

V – blocks

I needed a pair of identical V-blocks to clamp the Bonelle/Quorn toolholder. I wanted to mill the sides of the tool holder parallel to the mandrel and bar bed centre lines. To get two identical V-blocks I made one long V-block and used a hacksaw to part it in two. The picture to the right shows one of the V-blocks with one clamp.



Materials

I found a piece of steel in my pile of scrap that was just big enough. The piece was a little over 60-mm long, just enough to make two V-blocks. The piece was 27 mm thick hot rolled steel. For the clamps I used a piece of steel 12-mm thick.

V-block

I used a hacksaw to cut the piece roughly to the shape needed for two V-blocks as I intend to machine the V in both blocks while the blocks are still in one piece. This way the blocks will be as identical as possible.

I mounted the work in the screwless vise and cleaned up the hacksawed faces to make a rectangular block. I marked the position of the slots on each side and used an 8-mm end-mill (right picture). A small adjustment with the cross feed and a finishing cut made the slots 8.5-mm wide.



The top and bottom of the work was fairly flat from the manufacturing process. With the two slots milled the work was clamped directly to the mill table and the top and bottom surfaces cleaned up with a carbide tipped end mill. This will make the top and bottom surfaces parallel with each other. The surface of HRS is hard and will soon dull a HSS end-mill, carbide is much harder.

After the top surface was milled I drilled four 4.2-mm holes – one in each corner – and tapped them M5.



The position of the V was marked on the block. I used an angle vise to clamp the block in a 45 deg. position so I could mill the V.

I used a hacksaw to part the work to get two V-blocks and then cleaned up the surfaces in the Mini-Mill..



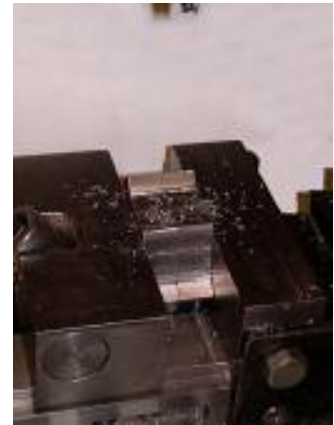
Clamps

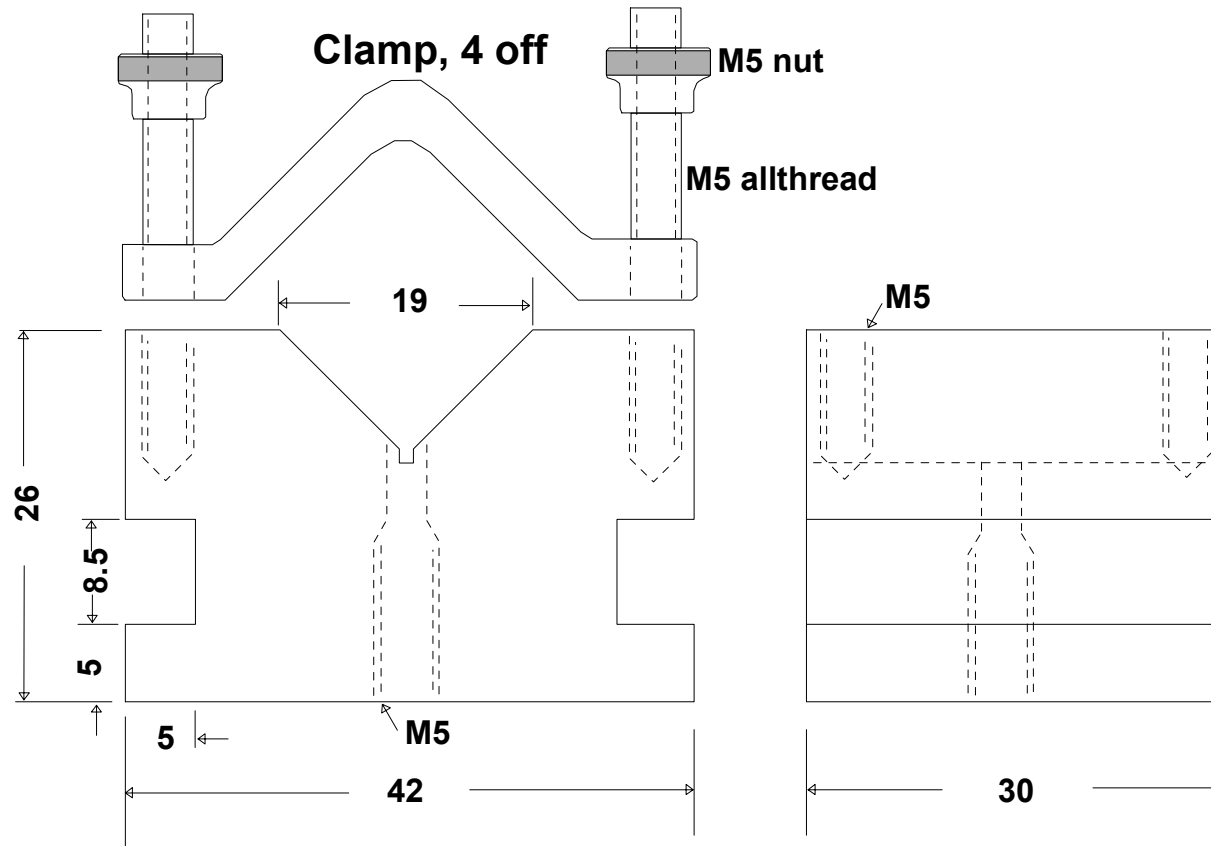
The piece I used to make the clamps was just big enough to make four clamps if I layed out the clamps stacked together and adjusted the angles slightly.

I drilled some holes to mark the outline of each clamp and used a small Eclipse hacksaw for the cuts. The picture show the work laying on top of the first clamp, with 3 holes drilled and a couple of cuts left for the the second clamp.



Two clamps were glued together with superglue and machined together. I used M5 allthread and machined M5 nuts (see picture below).





V-block, 2 off

Dato: 2006	Tegner T.H.	Materiale: Steel	
V - block			