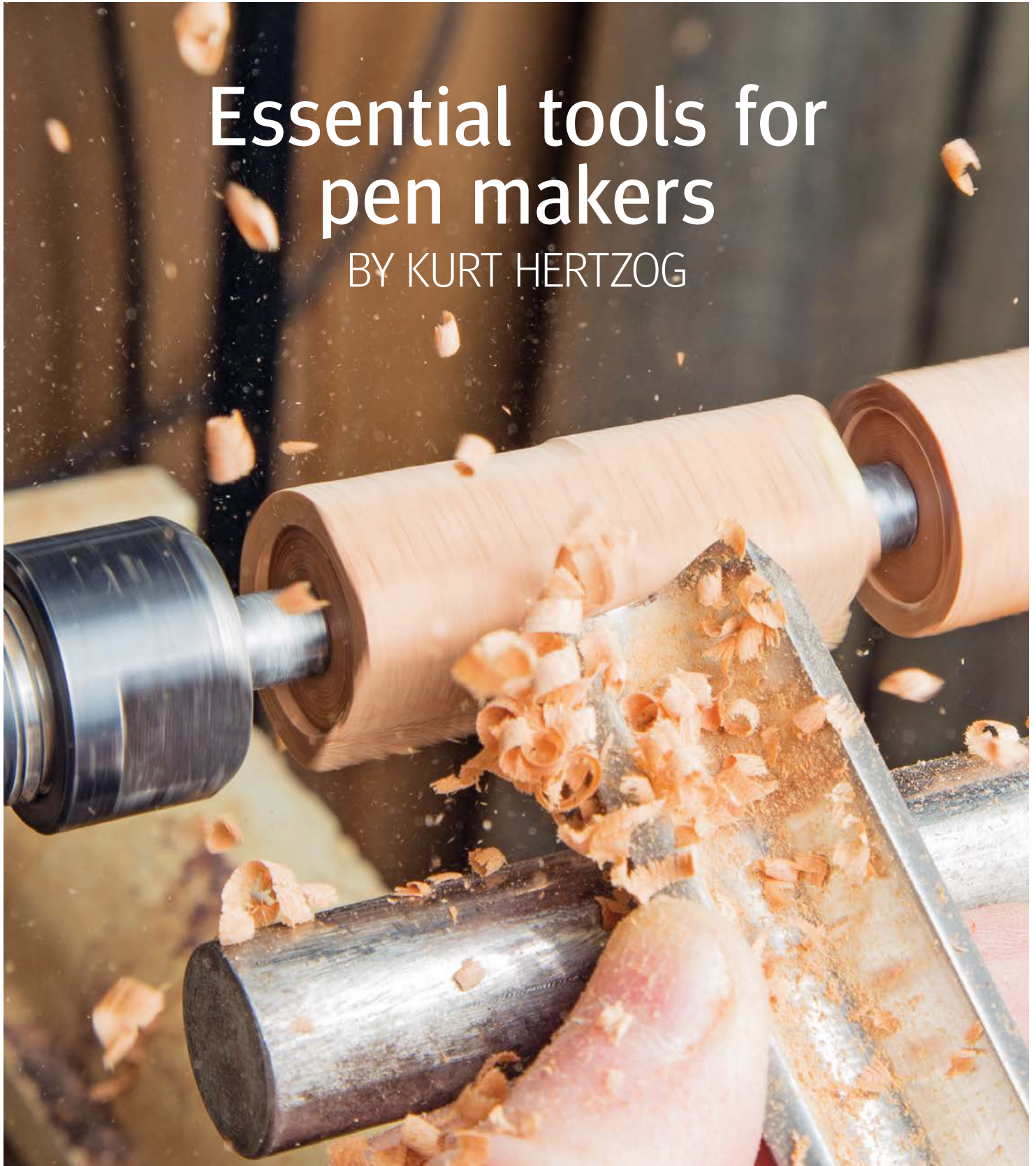


Woodturning

THE WORLD'S LEADING MAGAZINE FOR WOODTURNERS

Essential tools for pen makers

BY KURT HERTZOG



Technical: Maximising use of figured timber • Turning tapered legs

Projects: Christmas carousel • Three-centre candlestick • Four-legged bowl



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Woodturning, Mark Sanger
(Professional Woodturner)



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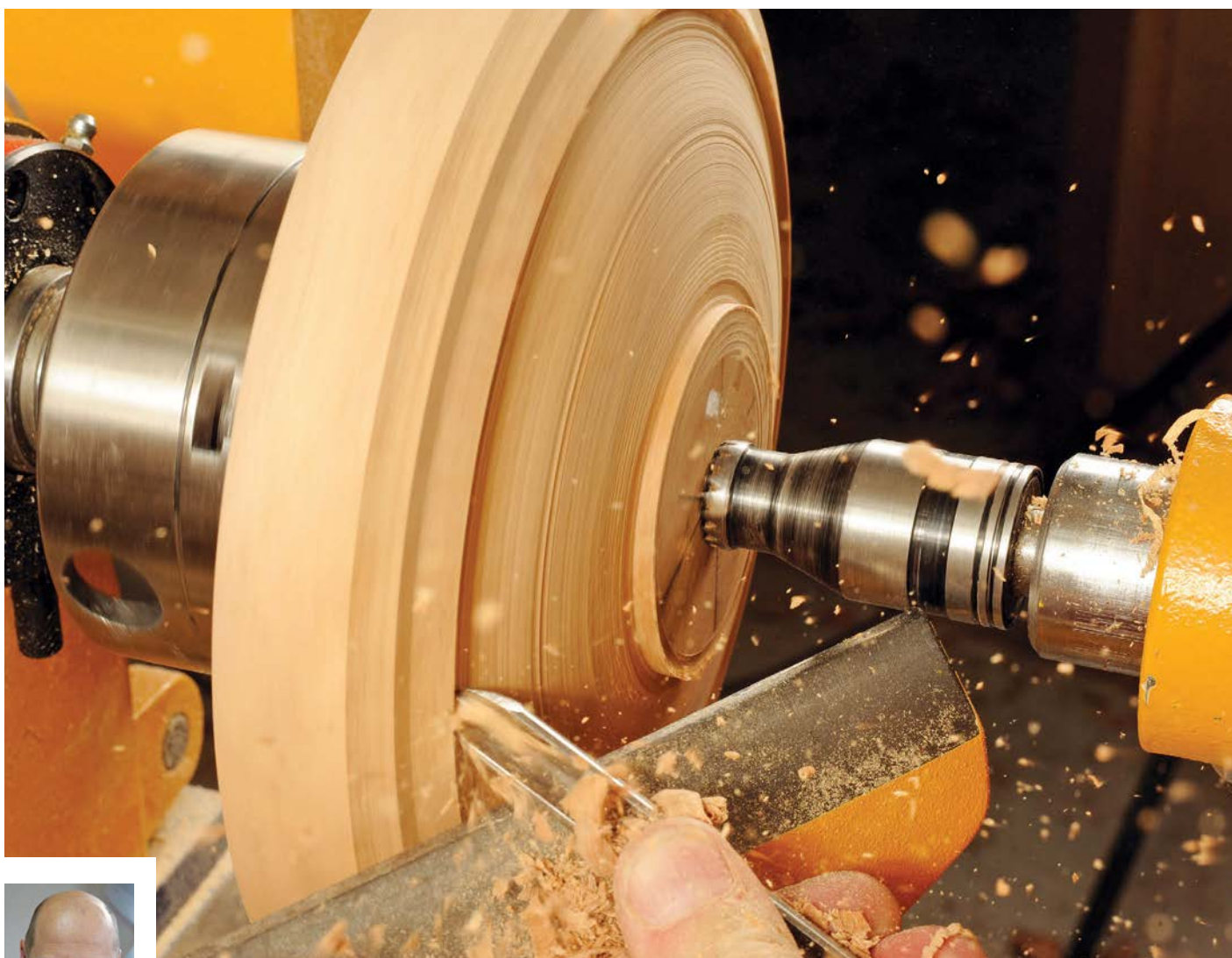
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Forward planning

I have been asking questions of clubs and similar set-ups for a long while and I am happy to say that, from what I've heard, membership is increasing for the majority. Some clubs, of course, are suffering a decline but others are putting a cap on the numbers because demand outstrips the capacity of their facilities.

Most people love the interaction and the infotainment they get from demonstrations, but one thing is quite clear – about this time of year we see an increase in activity generated by the word 'Christmas'.

I know, it's early and I will no doubt cop some flack for mentioning that word. But some of my family members have already started buying the presents and some of the clubs I have recently visited have started the discussion about what to make for family, friends and charity events. It all takes time and planning you know, so this should come as no surprise. Especially since we all complain about

how our lifestyles don't allow us enough time in the workshop.

I must admit I was playing devil's advocate in a discussion recently. OK, I do that quite a lot, but always with good intentions – honest. I asked: 'If we had more time would we actually spend much more time in the workshop? Or, is the idea of spending more time in the workshop more appealing than the reality of doing so?' Now that sparked a debate, I can tell you. Absolutely everyone said yes to the first question very quickly, but after a bit more discussion, many said they actually thought they would spend a bit more time in there than currently, but not a lot. I will let you ponder that one for a bit.

Anyway, back to Christmas. I must admit that last year, I received some criticism for not featuring enough Christmas items overall and, when I did, not featuring them early enough so people can make them in time.

To that end, I have started a two-part item from Colwin Way in this issue. It is one of those multitransformed-part centrepieces that will create a wow factor so I hope you enjoy the challenge. Next issue will see the last part of this project, but will also feature other items for Christmas. I hope this is early enough and please don't harangue me for daring to place something in an issue which is on sale in early October. I am writing this in early August, so I can promise you I feel disappointed from actual time as I sit in 25°C of heat watching the magazine year go by.

Anyway, whatever projects you are making, don't forget to send me some pictures.

Have fun, Mark

markb@thegmcgroup.com



Cover image: Kurt Hertzog (see page 27)

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HEALTH AND SAFETY

Woodturning is an inherently dangerous pursuit. Readers should not attempt the procedures described herein without seeking training and information on the safe use of tools and machines. All readers should observe current safety legislation.

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Christmas carousel

Colwin Way, in the first of a two-part article, looks at creating a centrepiece for Christmas



Oh yes, it's time to start talking about my favourite time of year again... CHRISTMAS! Now before you throw the magazine down in disgust bear a thought for me as, at the time of writing this article, it's the beginning of August. Anyway, bah humbug aside, we can't escape it, it's happening and as woodturners we need to prepare all those festive gifts we will be making, either to sell or just as presents for our loved ones.

I was incredibly lucky this year to have the opportunity to demonstrate at a woodturning event in Olbernhau Germany. This gave me the opportunity to visit some of the toy-making villages in the area and the most well-known of them all is Seiffen.

My trip there filled me with inspiration. I visited a number of workshops and shops, seeing all manner of festive woodwork in this perpetual Christmas town. I was really taken with the

Christmas pyramids both for sale and those decorating the town, some small, single tier and others stretching 6m up into the air made from 15 tiers. They are completely mesmerising as they turn their nativity scenes around, purely from the heat generated by candle power. I want us to have a go at making one of these, but understanding the technical difficulties with such a project, I have split it into two parts and also kept to one tier. As with all the projects we've undertaken, don't be put off thinking it looks too complicated. We work on one step at a time to build the finished piece. If you want to push even further, however, research online and build more tiers to create your

own festive heirloom. I strongly advise a visit to this wonderful part of Germany where I was told that Seiffen was once famed for having a population

of 2000 with a lathe population of 900 – woodturning is one of the main industries in the village. Just as a final thought before starting our project and a little background information, it's said that these Christmas pyramids were the predecessor to the Christmas tree – looking at them I can see where this idea came from.

All the main parts of this project are made from beech (*Fagus sylvatica*), apart from the decorative figures which are made from lime and the props which are made from cedar (*Cedrus* spp.). I chose cedar for these pieces purely because I thought they would smell nice but to be honest the timber choice is what you have to hand.

TOOLS AND MATERIALS

- RPE & PPE
- Belt sander
- Sanding disc
- Bandsaw
- Drill or pillar drill
- 6 and 10mm drill bits
- 3mm short drill bit
- 3mm long drill bit
- 42mm saw tooth/Forstner bit or a size suitable for your tealight inserts
- Metal, ceramic or glass tealight heatshield insert
- Pyramid cup washers
- 3mm silver steel rod
- 10mm bowl gouge
- 13mm skew chisel
- 30mm skew chisel
- 8mm flat scraper
- Abrasives down to 400 grit
- Adhesive

SAFETY

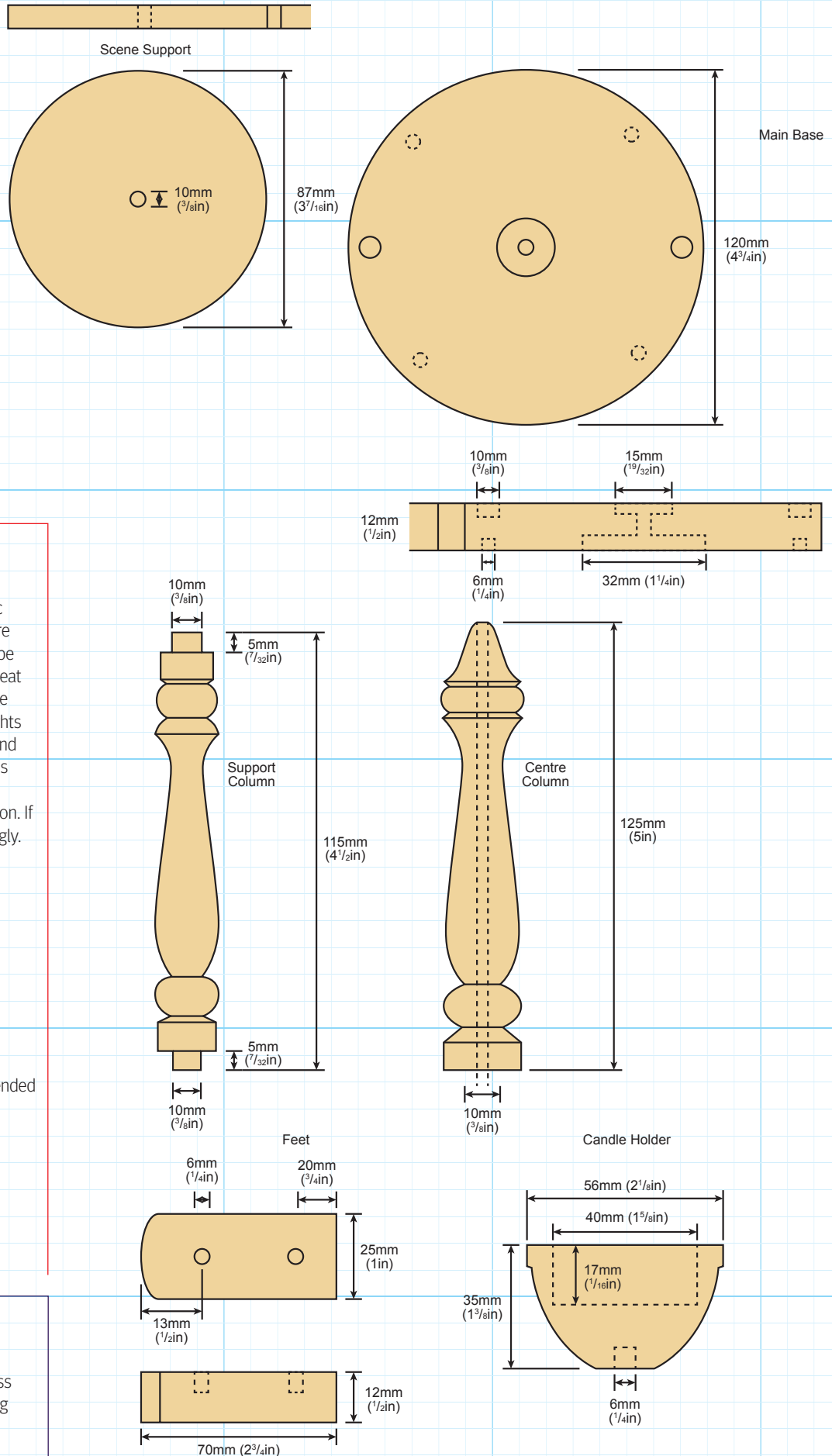
Our recommendation is that you always use a heat shield insert of metal, glass or ceramic between the tealight/candle and holder. There may, depending on the country one lives in, be specific laws/guidelines to cover the use of heat shields and also specific instructions as to the distance needed between candles and tealights and where one can and cannot place them and at what distance apart. There are other issues such as the stability of item, what material is used for each tealight or candle sit in and so on. If there are guidelines, follow them all accordingly.

General guidelines for working with candles and tealights are:

- Use a heat shield.
- If you stick the glass, metal or ceramic heat shield insert in place, use a heatproof adhesive and make sure you leave a little bit of an expansion gap between the hole and the holder insert to allow for any wood movement.
- Never leave a lit tealights or candles unattended or place one near any flammable material.
- Never place tealight or candle too close together.
- Always make sure the holder of the candle or the tealight is of a design and weight to be stable enough to stay where it is placed and withstand accidental knocking.

Top tips

If you keep the timber for the candle holders in long lengths for drilling it makes the process easier when it comes to holding and clamping to the drill bed. These are large drill bits and the timber will require clamping for safety.





1 Where better to start than at the bottom and build up from there? The first pieces can be referred to as the feet. They have one radiused edge and two 6mm holes in them. The exact measurements for these holes are on the plan drawings.

2 Start by cutting your pieces of timber into rectangles measuring 70mm x 12mm x 25mm and mark a radius on one end drawing around a coin to get an even curve. Using a sanding platform and sanding disc on your lathe, sand the radius and, if needed, all other sides of each piece finishing with four pieces in total.



3 These feet are going to support the carousel base and the candle holders so need two 6mm holes drilled into them. Clamp the pieces down if you can for drilling large holes, I haven't in this picture as the hole is 5mm deep by 6mm in diameter not giving any torque, so I decided it was safe.

4 For the candle holders, the holder you make will later be lined with a brass cup/heatshield. The ones I used are 42mm x 15mm in size. I didn't have a 42mm bit so used an adjustable drill bit. Of course, another option would be to turn the holes.



5 Once the holes have been drilled to the correct depth by using the depth stop on your drill, cut the individual pieces out using a bandsaw if you have one. Because the radius is a bit tight, just cut the corners off the individual pieces, leaving an eight-sided blank ready to turn.

6 To turn the candle holder start by expanding a set of small jaws into the 42mm hole of the blank and drilling a 6mm hole into the underside. This hole is used to connect the holder to the foot with the aid of some 6mm dowel but is also used as a centring hole in a moment when turning between centres.



7 Now to make a jam chuck. Fit a scrap piece of wood on a screw chuck, cut a spigot to fit in your chuck and shape the front end to fit the insert hole of the holders. Once shaped, place the tealight hole on to the jam chuck, bring up the tailstock with revolving centre for support and shape the body of the tealight holder.

8 Here is what the holders will look like with metal heatshields in place. The timber was surface sanded before any other work was done, meaning the top face only needed to be sanded otherwise it would have been tricky to get to. The metal liners can be bought online and are called 40mm tea spout tealight holders.

9 The next piece is the main support for the structure. This will be drilled in several positions. Sand or plane both sides and drill a 6mm hole in the centre before mounting on a small screw chuck to clean up the outside edge. Sand this edge and the front face. Do not have the screw protruding too much or you will hit it when cutting the recess.

10 While held in the same position on the screw chuck, cut a small recess in the front face 5mm deep to a diameter to expand your chuck jaws into, making it possible to turn the disc over and work the other face.

11 Now turn the disc around and expand the jaws into this recess. The bearing for the carousel to spin on is a low-friction cup bearing that a pointed centre spike runs on. Simply turn a small recess to accept this bearing, which will later be glued in. Once again this surface can now be sanded to a good finish.

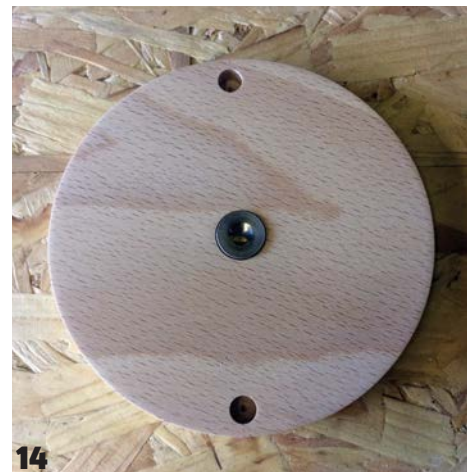
12 The bearings are available online, known as pyramid cup bearings, and are available in several sizes in metal or glass costing a couple of pounds. They have a slight pointed centre-shape to keep the needle running central.

13 With the support turned it now needs to be drilled with 6mm holes to connect to the feet. The drawings show the exact positions of the holes. An indexing unit on the lathe helps to divide the disc into marked four quarters before measuring in from the edge to get the exact position.

14 The top face will be the bearing face and carry the upright support columns, these holes are 10mm in size and positioned between the drillings of the underside. This position is important because when you put everything together you want the feet, and ultimately the candle holders, placed evenly to either side of the support columns.

15 To turn the support columns start by roughing down two pieces of 115mm x 15mm beech to a cylinder. Cut a 10mm x 5mm deep tenon on both ends then shape to your chosen design, not forgetting to check the diameter at each end fits on without overlapping the edges of both the support base and the arch yet to be shaped.

16 Here's how the Christmas carousel should look so far. You can fit the pieces together with 6mm dowel but I would recommend not gluing anything until all the pieces are made.





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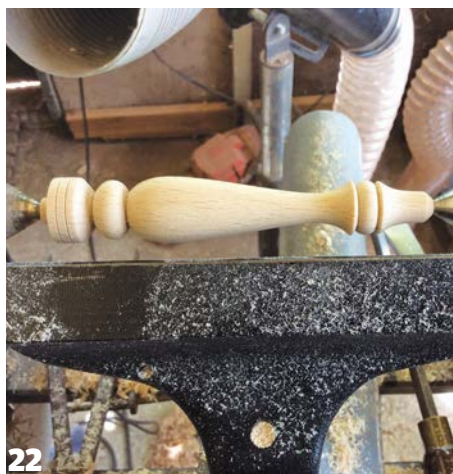
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17 Now for the centre column, scene holder and needle. The scene holder is the platform for your figures – traditionally these would have featured nativity or woodland scenes. Drill a 10mm hole in the centre of your planed piece of beech which measures 90mm x 12mm.

18 To drive this small disc I'm using a friction plate made from a piece of scrap wood and a piece of router matting for protection. Centre the disc with the tailstock revolving centre and add gentle pressure. True up the outside edge before sanding to a good finish.

19 Before turning the centre column you will need to accurately drill a 3mm hole through the centre. This is extremely important as any error will show up when your carousel turns. Notice the support from the toolrest lying under the blank stopping it from rotating while drilling. The tailstock centre holds the wood centrally and is used to advance the wood.

20 Use a short 3mm lip and spur bit to drill a pilot hole in both ends of your blank before swapping the drill to a long series drill bit of the same size to finish the hole off. Ensure that the bits are sharp and clear out any swarf as you go.

21 Now use a single pointed friction drive and a standard tailstock centre to locate the columns while you turn them.

22 Unlike the two support columns, this column has a tenon only to the bottom end which again measures 10mm x 5mm. The opposite end is more of a point and is visible, not sitting in anything but has the needle passing through it and into the arch later.

23 Dry fit the two pieces together and fit the needle. The needle is a piece of 3mm silver steel – bought online – cut to a length of 200mm with a point ground on one end with a bench grinder. You can see by this picture how far the point is coming through the bottom of the scene holder.

24 You now have two constructions – the main support base and the needle holder and scene support. You have a few bits to source so I would get to work on these so you are ready for next month.

NEXT MONTH: We will be finishing off our Christmas carousel pyramid and making the propeller that drives the scene, along with the archway that brings it all together. So until then, happy turning. ●



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Einhell
WELL DONE.

Community news

We bring you the latest news from the world of woodturning and important dates for your diary

We try to give accurate details on forthcoming events. Please check with organisers for up-to-date information if you are planning to attend any of the events mentioned.

AAW call for entries

The American Association of Woodturners (AAW) is calling for entries for the 2018 Professional Outreach Program exhibition Out of the Woods: Traditional Form Revisited. Whether you love traditional forms or are an unrepentant rule-breaker, the 2018 Professional Outreach Program exhibition offers intriguing possibilities.

Out of the Woods will premiere at the AAW Gallery of Wood Art in Saint Paul, then travel to the 2018 AAW symposium in Portland, Oregon (14-17 June 2018), where the works are sold in an online/live auction. Funds raised support POP programmes, including the Instant Gallery awards, fellowships, panel discussions, Artist Showcase, and other professional development initiatives.

The rules are simple: **1)** The piece you create must fit into an imaginary 150mm x 150mm x 150mm box as displayed. (As displayed means that if it is a nested set, for example, and you want it displayed so people can see all of the boxes, they must fit into a 6in x 6in footprint.) There is no lower size limit. **2)** The piece must relate to the theme – a short (100 word maximum) theme statement is required. **3)** All pieces are sold at auction.

Dia•Log

In addition to the exhibition the AAW has announced that the annual member exhibition title theme for the 2018 AAW



Ceremony angle bowl by Hans Weissflog from the POP exhibition in 2014

symposium in Portland is Dia•Log.

The organisation says it received suggestions that drew on Portland's history as a port city, its reputation for being eco-conscious and celebrating individuality, the city's association with roses, and more.

The theme of Dia•Log was chosen because it reflects the city of Portland's strong community spirit and the state's long logging history but, perhaps even more importantly, it speaks to the way in which the woodturning community provides common ground.

As always, the organisation looks for themes that can be interpreted in multiple ways, and this one is said to fit the bill well, offering interpretations

from philosophical to down-to-earth.

It says: "Working with wood is often described as a dialogue between the maker and the material, and art as a dialogue between object and viewer. There is also, of course, the simple truth that if an object is made of wood, it was probably once part of a log."

For full information about the Professional Outreach Program and the Dia•Log closing dates, terms and conditions please go to: www.woodturner.org/?page=CallforEntry before planning your project. Questions? Email AAW curator Tib Shaw at tib@woodturner.org.

Woodturning Cruise

The famous Norwegian Woodturning cruise on the MS *Gann* will set sail on 20 August until 1 September 2018. During the 12 day cruise travellers will be visiting famous cities such as Bergen, Trondheim and Tromsø, and many more. The turning point of travel is Honningsvåg, which is very close to the North Cape, Europe's most northern point, which cruisers can visit.

As they travel in the land of the midnight sun they will experience very long evenings almost as bright as day, culminating in spectacular sunsets.

In addition to the breathtaking scenery, there will be some of the world's best demonstrators and woodworking manufacturers on board too.

Combined with the spectacular scenery while in port or at sea, the unique shopping, wonderful excursions, the many onboard arts and crafts classes, ship activities, gallery and auction, the Woodturning Cruise is an adventure never forgotten. And for many, lifetime friendships are forged.

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The MS *Gann*



Help for Heroes: woodturning for wellbeing

Improving your wellbeing doesn't have to be about running a marathon, eating vegetables all day long or meditating for hours. Sometimes it's just about finding new ways to focus and relax, learning how to be your best.

The Help for Heroes Recovery Centre in Colchester has started offering its beneficiaries woodturning sessions. What was originally planned as a pilot once a month has turned into three or four sessions a month due to its success – nearly 100 people have attended so far.

The sessions are guided by members of the Colchester Woodturners Club, all giving up their time for free in order to teach interested veterans how to turn wood effectively. The group has been running since 1996 and meets once a month at St John's Church in Colchester. The group says it was a natural step to work with Help for Heroes as members all have family connections to the military.

Alan Essam, club treasurer and events coordinator, says: 'The beauty of woodturning is that anyone can take part, no matter what age, sex or ability they are. We even once had a gentleman attend with his guide dog. We find that with every session people's self-assurance increases and they stretch their abilities, moving from making pens, to jewellery boxes and goblets. Those who once felt quite isolated now engage more with the rest of the group and it's increased

their confidence to return to work.'

Melvin White from Colchester started attending the Recovery Centre three years ago. The 62-year-old, originally from Leicester, served in the Royal Anglians and subsequently the Corps of Army Music. After 30 years of touring in many places an old back injury and knee problems forced him to retire from his position as Band Sergeant Major. Melvin has been attending the woodturning sessions since they began.

'I did woodturning when I was in school but never really finished anything. It's very rewarding to make something useful and be able to take it home. If I'd been introduced to it earlier then I might have found a new career path. Woodturning helps improve my wellbeing as I find working with the wood quite therapeutic. It also helps reduce anxieties as when working on the lathe you have to concentrate very hard in order to not make a mistake. This focus means other worries go out the window in that moment.'

Chavasse VC House in Colchester is one of four Help for Heroes Recovery Centres.

Colchester Woodturning Group would like to thank Thoroughgood Timber, Robert Sorby and DJ Evans who have donated materials and equipment.

Contact: www.helpforheroes.org.uk/get-support
www.colchesterwoodturners.co.uk

Spalted timber survey

Patricia Vega is a doctoral candidate at Oregon State University. She is doing a study on wood spalting for her degree. OSU is a leading institution on wood and spalting. To help with the research Patricia is asking woodworkers and turners to take the time to look at and fill in her survey.

