



# Etch Drawing Preparation For Model Etch

## ***Introduction***

Model Etch in Adelaide, South Australia is a quality metal etching company, producing products primarily for the model industry and modellers in general. It is run by Tony Crennan, and Tony does an excellent job, but because he is a one-man operation, needs the artwork formulated in a specific manner for processing.

Of course you can submit artwork in other forms, including hand drawn form, or even get Tony to do the drawing for you, but he will charge you for this service, as it is a time consuming task and it takes Tony away from the job of etching.

Ideally, Tony would like you to submit the artwork in a specific format in electronic form. You can produce the artwork using Corel Draw, AutoCad, TurboCAD or any drawing or CAD program that produces real size drawing in CDR, DXF, DWG, AI or PDF file formats.

It is important that the drawing files present the artwork in actual size when forwarded in any of the above formats. If you draw your artwork in a scale larger or smaller than the desired size, then you will receive your etches in the wrong size.

## ***Clean Up***

When presenting the files, please remove or purge any layers or information that is not essential to the etching process. I suggest you draw your design using the principles outlined in the previous papers, then make a copy for sending to Model Etch. In that copy, please delete or purge all construction layers. The file should preferably end up with one, two or three layers.

1. The default (or 0 layer in AutoCad) can contain the actual etch information
2. A layer called 'Crop' can contain the artwork targets.
3. A layer called 'Text' can contain all text required in the artwork.

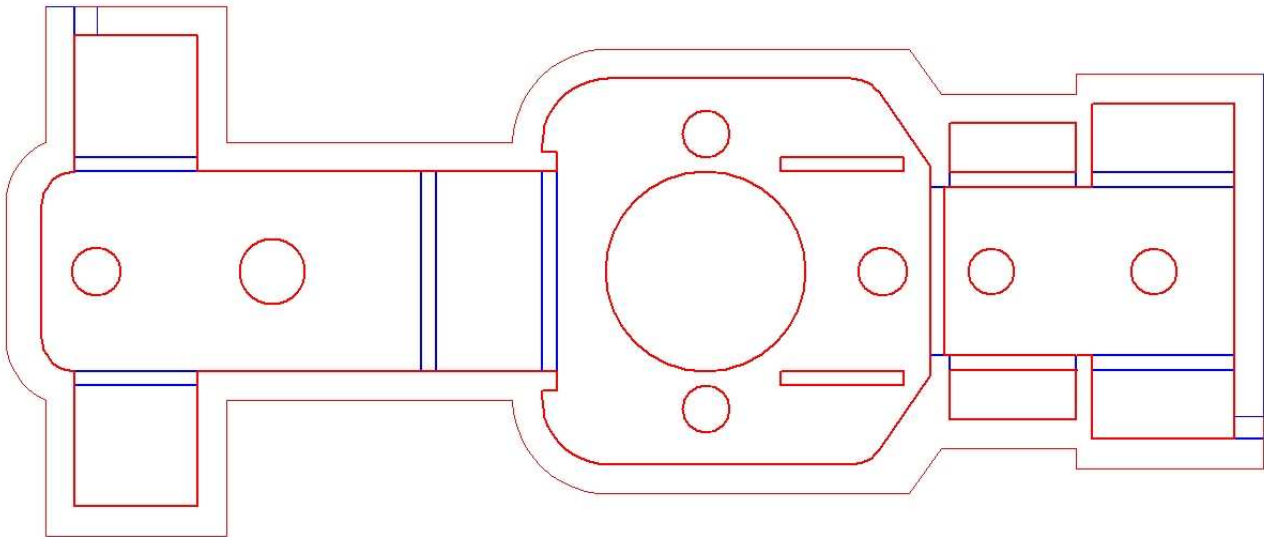
## ***Format***

When the file is received by Tony, he will send it off to a printer to have the necessary films created. He will send it as a PDF file, however there are some traps with creating correct PDF files, so it is probably best to let Tony do the PDF conversion.

