

## Use of Ultraviolet light to inspect and identify stray masking

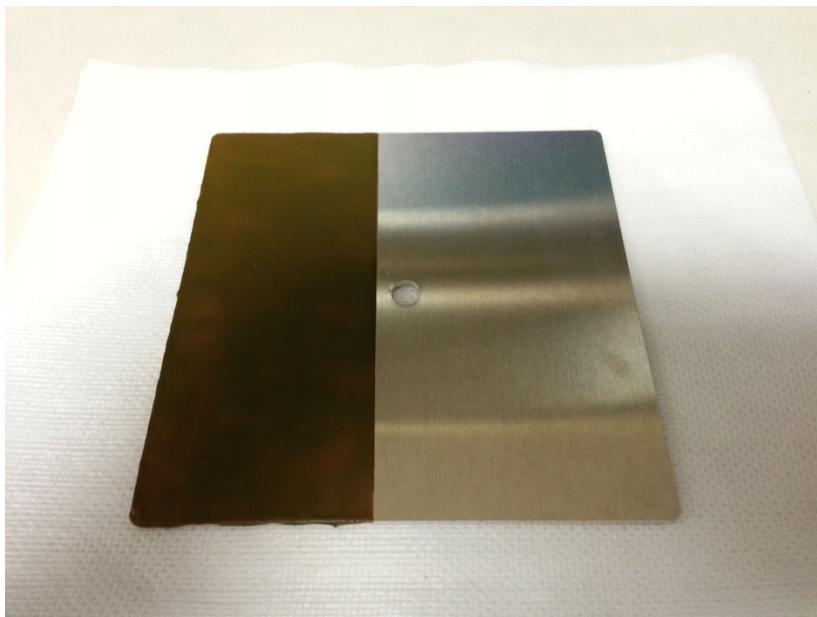
### Summary:

Precision hand masking requires a steady hand and keen eyesight. Sometimes excess masking will remain on a surface that has been cleaned. This is especially true on rough surfaces, or on background colors that are similar to the liquid masking. The addition of Dye-Lite Ultraviolet illuminating additive to the masking liquid can help identify stray masking that remains after initial cleanup. This is an additional level of insurance that is easily added to your masking process for very high value add parts that cannot be reworked due to stray masking.

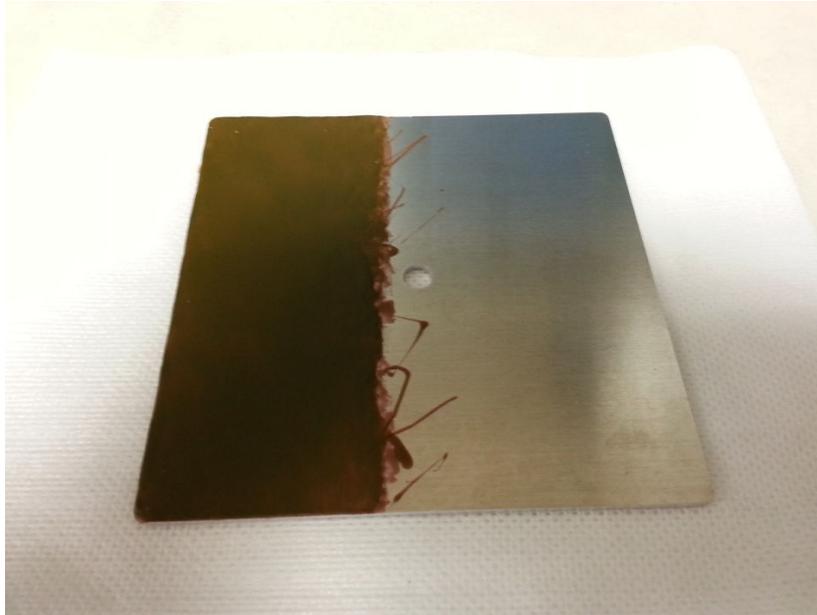
At Pioneer Metal Finishing, we utilize this technique routinely to insure a perfect outcome whenever there is a situation where critical mask lines are necessary on hand masked surfaces.

### Demonstration:

The following picture is a panel with an edge that has been hand masked and then cleaned. This is how a clean edge should look under visible and ultraviolet (black) light.



