

Potts drill grinding tool

Short description of my construction methods on the Potts drill grinding tool

First I study the drawing's and read the notes and the articles and realised that it was a job to be done with great precision and care.

Beginning with the most important piece: the upper platform

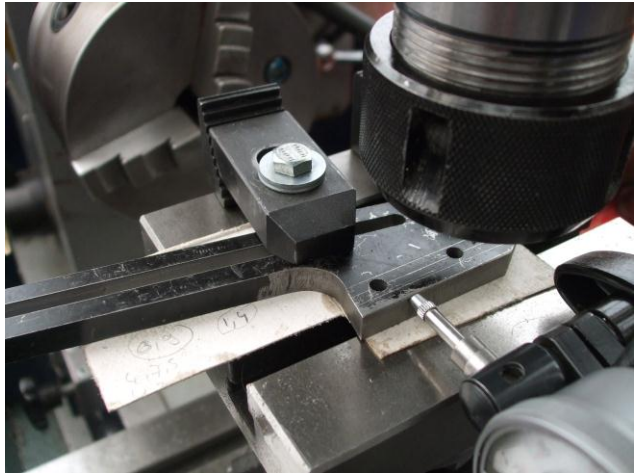
Shape or mill the long and the short side to the measurements of the drawing (11/16").

Then you have a reference to shape or mill the upper and bottom surface to the correct measurements (5/16").

The upper platform is now ready for the layout fluid and a precise indication on it of all the drawing info.

Make the guide slots and the slots but do this with the upper platform mounted on a flat surface with clamps and a piece of cardboard under it.(If you use a vice for this work there is a possibility to brake the casting while milling the long slot through).

Drill the hole for part (8).



* Wait with the work on the front of the upper platform because this must be done together with part (8) and (5).

Shape or mill only the place where part (5) meet the upper platform.

Next job is to make the V block (8) to his measurements.



* Make the complete mill operation on the casting before splitting it in the tip and the shank support.
(before splitting: mark one side with a centre point)

Make the calliper part(5) on the correct measurements without the angle on the top. (because this will be done when the parts are connected on the upper platform).

Now secure item (4),(8) and (5) together.

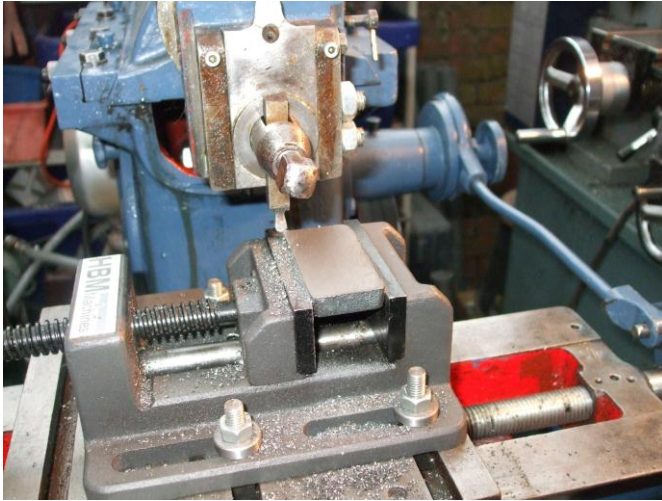
I placed the assembly in the angular vice to achieve both clearance angles. (see picture).