In contrast to other companies who ask you not to fill the areas of the artwork, Tony requires you to do this. He also asks that you check the basic drawing parameters. Make sure the connecting tabs are at least 1.7 times material thickness and there are at least two preferably three tabs holding the item in the fret. Fold lines should be equal to material thickness, and minimum lines and holes should be no less than material thickness. The border or moat around the part needs to be at least 2 times material thickness.

## ***Templates***

To help you with formatting the layout, we have produced a template file that you can download from this site that contains the targets required on the drawing. These are in two forms, one for A4 size sheets and A3 size beside it in the same drawing. These templates are available in DWG, DXF and AI formats. We will use the motor mounting bracket that featured in the previous lesson to show how to format the drawing

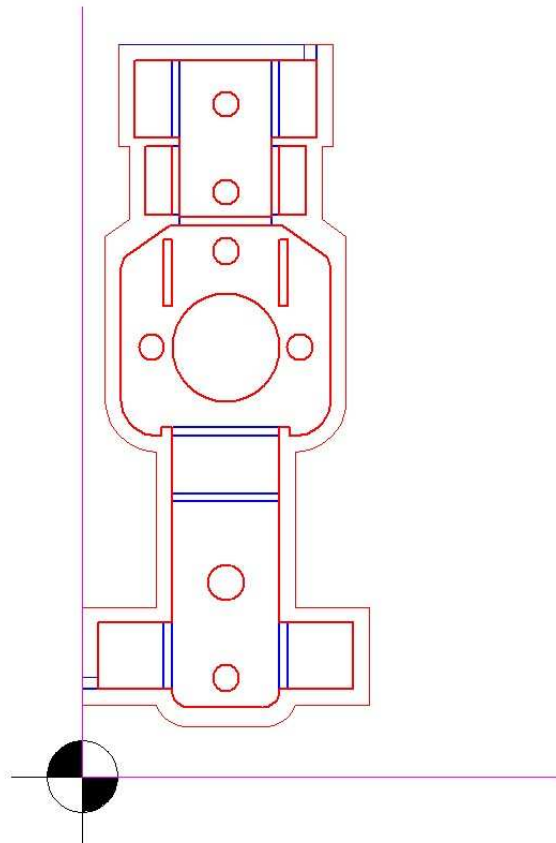


You should now download and open the template file, look at it, and return to this document.

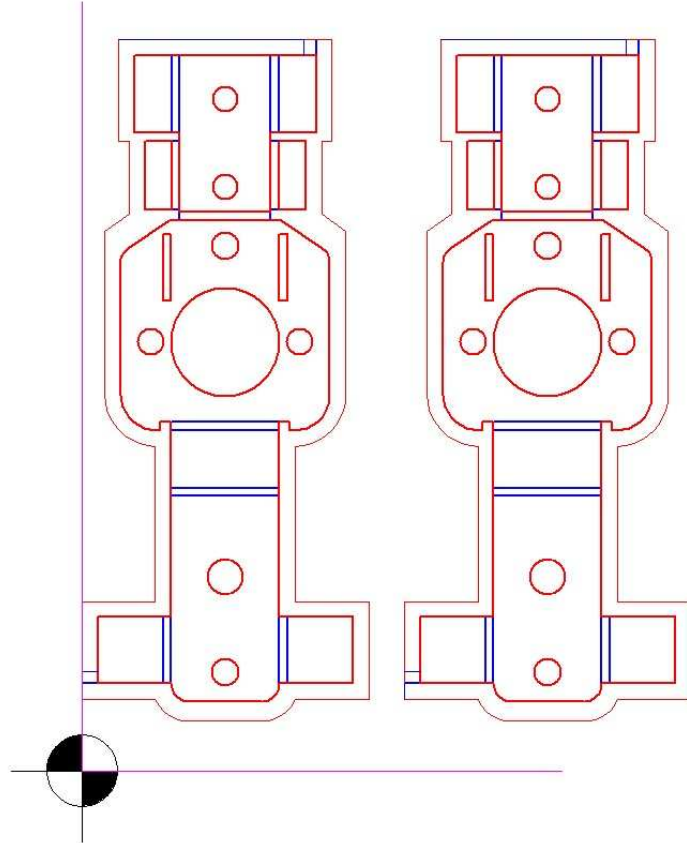
Note that two sheet sizes are shown, A3 on the left and A4 on the right. Note that each size has two panels, the Top Layer on the left, and the Bottom Layer on the right. There are 4 objects called 'targets', one in each corner of every panel. These targets are used in the process of aligning the top and bottom layers of the artwork so that the layers exposed and developed are in 'register'.

