Metal Wurx – Part XXII

How to Make a Fuel Flow Indicator

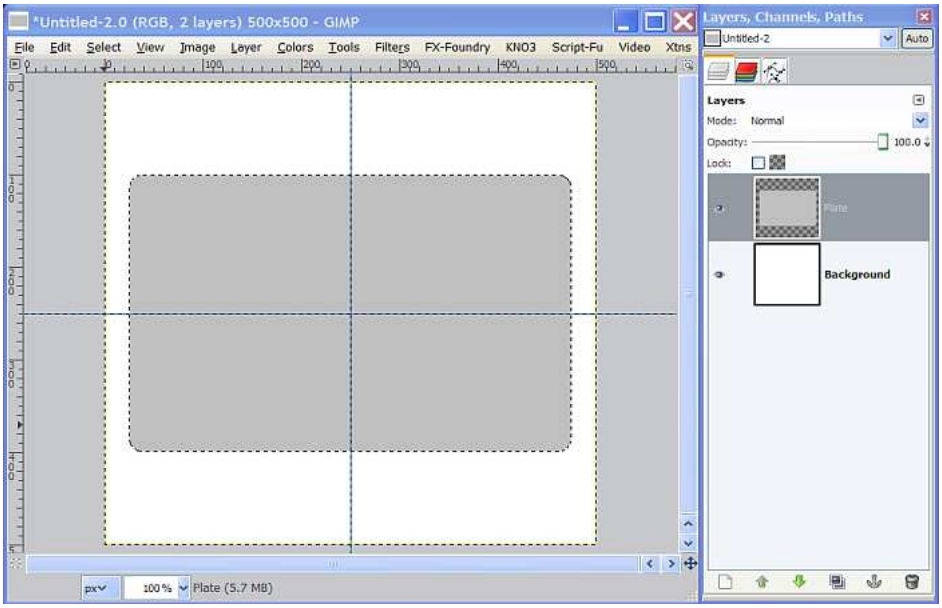
Any control panel would not be complete without some sort of indicator to look at. There are many kinds of course, view meters, flow indicators, temperature gauges and on and on. I'm going to show you how to make a simple Indicator with graduated bars indicating the level of fuel flow. This could easily be called something else or used in a different way so be creative.

You won't need any special filters to complete this tutorial as we have in the past, and only the native filters and tools that come with GIMP 2.6.11 are required. You will, however, need to download and install the Pop Rivet brush in your Gimp "user" Brushes folder, refresh your brushes, then save the Rust texture to your desktop. Both of these are in the attached Resources folder.

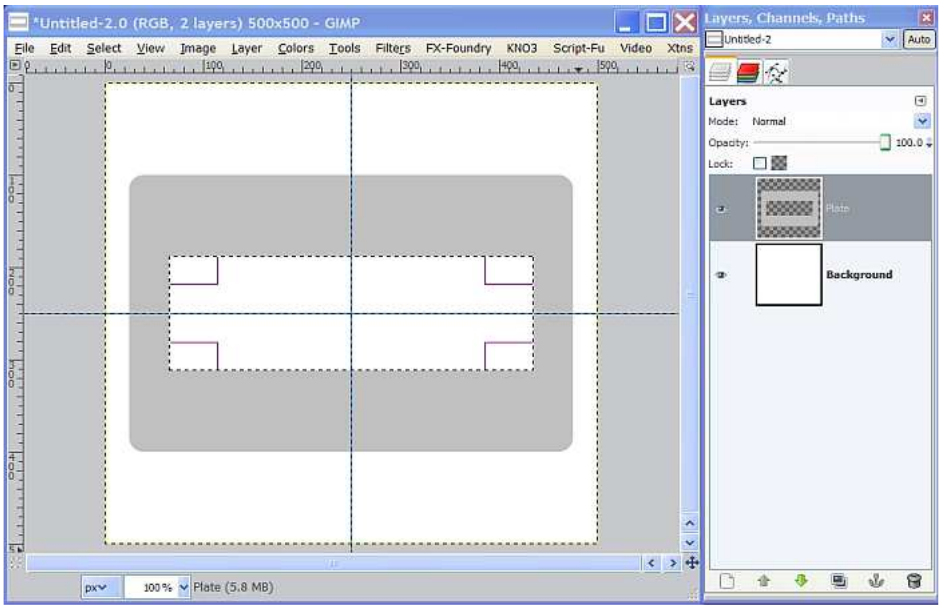
Step 1.
Open a new image 500 x 500 pixels and at least 600 ppi resolution. I used 1200.

Step 2.
Set your View at about 400% for accurate placement and create a vertical and horizontal guide in the very center at the 250 pixels both ways. Now, reset your view to 200%.

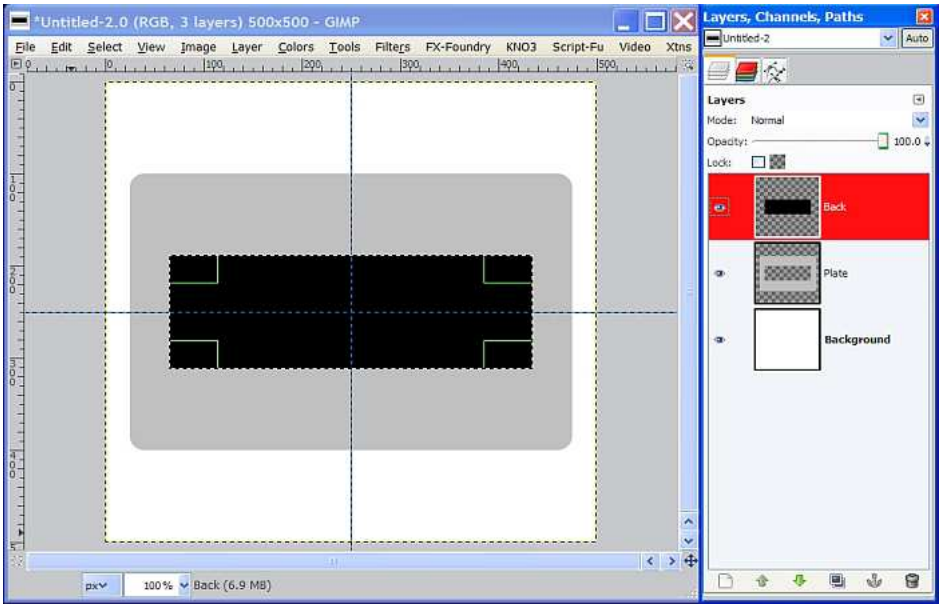
Step 3.
Click on the Rectangle Select tool and check the boxes for Rounded corners with the Radius set to 15, and Expand from center. Make a selection by placing your mouse cursor in the exact center, using the intersection of the two guides to help get it exact, and make it 400 pixels wide and 300 pixels high. Create a new transparent layer named "Plate" and set your FG color to a very light gray like C0C0C0. Now drag the color over to the selection to fill it then turn off the selection (Select>None).



