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Mark Baker
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1966-2020



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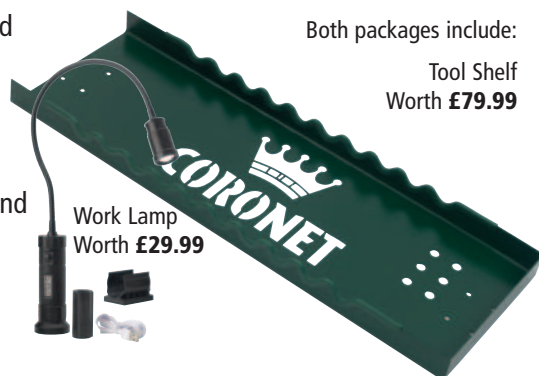
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BE INSPIRED, BE CREATIVE

End of an era



It is with great sadness that we tell you that Mark Baker, having shared his terminal diagnosis with you in issue 345, has passed away.

This issue we remember Mark and his work in a gallery and feature written by his many friends, colleagues and fellow woodturners.

Mark lived and breathed woodturning – and fishing – and was greatly respected and loved by the woodworking community all over the world. Many of you have commented on Mark's genuine interest in readers, their work and what

they wanted to see in the magazine. He encouraged many of you to share photos, join clubs and feel a part of a community.

Our most sincere condolences go to his wife, daughters, family and many friends around the world.

In the words of the man himself: 'Happy woodturning.'

'To live in hearts we leave behind is not to die.'

Thomas Campbell



COVER IMAGE: Mark Baker (see page 6)



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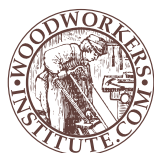
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HEALTH AND SAFETY

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 when turning and wear appropriate personal protective equipment (PPE) and respiratory protective equipment (RPE).



NEWS, LATEST PRODUCTS, MAGAZINE UPLOADS & EVENTS

can all be found on www.woodworkersinstitute.com. These all appear on the magazine homepage and you can see a bigger selection by scrolling down the page and clicking on the individual stories. We also have an extensive online archive for you to browse, or see us on Facebook & Twitter.



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Mark Baker

An ambassador and inspiration 1966-2020

Woodturning editor **Mark Baker**, who died in October, was a humble woodturner, a born teacher, a generous friend and an inspiration to woodworkers worldwide

Woodturners around the globe have paid tribute to Mark Baker, editor of *Woodturning* and *Woodcarving* magazines and group editor of all GMC's wood titles. Mark died in early October after a battle with cancer, having shared his terminal diagnosis in the magazine earlier this year. In *Woodturning* 345 he wrote: 'I have had the most amazing time and experiences in my woodworking journey. I would never have realised the delights I was to experience as a kid straight out of school starting his apprenticeship. My journey in woodworking over the years has challenged me, surprised me, taught me so many lessons, taken me to places I would never have seen. It's allowed me to see remarkable work and to meet and talk to the most amazing people from all walks of life, who also shared a love of woodworking.'

Mark joined a local building company to work as a carpenter and joiner as soon as he left school, and spent time working on protected listed buildings and timber-framed houses. He went on to work with a metal fabrication company before joining a charity to help set up craft workshops for autistic adults. He obtained qualifications for teaching adults with special needs and helped develop a vibrant, fun and focused learning environment. Later Mark worked for Robert Sorby in Sheffield before joining GMC as editor of *Woodturning* magazine in February 1999.

Mark had read the magazine from its first issue and had been writing for *Woodturning* for several years before he started working there full-time. He wrote: 'I always anticipated each edition, wondering what and who would be featured, what I would learn, and what people would be making. I also enjoyed seeing all the new kit and tools.' But he noted: 'The only sad part was that, over the years, some of the master turners, authors and readers passed away. Sad as that was and is, I know their legacy was that they shared their knowledge and people gained from it immensely. It is on their shoulders that we continue to learn, creating beautiful things and having fun doing so.'

During his time at GMC Mark also authored a number of books, including *Turned Toys*, *Woodworking Projects: A Workshop Guide to Shapes*, *Weekend Woodturning Projects*, *Woodturning: A Craftsman's Guide*, *Wood for Woodturners*, *30 Minute Woodturning* and *Turning Hollow Forms*, and he edited many more GMC books. He travelled the world doing demonstrations at events and woodworking clubs, taught on cruises and judged many woodturning competitions. He left behind his wife Sarah and two daughters Eleanor and Hannah.

'My journey in woodworking over the years has challenged me, surprised me, taught me so many lessons, taken me to places I would never have seen. It's allowed me to see remarkable work and to meet and talk to the most amazing people from all walks of life, who also shared a love of woodworking.'

Mark Baker

Teacher and mentor

Mark was a master woodturner whose demonstrations were admired throughout the woodworking world – but he is remembered even more for his generous support and inspiration of those just starting out. Professional woodturner and GMC technical editor Andy Coates recalls meeting him in 2003 when he was a novice turner who had taken it up as a hobby, and says Mark was 'unreasonably kind about the atrocity I had taken to exhibit'. Years later, after the pair had worked together on the magazine for some time, Mark turned to Andy for advice on his own turning. Andy says: 'Mark approached me and asked if his pieces were good enough. In that moment we both laughed at the fact that not that many years previously I had been the one seeking assurance and guidance, and there we were reversing the roles. What struck me only later was that despite his position as editor of *Woodturning* magazine, author of a number of excellent woodturning books and his standing in the woodturning community in the UK and internationally, he was humble enough to imagine his work was nothing special. But of course, it was – it was of an incredibly high standard, in respect to design, application and finish. I don't think Mark ever considered himself to be one of the top turners, but he was. It was just that he was a humble woodturner – a rare beast!'

Andy adds: 'I have been fortunate enough to see him demonstrate many times, and his demonstrations were always of the highest quality. Mark wasn't a showboat turner: he was a teacher, and his only aim was to pass on the tips, tricks and techniques that would hopefully improve your own turning. And if you listened, they did.'

'He has been a great ambassador for woodturning, and an encouragement and inspiration to countless turners throughout the world.'

Andy Coates

'Mark's legacy is an important one. Through his work at *Woodturning* magazine, where he always strived to produce the best magazine he possibly could, through his writing and demonstrating, his committee work with the Worshipful Company of Turners and the standard of his own work, he has been a great ambassador for woodturning, and an encouragement and inspiration to countless turners throughout the world. His knowledge of the craft, its history and its practitioners worldwide, was incredible, and no discussion on woodturning matters was ever boring. Mark Baker was the most unassuming man: kind, quiet, considered and incapable of not sharing his passion for woodturning.'

Tall vase in cherry, published in 244



Les Symonds left behind a career in special needs teaching to become a professional turner. He remembers Mark as generous and supportive, and says: 'Throughout the course of our lives, each of us encounters special people who map out the milestones that can make life such a wonderful experience: Mark was one of those special people. He spotted in me the potential for skills that he helped me to develop and it was through his intervention that I was able to advance my woodturning career.'

'Mark to me was more than an editor, turner and demonstrator – he was a mentor and an inspiration,' says woodturner and penmaker Walter Hall. 'Mark was the reason I became an author and contributor to *Woodturning*, an endless source of ideas and always ready to support and encourage. I will miss his friendly and supportive voice at the end of the phone, his advice when things were going wrong and I will forever cherish the examples of his work that I am honoured to own.'



Scout Woodturning day organised by the AWGB. From left to right, Andy Coates, a Scout who had just had a taster session, Ray Key and Mark

'Throughout the course of our lives, each of us encounters special people who map out the milestones that can make life such a wonderful experience: Mark was one of those special people. He spotted in me the potential for skills that he helped me to develop and it was through his intervention that I was able to advance my woodturning career.'

Les Symonds

Ash vase with finial stopper published, in issue 215



'Mark to me was more than an editor, turner and demonstrator – he was a mentor and an inspiration.'

Walter Hall

Louise Biggs, now a regular contributor to GMC's woodworking magazines, recalls spending all day plucking up the courage to show Mark her portfolio the first time she met him at the European Woodworking Show in 2010. 'I did not know him then but over the years came to see what a special person he was and a friendship formed from there. I booked him for my woodturning club demonstrations as well as writing for GMC. I shall miss him greatly,' she says. Professional woodcarver and tutor Zoe Gerstner, who worked with Mark throughout his time at *Woodcarving* magazine, says his encouragement was crucial to her. 'Mark was a knowledgeable and appreciative person who spent considerable time looking and discussing our display and carvings in progress,' she says. 'Not only praising our work, Mark was a perceptive and sensitive person who, when we had an unexpected family bereavement, quietly spoke sensitive and comforting words to us. We shall miss and remember him always.'

Sharing skills

Other woodworkers and colleagues recall his generous support, encouragement and

kindness as key factors in their careers. One of his key achievements was to encourage talented woodworkers to write, so their tips and techniques could be spread to a wider audience.

'I had the great pleasure of knowing Mark for 14 years,' says decorative carver and author Steve Bisco. 'When, as a hobby carver and novice woodturner, I cheekily sent in an article to *Woodturning* in 2006, I was surprised to get a phone call from the editor himself. He said he would use the article, but for future articles there were things I needed to do. I followed his guidance and more articles, more guidance and more encouragement followed. He was a very approachable and kind man and was the driving force behind not only the magazines but also the hobbies of woodturning and woodcarving. He will be sadly missed by all who knew him.'

Irish wood artist Pat Carroll says he would have given up writing for the magazine if it hadn't been for Mark. 'He worked hard to help me and kept assuring me I was doing great. His encouragement and support have helped me so much,' he says.



Selection of boxes, published in 202

Writing was the Achilles heel for woodturner and tutor Colwin Way – but because Mark kept asking, he turned his hand to it in 2014. ‘The thought of writing articles was terrifying,’ he says, ‘but Mark could see this and immediately started giving me advice. He would check to make sure I was keeping up with schedules but didn’t have too much on, and was always there for questions. He has made my introduction into writing enjoyable and has taught me so much. He’s never been afraid to say if my work wasn’t up to speed, but in a very supportive way and it’s this that has kept me writing.’

‘Mark has been my guide, mentor and friend, and whatever the conversation was about he would always open with “hello buddy” and end by making sure I was OK and wasn’t stressed about my workload. Mark always thought about others and how they cope and feel, and his work

‘Mark will be missed as a wonderful human being who helped many of us get to where we are and do things we never thought we could.’

Colwin Way

is going to be massively missed by the whole woodworking industry. More than that, Mark will be missed as a wonderful human being who helped many of us get to where we are and do things we never thought we could.’

Martin Brown praises Mark’s ability to tread the fine line between keeping advertisers well represented and remaining impartial. He says: ‘Mark’s perennially friendly demeanour, professional attitude and understanding made him someone you could approach with ideas, problems and more. A good teacher with a clear

understanding of what the untrained eye needed to see, his popularity within the turning fraternity was testament to his pleasant, knowledgeable and enthusiastic personality.’

Turner Phil Irons says: ‘Mark’s contribution to the woodturning world during his 24 years with the magazine was immense. He enriched the lives of countless people, sharing his knowledge, wisdom and expertise and leaving a lasting legacy to the world of woodturning.’ Alan Styles of Axminster Tools says: ‘We had the pleasure of working alongside Mark for many years, from the early years of our Axminster exhibitions where he’d help us with the judging through to his years at *Woodturning* magazine. Mark was always full of enthusiasm, keen to support wherever he could and a real pleasure to work with. Over the years, he not only helped us as a business but he also acted as a mentor for individuals within our team, sparing his own time to help nurture and guide their careers professionally. Mark was a huge part of the woodturning community, respected and knowledgeable. His passing represents a great loss.’

Andrew Greensted of Record Power says: ‘I always enjoyed the opportunity of talking to Mark. Not only was he endlessly positive and enthusiastic – he was also generous with his time and knowledge. As we have been rebuilding our UK manufacturing base and increasing our time and investment in product development, Mark was an incredibly helpful sounding board and source of encouragement. He was not only a skilled and knowledgeable practitioner whose opinion we would value on that basis alone, he also had a vast experience of our industry and used and tested products from all over the world, giving him a unique perspective that we truly valued. My experience of Mark was a kind, generous and positive person and his passing will be a great loss to the woodworking world.’

‘A very sad loss indeed,’ says Phil Dart of Beaufort Ink. ‘Not only was Mark among the most affable of editors and of course a talented woodturner whose work influenced my own a great deal at many stages in my journey – he was a sought-after demonstrator, a popular and effective ambassador for woodturning



Selection of hollow forms,
published in issue 204

‘Mark’s contribution to the woodturning world during his 24 years with the magazine was immense. He enriched the lives of countless people, sharing his knowledge, wisdom and expertise and leaving a lasting legacy to the world of woodturning.’

Phil Irons

in general, a mentor to writers, turning supply businesses such as my own and to turners too numerous to mention, a thoroughly readable author, an all-round good egg and downright nice fellow. His passing must be devastating for his family no matter how expected it had been in recent months, and is a huge loss to the international woodturning community.'

The team at woodworking shop The Turners Retreat add: 'Mark was an enthusiastic and inspiring individual, a dedicated woodturner with such unique creative flair. He will be fondly remembered by many.'

'Not only was Mark among the most affable of editors and of course a talented woodturner whose work influenced my own a great deal at many stages in my journey – he was a sought-after demonstrator, a popular and effective ambassador for woodturning in general, a mentor to writers, turning supply businesses such as my own and to turners too numerous to mention, a thoroughly readable author, an all-round good egg and downright nice fellow.'

Phil Dart



Bronze-effect lidded vessel



Balancing platter published in issue 245



Heart-shaped box in burr elm with an African blackwood finial, published in issue 202

'If Mark's work stood for one thing it was probably precision; precision in all aspects of the process, from wood selection and preparation through to finishing and presenting the work. He wanted every piece to be the best it could be. This outlook was obvious to anybody who was fortunate enough to see him demonstrate, where his meticulous approach to imparting knowledge in a clear and concise manner was the template we might all benefit by adopting. There was no place for showboating or self-aggrandisement in Mark's toolbox, and the demonstration room was no place for secrets: Mark was the most generous of teachers.'

Andy Coates

Yew supported lidded vessel, published in issue 246





Sandon Woodturners Dec 2010

Joining the club

Mark was extremely popular as a speaker and demonstrator to woodturning clubs, many of whose members remember him with great fondness. He was a patron of Sandon Woodturners, not far from his home in Colchester, Essex. When the club announced his terminal diagnosis to its members, its team received many reactions of shock and sadness, but also of admiration for Mark as a person and for

his contribution to woodturning. Chairman Paul Howard remembers Mark as a generous friend and says: 'I will be forever grateful for the friendship we had and for the networking and sharing of ideas that is a sign of a true woodturner.' Treasurer Norman Taylor adds: 'I have watched every demonstration he gave at the club and have always wanted them to last longer. His demos were interesting, informative

'His legacy will be the enthusiasm he had for woodturning and the inspiration and help he gave to so many people to begin, follow and become proficient in woodturning.'

