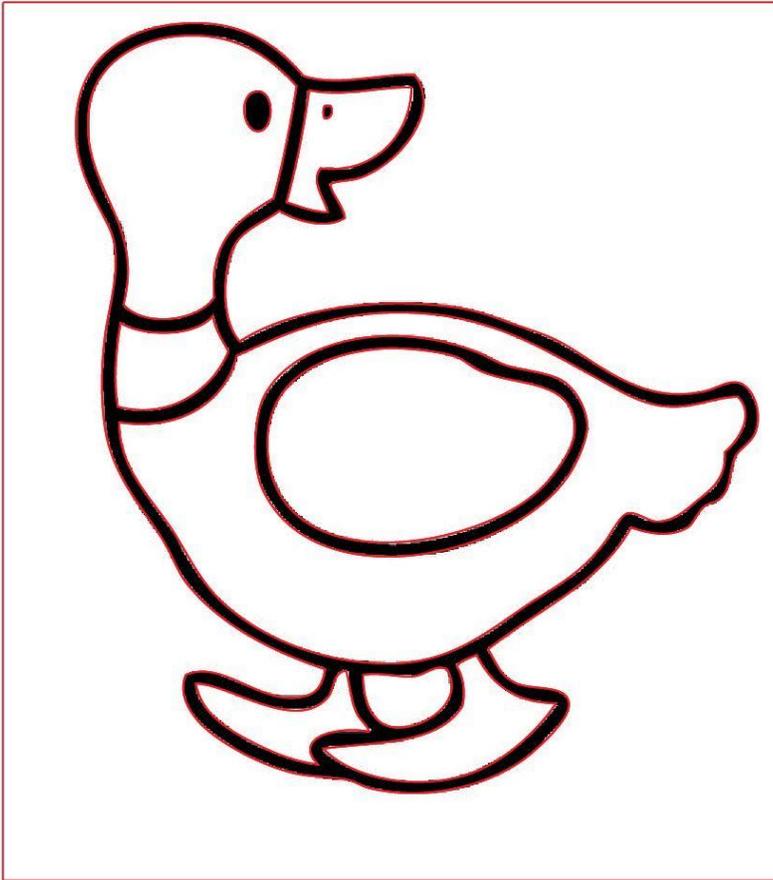


## Avoiding Double Cut Lines in your Designs

When a vector program creates an Auto-Trace of an image, it generally places a vector cutting path into the interface anywhere there is a color change between two different colors.

One of the places where this can cause confusion is for unfilled shapes that have a black or colored stroke, or filled shapes that have a different colored stroke than the fill color.

A common example is shown below – this is a “Coloring Book” image – and the red lines indicate where the vector paths will be placed by the Auto-Trace program.

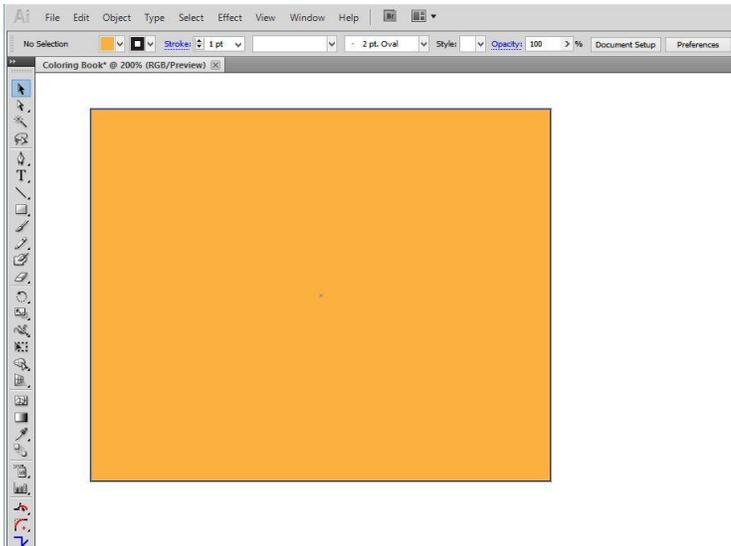


You can see that any time the color changes from white to black, or from black back to white, a red line is placed in between them into the interface. Those red lines indicate the vector paths that the laser will follow when it travels. Which means it's going to cut out the wing twice, leaving a thin black sliver shaped like a wing. Eventually, you will wind up with a separate outline of a duck....all of the white areas will be cut away from the black areas, and the eye, nostril and wing will not be attached to the rest of the outline – they will fall out. In addition, there was a white background on the image, and that created a rectangle around the duck, so that will be cut too.