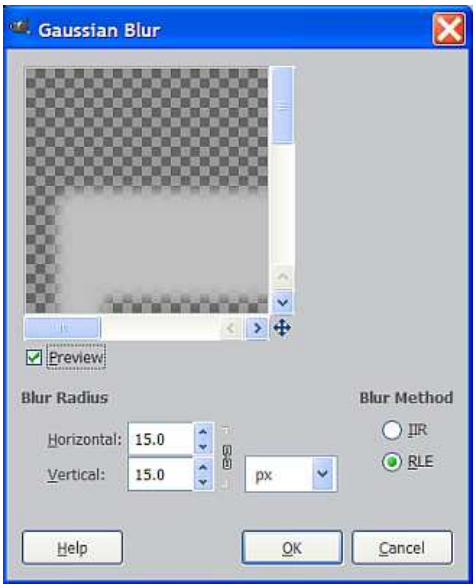
Step 4.
Uncheck the box for rounded corners in the tool dialog and make another selection from the center that measures 340 wide and 124 high. Now hit the delete key on your keyboard to "cut out" the area of the selection. You will see the white background underneath the Plate layer. Do not turn off the selection yet.



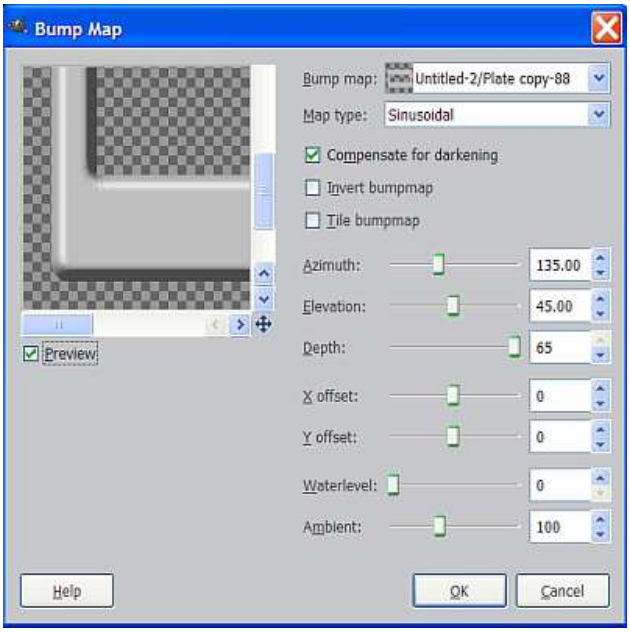
Step 5.
With the selection still active, create a new transparent layer named "Back", reset your FG color to Black and fill the new Back layer. Turn off the selection.



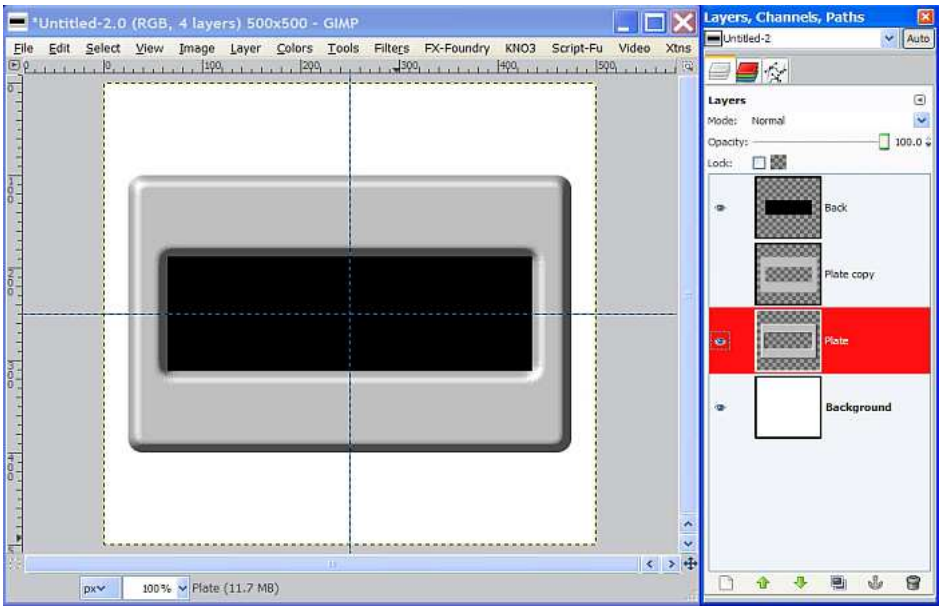
Step 6.
Select the Plate layer to make it active and duplicate it one time. With the Plate copy layer still active, go to Filters>Blur>Gaussian Blur and enter 15 for both values, then click OK.



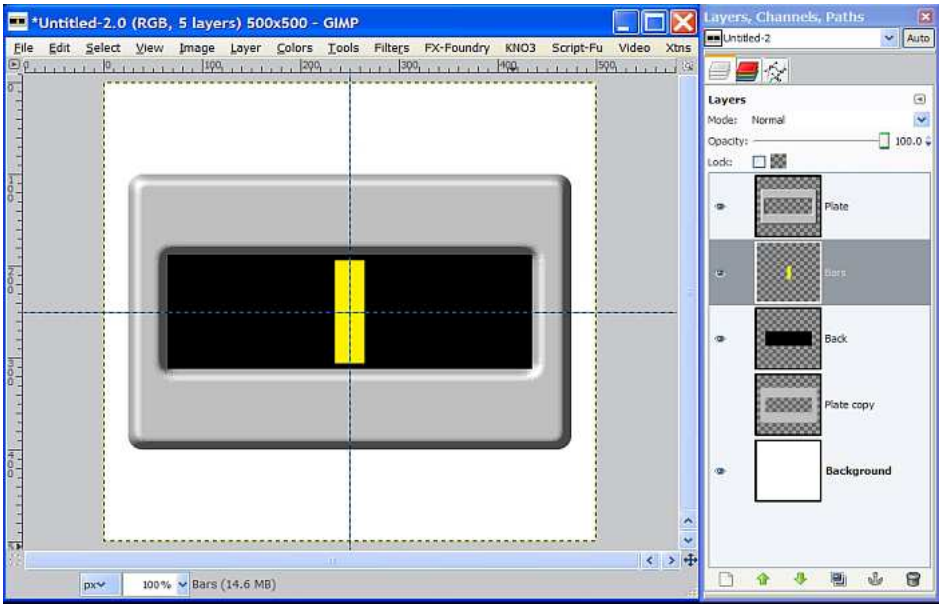
Turn off the visibility of the Plate copy layer and select the Plate layer again to make it active. Go to Filters>Map>Bump Map and enter the settings shown below. Make sure the Plate copy layer is selected at the top to be used for the bump map.



Your image and layers should now look like this.

