

Steven 'Skiprat' Jackson

April 2009

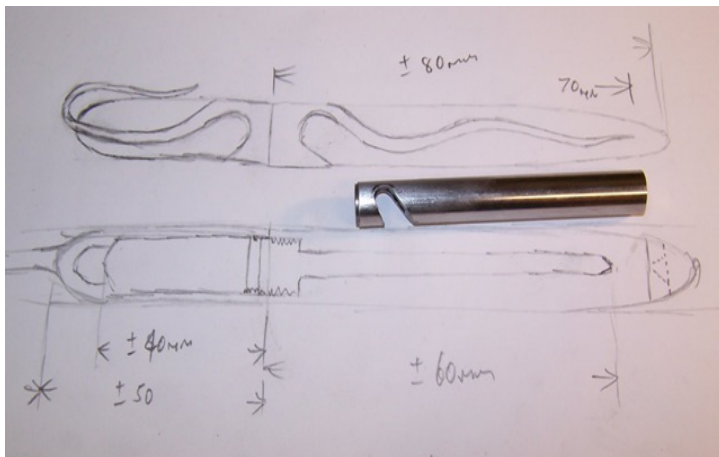
## A Rat's Tale

How it was made



This pen is one of a very few of my own pens that I really like and am quite proud of. It isn't the best, nor was it the most difficult to make. But it is just about the only pen that I've made that finished up exactly as I envisaged. The materials are Polyester Resin and Stainless Steel.

Not shown here is the drilling of the holes for the refill and the shaping of the nib.



Here is my original layout sketch. It is shown with the body of the pen with the first piece cut out of it.



This is the same piece shown in the above picture. With a good quality half-round metal file, the shaping begins

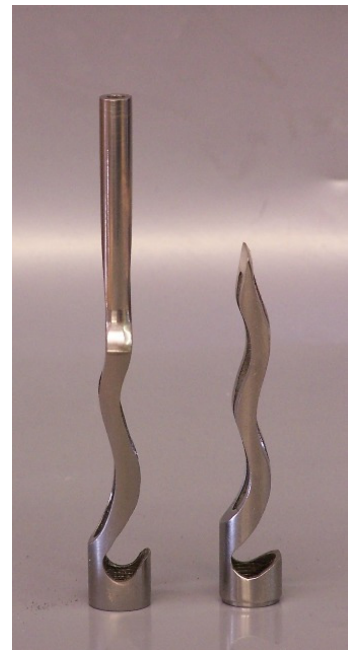


This is the side and front view of the body once the rough filing is complete. I just took a bit more time smoothing out the curve edges. I also had to try and keep the edges fairly sharp or there would be visible voids or wide glue lines between the metal and resin when it was finished. It was important to keep the 'tip' to stay on the centreline of the pen.



The piece on the left is the cap. The lower wide portion has already been drilled and tapped. The upper portion is solid but you may make out the centre drill dimple in the end. That was so the shape so far could have been turned on the lathe.

The next three pictures show the various stages that the cap was filed. As with the body, I drilled a 'starter' hole first. There is a short collar visible on the body portion. This is so both parts mate properly when together. At this stage, the clip portion is still round.





Here the clip is being filed flat. The wood is simply supporting it so the vise didn't have to be tightened too much.



There is a short piece of thread temporarily holding both pieces together. I had previously used this thread to join them so that the 'starter' holes drilled in the sides of both pieces would match when the pen was closed. The picture was taken to show how thin the clip has been filed to.



The nib was made completely on the lathe. A little care with the measurements ensures that it all actually fits together once assembled. I know 'somebody' that once made the nib too long to fit in the cap !!



All the metalwork done. The strange notch in the end is the dimple from the centre drill. It will be removed later.



A resin blank has been cut and shaped to fit. First the basic shape is cut out as neatly as possible. I then clamped the resin to the metal. The resin was then warmed up with an electric heat gun. (Like a hairdryer on steroids) But a hairdryer would probably work too. The warmed up, and now slightly softened resin, is then squashed a bit with the clamps till there is a perfect joint. The resin holds the heat for a while and must be allowed to cool completely before removing the clamp.

The next picture on the right is of one side of the body being CA'd (superglued) into place. It is being vertically supported to make sure the glue didn't run into the already threaded end.



Now two pieces of resin have been fitted on the body. I applied glue very liberally just to make sure it would all hold together while I turned it down to shape.

Once the outside was rounded, I re-drilled the insides (as the resin pieces had of course taken up the hole space)

Only once the refill and nib fitted again, did I finish turning the outside. I don't have a picture of the cap at this stage, but it was done the same way.

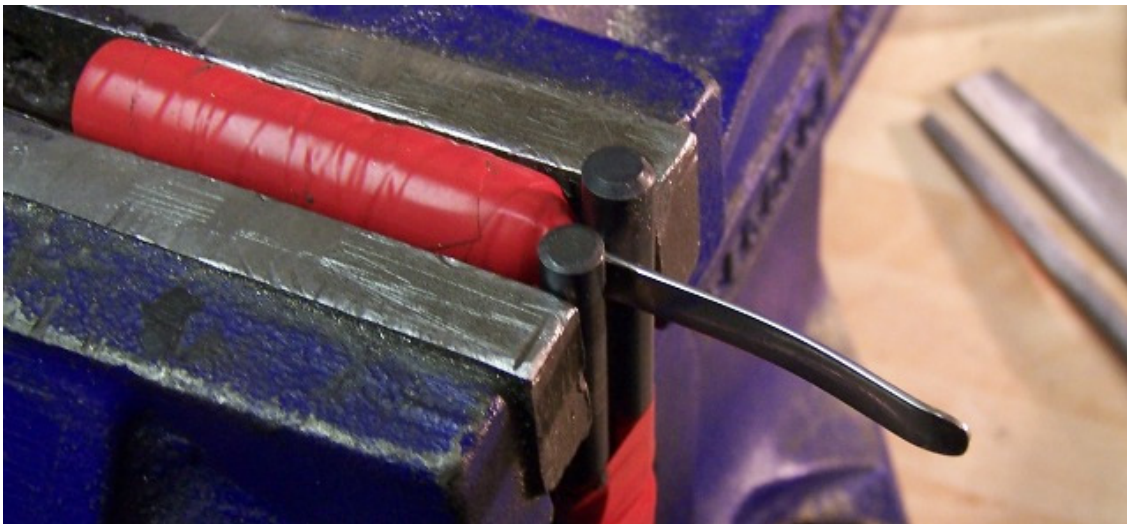


Turned to size and even polished a bit. The end will be rounded over to match the cap.



Nearly there. My problem now was finding a way to bend the clip to shape. I almost gave up and was going to just cut it off and polish it up. Even though the clip is fairly thin, it is still very stiff. I was worried that it

would break the joint between the resin and the stainless steel.



This was the most worrying and difficult part of making this pen. I wrapped many layers of electrical insulation tape over the cap to hold it together and prevent scratches. The picture shows two drill bits gripping the end of the clip in the jaws of the vise. The vise is actually not touching the red taped cap. I then selected smaller drill bits until the vise jaws lightly gripped the tape when tightly clamping the drill bits. I wanted the smallest sized radius bend on the clip as possible.

Fortunately, all held together and with a bit of careful bending, the clip ended up like I wanted it.



I hope you have enjoyed this and maybe it will inspire you to try something a little different with basic hand tools like files!!!

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