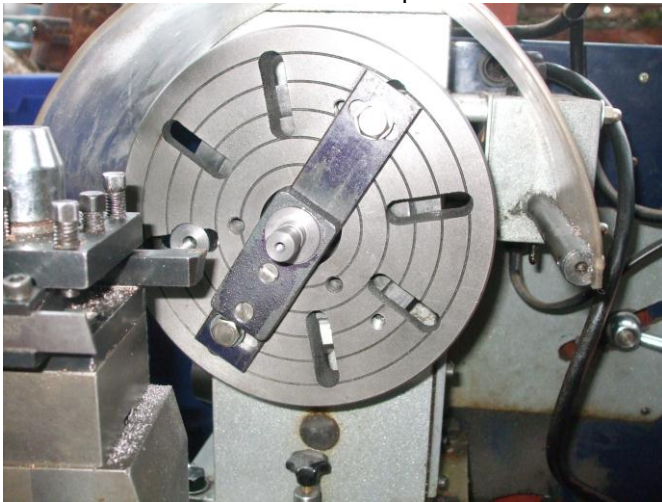
For the work on the lower platform I first flat the upper side and one side square on it.
We now have a reference for the angle of the hole for the shaft (3c)
Mark the slot and the holes very precise and make them.

Make the key and put the parts together for testing.

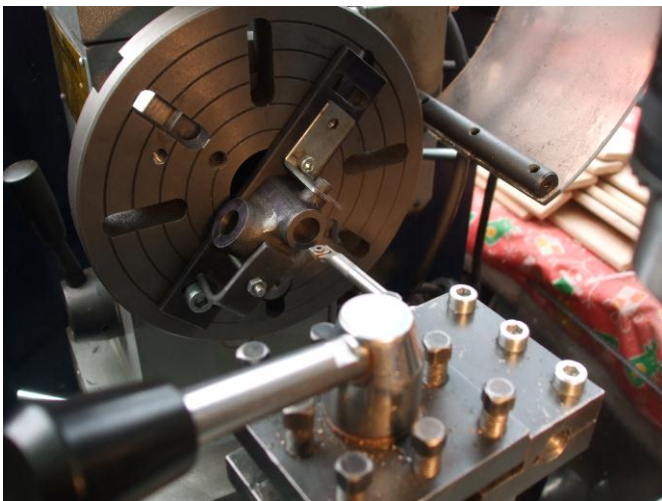
To work the castings (14), (15) and (10) you first need a reference.



For part (14) I choose the bottom to shape first, after drilling the holes I mount it with two bolts on a piece of mild steel with some slots in it to centre it on my (home-made) back plate. (see picture)
Not difficult now to turn the round part on it.



For turning the blind hole in part (15) I modify the same piece with a little clamp to turn it on the back plate.

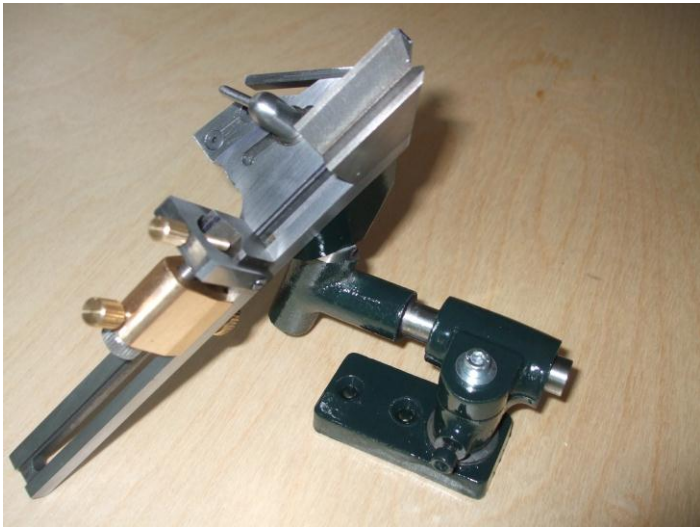


For reaming the other holes in the castings I make a special guide cone for using the adjustable reamer.



The other small pieces are simple turn and milling operations and a pleasure to do with the fine stuff in the kit.

After testing and adjusting the complete tool I painted the castings.





conclusion:

The drawings are very complete and correct (even for a guy that must work out all the measurements in metric).

The castings and all the material is complete and fine to work with.

When I have some drilling to do, it is with sharp and correct drills.

The castings and drawings are available by :

www.hemingwaykits.com

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