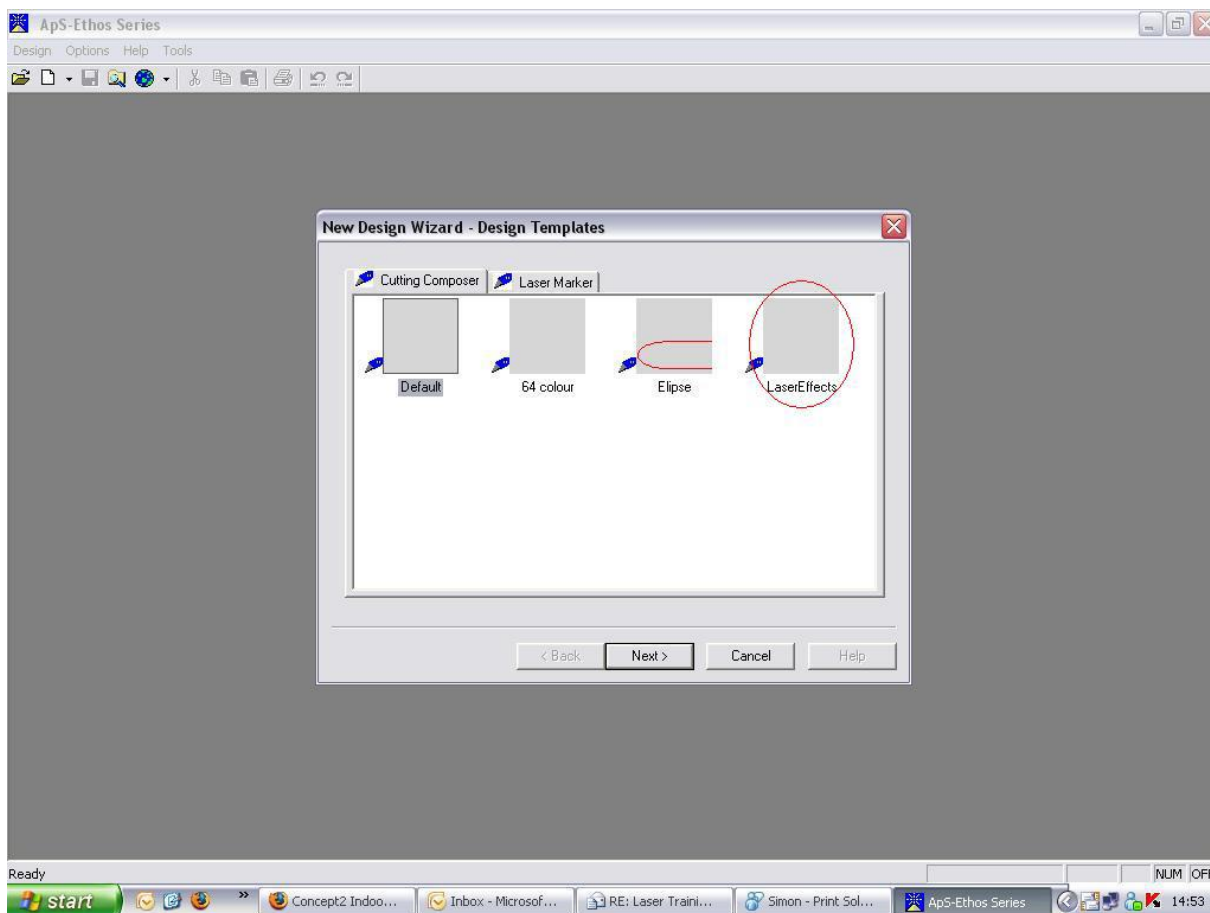
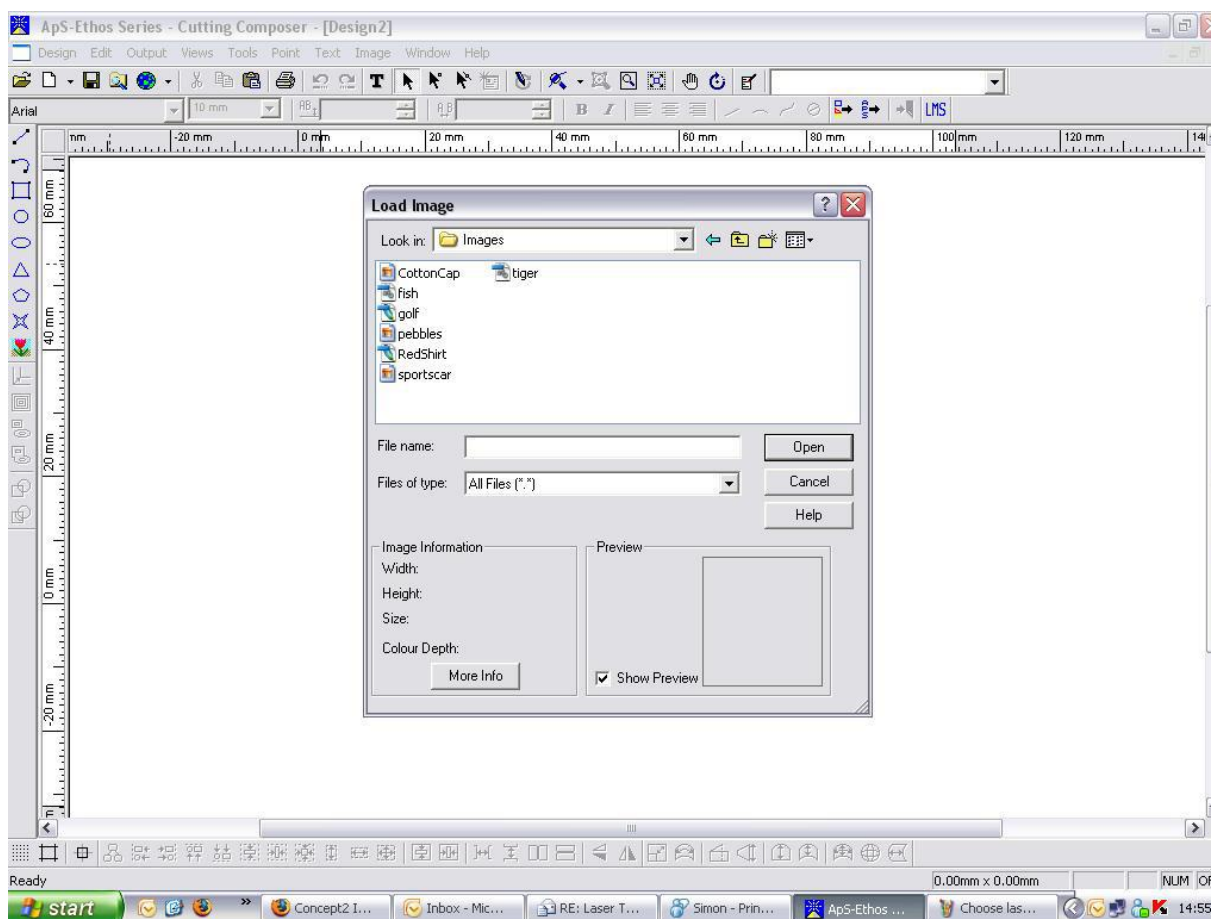


