







Designing a laser cut keychain using Inkscape

Basic Tools

-  Selection - Select, move or scale an object.
 -  Edit paths by nodes - Edit paths by dragging their nodes, or node handles.
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-  Rectangles and Squares
 -  Circles, ellipses, and arcs
 -  Stars and polygons
- Shape tools - Click and drag to create shapes. If you want it to be an exact size, you can use the selection tool to select it and type in the exact sizes in the width and height boxes at the top.
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-  Create and edit text objects.

Useful Inkscape Shortcuts

(you can also hover over a tool and it will show you the shortcut.)

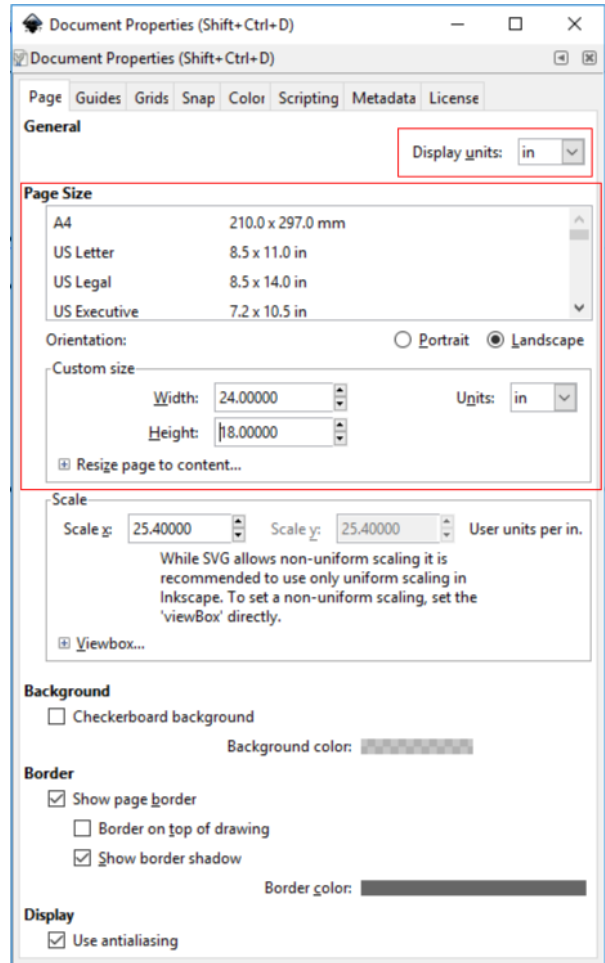
- Ctrl S (Save)
- Shift Ctrl S (save as)
- Ctrl Z (undo)
- Shift Ctrl Z (redo)
- Ctrl C (copy)
- Ctrl V (paste)
- Ctrl D (duplicate)
- Ctrl G (group items together)
- Ctrl U (ungroup items)
- Ctrl A (select all in current layer)
- Alt Click (select something that is underneath an object)
- Ctrl+Roll Wheel on Mouse(zoom in and out)
- Space Bar, Click and Drag (allows you to move screen around while moving mouse)
- Ctrl+R (hide/unhide rulers)
- F1 (selection tool)
- F2 (edit paths by nodes)
- Ctrl drag (draw shape fixed to ratio. eg: squares, circles)
- Shift drag (draw shape from the center)

1. Open Inkscape



2. Go to File > Document Properties

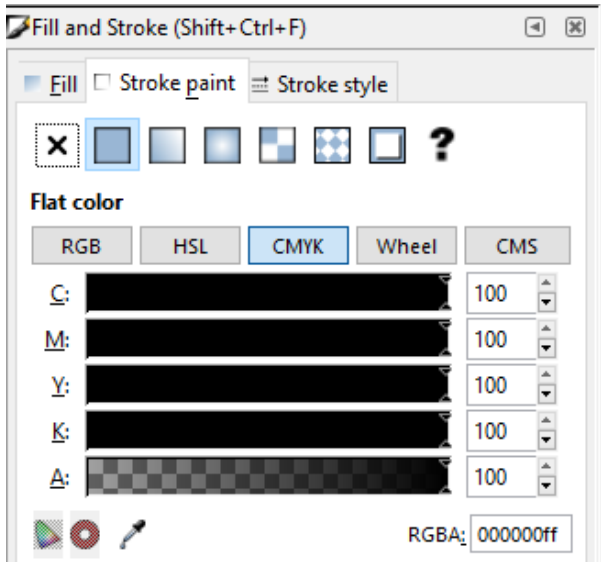
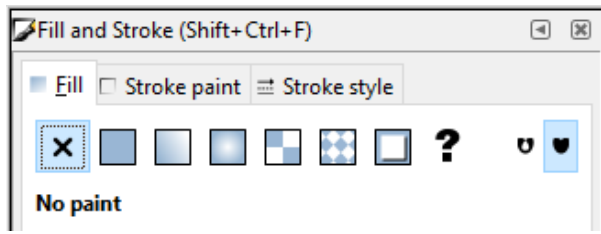
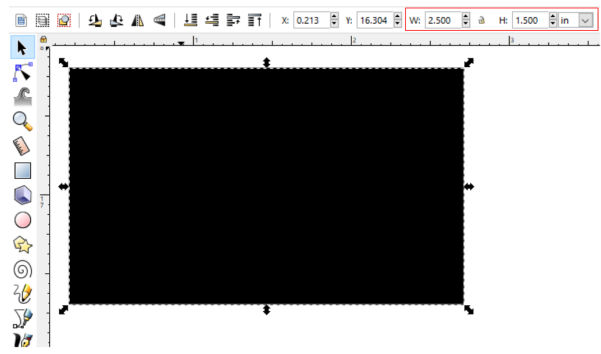
- a. Next go to Display Units, click on the drop down menu and select the unit of measurement that you are most comfortable with.
- b. Change the page size to the size of material you will be using. If you are unsure, you can just set it to the size of the bed on the laser cutter (24x18 in.)