Norman Taylor



Sandon Woodturners Oct 2014



Sandon Woodturners April 2013



Sandon Woodturners June 2018



Thameside Woodturning club 2018

and entertaining and delivered in such a pleasant, warm and friendly way. His legacy will be the enthusiasm he had for woodturning and the inspiration and help he gave to so many people to begin, follow and become proficient in woodturning.'

Turner Chris West says: 'Through his travels around the world as editor of *Woodturning* magazine, he met and befriended all of the world's best woodturners, but kept his feet on the ground and was equally at home with club members like myself. It has been my honour to be able to call him a friend. It may be a strange thing to say but I feel re-energised by the thought of all that Mark gave to woodturning. I'll be in my workshop tomorrow and he will be by my side.'

'Mark was both an inspiration and a support to me as my woodturning has developed and improved. Freely giving of advice and guidance, Mark was instrumental in helping so many enjoy woodturning. He will be sorely missed.'

Stewart Furini

Tributes to Mark have poured into the website of the Association of Woodturners of Great Britain, where members lamented the loss of an inspiration, a friend and 'a true gentleman'. Many said they would miss seeing his friendly face at events and others shared how his encouragement and inspiration had helped them on their turning journeys.

John Woods of the West Suffolk Woodturning Club says: 'When Mark demonstrated at our woodturning club his preparation was meticulous and his demonstrations a constant flow of information that challenged your thoughts. I and many others have lost a friend, and the world has lost a great ambassador for woodturning.' Malcolm Ferguson of the Border Woodturning Club says: 'The woodturning community has lost a true champion who worked for many years to promote woodturning and to make it a welcoming and inclusive community.'

Woodturner and YouTuber Stewart Furini says: 'Mark was both an inspiration and a support to me as my woodturning has developed and improved. Freely giving of advice and guidance, Mark was instrumental in helping so many enjoy woodturning. He will be sorely missed.' Irish artist and woodturner Emmet Kane says: 'The woodturning world has lost another great woodturner, teacher, demonstrator, writer and above all gentleman. Thank you for all the support and encouragement over the years.' Richard Findley of The Turner's Workshop in Leicestershire, a contributor to *Woodturning*, adds: 'He was a leader in the woodturning community and will be missed by everyone that knew him.'

A legacy of inspiration

Woodworker and journalist Alan Goodsell was technical editor of *Woodturning* when Mark joined the publication as editor. He recalls: 'Mark was a passionate and knowledgeable woodturner and had travelled the world demonstrating



Mark and Alan Goodsell at the AAW Symposium in Raleigh, NC, 2019

'Everywhere we went he was welcomed with open arms, his warm personality endeared him to the many people he met or was reunited with. I was always in awe of how people adored him and couldn't wait to chat with him or attend his enthusiastic and educational "rotations".'

Alan Goodsell

his tremendous skills and inspiring all woodturners, young, old, beginners and experienced. [When he became editor of *Woodturning*] he put his life and soul into the magazine, and he transformed it with his exceptional talent.' Later, after Alan moved to the US, he would meet Mark at symposiums all over the country.

'Everywhere we went he was welcomed with open arms, his warm personality endeared him to the many people he met or was reunited with. I was always in awe of how people adored him and couldn't wait to chat with him or attend his enthusiastic and educational "rotations",' he says.



Selection of platters, published in issue 203



Mark with John Jordan

John Jordan of John Jordan Woodturning has known Mark for 20 years and loved working with him writing for the magazine and looking at turnings with him at shows. 'I've never looked at work with anyone else that understood what I was seeing and thinking like Mark,' he says. 'It was always a very informative exercise for us both, and I connected Mark with a number of people over the years to write articles about their work. When we resume the live AAW Symposium again, I'm going to miss my friend Mark greatly. I miss him now.'

'Mark has done so much for the woodturning community over the years

and was a superb turner and teacher,' says Glenn Lucas of Glenn Lucas Woodturning. 'He also helped open up many doors for me and I considered him a friend. He will really be missed by us all.' Woodturner and cabinet-maker Seamus Cassidy says: 'He was very good to me in helping to get me noticed in the world of demonstrating abroad and in promoting me in various articles. He always met you with a smile and welcome.'

'Mark's enthusiasm for turning was inspiring and his work for the magazine too,' says Garry Stevenson, director of G&S Specialist Timber. Cam Merkle,

president of Razertip Industries, says: 'Mark struck me as a man who very much loved what he did and was generous with his time in encouraging others. He will be greatly missed.' Woodturner Jimmy Clewes adds: 'A good friend and fellow woodturner. A great loss.'

'Mark has done more for woodturning than anyone I know.'

Emiliano Archaval



'Mark and I [Emiliano Archaval] shared a passion for fishing. Tagging and releasing a Marlin was one of his dreams. I will tag the next one for you, Mark.'



Competition critique at the Richmond Woodturning Symposium

‘The woodturning community has lost a true champion who worked for many years to promote woodturning and to make it a welcoming and inclusive community.’

Malcolm Ferguson

‘Mark has done more for woodturning than anyone I know,’ says Hawaiian lathe artist and president of the Maui Woodturners Association Emiliano Archaval. ‘Ask anybody involved with turning, at any event, club meeting, regional or international symposium if they know Mark Baker – the answer is always yes. He was always super busy, juggling a lot of us over two magazines. But he found the time to talk about one of his passions: fishing. On one of our last calls, he told me he was retiring. I thanked him for hiring me, for our friendship, for taking a chance with me. No, he said, I want to thank you, you rose to the challenge. That’s how I will remember him: a great friend that cares for others.’

We’ve received so many additional condolences and memories from professional woodturners, clubs, readers and colleagues that we’ll be publishing more of those in the next issue.



Contemporary tazza
with support and base,
published in issue 249

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There are no calories in this bun

Chris West updates a piece of treen for the 21st century



ACCESSORIES:

- Brass candle holders. Two required
 - M8 x 25 mm studding (ideally brass) or cut down bolts. Three required.
 - M8 x 20 mm internal threaded tube, (ideally brass). Three required.
-

The Brighton buns are folding candlesticks which were used by explorers and soldiers in the 18th and 19th centuries, both in Europe and North America. They consist of two drip-pan bases with candle cups which screw into the base to provide two candle holders. When not in use, the candle cups are unscrewed and stored along with a candle snuffer in the bases, which in turn screw together to form the Brighton bun.

It was called the Brighton bun just because it looked like a bun. Why Brighton? No one seems to know.

What is treen?

Up until the late 17th century, household items were usually made from wood. Agricultural and domestic wooden tools are often referred to as treen. The literal definition of treen is 'of a tree' and it refers to small, handmade, functional household objects made of wood. Items that you might see associated with treen can be any of the following: bowls, plates, needle cases, spoons and egg cups. So, the bun was also considered to be treen.

The bun in this project has been slightly modernised for 21st-century safety reasons – a metal candle holder is mandatory. Additionally, the wooden threads are replaced by 8mm metal threading and threaded tube. However, if you wish to turn a replica of an original treen bun, then wooden male threads can be fitted into one base and the other base is tapped.

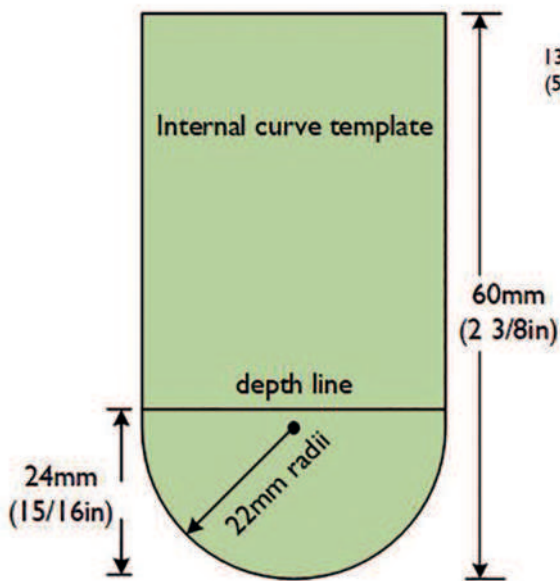
Candle base blanks

While each half of a bun ends up 30mm deep, sufficient thickness is required for a dovetail. So each base blank should be around 150mm x 51mm.

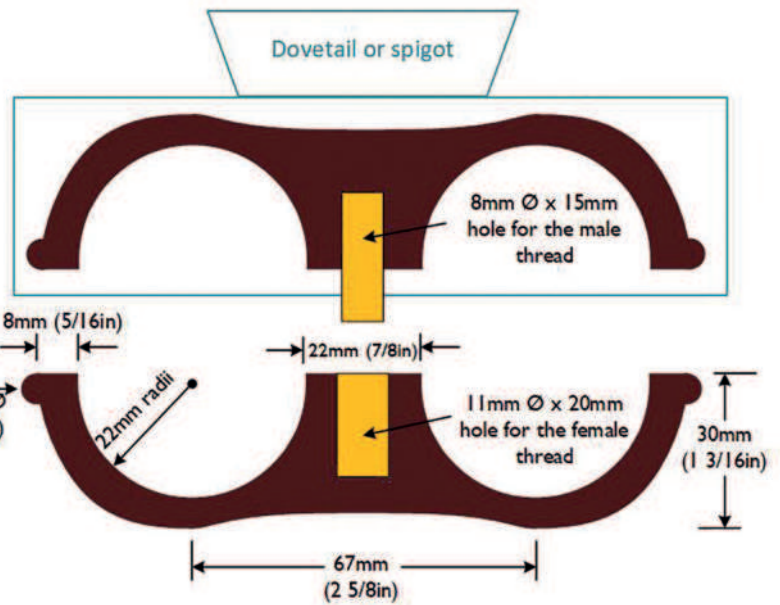
◀ Shaping the male base

STEP 1

Begin by rough turning the outside diameter and forming the dovetail. Mount the blank and face off the top. Mark a circle 22mmØ at the centre. Measure and mark the channel's outer edge 33mm from the centre point. This will be formed into a channel to take the candle holders and snuffer when not in use. This is a good time to obtain a piece of acrylic sheet approximately 51 x 63mm, 2mm thick to make a template from.



Shape the template as shown



Using a template to check the curve

TIP

It is important to ensure that the centre holes in the bases are drilled accurately. If you have one, use a centre point in a Jacobs chuck to start the hole. If you don't, a suitably sized brad drill will do the job.

STEP 2



Using the template to check the shape

The male's hole is drilled 8mmØ x 15mm. This will accept the 25mm-long male thread. The female tubing needs a hole 11Ø x 20mm. With the template to hand, begin hollowing out the curve which will hold the two candle holders. I used a 3/8in gouge for this task. Continue checking until the template sits in the hollow to the depth line shown on the template.

Ensure that the central pillar which has just been drilled is 1mm below the level of the outside diameter of the base.

Sand the hollow before moving on to turning the outside diameter down towards the required 132mm.

STEP 3



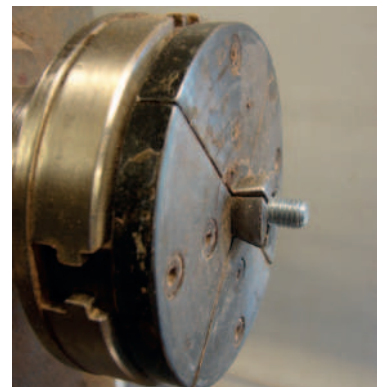
Male and female inserts

Shown are the male and female threads used in this project. Two of each are used. The male is 25mm long and the female 20mm long. Ideally the female should be brass.

STEP 4

In order to hold the female threaded base to complete the turning, it is screwed on to a spare male threaded rod, which is itself held in a chuck as shown.

Rough up the outside of the internal threaded tube before gluing it into the base using a two-part epoxy. It should be a tight fit to ensure that it is 90° to the base.



Spare piece of studding used to mount the base



The pillar fitted



Spare internally threaded tube used for mounting hold

STEP 5

The central pillar will accept the 15mm of the male thread as shown. Glue with a two-part epoxy. It is imperative that it is at 90° to the base to ensure that the two halves are completely flat against each other when they are screwed together. It should protrude 10mm.

STEP 6

In order to hold the male threaded base to complete the turning, a spare M8 x 20mm internally threaded tube is held in the chuck jaws as shown. While the tube is shown protruding from the chuck (for the photograph) it is actually pushed in to be flush with the jaws.



Base screwed on ready for turning

HINT:



Completed base

STEP 7

The base's dovetail is removed from the chuck, reversed, the base screwed on to a chuck as shown in Step 6, and supported by a live centre. The first step is to turn a 6mm-wide bead using a 1/4in spindle gouge or an appropriately sized beading tool. Further shaping of the outside can now continue. From the drawing it can be seen that the height will be 30mm and the diameter 132mm, which will give a wall thickness of 8mm at the top. The curve is now turned using a 3/8in spindle gouge up to the dovetail. The thickness should be even over the top half of the curve.

You are advised to turn the other base up to and including Step 7. That is, it is hollowed out and the male/female thread/tube have been glued in and the bead formed. This will allow the two halves to be screwed together as shown. You will now be able to confirm that the beads on each half match and that the two circumference surfaces where they meet are flat.

STEP 8

The bottom of the base is turned to a depth of 30mm before being sanded through to 400 grit. It is given a slight concave indentation at 30mm radius from the centre to ensure that it sits evenly. The base has a tack cloth wiped over it to remove any dust before being finished.

Shaping the male base

Steps 2-7 are followed with the exception that the centre will be drilled 11mmØ x 20mm to accept the female threaded tube.

HINT: Lining up the male and female threads

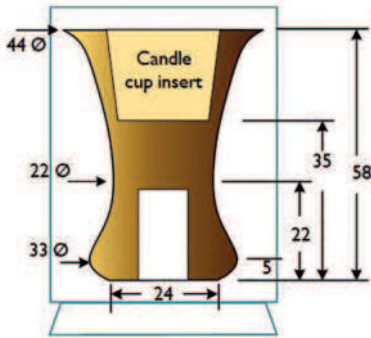
Use five-minute two-part epoxy and ensure that no epoxy is on the protruding thread, then, after two or three minutes, screw the two halves together ensuring that the two surfaces are flush with one another.

Finishing

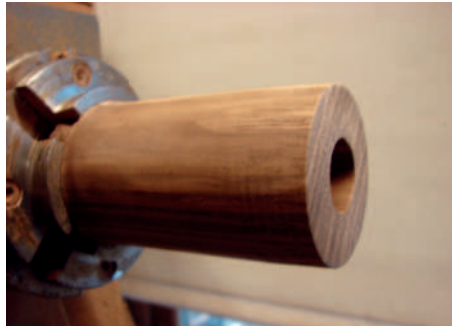
The chosen finish should give an extremely hardwearing and waterproof finish. The original treen makers would not have had the opportunity to use the likes of lacquers that are available today. Whatever method you use, wax should be applied as a final finish. ►

◀ Turning the candle holders

There are two candle holders to turn. The blank size for these is 51 x 51 x 85mm.