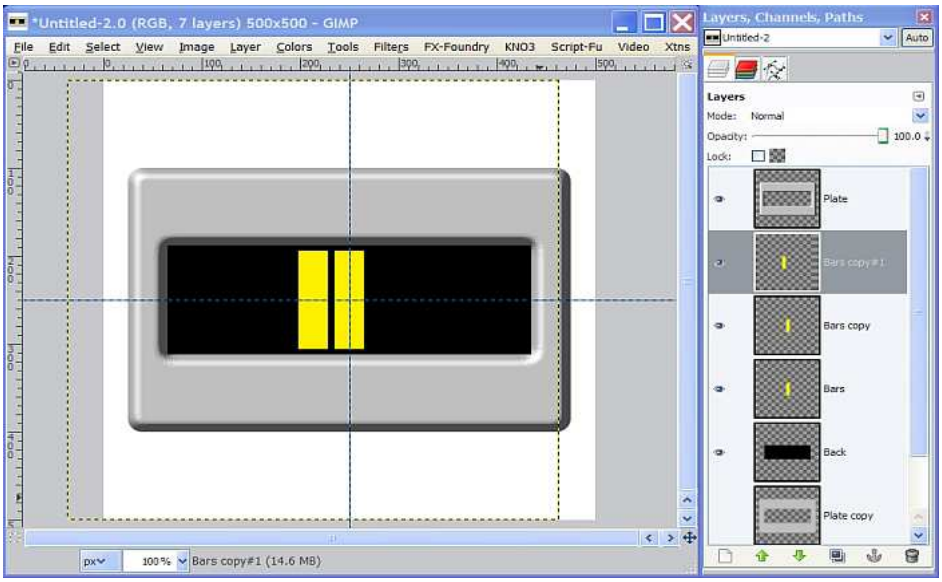


Step 7.
Move the Plate layer to the top of the layer stack. Create a new transparent layer named Bars, just below the Plate layer, and set your FG color to yellow (FFF000). Grab the Rectangle select tool again (settings should still be OK) and make a selection in the center that measures 30 pixels wide and 112 pixels high. Drag your FG color over to the selection to fill it with the yellow color and then turn off the selection. (Select>None)



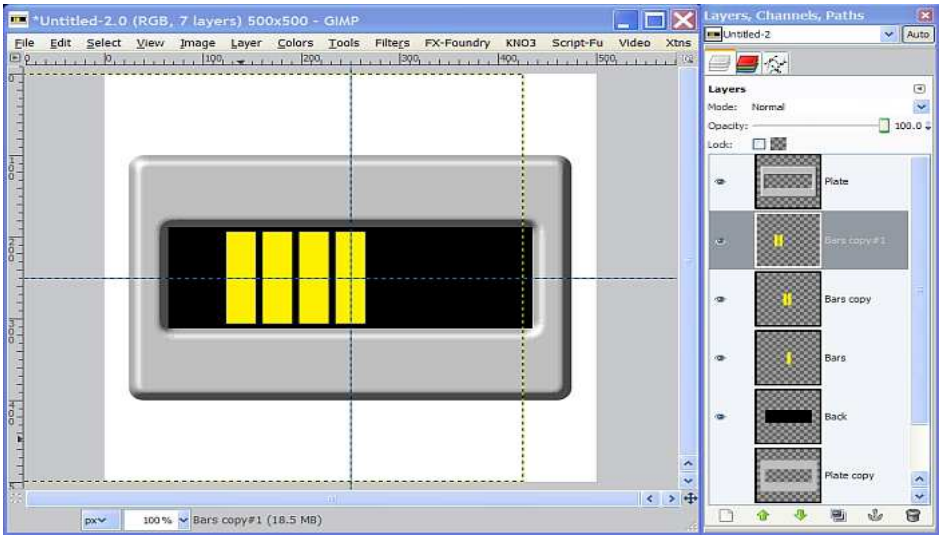
Now, duplicate this layer twice.

Step 8.
Select the Move tool and make sure the circle is ticked for “Move the active layer” in the tool dialog. Select the Bars copy #1 layer (top bar duplicate) and click on the image window to activate the tool. Use your arrow buttons to move this layer to the left until the right side is perfectly aligned with the left side of the original Bar layer. Now hit the left arrow button 7 more times to create a space between the two bars.

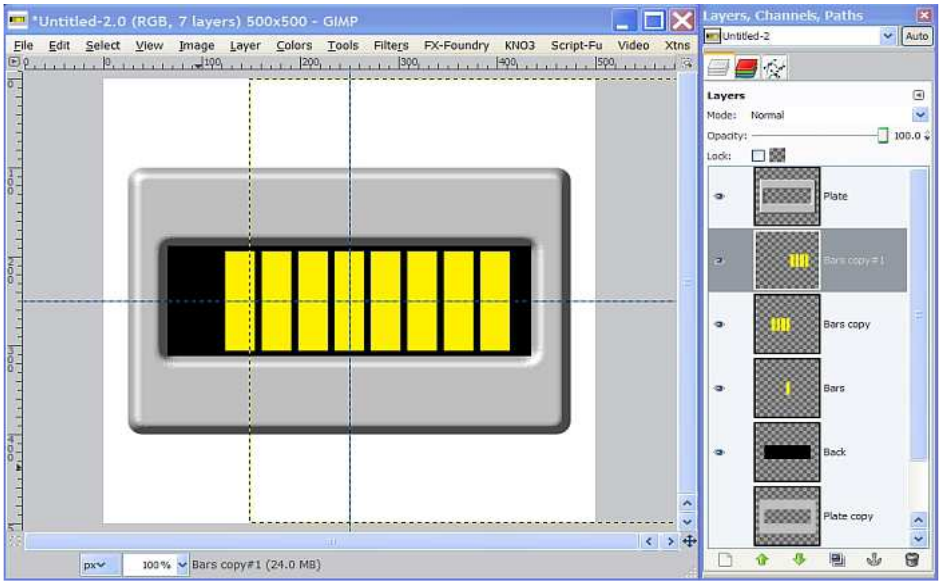


Now right click on this layer in the layers dialog and choose Merge Down to merge it with the Bars copy layer.

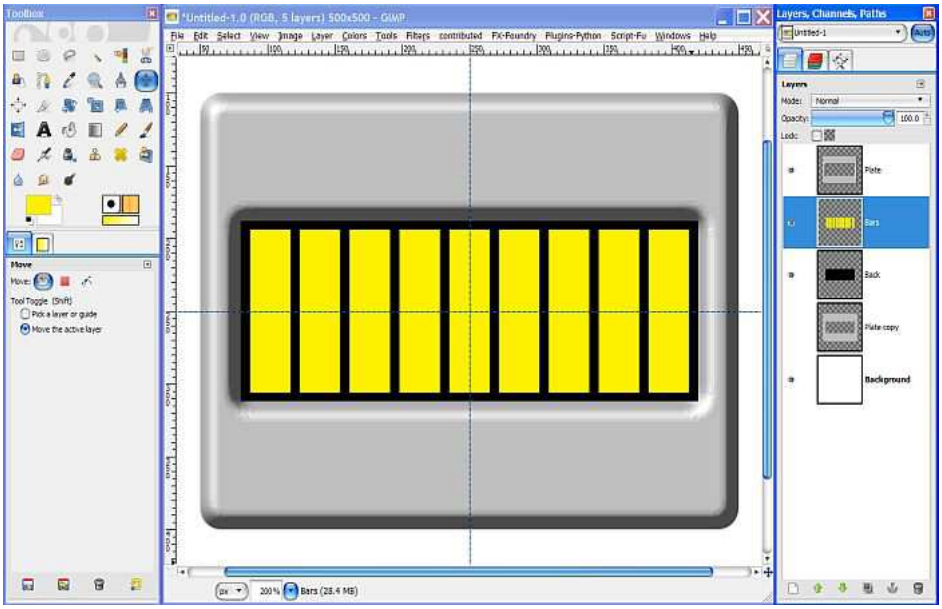
Step 9.
If you look over in the layers dialog, you will see two bars on the Bars copy layer and should also still be selected. Right click on it and select Layer to Image Size then duplicate the layer. Now use your left arrow key again and position the new Bars copy #1 layer to the left using the same method and spacing like in Step 7. above.