The following picture is a panel with an edge that has not been cleaned and has a very rough edge with a lot of stray masking. Due to the limitations of our camera to “see” light residual masking under ultraviolet light, we have significantly exaggerated the stray masking areas for clarity in this presentation. This technique is effective in finding very light masking residue that is hard to detect with the naked eye.

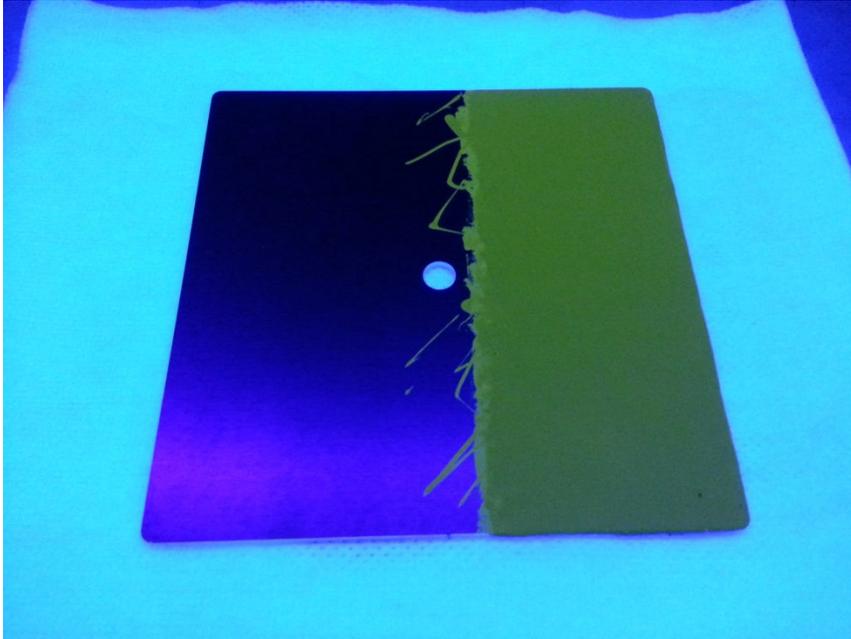


The following picture shows how the clean edge should look underneath the Ultraviolet (black) light prior to

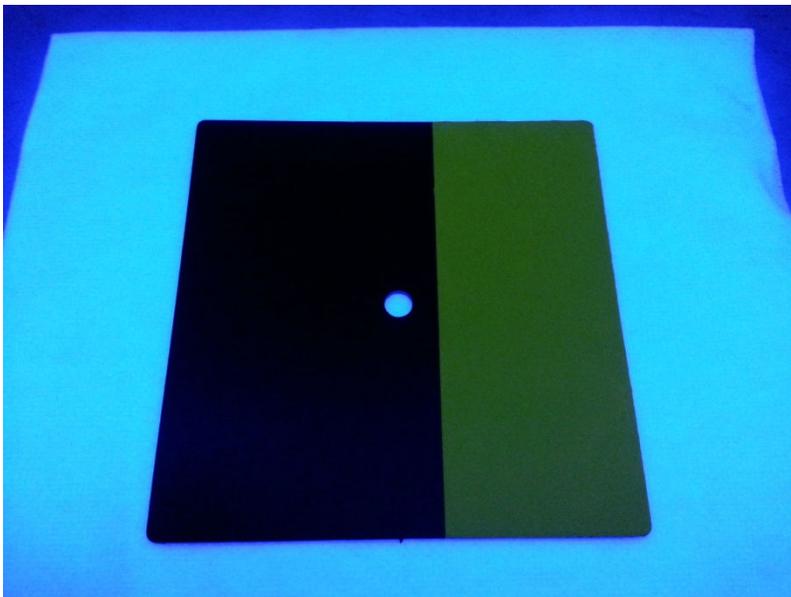


processing.

The following picture shows a rough edge with stray masking under the ultraviolet (black) light prior to processing. Notice how using the additive brightens the masking underneath the black light to easily identify the stray masking.