<https://tinyurl.com/y9j79xnc>

If you have questions about your rights or welfare as a participant, please contact the Oregon State University Human Research Protection Program (HRPP) office, at (541) 737-8008 or by email at IRB@oregonstate.edu

SHOWS AND EVENTS

Surrey Association of Woodturners Open Day

When: 29 October, 2017

Where: Mytchett Centre, 140 Mytchett Road Mytchett, Surrey, GU16 6AA

Web: www.sawoodturners.org

The Toolpost Open House

When: 4-5 November, 2017

Where: Unit 7, Hawksworth, Southmead Industrial Park, Didcot, Oxfordshire, OX11 7HR

Web: www.toolpost.co.uk

North Of England Woodworking & Power Tool Show

The North of England Woodworking & Power Tool Show is the largest and longest-established retail woodworking and power tool shows in the country.

When: 17-19 November, 2017

Where: Hall 1, Great Yorkshire Showground, Harrogate, HG2 8QZ

Web: www.skpromotions.co.uk

Northumbrian Woodturners Auction

The auction will feature a large selection of both new and little used goods. No entry charge & free parking.

When: 8 December, 2017

Where: Briardale Community Centre Briardale Rd, Blyth, NE24 5AN

Web: www.skpromotions.co.uk

2018 DIARY DATES

Utah Woodturning Symposium

When: 10-12 May, 2018

Where: UCCU Events Centre is located on the West side of the Utah Valley University campus at: 800 W University Parkway, Provo, UT 84058
Web: utahwoodturning.com

American Association of Woodturners Symposium

When: 14-17 June, 2018

Where: Oregon Convention Centre, 777 NE Martin Luther King, Jr. Blvd, Portland, OR 97232
Web: www.woodturner.org/page/2018Portland

AWGB Seminar

The association of Woodturners of Great Britain has confirmed the line-up for its seminar to be held 5-7 October, 2018.

The list of presenters is: Mike Hosaluk, Benoit Averly, Jean-Francois Escoulen, Glenn Lucas, Max Brosi, Harvey Meyer, Asmund Vignes, Rod Page, Gary Rance and Les Thorne.

For further details and prices go to: www.awgbwoodturningseminar.co.uk

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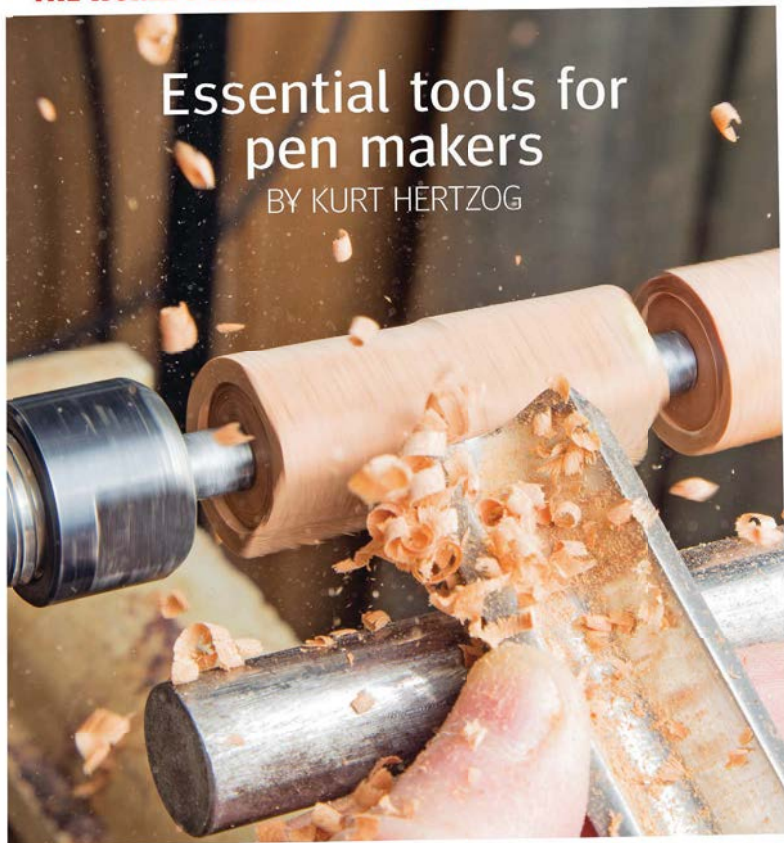


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Woodturning

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Technical: Maximising use of figured timber • Turning tapered legs
Projects: Christmas carousel • Three-centre candlestick • Four-legged bowl

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Three-centre candlestick

Walter Hall
makes an elegant
candlestick on
three centres

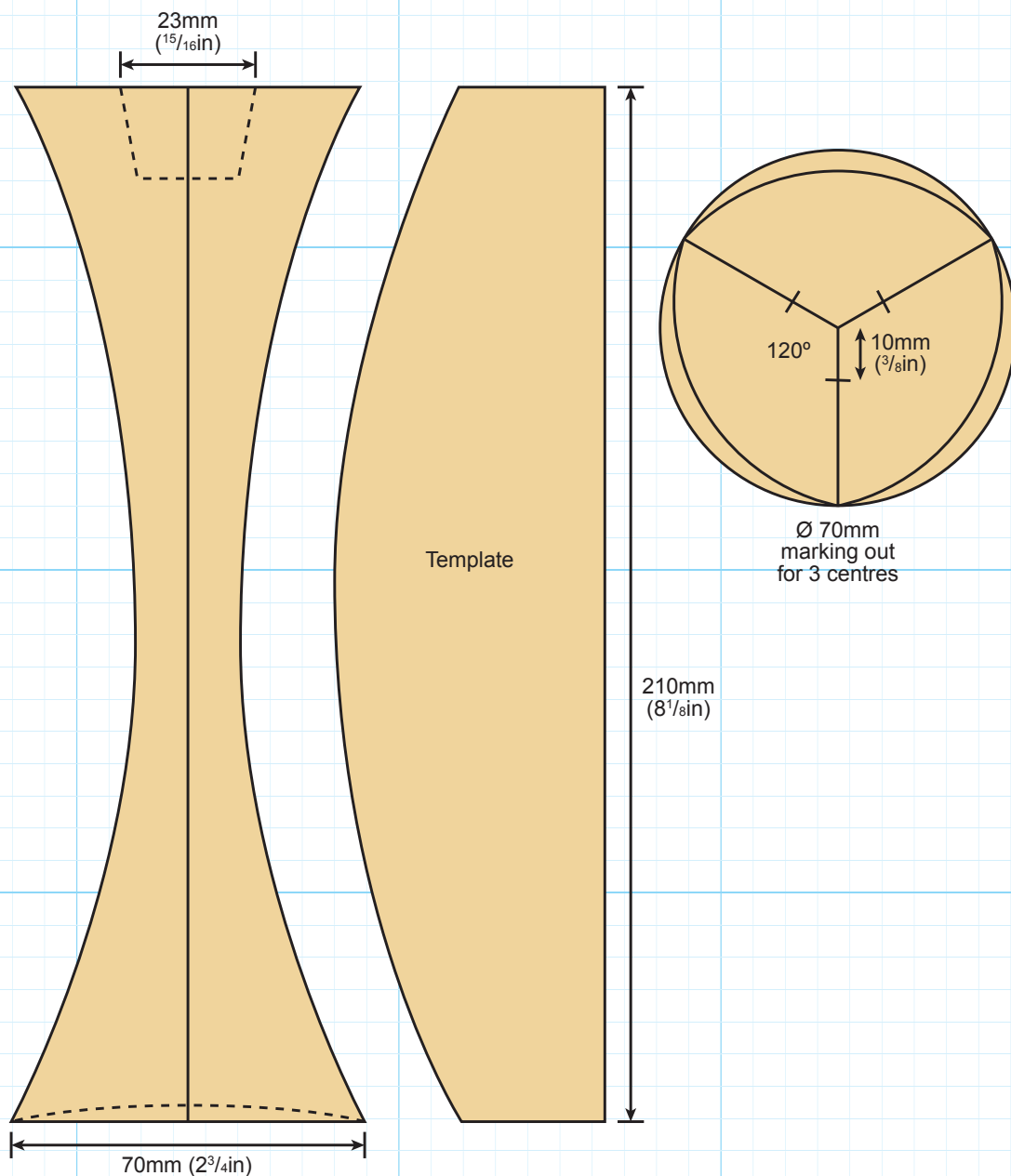
Like many woodturners I have long admired the designs of the late Rude Osolnik, whose pioneering work was instrumental in moving the world of woodturning forward from the mundane and practical to the creative and artistic. In particular I have looked in appreciation at the form of the elegant candlesticks that became his signature pieces. I do not aspire to emulate the apparently effortless elegance that Rude demonstrated in his work, but it is to those candlesticks that I must assign, at least in part, the inspiration for the subject of this article. I have also had in mind for some time the idea of turning candlesticks on three centres to give a triangular section to the form. Combining this concept with a sweeping curve which pays homage to Rude's work without seeking to replicate it gave rise to the design featured here. Two practical problems needed to be resolved to create this piece. First, the extent of the offset required to achieve the desired shape had to be ascertained and then a means had to be found of ensuring that each of the three sides had exactly the same curve to ensure clean, straight lines where they joined. The first was resolved by careful drawing and the second by using a template.



PHOTOGRAPHS BY WALTER HALL

TOOLS AND MATERIALS

- RPE & PPE
- 20-25mm spindle roughing gouge
- 10mm spindle gouge
- Parting tool
- Forstner bit (to suit size of brass cup)
- Dust extraction
- Oak spindle blank
- Brass candle cup
- Abrasives 240-400 grit
- Cellulose sanding sealer
- Melamine lacquer
- Tack cloth
- Safety cloth
- Paper towel or tissue
- Timber of your choice



SAFETY

Our recommendation is that you always use a heat shield insert of metal, glass or ceramic between the tealight/candle holder. There may, depending on the country one lives in, be specific laws/guidelines to cover the use of heat shields and also specific instructions as to distance needed between candles and tealights, where one can and cannot place them and at what distance apart and other issues such as the

stability of item, what material is used for each tealight or candle to sit in and so on. If there are guidelines, follow all of them accordingly.

General guidelines for working with candles and tealights are:

- Use a heat shield.
- If you stick the glass, metal or ceramic heat shield insert in place, use a heatproof adhesive and make sure you leave a little bit of an expansion gap between the hole and the holder insert to allow for any wood movement.
- Never leave a lit tealight or candle unattended or place one near any flammable material.
- Never place tealights or candles too close together.
- Always make sure the holder of the candle or the tealight is of a design and weight to be stable enough to stay where it is



1 Select a straight-grained blank about 75mm square and turn it between centres to a cylinder. I chose oak (*Quercus robur*). The length of the blank is not critical, but it must be slightly longer than the final candlestick to allow for a spigot to hold the work while forming the hole for the candle.

2 Once the candlestick has been reshaped it will be necessary to return it to the chuck to create the recess for the candle cup insert/heatshield. To do this it is necessary to form a spigot now. Use a parting tool to cut the spigot to the size of your chuck jaws, using callipers to gauge the size. Angle the cut slightly to form a dovetail.

3 After cutting the spigot, begin marking out by drawing three lines equidistant around the circumference. Use the indexing facility if your lathe or chuck has one or carefully mark the 120° positions on one end with a protractor. The positions of the centres on each end must be exactly aligned.

4 I cannot stress too strongly the importance of accurately marking the three centres which will define the success or failure of the project. With the work removed from the lathe, carefully extend the lines to the centrepoint at each end. Carefully measure or mark with a compass the positions of the three centres. It is also important to ensure that the drive and tailstock centres engage accurately with the centres, so define them with a centre punch. Numbering them will also help to ensure the same centres are aligned at each end when mounting on the lathe.

5 Remount the work on the lathe on one of the three pairs of centres and begin shaping the sweeping curve using a spindle roughing gouge or other tool of your preference. Repeat on each set of centres until you approach the desired shape. It is better to remount the work several times than try to cut too much at a time from each face.

6 Make a template to the design shown. You could use card, but as I intend to make at least one more of these to create a pair I used a piece of hardboard cut roughly to shape on the bandsaw and refined with a block plane and abrasives. Check regularly on each face until the form matches the template.

Top tips

- Prior to switching the lathe on, rotate off-centre work by hand to check that the toolrest position does not hinder the off-centre work.
- Keep firm pressure on the tool to keep in stable on the rest when turning off-centre work and make light cuts to minimise any knocking back of the gouge/tool when you cut.
- Using a revolving ring centre rather than a point centre helps minimise the risk of splitting end grain when holding closer to the edges of the candlestick ends.
- Candlestick inserts are available from turning craft stores or online.

Top tips

- The shape chosen for this project works well and it is a shape that is easily adapted to have a wider base too.
- While I chose oak for this project, most hardwoods can be used, giving you many options colour-wise.
- You can experiment and explore further by trying a four, five or even six-sided item.

7 Once the sides are evenly turned there should be a straight line where they join. In the photograph, the work is nearly there but some refinement is still needed at the ends. Take great care remounting on each set of centres until a perfect join is achieved. Small adjustments can be made with abrasives when finishing, but the better the tool work the less there will be to do later.

8 For reasons that should be obvious it is not possible to sand the work to a finish under power. Hand sand along the grain, working through the grits from the coarsest you need to remove any tool marks up to 400 grit. A firm sanding pad will help to ensure that you do not round off the edges and maintain a well-defined shape. I used an Abranet pad which attaches to my shop vac, but whatever you use do ensure adequate dust extraction. Wipe off with a tack cloth and apply sanding sealer between each grit.

9 Apply two or three coats of melamine lacquer to the completed sides, then remount the work in your chuck using the spigot formed at step 2. You can now begin to form the hole for the candle cup using an appropriately sized Forstner bit in a tailstock chuck. Drill slightly undersize and complete the tapered shape with a spindle gouge to achieve a good fit for the cup.

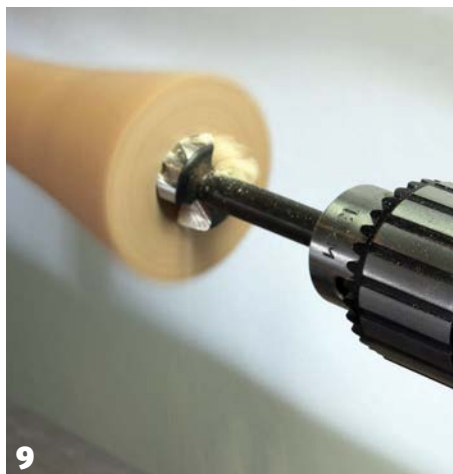
10 Using very light pull cuts with a spindle gouge form a slight hollow in the end of the work to refine the top of the candlestick. Take great care at the end of the cuts not to cause any breakout – remember that for some of the time you will be ‘cutting air’. Very light shearing cuts will give the best results.

11 All that now remains is to part off the completed work using the parting tool at a slight angle so as to form a hollow in the base that will ensure the candlestick stands steady. Make the final cut with a fine saw and finish off the bottom with abrasive before applying melamine lacquer to the top and base and fixing the candle cup in position.

12 The finished candlestick. •

Two projects in one?

If, as I did, you use a spindle blank that is slightly longer than necessary you may be left with an offcut long enough for a second project. Try a three-sided box perhaps, or a tealight holder.





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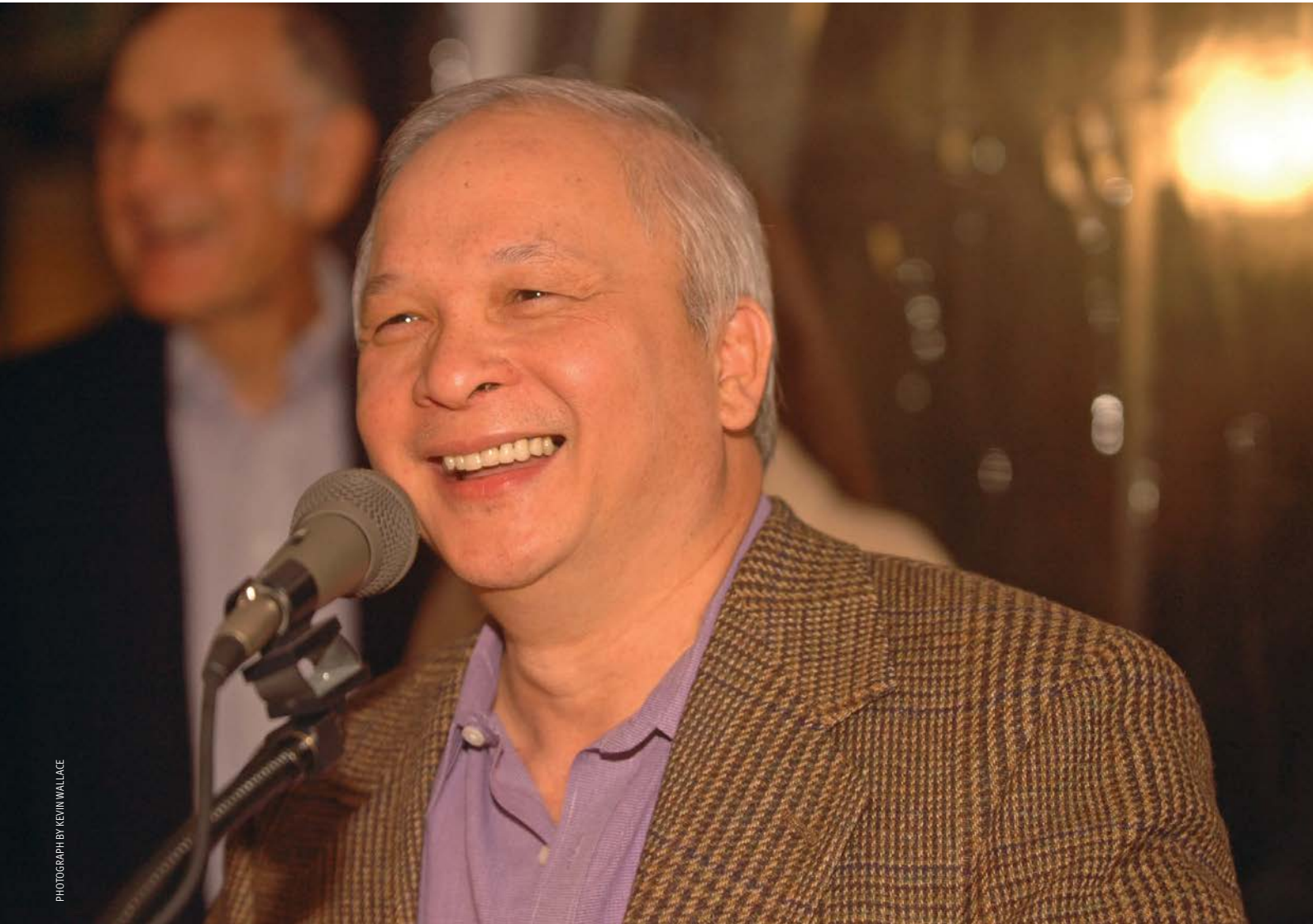
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IN MEMORIAM

Binh Pho, 1955-2017



PHOTOGRAPH BY KEVIN WALLACE

MEMORIES FROM JOEY RICHARDSON

Binh is my hero. I fell in love with his work the moment I first saw it in magazines. I was mesmerised by the intricate detail, amazed at how he pushed the boundaries and in awe of the energy and emotion radiating from each piece. I felt inspired, wanted to meet this genius and learn his techniques. I applied and was awarded the 2005 bursary from the Worshipful of Turners. Contacting Binh I explained I was an English woodturner and asked if I could have lessons with him. Binh's reply was 'can you train with anyone?', my reply was yes. Concerned he would suggest another turner this humble Master he simply replied, 'In that case I am honoured'.

Staying with Binh and his family was the most inspirational and life changing three days of my life. I was introduced to new techniques, perfected existing ones, but most vitally he showed me the importance of creating from my inner self. He gave me a new-found confidence to be free and spontaneous with my work. It was truly inspirational working in his studio under his watchful eye as he also worked on his own art and was on a conference call all at the same time. Binh not only multitasked but he never seemed to sleep. By day he worked full time as the national operations manager for Eaton Corp, a global power management company. After spending his evenings with the

family, he would then go into his studio and create his magic. He worked into the early hours of each morning producing art, challenging himself and the materials, incorporating his dreams and passions to give each piece of artwork a soul.

Over the last twelve years I have been so fortunate to have known Binh as both a mentor and a friend. I would not be the artist/woodturner I am today without him and I feel very privileged to have had the opportunity to have worked and collaborated with him.

There is hardly a woodturner among the new generation that has not been directly or indirectly influenced by Binh. Promoting and leading the field

he has opened doors, broken down boundaries and invented his own rules. Incorporating colour, piercing, texture, bronze and glass he has made anything and everything possible. Binh was the most kind and generous man, giving his time unconditionally. His generosity of spirit in passing on his artistic skills and knowledge thorough mentoring, tutoring, lecturing and demonstrating all around the world has been invaluable. Sitting on numerous boards of woodturning institutes and museums he has promoted both the field of wood and individual artists alike. Binh helped everyone, he donated so many pieces of his work, raising thousands for the future generations of turning and for people less fortunate than himself.

Binh, born in Vietnam in 1955 has lived the most extraordinary 61 years. When Saigon fell in 1975 Binh's family escaped but he was left behind in the United States embassy. Refusing to except Communism, he was imprisoned by the Vietcong. After numerous failed attempts he managed to escape in 1978 as one of the boat people. It was on this boat that he met and fell in love with Vi; they later

married and have two lovely children. Benjamin is now 22 and Victoria 20, Binh was extremely proud of them both. Binh really appreciated his freedom, he loved his work, loved his life and above all he loved his family. This love was portrayed very deeply in the autobiographical work he produced for his book *River of Destiny*, a collaboration with Kevin Wallace. Binh very kindly invited my whole family to the opening of the *River of Destiny* exhibition and book launch at the Long Beach Museum of Art in 2006. We all have wonderful happy memories of spending time with his whole family, appreciating his art, attending parties and enjoying his talks and demonstrations.

Binh was also a film star; Rory Kennedy interviewed him for her Academy Award-nominated documentary, *Last Days in Vietnam* (2014). Binh went to the Oscars. I urge everyone see this film and to read his books.

In 2013 Binh and Kevin Wallace produced *Shadow of the Turning*, a fictional story with corresponding artwork which toured numerous museums across America. I was thrilled to be a part of this, collaborating on numerous pieces and making all the

gelkandars. If you want to know what a gelkandar is you should buy the book! This story is based around three words, Dream: Transform, Live.

To me these three words reflect Binh's life. Not only did he dream, he realised his dreams. He transformed so many lives, and in the field of woodturning he lived not one, but many fulfilled lives.

The world of wood is so much richer for his contributions, but today so much sadder for his passing. To quote Kevin Wallace, 'the difference between artists and everyone else is that death isn't the end of a career, it's just a new stage of it'

Binh's work is held in many museums and collections around the world. He has taken the field of turned wood in a new direction, helping and inspiring so many. He has left us a legacy; one that we need to continue.

I visited Binh a few weeks ago, it was heartbreaking to see him so ill but he was so positive he could beat the cancer. I, like everyone else, believed he would. After all this was Binh and he had endured so much throughout his life. He gave me a blank vessel to work on, our next collaboration. This vessel now sits in my studio, an empty soul. I cannot express how much I miss him. My thoughts and prayers are with the family.

Binh, the man who never slept; father, husband, family man, artist and manager. Hero, mentor, friend and tutor to so many, may you rest in peace. *Ars longa vita brevis.*

RAY KEY PAYS TRIBUTE TO A MASTER

The world of woodturning has lost one of its most inspiring and creative makers and our craft and art is a much poorer place for Binh's passing. He was a multi-talented individual, being a superb craftsman and a true artist who helped turned wood be taken seriously as an art form. His ability to multi-task was legendary, as was his ability to operate on just a few hours sleep.

I had the pleasure of staying at his home on a couple of occasions, once for the best part a week during one of the SOFA shows. This was the time when his wonderful book, *River of Destiny*, was close to publication and each day we picked Kevin Wallace up on the way to the show. Great discussions were had over the cover photograph to be used. Kevin had a number of photos he invited comment on and I made my choice, which was also Kevin's. It was Binh's choice that made the cover. The book tugged at every human emotion; I defy anyone to read it without shedding tears.

His generosity knew no bounds, he was willing to help anyone. At the Chicago



Drifting Away, by Binh Pho

Turning Club, Binh noticed a small guy who was always at the back of the room, seemed on the edge of everything and didn't mix well. The guy in question was Don Manz, a shy man who had just lost his mother, with whom he had lived all his life. He was a lonely confirmed bachelor. The way Don told it, one night Binh came over and asked him to his workshop, Don was totally taken aback that Binh had taken the trouble seek him out. From then on Don spent about a week a month at Binh's home. He told me the last few years of his life were some of his happiest and it was all down to Binh and Vi's friendship and generosity.

One morning at breakfast I made some irreverent comment – Binh's laughter at my insult was memorable, which was typical of Binh's good humour and generosity of spirit.

It was Binh who delivered an emotional tribute at the AAW 2011 Symposium to dear Bert Marsh who had just passed away. He and Binh were very good friends.

The turning world has suffered a huge loss with Binh's passing but he leaves a huge legacy.

STUART MORTIMER RECALLS A GENEROUS SPIRIT

I first met Binh as an aspiring artist in the company of Frank Sudol. Binh had a very enthusiastic, fresh and fertile imagination towards the craft. I was very impressed when I first saw his work – it was plain to see an incredible talent in development.

From the late 1990s and onwards Binh and I met and worked at symposiums, exhibitions and museums. I was aware of his earlier history in Vietnam, his achievements and devotion to his family. He was also a very kind and modest man, generous in sharing his techniques and knowledge with others.

Binh was an unbelievably hard worker at his day job and often into the early mornings on his artwork. His work soon attracted the attention of collectors, galleries and museums. His skill and exquisite artwork in wood and glass is unsurpassed. During the early 2000s his work transformed into incredible storytelling, depicting his personal and traumatic experiences in a Vietnam prison, his eventual escape by boat with his future wife Vi, later settling in America and raising his family.

Binh was fun to be with, always had a smile with a great sense of humour. He once bought another artist's piece of work at an auction. We later drove to a party at a luxury house on a mountain overlooking Monterey Bay on the Pacific coast – the trip and Binh's driving there was an

experience to behold. He presented our host and hostess with the auction piece. Binh said to the other artist: 'It was cheaper than giving them one of mine.' The look on their face and Binh's cheeky grin said it all.

Binh was a friend and inspiration to us all in the craft; he has left the world of art a legacy and skill level for all to aspire to. It was a privilege to work with him and to be one of his friends. Linda and I will always treasure our memories with Binh, we will see his smiling face every time we see a dragonfly. He was one of life's very special people. Thank you and god bless you Binh.

MARK BAKER CELEBRATES THE LEGACY OF A TRUE GENTLE MAN

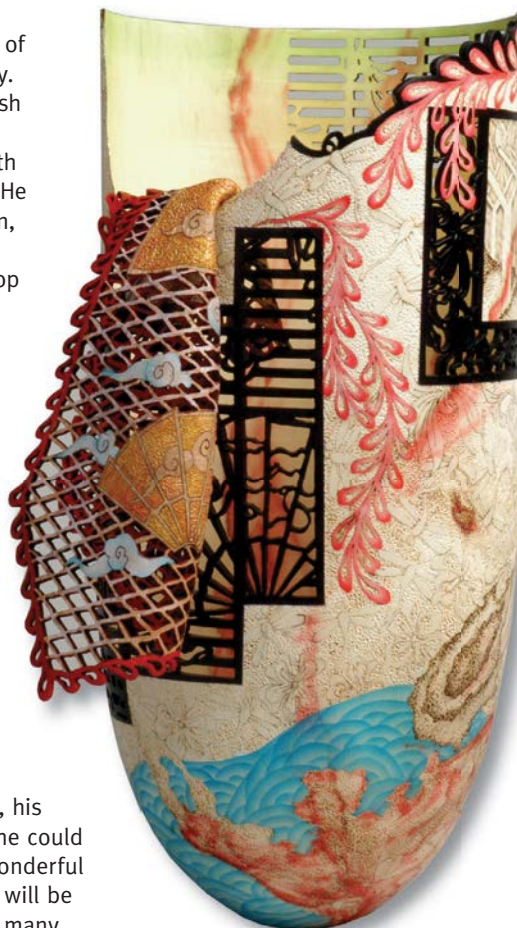
I had the pleasure of meeting up with Binh at many events in the US and in the UK. His work and the stories behind each piece always fascinated me. His work was not only a visual feast, it also made me think. Binh was a gentle man with a wickedly dry sense of humour. He was one of the few people to be always able to make me laugh. That sense of humour shouldn't surprise me really. He was great friends with Bert Marsh and he too had a wonderfully dry sense of humour. Conversations with him would always be enlightening. He was a deep thinker and would often, with the gentlest of comments, say something that would make you stop and ponder. I also loved how Binh would collaborate on works with people. Again, an example of his ability to share and his knowing that working together creates something wonderful.

Binh and I last saw each other at the Turnfest symposium in Australia in March. Even though he was ill at the time, he greeted everyone with a smile and had time for all who talked to him. He was a great teacher and communicator.