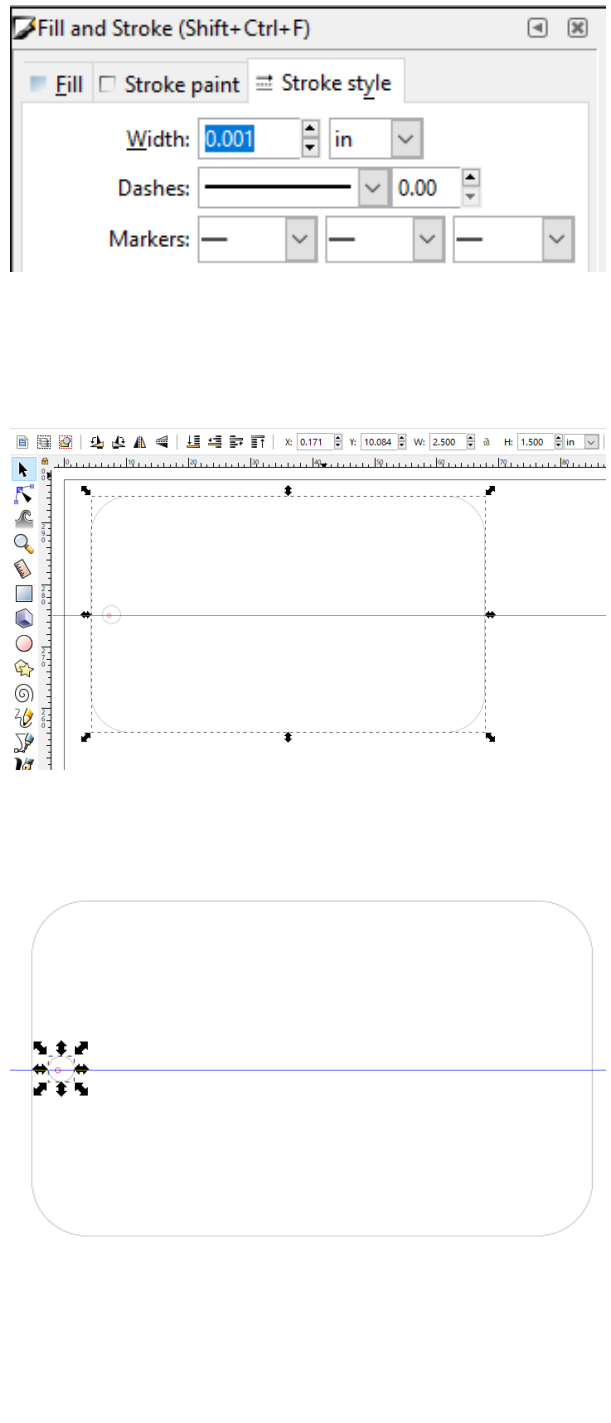
3. Create the general outline of your keychain by selecting a shape from the toolbar on the left. In this example, we will be using the rectangles and squares tool. Click and drag to create a rectangle.

- a. You can change the size by clicking on the selection tool (F1) and clicking in the width and height boxes and typing it in manually. Your shape must be selected for this. This rectangle has a width of 2.5 in and a height of 1.5 in.
- b. To make your rectangle a rounded rectangle, select the edit paths by nodes tool (F2). Then click on the circle in the upper right hand corner (of the rectangle) and drag.
- c. In order to laser cut the shape out, we must make sure we have no fill and that we have a stroke of .001 in. To do that, you will need to go to the Fill and Stroke panel to the right. If it is not already open, hit Shift+Ctrl+F.