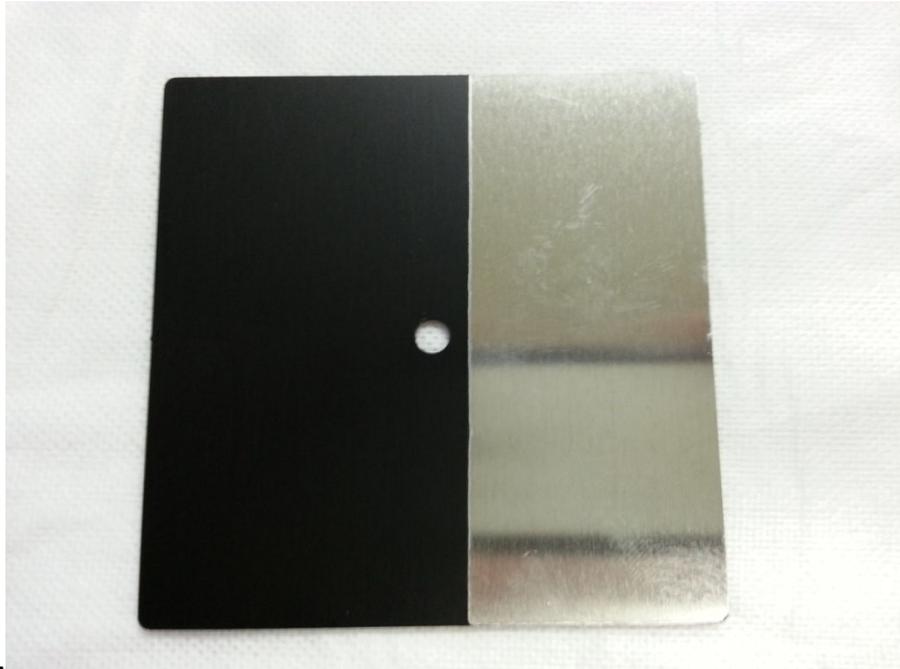
The following picture is after the black hard anodizing process and shows the clean edge between the masking and the anodized surface.



The following picture is after the black hard anodizing process and shows the stray masking which has masked off the surface from anodizing.

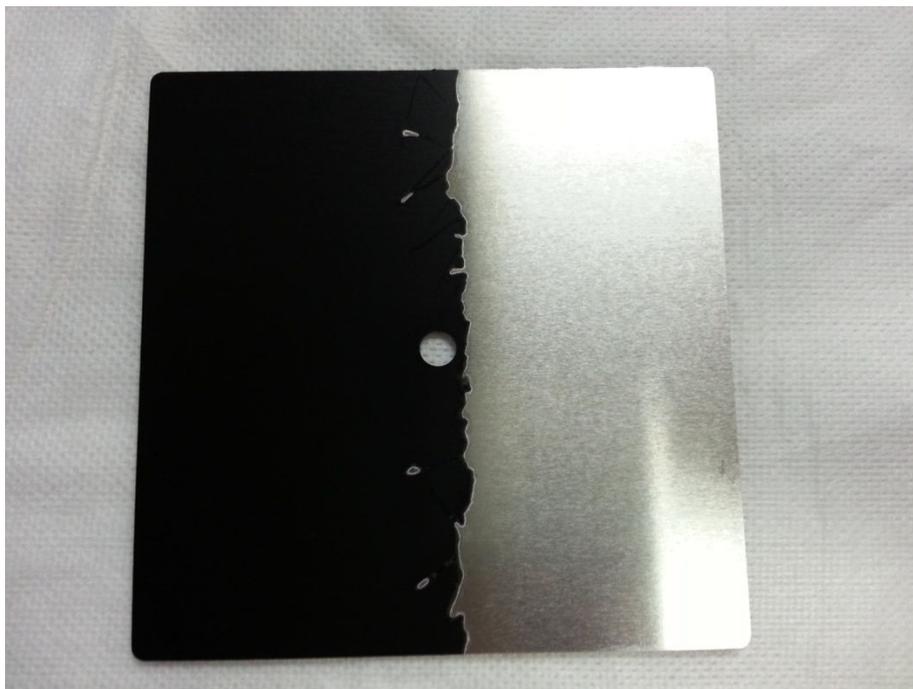


The following picture shows the mask line after the masking has been removed, how the clean edge is formed between the masking and the anodized