## Engraving an image or Rastering

When choosing a template to design onto you should always select Laser Effects. The kind of template is optimised for Rastering and you can also carry out cutting and engraving effects using normal geometric shapes.



Next you need to load an image. Choose the icon on the left of the screen that looks like a flower. You can also choose Image/Insert Image from the menu at the top. This brings up the familiar windows search box which you can use to navigate to the image file you require. You can choose from 54 different image file types including JPEG, Bitmaps, TIFF and Photoshop files. Once you choose your image you can double click on it and then using the left mouse button draw a box to the approximate size you need before releasing to insert the image. This enables you to scale the image into your design.



Next you need to apply the engraving properties to the image. Select the image using a single click. Go to Edit/Properties or select the Object Properties button from the top tool bar.

The first check box is Enable Engraving. Make a tick in this box.

The next option is for the scan line resolution. This is the distance between each scan line during Rastering. Remember that Rastering only draws straight lines vertically (horizontally on FB400) and the distance between these straight lines is the resolution. The default value is 0.2 and you can go as low as 0.02. Be aware though that those resolutions below 0.1 are likely to overlap and so more material will be affected.

The next tick box is for the direction you want the scan lines to go. The best option is to have them go the direction of least effort. This protects the motors from overwork and keeps the machines more stable for an accurate cut. For FB400 machines the best direction is along the X Axis while all other CAD CAM Technology flatbed machines work best in the Y Axis. A tick in this box means Vertical (Y Axis) is selected while an empty box means the Horizontal (X Axis) is selected.

The white space is what could be called acceleration space and permits the cutter head to reach its desired speed before laying down power. This prevents “banding” top and bottom of jobs when Rastering. It is similar in function to going over the edge of a job when paint spraying.