We as a community have lost a great man and friend. But Binh's infectious enthusiasm, his humour, his desire to help as many people as he could as well as his amazing work are wonderful legacies that many have been and will be influenced by and benefit from for many years to come. ●



ABOVE: Capturing Dreams – box elder (*Acer negundo*), acrylic paints, gold leaf, 405mm x 215mm dia. (closed position) 405mm x 305mm wide x 12mm dia. (open position)



ABOVE: Secret Garden by Binh Pho

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Tools for pen makers

Kurt Hertzog looks at the core tools used by pen makers

Most woodturners already have most of what they need to turn pens. There are many manufacturers that feature tools specifically for pen makers. They all work nicely and you can add them to your turning kit if you like the performance they give you. When you think of turning pens, you obviously need a lathe and a cutter of your choice but what else would be needed to let you craft pens? In this article I'll put together the items I recommend to make a very workable pen-making package. I believe it is fully functional for virtually any pens or materials for pens you'll run across. For the sake of simplicity, I'll tailor this article to the 7mm pen kit-maker, although everything here will apply to those beyond that level.

When you think of woodturning, turning pens is probably one of the safest

endeavours. The mass is low, the work holding is robust, and all of the tools, finishing and chemicals are common to the shop. Regardless of how familiar these are to you, please don't become less vigilant with your safety regimen. Follow all the good practices for PPE and safe operating procedures that you do when turning any project.

Pen mill

You can buy your pen blank, wood, plastic or other material through your local woodturning retailer. Don't be afraid to cut your own from existing stock. Nearly every kit will require a blank in the 20mm x 20mm x 140mm range. There are ways to economise on this size but, for example, that is a generous size that should do nearly any kit. The blank will need to be



Pen mills are available with different pilot sizes. I often use tape in a pinch



Using a slow speed and piloting on the tube's inner diameter, the pen mill will create a perpendicular face

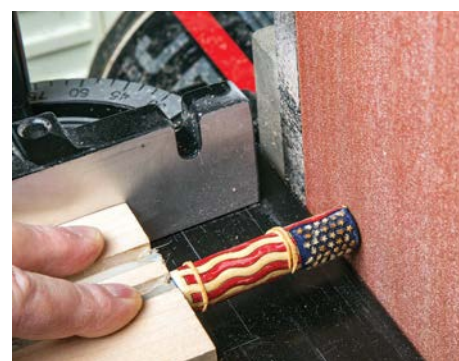
cut into two pieces of length sufficient to completely encapsulate the kit-provided brass pen tubes. You can cut the blanks with your bandsaw or by hand to obtain the proper lengths. A 7mm drill is used to drill the blanks for the brass tubes. If you

don't own one, the kit retailers have them for purchase. A drill press, pistol drill, or the lathe can be used for drilling the blank. The goal is to create the hole in the centre of the blank to receive the tube. Adhesively bond the tube as per the instruction sheet and allow it to cure. The facing of the tube ends to be flush and perpendicular is a key step to a perfect pen. The excess wood needs to be removed so the blank can be made flush to the brass at each end, being perpendicular to the brass tube. This can be done one of two ways, using either a sanding process or a milling process.

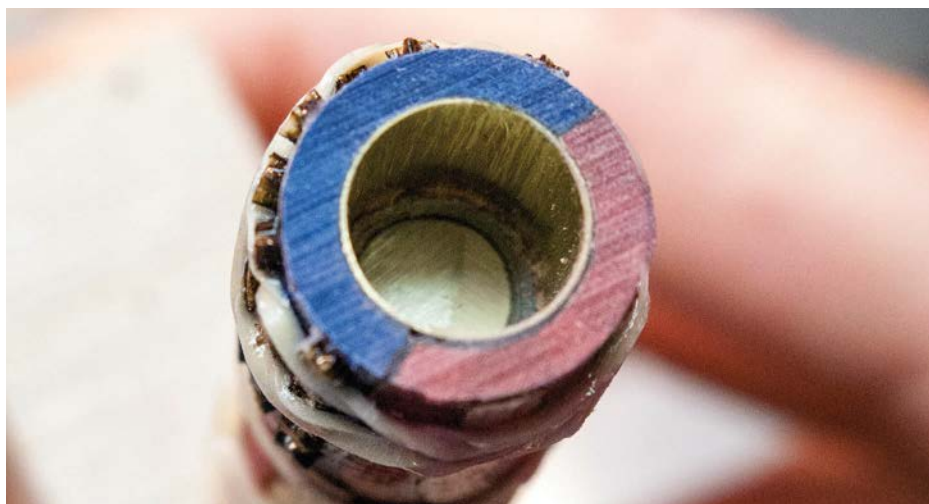
For those starting out or not having a belt or disk sander, the pen mill works marvellously in my opinion. I use a pen mill for everything except the laser cut kits. Using the mill, piloting on the inner diameter of the glued-in tube, remove excess wood until the brass tube end is just exposed and flush. Once all four faces of the two blanks are done, you are ready for turning. There are other methods of facing the glued-up pen blank which involve a belt or disc sander. These all work, including those with a sanding mechanism installed in the lathe. I believe the pen mill provides the best result at the lowest cost for most. The key is that the final faces have no sanding scratches and are truly perpendicular to the glued-in tubes (the true axis of rotation).



The facing should only be deep enough to expose the end of the brass tube



Alternatively, piloting on the inner diameter of the tube and sanding will face the blank



Care must be taken to keep the fence and the platten properly aligned to yield a good result

Pen mandrel

Pen blanks can be turned between centres. You can make up your own wooden drives or tapers to do so. Now, there are manufacturers that offer bushings for the various kits that will drive between centres. They work nicely but I'm a fan of the old-fashioned pen mandrel.

I favour the adjustable-length mandrel for a variety of reasons, so I suggest you buy that. The mandrel has a Morse taper on it at the drive end and tail centrepoint at the other. We'll discuss the tail centre issues in the mandrel saver section.



Tailstock centres have a variety of nose angles. This causes problems with the standard pen mandrel



A mandrel saver swallows the shaft putting all of the force on the bushings and brass tubes

Mandrel saver

I believe the mandrel saver is absolutely key. The traditional pen mandrel relies on a brass nut to press the blanks together on the mandrel. That compression keeps things from spinning freely as you turn the stock away. The tailstock centre presses into the end of the mandrel to keep the shaft properly located. The age-old problem is two fold. First, the angle machined into the mandrel end is rarely a match for the nose angle of your tailstock centre. With a poor fit between the two, the mandrel isn't being supported well. The other problem is that most turners use too

much force on the tailstock centre, whether the nose fit is correct or not. This tendency to use excessive force flexes the mandrel during rotation causing eccentricity in the final results. That, along with the possibility of permanently bending the mandrel shaft, is reason enough for me to recommend a mandrel saver. This device, whether purchased or homemade, removes all pressure from the end of the mandrel shaft. It places all of the necessary force to support the shaft and compress the workpieces where it belongs, on the workpieces themselves straight through to the headstock.

Turning tools

As mentioned in the opening, there are speciality pen-making tools offered by nearly all the tool manufacturers. I have used them all and they all perform well. You can pick any of these and do quite nicely with your pen-making needs. My favourite pen-making tool is a 20mm spindle roughing gouge. Properly sharpened, I find it will do everything I need on any pen I make, barring cutting reliefs for slip-over components. In that instance,

I'll also bring a 3mm parting tool to bear. The roughing gouge alone will do 95% of the pens I make. The parting tool is needed for only a few. Depending on what tools you have in your kit and which you are most proficient with, you can use any tool you own to make pens. Knocking off the corners and turning a pleasing shape to meet the bushings won't be your most challenging turning task.

Dial callipers

You can make pens by only using the bushings as your guide for sizing. This approach works but isn't ideal in my opinion. Bushings not only vary in size compared to the mating kit components, they also get smaller with use. Every time you sand your pen barrels, your bushings will get a bit smaller. Even if they started as a perfect match, time will progressively make the fit less perfect. My recommendation is that you own an inexpensive pair of dial callipers. Most people have difficulty reading Vernier callipers so buy the dial version. The don't need to be expensive. You'll be using them as a transfer measurement. Measure the mating part to know what your finished mate on the pen barrel needs to be. Use this measurement as your guide on



Parts and bushings vary in size. Bushings will continue to get smaller with sanding

how small to turn your diameter at the pressed-in ends, allowing for sanding and finishing changes in size. When the two measurements match, your fit will be perfect regardless of what the number on the dial says. The number does not need



The measurement is comparative. Any repeatable measuring tool will work fine

to be accurate to the Bureau of Standards. Only repeatable. If you already own callipers or a micrometer that you can use, you are all set. If not, buy an inexpensive pair of dial callipers at your discount tool or automotive supply source.

Abrasives

If you are using wood, you'll likely have the necessary abrasives at hand to properly sand your pen blanks for finishing. Start at the necessary low end and work through the grits until you are content with the sizing and surface finish. Usually, you'll need to sand to 400 grit but at times 320 is sufficient. This always depends on the species and finish planned for the pen. For plastics, the story is quite

different. Plastics rarely have a finish applied relying on the super-finishing of the plastic itself to be the finished product. Working with plastics in this manner requires abrasives up through the automotive finishing products in the range of 2000 grit or finer to bring the plastic to its true glory. An alternative to the automotive abrasives is a product named Micromesh. More on this later.

Finishes

Plastic pens require no applied finish. You usually will polish the plastic to a high gloss and call it completed. For woods, you can use nearly any finish you would on other wood turnings but I don't recommend just anything. Pens that will see use, as opposed to the desk ornament types, need a tough finish to protect them. Pens lead a brutal life, being exposed to everything from the bottom of purses to pockets filled with car keys and change. Their environment can range from the unheated car in the winter to the glove box on a summer's day. Any finish that is not supremely tough will wither with this use, not to mention the ongoing general abrasions and finger chemicals. I can only recommend three finishes that I believe are tough enough for pens. All three are easily applied and will provide a mechanically tough and chemical-resistant finish. These finishes, in my order of preference, are cyanoacrylate, lacquer or epoxy. All are build finishes, allowing you to apply repeated coats to increase the final thickness to your wishes. These are covered in detail in *WT298*, *299*, and *306*.



The toughest finish is needed for pens – cyanoacrylate, epoxy, or spray acrylic lacquer will provide it

Ultra-fine abrasives

I recommend that you polish or buff the finished pen tubes prior to assembly. This is easily done while you have them mounted on the pen mandrel. If you have applied one of the three finishes I recommended, you can punch them up by using Micromesh or similar micro-fine abrasives to provide a high gloss. If the finish was properly applied, you don't need to level it, only bring up the gloss. If you need to level the finish, you should revisit how to apply the finish so you won't need to level it. When you start polishing with the Micromesh, don't start at the coarsest grit. If you are using Micromesh, remember that the numbered scaling is different from conventional abrasives – 1200 on the Micromesh scale is the sandpaper equivalent of 400 grit. That is far too coarse and will remove your finish. Start about halfway through the packet and work through the grits to the finest Micromesh, 12000. At the 8000 pad – or, if using conventional abrasives, finer than 1500-2000 grit – your finish will pop. If it doesn't, you've got some improvements possible in your finish application techniques.



Ultra-fine abrasive products are key to getting the pop you'd like. Available in sheet or pads

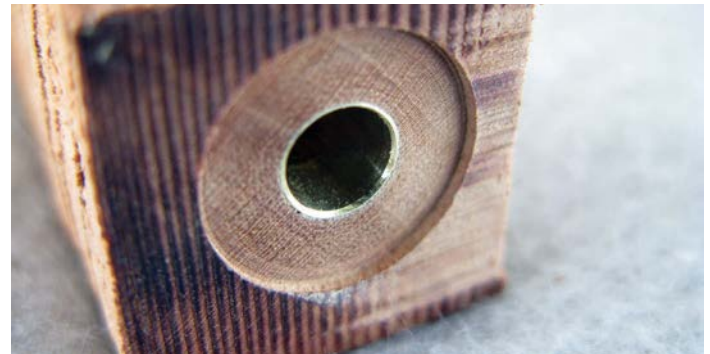
Chamfer tool

Because you will be assembling components permanently using a hard-press fit, it helps to chamfer the edges of the brass tubes prior to assembly. This helps the lead-in of the press fit and helps minimise galling of the brass pressed in pieces. A quick twist of a chamfer tool in the ends of all of the brass tubes prior to assembly is worth the time and trouble. You can

chamfer the brass tubes before turning or before assembly. A chamfer tool can be purchased at your retailer but a very modestly priced and serviceable version can be had at the discount houses. Many try to use a larger drill face but I find it less than optimal. Buy the inexpensive chamfer tool for less than a buck (or UK equivalent) and you'll be happier.



Chamfer tools are available from machine tool grade to bargain basement. They all work fine



Chamfering the brass tubes lead-ins will make the assembly process easier

Assembly

There are many ways to assemble your pen once you have the barrel parts turned and finished. With the components in hand and the brass tubes chamfered, you are ready to press the parts to complete the pen. The press fits for pens are a 'hard press'. The term 'hard press' isn't a physically stressing situation, rather an interference fit requiring a bit of force to make it happen. Following the instructions with regards to sequence of assembly, you'll need to seat some presses flush and control the transmission press to

a depth. All easily done with a variety of tools and techniques. A hand clamp can be brought to bear, although it's a bit tedious. Your drill press with a bolt clamped in the chuck to provide a press face will work. There is a pen press on offer that is designed for the purpose, but I have only found one that I feel is rigid enough to do a quality press job. A bench vice with some padding, such as painter's tape, to prevent marring will work as well. In my opinion, the best assembly press in the world is your

lathe. You already have it so it costs nothing extra and takes up no additional space. You can easily turn a couple of press blocks that will set in the tapers and use the lathe to perform your assembly. A couple of blocks of wood will work but are a bit awkward to hold. Regardless of the press faces, your lathe will provide far more force than is ever required. The control and resolution via the tailstock handwheel is exceptional for starting the press and controlling the depth-dependent presses.



A bench clamp can be used for assembly. Take the rubber cushions off



The best assembly tool is your lathe. A couple of wood blocks work well

Niceties

There are a lot of ancillary items you could buy if you wish but they are certainly optional. They may make the job easier or faster but they rarely, if ever, improve the final product. You can do very nicely with the items as listed. As a matter of fact, technique may even allow you to skip a few of those but I don't suggest it. If you own a drill press and will drill your blanks there, a pen-drilling vice is a fast way to drill blanks accurately. It can also double as an assembly vice, depending on its opening capabilities. A pen press can make assembly easier by having fixed stops rather than adjusting via the tailstock handwheel. For that final high buff, you might consider a pen-buffing system for your kit.

Niceties you might consider are: a dedicated pen press, a drilling vice and pen-buffing system



The added kit that will let you turn pens is quite simple and modestly priced

Conclusions

You can make pens with a spindle roughing gouge and a couple of home-turned tapers to turn between centres. That said, doing a quality job entails a few more items and capabilities. My recommended kit is the lathe equipment and tools you already probably own with the addition of: a mandrel with bushings; a mandrel saver; a pen mill; a chamfer tool; a pair of inexpensive dial callipers; and ultra-fine abrasives. The couple of items you can make are the assembly press fittings, drilling aid and mandrel saver. It's not a major investment to turn pens. Things do change a bit when you get to different kit complexities and non-kit efforts, but these basic additions will get you going and serve you over the long haul. Can you spend more and get more tools and equipment? Certainly. Your pocket is the only limit. These convenience additions will make your process quicker on occasion but the results will only be as good as your technique, not your tools. ●

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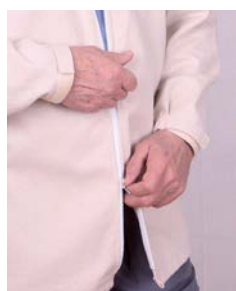
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Where does woodturning fit?

John Plater looks at whether it is helpful to categorise and label turned work



Should we attach a label to woodturning? Is it about form or function? Is it art or craft? Where does design/designing fit? Maybe the label is best left in the intent of the maker or in the eye of the beholder. Saying that is the easy way out...

The arguments around form and function were well documented early in the last century. I remember hearing Edward Barnsley speak in the mid 1970s. There he was as a direct link to the Arts & Crafts movement of a bygone age. It was surprising and yet understandable to hear a renowned traditional cabinetmaker wax lyrical about Concord. Enough said. If you get the function right it will automatically have a good form.

There is a common saying: 'He who works with his hands is a labourer, he who works with his hands and his head is a craftsman, he who works with his hands, his head and his heart is an artist.' So, if shavings are made without any particular purpose in mind maybe the woodturner is only engaging the hands, an involvement with the physicality of the activity, maybe limbering up for the main act to follow. By introducing the head the activity becomes more purposeful with a specific outcome in mind. How do we define how much 'heart' goes into a piece of woodturning? Many of my pieces are overtly decorative in nature and I am able to describe how I have responded to the natural characteristics of the piece of wood. Or how nature has taken away the geometry of

the initial turning as the timber has seasoned. Is this an indication of the involvement of the heart?

I'm not sure where design fits into this scenario. I tend to think of it as an activity so, strictly speaking, it should be designing. It is about the intellectual activity surrounding the pre-planning of a piece of work. There are many facets to this activity surrounding the material, the level of skill available to me, the constraints of the equipment available as well as the form and function of the intended outcome. I perceive many of the cut and rearranged or assembly of arts pieces of woodturning as designed items rather than as artistic items. I suspect that in common woodturning parlance design has more to do with the application of decoration to a piece. How many beads and coves have been turned and the relationship of curves and straights. In other words, its form.

I now return to my 'easy way out'. I come back to taking a personal view on the piece being judged irrespective of anyone else's labels being placed on it. The woodturner would have their own reasons for the production of a piece and the viewer of it would have their own opinions. It is a shame that a piece which is generally accepted as being 'artistic' immediately gains added value, in both an abstract and a monetary sense. What happens when that piece is judged alongside a set of stair rails? They are both woodturning aren't they?

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Australian dynamo

Australian turner Giulio Marcolongo tells Mark Baker about himself, his life and his work



I live in a small town called Wonthaggi, which is around 120 miles from Melbourne. I am married to Susan – we celebrated our 45th anniversary this year – and have four grandchildren. Wonthaggi was a black coal mining town but today the mines are closed. There are around 10,000 residents and, since the town is only six miles from the sea, it is now a tourist destination.

Contrary to belief, I was never a professional fisherman, although I did catch a lot of fish. I did a lot of fishing, hunting and shooting back then, but I actually worked in the retail furniture business for 43 years. I managed a store

for 28 of those years and on weekends and any spare time I had I laid floor coverings or did tiling to make a bit more money.

I took up woodturning in 1995. I knew some local woodturners and thought about the turning I did back at school and tried it out. I liked it and sold all my fishing gear. I turned a lot, but it was mostly on evenings, spare days, holidays and so on. I continued to work in retail and work weekends until about eight years ago when I reached 60 and retired.

BUYING A LATHE

I took advice from a good friend and one

of the best turners in our area, Oke Huitema, on what lathe to buy. He said to me; 'The better you become the more you demand of your machinery.' So I brought a TT500 lathe which cost me Aus\$5200, 22 years ago. Oke was right. I still have that lathe, but I have bought a Stubb y1000 since then which has allowed me produce a lot of the weird and wonderful pieces I like to make.

LEARNING TO TURN

From the start I thought I could teach myself. That did not work – I found that you can't when I put the skew through



Trio of turned and sculpted boxes predominantly made from she oak (*Allocasuarina* spp.)



Trio of bowls from she oak (*Allocasuarina* spp.)

the light above the lathe. So I decided to seek out a professional teacher. I was fortunate to find Vic Wood and travelled to Melbourne to take his courses. That was about 100 miles away and took one-and-a-half hours. He is the best teacher I have met even to this day. He taught me how to use the tools, understand how they work and how to cut wood. He taught the fundamentals of turning so well. These create the springboard from which people develop their skills. Bad habits hinder people. He is a gentle teacher, a quiet man, and has taught more than 6000 people to turn. Vic and I remain friends to this day.

EARLY PROJECTS

Initially, I loved making bowls and boxes and the typical turnings one starts off making. Having been armed with a good understanding of the basic principles involved in turning, I found this helped me work and turn more efficiently. The more work I produced, the quality of the work, the shape and design went from a bucket straight-sided form to those that had beautiful flowing curves.

I worked with a wide variety of timber species, including burrs and highly figured woods. The designs improved and I always looked for different ways of

extending my skills. When I ventured into hollow forms I did a couple of days with woodturner Stephen Hughes to learn hollow-form turning. He taught the fundamentals and it was up to me to develop further. He is a really good teacher too.

DEVELOPMENT

I entered a lot of competitions back then which helped me push the boundaries of my ability. I incorporated other decorative techniques into my tunings too. I did some weird and wonderful things early on, but do this less so now, concentrating

more on challenging items to develop my skills further. I try not to repeat things over and over again. I change and adapt. I never really sold turnings – it is hard to sell turnings in Australia, especially if you want to get a decent price. The USA is a better because they appreciate wood. People sell turned work for less than the cost of the wood and materials at times.

SHARING

I base my principles in woodturning on Vic's teachings – be forthcoming with your knowledge and help others wherever you can. Vic told me that I needed to go to New Zealand to the Otematata experience and while there introduce myself to a guy by the name of Dale Nish.

The Otematata Experience is an event where people bring their own lathes and wood and turn for three days. My mate Bruce Talbot and I went and loved it so much that when we got home we started one in Victoria.

There are now five such events in Australia to which people come from everywhere. We call ours the Down Under Turnaround. There are only 120 places and it is booked out every year. We have had 80 lathes going at one time.

I bet there are not too many events that can boast that and it runs basically 24 hours a day for three days at a Christian youth camp. We have had the best of the best come and teach and no one gets paid – everyone is equal.



Off-set boxes in Red gum (*Eucalyptus camaldulensis*)



Mock olive (*Notelaea venosa*) hollow form

DALE NISH

Getting back to meeting Dale Nish, I asked this short gentleman at Otematata if he could point out Dale Nish. He said: 'I am Dale Nish.' I looked at him and said: 'You can't be – you're too short. All Americans are 6ft tall. You're well under that.'

We became friends from then on and later he invited Bruce and I to be his guests at the Utah Woodturning Symposium. All we had to do was pay for our air fares. Bruce decided to buy a bandsaw and I took Dale up on his offer.

The next year he invited me to be a demonstrator at the Utah Woodturning Symposium and I have been invited back several times. The rest is history really.

This gave me the opportunity to visit many places around the US and the world. Dale Nish has helped launch the careers

of many turners from around the world and I am fortunate to be one of them. He put us up on a stage and allowed us to show what we could do with wood. The symposium has been so influential around the world, but many are not aware of how much Dale Nish and the symposium have done for the world of turning. Just recently I was talking with Nick Agar and he told me how Dale invited him to demonstrate and that helped his career too. Vic and I both received a lifetime achievement award a little while back from the Utah Woodturning Symposium Committee. It was an unexpected honour.

INFLUENCES

Another turner who had a great influence on me was Allan Batty. He once asked me what a bowl was. I could not give him an answer and he quickly said, in his wry



Sculpted form coastal banksia the middle section is from blackheart sassafras (*Atherosperma moschatum*) with paua shell insert



PHOTOGRAPH BY ALAN FOON

Internet in Australian blackwood (*Acacia melanoxylon*)

Vic Wood and Gulio with their Lifetime Achievement Awards from Utah Woodturning Symposium

way: 'A bowl is a piece of wood with a hole in it.' He told me to 'get away from turning bowls and challenge yourself and do all forms of turning'. I think, over the years, I have succeeded in that. Richard Raffan has also been a great influence. I have made a full-sized pierced tennis racket from one piece of wood with strings and all some 20 years before piercing became a fashion. I have turned square-edge bowls and natural-edge items 1m across. One job was to make 1.8m corner posts incorporating barley twists. The base with the barley twist was 380mm and tapered up. I have not tackled anything I have not completed and have enjoyed the learning process.

I have not carved much but that is not what I want people to know me for. I have carved feet on bowls and done some small carvings but, having said that, my next piece will feature some carving.

CURRENT TURNING

I like making boxes nowadays because my body is breaking down. This in part is due to my past working life carpet-laying and the heavy lifting. I cannot do the big pieces anymore. I have had three back operations, three stents, a knee operation, arthritis in the hands... But don't think that means I am giving up. I like making boxes. Boxes take little time and are not hard on the body. Effectively, anything with a lid can be a box. I try not to copy anyone but rather come up with my own designs. I enjoy the whole design process.

DISLIKES

I do not like what is happening with all these scraping tools on the market. They can certainly help people continue turning, but if people are not prepared to learn how to turn properly or cut the wood the way it wants to be cut, progress will be limited.

There are not too many woodturners out there who you can call just a woodturner. There are a lot of wood artists who call themselves woodturners too. That bugs me. They might produce beautiful work, but they are not turners.

FUTURE

I would like to see more young people introduced to woodturning. We have to grow the industry and the only way we can do that is by getting younger people into turning. It is difficult today because of the way the system is against the teaching of hand craft skills in schools. Many schools no longer teach woodwork, metalwork and so on. The governments should get their heads out of the sand, get out in the real world and provide the craft skills in schools once again as part of the mix of what children learn.

ADVICE

- Get good quality tuition, tools and lathe. If you have vibration in your lathe you can't cut the wood properly.
- My advice to wood-be woodturners is to learn to use the traditional tools properly and find someone who can teach you the right way to use them and how to cut wood properly. When you have mastered them then many tools become available to you to use effectively – your imagination is your only limitation to creating great pieces in wood.
- Practice, practice and practice some more. Nothing comes easy.
- Keep your tools sharp. To help with that, get a good sharpening system. As soon as you put any tool to wood

and have to push, it needs sharpening!

- Keep to the basics in equipment. A lot of the things on the market today are nice to have but not necessary. I remember when I was fishing – some lures are not made to catch fish but to catch fisherman. One of the best turners on the planet is Richard Raffan. He travels with half a dozen tools and makes great pieces with them. He once said to me: 'You travel with 20 tools to make five cuts.' You really do not need a lot of tools to get going.

REGRETS

I regret that I didn't take turning up earlier.

FINAL WORDS

Woodturning has been good to me. It has

allowed me and my wife to travel the world, which we would not have been able to do otherwise. I have made many friends around the world and continue to do so. I have also met and made friends with some of the best turners in the world. It is always interesting seeing what fellow turners are doing.

I have had the pleasure of sharing my knowledge and teaching a lot of people here and overseas, with each one becoming a treasured friend to this day.

So, because of woodturning, a little guy from nowhere, has been fortunate enough to have met people such as Vic Wood, Dale Nish, Alan Batty and so many others who befriended, guided, helped and made me part of the amazing woodturning fraternity. ●



Sculpted form from she oak (*Allocasuarina* spp.)



PHOTOGRAPH BY ALAN FOON

The body of this legged form is made from grass tree root (*Zanthorrhoea* spp.)



Box in amboyna burr (*Pterocarpus indicus*)



Carved hollow form in Cook Town ironwood (*Erythrophleum chlorostachys*)



Gap section
at end for
long pieces

*Sweet
16*

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Maximising use of burr material

In the final article of this three-part series, Andy Coates looks at making the most of using of burr wood in greater detail

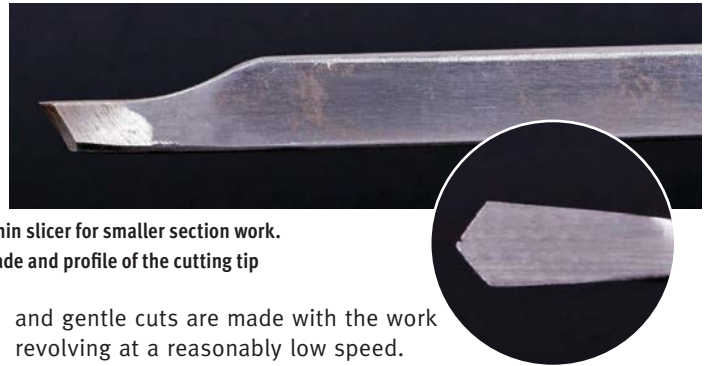
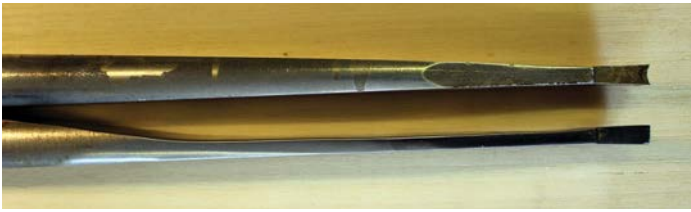
In the first two articles of this series we looked at using burr wood, paying particular attention to the associated differences to non-burred woods and problems and peculiarities of the material. As already mentioned, burr wood is usually sold at a premium price due the desirability of burr as a material. The cost is associated both with its relative scarcity, compared to non-burred wood of the same species, and also the demand for it across the range of woodworking interest groups. Flat workers such as cabinetmakers and instrument makers might require relatively thin, but sizeable, board sections, or may need others in even finer section for inlays or veneers. Woodturners generally want thicker stock, but can accommodate small blocks and odd shapes, often material which might be rejected by the other interest groups. This does not seem to result in any significant cost saving, and burr remains one of the costlier materials we use – it is therefore vitally important that we make the most out of what we have.

While spindle work is not precluded when using burr, it is less commonly used here due primarily to the reduced structural integrity of the material, and when it is used there is far less waste than when used in faceplate work, so I will not be considering spindle work in this regard. Faceplate work is certainly the most wasteful of all turning types, as evidenced by the sacks of shavings we all have to dispose of on a far too

regular basis, but it does not need to be quite so wasteful. There are strategies for reducing waste, and some I have already touched on previously. In this last part of the series I will look more closely at what can be achieved with some planning, thought and care.

