

Enamelling and Recessing with Engine Turning

Recessing around holes - another picture frame

Recessing is done where enamel is wanted on the same level as the surface of the work. The enamel is stoned and fired to produce a smooth flat surface like a sheet of glass with metal and enamel areas.

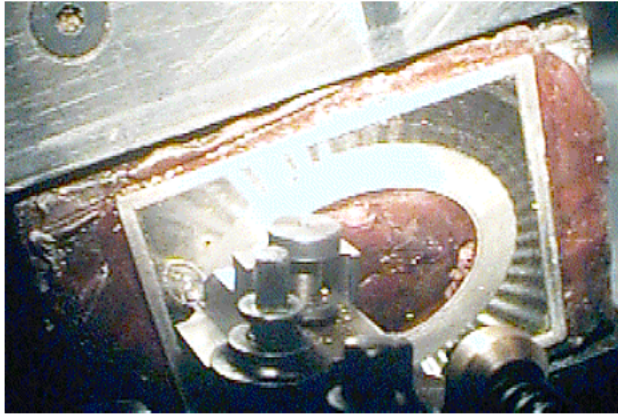
Where the object needs to have mounts, one must deal with the holes. In this example, the biggest mount is the hold around the inner sight bezel, an ellipse, but there are also some small 1mm diameter holes as well.



Firstly one must sink around all the holes Then all the edges, and then plane across the main area to lower the surface by about 0.35mm This is then carefully scraped, stoned and pre polished to provide a clean surface for the engine turning

Notice carefully the small mounting holes, which have a 0.5mm unrecessed border around them so that the mounts don't sit directly on the enamel.

An alternate and less time consuming process, which can work best where no stress will be put on the mounting hole, is not to leave a non-recessed border around such small holes to begin with, and to leave the hole very much smaller than it's eventual size, or even to drill it after engine turning, which is more risky. When the turning is finished, the hole is broached out from the back, and a burr is raised all around the hole just as if a very fine border had been left unrecessed. Once the enamel has been laid and stoned level, the very fine metal edge can be seen neatly bordering the hole. Never use this technique if the mounts are large or need to move.



Here, the machine is set up to cut everything elliptical, with the ellipse set to finish at the central hole. A very small guide is used to get right up to the edges of the recess especially the oval as the guide will be on the recess wall side of the tool for the final cut. The pattern, in this case concentric oval waves, is cut within the prepared recess stopping close to the edges but being careful not to damage the clean recess wall. The edges of the recess are trimmed neatly to remove the ragged ends of each cut as close to the edge as possible, and finally the small mounting holes are individually centred and trimmed.

The geometry of the elliptical pattern here is worth noting.

The ellipse has been set up to fit the ellipse of the inside of the recess, and locked in place. The further out the oval cuts are from the centre, the less oval and more circular they are, but this is not apparent to the eye. If one

were cutting a pattern within an elliptical outside border then you would cut the trim line, reset the machine to circular cutting and cut all the pattern circular. Again the eye is deceived, and this is important because cutting concentric ellipses to look the same shape would require resetting the ellipse on each cut. This, however is sometimes done with deeply cut pill boxes but is more time consuming.