

# Mini Mosaic Feature Ring

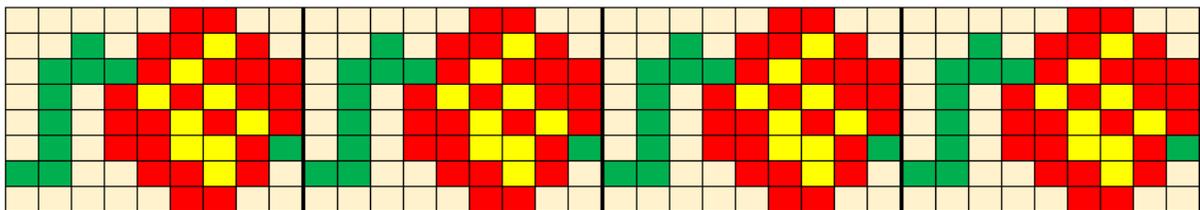
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I was recently into building guitars and found an article in Fall 2017 American Luthier magazine that I thought could be adapted to segmented woodturning projects. Peter Tsiorka incorporates these little mosaic pieces in the rosettes around the sound hole in his guitars. There was no mention of how he made them so there was a little trial and much error in coming up with a process that worked. There are also some articles online that give some information and different methods to make these so surf away for additional ideas.

I used pre-coloured veneer sheets that I bought from B&B rare woods. The veneer I used was 0.9mm (0.035") thick and is about as small as I would want to go. You could also cut and dye your own veneers or use non-dyed natural woods of contrasting colours. Make sure all the veneers are equal in thickness. I made a plan in excel or you could use squared paper and colour in the squares as close as you can get to the real colours. Copy the pattern a few times across the page to make sure it works for you as a repeating pattern.



Be accurate with the colours especially if you are using natural woods. My first attempt looked like swastikas instead of flowers as the yellowheart didn't stand out enough from the maple! You can also see I lost some segments with my first gluing attempt using CA glue.

My final design is fairly close to Peter Tsiorka's so I won't claim credit for the design. After a failed attempt or two I went for something that I knew would work.



I made a tool to cut the veneer out of a carpenters marking guage. It worked pretty well. I just removed the marking pins and glued a small block on the end of the guage with a carved cut out for an X-Acto blade to sit in. The blade is held in place by friction and is super easy to change, just tap one out and push a new blade in. It is important to use a brand new blade. I had trouble a few times cutting the veneer and every time I found it was the tiny point on the blade had broken off. I broke a few blades before I learned that a really light touch and 2 or 3 passes was the way to go



I sanded the edge of the veneer flat to start with and between every cut by running across a flat sanding block or shooting block. This ensures a good straight accurate cut on each piece. I laid the sheet of veneer on a cutting block (flat piece of MDF) with a straight edge for the carpenters guage to run against. I aligned the veneer with the edge of the cutting block with a straight edge and then held firmly in place while running the cutter along the sheet. My pieces are about 300mm (12") long and about 2.5mm (~ 1/8" wide). I made them this wide to make them easier to handle. They will get reduced down to 0.9mm (0.035") later. If you go any narrower you will have a heck of a time trying to glue them together (how do I know this?).

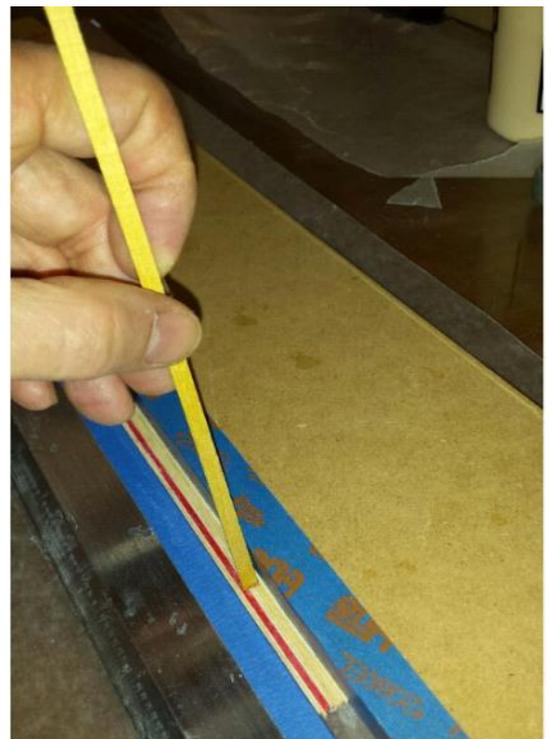
I cut a bunch of colourful strips of veneer 0.9mm thick x 2.5mm wide by 300mm long or thereabouts. The next step was to glue them together into laminations - hopefully in the right order.