Basic tools and equipment

For the purposes of this article a basic set of tools for the applicable project is assumed, and the addition here is for only a very sturdy, parallel straight-through section, minimum 13mm deep and 4-5mm wide without tapered tang parting tool fitted in a metal handle. P&N Tools and Ashley Iles sell these but they are only about 200mm long when fitted in a handle and are only suitable for small work with cuts up to about 100mm deep. The better choice, which gives more options project size-wise, is to use a straight coring blade like the small one from the Kel McNaughton coring tool range. For bigger work a specialised tapered slicer-type tool like those from Robert Sorby is required. Both of the last two options need to be fitted in a sturdy metal handle long enough to counter the downward pull and overhang of the tool encountered when coring. These two items will enable you to work up to about 150-175mm in depth of cut freehand when used in conjunction with the right length of metal handle.



ABOVE LEFT: Conventional tapered slicer from Robert Sorby. LOWER LEFT: Modified thin slicer for smaller section work. RIGHT: Kel McNaughton small straight coring blade showing the side profile of the blade and profile of the cutting tip

When working with faceplate blanks of under 200mm, a conventional tapered slicer can prove to be too wide and a thinner section tool is useful. In order to safely take rings and cores from blanks the slicer has the advantage of strength and length over conventional parting tools, which are generally not strong enough for use in this fashion, and certainly were not designed to be used this way.

With the slicer or the small straight coring blade coring cuts of up to 150-175mm in depth (approx 200mm diameter) can be taken if care is taken, the swarf regularly cleared

and gentle cuts are made with the work revolving at a reasonably low speed.

Rings up to 100mm width and 50mm thick are possible when coupled with the right length of handle attached to the blade too.

Larger rings and cores would require more specialised, heavier duty tools that would not be able to be used freehand and would require the use of anti-lift control units in which the blades are fed through to prevent grabbing and the loss of control of the blade.

Stock selection and preparation

The bowl blank is where the largest and most useful wood savings can be made, although with thought other project blanks can offer savings. When deciding to take rings from a blank you need to have some vision of the exterior shape you intend to turn, and this will obviously dictate if you can take rings and how many you can take from the blank. Due to the nature of burr, its tendency to be more fragile than solid

wood, aim for thicker rings (10mm should be a minimum) and turn at a low speed (in the region of 500 rpm depending on the size of ring). Avoid taking rings from areas with severe fractures, cracks, fissures or bark inclusions as these often result in blown rings which can represent a safety issue.

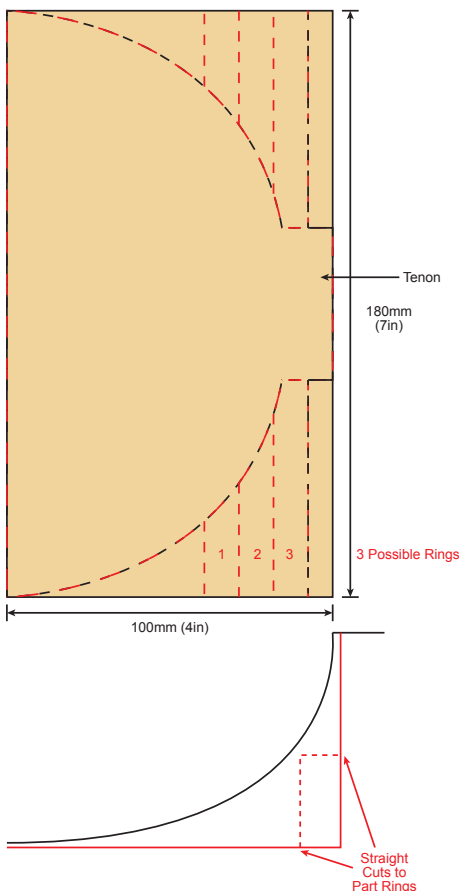
Marking out the blank prior to the operation helps focus the mind on the task at hand. For a bowl shaped as in the diagram the first ring will be the widest in section and subsequent rings less wide. All can be utilised later in some form or other, so the process is well worth undertaking.

Marking the depth of cut of both the edge and face cuts on the shaft of the slicer is advisable. On the face cut this is

particularly helpful as it gives a visual indication of when to slow the rate of cut down and prepare for the ring to part company with the blank. It is worth noting here that you DO NOT attempt to hold the ring as it parts from the blank.

Allow the ring to cleanly part off and quickly turn the lathe off. The ring will spin but the close proximity of the tool rest confines it in the tight space between the parting point and the face of the tool rest. In the vast majority of cases this all happens without any issues, but occasionally, especially with burr, a ring will crack and fall in pieces. So ensure you are wearing face protection at all times during this process.

Some losses are to be expected. At least you tried.



A typical bowl showing possible ring positions and marking out



Blank marked off and tool position



Edge cut made, face cut started

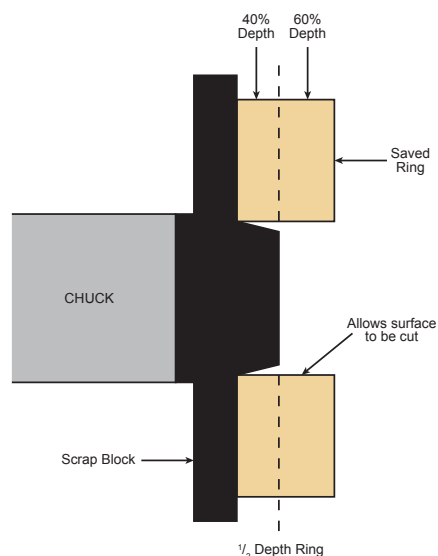


Ring parted off



A useful selection of saved rings

Using saved rings: mounting



NB: Ring held on 40% of depth to facilitate turning internal face of hole

The ultimate use of any rings that you save may not even be known at the time of taking them, but as a worthwhile practice the process is worth undertaking whenever the opportunity arises – a use can always be found later and the saving in wood will be appreciated every time you use one.

When taking the rings aim for parallel cuts on the edge cuts as this provides a flat surface to act as a register against a jam chuck later, and a straight cut on the face cut. Preparing rings for use is not a difficult process, but does require care, sharp tools and thought. Exactly how you prepare them may depend on the decided use, but as a general rule a jam chuck offers a cheap, quick and simple solution. A slightly tapered tenon is turned on a scrap disc with the intention of producing a snug fit on the interior hole of the ring. Make the tenon just under half the thickness of the ring to allow reversing to clean up both sides of the surface of the interior hole.

If the ring is to form the surround of a picture frame, dressing table hand mirror, or similar function, then the required recess can be turned at this point.

A snug fit is usually sufficient to hold the ring for cleaning up the surfaces, but if there is any uncertainty you can use duct tape or hot-melt glue to secure the ring.

If the ring is to be used as an inlay, the face and edge surfaces can be cleaned up and flattened at this stage. The ring can then be let into and glued into the mother blank and the top surface then turned accordingly.

By their very nature saved rings can be delicate when compared to other blanks, and sharp tools and light cuts are required



Preparing a jam chuck from scrap wood



Extra security from hot-melt glue



Extra security from duct tape

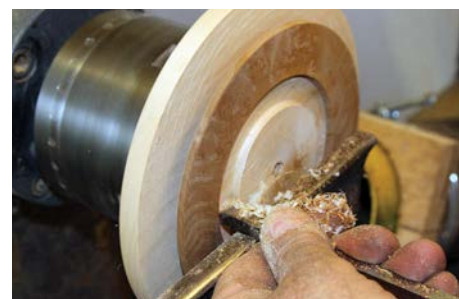


A tight fit holds the ring securely

to succeed. While the jam chuck is my preferred option you may find that you can mount the rings in Cole jaws, large conventional jaw sets, or some other means of your devising, but whichever method you decide on ensuring the ring is firmly and securely mounted is key to success. Experiment with the options until you find the solution that suits you. One thing worth noting is that holding rings in a conventional jaw set in expansion mode requires some care. Scroll chucks exert extreme pressure in expansion mode and a ring can easily be burst while mounting or, even worse, as the lathe is powered up and centrifugal force adds its own impetus to the force equation.

FINDING A USE FOR SAVED RINGS

Once you get into the habit of saving rings you will begin to see potential

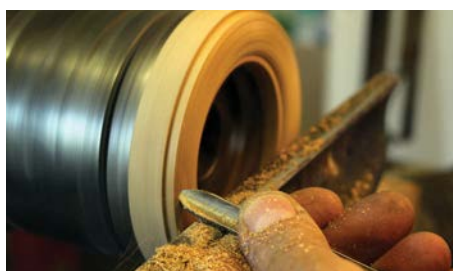


Taking delicate cuts

uses for them. Picture and mirror frames are obvious uses for rings of sufficient dimensions. These present a particular set of challenges in as much as they often require reversing and turning on both faces to complete, but with thought both are achievable projects, and the satisfaction of using saved material is not to be underestimated.



A picture frame



A hand mirror frame



A separate saved core and ring joined to make a lid

◀ Saving central cores

Saving central cores from bowls is more difficult than taking rings, but an equally, if not more, valuable practice. Bowls above 200mm can be cored with a dedicated coring system, which is a far less stressful and wholly preferable situation, but that shouldn't mean we waste valuable material on blanks of sub-200mm dimensions.

A dedicated slicer tool, effectively an oversized parting tool, is the preferred tool for this job as its strength and length are designed to take the considerable stresses exerted on the tool and the user during the process. In order to remount and use the resulting core, it makes sense to turn either a tenon or recess on the face prior to coring. It helps considerably to know the depth you need to core to, and to mark this on the top of the tool shaft. Essentially you are taking a diagonal cut from the point of the wall thickness to the centre of the blank at about 10mm above the wall thickness. The additional 10mm of depth allows for final shaping of the donor bowl.

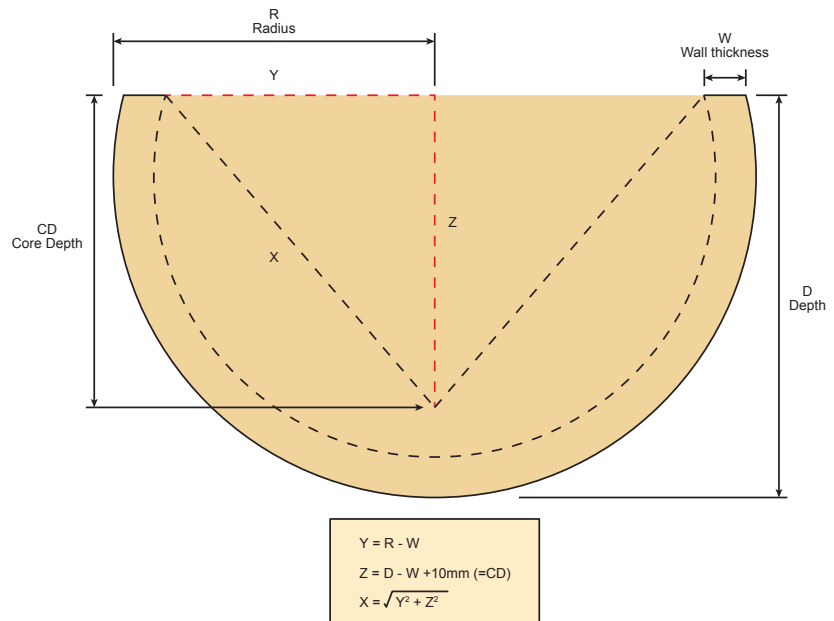
You may find you can do this by eye, or you can resort to making a scale drawing and measuring the depth of cut required – or the mathematically-minded may quickly work out the depth of cut using the equation on the diagram.

Cuts are made in a diagonal line and may require a relief cut to reduce abrasion and consequent heat build-up due to friction. This can result in the tool tip expanding and binding in the cut. Allow the tool to cut at its own pace, and remove the tool frequently to eject the shavings. Try to ensure that the tool is supported directly over the central stem of the toolrest for maximum support during the cut.

A common error when first trying to core is trying to save too much in the core. This usually results in losing, or at least compromising, the donor bowl, which makes the whole process pointless, so don't be greedy – take what you can safely and be content to have saved something.

Coring is done at relatively low lathe speeds for safety (500-600rpm depending on blank size), and knowing when the cut is coming to an end allows the turner to slow the rate of cut down and prepare for the core to part. It is not always necessary to part to completion, often a central core of 10-15mm can be left and, with the lathe stopped, the core can be flexed until it snaps out.

Alternatively continue with the cut until the core parts off. It will spin to a stop, but as it is not being driven by the lathe this is rarely a problem.



You can eyeball where to cut, but working it out provides greater accuracy



Using the slicer to core



Parting the core



A core used to produce a pedestal bowl

The only notable difference between taking cores from sound wood and burrs is the potential for voids and cracks to cause issues during the process. Take care and make the cut slowly and gently, allowing the tool to do the cutting without forcing the cut. Remember that you might be saving nearly 50% of an expensive blank, so the time and effort is well worth expending.

Potential problems with burr

- Loose bark
- Embedded stones, grit, foreign objects, dirt
- Voids
- Irregular surface leading to holes forming in vessels
- Areas of very hard to very soft wood
- Highly variable grain direction

Some of the ideas discussed

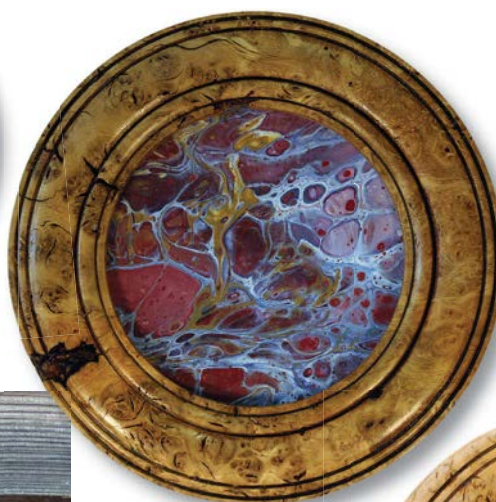
Each of the objects here has been made by incorporating either saved rings or saved cores or, in fact, both elements. Your imagination is the only thing that will hold you back in conceiving new ways to use them, but the joy is in knowing that these small inclusions have effectively cost you nothing. Use them to increase the size of a too-small blank, to add interesting and contrasting detail, to serve as chapter rings on clock faces, to produce donut-type sculptural pieces, inlays in box lids or bowl rims, to produce nested sets of two bowls, an alternative style bowl to the donor, or whatever else you can think of – the world is your oyster. Just remember to do it safely and consider the delicate nature of the material.

SAFETY

Turning burrs can be hazardous. There is a genuine risk from flying pieces of bark, detritus, stones and, in extreme case, pieces of the vessel itself. Learn to listen to the sound of the tool on the wood – often this will provide the first indication of a potential problem as the note changes. If you are concerned, stop the lathe and examine the workpiece. Are there voids? Are there cracks or fissures opening up? Is there some debris that the tool is catching? If the answer to any of these questions is yes, then you need to either deal with the issue so that it is safe to continue turning, or discard the workpiece as unsafe. An unresolved risk is a bad risk. Don't take it.



Hand mirror turned from saved burr oak ring and chuck waste for back



ABOVE: Picture frame from saved burr oak ring
RIGHT: The same frame used as a mirror frame



Wall plaque comprising three large saved rings and a small core



Round-bottomed bowl made from saved core and two saved rings

Conclusions

Saving rings and cores may seem to be an unnecessary fuss, and woodturners often want to get straight on with the project and get it finished, but with expensive burr or figured material it makes financial sense to recover whatever you can and use it. In an environmental sense we owe it to the tree as well as our pocket to get as much as we can from all of the timber we use.

Aside from the savings made it is also a useful process for developing skills – taking accurate dimensions and transferring them, cutting cleanly and parallel, working with more delicate wood, making jam chucks and fitting rings into other projects. All are useful skills to develop as turners and all are transferable skills. ●

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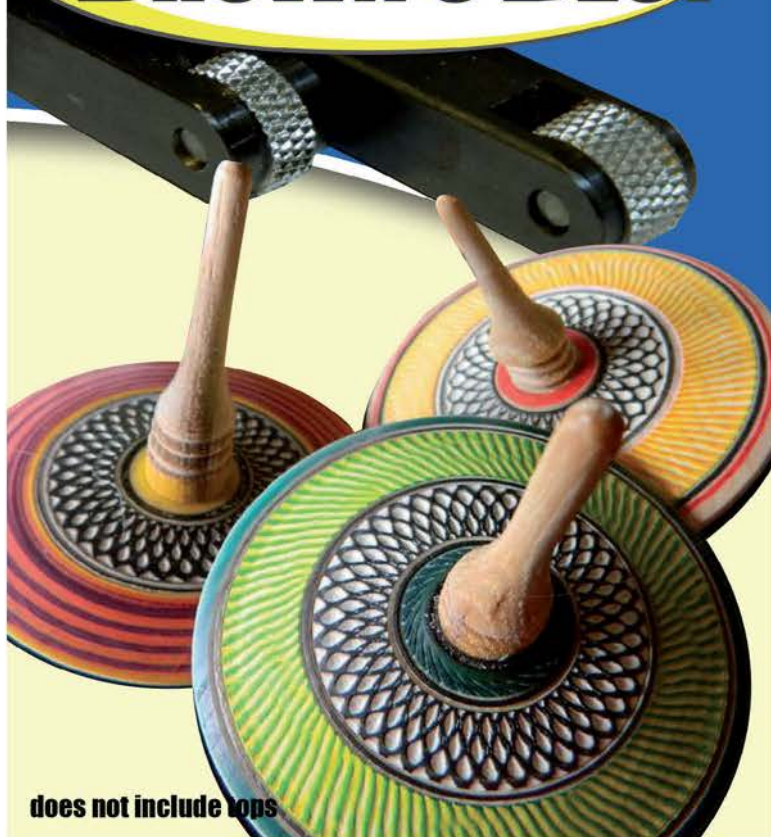
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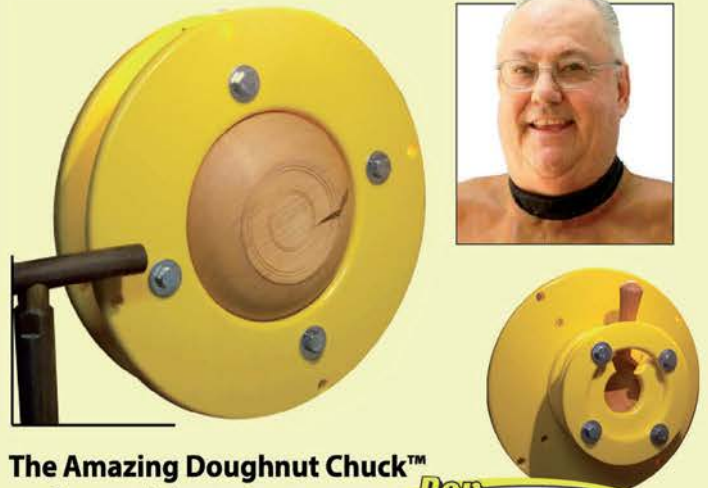


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Four-legged bowl



Pat Carroll makes an
oriental meal-inspired bowl

This project was the result of a night out to the local Chinese restaurant, while munching on prawn crackers and playing with chopsticks. A rather large cracker appeared and soon had four holes in it. With four chopsticks applied for legs, the idea was born and the cracker eaten shortly thereafter. Oak (*Quercus* spp.) was decided upon for this project for no singular reason. A mix of woods may be used as the legs of the bowl are dyed black. Two different styles of legs are created, one incorporating a simple pyrography design. The other style uses a slight

curve at the base of the leg. A mortiser was used to cut the square holes in the legs to attach to the bowl. This can also be achieved by drilling a hole and refining with a wood chisel. Two methods of holding the legs for turning are described in this article – one uses paper glue joints and the second uses pressure from wooden chucks. Using scrap pieces of wood as guides, the piece is glued up using rubber bands as clamps. The process and project are subject to the interpretation of the individual.

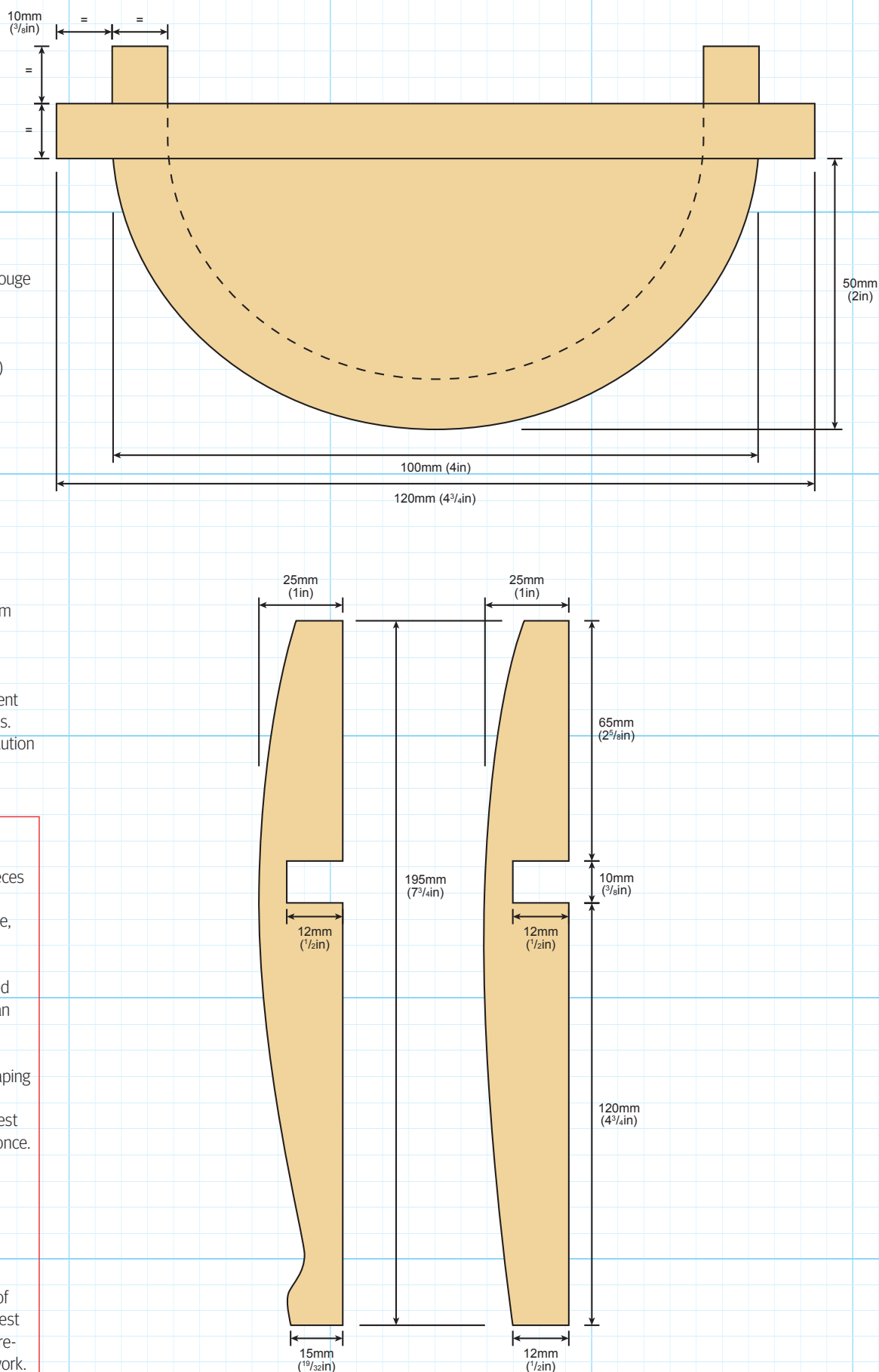
TOOLS AND MATERIALS

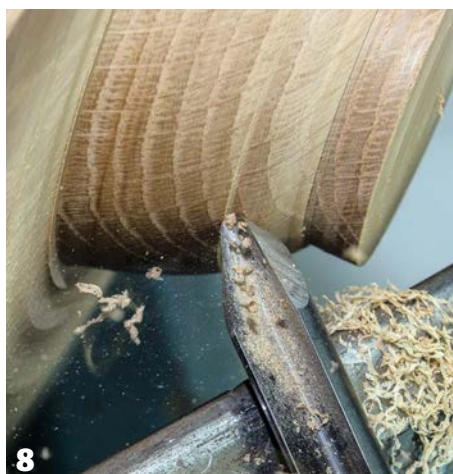
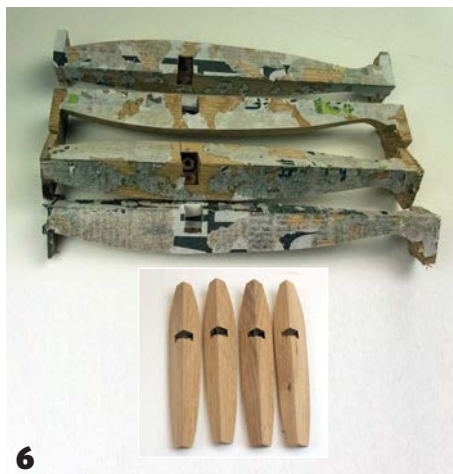
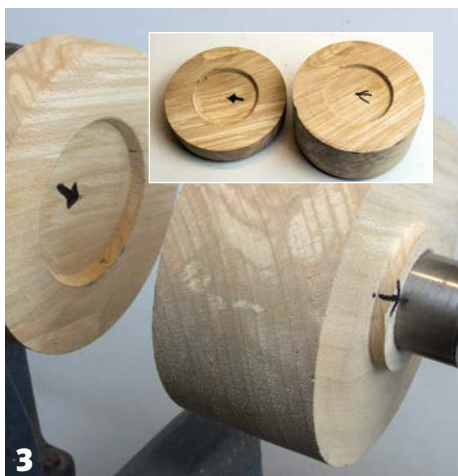
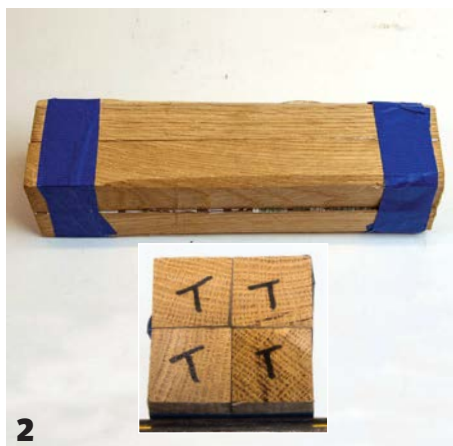
- RPE & PPE
- 25mm spindle roughing gouge
- 10mm bowl gouge
- 4mm parting tool
- 6mm parting tool
- Pyrography tool (optional)
- Rule
- Rubber bands or clamps
- Black wood stain
- Acrylic lacquer
- Two part epoxy or similar adhesive
- Sandpaper
- Mortiser (optional)
- Drill and 10mm drill bit
- Oak (*Quercus* spp.)
- Bowl 25 x 80mm x 80 mm
- Four leg sections 125mm x 30mm x 30mm

All dimensions and equipment used are merely suggestions. Always err on the side of caution regarding safety issues.

SAFETY

- When turning glued pieces between centres such as outlined in this article, ring or Steb revolving centres or similar are advised. Using a pointed centre with pressure can split a glue joint and/or split any nub of timber underneath it while shaping the underside of work.
- Safety rules are your best tools. Think twice, cut once.
- Stop the lathe before altering the position of the tool rest and check the work is clear of the rest before starting the lathe again.
- Always have all parts of your body behind the rest when working on square-edge or natural-edge work.





1 Once the oak pieces were cut and the positions marked for where to cut the mortises, I made two sets to show an alternative pattern. An extra piece was cut for trial purposes and unforeseen mistakes. Note the square piece of wood to fit into the mortises to maintain correct alignment. Use a 10mm chisel in the mortiser or cut by hand the recess on one side. Then rotate the piece and cut again from the other side. Repeat for all the pieces. This process was carried out on a scrap piece of wood first to ensure accuracy.

2 For this article two methods were used to secure the pieces for turning. The first was a paper glue joint. Both sides had a layer of PVA glue applied with a piece of newspaper inserted before clamping together and being left to dry. The other method used is a jam fit chuck. After clamping, the glue was fully cured. Masking tape was added as a further precaution. Be sure to mark the top and bottom of the leg before gluing as the mortise is not in the centre of the leg. Both sets of legs were turned using the jam chuck for safety. The glued legs can also be turned between centres (see safety note in side bar).

3 Use two pieces of wood for the jam chuck. The first is mounted in the scroll chuck and a hole created to fit over the live centre in the tailstock. Then a spigot is formed so it can be reversed into the scroll chuck to form a recess for the legs to fit. The recess is slightly tapered, so when the tailstock is tightened the pieces are compressed and centred. The second piece is then held in the scroll chuck and the same size recess created.

4 With the pieces now held between the jam chucks, the turning can commence. Use a spindle roughing gouge to remove the bulk of the waste. Make light cuts, check-stop the lathe and check everything regularly.

5 Use a 13mm spindle gouge for the final shaping. The tip of the tool allows access into the corners.

6 Use a utility knife or similar blade along the joints to separate the parts, keeping hands behind the blade. Once separated, sand the glued faces flat. Once the legs are sanded they are ready for further enhancement.

7 Now accurately mark the centre of the perfectly square bowl blank and drill a hole in it to suit your screw chuck. Once mounted on the screw chuck, use the tailstock to mark the centre of the underneath of the bowl for future use when removing the spigot. The spigot size is just over 50mm in this case.

