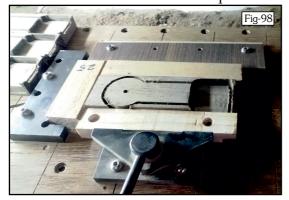
The Rear Frame D sections are now all 'thicknessed' using just the eccentric clamping jaw. They cleaned up at just under 13mm (the Front Frame version is just over 14mm) so the G-Code has been adjusted so that I don't cut into the table.

I've been cautious about using a 2mm burr to cut the outline due to the 11mm depth but since the 3mm TCT cutter broke leaving me only a 4mm option which I considered too wide for this part, I decided to specify it when creating the G-Code but I reduced the depth of cut to ½mm rather than 1mm which I've been using for the 'rough' outlines



with the 3 or 4mm TCT cutters. I also specified the 2mm burr for the finish cut since my 1mm spiral flute cutters can only reach a depth of 6mm. The only problem with using burrs instead of spiral flute cutters is that they leave ridges. These will be removed when I do the finishing process through the abrasive grits of course.

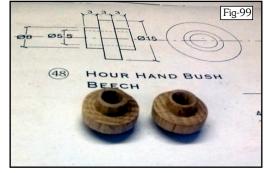
As you can see from Fig-98, I've re-thought the clamping methodology and made specific width spacers to achieve a good grip but also restricting the blank in the X axis as well. Using this method also affords me the opportunity to cut the joint on all four blanks before changing the tool to cut the outline or drill the hole. Previously I've kept the blank in place and changed the tool for each operation before starting again

with the next blank. For this particular part that would have meant 12 tool changes rather than 3, so overall quite a bit more convenient and faster - not that I'm too concerned about speed of manufacture.

Machining the outline was taking 15 minutes so there was time to do other work on the lathe and I got all the Beech bushes for the motion works made though not the brass bushes which will

provide a 'free running' bearing for the hour hand.

Because I had no means by which I could screw the 'D' blanks down to skim the second side, I had to use a clamp at the right hand end. I was well aware that I couldn't run the fly-cutter straight across the blank so when I created the G-Code for the surfacing I made sure that it stopped short of where the clamp would be. That would be all well and good as long as I also made sure that I positioned the blank in the correct position on the table. The adage of "measure twice and cut once" comes to mind here!!





What I actually did with the first blank was position it 40mm (one grid hole) too far along the X axis. I should have done a 'dry run' by cutting air but unfortunately just watched as the Fly-Cutter ploughed straight into the clamp and broke both carbide bits :(Fig-100 is the remains of the carbide cutters retrieved from the cutter block. See WIP 3 Fig-12 for the cutter block itself. As it happens I use - and break - quite a few 1/8" Ø solid carbide drills so I have a stash of spare 'shanks' so it only took me 10 minutes to replace the bits and sharpen them.

1st Nov

I'm somewhat surprised this morning to find that the blank is in the correct location on the table ????

This means that I had to look again at the CamBam parameters/drawing and it turns out that I had drawn the engrave MOP line just short of the furthest extent I wanted to cut to rather than to the radius of the cutter - D'oh!!

In Fig-101 you can see the damage the fly-cutter did to the clamp and the Rear Frame D machined to 10mm thick as far as the cutter needed to go.

It also shows the 'holding tabs' which keep the integrity of the clamping sufficiently to take surface skimming cuts - I tend to keep them under 1mm deep.