Candle cup dimensions



Hole drilled



Shaping the hole

STEP 9

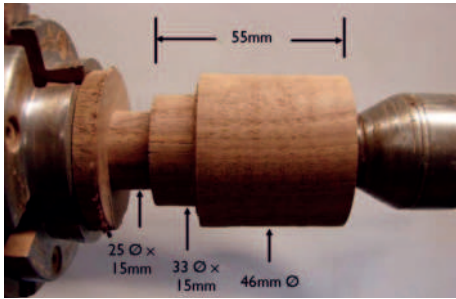
Mount between centres, rough turn down to 46mm and turn a dovetail at the base of the holder. When mounted, face off and sand the top of the holder.

STEP 10

Drill a 20mm x 20mm hole.

STEP 11

Shape the 20mm hole to fit the brass-plated candle holder you have.



Dimensions of turned blank



Candle holder turned ready for parting



Jam chuck

STEP 12

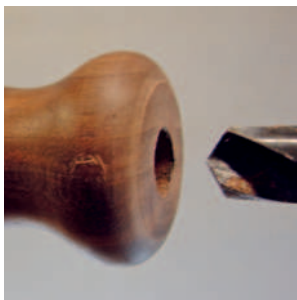
Measure, mark and turn down the blank to the dimensions shown.

STEP 13

Shape as shown in the drawing. Sand and seal using the same finish as that used on the bases.

STEP 14

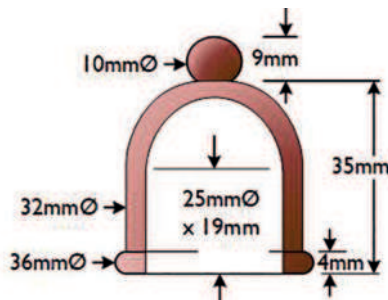
Turn a jam chuck to fit into the 20mm x 20mm hole just shaped in the top of the candle holder. Fit this over the jam chuck and bring a live centre up for support before shaping as shown in the diagram.



Drilling the holder



Completed parts



Snuffer dimensions



Snuffer mounted

STEP 15

When the holder is running true and with a live centre in place, remove the dovetail. Replace with a Jacobs chuck and fit either a centre point or an 8mm brad drill bit. Drill a hole 20mm deep. Use a tack cloth to clean any dust before applying an appropriate finish.

STEP 16

The male thread is now glued and placed in the candle holder's base. Use a five-minute, two-part epoxy adhesive. 10mm of the thread should protrude from the holder. The process is repeated for the second, female candle holder with one exception – the base hole will need to be 11mm x 20mm for the female thread.

STEP 17

The snuffer's name speaks for itself. It is held over the candle flame to extinguish it. Feel free to tweak the design, just don't increase the size too much. Mount a 50 x 50 x 50mm blank between centres and form a dovetail on what will be the top of the snuffer. Drill a hole 25mm x 19mm deep. Form the 36mm x 4mm bead. Turn the outside to 32mm. Either turn a jam chuck and support the top end with a live centre once it is running true, or hold the 25mm hole in expansion jaws – my chosen method.

STEP 18

With a live centre supporting the snuffer, measure the overall length required. Complete the 32mm turning and mark the position of the oval at the top. Proceed to turn the oval before sanding and finishing as before. ●

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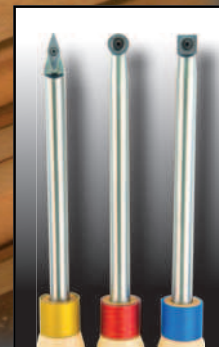
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Woodturning tools with an edge

In part one of this new series, Marty Kaminsky discusses setting up a sharpening system



If you want to be a good woodturner, become a great sharpener

Like most things in turning – or in life – there's more than one way. In researching sharpening techniques and reviewing articles about the subject, I was surprised by the considerable variation in sharpening advice. So in this article I'm providing what I think is the best of it. I'll not claim that what I present is the only good way to sharpen, but the

methods described here represent a good approach.

Sharpening properly and often is essential – there's nothing more frustrating than the lack of control and the poor quality of cut from dull tools. And yet, when we start out in turning, we're invariably thinking about the bowl or pen we want to

create, not grinders and sharpening jigs. New turners generally think that a tool is correctly shaped and sharpened as it comes out of the box. It isn't.

In this series of articles I'm talking about sharpening the steels used in modern tools, not carbon steel. I'll talk a bit about carbide scraper inserts, too.



My grinder setup

Sharpening system

Let's look at the equipment first. I'm not a freehand sharpener, I use sharpening jigs. My sharpening station is shown here. While professional turners might argue that freehand sharpening saves them time, I have techniques that make it pretty darn quick with a jig, and I get repeated results of identically perfectly sharpened tools every time. I'm not making a living at it, so a few seconds extra doesn't bother me. However, Stuart Batty's 40/40 grind is generally done freehand; you can't do it with the methods shown in this article. There is at least one device available for purchase that claims to allow you to adapt the Wolverine system to the 40/40 grind (Ron Brown's Best 40/40 Grind Setup Block). And Peter Miao provides a free design for a jig to assist grinding the 40/40 – you can see it on his website, along with videos of it in use (www.petermiao.com/news/2017/11/11/a-jig-for-4040-grind).

Here's what you need:

- Grinder
- Grinding wheel(s)
- Jig system
- Grinding platform angle-setting device
- Protractor
- Wide Sharpie marker
- Wheel dresser (if you use traditional aluminium oxide rather than CBN wheels)
- Diamond or CBN hone
- Eye protection (of course)
- 1000 grit diamond plate (only for sharpening carbide inserts)

Grinder

I started out with an 8in standard speed (3450rpm) grinder. It worked fine. As far as that goes a 6in grinder will work too, so use what you have. But if you're buying new, get an 8in slow speed (1725rpm) grinder. There's some concern about overheating your tools as you grind, although this is probably not much of an issue as high-speed steel tools can take considerable heat. A little bluing does not matter – glowing red matters. And one thing that's really important is that high-speed steel should NEVER be water quenched. Let your tools air cool as the thermal shock of quenching can cause microscopic cracks in the steel. Slow-speed grinders reduce the chances of heat damage, and they slow down the removal of material. Put your grinder conveniently close to your lathe to encourage yourself to sharpen often.

Grinding wheels

Generally, you'll want two grinding wheels, a fine wheel for sharpening and a coarse one for rough shaping your tools and for sharpening scrapers. Some grinders come with good-quality wheels that are suitable for our needs – possibly not with exactly my recommended grits, but close enough – but many come with hard grey wheels, which need to be replaced.

There are several types of grinding wheel that are suitable for high-speed steel turning tools, but the most common are aluminium oxide wheels and the newer CBN (cubic boron nitride) wheels. Aluminium oxide wheels are relatively inexpensive, but gradually wear down and then must be replaced. As they wear, your jig system setup must be adjusted to accommodate the change in diameter.

CBN wheels are rather expensive (up to three times the cost of aluminium oxide), but they last a very long time and they don't change diameter. Not changing diameter somewhat simplifies the jig setup.

For aluminium oxide wheels I'd recommend a 60 and an 80 grit wheel with J or K hardness. The aluminium oxide wheels we use are 'friable' – they wear away easily, exposing fresh grit. It's always recommended that you check your new aluminium oxide wheels for unseen cracks. Slip a screwdriver through the hole and rap on the outer edge with the handle of a screwdriver. A ringing sound is good. 'Thud' indicates a crack.

I'd suggest 80 and 180 grit wheels for CBN as they run much cooler than aluminium oxide, so there is less risk of overheating the tool using finer grits with CBN. To save some cash you could get a 180 grit CBN for sharpening, and a 60 grit aluminium oxide for shaping.

Having said all that I want to add some issues brought up in an article in *American Woodturner*, June 2018, Modern Tool Steels & Grinders, by Tom Wirsing, a physicist and past president of AAW. He discusses the common high-speed steel, M2, and the newer particle metal tools. He says conventional grinding wheels (aluminium oxide) will not sharpen particle metal (also called powder metal) tools to a sufficiently keen edge, but CBN wheels will. He advises using finer grit wheels for particle metal tools. According to the article, he has two slow-speed grinders, each with two CBN wheels – 80 and 180 grit on one grinder, 350 and 600 grit on the other. He uses the 80 grit for rough shaping tools, the 180 for general sharpening and negative rake scrapers, the 350 to sharpen gouges used for rough shaping platters and bowls, and the 600 to sharpen gouges for finishing cuts. He suggests if he had only one grinder, he would have 180 and 600 grit CBN wheels. As I said earlier, there are many opinions on sharpening and, for the most part, I'm not including them here. But Tom's concerns about sharpening the more advanced steels now available are worth noting.

◀ Jig system

There are many excellent jig systems on the market, and if you Google a bit you can find some designs you can make yourself. In this article, I'll be using Oneway's Wolverine system, combined with its Wolverine Vari-Grind. This is one of the most popular systems being sold. There are certainly other systems that do the job well, including the Ellsworth Grinding Jig, Pro-Grind Sharpening System, Robert Sorby Pro Edge, Savannah Pro-Grind Sharpening System, Sharp Fast Fingernail Grind Sharpening Jig System, Tormek Sharpening System, Tru-Grind Sharpening System, and others. Whatever method you use, the shapes

that I demonstrate in this series of articles are your goal.

The Oneway jig system consists of six parts: two base units, one adjustable angle platform, one vee-pocket or, for the Vari-Grind two jig version, a pivot arm assembly, one Vari-Grind, and one optional skew jig. With the system you can sharpen bowl gouges, scrapers, spindle gouges, detail gouges, bedans, parting tools, skew chisels, and spindle roughing gouges. Oneway offers two choices of the Vari-Grind accessory: the original Vari-Grind and the Vari-Grind 2. They both do the same thing but the Vari-Grind 2 is safer – it holds the tool being

sharpened in the centre of the grinding wheel, while the original Vari-Grind will allow the tool to slip off the edge if you are not careful. That said, I've used the original for years with good results.

Photos included in Parts 1-3 of this series of articles only show the original Vari-Grind, but all of the information applies to both versions of the jig. When I get to Part 4, The Easy-Peasy Method, I'll be discussing both Vari-Grind jigs. With the Wolverine system you'll get instructions about how the system should be assembled with your grinder. Please follow those instructions to get the best results.



Base unit with vee-pocket; red line indicates vee-pocket extension distance



Lower unit is original Wolverine platform with a notch that I cut; upper unit is a Robo Hippy platform that fits the Wolverine system



Upper: vee-pocket for original Vari-Grind; lower: Pivot arm for Vari-Grind 2



Left: Vari-Grind 2 jig; Right: original Vari-Grind; red lines indicate travel of the angle arm

Grinding platform angle-setting device

For some operations, the grinding platform must be set at particular angles. An angle-setting device such as the SB Angle Gauge, the Raptor gauges, or Ron Brown's Quad-Setting-Jig make this easy. As an alternative, there are several grinding platforms designed to fit Oneway's Wolverine system that have preset angle positions, such as Robo Hippy's Robo Rest.



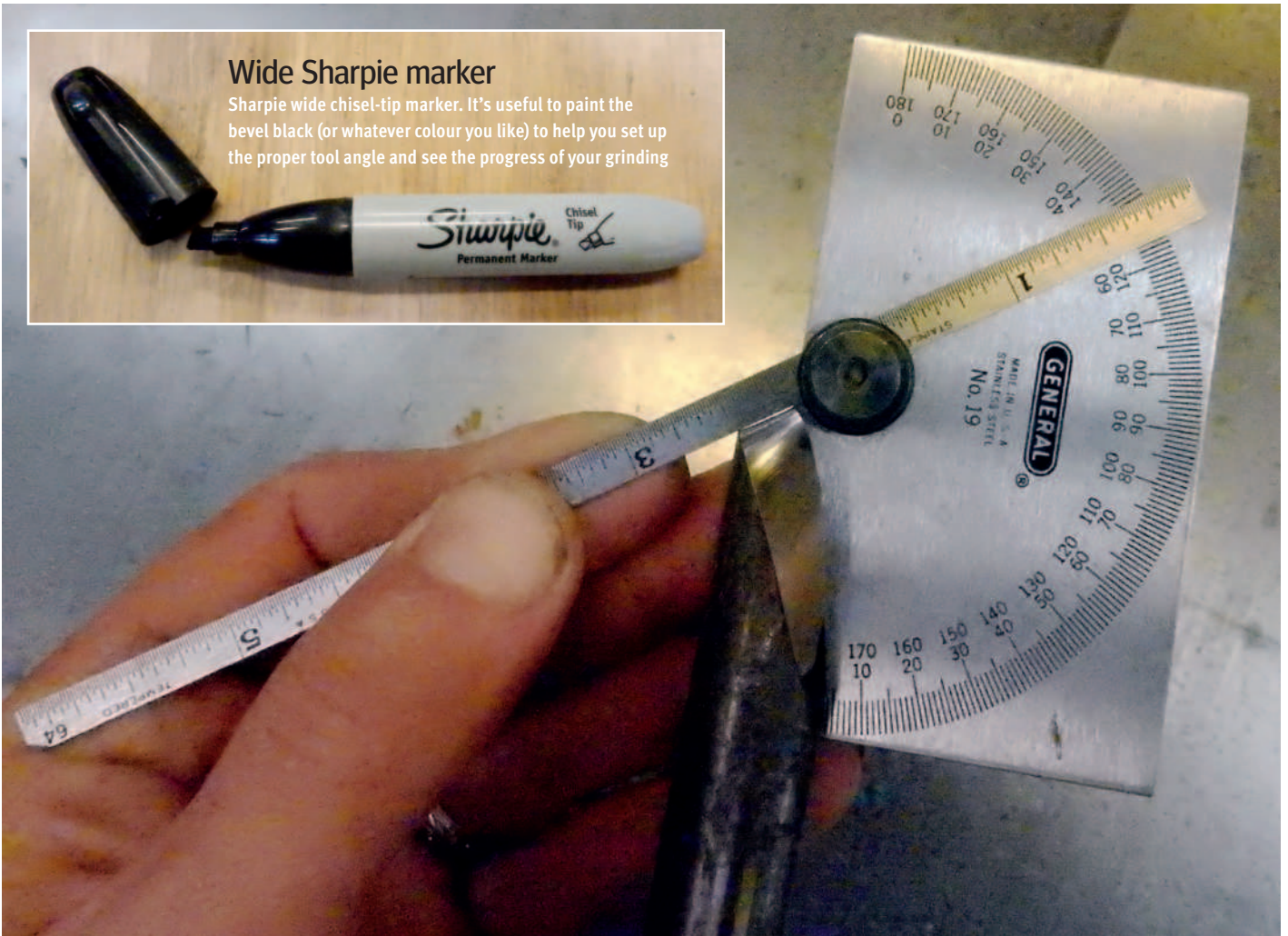
Platform angle-setting device

Protractor



Wide Sharpie marker

Sharpie wide chisel-tip marker. It's useful to paint the bevel black (or whatever colour you like) to help you set up the proper tool angle and see the progress of your grinding



Protractor measuring the nose angle of a bowl gouge. This is to check the angles of your tools

◀ Wheel dresser



Diamond wheel dresser, cleaning and flattening aluminium oxide wheel. A diamond wheel dresser (use either a cluster diamond or point diamond; don't use a star dresser) is used to clean, true, and flatten stone wheels. It's never used for CBN wheels

Diamond or CBN hone

Some turners use a small diamond or CBN hone (600 grit) to give a final sharpening to their skews and to keep them sharp during use, in between grinder sharpenings. The hone is also useful for touching up other turning tools between sharpenings.

