Hamilton Woodturners Club

www.hwoodturners.org

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TT's TOP TURNING for this week

RICHARD's Kauri bowl with red-dyed resin and a 25mm paua dot inset. A mighty fine job for a first-ever resin inlay feature. Well done!
(3 other pictures show more of Richard's work)

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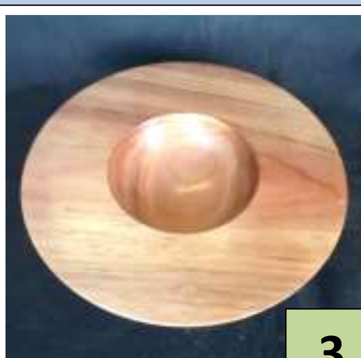


3

1. A lidded pot made using Indian bead wood
2. Oak wood small bowl
3. A beautifully finished wattle wood bowl.

Richard has flown well past the beginner stage and right into woodturning adventures enjoying every challenge that comes his way. Yeeeeehaaaaar!

38 days to CHRISTMAS

The year's final courses commenced this week.

TUESDAYs, WEDNESDAYs, and THURSDAYs

Get busy on the lathe - it's time to turn thingies for Christmas

This week's **completed turnings.**

JAN: Well done with this pepper mill project. I think this is your best work yet.

A strong feature of your mill is the array of amazing colours in the spalted WNI wood.

Patience and our NEAGE philosophy well applied resulting in a successful outcome.

STEPHEN O'Connor completed this captured-ring goblet using kahikatea wood. This is a remarkable achievement give that Stephen has only just completed the club's induction programme.

Tutor: (Maybe it's a big advantage having a positive attitude and a cheery "give-it-a-go" attitude eh) Quare Good Stephen.

SPENCER's Nuts and Bolts made from heart Rimu wood.
Clever, patient work here!

DYLAN - Planning

RIKIHANA - Scraping

AARON – Pen making

DAVE - Shaping

SPENCER - Gluing

SCOTT - Drilling

Woodturning: Fun activities for creative moments. Sessions involve therapeutic, satisfying and productive activities all happening within a climate of camaraderie and encouragement. That's Us! We are the members of the Hamilton Wood Turners Club. Here's a few of the Thursday members working on their individual projects. Great concentration fellas!

The debate about drilling the long hole in a pepper mill blank

Best way to drill a concentric hole with a lathe

(A frustrated wood turner wrote…) "I'm new to turning and recently decided to make some pepper mills. Starting with squareish stock I roughed the pieces to rounds and then started drilling several concentric holes of different sizes using Forstner bits on the lathe. Somebody gave me the feedback that I should use the largest drill bit first and not to drill any pilot holes. In other words if I need a 1.5" through hole and a 2.5" hole at 1" depth then I should drill the 2.5" hole first followed by the 1.5" hole. This flies in the face of everything I've been taught, but the explanation was that the Forstner bits do better without large pilot hole (e.g. from another Forstner bit).

In any event I was able to drill the holes into the work pieces, but as I did this I noticed that the drill bit appeared to be wobbling rather substantially (it looked like the work piece was "pulling" the bit such that it wasn't always inline with the axis of rotation. I assume that this is because the drill bit didn't enter the piece perfectly in-line with the axis of rotation though for the first ~1.5" I couldn't tell and it looked good). This was especially true when I used a drill bit extension to get the depth I needed (I started swapping in the extension only when I needed it rather than starting with it for deeper holes).

After I drilled the holes I used a cone/chuck to hold the piece in place for sanding/finishing. On several pieces I noticed that the through holes were not concentric with the outer surface of the work piece. In other words when I'd pull the spindle off the lathe I'd notice that the through hole appeared to be at a slight angle relative to the outer surface.

The big question

What's the best way to drill a hole that is "perfectly" concentric with the outer surface of a work piece on a lathe? Is it better to drill first and then rough/round? Should I in fact be using a pilot hole? Am I not securing the piece in the chuck properly prior to drilling?

Drill Bit Entered Here.
Looks relatively concentric

Drill Bit Exited Here.
Looks very excentric

Wood turners discuss the challenge of drilling long holes in pepper mills

(A Reply) “I have no turning experience, but my instinctive reaction is: Drill out the core, then mount the piece between cones and shape the outside to match that centering, rather than the order you tried...?”

(Another reply) “ The other cheat: Drill from both ends. If the middle is not a perfect match, nobody will notice or care.”

(Another reply) “Is the bit wobbling or is it the wood? If you are not chucking the wood at the head stock and just using a spur center, it's going to be extremely difficult to keep the wood from wobbling. “

(Response): “I am chucking the wood and the bit itself is wobbling.”

(Another reply) “ I assume you are talking about using a wood turning lathe and you have mounted the work on the headstock and have the bit mounted in the tailstock. Getting everything lined up on a wood turning lathe will be difficult. They are not made for boring.”

(Another reply) “I would recommend using a drill press instead.”

