

# MAKING A MULTICOLOR ETCHING

BY RUZ GUITAR GEAR

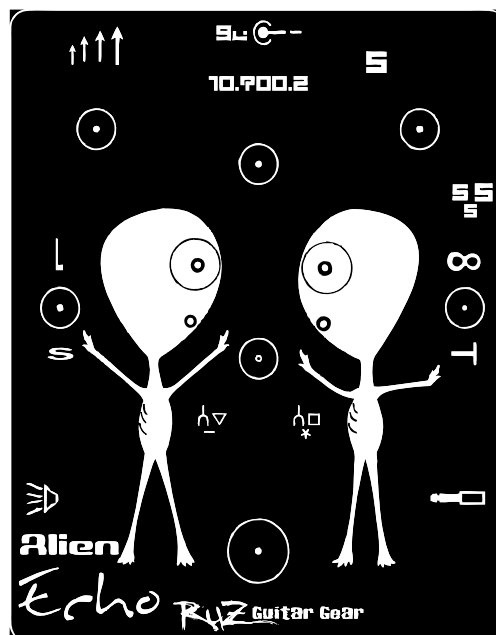
This is a beginners guide for you all to make your own multicolor etching enclosure finishings. The instructions and pictures in this document will help you understand the techniques I use to make the etching to my effect boxes, **it's not a definitive guide** to do it, you need practice to get a perfect etching finishing but if you follow this instructions step by step you will surely get very nice results. Hope you like it.

## STEP 1 MAKING THE DESIGN

First thing you need is (obviously) create a design for the enclosure.

You need to have the measures of the front face of the enclosure you are using, considering the "real" design space area, not the total area. Now you can create the design in any software you like, I use Illustrator. I recommend to make the design using monochrome vectorial designs to avoid pixelated images and gray scales (for the etching design you just have to use black and white).

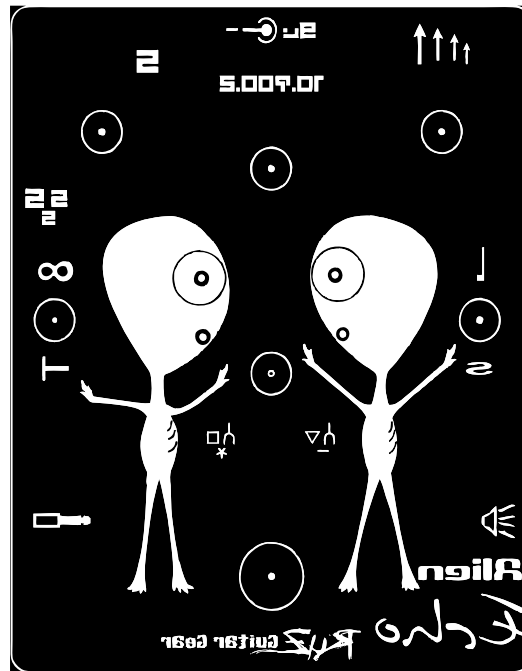
Here is the design I made for this tutorial:



As you can see, I marked the holes to drill with a white dot in the center which will help you with the drilling.

## STEP 2 PRINTING THE DESIGN

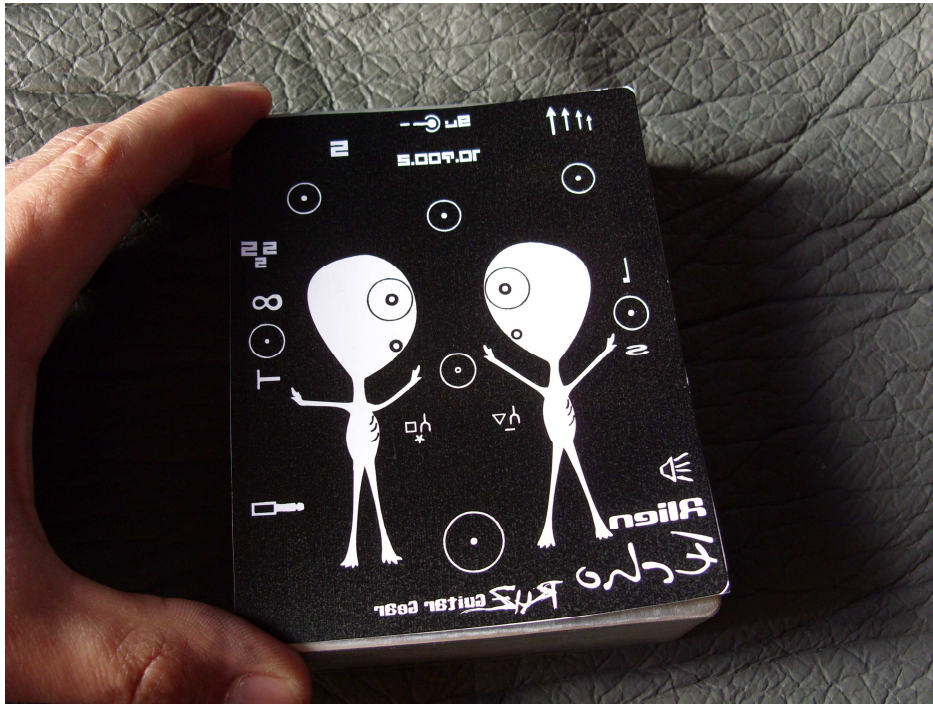
When you are printing the design you'll need to print it mirrored, just like the PCBs:



**The printing is a very important part of the process**, because the density of the toner printer will determine how easy it will be to the design to transfer to the enclosure and also the density of the toner over the surface once the transference is ready. The paper is also very important, I use this 180g/m<sup>2</sup> High Glossy Photo paper:



The printing should be like this:



## STEP 3 PREPARING THE BOX FOR TRANSFERENCE

Once you have printed the design you need to water-sand the enclosure. I use 800 and 1200 sand paper. Just start with the 800 sand paper until you see no dots over the surface, and then use the 1200 to get a perfect flat surface. If the surface is not perfectly flat or if you have dots over it the transfer will not work. It usually takes me about 15 minutes.





Then you have to dry the enclosure and clear the surface with alcohol to get rid of any rest of metal or dirt.



Now you are ready for the thermal transference.

## STEP 4 THERMAL TRANSFERENCE

Cut the design from the paper and put it over the front face of the box. Use masking tape to keep it in place.





The ironing work will take you between 8 minutes (11x6x3cm enclosures) and 15 minutes (18x12x5cm enclosures). For this enclosure (12x9x3cm) 12 minutes will be enough. Start with medium power until about 3 minutes and then go with full power until you complete the time.



When finish the paper should look like this:



Then let it get cold and take off the paper like this, you don't need to wash it:





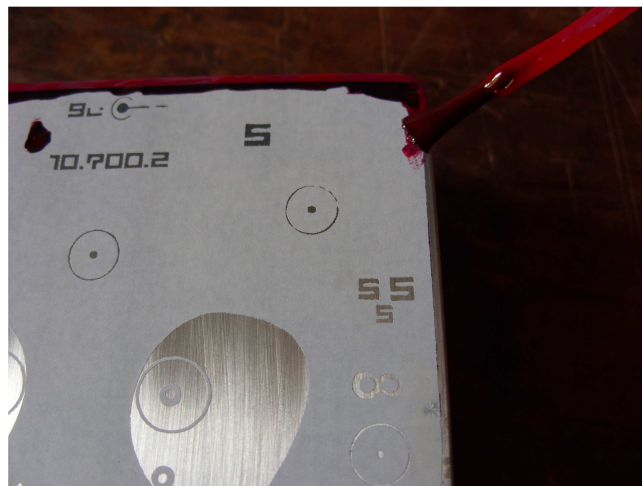
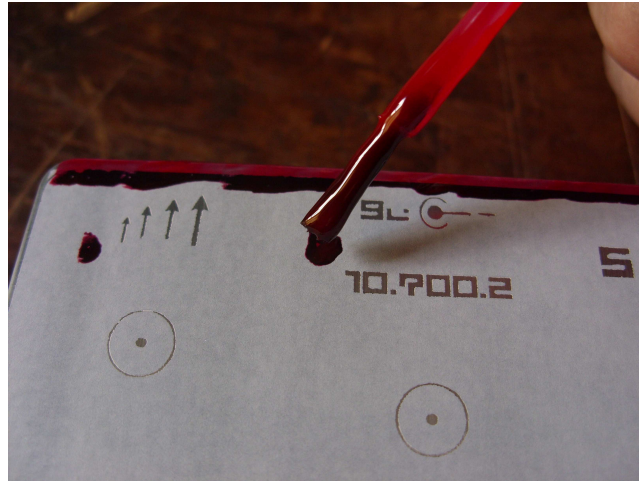
Thermal transference ready!