Safety

Safety, of course, is always a priority. Sharpening tools creates metal and stone particles, and there is the risk of a grinding wheel failing with pieces flying about. Wear eye protection. Consider a respirator, particularly when cleaning/truing an aluminium oxide wheel – a lot of fine dust is created.

Sharpening your tools

The next part of this sharpening series – Sharpening Scrapers, Skews, Parting Tools, and Spindle Roughing Gouges – deals with the methods of sharpening the easiest-to-sharpen tools. Following articles will describe how to sharpen bowl, spindle, and detail gouges, and then the final edition will describe my Easy-Peasy method to sharpen bowl, spindle, and detail gouges that makes sharpening those tools even simpler.

It's well worth taking the time to learn to sharpen correctly. Your sharpening efforts will become easy and repeatable, and your turning joy and your results will be enhanced. Stay sharp, my friends.



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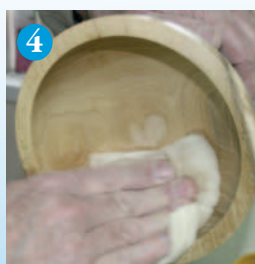
White - 0 grit, but still abrasive due to the texture of the pad.



2 Use the NyWeb with the lathe running, taking care not to let it get caught, allowing the pad to mould itself to the shape of your work.



3 Work through the grades; as you use the pads the surface is worn away to expose fresh abrasive, ensuring the pad keeps cutting for a very long time.



4 Once you've finished sanding stop the lathe and use a Chestnut Products Tack Cloth to remove any dust residue from the sanded surface.



5 Tack Cloths are impregnated with a special resin to collect the dust; once opened, store the cloth in an airtight jar to prevent it drying out to keep it useable for many months.

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Domesticware

Andy Coates makes another object for everyday use... this time with a twist

Coming up with suitable subjects for articles is not always easy. In fact, rarely is it so. Domesticware, however, does have 'legs'. All you need do to find something to make is take a look around the kitchen and ask: 'Could I make that in wood?' The answer is usually yes, but that doesn't always mean you should. Having taken a look around and not found anything I thought suitable, I then saw something in the workshop that had possibilities... but I'd already made that item for a previous article. It was a storage pot for ground coffee, but this one was based on a hinged-lidded shrink pot. Could I design a more up-to-date-looking storage pot for ground coffee?

The answer, obviously, is yes, I could, but when I started to mull it over a picture flashed into my brain of a pot another

turner friend, Simon Hope, had made for the Ray Key tribute, from a rough-out of Ray's. A simple but perfect shape adorned with beads, with a pleasing finial knob, and a decorative pewter disc. And my mind was set: this would be the basis for the pot I would make. I called Simon to check he was okay with me stealing his idea and he graciously gave his consent. I would need to alter the shape to make it suitable as a storage pot, but the basic idea would remain the same.

The next question was what to make it from. The wood had to be clean, preferably with some interest in the colour or grain, but not so much that it detracted from the decorative disc and finial, and, most importantly, it had to be safe for food use and have no overpowering scent. The lid would also need to provide an

airtight seal to ensure the freshly ground beans didn't go stale too quickly.

I decided that it would have to be more 'jar'-shaped than Simon's original, but what I was thinking of was something more decorative, more 'arty'-looking than utility. Arbitrarily I decided upon a 50mm opening, and when I looked I found I already had some nitrile seals that are 56mm OD. Based on this size for the opening, the blank of wood would need to be at least 100mm in diameter to begin with, and to ensure the correct proportions and provide sufficient material for a lid it should be at least 130-150mm long.

So it was decided... a ground coffee storage pot with a sealed lid, finial and decorative pewter ring. Now all I had to do was find a blank.

EQUIPMENT USED

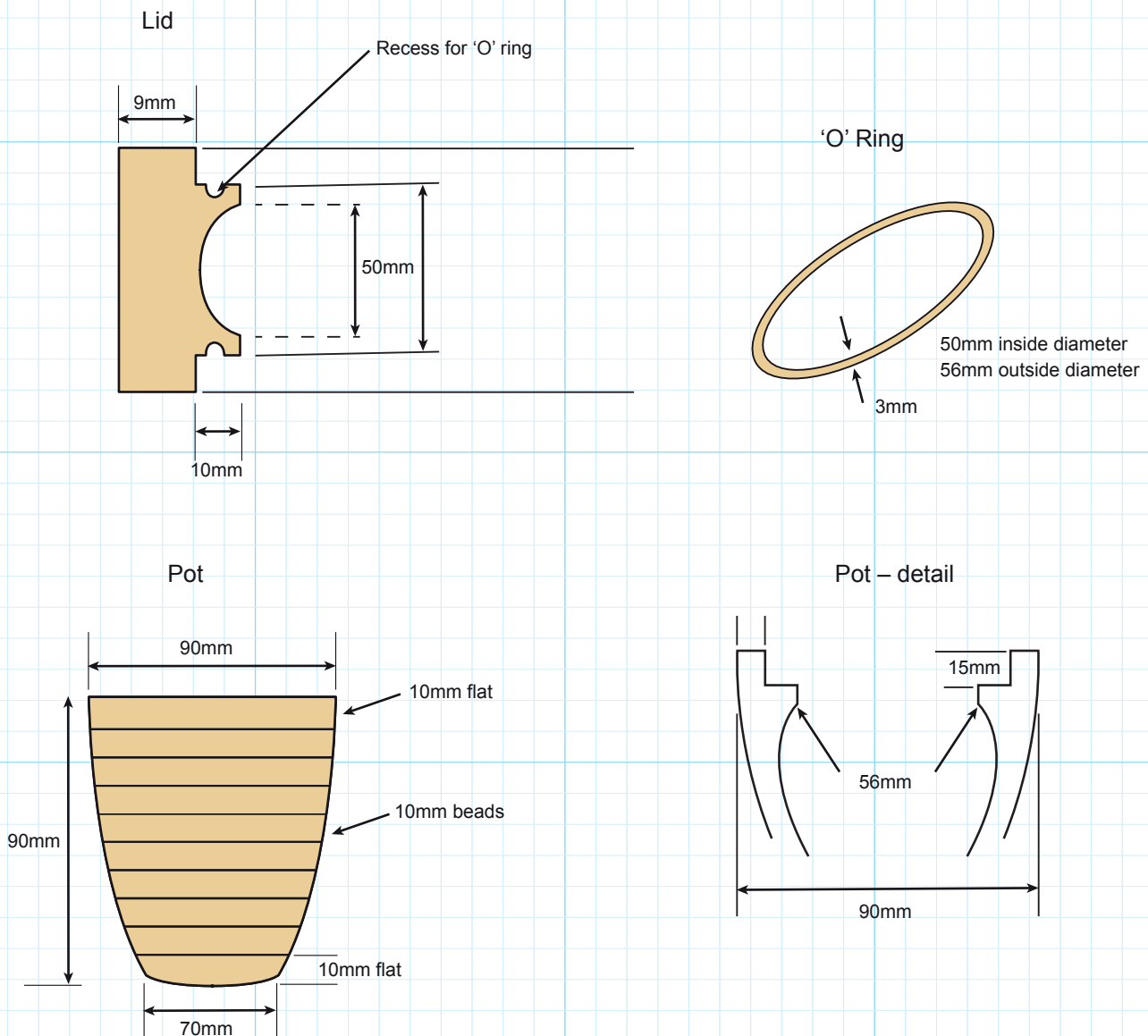
Materials

Discs of brown oak:

- Oak square, 100mm x 100 x 180mm
- Oak square, 25 x 25 x 80mm
- 1 cast pewter disc, 40mm diameter x 10mm thickness
- Nitrile O ring, ID 50mm OD 56mm

Tools

- Spindle roughing gouge
- 15mm long-ground bowl gouge
- 10mm spindle gouge
- Negative rake scraper
- Negative rake detail tool
- Swan-neck carbide hollowing tool
- 25mm skew chisel
- Jacobs chuck and 10mm Forstner bit
- RPE & PPE
- Dust extraction



First steps

The blank is mounted between centres and roughed down to a 90mm-diameter cylinder using the spindle roughing gouge. A tenon is turned on both ends and then a 50mm section parted off the tailstock end. This forms the lid. The body of the pot is then marked at 90mm to match the diameter.

The lid

In order to simplify the process, the interior of the lid is turned first, so mount the 50mm section in the chuck and true up if required. You won't know the overall diameter required so leave it at 90mm for now, and concentrate on the tenon that will hold the seal.

The nitrile seal I used was ID 50mm with an OD of 56mm. It isn't enough to have this simply sitting on the tenon, we need to recess it into the middle of a 10mm-deep tenon. The ID is 50mm, so make the tenon 52mm diameter and then cut a recess,

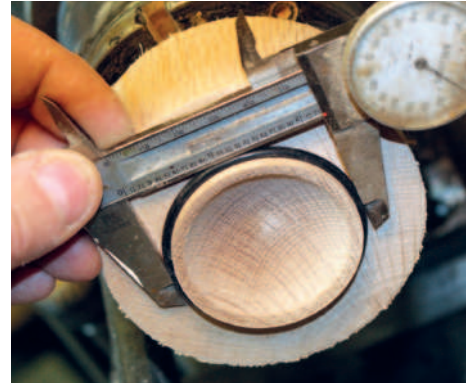
in this case 3mm wide, 1mm deep. This will allow the O ring to drop into the recess, leaving two thirds of its thickness to form the seal in the pot. Ensure that the surface perpendicular to the tenon edge is completely flat and then turn a slight concavity into the face of the tenon. Once the whole pot is completed the O ring will be glued into the slot using CA glue. Ensure all interior surfaces are fully abraded and sealed before removing from the lathe.



Parting off the lid section



Test-fitting the O ring



Checking the OD is 56mm when seated in the recess

The exterior of the pot

Leaving the face edge at 90mm diameter, mark back 90mm and part down to 70mm diameter, then cut a gentle curve between the two diameters. A long-ground bowl gouge will make short work of this. Aim for a clean surface and finish with a few passes of the skew.

From the 90mm diameter mark off with a pencil 10mm increments down the pot.

These will mark the beads you are about to form. You can use a dedicated bead forming tool if you have one, but these often leave an unsatisfactory surface that requires much abrading. My preference for forming repetitive beads is to use a skew chisel for the separating V-cuts and a parting and beading tool to quickly form the beads. Using just the corner of the

tool, cut one side of the bead and then the other. Once you master the roll-over it becomes a simple and quick technique for repeating beads. As the tool is twisted over, gently feed it forward to follow the curve in towards the base of the V-cut. Only the very tip of the tool should ever make contact with the wood; if the edge touches you may have a catch.



Shaping to the 70mm base diameter



Turning a bead with a dedicated tool



Making a V-cut with the skew



Forming a bead with a parting and beading tool

◀ Forming the double recess for the lid

Before we can begin hollowing the pot, the primary and secondary recesses need to be turned. The lid will drop into a primary recess and the sealing tenon will drop into a secondary recess, forming a seal with the O ring.

First cut the primary recess 15mm deep, leaving a wall thickness of 5mm. Measure the diameter of the outer surface of the O ring when fitted to the lid. This should be 56mm. Mark this diameter on the flat surface just cut on the interior of the recess and cut the secondary recess to a millimetre or so inside this diameter. Make the recess slightly dovetailed to allow for later adjustment to fit the lid. Cut the recess 10-15mm deep at

this stage. Remember that you cannot test fit the lid yet because its overall diameter is too great.

Remount the lid and turn the flat edge to the diameter of the primary recess. The fit on the primary recess does not need to be tight because the seal is formed on the secondary recess. The lid section is much too deep at this point, so mark back 10mm from the edge and part off the lid. The lid should now fit in the primary recess but will not seat fully until the secondary recess is turned.

The lid can now be remounted using the sealing tenon to hold it, and the top surface can be turned. Aim for a gentle curve rising to a 40mm flat centre section. Abrade to a finish.



Measuring the sealing ring diameter



Measuring the depth of the sealing tenon



Measuring the primary recess diameter

Finishing the interior of the pot

Remount the pot and cut the secondary recess back towards the mark you made earlier. Test for lid fit as you go. The recess should be a hair less than the diameter of the O ring when fitted on the tenon so that the compression of the O ring forms a tight seal on the wall of the secondary recess. Check that the two pairs of surfaces indicated mate fully to ensure a perfect fit.

Once you have the fit correct, leave a shallow step at the base and begin hollowing beyond this point. The interior will need to be undercut to increase the capacity of the pot, but be careful not to widen the interior too much; the beads cut into the wall thickness of the pot. Remember that an undercut will result in

shavings gathering at the widest diameter and failure to clear the shavings periodically can cause a bad catch. Regularly stop the lathe and vacuum the shavings out.

You could hollow with any hollowing tool small enough to work through the restricted opening – a small swan-neck carbide tool works well and will leave an adequate surface finish. Hollow down to around 80mm from the upper rim of the pot, leaving 10mm base thickness. A concave base works best for scooping out ground coffee. Abrade the interior of the pot to a fine finish and seal with cellulose sealer. Once this is perfectly dry it will be food safe and non-tainting.



These two surfaces must mate



These two surfaces must also mate



Starting to hollow the pot

USING PEWTER

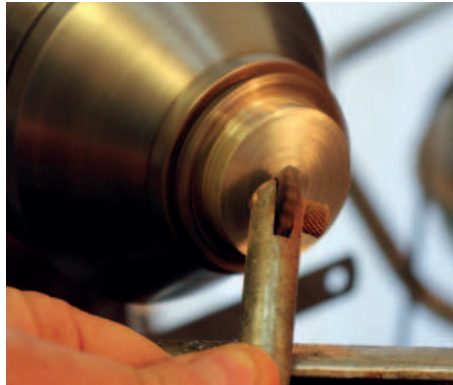
Casting pewter is potentially dangerous and should not be attempted without an understanding of the material and processes. The constraints of this article prevent a full explanation here, but full details can be found in a previous series of my articles (WT337-339). Please do not attempt to cast pewter without first learning the process and safety concerns.