Note also there are 4 lines connecting the centres of these targets. All artwork should be contained within these lines. However, once the artwork has been placed inside these borders, the borders themselves should be deleted. Also, the text items on the template should also be deleted, they are only there for explanatory purposes.

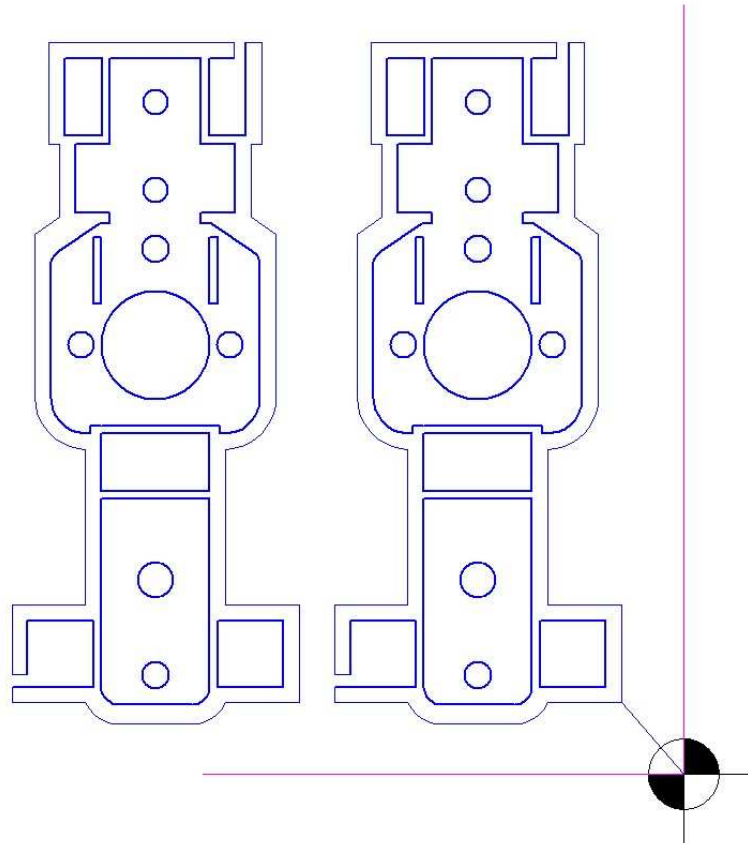
Note that the two panels are spaced 20mm apart. You should take objects you wish to fill the etch fret with and move them into the panel on the left side for the moment. The following drawing shows the example motor mount fitted into the template with its left edge aligned to the border. The bottom edge cannot align with the border however, as it will overlap the target.



Now place all additional artwork objects in the template, or in the case of this example, copy the original until it fills the template area. Each object should be spaced approximately 2mm away from each other. According to the rules, you should be able to make them closer than this, but it has the unfortunate effect of making the A3 or A4 size sheet very flimsy and hard to handle, so 2mm is best.