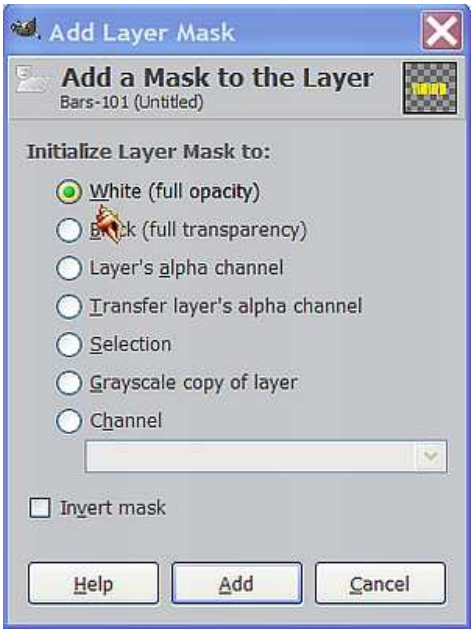
Now Merge this layer down with the first Bars copy layer, right click and select Layer to Image Size again, and the Bars copy layer now has four bars. Duplicate this layer and this time, move it to the right in the same manner as we did above.



Now we have eight bars, so Merge this layer down with the Bars copy layer, then right click and select Layer to Image Size again. Now let's go back and select our Bars layer with the single bar and move it all the way to the left and space it out 7 spaces just like we have been doing. Once it is in place, right click on the Bars copy layer and select Merge Down, then Layer to Image Size.

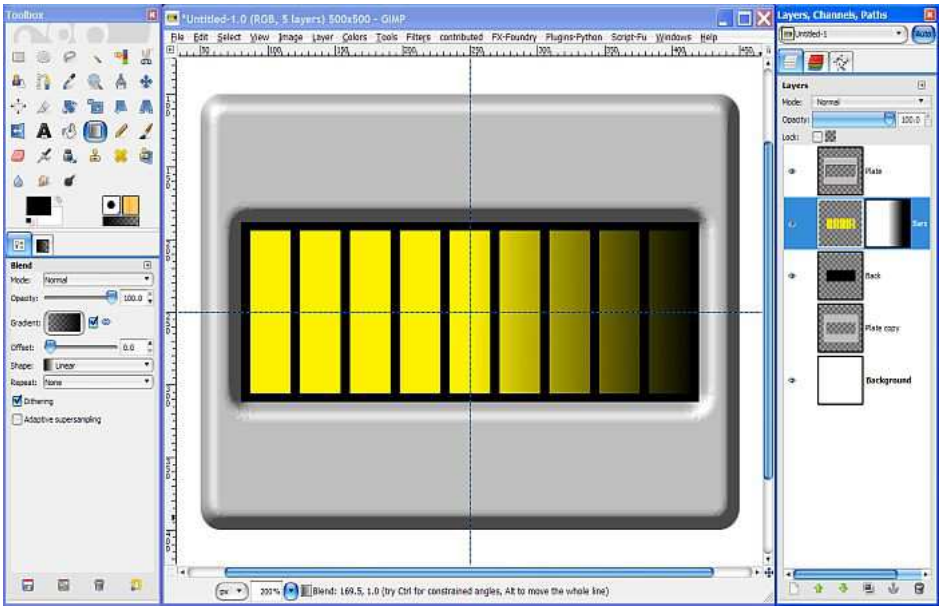


Step 10.
Right click on the Bars layer again and this time select Add Layer Mask. When the dialog comes up make sure that White (full opacity) is selected then click OK.



Reset your FG/BG color to the default black and white then select the Blend tool. Set the gradient to FG to Transparent and the shape to Linear. Check the little box next to the Gradient to reverse it.

Now click on the mask to make sure we are working on it and not the bars. Place your mouse cursor in the center of your image at the intersection of the two guides and stroke to the right Horizontally to the right edge of the last bar to apply the gradient.

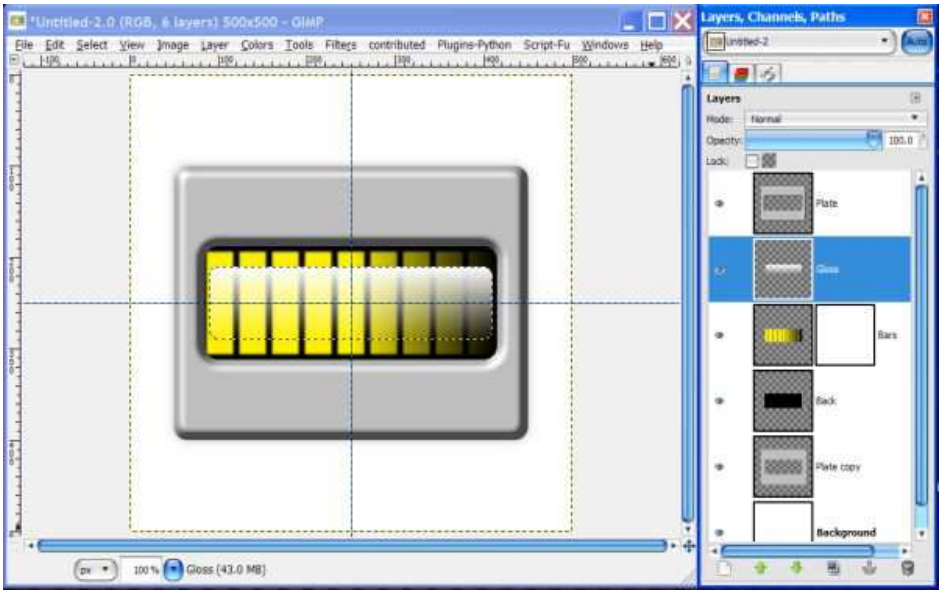


Step 11.
Turn off the selection (Select>None) and click on the bars layer to make it active instead of the mask. To make our light look a little better, we'll use a slight blur to give us just a little bit of a glow effect. Go to Filters Blur>Gaussian Blur and set both amounts to 3 and click OK.

Step 12.
Let's go ahead and delete the Plate copy layer and create a new layer above the Bars layer called it "Gloss". Click on the Rectangle Select tool. The settings should still be the same but recheck the box for Rounded Corners and change the Radius amount to 10.