Thin pewter sheet is available commercially, though may not be suitable for aggressive texturing as detailed in this article. If you cannot use pewter a contrasting wood disc could be used and textured.

The pewter disc adornment



An assortment of texturing tool



Using the Sorby micro tool

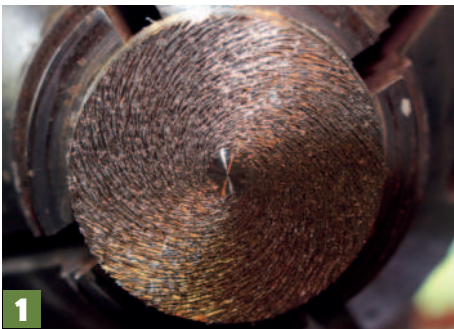


Cutting a convex surface with a negative rake scraper

I cast a small pewter disc 40mm diameter by 10mm and, by holding it in O'Donnell jaws, was able to clean up the outer edge and face. A carbide-tipped tool or a negative rake scraper are the best tools for working pewter. (Note: Remember that pewter shavings can be recycled.)

The texture can be formed using any of a wide range of available tools – a selection is shown here – and any will

provide an interesting and pleasing texture. The best approach is to try different tools and cutters at different lathe speeds, application angles, and pass rates until you find one that you like. If you begin with a disc 10mm deep this gives you plenty of material to try any number of textures before you need to settle on one. A small selection of the possible outcomes can be seen in the collage here.



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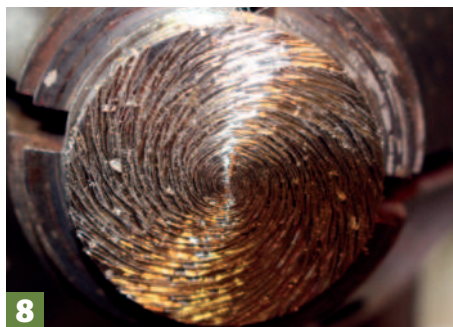
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1: Crown micro spiralling wheel, 2: Engineering knurling tool, 3: Sorby chatter tool, 4: Sorby large spiralling tool, 5: Sorby decorating elf – ball cutter, 6: Sorby decorating elf – cylinder cutter, 7: Sorby decorating elf – teardrop cutter, 8: Sorby large texturing wheel, 9: Sorby large fine spiralling wheel

Once a suitable texture has been decided upon use the negative rake tool to put a slight convex surface on the pewter disc before applying the texture. Once done the surface should

be cleaned gently with a bronze brush. The pewter could be patinated or the texture filled with coloured gilding paste, but I left it natural here.

◀ Final touches

The disc needs to fit on the lid with a very slight raised appearance, so a slight chamfer is cut on the underside edge with a carbide detail tool. The disc is then parted carefully using a very slim carbide parting tool. This is done very slowly and the tool is removed frequently to allow cooling.

A 10mm Forstner bit held in a Jacobs chuck is used to drill a 4mm-deep recess for the finial. The lid is then remounted on the sealing tenon and a recess turned to accept the pewter disc. This is then glued into position using CA glue.

A small block of oak is mounted and a finial turned. The shape is basically a small, proportionate ball mounted by a tapering peg, with a 2mm x 10mm tenon to fit the drilled hole in the

pewter disc. This finial needs to be more robust than for a purely decorative piece because it needs to be strong enough to be used to pull the lid off the pot. The top of the taper is shaped on a sanding wheel and then the finial is abraded and glued on to the pewter disc. The O ring can be glued on to the sealing tenon at the same time.

The pot can now be remounted and the lid fitted for any final abrading and finishing before removing the lid and parting off the pot. The pot is then reverse chucked to clean the base up and your coffee pot is complete. The exterior can be finished with oil or wax as preferred, but the interior should remain unfinished.



Cutting a chamfer



Drilling for the finial



The disc fitted



Preparing to turn the finial



Shaping the finial top

Conclusions

This is a great project, and despite pretty much making it on the fly, I found it a fun thing to create. I would probably make changes to a version two, but that's part of the fun of turning. The best part of it for me was the sealing method; it works perfectly yet retains a hint of the decorative look I wanted to emulate the Simon Hope piece. The interior could also be fully sealed with a two-part epoxy, but I don't feel it needs it. You may prefer to.

I had intended to take this home to use, but I'll keep it at the workshop. If I ever have visitors again after this pandemic I'm pretty sure it will lead to a few sales. Happy and safe turning, folks. ●





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Layout by Codefuse

LED-illuminated Christmas trees

Les Symonds uses reclaimed timber to make a pair of flat-backed ornaments with lights

This pair of flat-backed trees is made as a single, composite item, assembled then turned with a vertical paper layer between certain components to facilitate splitting apart.

As with all segmented work, accuracy in the components will be essential, so a degree of careful preparation will pay dividends. Check that all cutting edges are sharp, that all guides and fences are accurately set and that appropriate jigs are ready for use. Essentially, from the ground upwards, the tree will include a ground piece, a trunk, an under-branch disk, the main body (comprising eight staves) and a crown, with back-panels to be added later. We will be using a simple template for marking and checking the staves, which fit together to form the main body, while simple jigs will be used to assist in the glue-up of those components, which will not lend themselves to cramping together in the more traditional way.

The body of the tree will initially be made as an octagonal pyramid. Its apex will be the conjunction of eight staves, which simply will not machine accurately at their tips because of their needle-thin section. But fear not, as these will be cut away and replaced by a solid apex cone. Likewise, the underside of the tree's body will be problematic, but once again, a solid piece will eventually be glued in place, replacing what may formerly be a slightly jagged arrangement of the stave ends.

This project sees my introduction into the world of segmented work, being the first time that I have tackled such a piece. Through this, I have developed a high regard for those turners who specialise in such work.



EQUIPMENT USED**Woodturning tools**

- Drive and live centres
- Chuck with 50mm jaws
- Spindle roughing gouge
- Spindle gouge (9mm or 12mm)
- Parting tool
- Skew chisel
- Jacobs chuck for tailstock
- 15mm spur drill
- Dividers, steel rules, etc.
- 3 or 4 cramps
- Try square
- Hot-melt glue gun and glue
- Handsaw (fine tooth)
- Drill with 2mm and 5.5mm twist drills

Materials

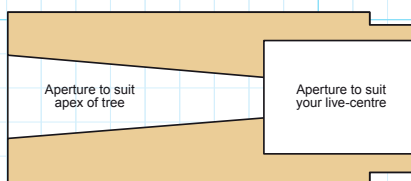
- African mahogany (*Khaya senegalensis*) (reclaimed) or similar
- 4 pieces 550 x 60 x 25mm to make 8 staves
- 2 pieces 150 x 150 x 25mm to make ground and under-branch disk
- 2 pieces 150 x 60 x 60mm to make crown and trunk
- Oak (*Quercus robur*) or similar
- 1 piece 500 x 130mm to make 2 back panels
- Upvc or similar
- 1 piece 550 x 60mm to make template for staves
- 2 sets battery-operated 20 x LED Christmas tree lights

Peripheral equipment

- Workshop facilities to machine the staves, particularly a planer, thicknesser and bandsaw
- Hot-air gun
- Disk sander (not essential, but very useful)
- Dividers
- Steel rules, etc.

Consumables

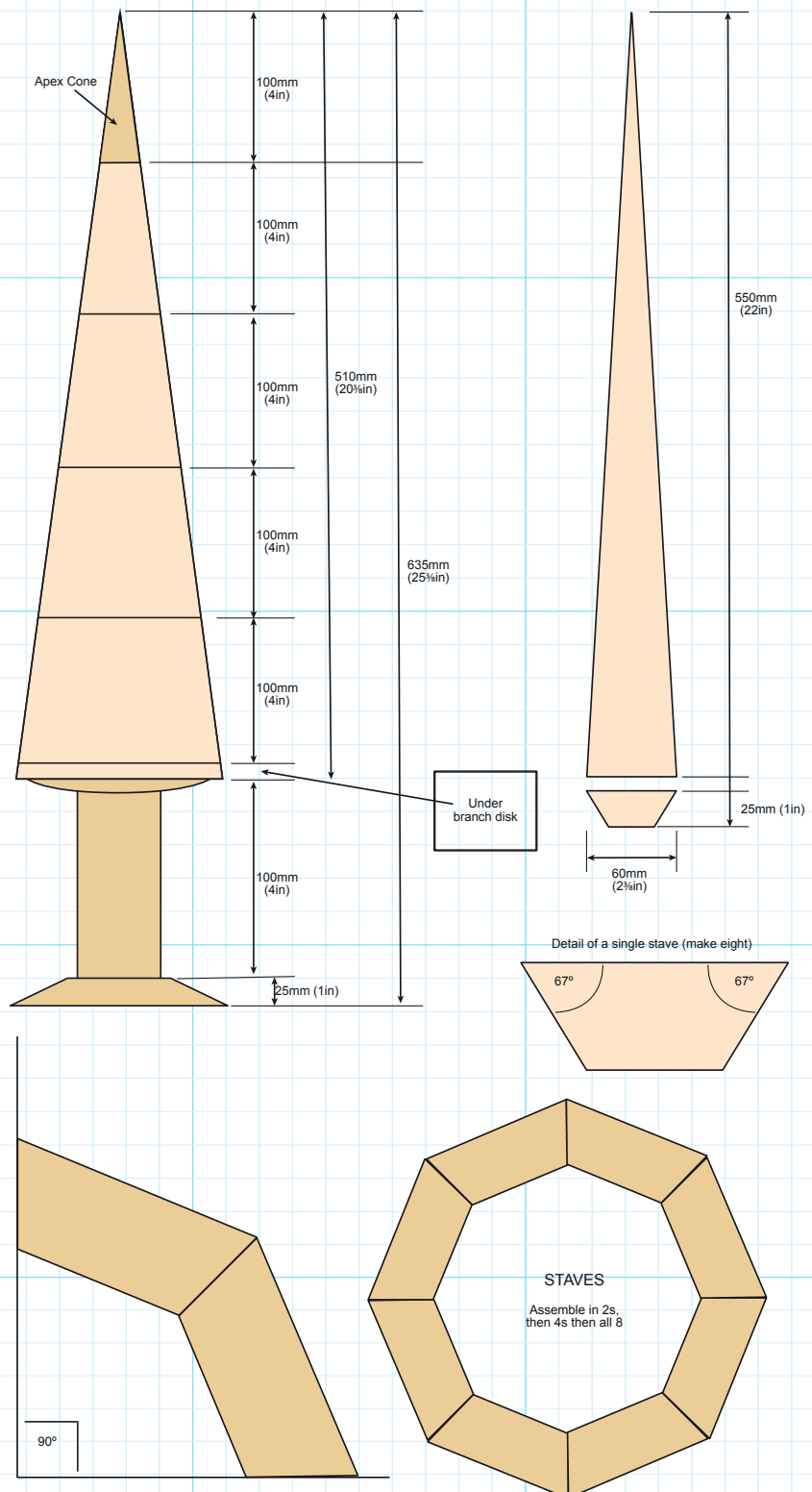
- Abrasives
- Scrap pieces of timber for chucking, lathe, collar, etc.
- Aerosol satin lacquer
- PVA adhesive
- Stout paper for glue joint

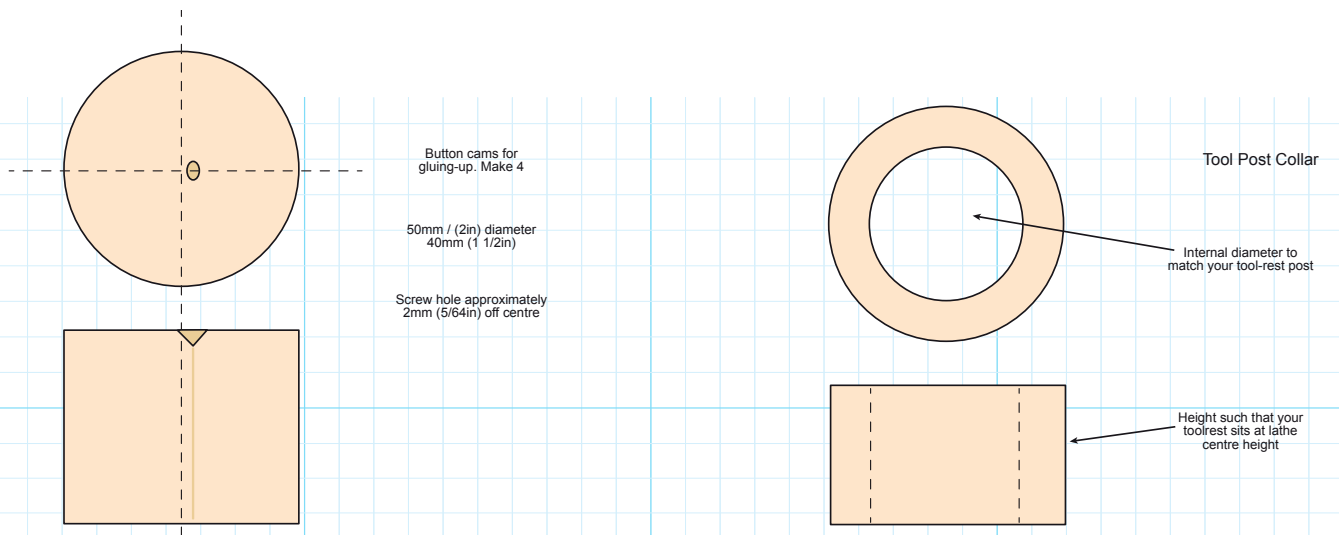


Cross section of apex bung

Health & Safety

This is a project for confident turners and beginners should consider waiting until they have sufficiently developed skills. As with all segmented work, we will be turning irregular shapes, which will need a cautious approach regarding lathe speed and depth of cut. Likewise, the paper glue joints are designed to shear when finished, so these need to be respected and considered while turning. While considering paper glue joints; these could have been used more extensively, in the under-branch disk and in the trunk, but as a newcomer to segmented work, I chose to leave these as solid pieces. It is, however, essential that the ground and the crown are left as solid pieces as the tree would be prone to splitting open while being turned were paper glue joints to be used throughout.





Making the tree

1 Use a suitable piece of material, such as stout card, thin ply, uPVC or acrylic sheet, to make a template for the triangular stave. With your timber prepared to the dimensions in the cutting list, take the four pieces for the staves and use the template to mark out two staves on each piece of timber.