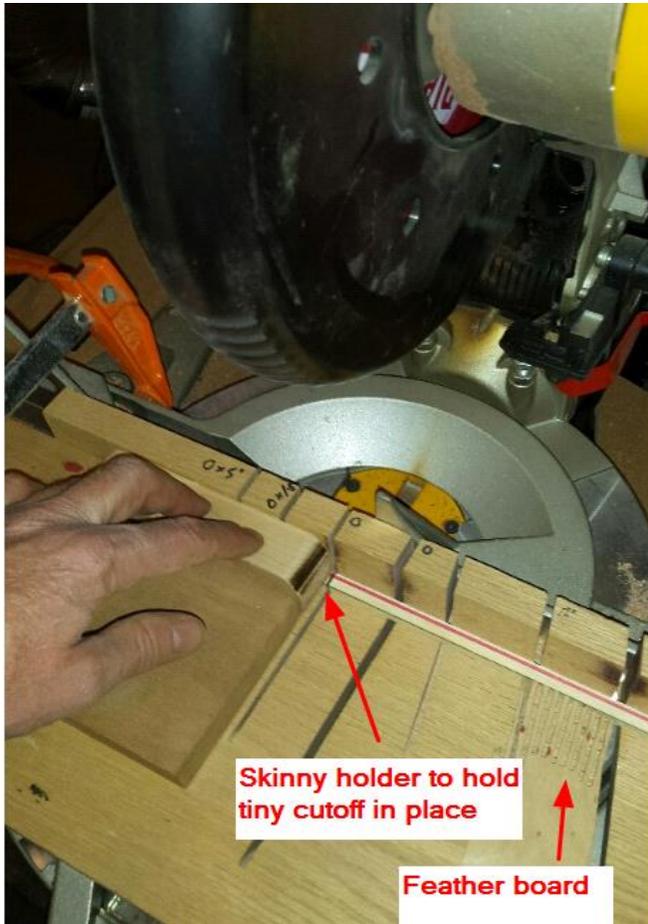
The trick here is to water down the glue a little. I tried CA glue (disaster) and Titebond original (very tricky and messy). The Titebond was a little too sticky to be able to slide the pieces together so about 10-20% water until it was like milk (full cream milk that is). I could then quickly brush glue on the 9 strips and get them aligned and pressed together in a simple fixture. My fixture was just a couple of straight edges covered with masking tape, sitting on wax paper to prevent sticking to the bench etc. I prodded the pieces down with a tamping stick to make sure they are all aligned and reasonably flat. I didn't use clamps, just pressed them together by hand and let them sit for 20mins or so for the glue to set. Clean up any excess glue as you go, the watered down glue cleans up easily with paper towels.



I ended up with 8 laminations about 8mm (5/16") wide, 2.5mm (~1/8" thick) and 300mm (12" long). These need to go through the drum sander multiple times until they are flat and even on both sides and reduced in thickness to exactly 0.9mm (0.035"). Run the edges across the shooting block to clean off any glue etc. These can then be glued together into a block the same way as the strips were glued together, I used watered down glue again, the same fixture and same process. The block can then be lightly cleaned up in the drum sander if needed.

I cut the mosaic pieces on my chop saw using a zero clearance fence. I used a thin kerf 6" blade mostly to reduce wastage so I could get as many mosaic pieces as possible. Mine are about 2.5mm (~1/8") thick.





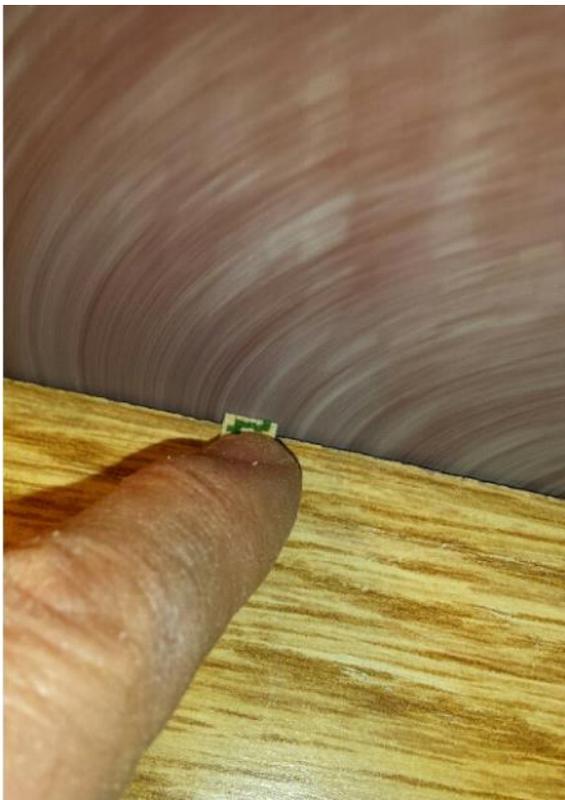
Don't sneeze!