*(Raster images have a background on them (usually white so you might not know it's there) that will create that rectangle outline, and it needs to be deleted from the file if you don't want it to be cut.)*

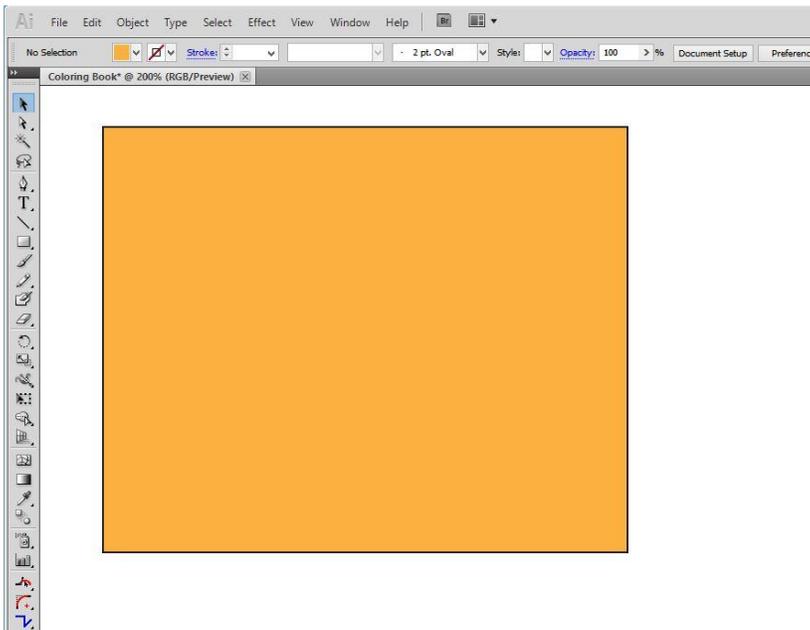
Okay so those double cut lines were easy enough to see, because the width of the lines being traced was fairly large. But if the width of the visible line is very small, you might not know that you created a double line when you Expand a Stroke or do an Auto-Trace on it.

This is a simple vector rectangle drawn in Illustrator. It has orange fill and a black stroke that's only 1 pt. wide.