8 Use a bowl gouge to shape the bottom of the bowl. Using the lower wing of the tool with the flute pointing in the direction of cut, make very light cuts to ensure the corners of the piece are maintained. Speed is kept as high as safely possible, with safety being the main concern. Higher speed reduces the hit-and-miss action of the square corners by reducing the time the tool is in negative space.

◀ **9** With the main shaping of the bowl done, clean up the spigot for the chuck jaws you use.

10 Now, use a straight edge to check the underside of the rim. Adjust as required to get it straight. A scraper is ideal for this purpose. The legs need to sit at 90° to the bowl's body.

11 Now it's time to sand the underside of the rim and the main body. The winged section is sanded with the lathe stationary by wrapping abrasive around a flat piece of wood, helping you to sand right up to and including the intersection with the main body. For the main body, move the toolrest out of the way, start up the lathe and, keeping clear of the wings, present the same abrasive and block trailing downwards, which is a negative-rake presentation angle, on the lower section of the bowl.

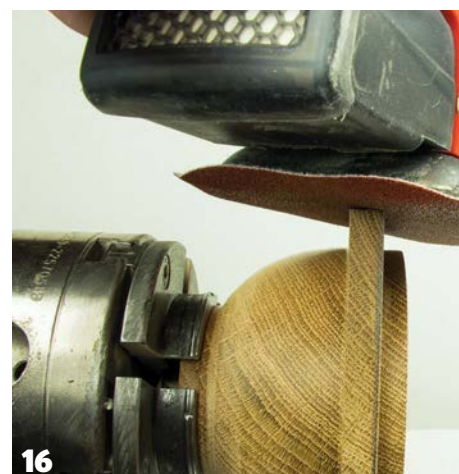
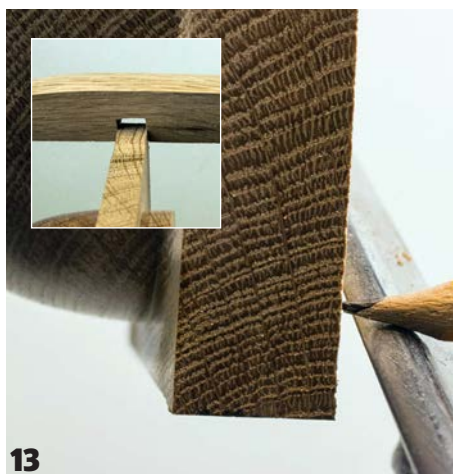
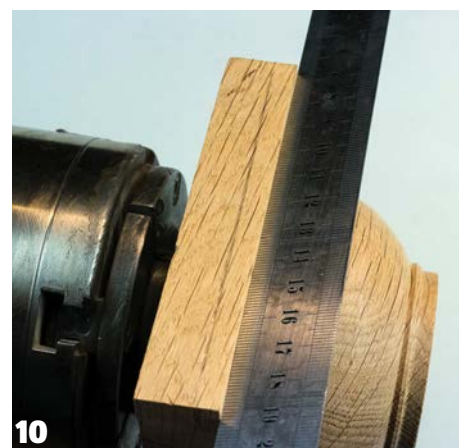
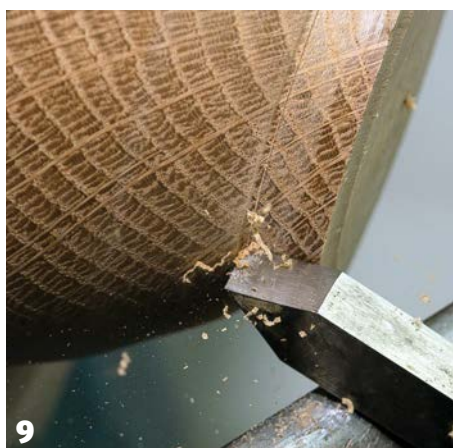
12 Once sanded, remove the bowl from the chuck, reverse it and secure the bowl on the tenon you cut. Once secure, true up the face of the bowl using the long wing of the bowl gouge in a light, gentle pull cut, in scraping mode with no bevel rubbing. You can use a push cut if you wish, but it means entering into the edge of the corners of the wings of the bowl. Keep pressure on the tool down on the rest and use only gentle pressure of the gouge against the wood as you scrape/cut the surface.

13 Draw a line on the face of the bowl, which represents the rim of the vessel projecting through the square of the piece. Then draw another line on the outer edge to define the wall thickness. The amount the vessel projects through the rim is equal to the thickness of the square rim and the wall thickness of the piece (10mm). Use the leg for a guide to check the correct thickness needed for the square rim. Once you have your wall thickness and so on marked, start the lathe and use a parting tool to cut a groove just wider than the outside edge of the outer rim mark, then use a bowl gouge in gentle scrape mode to reduce the protruding wing rim thickness down to just thicker than the thickness required. Then use a flat scraper to clean up the face to dead-flat square to the edges.

14 Now use a parting tool to cut a guide line groove approximately 1mm away from the marked internal wall thickness line. This allows for a cleaning cut to be taken with the bowl gouge and for sanding on completion of cutting later.

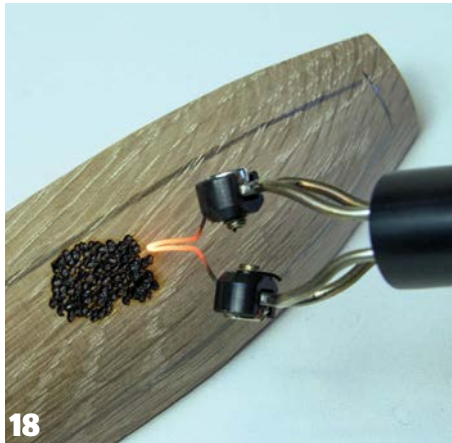
15 Use a bowl gouge to turn the inside of the bowl. Stop the lathe regularly and check with callipers to ensure you have a consistent wall thickness. Once turned, the solid internal areas can now be sanded with the lathe running, of course keeping every part of your body and the toolrest clear of the spinning corners by keeping them on the tailstock side of the tool rest. Work down to 400 grit. Once sanded, stop the lathe and sand the protruding corners in the same manner as step 11.

16 Now sand the wing edges flat using the sanding block or a power sander.





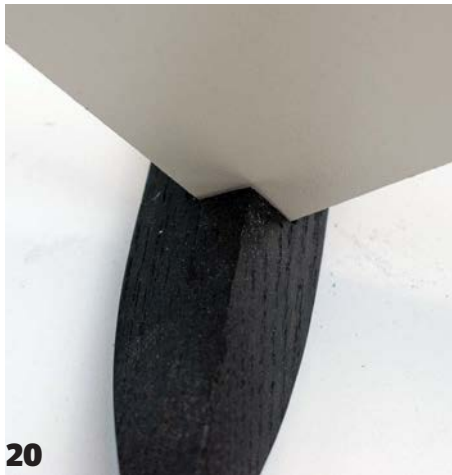
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18



19



20

17 Remove the sanded bowl from the chuck and mount one of the jam chucks shown earlier in step 3. Once secure, use a parting tool to cut a groove/recess into the wood that will match the diameter of the round rim of the bowl. You need to be able to gently push the rim into the recess and for it to be a nice, secure fit. Use a piece of tissue paper in the recess if you like to create a snug fit which will not mar the sanded surfaces of the bowl. Once you have a nice snug fit so the bowl cannot come out unless you exert a fair amount of pressure on it, bring up the tailstock for support. Set the lathe to a low speed and check that the bowl is running concentrically. Once true, turn off the bottom tenon/spigot to create a nice round bottom. Once shaped, sand all the areas you can reach. You will now have a dimple of wood under the tenon left. Remove the tailstock and, only if the bowl is secure, use a low speed, turn off the dimple and sand the piece. If the bowl is not secure enough, stop the lathe, remove the piece from the jam chuck, carve off the pip and sand the bottom.

18 The legs are now ready to be marked out to be embellished, using a simple pyrography technique. Mark a pencil line 5mm from the outside all around the leg on all four pieces. Using the pyrography pen, in conjunction with an extraction fan for the fumes, a simple pattern of dots can be applied. Start somewhere between the line and work out towards the marked line.

19 With the pyrography finished on all four legs, both sets are coloured black using a spirit dye. In this case the dye was liberally applied using a brush. Two coats were applied.

20 Two pieces of 4mm MDF need to be cut to the same size as the bowl – 125mm. A corner is offered into the bowl and marked with a pencil. The four corners are marked and cut on both pieces. These pieces will act as spacers to help attain correct alignment on assembly.

21 All the legs and bowl are finished with several light coats of satin lacquer, de-nibbing with 320 grit sandpaper. Building up the finish gradually gives a far better finish than trying to do one heavy coat. It is easier to get an even coat on the pieces when unassembled. All the pieces shown are ready for assembly.

22 The legs are then fitted to the piece with a two-part epoxy. A dry fit is recommended first to ensure everything fits nicely. Mix the epoxy adhesive thoroughly and, using a small brush, apply it to the recess of the legs and fit them to the body of the bowl. The square pieces of MDF are fitted between the legs and if clamps are not available, use rubber bands to hold everything in place until the epoxy sets.

23 The finished pieces with the optional legs. ●



21



22



23

hamlet

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INDULGE YOUR PASSION!

Do I really have to look after myself at work?

Geoffrey Laycock discusses safety issues

After over 40 years in the safety and health profession I retired this year and I do not miss it one bit. Obviously, I am still involved a little and writing is one of those things I will continue to do. One reason I am pleased to have left this behind is the constant media grumbling about 'elf 'n' safety and all the stupid examples they and people in general quote as why it has 'gone mad'. Yet one major, very tragic event recently and everyone starts to say there is not enough regulation, ask why things are not enforced, and health and safety is so important. The reality is that we are not over regulated. When I was a new Inspector of Factories in the 1970s there were more than 1000 sets of Regulations and Orders in effect. My favourite was the Gut Scraping and Tripe Dressing Welfare Order 1920 – yes it was all very specific back then and most have now gone.

Why do people complain about it being over the top? Well, mostly because of stupid stories relating to activities being stopped, people being banned etc. and almost always these are not real issues. Safety is often used as a good excuse to stop things for other reasons. If you want to find out more, go to the HSE website and look for health and safety myths. The other reason is involvement of people who have little knowledge of what they are professing on. One example dear to our hearts: some councils quoting safety as the reason for cutting down healthy trees rather than maintaining them, one explaining children may climb them and fall out. There are no regulations requiring trees to be cut down to stop children climbing them. Climb, fall out, break arm, learn lesson?

The biggest change to safety law since the first Factories Act in 1832 was in 1974. Many occupations not previously covered were brought under the law – education, armed forces, healthcare being examples. The self-employed also became responsible for their own safety and health, and that of anyone else who may be affected by their actions. The requirements included carrying out risk assessments for your activities and putting suitable control measures in place.

As an example, we are aware airborne



Safety professionals are not boring. A couple of years ago I thought about rekindling my free-fall parachuting days so had some practice time in a vertical wind tunnel – air at 140mph gives a very unflattering look

dust is a hazard for turners, assessing this and using the correct CE-certified protective equipment was legally required.

All a good idea that was eventually diluted thanks to the efforts of those in government wanting to reduce red tape. In 2015, the government produced The Health and Safety at Work etc. Act 1974 (General Duties of Self-Employed Persons) (Prescribed Undertakings) Regulations 2015. Yes, they really know how to make long names. So where does this leave you?

You make things as a hobby – then you did not have and still do not have any legal duties. You can do what you want and use any or no respiratory protection. You are self-employed as a woodturner, from 1 October 2015, you ceased to have any legal duty to look after yourself while working. The legal duty to assess risks or

even use approved CE-marked respiratory protection disappeared.

The Regulations do have a list of occupations that continue to have the same legal duties as before but we as a community are not included. But, if your work could be a risk to others, then you are still legally responsible. For example, if you teach others then you are.

Putting aside any legal arguments the obvious logic would be that if your income depends on continuing to work you would prefer to not be injured or suffer ill-health anyway. The simple objective is to leave your workshop at the end of each session in the same physical state as you started. That means you would want to understand the hazards and risks and do something appropriate about them. If it is your hobby the same logic surely applies.



Turning an end grain box

Chris Hart continues exploring lidded forms by looking at the core elements of making an end grain box

Picking up on the points raised in last month's article, we look at how this works in practice by making a straight-sided box from spindle-grain oriented timber, which, by its very nature must be considered functional, therefore leaving little room to introduce much change in the basic body form. One way to introduce pleasing form to an otherwise plain box is via the lid design, which can be achieved without compromising the function. Making one base with multiple lids is a great exercise in exploring the possibilities of form following function and also a great way to develop one's cutting skills. So, for this article three lids will be made for the body of the box, each with a variation in form. However, each will still adhere to the functional element. This is an ideal introduction to box making. Encompassing all the skills required, it is an ideal

opportunity to practice turning and hollowing a parallel cylinder in end grain, making lids that fit, using spindle gouge bevel rubbing techniques, re-chucking and so on. You will also have a lot of fun.

Cutting and initial turning

The timber I have used for this article came from a storm-fallen ash tree (*Fraxinus excelsior*), but most hardwoods make ideal candidates for turning boxes.

The ash I used was converted more than four years ago, the moisture content was about 12%. Because the blank was quarter-sawn and I had used other blanks from the same source, I was aware of the working qualities and happy that it should not present any issues. However, I was acutely aware

there would be movement once the stresses were relieved, together with further moisture shedding, resulting in ill-fitting lids also. The situation was exacerbated by the need to have three nicely fitting lids on the same body. So I rough-turned all four blanks and left them to stabilise before finishing turning.

Requiring four pieces, I cut the body and three pieces in various lengths for the lids on a bandsaw. I did it this way to save on waste involved with parting off, also for a better grain match on the first lid. Although the other two would not be an exact match, the grain was straight so the match would be acceptable. You can turn boxes in one go from start to finish

using dry timber, but the wood will move due to tension release. That means if you create a tight fit for the lid to base today, tomorrow you may find the lid is tighter due to movement. So, if you turn a box in one go, create a fit that is looser and takes into account this movement. You will need to work out a shape of box that will not show so visibly any movement. A pure, straight cylinder box would show any differential lid movement, whereas a lid that was wider than the lower box section would not show the movement misalignment as much or at all. So, whether you rough turn, set them aside and go back to finish them later or turn in one go – it's your choice.

Rough turning

The objective of rough turning, also called twice turning or two-part turning, is to speed up the drying process by relieving the stresses and reducing the volume and thickness of wood. This in turn will lessen the possibility and limit the amount of distortion (warping) that occurs when timber sheds water. Part one consists of turning the blank into the desired shape while leaving sufficient material to 'true up' and finish the article, remembering that the whole of the box (in this case), including the inside, will need re-turning. Also, the chuck spigot will have distorted, causing imbalance when re-chucked.

How much extra timber to leave on will depend on the species, the moisture content at the start and, of course, the size. Experience is the best guide, but one must start the trial-and-error process somewhere. The usual guide is to allow 10% extra wall thickness than the finished size if working on boxes. If working on bowls, it is an extra 10% or so on the overall diameter of the blank. One example of, say, an ash box 75mm in diameter and 75mm high, with the lid accounting for one third and a starting moisture content of, say, 15%-20%, with desired wall thickness of 5-6mm, an extra 5mm should be sufficient. Once part one is completed the whole box needs to be weighed (kitchen scales are ideal).

The weight and date need to be

noted and the piece left in a warmish place with plenty of air changes.

In my case I put them on a high shelf in a utility room, which has the boiler, fridge/freezer and a washing machine all generating small amounts of heat, together with an outside door. By weighing the items weekly, again noting date and weight, the progress can be monitored. When weight loss ceases this indicates the timber moisture content has reached equilibrium with the surrounding environment and should be OK to complete. On occasions I sometimes place part-turned boxes in the ultimate location for which the finished item is intended for a couple of weeks prior to completing. Timber is hygroscopic and constantly strives to take on or shed water to reach equilibrium with the surrounding environment, so there will always be small movements.

A final tip when fitting lids, which should be the penultimate operation, is to leave the piece on the lathe (or on the chuck which can be removed) overnight or a little longer prior to making the final cuts. This most definitely helps.

Once dry, it is just a case of mounting the pieces on the previously cut spigot and refining the pieces according to the shape required. The following sequences show how to cut and shape from solid wood.

The base

I cut the blanks used for this article to maximise yield. You might choose to cut for maximum figure or straightest grain. What you do will depend on what you want the item to look like. Because the blank was not perfectly square, marking the centres was accomplished with the aid of a template.

The blanks were mounted between centres and turned into a cylinder with a spindle roughing gouge. Once a cylinder was created, a parting tool was used to cut a chucking spigot/tenon to suit my chuck jaws. Once cut, I mounted the wood

in the chuck and used a light skim to true up the blank of the body and callipers to check the body was parallel. I only required a parallel cylinder for this box but you may, of course, create the shape to suit your own needs.

The remaining task before hollowing is to cut the spigot to fit the eventual lids, which was also cut with the parting tool. Once cut, a spindle gouge is used to clean up the top face of the spigot creating a slight bevel. If this operation is left post-hollowing the end fibres may splinter on the inner edges.



Rough-turned lids set aside for drying with enough thickness left to allow for movement and turning to finished size



Some other rough-turned boxes set aside for future projects



The base turned into a cylinder between centres, measuring while cutting the chuck spigot

◀ Hollowing tools used for internal shaping

The basic techniques are common in all hollowing procedures. These techniques must be mastered if the turner is to achieve a measure of success in this field. Therefore, due to their uncomplicated shape, straight-sided end grain boxes represent an ideal opportunity to take the first steps into hollowing and provide an easier learning curve than curved forms.

The tools required for hollowing straight-sided vessels are unsophisticated. The photograph shows tools I use or have used. I have found as techniques improve and experience is gained, so the choice of tool narrows, favourites emerge and multiple tasks are accomplished with one tool.

Tungsten carbide tipped (TCT) tools are now well established as a woodturning tool. Many manufacturers are producing hollowing tools with a circular cutter which may have a flat top face or one with a hollow section behind the cutting edge, seated on a tool shaft which is round, square or hexagonal in section and secured with a screw. The round- and hexagonal bars allow the tip to be presented horizontally or rotated to create a shear cutting angle. The cutters are hard and long-lasting. Typical available sizes are 6mm, 8mm and 10mm for the cup-type round cutters. Standard flat-topped cutters are available in small or large sizes.

Replacement cutters are widely available, but cost and quality are variable, depending on make, so it's worth researching the market. There are comments that the cutters are disposable, i.e. when all edges have been used they are discarded. However, it is possible to sharpen them by making a mandrel from mild or stainless steel rod, drilling and tapping a hole in the end. By screwing the tip on to a mandrel secured in engineering chuck jaws on the lathe, mark the cutting edge with a permanent marker, spinning at high speed and lightly applying a diamond file until the marked area disappears and the cutter is sharp.



A selection of some of the typical hollowing tools for boxes. From bottom right to top left: two tungsten carbide tipped tools, 25mm square-end scraper, side-cut box scraper, a side and end cutting negative-rake scraper and a multi-purpose tipped hollowing tool with scraper head

Another tool to use to remove the internal timber is a standard HSS 25mm square-end scraper. The whole process may be carried out with this tool following drilling out of the centre, by plunge-cutting small sections one at a time.

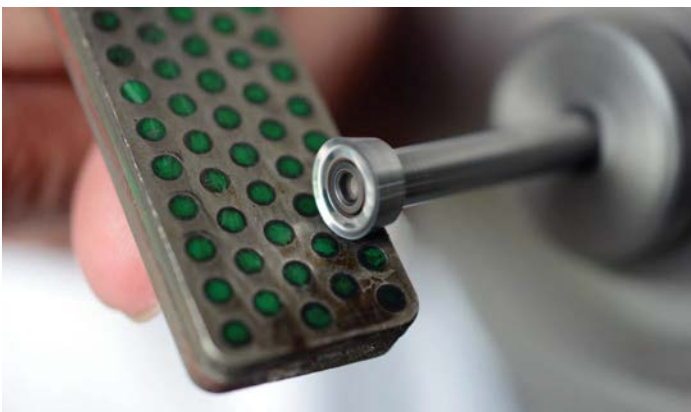
The tool has its limitations – when cutting on centre, the thickness of the section may cause the bottom edge to foul the arc below centre on smaller diameter boxes. It is possible to cut above centre but not below. Most manufacturers market tools to overcome this. Grinding a bevel along the left-hand edge helps prevent fouling of the lower left-hand corner of the shaft on the side wall. It also turns the tool into a side-cut as well as an end-cutting scraper.

A Bedan-type tool performs the same role – with only one front bevel it doubles as a parting and beading tool. It also has the left side relieved to create a

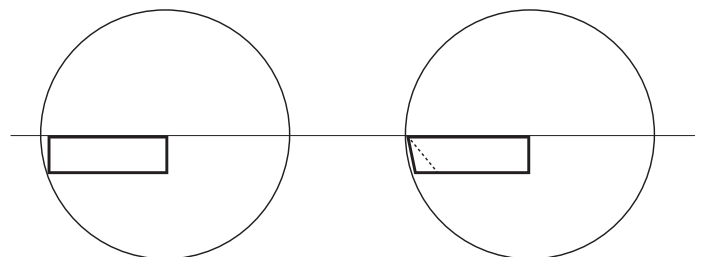
side bevel. This plunge cuts into wood with little risk of binding. Shown above (second tool from top) is a variation of this with the top front and side relieved to create second bevels, making it a negative rake scraper which creates a better finish.

The final tool is a multi-tip hollowing tool. In effect it follows the early hollowing tools, having two thin cutting tips for fast removal of waste, together with a scraper tip for cleaning up. The half-round shaft provides a flat side for stable waste removal. With a scraper inserted, the half-round rotates to accomplish shear scraping.

Some people will use a drill chuck secured in the tailstock fitted with a large drill bit to initially remove some waste, or even a spindle gouge before using the shaping/hollowing tools. There are many options for you to choose from.



Sharpening tungsten carbide cutter



The diagrams show how a standard scraper fouls on arc below the line centre and how a square scraper can be turned into a side-cut scraper with an 80° bevel on the side so the scraper doesn't foul



Lathe set-up for ideal hollowing position

Lathe set-up for hollowing

There are no special requirements or set-up for a woodturning lathe to make boxes. However, the following will make it a little easier, offering the maker more versatility. First up is the height of the lathe – the recommendation is that the centre height coincides with the height of the elbow when standing upright. This is the starting point and some experiment is required to find the optimum height. My preference is a little higher at 50mm above the recommendation. This promotes a more upright stance and less bending, also much improved for hollowing, particularly where larger or deeper vessels require more robust tools, with the handle tucked under the armpit for

stability. A moveable headstock is invaluable when it comes to hollowing. The ability to swing the head towards the turner is a definite advantage. An even better position is to slide the headstock towards the end of the lathe, allowing just enough room for the toolrest, which will sit centrally over the bed bars. This is a much more natural stance and stable position for the body, being directly in front of the workpiece. This brings the workpiece, tool and body along the axis of the lathe. The advantages compared with leaning over the bed bars to hollow are immense. Alternatively, a lathe with an outboard facility designed to increase swing capacity is perfect.

Hollowing

I typically start the hollowing process by drilling to the required depth using a drill chuck held in the tailstock which is fitted with a drill bit. If you use this method, remember to remove the drill regularly to prevent jamming. You can do the same thing using a spindle gouge presented dead on centreline and the flute pointing at the 10.30 position if the flute is viewed as a hand on a clock.

Drilling a central hole in the waste wood is not strictly necessary, however I consider it to be the best option for me. It makes cutting out from the centre easier (the centre is the slowest revolving part) and it establishes the required depth accurately. I use a standard twist drill which leaves a perfect key to engage a circular cutter when cleaning up the bottom, preventing

the dreaded pip forming in the middle. When asked which was the best method to remove the pip, the late Keith Rowley replied: 'Don't put it there in the first place.'

Rotational speed of the work will depend on the size and condition of the blank, timber species and the tool being used. If using a round cutter – my preferred option – the toolrest should be positioned slightly above centre so the shaft of the tool has a slight downward trailing aspect with the cutter cutting on or just above the centre. For right-handed turners the left hand provides the pivot point to enable the tool to move from the centre to the outer wall. Have the cutter rotated to the 10.30 position of a clock face to create a shearing cut and arc the cut from the centre out and up to the inner wall, which

is cutting with the grain. If you want an internal curve this would be an ideal cut for that shape. However, if you want a straight, flat bottom on the box, you will need to make a series of straight-across corrective cuts to remove the hollow using a round cutter or a square-across scraper. Make multiple small, manageable cuts until you reach the bottom.



Initial hollowing cutting from the centre outwards

Using a hollowing gate

If the reader has little or no experience of hollowing/removing waste wood in the end of spindle grain-oriented timber, the process may be a little daunting. An aid to the process is a hollowing gate and variants are marketed by various manufacturers. Typically the stem of the unit is fitted into the toolrest assembly and on top of the stem a platform holds a revolving cradle in which to place the tool shaft. This cradle provides the pivot/fulcrum point. An alternative version is to

use a flat-topped rest/platform, similar to that shown in the picture, in which there are various holes that accept a pin. The tool is placed on the platform and rested against the pin, which acts as a fulcrum from which to lever and manoeuvre the tool.

Whatever method you choose to use, you need to get used to the pivot action of the tool in conjunction with a controlled movement of the tool depth to get the surface shape you need.



Using a hollowing gate as a stable pivot point

Cleaning up the side wall

When it comes to cleaning up the sides there are two options available, the first being to remove waste, followed by scraping the sides in 25mm sections. The other is to complete the bulk of waste removal right to the bottom, then clean up the sides in one go. As the walls and base were not particularly thin, and having a good chuck hold, vibration was not a problem, so I chose the latter. The cuts need to be light to establish wall thickness leaving a good finish. Finally, cleaning up the bottom may be accomplished with a scraper, or my preference is the tungsten carbide tool. I locate the cutting edge in the depression left by the drill then draw the edge across the base, making very fine cuts until the required finished is achieved.



Plunge cutting with the square end scraper to establish wall thickness and clean up

◀ The lids

The three lids I created for this article were turned into cylinders, as per the main body earlier described, with a chucking spigot. Two of them required a domed outer shape and one required a flat top. For the domed lids, once each was mounted in the chuck and trued up, a recess was cut to fit over the spigot on the base section. When making yours, check for fit often as you remove waste. Once you have a snug fit to the right depth, you can cut a domed section in the middle upper section to mimic or complement the eventual top form. This feels and looks nice and reduces the weight of the lid. You can use a tipped tool, a scraper, a gouge or combination of these tools to achieve the results you need.

On the outside of the lid it is wise to mark the depth of the recess and dome so you know where the relevant sections are to help prevent cutting into them when shaping the outside later.

For the beaded lid, only a parallel side wall and flat top were required, so a simple recess cut to the required depth without inner detail was necessary.

The insides of each lid were effectively turned as a batch. Once shaped each was sanded.

Once the inside was sanded the lids were jam-chucked on the previously cut box body, using a revolving ring centre in the tailstock for support, while shaping the external lid profiles to create a smooth inline or overlap fit to the body.

Jam chucking is an effective method of holding work, but care must be taken. The fit must be secure for you to hold the item – in this case the lid – so it can be worked on. The tailstock provides support for most of the cutting, but when it is removed, only delicate cuts can be made. To ensure a good fit of the lid on the spigot or in a recess, you can apply a layer of paper kitchen towel over it to provide a more secure hold. That said, make it too tight and you run the risk of splitting the lid.

So with the tailstock in place, do the main shaping of the lids. Two of the lids I wanted to create are slightly wider than the base on which they sit. They each use a bead to delineate and disguise, and make the join more interesting

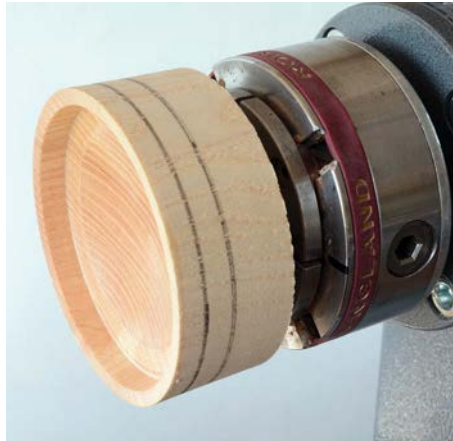
and less likely to show as an error of alignment if the wood moves. One shape blends directly in line with the main body form. Whatever shape you choose, make sure you have a clear plan in mind.

After the lower lid section is shaped the tailstock is removed so the very end can be refined. I tape over the join to provide a bit of extra security. I make no apology for securing the lid with masking tape. I know this practice is frowned upon by purists in some quarters, a little like using scrapers, but better safe than sorry. Cindy Drozda calls it her insurance policy.

Once shaped the lids are then sanded. For the parallel and flat-topped lid the process of shaping the inside and outside is the same but there is the addition of some beads, as there is on the lower section on one of the domed lids. For these I use a beading and parting tool. If only one bead is needed, this can be cut with a gouge or beading and parting tool or similar. If, however, you want to create multiple beads for decoration, a 3mm beading forming tool will help create uniformity of the beads.



Creating a recess in the underside of a lid with a parting tool. Note the pencil line to define maximum width, leaving sufficient material to finish



Once the lid is recessed and finished inside, the depths of the recess and the domed area are marked in pencil on the outside



Lid jam-chucked on to the base with tailstock used for support while the top shape is created



Using masking tape as insurance against base and lid parting company



For uniformity, the beads on the non-domed lid are cut with a 3mm beading tool

Finishing the base of the box

In the normal sequence of box making, re-chucking and finishing the bottom is the final operation, following hollowing using the base as a jam chuck to finish the lids, and I did complete the project in this way. However, I have included this in the section on dealing with the base.

