



## 8.0 - ENGRAVING PENS

**Materials Required: Pen Fixture and Four Wooden Pens.**

**Difficulty Level: Easy**

Let's use the pen fixture we made in section 7 and engrave names onto four wooden pens. Figure 8.1 shows the finished design of the job. It looks simple – only four lines of text – but the challenge is to design and engrave with accurate placement on the work pieces. We'll start by opening the pen fixture file. Make sure that all layers are visible by clicking in the check box to the right of the layer tabs

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### 8.1 Using the Pen Fixture

Place the pen fixture on the laser engraving machine's table and position it at the table's upper-left corner. Place the pens in the fixture from top-to-bottom in the fixture stations.

Position the pens in their stations so that all the pens are in line vertically and oriented so that the engraving will read in the direction we want. In most cases, the bottom of the pen points to the left. The pens will be centered vertically in the slots.

Let's visually determine the area in which we want to engrave. Let's assume that we want to engrave a name on the cap of each pen and that we want the characters to be italic with a height to be .13 inches high. We see, by eye, that the names should be centered on a line that starts at a fixture scale reading of 4.5 inches and ends at 5.8 inches and that this space (1.3 inch long) is the maximum line length that we can use on the cap.

We'll plan this job as follows:

- We'll make the fixture layer the active layer.

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**Figure 8-1 Pen Engraving Job**



- We'll draw a rectangle to represent the engraving space. It'll be 1 inch wide by 0.130 inches high.
- We'll move this rectangle so that it's vertically centered, by eye, on the top-left fixture station slot and so that it starts at the 4.5 inch tick mark on the station's ruler. (Make sure to work in "Wire View" viewing mode for this job. If you're in "Graphic" mode the display of the fill of the slots will obscure your work.)
- We'll duplicate this rectangle to the next three stations down
- We'll make "Layer 1" the active layer. It's here that we'll compose and position our lettering.
- We'll type our names in each of the rectangles.
- We'll turn off the visibility of the fixture layer so that we can be sure that we'll be engraving the names only.
- Finally, we'll set our engraving power and speed and send the job to the table for engraving.

### 8.2 Defining the Engraving Area On-Screen

With the fixture layer active, we'll use the zoom tool to zoom to the first station of the fixture along a ruler reading of, say, 4 to 7 inches and we'll make sure that we have some blank work area at the top of the screen (Figure 8-2). Press Ctl-7 to go into Wire color View mode.

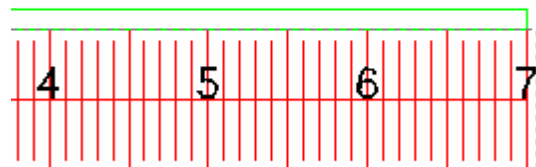


Figure 8-2 Zoomed view

Next, we'll open the "Geometrical Shapes" fly-out toolbar and select the rectangle tool. We'll start dragging, press the **F2** key and specify that the rectangle be 1.3 inches wide by 0.13 inches high. Click the Select mode icon. We'll then drag the rectangle so that



it's visually centered vertically on the first station's slot and so that it runs from the 4.5 to 5.8 ruler tick marks.

We'll make sure that the rectangle is selected and we'll select the "Linear Duplication" tool for the "Duplication Tools" fly-out toolbar. We'll enter values of 1 column and 4 rows in the Linear Duplication tool's dialog box. Press F2 for the precision dialog and click the 'Decal' (offset) tab. Enter -1 for the Y repeat offset value. Click **OK**. (Figure 8-3).

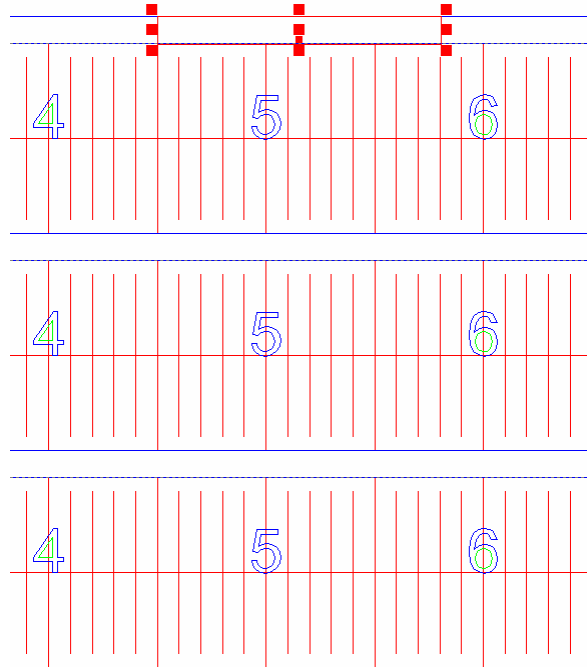




Figure 8-3 Dragging the Engrave Area

**8.3 Entering the Text**

Click on the Layer 1 tab to switch to that layer. Keep the Fixture layer still visible by checking the check box. Click anywhere in Layer 1 and then press **F3** to bring up the snaps window. We'll

select the snap mode that is labeled "Control Point" . Notice that the icon for this snap mode shows a snap point (a red circle) at a corner – we'll use this snap in just this way.