So now what to do with those tiny little suckers? For the body of my box I turned a groove into a segmented ring. I measured the diameter of the ring and calculated the circumference ( $3.14 \times \text{diameter}$ ). I then divided by the length of my mosaics to calculate how many will fit around the ring. I was close to 48 so I adjusted the diameter of the groove to make it exactly 48.

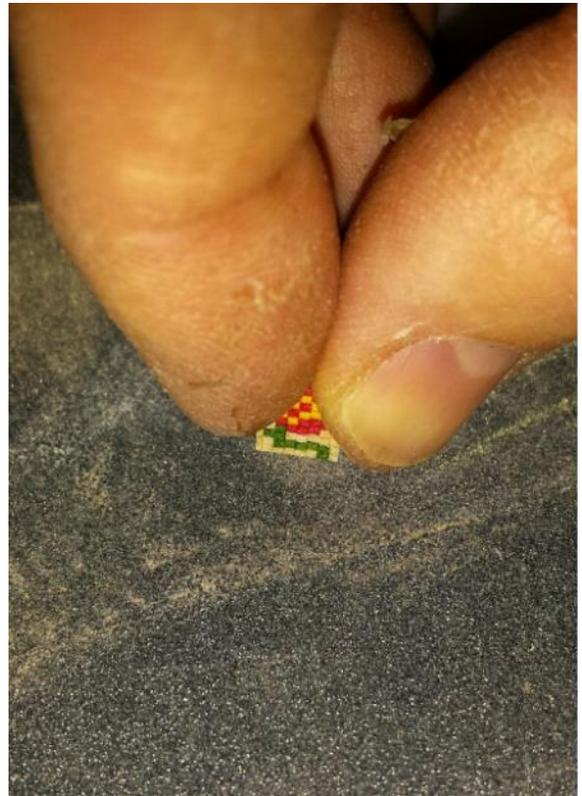
The trick then was to use the Lohman assembly jig to glue them in place. Using this method I could check that the last gap would be the right size for exactly one mosaic piece. I had to modify my jig to work in the groove as shown below. As you index the jig around you will find out if the pieces are too big or too small. After I glued in a few it was starting to get tight, so I sanded a tiny amount off of each end of the mosaic pieces to make more room.



See Tom Lohman's web site for details of this jig..... and parts to make one.

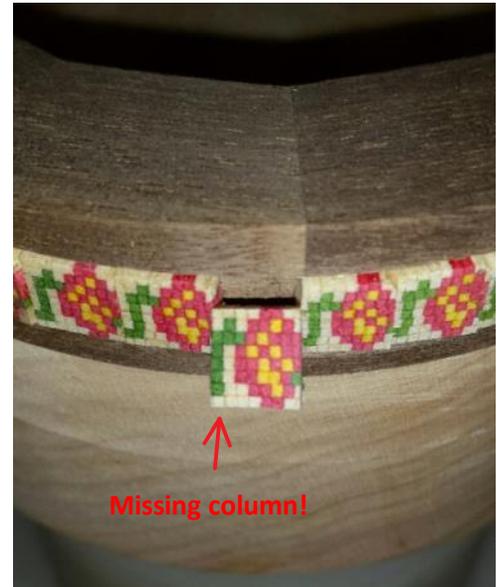


Sanding a touch off the mosaics. Sander is turned off, I'm sanding as it slows down. Note zero clearance base.



Sanding a little chamfer on the ends by hand. Looking for a perfect fit!

My last piece still came out tight even after all that effort - but it was close enough. I ended up sanding off a complete row to get it to fit but nobody knows except me. You can't see the mistake on the final box unless you go looking for it. Don't tell anyone will you? If you look closely at the photo I posted in the gallery you will see it!



I soaked the final ring in CA glue to seal all the end grain to make it easier to turn without tear out. This turned out to be a mistake as any imperfections came out as dark lines. For the knob on the lid I filled any imperfections or gaps (a few mosaic corner pieces broke off) with filler made from maple sanding dust and Titebond glue. This worked much better and made the mistakes invisible. Sanding the mosaic pieces down to match the surrounding groove worked well rather than turning.

On the knob I didn't use the Lohman jig but did a temporary fit using a rubber band to hold the pieces in place before gluing.



A little filler - Titebond + maple dust

Have Fun and watch out for your dust collector - it will eat those little pieces for lunch!