(Advice from an experienced wood turner) *"If you are making through holes there is no reason to be using a Forstner bit. Those are used for making blind holes. There are various YouTube guides on how to do boring on a wood turning lathe:*

https://www.youtube.com/watch?v=NCrETz4RTyM
https://www.youtube.com/watch?v=l24q7r_sg2A
https://www.youtube.com/watch?v=F3fueO0oP80

The last of these is actually on boring a pepper mill, your exact problem.

If I was making a lot of pepper mills, I would probably make a setup with a cutting mandrel.

First a hole is drilled through the blank using a drill press. Then the mandrel is threaded through this hole and tightened with a collet to the chuck. A v-block fixture is used to support the work at specific height. Then the work is pushed along the mandrel to cut the holes.

The mandrel has two cutters mounted on it, so that the entire inner diameter of the worker will be cut in one step. This kind of setup is somewhat advanced, but if you are making a lot of pepper mills would be desirable because it will be fast.

The mandrel is very rigid. For example, if you watch the 3rd video above you can see how he has to keep backing out the drill. A mandrel cutter is really powerful and will just bore the whole thing in one move.

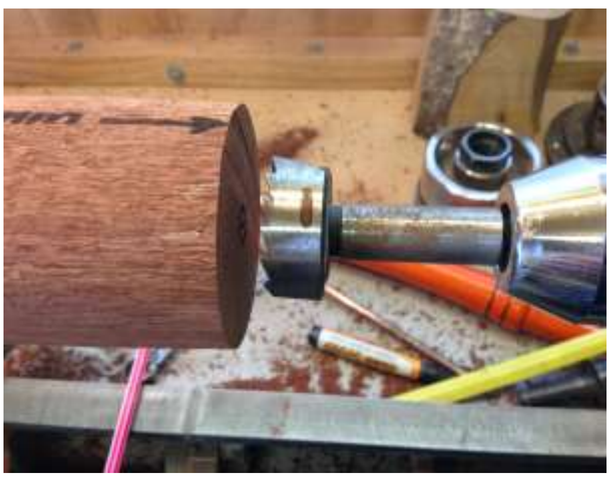
In any case you would turn the outside of the pepper mill after doing the inside, so the outside should always be concentric with the inside."

(Someone else added) “The difficulty is in drilling, once the bit is off-centre even as little as half a degree, the drilled hole will guide the bit further off course since the flutes do little to any cutting.

Another thought coming to mind would say use a Forstner bit, which does it's cutting a bit differently, and a wire bit support to help guide and support the bit. Might be worth a shot!”

(Then this comment to finish the conversation) “You need a gun drill for your pilot hole. Drill bit extensions do not work well for making very straight holes, but if the pilot hole is straight enough it might work out.”

Clive’s note: OK now go have a look at the youtube sites.



The standard mill mechanism has a cover plate measuring 38mm.

That’s why I prefer to drill the large recess hole in the mill base with a 38mm Forstner bit for a snug fit.

(the instructions may suggest a slightly larger diameter recess hole)

Next drill the 25mm (26mm if you have one) long hole in the mill base up to the height line you have marked on the round. Start the long hole using just the short bit then later load the extension shaft. This process helps to minimize the “wobbles”. **URGENT: Clear the flutes often. Use a slower lathe speed !**

TUTOR's Wood Turning Tips - USING SHARP TOOLS

The sharper the tool the better the job, the quicker the task, the smoother the finish and so on….. No apologies for sounding like I'm harping on about this most vital of wood turning ideas… BUT you **must** use **SHARP TOOLS** to achieve the success you expect!

OK having got that off my chest I need to explain how a tool cuts wood.

So what is cutting? **CUTTING:** Where the edge of the tool meets the individual wood fibres the term "Cutting" is synonymous with breaking. If you press the point of the tool against the wood fibres with sufficient force each fibre will break into two pieces.

A cutting edge transfers all the force driving the tool at its point. OK got that?

Now because a sharp edge ("razor sharp" edge you often hear me say) contacts only a small amount of the wood surface, the **resistance is confined to a tiny area.**

Thus it follows that the keener the point, the smaller the resistance and the smaller the force required to cut.

The wood fibres separate along a narrow line determined by the path of the tool, and the now cut surface appears smooth and even. (no bumps, ridges or valleys on the work)

BLUNT TOOLS: A blunt tool contacts a larger surface area. Consequently there is more resistance and it requires more force to cut. The fibres fall along a wider, irregular defined line and the cut can appear ragged, torn and uneven.

FINAL courses for the year

TUESDAYs		WEDNESDAY Evenings		THURSDAY Evenings	
21st Nov	As usual, a full 30-hour course for five weeks.	15th Nov	This is a shortened course for 6 weeks . (Fee reduced proportionately)	16th Nov	This is a shortened course for 6 weeks . (Fee reduced proportionately)
28th Nov		22nd Nov		23rd Nov	
5th Dec		29th Nov		30th Nov	
12th Dec		6th Dec		7th Dec	
19th Dec		13th Dec		14 Dec	
		20th Dec		21st Dec	

Can you identify the turner responsible for this clever artwork? **A clue:** (1) The turner is a current member of our club. *(this careful turner applied a top finish eh!)*