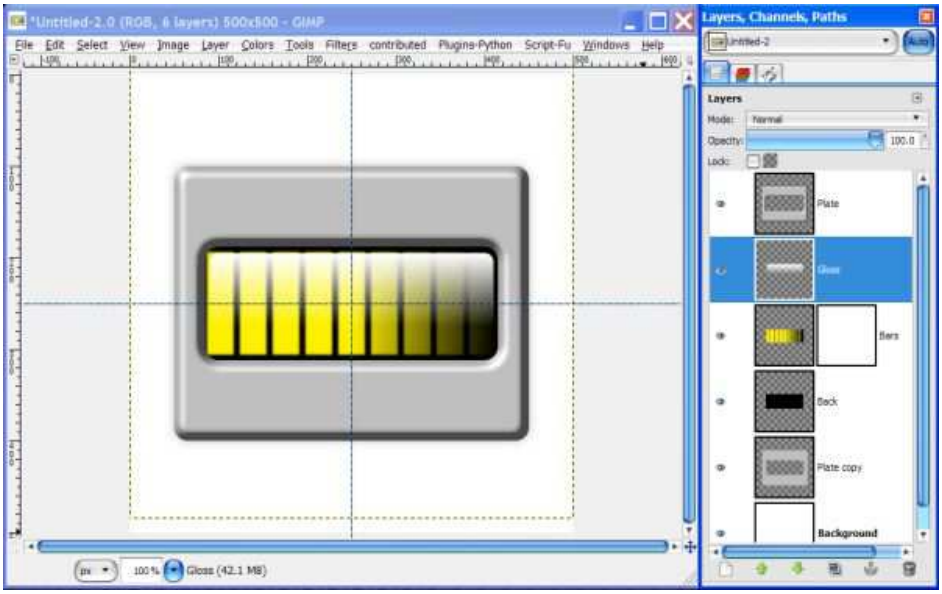
Drag from the center to make a selection that is 320 pixels by 80 pixels. Select the Blend tool, but uncheck the box next to the gradient to "unreverse" it. You should still have the Gradient set to FG to transparent, but we need to reverse the FG/BG colors so that white is on the left side of the gradient.

Now drag vertically from the top of the new selection to the bottom to apply the gradient to the Gloss layer.



Step 13.
Turn off the selection and select the Move tool. Click on the Gloss layer in the image window to activate the Move tool and hit your Up arrow on your keyboard 16 times then the Left arrow 2 times to reposition the layer.

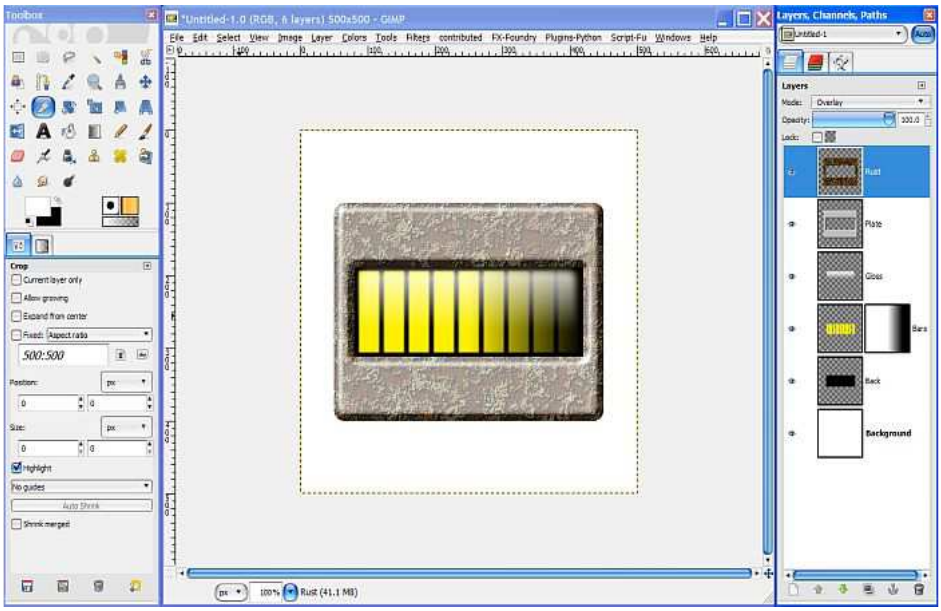
The edges of the gloss should now be lined up with the top edge of the Bars and 1 pixel to the right of the left edge of the last bar. When you are finished, right click on the Gloss layer and select Layer to Image Size.



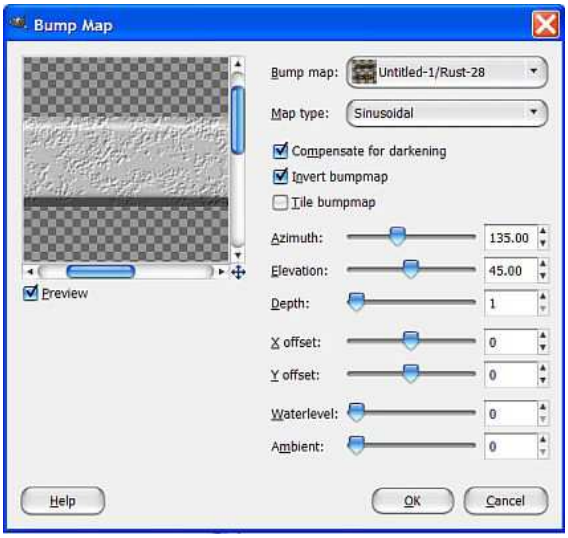
Step 14.
Go to Filters>Blur>Gaussian Blur and set both values to 15 and click OK. Set the layer Opacity to about 80 % and turn off the guides.

Step 15.
Select the Plate layer then Go to File>Open as layers and navigate to the Rust image you downloaded from the zip file to bring the image into Gimp. Right click on this image layer in the layers dialog and select Add Alpha Channel.

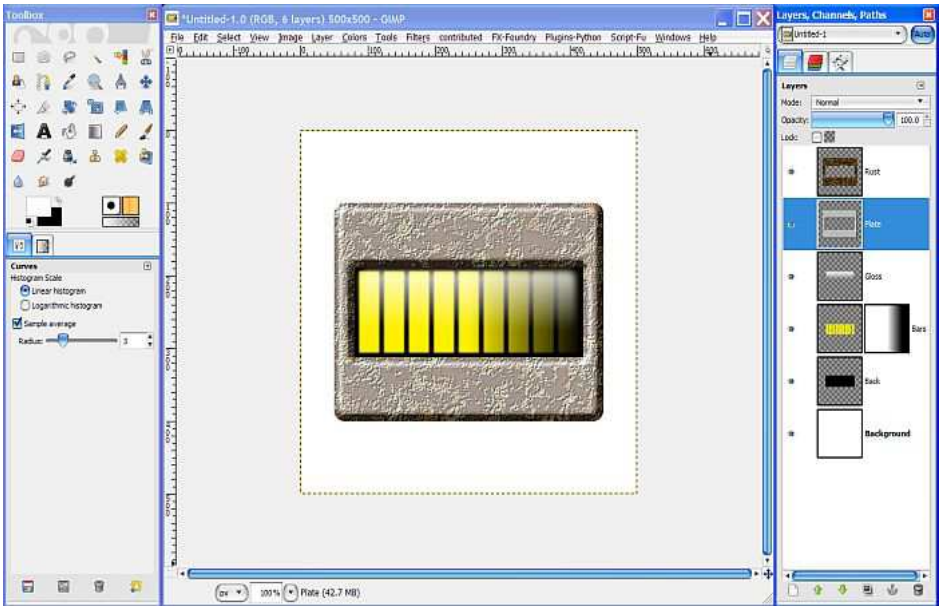
Now, right click on the Plate layer and choose Alpha to Selection. Go to Select>Invert, reselect the Rust image layer and hit your Delete key to remove the excess. Turn off the selection (Select>None) and set the layer Mode to Overlay. Now right click on the Rust layer and select Layer to Image Size.