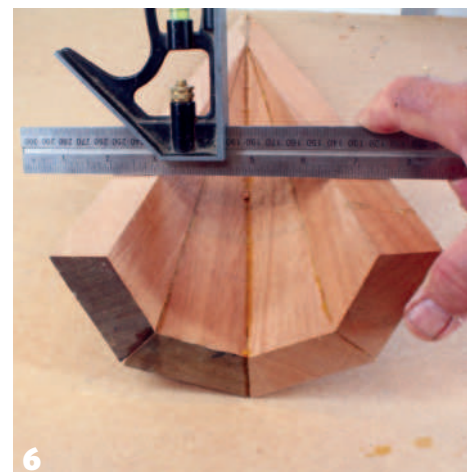
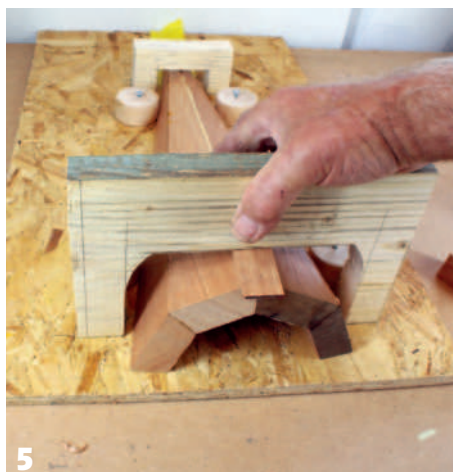
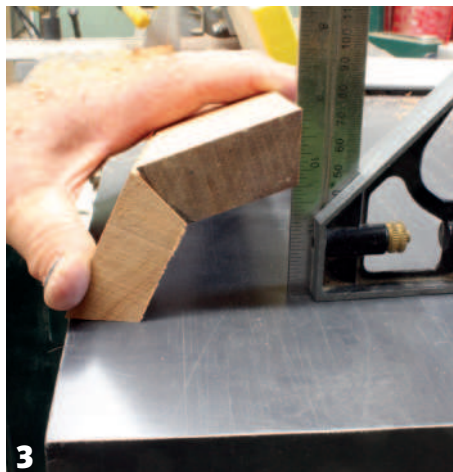
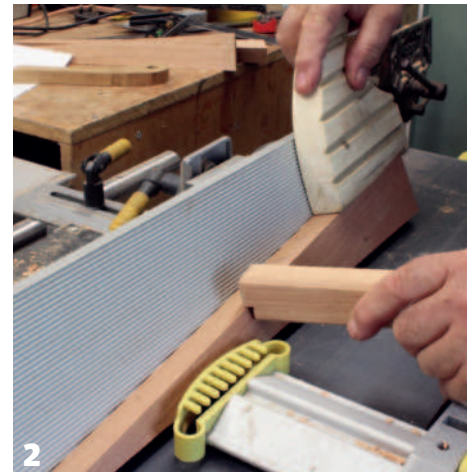
2 Cut out the eight staves, clean up the saw cuts then set the planer fence to achieve an angle of 67° between the stave's outer face and its edges. The tips of the staves will become thin and may chatter and crumble on contact with the planer knives, so proceed slowly and don't worry about slight damage as we will be cutting the tips off later.

3 Once all eight staves have been bevelled, hold two together lengthways and place them on a flat surface with a try square held against them. They should form a 90° angle and will thus be one-quarter of the finished body of the tree. Minor errors can be corrected later, but if you have an error of more than a degree or two, adjust the planer fence and skim each bevelled edge.

4 To glue each pair of staves together, turn a set of four wooden buttons with screw holes off-centre by about 2mm and screw to a baseboard along the edges of a pair of staves. Because the screws are off-centre, when rotated they act as cams, pinching on the workpiece as they turn. Apply plenty of glue to a pair of staves, spread it evenly and rub the joints together to ensure good distribution. Then set the workpiece on the baseboard and tighten the button cams to clamp the staves together.

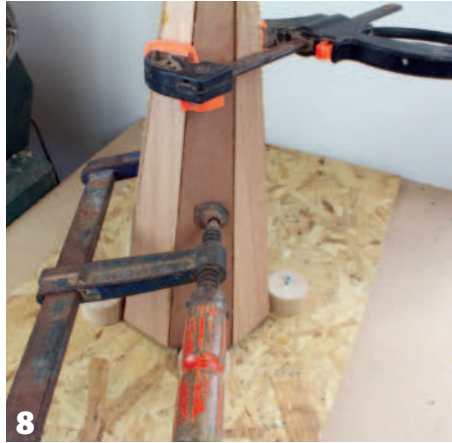
5 Repeat Step 4 for the rest of the staves, then glue two pairs together. Use of the button-cams will cause the glue joint to pop open, so cut a pair of 'bridges' and a pair of wedges out of scrap wood. Apply plenty of adhesive, set the workpiece on the baseboard, under the bridges and screw the button cams around it. Use sideways pressure from the button cams and downward pressure from the wedges to hold the workpiece stable while the glue sets.

6 When the glue has set, place a straightedge across the opposite faces of the outer staves. If there is the slightest gap, touch-up the edges with a sharp plane. Repeat for each of the sets.





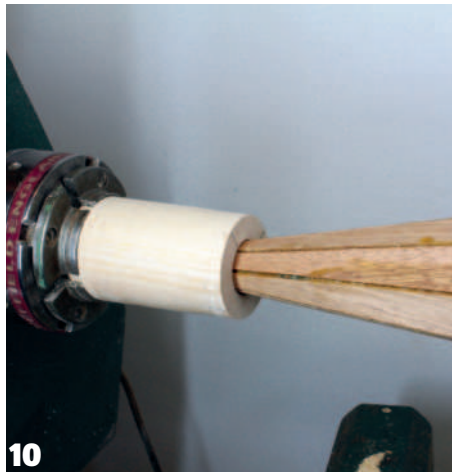
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7 Apply adhesive liberally to one set of four staves, lay a stout paper sheet down on the adhesive, glue up the second set of four and hold the two sets together, trapping the paper between them. Trim off excess paper so it doesn't impede gluing up.

8 Stand the set of eight staves upright on the baseboard and position the button cams around it, rotating them to pinch the base of the pyramid into place. Add cramps as you feel necessary, above the cams, holding the workpiece securely until the glue sets.

9 Next we make a bung to support the apex of the tree while it is being turned. Set a suitable piece of scrap timber into a chuck and in one end cut a recess to fit over your tailstock live centre. Make this a good, snug fit with the live centre extending deeply into the recess.

10 In the other end of the bung cut a recess that the top of the tree will slot into. By all means cut away the top centimetre or two of the tree to have sound material fitting into the bung.

11 Next, we want a bung to fit inside the bottom of the tree, so lay a piece of 60mm x 25mm scrap wood across the underside of the tree and, by eye, mark out the inner shape of the staves on it, such that it contacts three staves on each end. On your bandsaw or by hand, cut the scrap wood to shape and refine it to fit inside the tree, about 2cm into the body. All six edges will need to be appropriately bevelled so a disk sander will prove very useful here. Set the bung in place and secure with hot-melt glue.

12 Calculate the approximate centre of the bottom-bung by measuring with a pair of dividers, then the tree can be mounted on the lathe, held by the two bungs, the upper of which can now also be hot-melt glued into place for added security.

13 Start up the lathe at slow speed and increase gradually to a safe working speed. You will need to use your judgement here, based on your ability and the quality of your lathe. With the toolrest set across the bottom of the staves, use a 12mm spindle gouge to clean them up to achieve a flat face.

14 Use a parting tool to cut a recess running around the inside face of the staves. Into this recess we will be fixing a solid bottom for the tree's body (an under-branch disk), which will be glued in place on the stave ends and will eventually have the trunk glued into it. Make this recess 10mm deep and about 110mm in diameter.

15 Set one of the two 150mm x 25mm pieces in your cutting list on to a faceplate, clean up its outer face and use a parting tool to cut a shallow groove to fit your chuck's 50mm jaws. Remove the workpiece from the lathe, set the chuck in place in the groove and put it back on to the lathe.

16 Do not true up the outer edge, but cut what resembles a large chucking tenon on its outer face, diameter and depth to match the recess formerly cut in the underside of the tree, in Step 14. This is an important step, so make the diameter and depth as close a fit as possible, but avoid having the joint too tight.

17 The glue-up is simple. Use plenty of adhesive and clamp the whole assembly in place on the lathe, base held in the chuck and apex at the tailstock. Once dry, use a spindle roughing gouge to turn the outside of the tree body into the largest finished diameter you can achieve. Work up to within a couple of centimetres of the apex bung.

18 Starting at the headstock end, mark a pencil line around the tree, 10mm up from the base, then a further four lines, at 110mm, 210mm, 310mm and 410mm. That should leave a further 100mm (approximately) at the apex, where it is held in the apex bung.

19 At the 410mm pencil line, use a sharpened parting tool to cut away the tip of the tree. Start cutting to the right of the line and cut a second groove immediately alongside the first to ensure the tool does not bind in the cut. Leave about 1cm of core intact, stop the lathe and cut this final core with a fine-toothed saw. Remove and discard the tip of the tree from the apex bung (a hot-air gun will help), but retain the bung for a later step.

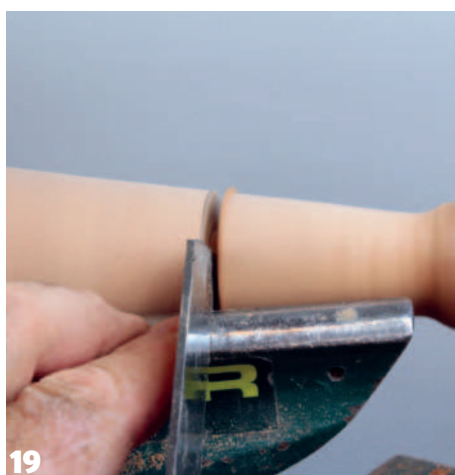
20 Set the toolrest across the end of the workpiece and gently clean up the end face, establishing a small centre point, 1-2mm across, to act as a true centre for drilling out the end. Set a 15mm bit into a chuck in the tailstock and drill slowly down into the tree, retracting the bit to clean, until it has drilled down into the hollow core.

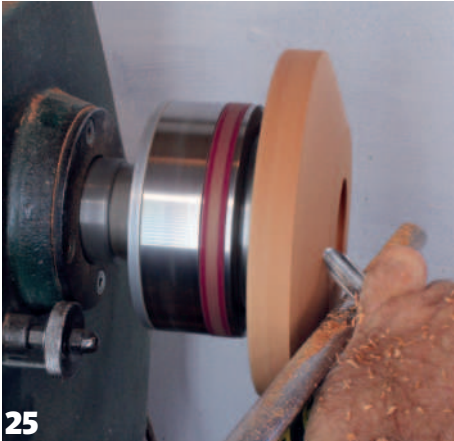
21 Set the wood for the tree crown between centres or in a chuck and turn down into a cylinder, about 2-3mm diameter greater than the top of your tree. Turn a 15mm spigot on the end to fit into the hole just drilled in the top of the tree.

22 Still on the lathe, shape the headstock end of the spindle so it slots into the apex bung, leaving about 100mm full sized. Return the tree to the lathe, the bottom in your chuck, the apex bung on your live centre and the workpiece for the crown in place. Add plenty of glue and clamp in place using tailstock pressure.

23 When the glue has set, put a toolrest against the face of the tree and use a skew chisel to cut narrow 5-6mm V-grooves at each of the three pencil lines and at the joint between body and the crown.

24 Use your skew chisel or a gouge to clean up the tree face, achieving a slight zigzag pattern at each of the 100mm spaces to suggest branch indentations. You need to shape the new crown to follow the rest of the body, but don't take it to its finished shape as you must keep the apex bung in place for now.





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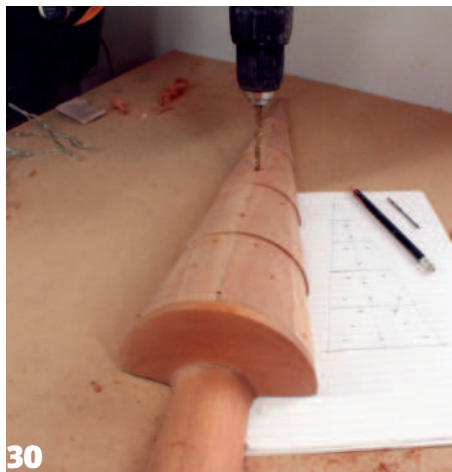
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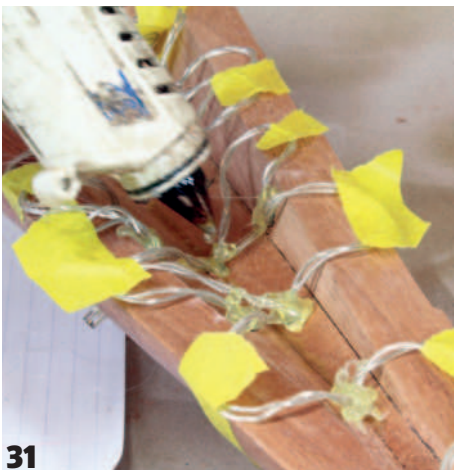
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25 Mount the second of the 25mm blanks on a faceplate with four short screws, clean up the outer face and turn a chucking recess. Remove the wood from the faceplate and set it into your chuck, clean up the outer face and cut a 40mm diameter recess, about 15mm deep, as a mortise for the trunk. Taper the outer face so it narrows towards the edge.

26 Set your final piece of timber between centres, reduce it to a cylinder and cut a 40mm tenon on one end. Set a chuck on the lathe and grip the 40mm tenon in its jaws. Working from left to right, leave 100mm of clear trunk, then mark a pencil line around the trunk. Set the toolrest across the end and cut a shape to match the chucking point on the underside of the tree's main body (as in Step 15).

27 Set all the main components of the tree up on the lathe with plenty of adhesive in the joints at either end of the trunk. Use the tailstock to apply pressure and leave to set.

28 Clean up all surfaces of the ground, trunk and underside of the body. Form a slight taper on the trunk and gentle curves to blend the components. Form a slight upward curve on the underside of the body then cut away the apex bung and shape the tip of the tree before abrading.

29 Mark a line with pencil in line with the paper-glue joints, running across the underside of the body, down the trunk and out, across the ground. Mark a second line up and around the crown. This is best achieved by turning a small collar to fit the post of your toolrest at centre height so the clamp can be slackened off, allowing the toolrest to swing into all corners and against all faces at the correct height. With the tree still on the lathe, use a fine-toothed saw to cut down the line in the crown, and a further 15mm down into the paper-glue joints. Place the tree (bottom uppermost) in a bench vice, gripped at the lowest part. Use a fine-toothed handsaw to cut through the ground, trunk and disk of wood with which you shaped the underside of the body – bearing in mind this disk is recessed into the body of the tree, continue your cut for about 15mm along the paper-glue joint.

