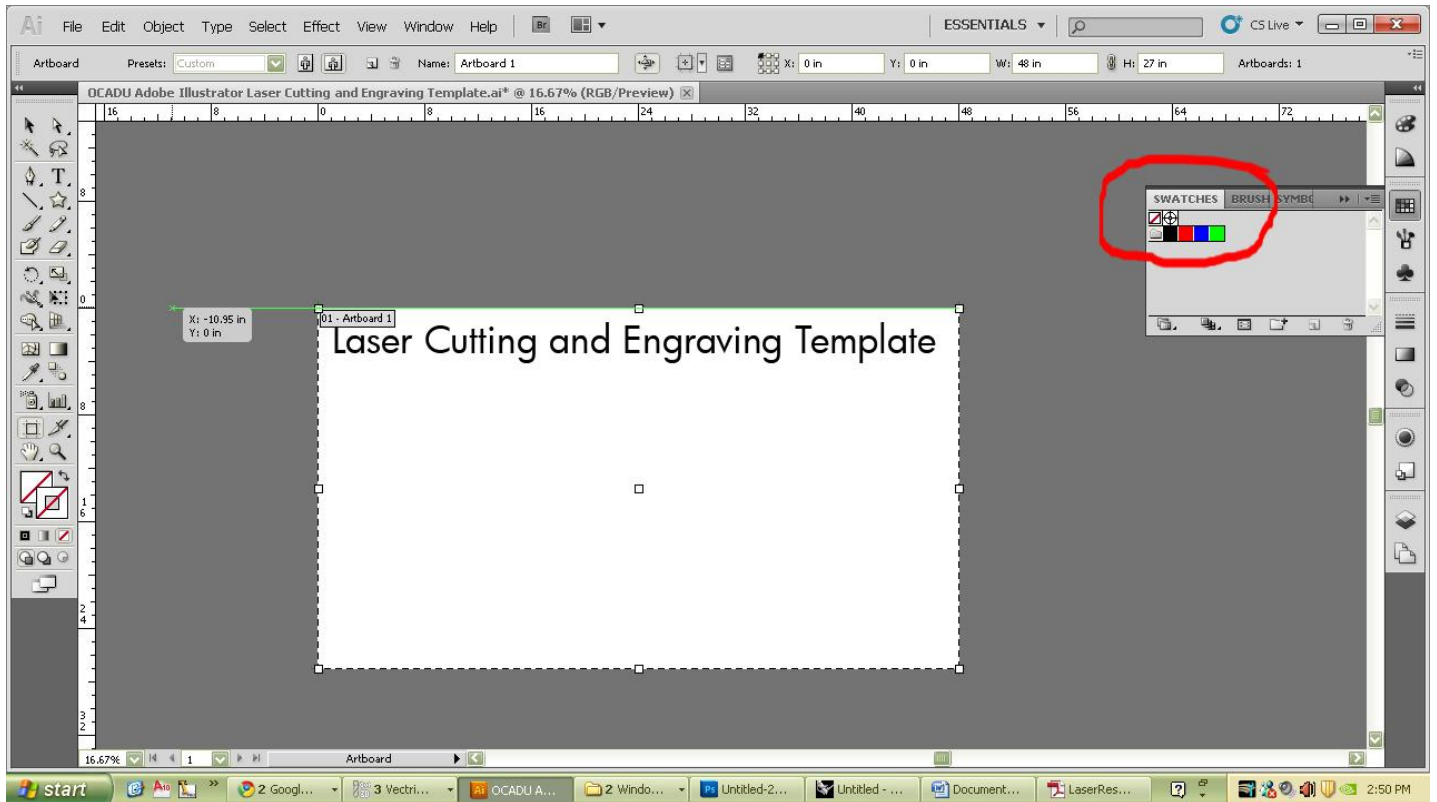
Files not created using this template will not be accepted.