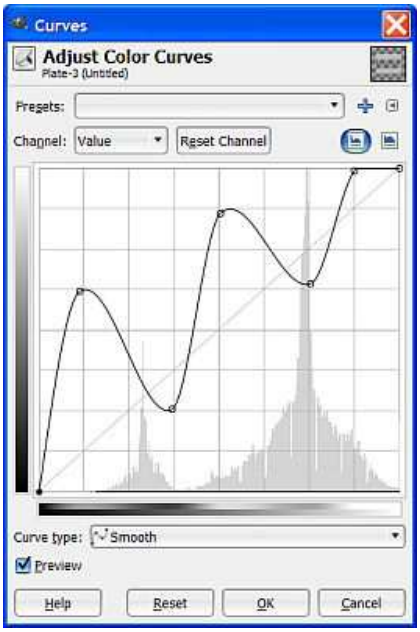
Step 16.
Select the Plate layer and go to Filters>Map>Bump Map and enter the settings shown below. The filter will automatically select the layer immediately above the layer you are working on, so the Rust layer should already be showing for the Bump map at the top of the dialog. Be sure to check the box for “Invert bumpmap”.



When you have all the settings entered correctly, click OK to apply the bump map.



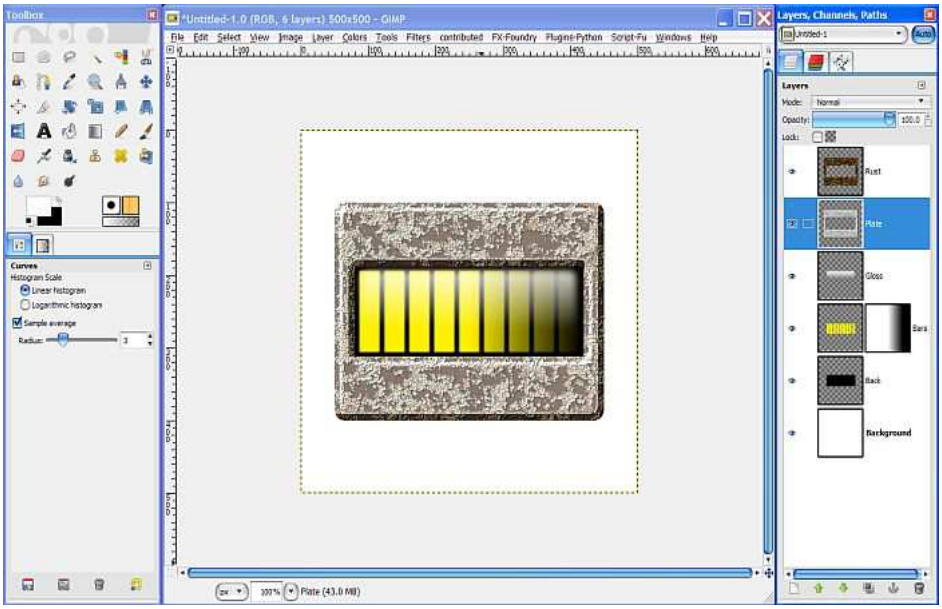
Step 17.
We have some nice texture now but incase you haven't figured it out already, I like metal. Go to Colors>Curves and apply my "Soft Chrome" preset or just adjust your curves so it looks similar to mine.



This and other metal curve presets can be downloaded from my Chrome Techniques tutorial. Check it out and grab the resources zip folder attached at the bottom.

http://www.gimpchat.com/viewtopic.php?f=23&t=4150

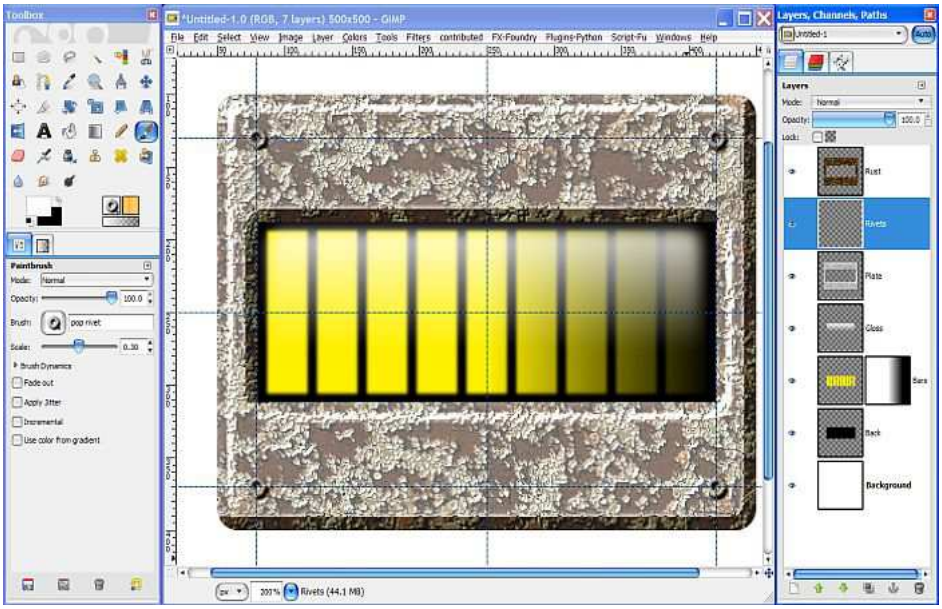
Now your Plate layer should have a more metallic look.



Step 18.
Create a new transparent layer above the Plate layer and name it “Rivets”. By placing this layer here, we will pick up the Overlay coloring of the Rust image layer above making our rivets “match” our Plate layer. Turn on the

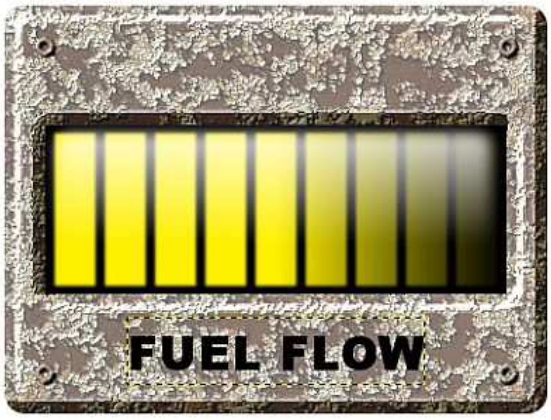
guides again and place two new vertical guides even with the sides of the Back layer which should be 80 pixels and 420 pixels. Place a new Horizontal guide at 130 pixels and another one at 370 pixels.

Select the Paintbrush tool and select your new Rivet brush I provided. Set the Scale to .30 and carefully paint in the Rivets at the intersections of the new guides in the corners of your image.