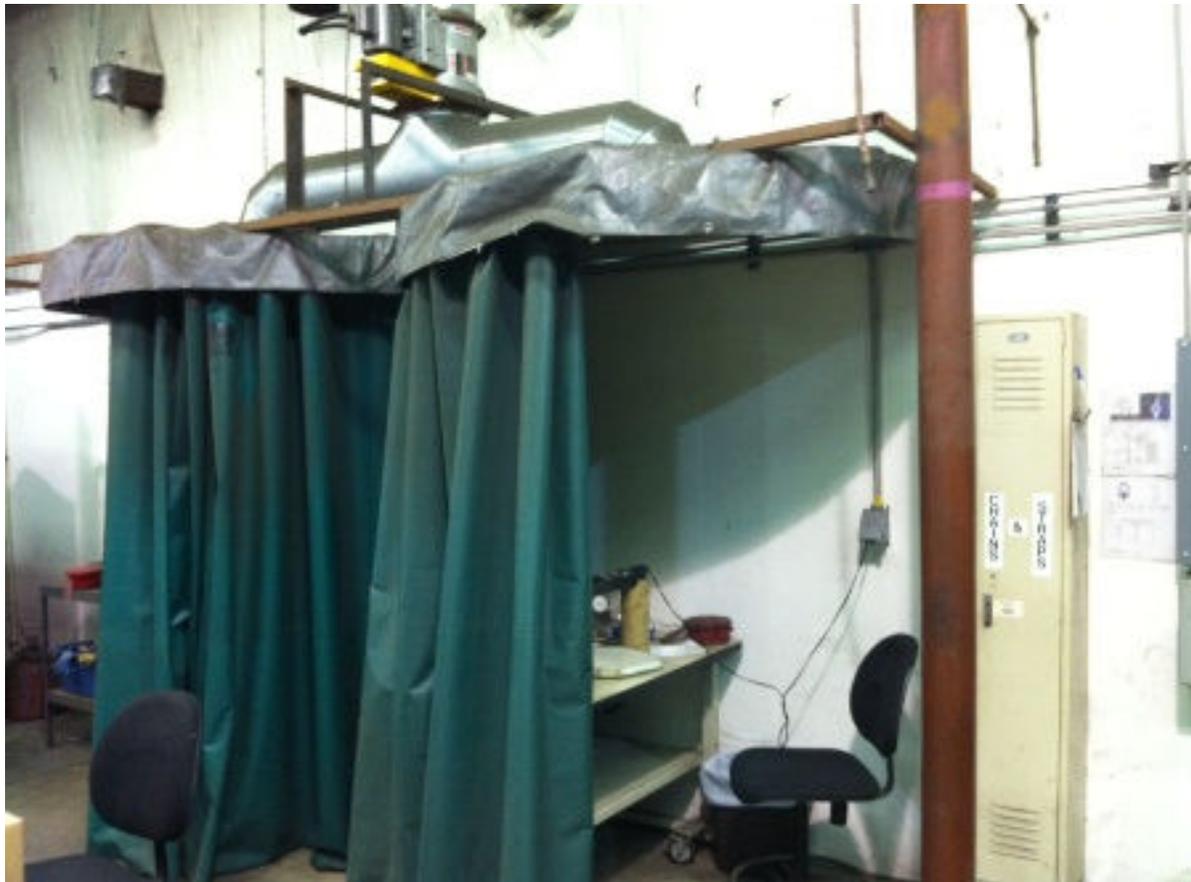
surface.

The following picture shows the bare spots and a rough edge due to not cleaning off the stray masking prior to the anodize process. Note how even 1 coat can have tails that may cause small bare spots on the anodized surface.



Here is a phot of a dual light booth work area. The use of a light booth, to darken the work area is necessary to effectively use this technique. The ultraviolet light source is located inside the booth, and with the light blocking curtains drawn, it is quite dark inside the booth. This makes inspection and final clean up very easy. The curtained area is ventilated to remove solvent fumes from the masking cleanup operation.

For very large parts that do not fit in the booth, the use of portable black lights is recommended.





The additive we use to help brighten the stray masking under ultraviolet (black) is called Dye-Lite. Dye-Lite is primarily used as an additive to engine oil in cars and trucks to identify the source of oil leaks. Below are two pictures, one of the front and one of the back of the bottle. We have not seen any negative effects in the bond between the masking and the parts using this product when added at the correct concentrations. This product is used at approximately one or two bottles to one gallon of masking material. It can be used in all types of liquid masks from our experience.



A special thanks goes to Art Johnson. of our Green Bay plant of Pioneer Metal Finishing, who developed this inspection process after too many frustrating rejections over stray masking.