30 With the tree on a soft surface, tap the paper-glue joints with a wide bench chisel (at least 25mm) to break them. Lay each half flat side down and mark identical patterns for the arrangement of the LEDs, pre-drilling each hole with a 2mm drill, then with a larger drill to suit your LEDs.

31 Clean the tree and spray with satin acrylic lacquer. Set the LEDs in place and tape the excess flex to one side between each adjacent bulb. Use a dribble of hot-melt glue to bond each bulb.

32 Remove all the tags of masking tape and use a single length of wider tape to retain the flex inside the body. Cut suitable material to match the shape of the back of the tree, leaving a 10mm margin. Cut a slot for the flex to come out and use hot-melt glue to fix the battery box to the backing panel. ●

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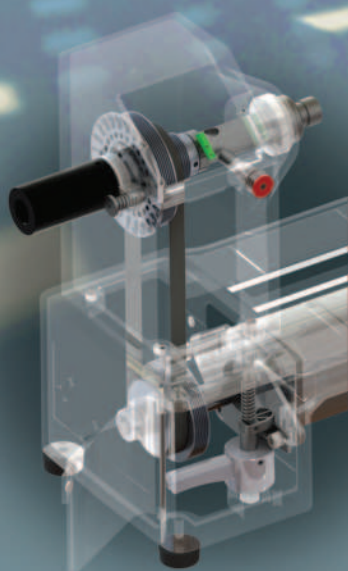
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Creating unique shapes with a twist

Brian Horais shows how to turn unusual twisted and spiral vases embellished by carving and shaping



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Embellishing the twist

This is the second article in my series on turning and enhancing twisted shapes, including vases, bowls and jars. If you haven't already read the first article, please do that first and practise the basic 'turning a twist' process. This

article assumes you have developed some proficiency in turning the twist and can then extend your skills to create unique jars and vases with graceful, spiralling edges.

Methods for embellishing the twisted

shapes using various carving and shaping tools will be described with examples and sample projects. The next article in this series of three will expand on developing skills to address half-twist bowls and spiral sculptures.

Turning air

The term 'turning air' refers to procedures when you are not turning a continuous object. This can occur if the object has an irregular shape or you are turning an off-centre mounted object. When turning air with irregular-shaped objects, it is important to first hand-rotate your wood blank to make sure there is clearance with the toolrest. Then carefully adjust the turning speed until you feel vibration. Back off the speed slowly until the vibration stops. Turning a vibrating object doesn't yield smooth surfaces. With the object rotating, you are cutting wood for only a portion of each rotation. For the remainder of each rotation you are literally turning air. Tool engagement must be done slowly while watching the shadow of the turning object. You judge where and how much to cut by observing the shadow of the turning object.

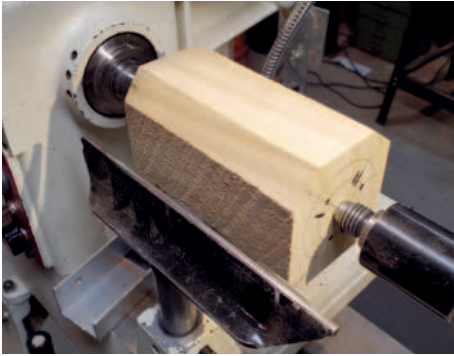


Review of turning the twist

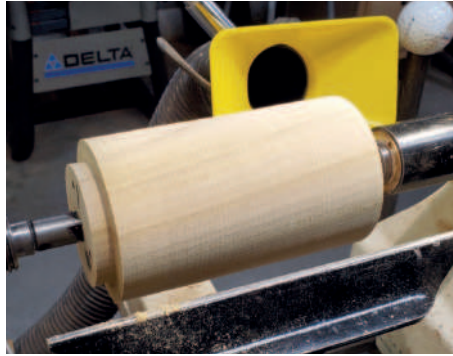
One of the simpler methods for offset turning is to use multiple intersecting centrelines to generate a twist in the desired shape. The first article described the process for generating a spiralling twist with three intersecting axes. Each of the endpoints are separated by 120° of rotation and then marked to create the desired amount of twist and twist direction. We start with a basic blank and turn it round on-centre. A tenon is added at the drive end only because for these twisted shapes we will be shaping the tailstock end of the blank. Turning the three twisted surfaces involves the previously mentioned technique known

as ‘turning air’, where the cutting action of the tool only occurs on a third of each full rotation. The rotating blank appears as a shadow, which is used as a guide to create the desired outer shape on each surface.

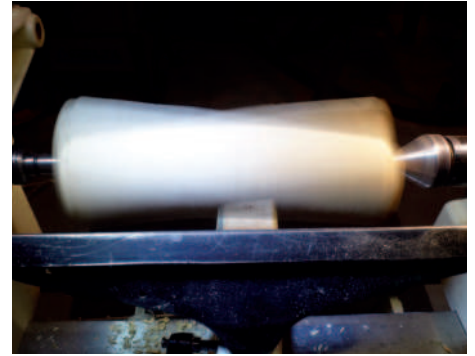
Tenons provide guides to balance the depth of cut between surfaces. After each surface is turned to the desired shape and surface quality, the blank is moved to the next pair of endpoints and turning is repeated. This is done for all three surfaces. This same technique is used to create a wide range of interesting spiral shapes, as discussed in later sections.



Turn the cylinder



Tenon added



Turning air

Planning the final shape

As with most turning projects, forward planning is essential for creating a desired shape. Sometimes it's fun to just create on the fly, but this doesn't always result in a shape you like or want to display. For the variations on twisted shapes in this article, some planning and prior shaping is needed.

We started by creating a cylinder with a tenon only on the drive end. In this article we will be exploring tapered and flared end shapes of twisted cylinders. If you want the twisted shape to taper to a smaller top or to have a top that blossoms like the

petals of a flower, prior shaping of the blank on-centre is very useful to guide the subsequent spiral turning process. Shown here are two variations in end treatments: a decreasing diameter taper towards the top or tailstock end, and a narrowing of the diameter prior to the tailstock end to create a flared effect like opening petals or spreading leaves.

With the desired tapers completed on-centre, the next step is to mount the blank off-centre on the numbered pairs and then check the clearance manually before turning on the lathe.



Turning blank



Cylinder with tenons



Checking the clearance

Turning the curves

Turning basic spiral shapes can be done using a roughing gouge because the curves are gentle and there are no abrupt changes in shape that would be difficult to turn without a catch. If you plan a shape that has more dramatic and steeper curves, you will need to use another tool, such as a bowl gouge, to create a steeper curve on the twisted surface. Another tool that is very useful for these steeper curves is the Hunter series of carbide tools. For the shapes in this article, a 1inch spindle

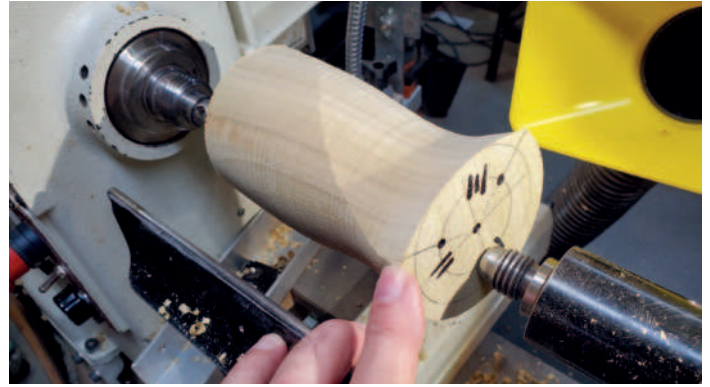
roughing gouge was used for the tapered shape and a 3/4inch roughing gouge was used to shape the flared section. With no tenon on the tailstock end to use for a depth-of-cut guide, the twisted surface is turned to approximately a third of the diameter. This can be judged by using the three lines extending through the pivot holes as shown on the next page. The tenon on the drive end can be used to judge depth of cut on that end.

Turning the twist is accomplished on each

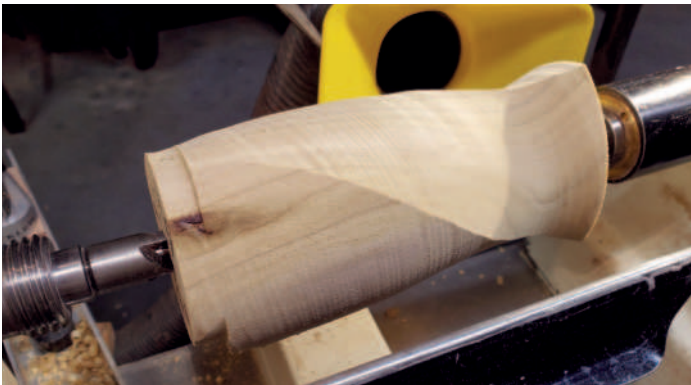
of the blanks by progressing through the numbered pairs of axes. If the shape is not to your liking or not sufficiently balanced, return to a side and turn a little more. When both blanks are completed on the outer surfaces, they should look as shown overleaf. Notice the circle you drew to locate the off-centre holes can also serve as a guide to balance your cuts on the three sides at the tailstock end. Hand sanding with the lathe off can be done at this point to remove tool marks.



Shaping the flare



Depth of cut



Use the tenon



Outer twists complete

Boring out the shape

Now we put that drive end tenon to good use by mounting the twisted shape in a four-jaw chuck. Because we cut into the tenon with our twisted shaping, it may need a little clean up by turning it to a smaller diameter on-centre. I like to use a bedan to turn the tenons. With the twisted blank mounted, the next step is to bore out the centre of our shape to make the vase. Forstner bits are the best way to bore out the material. Use a bit that does not exceed the smallest diameter of the twisted shape, plus an allowance for wall thickness. For the flared shape, the smallest diameter is not on the end. I like to bore a hole that reaches a depth 1in shorter than the

overall shape. This allows sufficient material on the base for final shaping.

With the hole boring complete, there is still some material that needs to be removed to achieve a more desirable shape. Opening up the end with a gradual taper thins the material of the petals.

You can open it up to a diameter where sufficient material remains near the three triangular end points to create your carved end shapes. I'm using a negative rake scraper to open up the end surfaces, but any bowl-shaping tool will also get the job done. Additional shaping and carving will create the desired end shapes and flares that often have an organic look, such as leaves or petals.



Re-cut the tenon



Forstner bit for boring



Opening the end

Shaping the opening

The twisted shapes that are created with multi-axis turning suggest organic items such as flowers and broad leaves. Cutting some of the material away from the opening yields these pleasing shapes. Mark the curves for cutting by using the gentle undulations of the twisted shape to suggest flowing lines. With

a small coping or jeweller's saw, carefully cut away the excess material. When the initial cuts are complete, it should look something like the picture opposite (top right). The final shapes are now becoming evident, but some additional carving, shaping and sanding will be needed.



Marking the cuts



Cuts in progress



Rough cuts made

Final shaping

Final shaping can be done with a variety of woodworking tools. I like to use a combination of Microplane tools and Kutzall files. The Microplane tools come in coarse and fine – I prefer the fine for final shaping – are fairly inexpensive and can be reversed in their handle to cut on the push or pull stroke. This becomes important so that you are shaving material off instead of roughly cutting it.

The Kutzall files come in flat and rounded versions, with the

rounded type having a flat bottom, so it is very versatile. When the shaping is done to your satisfaction, it should look something like the picture below, centre. The Kutzall and Microplane tools are shown just below the shaped opening. These examples have been done using the twisted blank we tapered towards the opening. After shaping, the flared opening twisted blank looks like the picture below. Now all you need is some elbow grease and sandpaper to get the surfaces smooth and ready for finishing.



Shaping with microplane



Shaping with Kutzall



Rough shaping



Shaping the flare

Shaping and sanding

Shaping and sanding your twisted vessels can be a lot of fun. When you create the tapered and flared vases described in this article, shaping and sanding tools allow your creativity to emerge. I use Microplane and Kutzall tools for most of my shaping. The Microplane tools may look a lot like your cheese grater. If you go to the Microplane website, you will see it sells kitchen tools as well. I'm convinced one of its employees was a woodworker who found out that cheese graters make great (or is that grate?) shaping tools. For sanding I prefer to use Abranet mesh sandpaper because it lasts longer and can be folded repeatedly into different shapes to sand small areas.



Finished examples

Here are some examples of vases made with this multi-axis and end-carving technique. The first example was turned from box elder and completed with an asymmetric opening. The second example was turned from Douglas fir. For this example, the softer wood was wire-brushed away to create

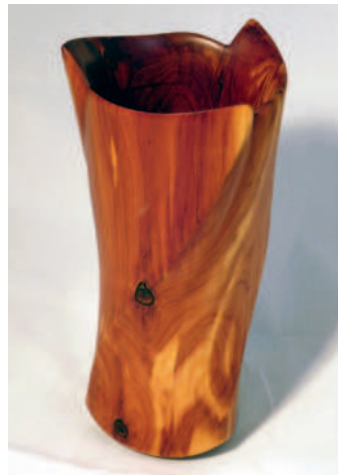
dramatic grain patterns. The third example was turned from red cedar with an increasing diameter opening. The final example was turned from ash and stained black. Liming wax was applied to highlight the deep grain patterns that occur with ash.



Box elder twist



Grainy Douglas fir twist



Red cedar twist



Limed black ash twist

Twisted peppermills

What better shape to be twisted than a peppermill? You can create a twisted peppermill with internal grinding mechanisms, but some preparation has to be done before turning the twist. The separation of top and bottom sections has to be completed first, then the top and bottom need to be pinned together to keep them from rotating when turning the twist.



Twisted peppermill

NEXT MONTH

There is one more article to follow in the next issue, which will show how to create unique half-twist bowls and vases with a twist on the top and round sections on the bottom. Enjoy the twist – not everything created on a lathe has to be round.



Half-twist bowl

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Stains, dyes, inks, waxes & paint

Stewart Furini continues his tour of the world of colour theory and how it can be used in woodturning



Health and Safety

Alcohol-based stains are flammable and should not be used near naked flames or other ignition sources. Make sure your workshop is properly ventilated if using alcohol-based stains and thinners, any aerosol cans or if airbrushing, and wear suitable eye, skin and respiratory protection. Follow all safety recommendations from the manufacturer.



PPE and RPE is essential

The first time I saw a turner using colour on a piece of woodturning was at a club meeting in Sussex. The turner was Mick Hanbury, the woodturning was a platter, and the colours were spirit stains and acrylic paint. Oh, and it was also textured. I loved it, but it was to be a few years before I seriously became interested in adding colour to my own woodturning. I suppose I was still focused on learning how to use the tools properly and get shapes right, the fundamental skills in woodturning. But when I turned my attention to embellishing, a whole new level of engagement and creativity was opened up – as was a whole

new world of colouring media. In those few years while I was developing my turning skills, I saw other turners add colour to their turnings. A lot of them used stains, a few used dyes, some used paints, others used waxes and creams and inks, and some used more exotic offerings such as interference paint and iridescent paint. It's certainly the case that if you want to add colour to your turning you are spoilt for choice. But what can you use each medium for and what are their advantages and disadvantages when it comes to using them with wood?