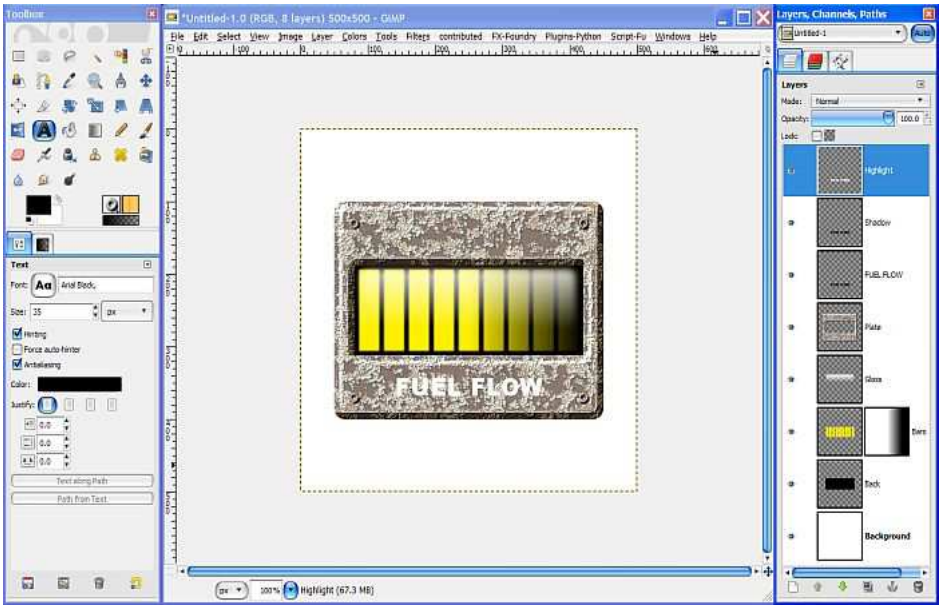
Turn off the guides and right click on the Rivets layer and select Merge Down. Now right click on the Rust layer and Select Merge Down. If you will notice, the Pop Rivet Brush comes with its own Drop Shadow, so I've saved you a step.

Step 19.
Reset your FG/BG colors to the default black and white. Select the text tool and in the tool dialog, find a simple bold text like Arial Black, and set the size to about 30. Go down to the bottom area of the plate below the bar lights and type out "FUEL FLOW" in all caps. Use the Move tool and/or the Alignment tool to center it up in the bottom area of the Plate like so.



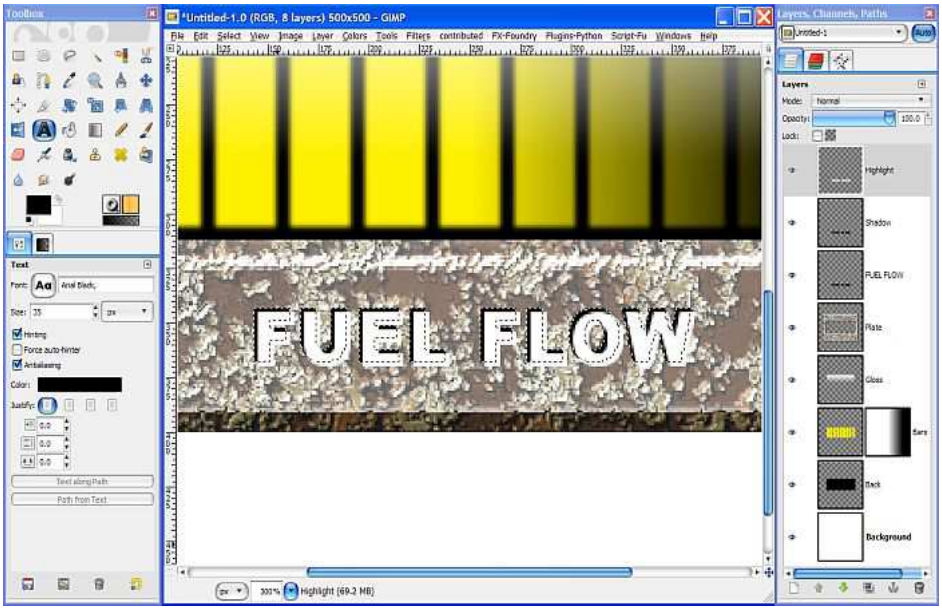
Step 20.
Right click on the text layer and select Layer to Image Size. Duplicate the text layer two times and name the top one “Highlight” and the other one “Shadow”.

Set the Opacity of the original text layer (the one that says Fuel Flow) to about 40%. Select the Highlight layer and lock the alpha channel, then drag your white background color over to fill it. Be sure to unlock the Alpha Channel when you are finished.

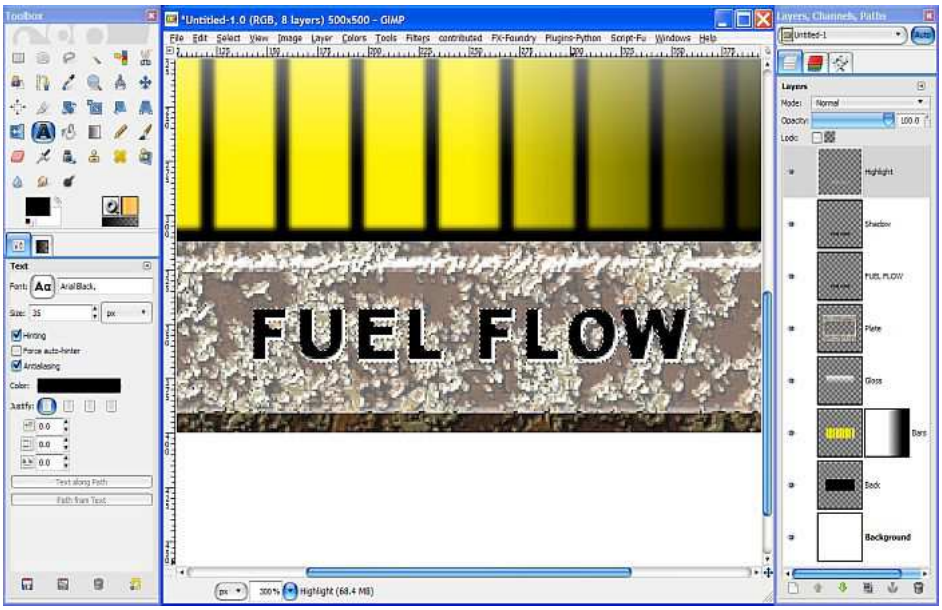


This is the first step in manually creating engraved text so you are going to get a short tutorial within a tutorial here. You could skip these next few steps and just use a filter, but it’s always good to know how to do it manually.