Select the "Text into Rectangle"  tool from the "Text Tools" fly-out pallet. Move this tool's cursor to any corner of station one's slot – and, like magic, we'll see the snap circle pop up as we near the corner! (See Figure 8-4.) The snap works even though the element we're snapping to cannot be edited because it is on another layer. Click the left

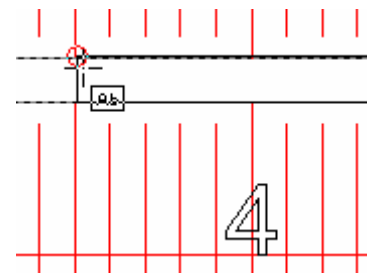


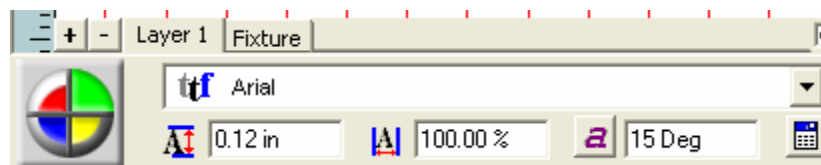
Figure 8-4 Snapping Text Box



mouse button and drag the cursor to the corner diagonally opposite. When that corner's snap circle appears, release the mouse button. Our text box is complete and ready for text entry.

Before we start typing, let's specify our text (Figure 8.5):

- Choose Arial True Type font.
- Set the text height to 0.12 inches
- Set the text angle (italicize) at 15 degrees
- Set the text justification to center
- Remember to press Enter or click in the white edit area to apply these changes.



**Figure 8-5 Specifying Text**

Now we'll type in a name in the first box. When we're done, we'll successively snap text boxes into each of the other target areas in the slots. If any of the names are just a little bit too long for the engraving area, the text will compress to fit as we type, and we'll find that a small amount of compression won't be noticeable.

We're done, but with the clutter of the fixture and our text on the screen, we might want to verify that *only* the names will engrave. There are two things that we can do. One is to simply uncheck the check box on the layers tab area so that only our design layer, Layer 1, shows.

Let's try another option. Enable all layers to be seen so that the names and the fixture show. Now we see everything again. Select the tool on the left toolbar labeled

#### **LOOK FURTHER**

***Notice the two pinwheels at either side of the text properties dialog area. The smaller one at the right transfers the dialog to a one-line menu directly under the upper toolbar. The larger pinwheel, at the left, enables you to set other text properties. Just click on one of the colors to bring up other text attributes such as subscript and superscript, etc.***

## GravoStyle5-Laser Tutorials

“**WYSIWYRE**” (Figure 8-6). This stands for “What You See Is What You *Really* Engrave”. When we select this tool, a new window opens full screen, to show you a graphic representation of exactly what will be sent to the table in the existing state of the design screen (Figure 8-7). (Make sure to close the WYSIWYRE window when you’ve finished verifying your engraving job.)



**Figure 8-6**  
**Wysiwire Tool**

### **8.4 Engraving the Pens**

Now we’re ready to engrave. We’ll open the



**Figure 8-7 WYSIWYRE Screen**

internal laser driver dialog window, where we’ll program settings for a typical 60W laser: 70 for power and 50 for speed for the black color (the only one we need for this job) and set the engraving resolution at 600 dpi. After the job is sent to the table, we’ll make sure to save the job for possible future use. Remember: the power, speed and resolution settings will be saved with the job.

### **8.5 What We’ve Learned**

In designing and engraving this job, we’ve learned:

- How to apply an engraving fixture to correlate the location of our work piece on the table with its location in the design screen.
- How to apply the power of layers to designs.

#### ***Look Further***

*You’ll probably encounter situations where you want to engrave only a part of a job that’s on-screen. If you select anything on-screen (or several things in one selection) only that selection will engrave. The WYSIWYRE screen is especially useful in this situation for verifying what will be sent to the table*

*Example: suppose you had to engrave another pen with one of the four names you’ve just engraved. Re-open this job select that name only and check the WYSIWYRE window to make sure. GravoStyle 5 gives you a good tool to apply the old carpenter’s adage: “Measure twice, cut once.”*

## GravoStyle5-Laser Tutorials



- How to snap to elements in a different layer.
- How to set text properties.
- How to place text *exactly* where we want it.
- How to verify what we'll be engraving by using the "WYSIWYRE" tool.
- How to engrave only a part of a job design.