Next you can choose the amount of levels of grey you want to apply. To Raster an image it needs to be converted to greyscale (this is done automatically) with each level of grey equating to a power level. It is these power levels along the lines of resolution that define the

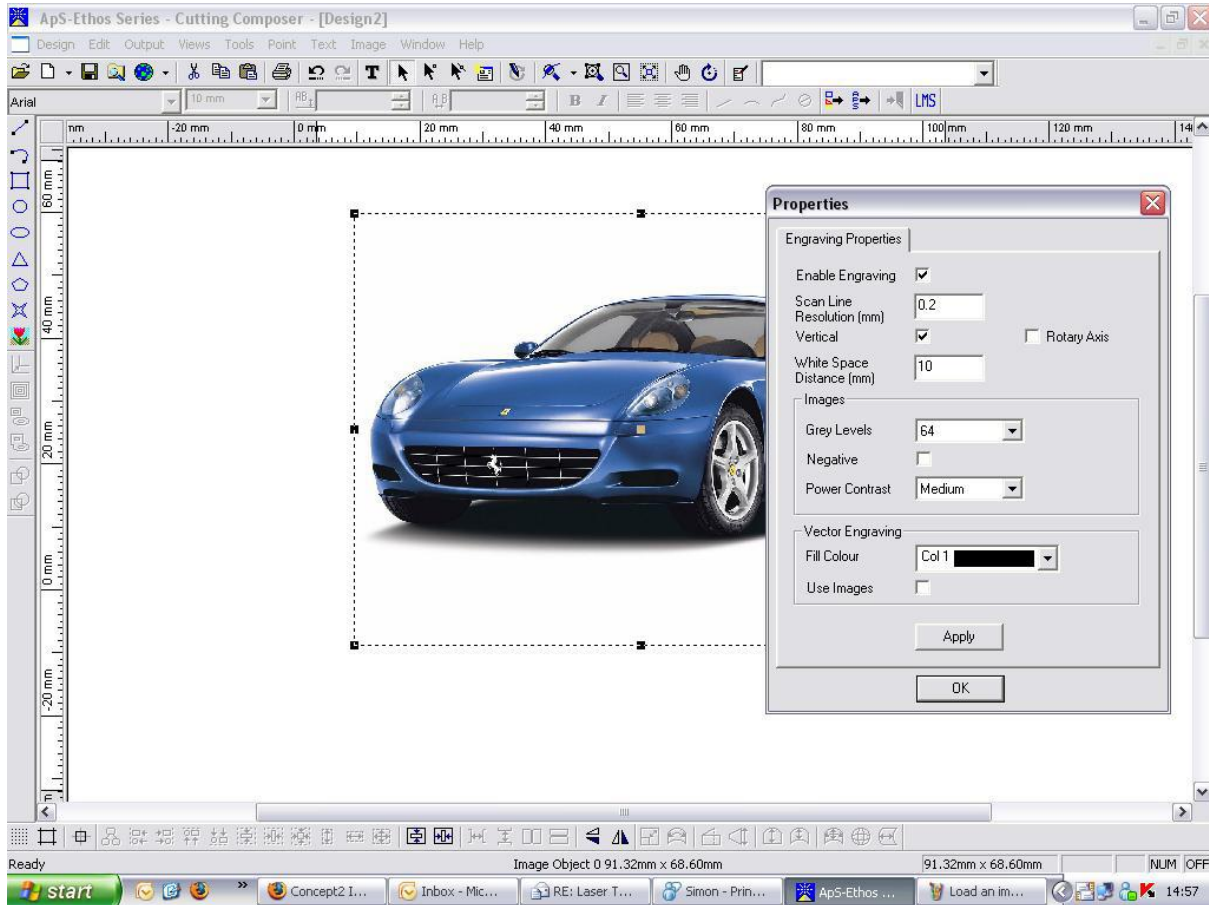
image. APS Ethos Version 9 can apply 64 grey levels whereas Version 10 can apply 256 levels.

The negative check box should be ticked if you want to raster a negative image onto the material. An example of this would be if you were Rastering onto denim. In this case the dye in the denim would be removed revealing the white cotton underneath resulting in a negative image. Selecting the check box would send a negative image, resulting in a correct positive image on the denim.

Power contrast is a selection of preset contrast levels for applying to the image. They work along these lines.

- **None** creates a linear relationship between colour and power,  
Colour 1 = Maximum power  
  
Colour 255 = Minimum power
- **Low** creates a modified linear relation between the first and last colour in the design – maybe the image starts at colour 10 and finishes at colour 245  
Colour *FirstCol* = Maximum Power  
  
Colour *LastCol* = Minimum Power
- **Medium** creates a square curve relationship,  $\text{power} = (256 - \text{colour})^2$  between the first colour and last, *FirstCol* is still Max Power and *LastCol* is still Min Power
- **High** creates a cubic curve relationship,  $\text{power} = (256 - \text{colour})^3$  between the first colour and last, *FirstCol* is still Max Power and *LastCol* is still Min Power

Contrast can also be adjusted from the Image/Brightness and Contrast menu at the top. Make sure you click apply before pressing OK.



In your material settings you should have velocity set to 50 cm/s and set your power to suit the material used. A max power of 18% works well for most materials but you should experiment to attain the desired results. (Example for 30 Watt laser)

The above description is for Rastering an image. You can just as easily Raster (fill) a shape or text by selecting the shape or text and going through the same process.