Two methods of re-chucking the base are readily available to use.

Option one is to use a part-finished lid



Chuck jaws with router matting to protect inside of base when re-chucking

as a jam chuck. Jam chucks can be made from scrap wood so they can have a tenon-type shape to fit into a hole, or a recess or hole to accept an object to fit into them. Jam chucks are low cost and very easy to make and use.

Option two is to expand the chuck jaws into the internal hole/hollow cut timber. This is a safe method, however care must be taken not to mark the inside walls of the items being held. You can minimise



Final action on the base, dishing the bottom with a spindle gauge

this risk by using a strip of router matting wrapped around the chuck jaws. Also, remember that over-tightening the jaws into the hole may crack the side walls so only gentle pressure need be applied. That said, this in turn may lead to the chuck becoming undone, so constant checking is required. Use the tailstock for the heavy cuts involved in removing the chucking spigot, only removing the tailstock for the final cuts.

Remove as much as possible of the chucking spigot with the parting tool then remove the tailstock. The spindle gouge is used to make a clean finish of the base, but remember to check the security of the chuck hold before removing the tailstock to remove the last little nub of timber. Next step is to chamfer the edge, which creates a shadow line around the bottom. A further chamfer is then required to create a stable base platform. To complete the base, make a very shallow plunge cut about 7mm in from the edge of the chamfer then turn the gouge making a bevel rubbing cut to create a dished/hollowed effect.

Design

The pictures show the base with a different lid on each. The turning for each lid is practically the same but for the change in shape, whether the lid has a knob or some added design element such as a light bead decoration variance. The base is the same for all, but each lid creates a very different look when placed on the base section.

The design options are endless for you to explore.

These boxes make ideal storage for the kitchen – perhaps a collection of three in decreasing sizes will grace a sideboard or dresser. We will concentrate more on lids next month with a comprehensive look at how to make various types and obtain the desired fit. ●



Here is the simplest of the lid designs on the straight base. Note the join between the lid and base. This design will show up any differential movement between the two parts readily. The shape of the knob makes this item easy to pick up



The lid width at the join is slightly wider on this one than the body and has a bead at the meeting intersection. This one will disguise any movement well. The lid has a different style to it and, while it looks good, the ease with which one can remove the lid is not as easy as the previous one



The lid is slightly wider than the base and is not very deep. While it has no knob to hold to remove the lid, one can easily grip the side of the lid to remove it

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Handbag vanity mirror

Chris West provides some inspiration and plans for you

PHOTOGRAPH BY CHRIS WEST



TOOLS AND MATERIALS

- RPE & PPE
- Roughing gouge
- Spindle gouge
- Parting tool
- 13mm skew
- Piece of wood for mirror surround, blank size 25 x 76 x 76mm

Accessories:

- 63mm diameter round glass mirror
- 100 x 100mm string-pull velvet bags

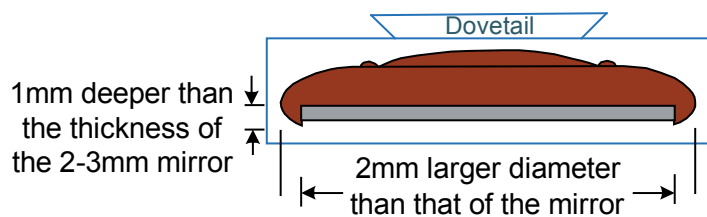
Accessories UK:

- Mirror – stuff4crafts.com
63mm round glass mirror, P/N 1633 83
- 63mm round glass mirror by Darice – amazon.co.uk
- Velvet bag – amazon.co.uk

Accessories USA:

- Mirror – createforless.com
2½in round glass mirror by Darice
Ebay.com, No 301972918930
- Velvet bag – amazon.com

Rough turn and form the dovetail. Once held by the dovetail, form the mirror recess and shape the blank at the front of the mirror surround. Reverse the mirror surround and hold the blank either by expansion jaws in your chuck or a jam chuck. Shape the back to your choice. Sand and seal as required. A waterproof finish is recommended. The mirror is glued in using silicone adhesive.



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Double Pen Velvet Pen Case £3.44



Turning tapered legs

Following on from last month's article, Richard Findley looks at the techniques of turning tapered legs



Tapered legs for various types of furniture are a fairly common thing for me to make. There are certain aspects that vary, but essentially they are a straight line between two dimensions. Some might think this job is too simple to write an article about, but tapered legs are not as simple as they first appear, and while I've made enough of them over the years so that they no longer pose a problem to me, I have seen people struggle to make this apparently simple item. In this article I will look at the techniques involved in making two different types of tapered legs, along with the challenges that they present to the turner.

I had two separate orders for tapered legs, several weeks apart from different customers. One set was for four ash (*Fraxinus excelsior*) table legs, 720mm long, tapering from 65mm to 28mm with an M8 stud screw fitting. The second was for a set of eight smaller European oak (*Quercus robur*) legs for a sideboard, 210mm long, tapering from 40mm to 20mm with a rounded bottom and a turned tenon fitting. While the end result is similar,

I approached them slightly differently.

In my never-ending quest for efficiency, I always try to use the fewest tools possible for any job. Here I used a

32mm roughing gouge and 10mm beading and parting tool, along with my Vernier callipers, a steel rule as a straight edge and abrasive.



The tools for the job: spindle roughing gouge, beading and parting tool, Vernier callipers and a straight edge

◀ Table legs

The ash legs are mounted between a toothed drive centre and live ring centre and I use my spindle roughing gouge to quickly turn it to a cylinder. The required diameter at the top of the leg is 65mm, so I rip the blanks to around 67mm on my saw bench, meaning that as soon as I feel the spinning wood is round, I can be happy that the diameter is right. The next step is to size the bottom of the leg, which is quickly done with Vernier callipers and my beading and parting tool to the necessary 28mm. With the diameters at the ends set, I can turn my attention to the taper.

I choose to use the longest tool rest I can in a single banjo, which is 380mm long. I could use my long wooden tool rest, but this requires two banjos to be used and so would be permanently fixed at the start of the job, leading to a fairly large tool overhang at the bottom of the leg. Not an impossible or particularly dangerous overhang, but an overhang nonetheless. For these longer legs I prefer to adjust my tool rest as the taper develops as I find

that it helps me to see high spots and easily achieve the perfect taper.

I begin the initial shaping stage at the bottom of the leg, using the 28mm diameter cut as a starting point and guide. The 380mm tool rest can cover the length of the leg in three positions, or two movements, so the second position

covers the centre section of the leg where the taper is further extended, followed by a final tool rest movement to the top portion of the leg. This gives the beginnings of a tapered leg but with three distinct sections, or facets. Next I need to blend these together to ensure a perfect taper.

Moving the tool rest

Something often referred to by demonstrators, and usually with a hint of sarcasm, is the need to stop the lathe when moving the tool rest and banjo. There is no doubt that the safest way to do this is to stop the lathe but with round timber spinning in the lathe there is almost no danger to the turner in moving the banjo or tool rest while the lathe is running. I would always stop the lathe if the work is square, very large or with protrusions of any kind such as a natural edge, where contact with a tool rest would damage the work or cause a potentially serious accident, but for a basic round bowl or spindle, done with



Safely moving the tool rest with the lathe running

a little care, there is virtually no risk to the turner in doing this. As with all things, if you don't feel comfortable doing this, then don't do it.



Sizing the bottom of the leg



Beginning the initial shaping stage at the bottom of the leg



The roughed out taper, showing three clear facets

Straight edge

A straight edge is a vital tool for producing a perfect taper. I found for the first leg I needed to check my progress a dozen or more times to get it right. By the fourth I had my eye in and only needed to check about four times, so practice, very much, makes perfect.

The combination of the long tool rest and a 600mm steel rule allows me to flatten the angles between the three facets produced in the initial shaping stage. I keep returning to the lower portion of the leg to develop the taper, kind of working 'uphill' although generally cutting 'downhill', with the grain.

In these early stages the straightness of the tool rest is enough to be able to see the high points, but the further along I go, the more I need to rely on the straight edge.

I apply the rule to the spinning work quite safely, although if you don't feel confident with this then please do stop

the lathe before checking with the straight edge. Use of the straight edge is simply a case of finding the high spots, which are easy to find as the straight edge rocks over them like a seesaw. These high points can be marked with a pencil if you feel the need but I find that just having my attention drawn to them is enough to show me where they are and remove them. By applying the straight edge like this, low spots are as easy to see as high points. Low spots generally indicate there is a high spot elsewhere on the leg. I find methodical working, repeatedly returning

to the lower part of the leg and working toward the top, flattening out the taper with each pass, the best way to achieve the perfect taper.



Using the straight edge with the lathe running

Alternative straight edges

I simply use a steel rule as a straight edge throughout these jobs, which I find works well. An alternative could be a length of straight timber or metal. A tip that can help, although I've not used it myself, is to rub chalk or even felt-tipped pen along the edge that comes into contact with the work. High spots will be highlighted and so can easily be identified and removed, eliminating any guesswork from where you should or shouldn't be turning.



The straight edge shows a high point at 190mm



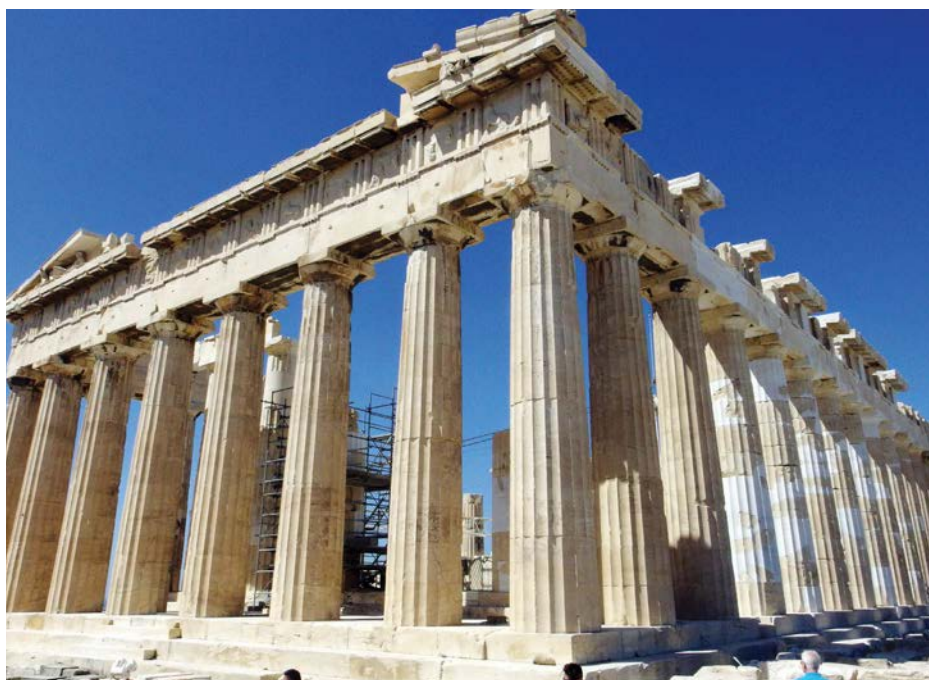
The straight edge shows a low spot

Perfect taper

The aim of a leg like this is to achieve a perfect taper. I am often asked if they should be made with a slight outward curve like the ancient Greek columns, a principle known as entasis. The simple answer is no – a perfectly straight taper is what we're after, the use of entasis would just look like the taper is badly made. As far as I can find through my research, the use of entasis is strictly for large-scale architectural work (there is evidence of its use in Egyptian pyramids and Medieval church spires, among other places) or scale models of Greek columns, rather than relatively small turnings such as this.

More on entasis

This discussion about the use of entasis has come up a number of times so I thought a little research was called for. Much of the internet repeats the common belief that it is used to counteract an optical illusion that a perfectly straight column would look hollow in such large scale. I've often felt this explanation sounds a little weak because, having seen many examples of ruined columns in real life, I can say that the curve of entasis is easy to spot, and very rarely, if ever, appears perfectly straight. A little deeper digging offers a few more explanations and confirms that the common belief is just that – a belief and not hard fact. There are, after all, not too many ancient



The columns of the Parthenon in Athens showing entasis

Greek architects left to ask about it. It seems that there are several theories as to the use of entasis but, of course, none can be confirmed as the definitive answer.

One theory is that it was used to make the columns look more substantial, or perhaps to try to show or emphasise the weight of the roof bearing down on them. Some say entasis is inspired by the shape of the trunk of a palm tree which has a

similar bulging curve. It has also been proven that the design which uses entasis is actually structurally stronger than a straight column, although no one knows if the ancients knew this.

Whatever the reason for it, the one thing I know for certain is that, unless you are making a pseudo-Greek column, you most likely don't need to use it in your design – aim to keep your tapers good and straight.

Check and check again

Once you feel the taper is right, check it again. Often, it can feel like so much timber has been removed there can't possibly be any more to take off. In this case I would say: trust your straight edge. Such tools are there to make life easier for us, so believe what we're telling you and don't skimp, because with these long tapers there are no details with which to hide poor turning or laziness. Tapers have to be right or it shows, so check your work against the straight edge, adjust and check again. Then keep repeating until you have it right. Patience and thorough methodical work will pay dividends. Practice will speed up the process and improve the eye. A set of four will get you some of the way, but making a couple of hundred, as I have in the past, will make them almost second nature.

Achieving a perfect finish

With the perfect taper turned, the next stage is to perfect the surface, which is best done with a planing cut. This can be with a skew or, my preferred version of a turner's chisel, the beading and parting tool. This is a cut that requires practice, but once perfected is reasonably straightforward. Cutting below centre on the edge of the tool, a smooth movement and light touch should produce an equally even and smooth finish. I found that a small amount of vibration occurred during this cut so I changed the grip of my front hand to support the work as well as offering support to the tool with my thumb. Very little pressure needs applying to the spinning wood with the front hand to counteract the vibration. If you find there is any vibration during the roughing and shaping part of the process, a similar grip can be

employed with the roughing gouge too. I find the best way of sanding long, straight turnings like this is with a long strip of abrasive, which covers a wide area of the job in one go. This helps to maintain and improve the straightness of the leg. I used 120, 180 and 240 grit in this form before switching to a hand pad and, with the lathe stationary, sanding in-line with the grain with 240 grit to remove the cross-grain sanding scratches which normal sanding produces. This is an important step on such a plain leg, which lays your technical ability bare for the world to see. Remember there are no beads and coves to hide poor turning or rushed sanding.



Planing the timber and offering support to the work with my front hand



Sanding the large tapered legs with a strip of abrasive, keeping arms and clothing well away from the work

Small tapered legs

The small tapered legs are similar to the larger version. The main difference being that I don't move the tool rest at any point during the turning process. These legs are 240mm long, so my 300mm tool rest is plenty long enough to cover them. This slight change in approach means the technique employed to shape them is slightly different. With the long legs I kept the toolrest mostly parallel to the work throughout, which meant that I was effectively cutting a straight line. With the shorter leg I need to manipulate the roughing gouge slightly differently to form the taper.

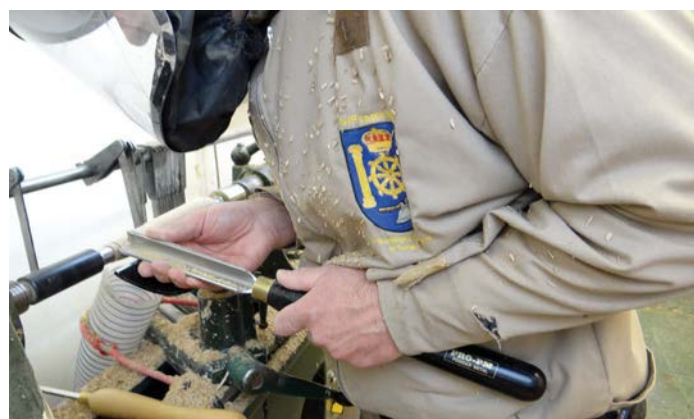
To produce a taper with a roughing gouge is reasonably straightforward but, like so many of these techniques, requires a little practice to perfect. By picking up a cut

at the top of the leg and moving the gouge straight across the toolrest throughout, a straight cut is achieved. By applying a little more forward pressure and gradually lifting the handle as the tool moves along the toolrest, a taper is formed. Repeating this several times, with just the right amount of handle lift and a smooth movement, produces a perfect taper between the two diameters that have been set at the beginning.

The taper is once again checked and double-checked against a straight edge and refined before being planed with the turning chisel of your choice. The planing cut requires the same lifting of the handle motion to achieve a continuous cut and a smooth end result.



Beginning the cut with the tool handle low



At the end of the cut, the tool handle is much higher to produce the taper

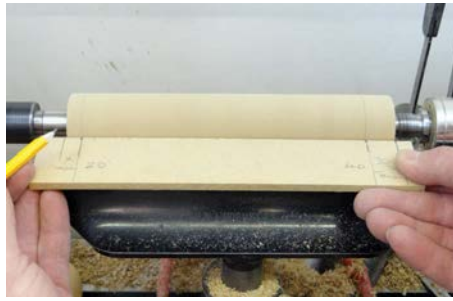


The straight edge is just as important on the small tapers as it is for the large legs

Bottoms of legs

There are two common options for how the bottoms of tapered legs are finished. They are either left square, as the longer legs were, to be cut to the correct angle once fitted to the furniture, or have a curve cut into them. This curve is sometimes specified as a full hemisphere, or sometimes, as in this case, with a radius on the corner.

If the legs are left square, there is no issue in leaving the drive marks from the lathe as these either won't be seen or will be cut off. When a radius is specified it is slightly more tricky as the drive marks really need removing. This calls for careful marking and turning to



Using a story board to carefully mark the positions of the fixing tenon and the bottom of the leg

ensure the legs are all the same length. In this case I use a template or storyboard to mark the position at the start of the turning and rolled the radius



Rounding the bottom of the leg with my beading and parting tool

with my beading and parting tool after making the planing cut. Not particularly difficult, but certainly an area where extra care and attention is needed.

Fitting the leg

The way the leg is fitted into the piece of furniture will almost certainly have some affect on the turning of the job, and both of these jobs have a different fixing method.

The longer table legs are for a shop display table so need to be simple, rigid and removable, so an M8 stud screw was specified. I have used several types of these stud screws over the years. They are a kind of double-ended screw with a wood screw at one end and a machine screw at the other. Often they are a pain to fit as some sort of jig needs making with the corresponding nut to drive them in. I have had some where even this doesn't work because of how poorly they were made. The best I've found were recommended to me by a production

turner friend a few years back. Made by Wurth, they come with a star drive screw head in the machine screw end, so they can simply be driven into the work with a power driver. I drill a small pilot 6mm wide and 20mm deep hole in the top of the leg using the lathe, holding the drill bit in engineers' jaws in my chuck, and use the tailstock to centralise the work and wind the tailstock quill to move the wood on to the drill. This is very accurate, but it could be done with a hand drill.

The smaller legs are for a bespoke sideboard and so have a tenon turned into the top, which can be permanently and securely fitted into a corresponding drilled mortise, most likely with glue and possibly with a wedge inside the joint. ●



Drilling the pilot hole using tailstock support to ensure perfect concentricity



Fitting the stud screw into the ash legs



The finished ash legs



The finished oak legs

NEXT MONTH: Richard continues his series, taking a look at turning different types of drawer pulls

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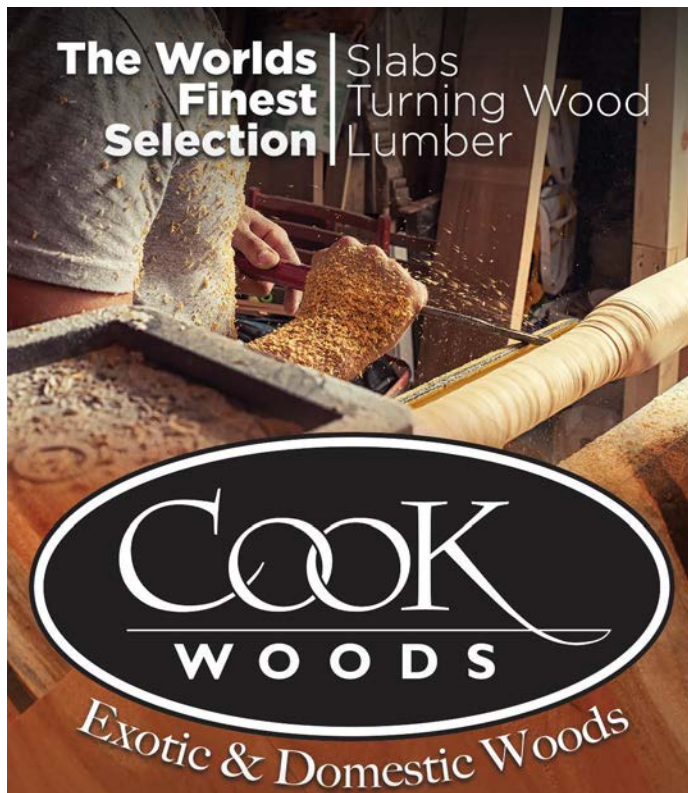
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sharing expertise



Merlin2 universal carving set

Mark Baker puts King Arthur's Tools Merlin2 universal carving set featuring a miniature long-neck angle grinder through its paces

King Arthur's Tools is well known for its power carving products shaping and sanding tools for power carvers. It has produced chainsaw-type discs as well as tungsten carbide toothed discs to fit on 115-125mm angle grinders for many years, and devilishly effective they are too at sculpting large works. However, turned work often does not often need such large cutters and this is where King Arthur's Tools' Merlin2 fits into the mix nicely. It is a scaled-down angle grinder with a long neck that is designed to take 50mm diameter accessories.

The Merlin2 universal carving set tested here comprises: a material carry bag, a Merlin2 variable speed miniature long-neck angle grinder (a fixed speed option is available) a 50mm saw chain

cutter, a Merlin2 carbide disc, a fibreglass cutting disc, and three flap wheel-type sanding disks.

There is also a safety manual, which one should read on all items bought before using them. This, of course, has important safety and maintenance information that one needs to know and quickly helps one get started and work safely.

King Arthur's Tools says: 'It's a great set for miniature work like carving spoons and small bowls, or for details on faces and feathers. But we don't recommend using this set for carving huge free-form bowls, sculptures, totem poles or the like. We have other tools you'll love for those massive projects! It's terrific for carving, shaping and sanding in difficult, hard to reach places.'

INITIAL IMPRESSIONS

On opening the package and picking up the miniature long-neck grinder it felt solid, appeared to be well balanced, built well and it fit my hand nicely. The on/off switch and the variable speed dial are on the underside of the body and have a couple of raised plastic shields that prevent fingers from inadvertently switching the machine on or off and also separate the on/off button from the variable speed dial, again preventing accidental touching of the wrong part.

At the lower end of the metal long-neck section, there is a spindle lock button which is used, when the unit is unplugged, to allow the changing of accessories. The cutting head end has a strong adjustable guard/shield which is

moveable to help you work with both the shaping and cutting discs and sanding accessories effectively and safely and provide protection to keep fingers away from the sanding/cutting accessories being used. The accessories are all held in place via a hexagonal thread connector (HTC) which allows numerous other optional extra accessories to be used too to further expand the versatility of the unit.

CHAINSAW-TYPE CUTTER

Taking note of all of the safety and usage advice I started by using the chainsaw-type cutter. This cutter is one that rapidly removes timber. Using the variable speed control unit allowed me to quickly find the optimum speed to suit the wood being cut. This cutter is devilishly quick at rough-shaping wood but, because of its design, it is not capable of fine detail. The learning curve to get the best from this tool was the steepest of any of the other accessories used. Light multiple cuts are the way to go – not only do they afford more control, it often works out quicker than trying to make heavy cuts, which this unit is not meant for. Surprisingly, delicate cuts can be made with this, but the surface quality is not always very clean. That said, it is not a cutter that will forgive mistakes in the presentation angle to the work. A kickback is possible if you get things wrong.

COARSE MERLIN2 CARBIDE DISC

This disc has carbide points aligned neatly on the angled face and edge and is labelled as coarse. I noted on the website that there are other shapes of disc with various options as to how the carbide is arranged down to fine grit grade available too. I found this disc very easy to use with a minimal learning curve. It is not as quick at removing waste wood as the chainsaw-type cutter, but affords far finer control and is capable of initial shaping, refining and some detail. The surface left after the cut is very consistent with micro-striations like those left from coarse abrasives.

THE OTHER ACCESSORIES

The sanding discs are very easy to use and can be used to gently texture work, sand sculpted areas and refine surfaces and so on. The fibreglass cutter came in handy when adjusting some carry units recently. It sliced fine and left clean cuts. While many woodworkers would not use this cutting disc much, there are many other opportunities for DIYers and craftspeople to use this cutter so it fits well within the set making the tool much more versatile generally.



The Merlin2 universal carving set

CONCLUSION

I had used the previous version of the Merlin some years back and can say that Merlin2 is a far superior tool. I could not fault the quality of it in any way and found that it handles and works very well. The variable speed adjustment is a dream to use and changing the accessories is easy.

Like any new tool or product, it takes a few moments to get used to the nuances of each of the different accessories, but having read the instruction sheets and learned the dos and don'ts, one is well armed with the information required.

I loved the carbide disc and found it did everything I asked of it easily, as did the sanding discs and fibreglass cutter.

Don't think I just tried wood. I used the sanding discs and carbide cutter on resins, acrylics, horn and similar materials too, all without problem.

Because of the wide range of cutting, shaping, sanding and refining accessories that can be fitted to the Merlin2, this is a very versatile tool that is definitely worth exploring and this set is a very good start. ●

Technical specs

PRICES:

Merlin2 variable speed universal woodcarving set – £251.66

There are numerous optional extra accessories to augment the Merlin2, starting from £4.50

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Using the sanding pads to clean up some cuts

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Vase with handles

John Pedley shows how to make a handled vase inspired by a museum piece

This project was inspired by a traditionally shaped vase I saw in a Wye Valley Gallery and a vase shown in a life-sized portrait in the National Museum of a woman standing next to a cello and a small table on which a similar vase was placed.

The challenge was to make the handles on the lathe rather than using a fretsaw. To this end I remembered a grainy film from Stuart King's presentation at the Loughborough symposium last year showing German turners using ring turning. Richard Findley had a go at this technique in issue 304 of *Woodturning* to produce a small car too. Stuart described the history and process of this type of turning in great detail. I commend the article to be read if you intend doing something similar or making this vase.

For this project I used a recently felled section of holly (*Ilex aquifolium*) tree trunk about 250mm in diameter. For the handles I used spindle-grain oriented wood which means the grain runs the length of the handles. If I chose faceplate-oriented timber the grain would run across the handle, making it potentially very weak. Truthfully, I do not envisage anyone picking up such a piece via the handles. I chose to use wet wood in the hope that it would be easier to turn than seasoned wood.

After cutting the log to size and shape I used the hefty faceplate and six heavy-duty screws to hold the blank. I could have mounted between centres and cut a tenon on one end, but the faceplate gave a more secure hold.

Turning the handles would likely take me a number of sessions and I was concerned that the wood would shrink and crack as it dried out overnight. As a precaution I covered the wood with a black bin liner in between turning sessions but I did the hollowing out stage in one session until fairly late in the evening. This was a wise decision as the offcut shrank and cracked considerably while I finished the last day of final turning stages.

For the vase body I used a branch of sycamore (*Acer pseudoplatanus*) about 125mm in diameter, also recently felled.

As this type of project involves a number of removing and re-chucking the parts of the vase, for which a screw chuck had its limitations, I made extensive use of jam chucks or, in this case, wood faceplates and hot-melt glue. I am always amazed how efficient this holding method is.