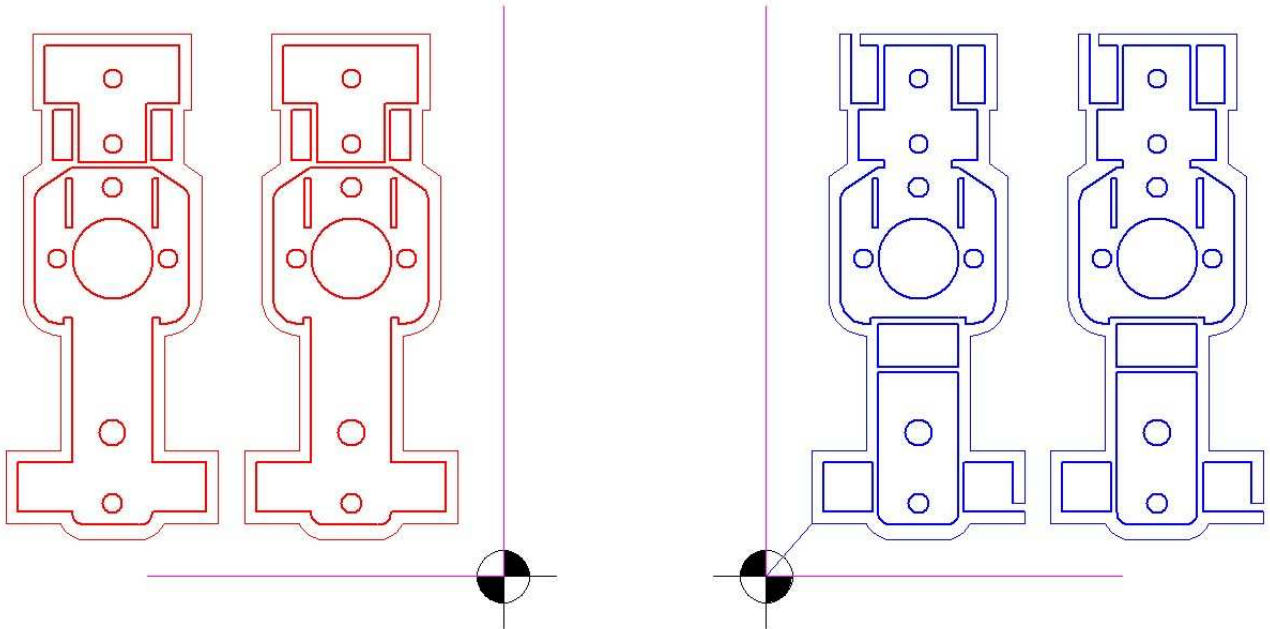


Once the template has been filled, go to the bottom right hand corner of the template, and draw a reference line on the bottom layer, between the bottom left hand corner of the nearest object and the centre of the target. This line will be used to position the bottom layers objects when mirrored and moved:



Switch off the top (or Red) layer, then select all the objects in the bottom layer, including the reference line you have just drawn. Make a horizontal mirror image of the selected objects, then move that image, using the portion of the reference line that was connected to the centre of the target. Do not move the target or its perimeter lines.

Place the mirrored image in the right hand panel, with the reference line re-connected to the bottom left target of the right hand panel, thus:

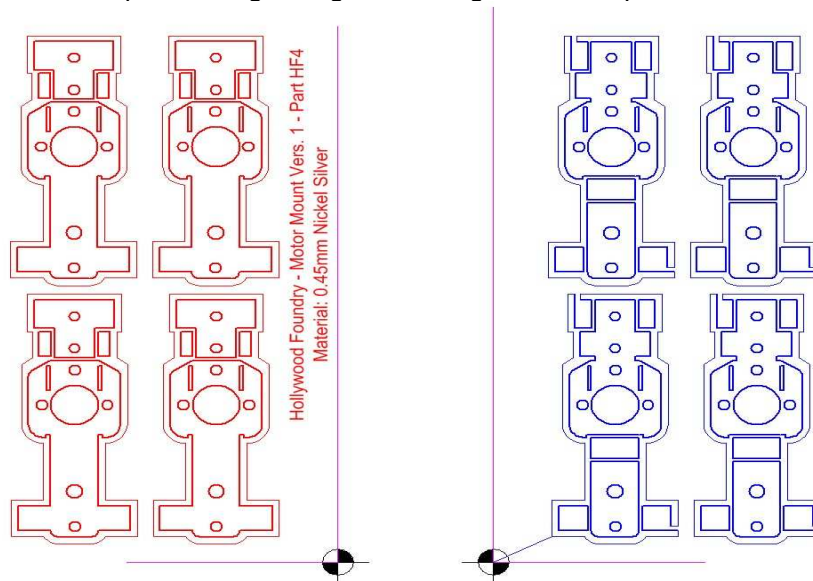


In the above drawing, the bottom (or Blue) layer has been mirrored and moved over to the right hand panel. The top (or Red) layer has been left behind on the left hand panel. Most importantly, because we moved it using the reference line (still visible in the right hand panel), the parts will stay in correct register. Now delete the reference line.

It is a good idea at this point to insert some text, preferably on the top layer, naming the sheet and giving it a reference code of some type. That code may be used by yourself and Model Etch to refer to this artwork. It will also be very helpful to Tony (and all etch companies for that matter) if you include the material type and thickness. An example might be say:

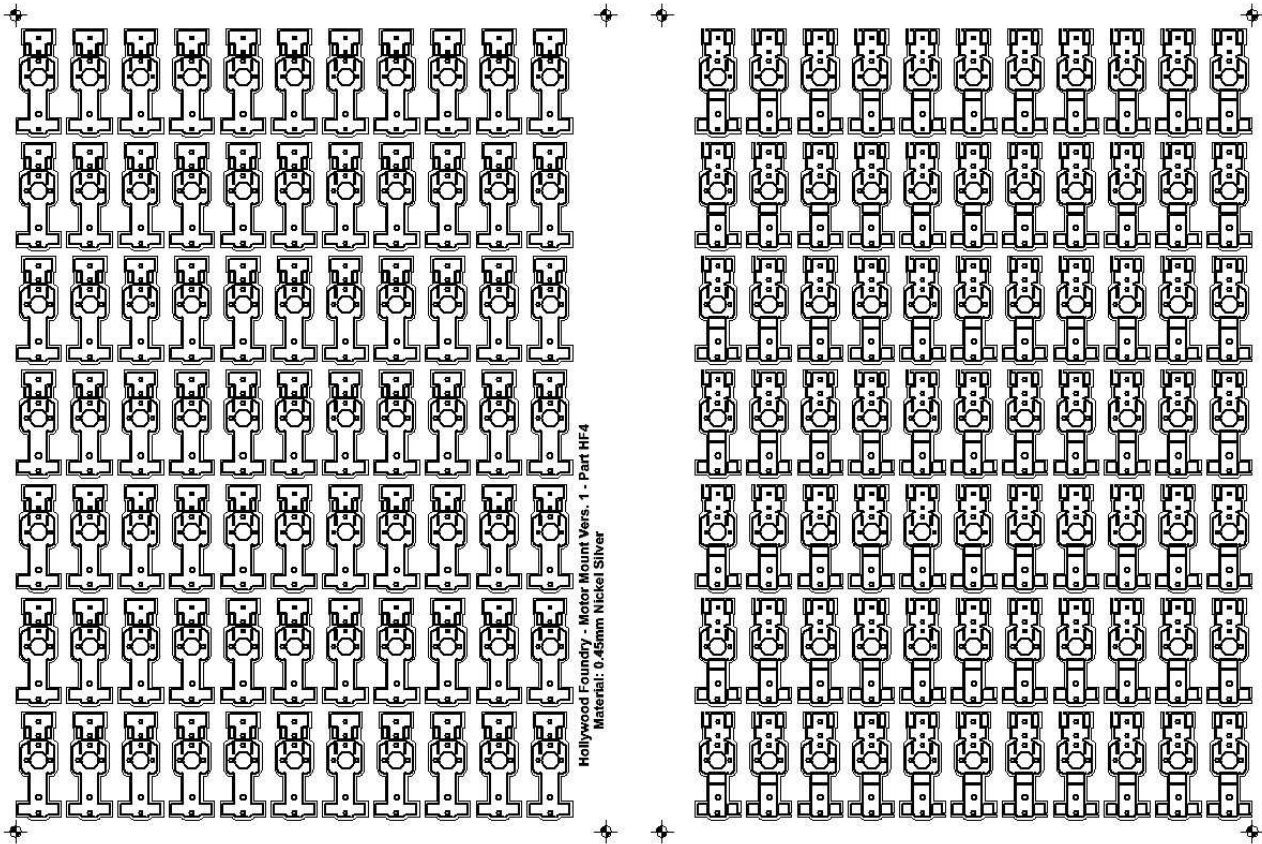
**Hollywood Foundry – Motor Mount Vers. 1 – Part HF4**  
**Material: 0.45mm Nickel Silver**