- i. Select the tab that says Fill and click on the box with an X in it. This means there will be no fill.
- ii. We want there to be a stroke around these shapes. Select Stroke paint. Click on the solid colored square. Then select CMYK and type in 100 into the 5 boxes on the right. This will make the stroke black.



- iii. Next, click Stroke style and type in .001 in, for the width.
- d. In order to make this a keychain, we need a hole for the key ring. Select the circle tool from the toolbar on the left. Then draw a small circle. Click on the selection tool (F1) and make the circle .125 in by .125 in. Inkscape automatically uses the fill and stroke you selected last, so you shouldn't have to change this.
- e. You can drag a guideline from the ruler by clicking the ruler on the top and dragging it down. If the ruler is hidden, click Ctrl+R. By selecting the rounded rectangle, you can see where the midpoint is on the left and right side. This is where the horizontal arrows are located. Click and drag the guideline to the center and place the circle in the middle. Also, make sure that the circle is .075 in. from the left edge. You can use a guide and the ruler to do this or you can draw a square that is .075 in. wide and delete it afterwards.



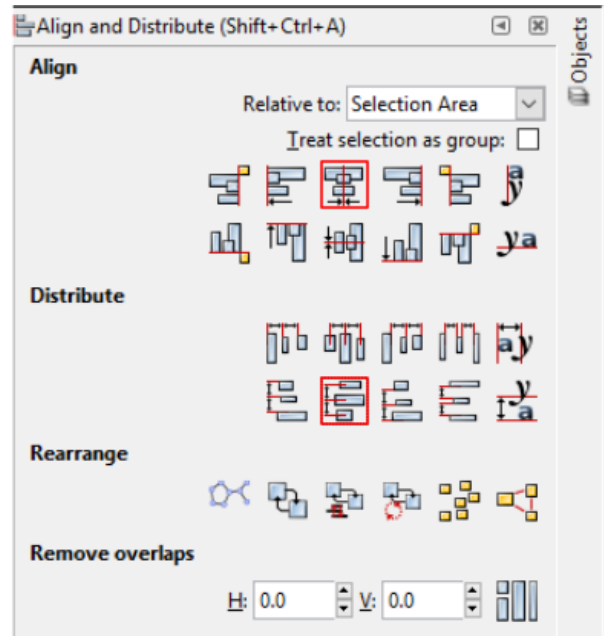
4. Select the Text tool and type your name. You can select whichever font you want by going to the upper left hand corner. This is also where you can change the size. In this example the font is Brush Script Std and the font size is 26. This is placed in the center of the keychain.
 - a. Next, we will create two long, thin rectangles to go above and below the name. The rectangles in the example are 2.25 in. wide and .007 in. tall. These rectangles should have a black fill, but no stroke. Once you create one, you can just click Ctrl+D, to duplicate it. You can drag the duplicate from the top of the original.
 - b. After adding in the rectangles go ahead and add, "Hello my name is" above the top rectangle. Try not to place it too close to the top. In the example, this is a Sans-serif font and is set to 18 pt. Sans-serif and Serif are types of fonts. In inkscape they are also the name of fonts. Serif refers to fonts that have decorative flourishes at the end of each stroke. Sans is another word for without. Therefore, Sans-serif means it doesn't have any decorative flourishes at the end of the strokes.

File Edit View Layer Object Path Text Filters Extensions Help
Brush Script Std Normal 26.00



Sans-serif
Serif

5. To make sure that these are aligned, you can select these elements (while holding shift), then go to the align panel on the right. If it is not already up, you can use the shortcut Shift+Ctrl+A. Then select the center on vertical axis button. Make sure you don't align the center of the circle for the key ring. You can also make sure your name and the rectangles are equally distributed by selecting those (holding shift) and clicking on the distribute centers vertically button.



6. Next, hold shift and click on both lines of type. Then go to the menu bar at the top and click on path>object to path. This converts the type from shapes to paths. This will allow us to edit them. It also prevent the font from changing, if you open the file on a computer that does not have that font.
- “Hello my name is,” is going to be laser cut (Vector) and your name will be laser engraved (Raster.) This means your name should have a black fill and no outline. “Hello my name is,” will have to be edited. If you don't edit it the space in the middle of certain letters will be cut out.

Hello my name is

~~Hello~~

- b. Add a tall rectangle on top of and in the center of the letters e, o, and a. Make sure it is at least .030 in. wide. You can pull guides out of the ruler to the left to make sure they are centered or you can just visually center them. If you are using guides, it might be easier if you deselect snap to grids and snap to guides. It is located on the toolbar on the right. Then, individually select each letter with the edit paths by nodes tool (F2) and the rectangle on top. While they are selected, go to path>difference. This subtracts the area where the two overlap. Once you are done doing this to each letter, select all of the letters and get rid of the fill. Then set the stroke to .001 in.



7. Double check your fill and stroke on everything and save your file as a pdf. Your file is now ready to be laser cut!