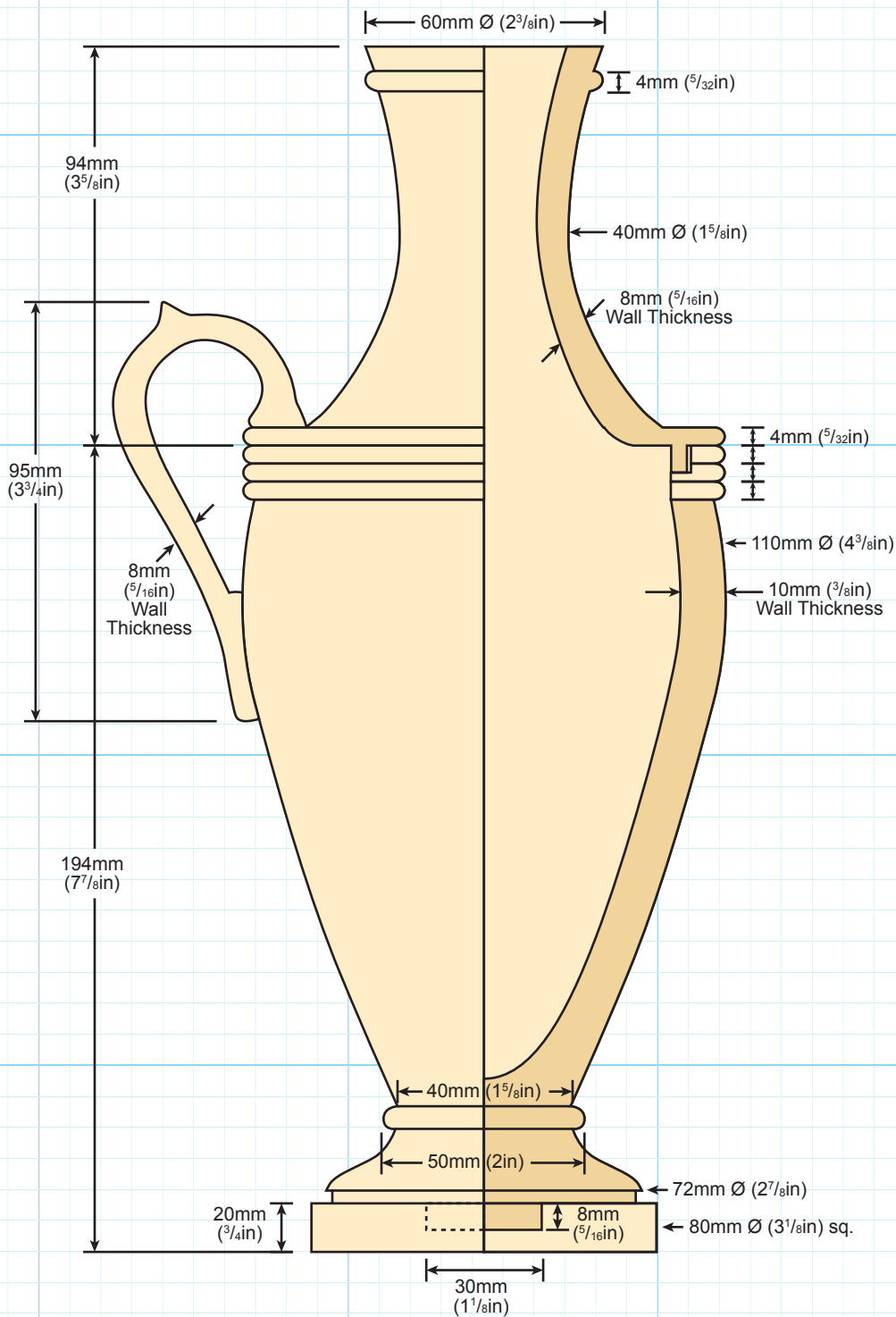
The hollowing out process, particularly of the handles, requires patience and care and checking the cuts against the pattern constantly to make sure everything is as it should be.

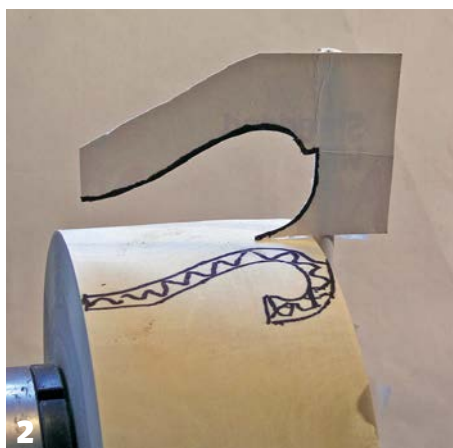


PHOTOGRAPHS BY JOHN PEDLEY

TOOLS AND MATERIALS

- RPE & PPE
- Chuck
- Faceplate and heavy-duty screws
- Bandsaw or handsaw
- Spindle roughing gouge
- Spindle gouge
- Bowl gouge
- Parting tool
- Bead forming tool
- Hollowing tool
- Round-nosed scraper
- Drill chuck and drill bits
- Hot-glue gun and adhesive
- Rotary carving tool and drum sander
- Bandsaw and handsaw
- PVA adhesive
- Cyanoacrylate adhesive
- Small panel/hardboard pins
- Abrasives down to 400 grit
- Finishes of your choice.
- Close-grained timber for the handles and body

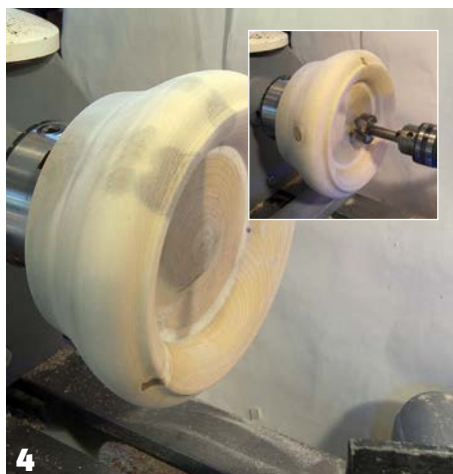
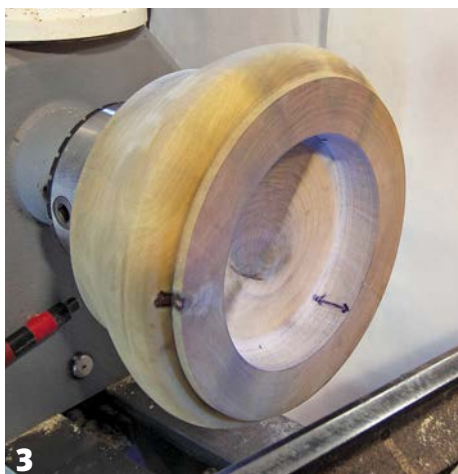




MAKING THE HANDLES

1 Turn the log to the largest diameter possible and face up the end. Cut a recess to suit your chuck and, once cut, stop the lathe, turn the wood around and remount on the chuck. Remove the faceplate, true up the face and cut a recess. Bring up the tailstock and use a parting tool to cut a groove just higher than the overall height of the handles needed – cut as far as you safely can without parting through. Now stop the lathe, remove the tailstock and then saw off the block. Keep the waste wood that is attached to the faceplate for later on.

2 Cut some cardboard templates of the handle to show the shape of the outside and inside and use to check the profile as it progresses.



3 After shaping the outside, mark out the diameter of the inside of the handle. Then hollow out to the depth of the top of the handle.

4 Complete the outside shape by rounding off the top and then drill a 12mm pilot hole, followed by a 35mm hole just short of reaching the chuck.

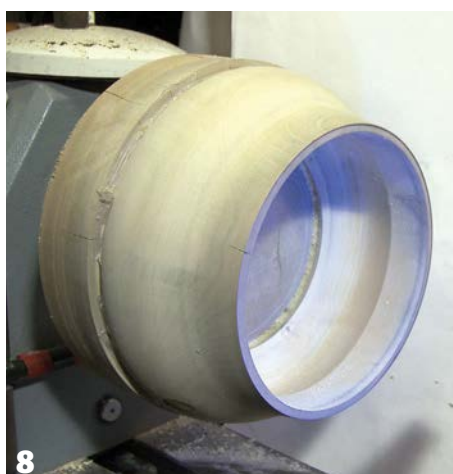
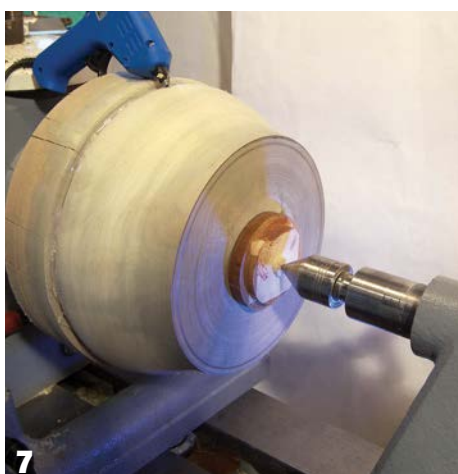
5 Make a start with the hollowing and shaping the inside as far as you can, then remove the turning from the chuck and set aside for later use. Gently cut a 35mm hole in the lower section, making sure to keep clear of the jaws.

6 Now remount the still attached to the faceplate offcut on the lathe. Face off the piece and cut a depression in the end that will support the shape and curves on the top of the handle section on the top of the previously hollowed section of timber.

7 Turn a plug to fill the hole in the turning, press it in the hole using the tailstock to centralise and keep things in place and, using hot melt glue in a continuous strip, glue the turning to the timber. Allow to dry and check it is secure before continuing turning.

8 Use a bowl gouge or hollowing tool to hollow out and refine the inside and outside. Use a scraper to refine the shape.

9 Once shaped, cut off radially the handles required about 10mm width. Shaping will be done later.



◀ Turning the vase

1 Mount the wood between centres – in this case a piece of sycamore branch wood was used. Make sure there is sufficient length for the top, centre and bottom parts of the vase plus sufficient for all three chuck spigots, i.e. about 450mm. Turn to a cylinder and mark off the lengths required for the base and for the top, including the chuck mountings. Part the top almost through and then stop the lathe and saw it off and set aside.

2 Drill a 12mm pilot hole until required depth is reached. Follow with a 35mm saw tooth bit in stages between hollowing out to remove waste. Don't drill all the way down with the 35mm drill as sufficient thickness has to be left for the thickness of the sides. Begin hollowing out with a hollowing tool and refine the internal shape with a scraper and sand if you want to.

3 Now cut a chuck spigot beyond the bottom of the vase, about 25mm from the eventual foot of the vase. This is to allow for the spigot to fit into the base to be formed later. Part off the base and set aside.

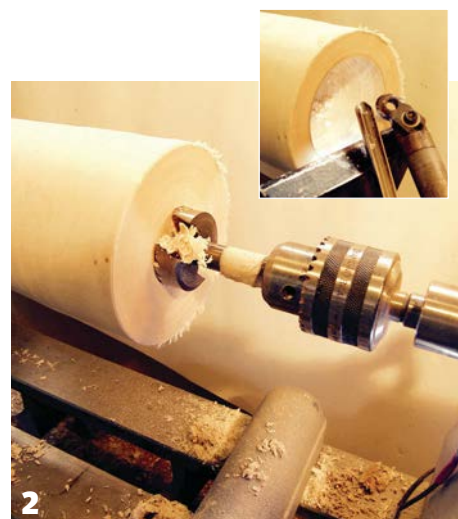
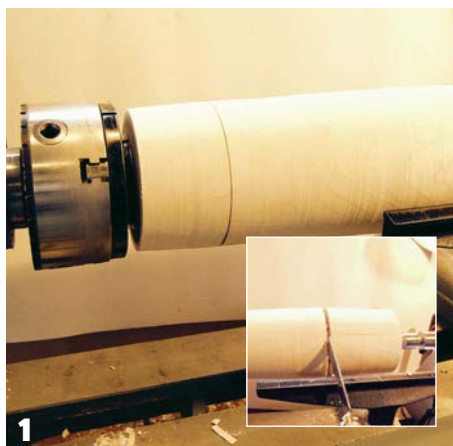
4 Rough turn the outside of the vase. mimicking the internal curve cut. The marked band at the bottom is a bit more than the diameter of the bottom bead. Now, mark out and cut the rebate to receive the top. Remove from the chuck and set aside.

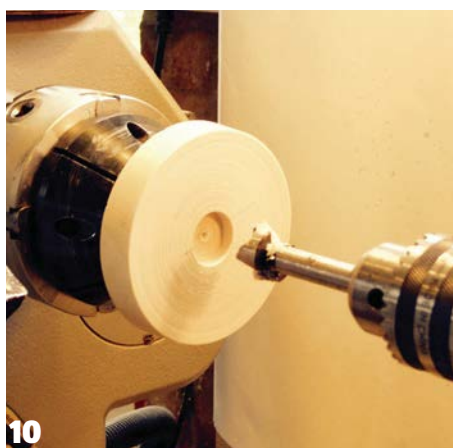
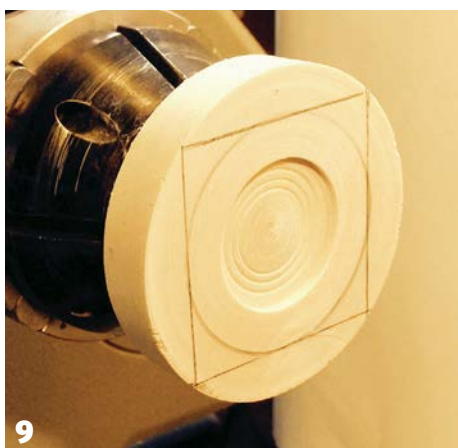
5 Remove the main body from the chuck and mount the top section created earlier. Drill a pilot hole in the centre to help with the internal shaping, and enlarge by drilling the hole to 25mm. This diameter will allow sufficient thickness in the wall to allow a curved shape to the neck of the vase. Rough shape the top leaving the chuck mounting in place. You will have to remove the tool regularly and stop the lathe to clear the shavings.

6 Turn the top around and remount. Carefully cut the rebate in the bottom edge to give a firm fit to match that in the vase. Finally, using a spindle gouge, shape the outside of the top then the inside, taking care not to go through the sides.

7 Mount the vase between centres ready for the final shaping. Cut the bottom bead using a bead forming tool. Shape the outside leaving the bottom bead projecting/raised from the main surface. Now cut the top three beads to hide the joint between the vase and the top. The inset picture shows the beading and parting tool I used resting against stationary work. Now partially part off the bottom leaving a 25mm tenon to connect to the base.

8 Mount a wood faceplate in the chuck and cut a recess to match the spigot cut on the top. Apply a few tabs of hot-melt glue on the outer rim to the top of the faceplate, making sure it is central by bringing up the tailstock. Shape the inside of the neck as necessary to mimic the external profile, then sand smooth.

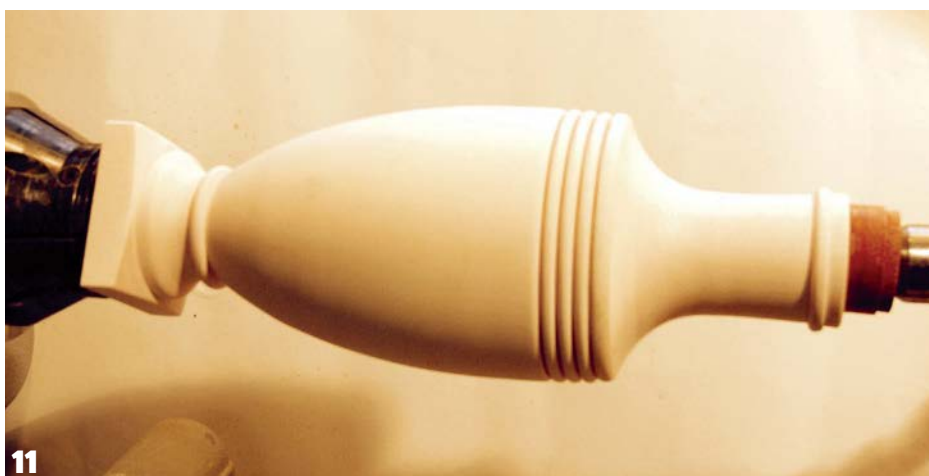




9 Mount the base in the chuck, face up the front and cut a 45mm recess or close to that for your chuck jaws. Mark a square on the piece. I wanted a small square base, but you can of course have a round one. It is your choice. Now remove the piece from the lathe and mount the wood on the chuck in the just-cut recess.

10 Using a drill chuck held in the tailstock, drill a 25mm hole to receive the tenon at the bottom of the vase. Remove the piece from the lathe, cut it to a square on a bandsaw and sand the sides.

11 Now remount the piece and turn the top edges beyond the round bottom of the vase. Once done, glue the base to the vase, top section to the body and clamp between centres. Allow the glue to dry overnight.



12 Now it is time to refine the handle shape. Mark the handles to your desired profile. Then sand to refine the shape using sanding arbors, by hand or both. Go gently and use very little pressure to get the shape you want. Also, adjust the ends of the handles to make sure they match the bodyline correctly to where they will be placed.

13 Once sanded smooth, the handles are held in place using copper-plated hard board panel pins and cyanoacrylate adhesive. Mark out the vase along the centreline and central to the base. Using a small drill or rotary carving tool fitted with a small bit carefully drill the handles as shown in the photograph. First hold the handle in position and mark and drill the bottom hole in the side of the vase. Push the nail into the hole. The top nail is snipped to length as shown. Mark the position of the top nail and drill. Hook the handle into the top hole and then into the bottom hole. The handles can now be set aside to allow the vase to be finished. A little tip for you – if you snip the top of a nail off it can be used as a drill bit.



14 As holly and sycamore are fairly bland woods I decided to decorate the vase. Of course you can leave it plain and have contrasting coloured wood for the handles and so on. At first I considered simply spraying it a contemporary grey colour but this would obliterate the grain. Instead, I used two shades of blue spirit stain so that the grain of the wood is still visible. The oval was enhanced with iridescent colours and transfers filled in with acrylic colours. The vase was then sprayed with acrylic gloss lacquer. That is how I chose to decorate it, but you have a blank canvas to work with so please do experiment. ●



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Choosing a lathe

Mike Darlow explores the subject of deciding on the right machine for you

I was recently asked to give a demonstration of outboard turning. On arriving at the clubhouse, I found the lathe I was to use didn't allow outboard turning (a term I'll explain later). It further became apparent that the club's equipment officer, its committee and its other members did not appreciate the advantages and disadvantages of the different configurations of woodturning lathes. This situation is all too common and often results in the purchase of lathes which are unsuitable. Their purchasers then

struggle unnecessarily with their turning, and may never realise that they've probably not bought a bad lathe, they've bought the wrong lathe.

Most woodturners have one lathe and, unless there are circumstances which dictate otherwise, will want to be able to produce spindle, cupchuck and faceplate turnings, and bowls. Most woodturners should therefore buy a general-purpose lathe. This article addresses the topic of how to choose such a lathe.

◀ Lathe types

HAND WOODTURNING LATHES CAN BE DIVIDED INTO FOUR TYPES:

Lathes with beds

These have a headstock at the left hand end of a relatively long bed, and a tailstock and one or more banjos (toolrest holders) which can slide along the bed and be locked on to it. To be general purpose, a lathe's bed length should be about a metre or more.

Pedestal lathes

These are intended for faceplate and bowl turning, and either have no bed or a short cantilevering one.

Special-purpose lathes

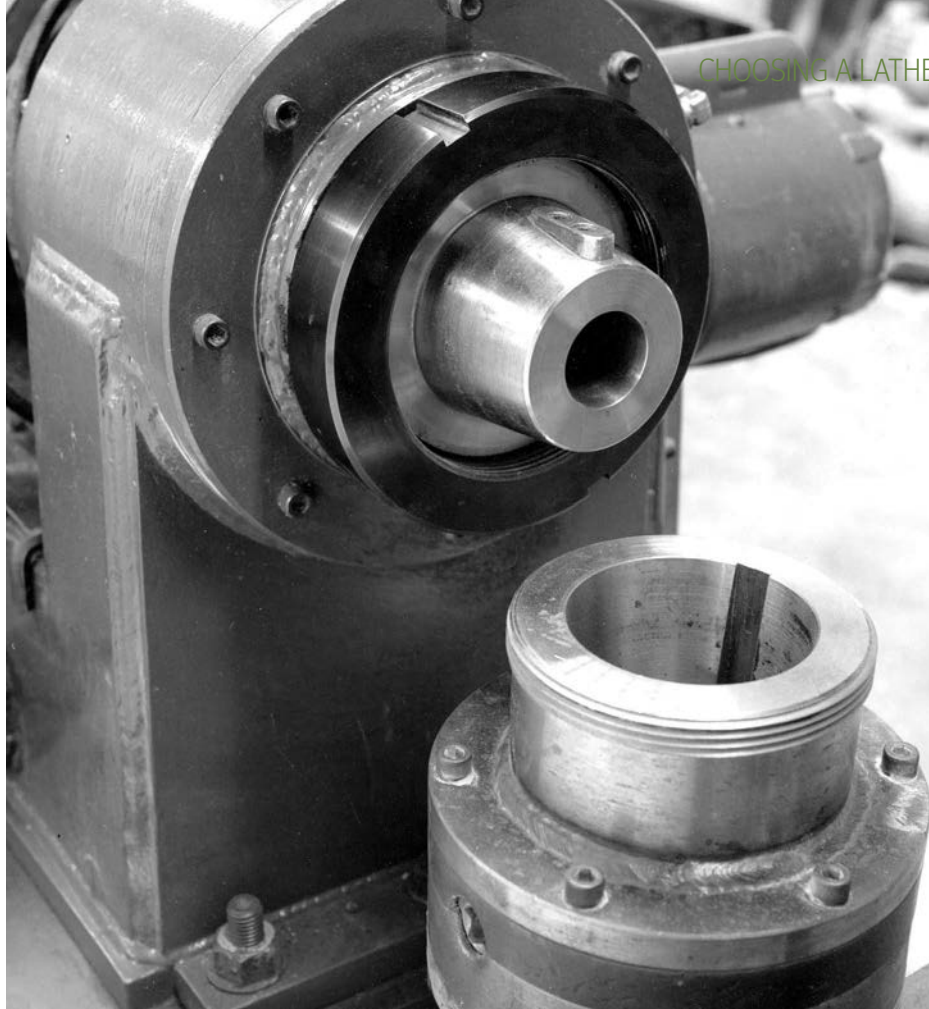
The most common special-purpose lathes are the very small ones intended for pen turning. Lathes for pattern makers usually have carriages which enable the workpieces to be machined.

Lathes with an integral bed

To fully explain the design of lathes, especially those with an integral bed, I first need to discuss how a headstock can be mounted relative to the bed and the design of the headstock spindle.

HEADSTOCK LOCATION

Almost all lathes which have a bed have the headstock at the left-hand end of the bed. A bed is essentially a feature required for spindle turning. Roughly 90% of people are right-handed, but the only spindle-turning operation which is 'handed' is parting off. A spindle should be parted off at its headstock end so the bulk of the workpiece ceases to be powered after parting off. To avoid having to part off cross-armed, the headstock should therefore be at the right-hand end of the bed for right-handed turners. Why then do woodturning lathes invariably have their headstocks at the left-hand end of the bed? Because right-handed turners would have to work cross-armed when hollowing in cupchuck turning and when faceplate turning. Therefore lathes have their headstocks at or on the left-hand end of the bed, and left-handed turners either have to work cross-armed or turn right-handed when hollowing in cupchuck turning and when faceplate turning inboard. It would, of course, be possible for a left-handed turner to stand 'behind' a lathe and run it in reverse, but then the controls will usually be inaccessible and chucks will tend to unscrew off the inboard, right-hand-threaded, headstock spindle nose.



An American long-taper spindle nose, which allows spindle acceleration and braking in either direction without any risk of a chucking locking on or coming off. It is, however, a very expensive solution. Many chucks now have a crew-type locking mechanism to keep chucks in place

HEADSTOCK SPINDLE DESIGN

A fundamental and defining feature of all lathes is the number and design of their headstock spindle noses. Almost all woodturning lathe noses are threaded, an inexpensive design, but one with downsides as I'll explain.

The nose on the right-hand (inboard) end of the headstock spindle invariably has a right-hand thread because turning with the headstock spindle rotating forwards tends to tighten a chuck (a term which in this article includes faceplates) on to the nose. However, a right-handed turner who wanted to hollow a bowl mounted inboard on a fixed headstock in the most comfortable, natural motion, would run the lathe in reverse and cut from right to left from the rim to the centre. This would tend to cause the chuck to unscrew.

Also, as many of you have experienced, if you don't screw a chuck firmly on to an inboard threaded nose, when you turn the lathe on the spindle accelerates into the chuck and locks it hard on to the nose. Aggressive spindle braking can cause a chuck to unscrew.

There are three ways to avoid the problems described in the preceding paragraph: screw the chuck on firmly (this solution doesn't always work); use a nose which effectively isn't threaded, or have

a different facility to mechanically lock a chuck onto a screwed nose.

In a lathe review in the June 2017 issue of *Woodturning*, Mark Baker referred to 'the fitment of a device on the new European chucks that prevents the chuck or faceplate from inadvertently unwinding'. This is a form of collar that locks on to a modified spindle and backplate of a chuck or faceplate. Most modern faceplates and chucks have grub screws in the rear section which can be tightened down on the smooth section of the spindle to keep things secure.

My first lathe, made by a Sydney engineer in 1975, had an external left-hand thread on the bosses of its chucks and a mating external locking ring which could be screwed tight with a C-spanner against the boss of each headstock spindle nose. On another lathe, a split collar located in V-shaped grooves in chuck bosses and the spindle noses prevented chucks unwinding. Wouldn't it be great if chuck and lathe manufacturers did get together to design a common standard for spindle noses and chuck locking?

To efficiently mount or dismount a chuck it's essential to be able to lock the headstock spindle. If this can be achieved while leaving both hands free, chuck mounting and removal are then both easier and safer.

◀ Configurations of lathes with beds



A bed with a gap, here with the infill in place. The bed and tailstock are from a 19th-century engineer's lathe. The woodturning lathe headstock has an outboard nose with a left-hand thread, and is mounted so that a banjo on the bed projecting to the left can be used for outboard turning. The inboard spindle nose has a hexagonal boss which can be locked with a spanner for chuck mounting or removal

LATHES WITH INTEGRAL BEDS CAN HAVE:

- Fixed headstock with only an inboard nose (and possibly with a gap)
- Fixed headstock with an inboard and an outboard nose
- Sliding headstock with an inboard nose only
- Swivelling headstock with an inboard nose only

INTEGRAL-BED LATHES WITH A FIXED HEADSTOCK AND WITH ONLY AN INBOARD NOSE

Most lathes are now sold to amateurs, and amateurs favour bowl turning. The commonest and least expensive form of general-purpose lathe – one with a fixed headstock and a headstock spindle with only an inboard nose with a right-hand thread – isn't ideal for bowl turning because the bed prevents turners positioning their bodies comfortably and doesn't allow the desirable steeper tool inclinations preferred for some cuts. A less important consideration is that the diameter of the workpiece which can be accommodated is restricted by the bed. Having a centre height greater than 200mm will allow steeper tool presentations, doesn't improve access for the turner's body, and does make moving the heavier banjo(s) and tailstock along the bed more arduous.

Some lathe beds have gaps at their left-hand ends to accommodate larger

diameters (see above left). These gaps aren't always sized and located so as to overcome the problem of the bed preventing the steep gouge presentations preferred for some bowl-hollowing cuts. Also, unless there's an infill section of bed available, a banjo may not be able to be located close and to the right of the headstock. On balance, beds are better without a gap.

INTEGRAL-BED LATHES WITH A FIXED HEADSTOCK AND INBOARD AND OUTBOARD NOSES

The commonest, and in my opinion the best, solution to the access restrictions which result when you hollow bowls inboard is to use a lathe with a headstock spindle with both an inboard and an outboard nose. (The headstock in the picture above right has both inboard and outboard noses, the latter with a left-hand thread.) That many turners are unaware of this solution became apparent when I published my book, *The Fundamentals of Woodturning*. I received several emails opining that I had transposed the photographs on the front cover and in the bowl-turning chapter despite the second sentence of that chapter reading: 'Its illustrations show a bowl being turned outboard.' This arrangement allows, or should be designed to allow, unimpeded body and tool positioning (picture above right). This is also the most expensive solution.



Turning outboard. I'm free to place my body where I wish, and can use a steep tool presentation if I like. Ideally there should be a duplicate (or triplicate) set of lathe controls located to suit outboard turning. Note: The lathe is turned off in this picture

If the left-hand nose has a left-hand thread, one set of chucks will be needed with right-hand threads and one set with left-hand threads. Some chucks have adaptors which enable those chucks to be used on both thread directions, but swapping adaptors is tiresome. There are also double-threaded chucks, but these are rare and the resulting threads are weak.

Some headstock spindles have inboard and outboard noses, both with right-hand threads. This saves having to have two sets of chucks or having to swap



A fabricated outboard stand, banjo and toolrest

adaptors. However, because lathes can be used by both left and right-handed turners, and because sanding of radially grained workpieces can be faster if the lathe direction is alternated during the process, a facility to mechanically lock chucks on to the noses, and a full reverse should be provided.

To use the outboard nose an outboard toolrest mounting facility has to be supplied. This must be truly rigid, should allow an adequate range of toolrest locations, and be smooth to adjust. Facilities which satisfy these three criteria are usually expensive (pictured below, and right), but there can be cheaper options, (bottom pic). You'll also need to allow ample room to the left of the headstock when installing the lathe.



A nicely machined outboard turning facility



A cheap but excellent outboard facility for a bench lathe. The wooden bearers are continued past the left-hand end of the headstock, and a steel plate is mounted on them. You may need to obtain a banjo manufactured for a lathe with suitable high centre-height, or have a tall projecting from the right-hand side of the banjo neck banjo made



A swivelling-headstock lathe

Sliding headstock lathes

Another solution to bed access restriction is a headstock which slides along the bed towards the right-hand end. When the headstock is so repositioned, the turner can stand comfortably when bowl hollowing, the banjo is supported rigidly, and tool positioning is unrestricted. To take full advantage of this potential, because when hollowing right-handed turners should prefer the workpiece rotating clockwise, the lathe should have a full reverse, and a chuck-to-spindle nose locking facility. The disadvantages of this lathe configuration are that removing the tailstock and sliding the headstock and banjo to and fro can be onerous, and the trueness of the common alignment of the axes of the headstock spindle and tailstock ram may eventually become compromised to some extent.

Swivelling headstock lathes

The fourth solution to restricted access is a swivelling headstock with a single inboard nose, usually with a right-hand thread (above). By swivelling the headstock clockwise in plan appropriately, access for a turner's body and for tool presentations are improved. Again to take full advantage of this potential, the lathe should have a full reverse and chuck-to-spindle nose locking. The lathe will also require an extra toolrest mounting facility which doesn't get in the way when turning with the headstock pointing along the bed, and is truly rigid – any flexing in this facility is likely to result in a catch. The adjustments of this facility should allow the turning of workpieces of a reasonable maximum diameter and thickness. A turner may then be able to turn on both the left and right-hand side of a workpiece, using the extra toolrest mounting facility or a toolrest mounted in the inboard banjo.

