Speedy360 Laser Cutter Quick Reference guide

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NEW ZEALAND

CENTRE for INNOVATION and ENTREPRENEURSHIP

UnleashSpace

1.   Part 1: Designing

Open Adobe Illustrator CC and create a new document (Under File > New or press 'Ctrl + N'), ensuring the following settings:
   i. A size slightly bigger than the object you are intending to make.
   ii. A maximum size of 813 mm for the Width and 508 mm for the height.
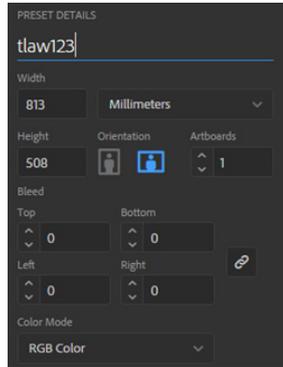   iii. 'RGB Color' selected for the Color Mode

Figure 1: Preset Details with Maximum Dimensions & RGB Colour Mode Selected

Draw and import your design into Illustrator CC:
This guide covers a few basic image manipulation techniques, but is no means comprehensive. Practice combining these techniques and manipulating vectors to achieve unique results!

For an image, or Raster
   i. Find a .jpg image or known as a 'Raster' image that is largely black and white
   ii. Under the 'Object' menu, select 'Image Trace' > 'Make and Expand'
   iii. Select 'Ctrl + Shift + G' to ungroup lines
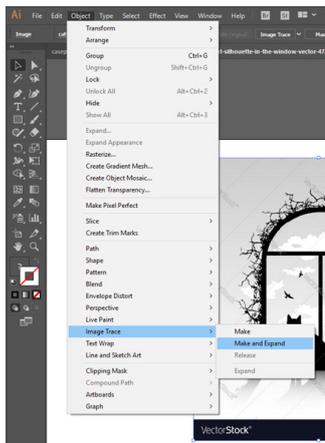   iv. Select all lines you want in your design and drag them into your template.

Figure 2: The drop down menu which contains the 'Make and Expand' Command

Advanced
If you want to Cut, Etch and Engrave in the same image
   i. Right click on your image and select 'Isolate Compound Path'
   ii. Select individual lines and change to either red or blue depending on your intended effect.
   iii. In Figure 3 below, the windows will be etched and the cat and frame engraved

Figure 3: RGB Blue lines will be etched & Black lines will be engraved

   iv. In Figure 4 below, the windows will be cut out and the cat and frame will be engraved

Figure 4: RGB Red lines will be cut & Black lines will be engraved

   v. If it only selects grey when trying to change the colour, click on the 'Artist's Palate' in the top right corner, click the menu and select 'RGB'
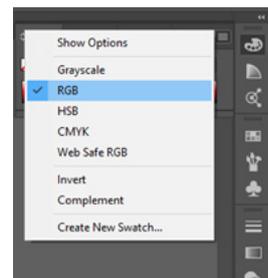

Figure 5: Artist's Palate Drop down box with RGB Selected

Repeat this process with different patterns and apply them to your design

Text Manipulation
i.   Select the 'Type Tool' from the left hand menu and click anywhere on your design. Type in your desired text.
ii. Select the arrow (Selection Tool) in the top left of the left hand menu
iii. Click on your text
iv. Click 'Object' from the Menu Bar and select 'Expand'
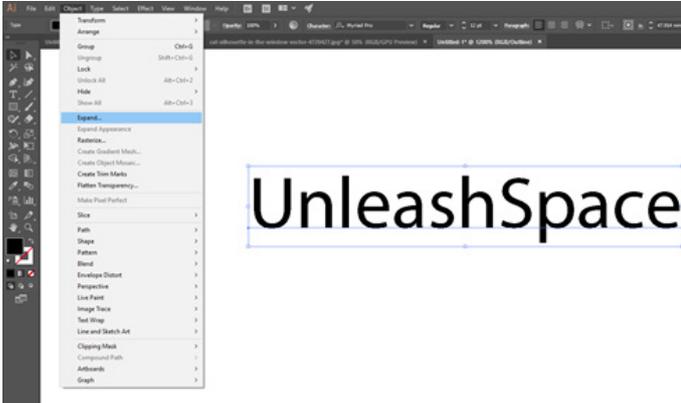v.   Your text is now a vector with changeable infill and stroke.

Figure 6: Text selected and 'Expand' option highlighted under the 'Object' tab

This image is now perfect for laser cutting, as we can adjust the infill and stroke to cut, etch and engrave individually using the RGB Scale shown below:

i. Black for Engraving
   a. No stroke
   b. Fill Colour = RGB Black
      i.   i.e. Red = 0, Green = 0, Blue = 0

Figure 7: Black Infill for Engraving

ii. Blue for Etching
   a. No fill
   b. Stroke Width = 0.001 mm
   c. Stroke Colour = RGB Blue
      i.   i.e. Red = 0, Green = 0, Blue = 255

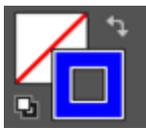*Figure 8: RGB Blue with No Infill for Etching*

iii.   Red for Cutting
   a. No fill
   b. Stroke Width = 0.001 mm
   c. Stroke Colour = RGB Red
      i.   i.e. Red = 255, Green = 0, Blue = 0
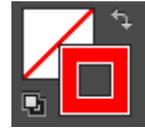

Figure 9: RGB Red with No Infill for Cutting

2.   Part 2: Cutting

i.   Print your file, and select the Trotec Printer. After selecting Print, Trotec's JobMate software should start automatically
ii. Drag your file from the right hand File Bar onto the work surface
iii. Press the eye icon on the top menu to see your red, blue and black lines
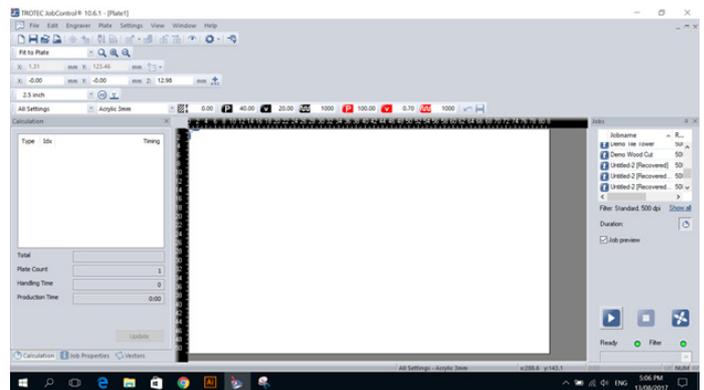iv. Select your Material type in the drop down menu (see Figure 10 below)

Figure 10: Trotec JobMate Software with Eye Icon, Material Drop down menu and File Bar circled

v.   Select the job in the workspace, then press update on the left hand side to see if the cut time looks about right for the size of the job
vi.   Focus the laser in the Trotec Laser Cutter by hanging the metal spacer off the side of the laser, then moving the bed up until it turns off. (Always have a Creative Technologist Supervise you)
vii. Press play in the bottom right corner
viii. Wait for your object to be made.