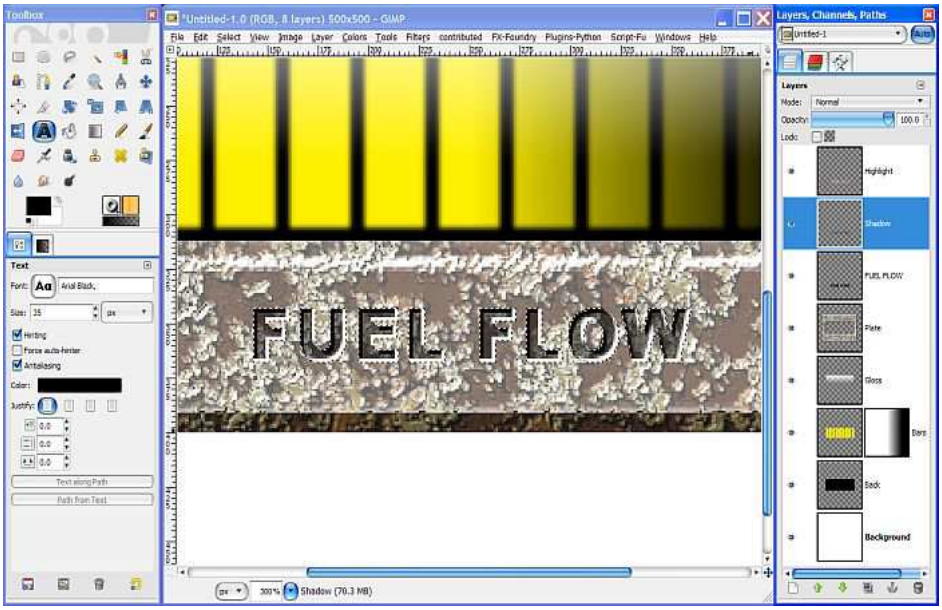
Step 21.
Increase your view to 300%, then right click on the Fuel Flow layer and choose alpha to Selection. Now, select the Highlight layer, then go to Layer>Transform>Offset and enter 2 for both X and Y., then click on the Offset button. This will shift the layer down and to the right 2 pixels.



Hit the Delete key to remove most of the Highlight layer, then go to Layer>Transform> Offset and enter -2 for X and Y and click the Offset button. This moves the layer back into position “Highlighting” the right edge of the text.

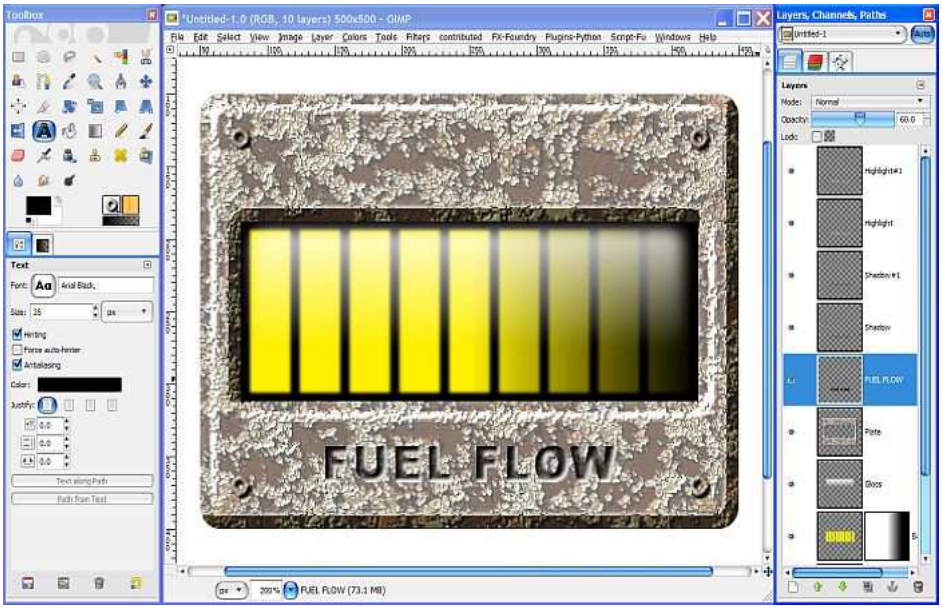


Step 22.
Select the Shadow layer and go to Layer>Transform>Offset and enter -2 for both X and Y then click the Offset button. This moves the layer up and to the left 2 pixels. Hit the delete key to remove the excess then go to Layer>Transform>Offset and enter 2 for both X and Y, then click the Offset button. Now the Shadow layer is repositioned and the text has a “shadow” on the left side.

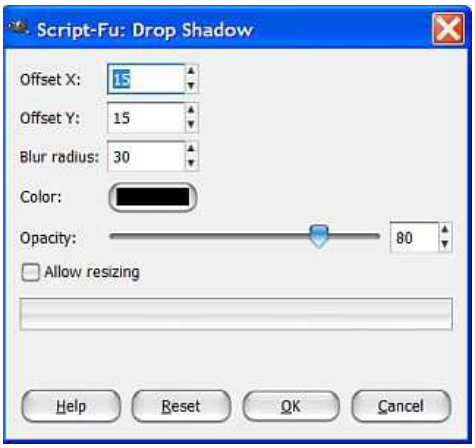


Step 23.
With the selection still active, and the Shadow layer still selected, go to Filters>Blur> Gaussian Blur and use 3 for both settings and click OK. Now Select the Highlight layer and apply the same Gaussian Blur of 3.

Duplicate the Highlight layer and the Shadow layer and set both duplicate layers to 50% Opacity. Turn off the selection (Select>None) and adjust the Opacity of the Fuel Flow layer to suit your taste. (I changed mine to 60%) You now have yourself some simple engraved text.

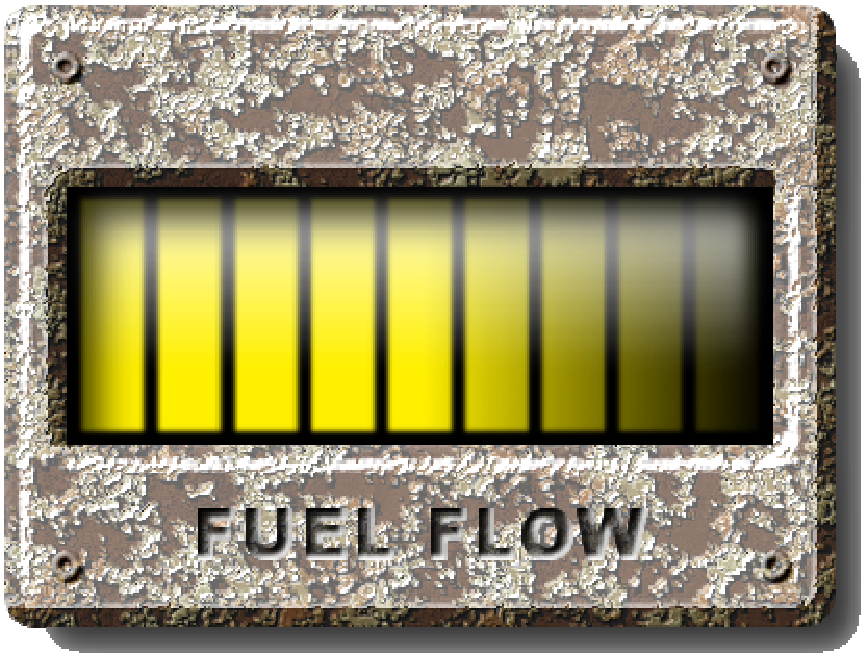


Step 24.
Reduce your view setting to 100% and select the Plate layer. Go to Filters>Light and Shadow>Drop Shadow and enter these settings, then click OK.



The reason we kept all the layers separate so long was to get the drop shadow on the meter itself in the upper right corner. Toggle the visibility of the Drop shadow layer on and off to see the effect.

Once the filter has finished, delete the background layer and right click anywhere in the layers dialog and select Merge Visible Layers and our Fuel Flow indicator is complete! Crop your image and save as a PNG to preserve the transparency and use in other work.



I hope you enjoyed this tutorial. For the next segment in the **Metal Wurx** series I'll show you how to make a Control Lever.