Pedestal lathes

A pedestal lathe is essentially a tower containing a headstock spindle and the motor and transmission to drive the

spindle. Pedestal lathes are intended for bowl and faceplate turning. If there is a full reverse and a chuck-to-spindle locking facility, one spindle nose is usually sufficient. The mounting for the toolrest(s) may be attached to the tower or be separate. There may also be one or more attachable beds and a tailstock, which enable a pedestal lathe to be converted into a general purpose lathe.

Other considerations

I'd like to be able to confirm that the more you pay, the better the lathe's design. While cost might be a rough guide to the quality of the materials, components and machining, unfortunately it doesn't always correlate with ease of use. Below I'll briefly discuss some of the many problems which you can still, and indeed are likely to, experience.

Alignment of headstock spindle and tailstock ram axes

The greater the misalignment of these two axes, the more likely that any holes you bore using a drill mounted in the tailstock ram will be oversize and non-axial.

Chips should fall away easily

At least one brand of lathe has the roof of the cabinet containing the motor flat and positioned so that shavings can't fall through the bed and away, and therefore have to be cleared manually.

Control positioning

If you're standing towards the right-hand end of the bed and something is going wrong, it can be dangerous to have to move to your left to turn the lathe off. It's therefore desirable to have at least an off button at a lathe's right-hand end. Another solution is a long, knee-operated bar switch. The design and location(s) of the controls should, however, limit the probability of accidentally turning the lathe on or off.

Easy slide of tailstock and banjo

Perversely, the more play there is in the mechanism for locking both components to the bed, the more likely the component is to jam in position on the bed.

Headstock casing design

I once had a Wadkin pattern maker's lathe. Beautifully machined, very solid, but there was a speed-change lever on the nearside of the headstock which dug in my ribs, and the great bulk of the headstock casting limited access to the left-hand ends of workpieces.

Indexing

An integral indexing facility is surprisingly

useful. When it also provides the headstock-spindle locking, check that the locking facility is strong enough. Pins can shear off if the lathe is started with the indexing pin still engaged, and indexing holes can enlarge over time.

Legs

A lathe's leg(s), supporting cabinet, and bolting-to-the-floor facility should be designed so that you don't trip over them. Nor should parts of the lathe's structure protrude so as to unnecessarily restrict body positioning or tool presentations.

Lever-cam-operated banjos

These are more convenient to operate than those which use a separate spanner. However, the lever and its associated mechanism can restrict the positioning of the toolrest. If so you should consider buying an extra spanner-locking banjo.

Morse tapers

These should be provided in both the right-hand end of the headstock spindle, and the left-hand end of the tailstock ram.

Noise

Quietness is desirable. Cast iron is favoured over steel for lathe structures because free graphite between the crystals of cast iron causes it to be a poor transmitter of both vibration and noise. Where and how the lathe motor and any controller is mounted and enclosed does affect the noise level.

Reverse

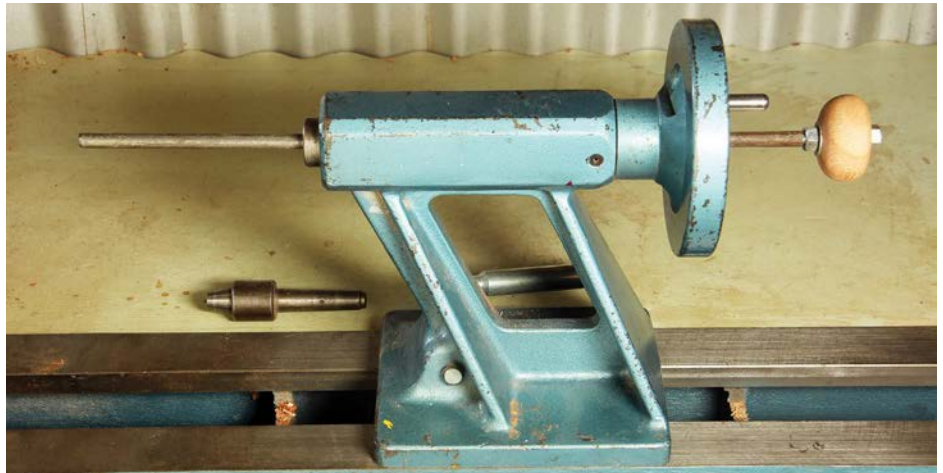
As discussed above, a full reverse is desirable for a lathe which is intended to allow bowl and faceplate turning.

Swing

The nominal swing of a lathe is double its centre height and is the maximum diameter of the workpiece which can be accommodated between centres. If the design of the workpiece means that the banjo(s) cannot be positioned without fouling a workpiece, the swing is effectively reduced. It would seem that the larger the swing the better. My preference is for a swing of about 400mm. Larger (about 600mm) swing, short-bed lathes with their tailstocks dismantled are used by some as bowl-turning lathes, but the beds are typically still too long to allow comfortable body positioning and steep tool inclinations.

Tailstock easy removal and remounting

Occasionally you will have to remove the tailstock to mount an extra banjo for long, two-stem toolrests, or to mount other equipment on the bed. As well



A non self-ejecting tailstock

as enabling the tailstock to slide along the bed easily, the locking arrangement should be designed to allow easy tailstock remounting on the bed. Some lathes have a hinged bed section (usually available at extra cost) at the right-hand end of the bed, which can save having to totally dismount the tailstock.

Tailstock type

There are two basic types of tailstock: those which automatically self-eject

tail centres, drills and other items of equipment mounted on Morse-taper arbors when the ram is retracted; and those aren't self-ejecting (see above). The second type, when used with the appropriate hollow tail centre, facilitates long-hole boring. However, the depth of hole which can be bored is lessened by the length of the drill within the tailstock. Therefore tailstock type shouldn't usually be a critical factor when choosing a lathe.



The underhand left-hand grip. The left hand is merely resting against the toolrest



The tied-underhand left-hand grip. The left hand is actively gripping both the tool and the toolrest, and is therefore enabled to take a more active part in manipulating the turning tool. In particular, the left forefinger can move traverse the tool along the toolrest either to the left or the right. Also, because the left hand should be securely gripping the tool blade, the left hand can apply axial thrust and can rotate the tool

Toolrest design

Australasia's most important contribution to woodturning could be the tied-underhand grip. Introduced by a New Zealander

(whose name I don't know) working in Sydney in the 1920s, it gives better control for detailed turning than the traditional underhand grip. Most toolrests with cast-

iron or cast-steel horizontal members seem to be supplied on the basis that their users only turn short spindles and only use the underhand grip for detailed turning.



A concave moulding being turned with the detail gouge in the desirable steep presentation

Turners are coming to accept the advantages of smaller sharpening angles on cutting (as opposed to scraping) woodturning tools. Thus a nominal 25° sharpening angle is now not uncommon on spindle gouges, and results in a slightly smaller effective sharpening angle when the cutting edge along the flank is used in faceplate turning. The steepness of the rear face of a toolrest (or its equivalent) should be such that, in faceplate turning, the gouge blade doesn't bear against the rear, bottom edge of the toolrest – paint worn off a toolrest's rear bottom edge is a sure sign that the toolrest's rear face is not steep enough. The diagram shows my current thinking on toolrest design.

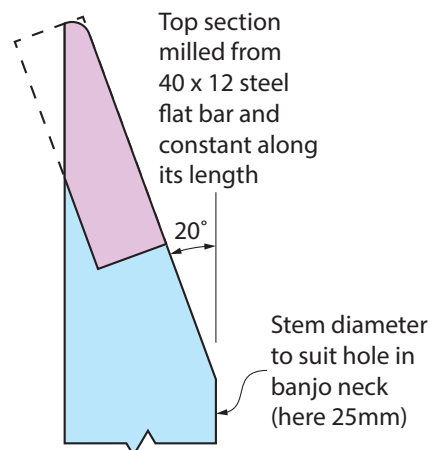
Particularly on smaller lathes, the toolrest's stem diameter can be too small for a toolrest of useful length

and allow the toolrest to spring.

If you do a lot of spindle turning you'll probably need a long toolrest with two stems. (I also had 2m-long toolrests with three stems.) The extra stems should have a diameter somewhat less than the diameter of the hole in the banjo necks so that the toolrest can be mounted and dismantled easily.

Toolrest locking

The stem of a toolrest is typically locked in the neck of a banjo by a screw projecting from the right-hand side of the banjo neck. This screw is typically operated by a lever. Particularly when faceplate turning inboard, this screw can prevent free tool movement. It's therefore desirable that the screw and any integral lever project no more than necessary, and that one or even two



My recommended toolrest design

additional threaded holes be provided around the neck of the banjo.

Two-part headstock spindles

One way to provide a spindle nose on each end of the spindle is to manufacture the spindle in two parts. In removing a chuck which had locked hard on to a two-part spindle's outboard nose, the two parts of the spindle separated and their mating threads were damaged.

Variable speed

Variable-speed lathes are much more convenient than those with several fixed speeds. However, motor torque is proportional to motor speed, hence step pulleys are still usually provided. Another option is multiple motor windings. Check that the lathe provides enough low-speed torque for heavy, large-diameter workpieces, also that acceleration from rest to the desired speed and changing from one desired speed to another don't take an unreasonably long time.

Conclusion

I hope the above will prove useful to those considering buying a lathe. I've tried few of the many available woodturning lathe brands and models, so am not qualified to recommend or advise against any particular one, nor should any of the content above be taken as doing so.

It's wise to trial your most likely lathe choices for a while for the different types of turning before deciding on your purchase. Here's where it's useful to be a member of a woodturning club. Clubs usually have several different lathes and there's also the potential to trial members' own lathes in their home workshops. And if you decide that a lathe has shortcomings, inform the supplier and the manufacturer. ●

OUR CONTRIBUTORS



ANDY COATES

Andy is a professional woodturner and has a workshop and gallery in Suffolk. He mostly makes one-off pieces, but is just as likely to be doing small-batch runs, antique restorations or any number of strange commissions. He also demonstrates and teaches turning. cobwebcrafts@btinternet.com
cobwebcrafts.co.uk



COLWIN WAY

Colwin started turning aged 13 and has since gone on to teach the craft. He wishes to continue to give people the confidence to try the wonderful hobby for themselves. colwinway@btinternet.com



CHRIS HART

Chris is a retired sales & marketing executive now living in the beautiful North Wales countryside on the edge of Snowdonia National Park. Here he is currently developing ornamental turning techniques and is an active member of Shropshire and Mid-Wales Woodturning clubs. christyhart@btinternet.com



CHRIS WEST

Chris has spent a good deal of time designing, turning and writing on the subject of salt and pepper mills. His latest book, *Adding Spice to Your Woodturning: 20 Salt, Pepper & Spice Shaker Projects for Woodturners*, was published in 2017 by Artisan IDEAS in North America. www.westwoodturnery.co.uk



GEOFFREY LAYCOCK

Geoffrey is a Chartered Safety Practitioner, Chartered Ergonomics Practitioner and Fellow of the Royal Society for the Protection of Health and has written extensively for our sister magazine, *Furniture & Cabinetmaking*. geoffrey@otterconsultancy.co.uk



JOHN PEDLEY

John served an apprenticeship as a joiner and wood machinist. He went to Regent Street Polytechnic and eventually qualified as a Chartered Surveyor. He is a member of the East Surrey Woodturners. john@pedleys.org



JOHN PLATER

John has woodturned in the UK since his schooldays, but in a more meaningful way since taking early retirement 10 years ago. He likes making decorative hollowed pieces from interesting woods with holes, sap and bark. He thinks that he's OK with a bowl gouge but useless with a skew. www.johnplater.co.uk



KURT HERTZOG

A professional woodturner, demonstrator and teacher, Kurt writes for various woodturning and woodworking publications in the US. He is on the Pen Makers' Guild Council and is a past president of the American Association of Woodturners. kurt@kurthertzog.com



MIKE DARLOW

Mike lives in Exeter in NSW, Australia. He is the author of six woodturning books, three woodturning DVDs, and about 160 magazine articles on woodturning. He has taught and demonstrated in America, Australia, Canada, Jersey, New Zealand and Great Britain. www.mikedarlow.com



PAT CARROLL

Pat is a builder and carpenter who has always loved working with wood. After taking his first woodworking class in 2002 he has been keen on every type of woodturning but is particularly drawn to hollow forms. He is currently looking to introduce a combination of texture and colour into his work. www.patcarrollwoodturning.com



RICHARD FINDLEY

Richard discovered woodturning while working for his father as a joiner. He makes all kinds of work to commission, and offers demonstrations and a range of woodturning supplies. richard@turnersworkshop.co.uk
turnersworkshop.co.uk



WALTER HALL

Walter is a woodturner who has specialised in making pens and pencils for more than 20 years. Based on the Northumberland coast in the UK, Walter sells his bespoke pens and pencils through local craft centres and via his website. walter@walterhall.co.uk
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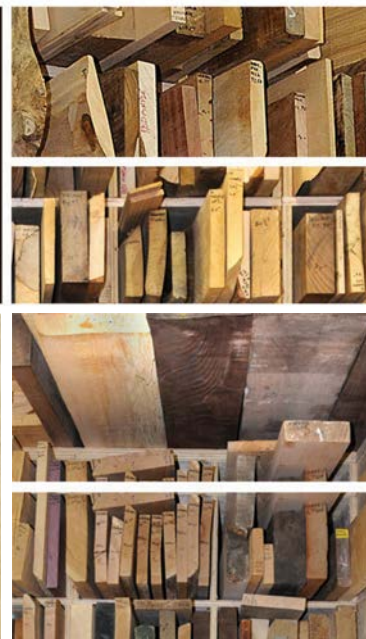
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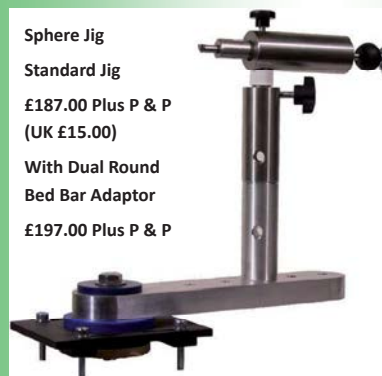
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Mark Baker talks to Pennsylvanian
turner Frederick Hill PhD

From biology to woodturning



I am a retired university professor with a PhD in the Biological Sciences. I worked at Bloomsburg University in Pennsylvania teaching a variety of courses in vertebrate studies. I've been retired since 2003 and presently live in the Endless Mountains of Pennsylvania, just above the small village of Camptown – made famous by Stephen Foster's song *Camptown Races*.

I have a very successful woodworking business in which I make many items for quilters and also produce useful household items, bowls, etc. and lots of wood art (www.frederickchill.com). I also teach woodturning.

My wife, Val, is an exceptional award-winning longarm quilter. She makes competition quilts, teaches quilting, quilts for others and sells longarm quilting machines. We enjoy a 33-acre farm property which allows us to raise most

of the food we eat, including producing maple syrup that we sell.

A fact I'm very proud of is that we produce nearly 100% of our electricity from 44 solar panels on our property. I get most of the wood I use in my business from my property and replant dozens of trees for every one that I harvest. We also bicycle hundreds of miles annually in interesting places on our tandem bicycle. No, we don't sing *Daisy, Daisy* while we ride.

HOW LONG HAVE YOU BEEN TURNING AND WHAT ATTRACTED YOU TO IT?

I've been turning for well over 40 years. I always enjoyed working with wood and when I bought my first lathe (a General 260) I was hooked. I loved the fact that you could make a finished piece on the lathe, basically from junk wood.

HOW DID YOU GET STARTED?

My dad had a Delta lathe in his basement and I'd butcher wood on it when I was younger. I never realised that the lathe would one day rule my life.

I started turning by making several small bowls, some of which I still have. By the way, I strongly encourage all involved in turning to keep your first pieces in a safe place so you can go back later and see how crude they were and how much you have improved with time and practice.

WHAT HAVE BEEN YOUR BIGGEST CHALLENGES?

Recently my biggest challenge is that I have a major visual deficiency created by a surgical mistake by an ophthalmologist who worked on my eyes after I had detached retinas. Because of this I have a very difficult time with small details.

I've learned to overcome most of this with practice, patience and intense lighting.

WHAT IS THE MOST MEMORABLE PIECE YOU'VE MADE?

I have several. However, my favourite is A Forest From The Trees. It was a challenge to make because of the thin 1.5mm spindles and then to organise them into a meaningful arrangement.

ODDEST EXPERIENCE IN WOODTURNING

Several years ago I was turning a large, thin bowl. I heard 'the sound' that you don't want to hear when a piece is turning and a second later the piece literally exploded. I always stand out of the path of such an accident so all the pieces missed me. The only thing was that I couldn't find ANY of the bowl in my shop. It had disappeared. A month or so later I found a piece of it embedded in a wall about 15ft away and 8ft from the ground. It had hit a stud in the wall or would have gone through to the outer metal skin of my building. I left the piece in the

wall and wrote a message under it as a reminder so that event is not forgotten. The other pieces began to show up in odd places over time. Not sure if I really learned from that one since I already 'knew' the lesson. However, it did ingrain in me to be eternally vigilant and work as safely as possible.

MOST MEMORABLE EXPERIENCE?

I've had many of them but they all revolve around helping my students on the lathe. It is very gratifying for me to teach someone a technique and for them to say: 'Wow, I can do that.'

WHO ARE THE PEOPLE WHO HAVE INFLUENCED YOU THE MOST THROUGHOUT YOUR WOODTURNING CAREER?

I took a three-day class from David Ellsworth several years ago and, after that, started my woodturning business. He is an inspiration. I've attended many demonstrations with Ray Key and learned from his precision and patience. There are also dozens of other woodturners who

I've talked with or listened to who have added immeasurably to my skills.

WHAT'S THE BEST BIT OF WOODTURNING ADVICE YOU'VE EVER RECEIVED?

I read somewhere that you become good at your craft when you have made thousands of mistakes. I've come close to that so I must be getting good!

WHAT ARE THE BIGGEST DIFFERENCES IN TURNING NOW TO WHEN YOU FIRST STARTED?

When I first started the work that was being done by most was rather crude by today's standards. There were true artists in the field at the time but nothing like today. Today's woodturners are making so many items that are unbelievable.

IF YOU WOULD LIKE TO SHARE ONE THING WITH YOUR FELLOW TURNERS WHAT WOULD THAT BE?

Make 10,000 mistakes (and learn from them). If you aren't making mistakes you aren't doing anything.



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CONTACT

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Kit & Tools

A collection of press releases showing the latest tools and products on the market

All prices are correct at time of going to press but are subject to change without notice. Products from US & overseas to UK are subject to shipping & taxes

Coronet Herald Lathe

Record Power has recently launched a new lathe, the Coronet Herald. It comments: 'This brand new lathe from Record Power represents the culmination of many decades of expertise in the manufacture and supply of superior woodturning lathes. Developed with the help of professional woodturners and keen hobbyists, we believe we have produced a world-class machine for woodturners of all levels. Thanks to a number of innovative design solutions the capabilities, features and performance of the Herald far exceed anything a machine of this size has been capable of before – It brings top-end professional performance at a fraction of the size and cost of comparable heavy-duty machines.'

The lathe is bought as a bench-mounted lathe with the option of buying legs, outrigger, lathe bed extension and bench feet, so you can decide what you want make this the lathe for you and your workshop.

Features: Cast-iron construction, swivel headstock, outboard turning facility, bench or leg-mount options spindle lock, state-of-the-art electronic variable speed, cast-iron bead, heavy-duty spindle lock and indexing, camlock, rests and a five-year warranty.

SPEC

• Maximum bowl diameter:	533mm
• Maximum between centres:	508mm
• Maximum swing over bed:	355mm
• Spindle speeds via three pulleys:	95-3980rpm
• Motor input P1:	1 kW
• Motor output P2:	0.75kW
• Thread:	M33 x 3.5tpi
• Taper:	2 Morse taper
• Weight:	48kg
• Size:	W870 x D290 x H252mm



Prices

• Coronet Herald lathe:	£899
• Tubular leg stand:	£129.99
• Cast iron outrigger:	£39.99
• Bench feet:	£59.99
• Bed extension:	£179.99

Contact: Record Power

Web: www.recordpower.co.uk

ULTRA-SHEAR CARBIDE INSERT TURNING TOOLS

Woodpeckers has introduced six new carbide insert turning tools. Three mid sizes at 15.5in long and three full-sized 24in tools. Each is designed to take a specific tip pattern. There are three cutter profile options: one true square and two with differing radii between the corners; one round cutter and a detail diamond-shaped available in two styles – one with a sharp point and one with the a small radii on the point.

Woodpeckers says: 'The cutting tips are a result of months of testing and trials and feature a unique nano-grain carbide matrix, polished to a mirror-finish on the cutting surface and precision ground on the bevel. They are the sharpest, longest-lasting inserts on the market.'

'A truly sharp cutting edge needs

rock-solid support to give you the best results. Ultra-Shear tools feature the same ChroMoly alloy steel used in NASCAR roll cages and crankshafts. CNC machines create the unique shaft profile (the tool shafts are milled to allow the tips to be used flat to the work to remove waste and shape wood, or angled so they shear cut and refine the surface), then the shafts go through a two-step hardening process that makes the shaft rigid and creates an ultra-smooth surface finish that glides easily across your tool rest and resists corrosion.'

Prices

• Mid-sized tools	\$99.99 each
• Full-sized tool	\$139.99 each
• Spare cutters/inserts	\$16.99 each

Contact: Woodpeckers

Web: www.woodpeck.com





EASY LIVE CENTRE

Easy Wood Tools has recently introduced the Easy Live Centre. This 2MT revolving centre has a ring/cup centre nose threaded to 3/4in x 10 and the body is through-bored with a 1/2in hole.

The revolving centre has precision angular contact bearings, sealed and lubricated, that can tackle thrust and radial loads combined with a high-quality radial bearing in the nose, the centre will produce long-lasting accuracy.

In addition to the Easy Live Centre, there is an Easy Cone Set comprising a 4in diameter cone and nominal 1 1/4in diameter point, both of which are made from 6061 aluminium.



Prices: Easy Live Centre £119.99

Easy Cone Set £55.99

Contact: Easy wood Tools

Web: www.easywoodtools.com

LATHE ALIGNMENT TOOL

The new Axminster lathe alignment tool is precision turned from high carbon steel in our own engineering workshop. You can use this double-ended 1MT taper on any woodturning lathe that has a 1MT in both headstock and tailstock. It is a quick and simple method of ensuring correct realignment after bowl turning with the headstock rotated.

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Contact: Axminster

Web: www.axminster.co.uk

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CYGNET AND ADJUSTER HOLLOWING TOOLS

Hunter Tools Systems has just released two new tools:

Cygnnet tool

The Cygnnet tool, or baby swan, was designed by Cindy Drozda from Boulder, CO. This is an ideal tool for many small-diameter and small-opening hollow forms. Hunter Tools says: 'A beginner or an experienced woodturner will enjoy the Cygnnet ease of control due to the design and angle of the cutter on the tool. The tool uses the versatile Hunter No.1 cutter, set at 45° front tilt.'

Price: Unhandled \$125

Adjuster tool

The adjuster tool is for box-making, ornaments and small vessels. You can easily adjust the tip to any desired position. It can cut aggressively if needed, or a light shear cut is easily achieved.

The tool is available in either a 10 or 13mm shank version.

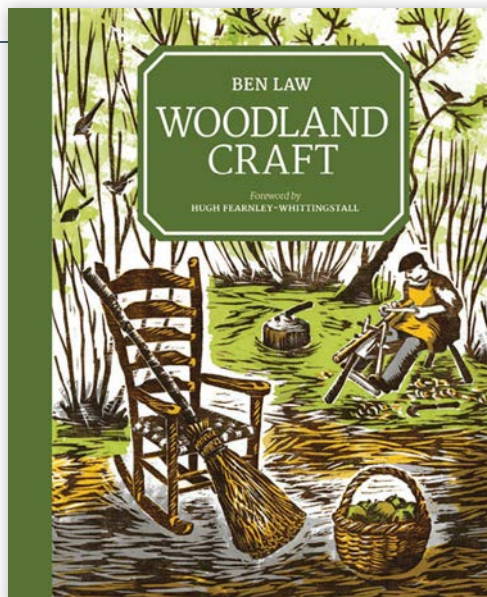
Price: Unhandled \$165-180

Contact: Hunter Tools Systems

Web: <http://huntertoolsystems.com>

For UK prices and enquiries contact: The Toolpost

Web: www.toolpost.co.uk



Conversion chart

2mm (7/64in)
3mm (1/8in)
4mm (1/4in)
6mm (1/4in)
7mm (9/32in)
8mm (5/16in)
9mm (11/32in)
10mm (3/8in)
11mm (7/16in)
12mm (1/2in)
13mm (1/2in)
14mm (9/16in)
15mm (9/16in)
16mm (5/8in)
17mm (11/16in)
18mm (3/4in)
19mm (3/4in)
20mm (1/2in)
21mm (13/16in)
22mm (7/8in)
23mm (23/32in)
24mm (5/8in)
25mm (1in)
30mm (1 1/8in)
32mm (1 1/4in)
35mm (1 3/8in)
38mm (1 7/8in)
40mm (1 5/8in)
45mm (1 3/4in)
50mm (2in)
55mm (2 1/8-2 1/4in)
60mm (2 3/8in)
63mm (2 1/2in)
65mm (2 5/8in)
70mm (2 3/4in)
75mm (3in)
80mm (3 1/8in)
85mm (3 1/4in)
90mm (3 1/2in)
93mm (3 3/8in)
95mm (3 7/8in)
100mm (4in)
105mm (4 1/8in)
110mm (4 1/4-4 3/8in)
115mm (4 1/2in)
120mm (4 3/4in)
125mm (5in)
130mm (5 1/8in)
135mm (5 1/4in)
140mm (5 1/2in)
145mm (5 3/4in)
150mm (6in)
155mm (6 1/8in)
160mm (6 1/4in)
165mm (6 1/2in)
170mm (6 3/4in)
178mm (6 5/8in)
180mm (7in)
185mm (7 1/4in)
190mm (7 1/2in)
195mm (7 3/4in)
200mm (8in)
305mm (12in)
405mm (16in)
510mm (20in)
610mm (24in)
710mm (28in)
815mm (32in)
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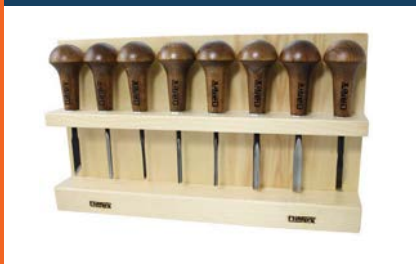
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This new carving drawknife is just one of the many new products from Narex.

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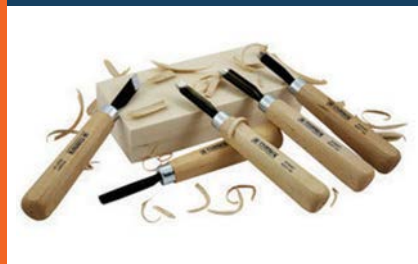
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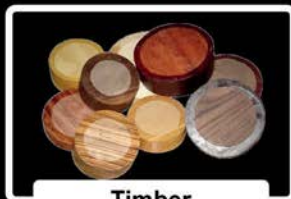


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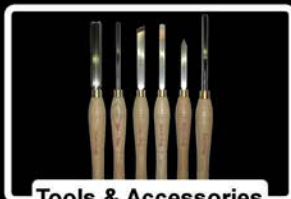
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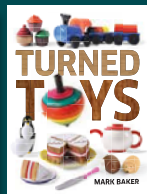
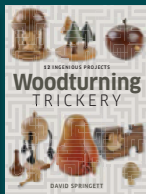
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Sky Tower

Jim McLain shares with us the story behind the making of Sky Tower

Having lived in New Mexico almost my entire life, I am surrounded by inspirational landscapes, artifacts, architecture and so much more. I first started making towers in my Chaco Series, which was inspired by the structures at Chaco Canyon National Monument back in 2013. Being an early morning bike rider, I have always been inspired by the New Mexico sunrises and have an opportunity to see the beautiful New Mexico skies turn from red, pink and gold to blue and turquoise each morning. During our monsoon season, the colours are even more vivid because of the cloud cover. I kept thinking that I would like to capture these colours and incorporate them into a piece. I decided that the best way to do this was with the use of glass and took a fused glass class in the Spring of 2017, to learn something about working with glass. At first I thought of adding some glass bricks to one of my Chaco Towers and actually made some glass bricks to be added to the brick pattern of this series. After some experimentation with these bricks I did not feel that I had achieved what I was looking for. Searching for another option, I decided to go back to my roots in the woodturning world (I started out as a segmented woodturner) and do a segmented tower that could be cut away to reveal the glass within. The segmented work was inspired by Bud Latven, a fellow New Mexican and similar to some segmented spheres I did in my early woodturnings. The finished piece is 368mm tall and 165mm in diameter. It is made out of curly maple with two different colours of blue iridized glass one being blue and the other being a turquoise blue both colours are found in the New Mexico sky at sunrise.

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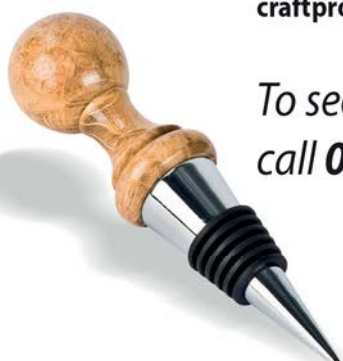
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