With the Template file open, it is important to take note of several important settings:

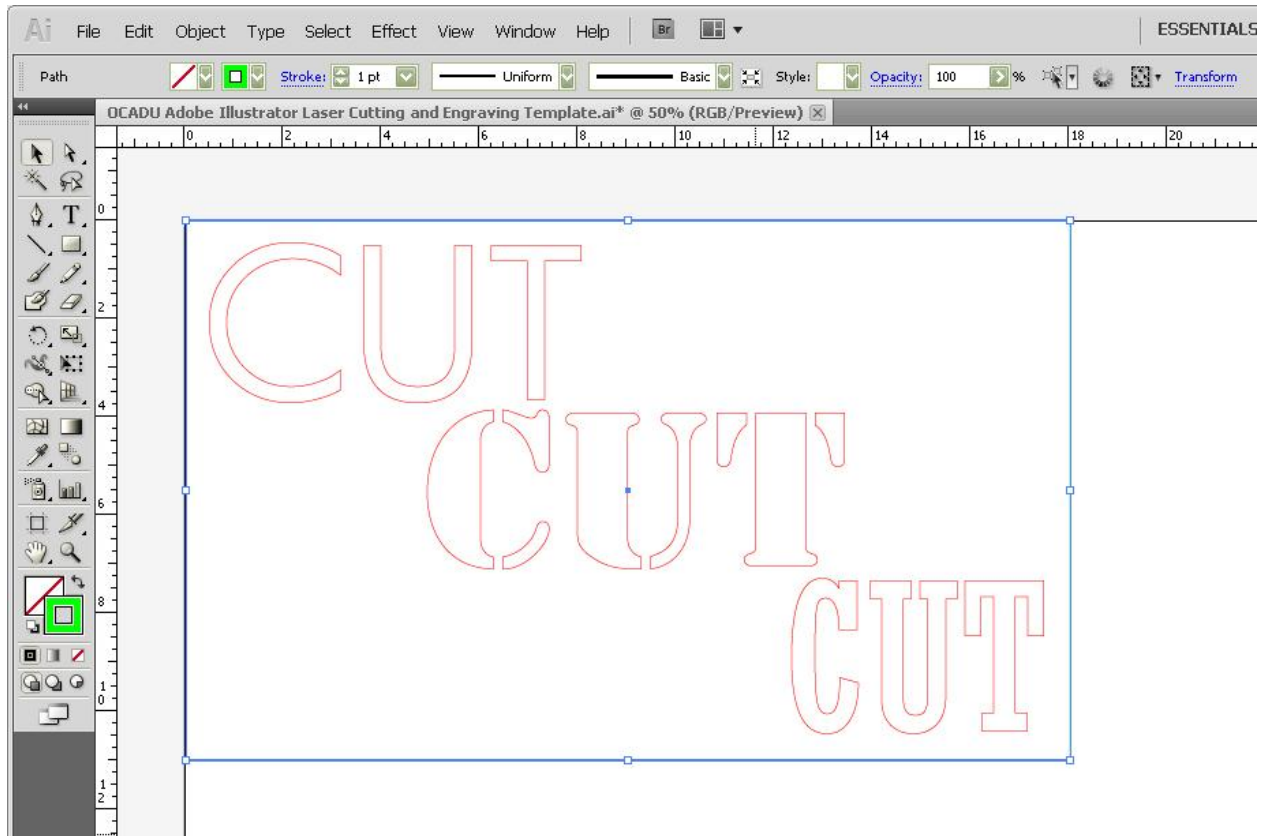
1. **The "Art board" size** of the template is set to 48"x 27". This is the size of the laser bed. Anything larger than 48"x 27" will not fit on the laser and therefore will not be accepted.



2. **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. The laser cuts/engraves the colours in order. Starting with Black, followed by Red, followed by Blue, and finally Green. This is important to remember when creating jobs with multiple cut lines.



- Material size within the Artboard:** This step is important when it comes to organising your cuts on the material you've selected. For best results, the material should fit in the Artboard, and should be no thicker than ¼". When the material has been selected, create a box on the provided template Artboard. The image below would dictate that the material to be cut is 18"x11".





Rastering

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.

Engraving

Engraving is achieved by simply setting your path stroke weight to .01 and changing the colour to black. Black is the first colour the laser will read, so all engraving is done before cutting. If the stroke weight is set any larger than .01 it will be interpreted as Rastering. This is the only way to create thicker engraving lines. All lines set at .01 will be engraved with the thickness of the laser beam, which is approximately .010".

Cutting

Cutting is similar to engraving when it come to file preparation. When cutting is desired, all line weights should be set to .01. When cutting, it is important to set the stroke colour to Red, Blue, or Green. 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.