It can be inserted into the template, along the right hand edge of the left panel as shown below:

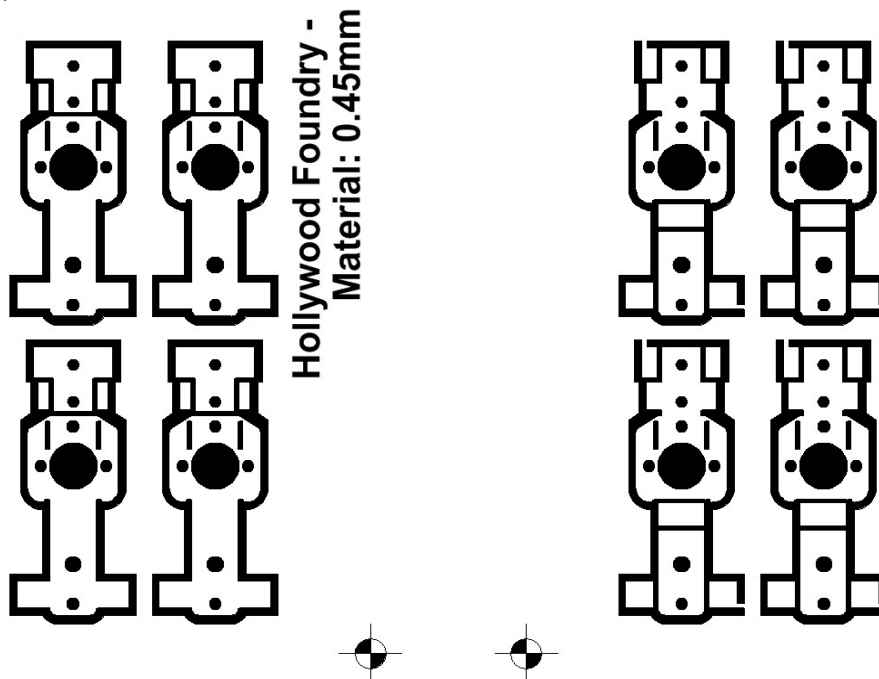


At this stage, having all the objects in place on the template, we need to simplify the layers and purge any un-necessary layers or objects. Firstly, remove the explanatory text, such as 'Top Layer' etc. Also remove the perimeter lines connecting the targets.

The targets are contained on a layer called 'Crop', so you should now switch off the Crop layer, then select all the remaining items and change them to the default or 0 layer. By now you should only have two layers left and no extraneous objects:



The last task is to apply fill to the objects in your fret. As explained in the previous lessons, the fill command will fail if there are any breaks in the lines or circle segments, so you need to make sure that all lines are joined correctly to the next line segment. Also make sure you do not have lines on top of other lines, as this will also cause the fill function to fail. If all goes well, you should be rewarded by a filled drawing, as per the zoomed in example below:



## ***A Word of Warning***

Both AutoCad and TurboCAD can produce fills that look OK, but when they are loaded into Adobe Illustrator, as Tony will do to create the PDF, the fill may screw up due to undetected double or overlaid lines, breaks or other faults. For this reason, if you have a copy of Illustrator, it is worth loading your drawing file into it for checking.

Finally, ZIP up the file before sending it by email, as the resultant file may have become quite large and take a long time to send. If the file is OK, Tony will produce your etching, but if the file has problems, he will most likely ask you to fix them.