

3RD NOV

A busy and interesting day with a few mistakes made & corrected. It started when I picked up the sawn blanks for the Front Frame 'A' section and began to think "Why did I need to saw these at 15mm thick when they will finish at only 10mm?". This question was answered some time later when I realised that I'd created G-Code to cut both joints 5mm deep when in fact one of them should only be 3mm deep. Not only had I created the G-Code, I'd actually cut all four before I realised :(

This meant that I had to trim 2mm off the face and then re-cut the one joint back down to 5mm. Re-positioning wasn't a problem with that last one which I hadn't dis-mounted but the other three did need careful attention to make sure that the width of the 5mm deep joint wasn't increased.

The fact that I'd (unusually for me) allowed a 50% waste factor saved the day but it took me all day to recover the error and I eventually completed the four Front Frame 'A' sections just before midnight — I had taken time out to eat though :)

I was hoping to get the frame spacers turned while the Denford was busy and I did at least get some Maple sawn to 18mm square and used the Router Table to round the corners so that I could hold the blanks in a 20mm collet chuck. Turning them down to 16mm Ø and drilling a ¼" Ø hole will be a job to do the next time the Denford is tied up.

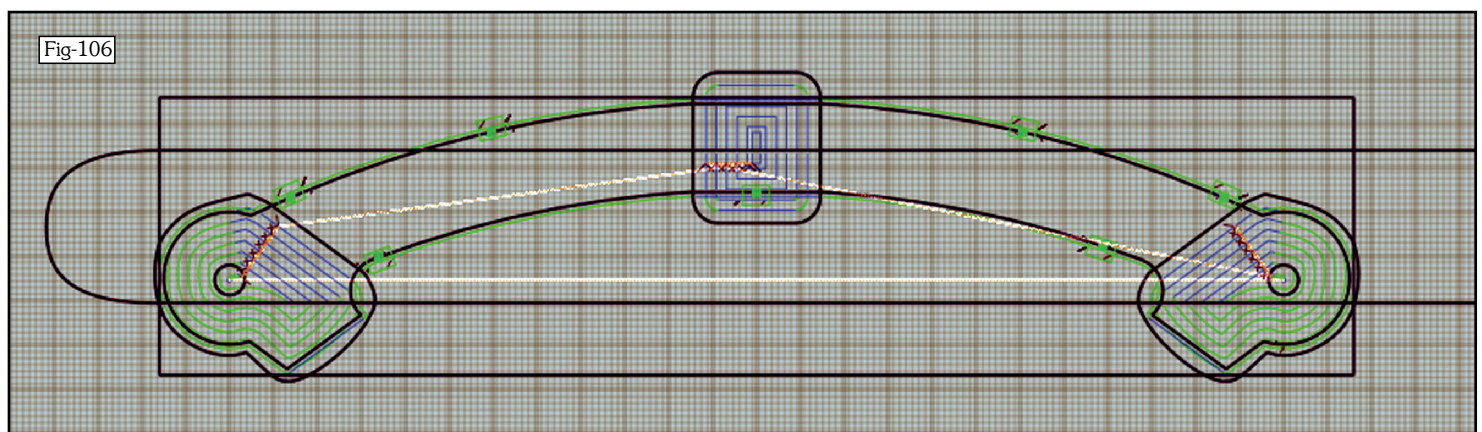
4TH NOV

I hadn't finished the Front Frame 'A' section yesterday, because the cut to round the ends only went 1mm over depth so I still had to remove the waste and clean them up on the finisher.

For some time I've been concerned that I didn't do a thorough job when I drilled the grid on the Denford Table since I only drilled the holes deep enough to take the threaded inserts and I've found that the M4 screws which I have in 5mm increments sometimes 'bottom out' before the work had clamped. I had been manually drilling the table deeper for the holes that I needed to use and then tapping them, but this morning I resurrected the G-Code which cut the grid and changed it so that all the holes were drilled right through the sacrificial table and left that running while I created the G-Code for the Front Frame 'B' section which will be the next part to be made. I'll still have to tap each hole by hand of course but I can do that on an 'as-I-need' basis. At least I can't make the same mistake as yesterday since all the joints on the 'B' section really are 5mm deep!

**OUCH!!!**

Well, I didn't make this mistake! It seems that either Mach3 or the Denford decided that I was doing too well today having skimmed both surfaces of the Front Frame 'B' sections with nary a problem, and even cut the joints and two holes in the first blank whilst also giving my grandson instruction in the use of the milling machine during which time I just let the Denford get on with cutting the outline. I knew it was going to take a while since I'd decided to take just a single cut down to the 11mm depth in ½mm increments and I just kept an eye on what it was doing occasionally. All was going to plan and the depth was at about 8mm when I had to spend a little more time on the mill. The next time I looked at the Denford it was cutting the blank in half !!! - The drawing in CamBam, Fig-106, from which the G-Code is generated has no line going from top to bottom but that is what was being cut when I got back to checking the Denford – the result can be seen in Fig-107.



Maybe the Denford felt neglected :)

I've poured over the G-Code and can find no error so therefore no reason that the Denford suddenly changed from following the instructions and simply moved the table along the Y axis, and since I wasn't watching at the time I doubt that I'll fathom what went wrong.

I stopped it before it had completely cut deep enough to sever the two halves and I suspect that I can glue in a 2mm thick piece of Walnut to recover it. The concern is that it will happen again on the next blank so I'll have to watch every pass - just in case. It will be prudent to split the cutting of the outline into two sections, the first going down to (say) 8mm in 1mm increments and the second

starting at 8.5mm, going to 11mm in  $\frac{1}{2}$ mm increments. That will at least address the issue of the ribbed finish that the burr creates when using full mm pitch cuts and might stop a repeat 'rogue' cut.

After some deliberation - read ignore the problem and do something else - I switched the Denford off and closed Mach3, left it for a while then re-started both. The first thing that has to be done on starting Mach3 is to [Zero] the axes. This showed that the Axis registration was way out and I now suspect that the 'X' Axis motor or the ball-screw had jammed but the 'Y' Axis continued to operate.

I have plenty of thin sections of Walnut so it didn't take long to trim a piece down to 2mm and glue it in to the damage and that is now curing overnight.