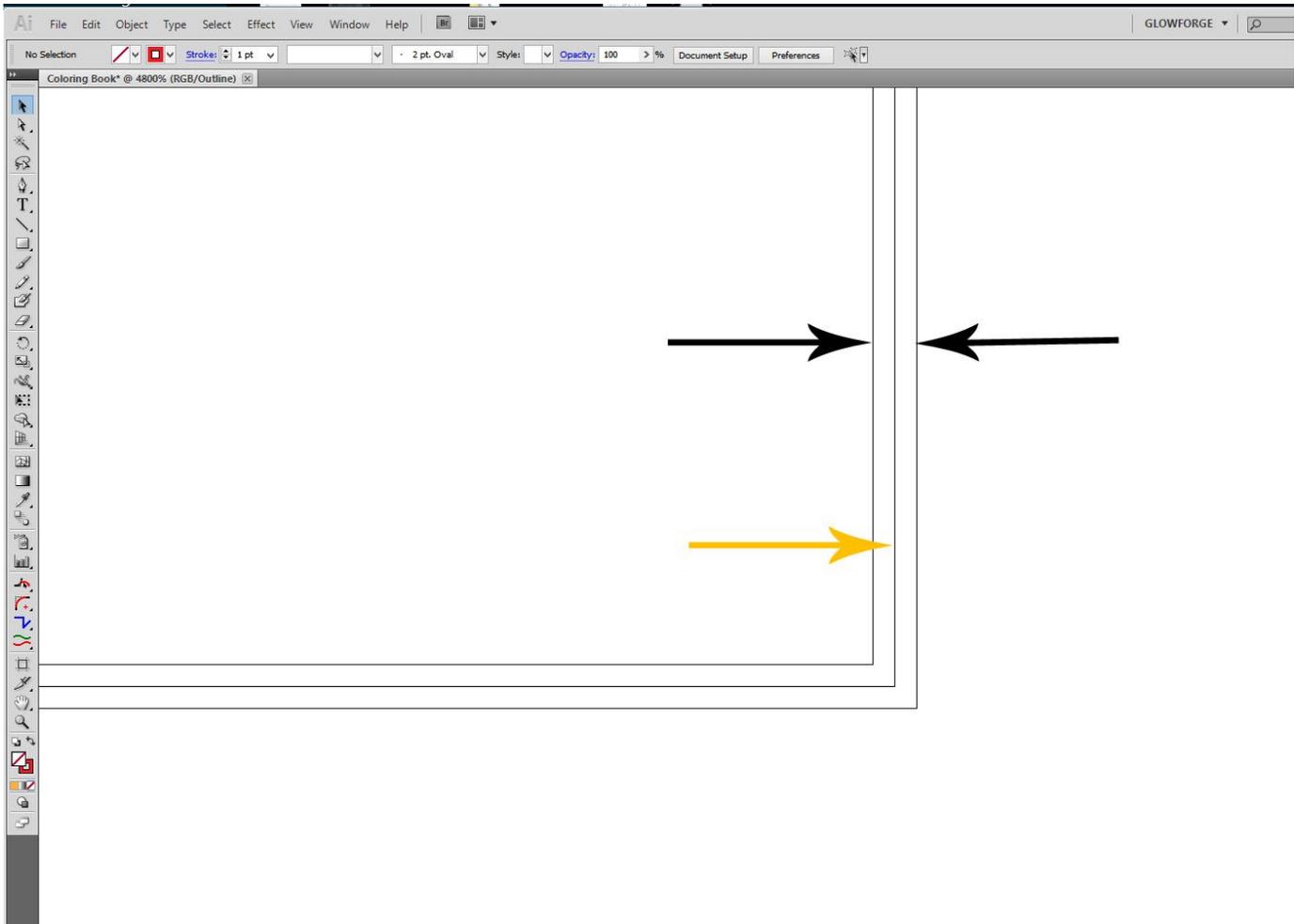
If you were to **Expand** that shape for any reason, a vector cut path will be placed into the space between the orange fill and the black line, but a second vector cut path would be placed into the interface between the black line and the empty background.

The result looks like this....exactly the same as the original.



That's because **Expanding** an object creates filled shapes without strokes, and compound paths that do not have stroke colors assigned to them. If you were to then select everything and assign a stroke color to it, you will create double (or triple) cut paths.

If you switch to viewing in Outline Mode, and Zoom way in, you can see the actual vector cutting paths that were created for that simple shape..... An orange filled area with no stroke, and a black compound path with no stroke.



The orange fill area ends at the center line shown, the two black arrows point at the paths created on either side of the black stroke that existed on the original shape.

If you select everything and assign a stroke color to it, thinking that the black line that you see is the only one there, you are going to cause the interface to have a hard time interpreting whether you want to engrave the shape or cut it out three times. (Kind of a toss-up what will happen, it will probably treat it as a solid engrave, but it might also give a double cutline with an engrave.)

If you're not completely lost by now, there's an easy way to keep this from happening. Just remember to always **check the results in Outline Viewing mode** before you send a file to be cut....it will save you some serious headaches.

And remember that any time there is a color change of **any** kind – a vector path is going to appear there between the two colors (including white), or between a color and no color, when you are using either the Auto-Trace or an Expand function. Making sure that the stroke color and fill color are exactly the same can prevent this from happening. Or just design the file with fills and no strokes, until you get it done, and then assign the stroke color to only the outside path as a last step.