## STEP 5 PROTECTING THE DESIGNS FROM ETCHANT

You have to protect all the areas around the designs if the toner is not protecting them correctly, and all the edges of the enclosure. I use nail enamel to cover them:





To ensure correct protection of the sides of the enclosure you can cover them with masking tape like this:



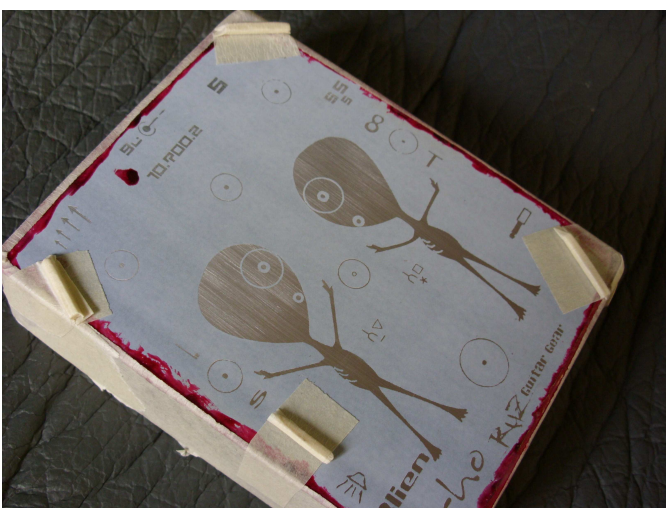
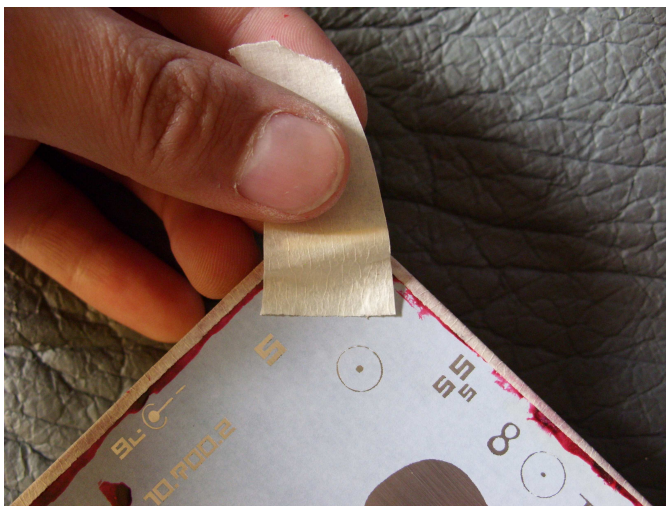


And now you can use some matches to do this "pieces":



And use them this way to keep space between the enclosure and the base when you immerse it:







## STEP 6 TIME TO ETCH!

You are now ready to immerse the enclosure in the etchant. The exposition time will vary between 5 and 9 minutes. It depends on the design you've used. If your design have large "white zones" it will take more time to the etchant to work and have a good relief. If , per example, you have a mixed design with large white zones and thin letters you have to immerse the enclosure approximately 5 minutes and then take it out, wash it and cover the thin letters with masking tape leaving the large white zones designs without masking tape and then immerse it again 3 to 5 minutes. Doing this you will have a flat etching.



You must be moving the enclosure all the time to remove the metal rests:

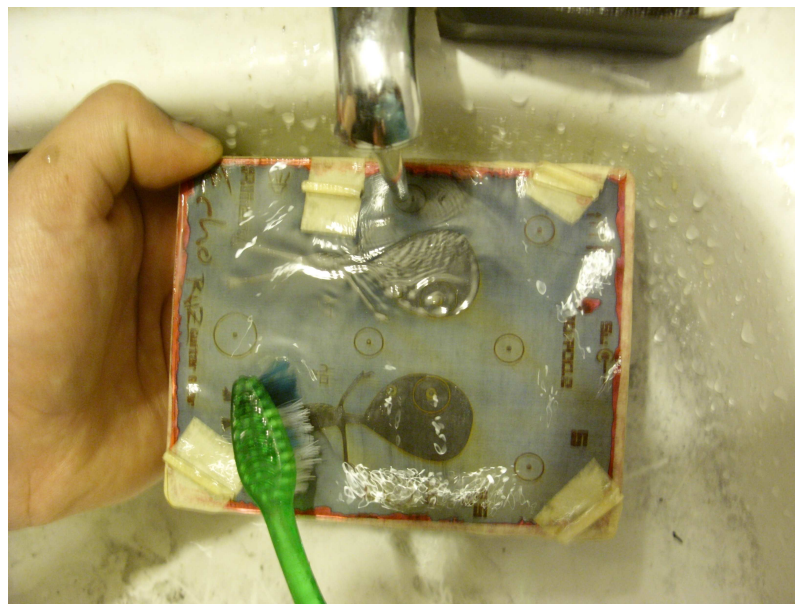


And 6 minutes later the etching is ready, looking really ugly (I know it's ready because of my experience, but you need to prove it in the next step):



## STEP 7 CLEANING THE ETCHING RESTS

You must take the enclosure very carefully, using gloves to avoid the acid contact with your skin (I didn't---). Use a napskin or a wipe to take off all the rests of etchant, **don't throw the etchant rests into your sink!** And now you must clean the metal rests with an old toothbrush:



Once you have do it, pass your finger over the surface to prove the relief and see if it's deep enough. If it's ok then continue to next steps, if not then clean the enclosure and immerge it again for 2 to 3 minutes.



## STEP 8 FINISHING THE ETCHING WORK

Now take off all the masking tape and use a steel shavings to remove the rests of nail enamel and toner from the surface. If you use sand paper there will be some sand paper rests inside the designs, it's not recommended.



Now that you have your etching ready it's time to drill the enclosure and finish the work. It's really easy to drill with the guide points inside the mark holes.





Etching and drilling ready!



## STEP 9 PAINTING

This part is really intuitive, but I'll explain it step by step. Once you have drilled the enclosure you must sand it again with 1200 sand paper very softly, dry it and clean it with alcohol for the paint work.



I use synthetic spray enamel to paint my etchings:

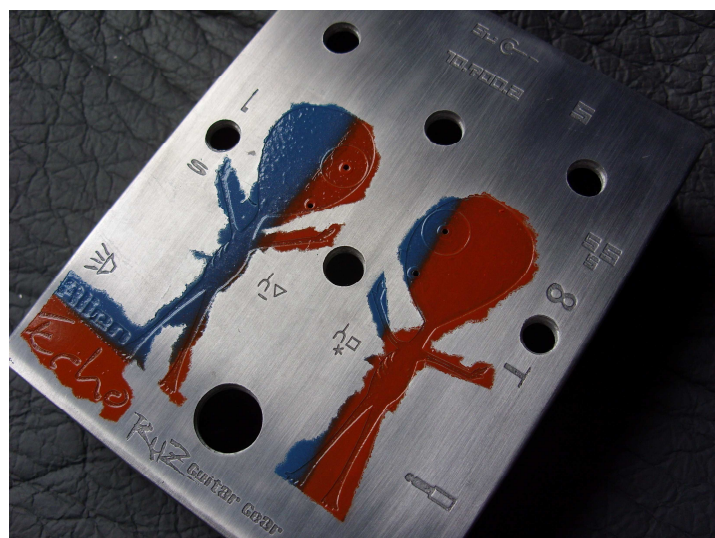


For a multicolor etching you must protect with masking tape the designs by the color you want this way:





Now cover the painted areas and uncover the unpainted areas to apply the other color.





And so...



And finally you will have this:



Now remove the paint excess around the designs with 1200 sand paper. Doing it under water will prevent the sanding rests to go into the designs staining the paint.



Once you have done this you can cover the front surface of the enclosure with masking tape and paint the lateral faces as I do and then just remove the paint excess from the edges of the front face. Finally you can paint the knobs to match the colour of the designs. At the end you can have this final result:





Well that's all. I hope it serves to you and, once again, to get a perfect result you need practice and very much patience!. I encourage you to innovate with your own ideas and lose some boxes applying them!

Finally, don't get to sad if your first try doesn't work! Just ensure to follow this steps very carefully and your result must be good enough.

You can see all the etchings and effects I have done using this techniques in my site [www.ruzguitargear.tk](http://www.ruzguitargear.tk)

Regards,

Fernando Ruz R.-

**RUZ Guitar Gear**



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