◀ Paint

Paint is probably the first medium people would think of if you mentioned colouring wood to them – for me, this conjures up the image of glossed paintwork in the home: skirting boards, door frames and dado rails. The wood might as well not be wood with such a thick coating hiding it completely – and, yes, I know the fashion is more for eggshell these days. But there is a rich vein of painted wood in many cultures around the world, where the painted designs carry symbolic, religious or cultural significance. From my own woodturning perspective, I don't claim any deeper meanings behind my uses of colour other than to add a decorative quality to what I have turned, or to add another process to the shaping and finishing that engages other creative parts of my mind and imagination. For others, with a better honed skill set, there is huge artistic potential for colouring wood, and paint is a great medium to use for this.

You could probably anticipate my next comment, if you've read the other articles in this series, that any paint could be used: acrylic, oil, watercolour, metallic, even emulsion, not to forget some of the more fashionable paints like milk paint and chalk paint. Paint can be thinned, mixed with a medium that adds transparency, mixed with sand, ground lava or glass beads to add texture, laid on with brushes, paper, paint trowels and sponges – I've even seen bits of shaped cardboard being used. Plastic food wrap and kitchen foil have their uses for adding and swirling paints together. Oh, and don't forget aerosol paints, where, as well as standard colours and metallics, you can get some great special effect paints that recreate the texture of stone or concrete, and even a marbling effect. Ones I have yet to try include glass paint, hammer reactive paint, and a honeycomb effect paint.

But hang on, I hear some of you say, where is the wood in all of this? And it's



A range of acrylic paints I use to colour my turnings



Spray paints are fun to use – wear a respirator though

a valid question for sure, with plenty of scope for differences of opinion. For me, the wood is more than just a canvas for a colouring effect, and I like to retain some of the natural wood, though I have done some pieces that have been completely covered.

Acrylic paint is likely to be the paint of choice for most turners starting out with colouring wood. The first acrylics I bought were from the cheaper end of the market and they were good enough to play around with and try out ideas. I can't name the retailer, but let's just say



Special effect paints that give a hammered or honeycomb effect, and transparent glass paints

they all cost one pound. The problem with cheaper paints is that they don't contain as much pigment as higher-priced paints so their coverage is definitely thinner, and they may well not be as light fast as better quality artist paints. The price difference is about £6 per tube, but a little of the good-quality paint goes a long way. As with cheap tools, so too with cheap paint – it will sort of do the job but it can lack quality and may be frustrating to use as the end results might not match your intended outcome.

Acrylic paint and mediums

You can thin acrylic paint with water – after all, it is water-based. However, this can affect the quality of the paint's coverage and hue, reducing the power of the pigments. It's better to use an acrylic medium for this. Several types are available, and all will make the paint less viscous without diminishing the colour. Named brands encourage you to use them with paints of the same brand, but I've had success using one brand's medium with a different brand's paint. Experiment with different ratios of paint to medium to get the effect you want. It can be particularly useful if you are creating a centrifuge effect. If you want to thin a paint

to airbrush it, then use airbrush reducer. There is also the choice of a medium that not only thins the paint, but adds transparency. I've even got a pot of iridescent medium waiting for its first use – it's only been in my cupboard since the summer before last. If you want to go for an aged look, then check out crackle glazes that go over a layer of paint and produce a network of cracked lines – these can be filled with a contrasting colour, either paint or wax, to accentuate the effect. You can get a medium to extend drying time and increase the flow of paint (useful if acrylic pouring is of interest to you) and a range of pastes and gels to help create texture in your painted finish.



Notice how the cheaper orange paint covers less well than the other better-quality, higher-priced colours

Special effect acrylic paints

If you want an added shine to your paint, then there are a many metallic colours available – various hues of gold, silver, copper and bronze, being the most common. They can be used straight from the tube or bottle, or they too can be mixed with a medium to thin them or to add translucency. Some manufacturers offer a wider range of colours in a metallic finish, either in bottles or aerosol form – check out the rattle can colours in automotive retail outlets.

Getting a little more exotic, we have iridescent and interference paints. These both create a colour-shift effect, where the colour changes depending upon the angle from which you view it – think of the colour effect of a slick of oil on black tarmac or the shimmering colours in a piece of mother-of-pearl. Closely related to this are pearlescent colours, which reflect back white alongside their own colour.



Metallic acrylic paints

You may also see the term ‘opalescent’ used. Various manufacturers offer paints labelled in this way, but although they are described in the same way, the effects produced by different brands are not always the same as each other. In everyday language, we can think of these as paints that add shine, shimmer and colour-shift. They can be used on their own or mixed with standard acrylic paints to add an extra dimension to your colouring work,



Interference and iridescent paints

or as a glaze over other colours. Finally, reactive metallic paints are proving very popular with turners who want to create a rusted metallic look or patinated copper look, among other effects. These usually come in two parts – a base coat to which the reactive or patinating layer is then added. I’ve seen some great effects produced with these paints and you can definitely be forgiven for not realising that wood is the material underneath this finish.

How does colour interference work?

Interference and iridescent paints work by adding a metallic oxide and mica to the paint. The combination of the highly reflective oxide, usually titanium dioxide or iron oxide, with the transparent mica platelets allows light to be reflected and refracted multiple times. Light hitting the paint is both reflected and refracted when it hits the boundaries between these constituents of the paint as they are of different densities. Light reflects on the metal oxide layer twice – on its surface and the boundary between the oxide and the mica. The delay between these reflections

produces a phase shift in the light, removing some wavelengths and intensifying others – the intensified wavelengths are the dominant iridescent colour. The intensity of the shift depends on the base colour used with the iridescent or interference paint, as well as the angle of view or illumination. Some interference and iridescent paints contain transparent pigments, with the colour seen being produced by the reflections between the layers of mica and metal oxide. In the bottle these paints all look white with just a subtle hint of the colour they will produce when dry.



Sample boards of interference and iridescent paints

Stains and dyes

If you want to add colour but also retain some of the wood’s grain or figure, then stains and dyes are the colouring media to use. They are transparent so will not obscure the natural features of the wood; in fact, they can be used to emphasise grain and figure. Stains and dyes are produced with a range of bases: alcohol, water and oil. I prefer to use the water or alcohol-based stains as these give more flexibility with what finish can be used over the stain or dye. There is a wide range of colour choice, from various wood colours such as walnut, oak, teak or mahogany, to more vibrant colours from the colour wheel we looked at last month. Like paint, stains and dyes can be mixed to produce a wide range of colours, and most ranges contain a white that can be used to produce a range of pastel shades. They can also be thinned to give a subtler wash effect. For alcohol-based stains, methylated spirits, cellulose thinners or spirit thinners can be used.

Alcohol or spirit stains will dry before



Alcohol and water-based stains, with some sample-sized bottles that are a good starting kit

water-based stains and dyes, but both dry more quickly than paint. It can be tempting to try to speed up the drying process with a hairdryer or even a hot-air gun, but it’s best to leave the stain or paint to dry naturally to ensure it’s not just the surface that is dry.

An advantage that stains and dyes have over paint is that they are less affected by being used in a dusty workshop, though you should try to remove dust

before applying them. As they soak into the wood, if there is some dust around, it doesn’t dry into the finish as it would do in paint, giving an unwanted textural ‘enhancement’. Another advantage of stains is that their transparency allows you to use other media below them: I like to use a metallic paint under stains to add some more shimmer and sparkle. You also have great control over the saturation of stains, which can help you create

variety in the finished look by building up multiple layers of stain. The vibrancy of a colour is enhanced if more than a single coat is used. By dabbing stains on to wood rather than covering the wood completely with each colour, you can build up a nicely variegated finish. If you build up several coats of stain, just make sure you give it longer to dry before moving on to adding the sealer.

Alcohol-based stains can be 'spritzed' with methylated spirits, or denatured alcohol as it is known across the Atlantic, to create interesting blends of colour

by reactivating the stains and creating mini runs of colour. This can become dangerously obsessive if you want to have total control of the effect.

I use stains much more than paints in my decorative work, mainly because they do allow the figure and grain to be seen in a way that paint usually doesn't, but also because of the speed they dry and their greater tolerance of a dusty environment. I like the way I can control the build-up of colour, and when a finish is added, whether it's lacquer or oil, if the grain is still visible there is an extra



Stains and dyes test sample on wood. Notice how subsequent coats of red intensify the colour but still allow the grain to be seen

depth to the final look that doesn't happen with paint.



Sanding sealers

Sealing your wood

As a general rule, if you are going to use paint on your wood, seal the wood before adding the paint. For stains and dyes, the wood should be sealed after the colouring has been completed. Take care with applying solvent-based sealers over alcohol-based stains as they can reactivate the stain and re-blend any colouring effect you worked hard to achieve – been there and done that. Alcohol-based stains should be all right if you use an acrylic sanding sealer on them, but for added peace of mind, an aerosol sealer is better to use as the lack of any mechanical application will stop the colours being reworked. Do make sure that any stain is completely dry before the sealer is added.

Pens, pencils, ink and waxes

Perhaps the easiest way of adding colour is to use a felt-tip – I've seen some fun spinning tops coloured with just felt-tips. You can get a wide range of different inks to experiment with as well as a huge range of colours. Coloured pencils also work, and there are some pencils that you

can wash over with water to give an ink-like effect. Marbling inks are great fun too.

Finally, there are various coloured waxes and creams that can be used to enhance your colouring. Bare wood can be enhanced by filling the grain with a coloured wax with the excess being buffed

off. Liming wax is an example of this, but there are waxes in different colours that will produce a similar effect. Gilt cream is great for enhancing a textured surface and adding a metallic look to wood – it's a key feature in Nick Agar's widely emulated Viking Sunset bowl.



Oil-based felt pens, chalk marker and watercolour pencils



Marbling inks and some sample pieces



Coloured waxes and creams to use on wood

Finishing thoughts

Don't get bamboozled by the variety of media you can choose from if you want to have a go at colouring your turned items. You don't need to rush out and buy everything that's been mentioned. If there is a particular look you want to achieve, or you fancy making a copy of something you have seen demonstrated (with proper accreditation to the creator of that piece), then this will determine whether you need to buy a dye or a stain, an acrylic paint or a wax. If you are looking at just trying out some ideas, sample sets are great for starting

colouring – it's where I started, and the set lasted quite a while. And if the bug bites, then no doubt it won't be long before you have an impressive collection of stains, paints, medium, gels and pastes, perhaps mirroring the way your collection of turning tools grew from a parting tool, a roughing gouge, a couple of spindle gouges, a bowl gouge and a scraper.

Next month, we'll look at various ways of applying colour and some of the effects you can achieve, before we look at what different finishes can be put over your colouring work. ●



40/40 Grind Set Up-Block



Stuart Batty is an internationally known woodturner who popularized a bowl gouge grind known as the 40/40 grind. Stuart teaches this grind as a platform only grind that does not use jigs or fixtures other than the platform on a OneWay Wolverine Jig System. Until now, the only way to achieve a 40/40 grind was by hand. I have developed a system that uses the OneWay VariGrind 1 or 2 tool holding fixture and a setup block to achieve the traditional 40/40 grind. Results are much more consistent and it is much easier to grind a single facet. The Nose Angle and the Wing Angles will be 40 degrees every time just as one would get with Stuart's manual grinding method.



Other Set Up Aids

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Celery top pine bowl

Andrew Potocnik applies some techniques he has previously experimented with to the creation of a decorative bowl



So often a new piece is the development of a series of projects previously explored, but once the mind is activated, it goes off on a tangent. As pen is applied to paper sketching further developments, along with scribbled notes to explain how to bring these ideas to fruition, the result can bring forth a raft of new ideas to entertain.

This piece is the culmination of techniques I've experimented with in recent times (really several years) where I've applied carving and scorching to pieces that expose growth rings and grain of the wood, bringing them to the fore when contrasted with the natural sanded timber.

This project offers you the opportunity to use traditional hand carving techniques to shape flutes which form the rippled edges that define this bowl's exterior surface. However, there's a quicker method than I used. But let's get back to how to start the project and look at things that make celery top pine a wonderful timber to turn.

Focus on celery top pine

Celery top pine (*Phyllocladus aspleniifolius*) is endemic to Tasmania, where it is the most widespread and abundant conifer in the island state. Commonly found in wet sclerophyll forest and rain forests from sea level to 1200m in the west and south west, it is also found in small communities on the east coast, Maria and Bruny islands, the Tasman Peninsula, and in the north east Blue Tier.

It can grow as an understorey tree or, in the right conditions, become a dominant species. It tolerates a wide spectrum of soil types, except for really dry or poor-quality soil. It is sensitive to climatic conditions and prefers a wet environment, or rain forest, where it is found with other rainforest species such as myrtle

(*Nothofagus cunninghamii*), blackheart sassafras (*Atherosperma moschatum*) and leatherwood (*Eucryphia lucida*) and can be up to 800 years old.

Celery top pine was named for the celery-like appearance of its leaves, which are not leaves but flattened stems, or cladodes, that are pale green when juvenile growth occurs in spring and autumn, while adult leaves are dark green, thick and leathery. The leaves contain numerous oil cavities.

Celery top pine's growth is regular and symmetrical. It reaches a height of 15-40m, and a trunk width of 85cm. Named as a pine, it does not resemble pines in appearance and is related to yew trees.

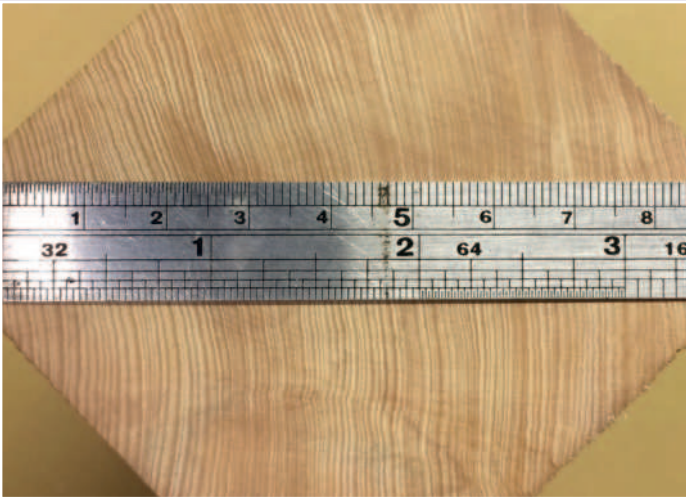
Sapwood is narrow and not easily distinguishable, however, heartwood texture is fine and even with grain that is usually straight. Growth rings are conspicuous and very close, so the wood dries without much degrade and lends itself well to steam bending. GD is about 1050 kg/m³, ADD about 650 kg/m³.

Working qualities

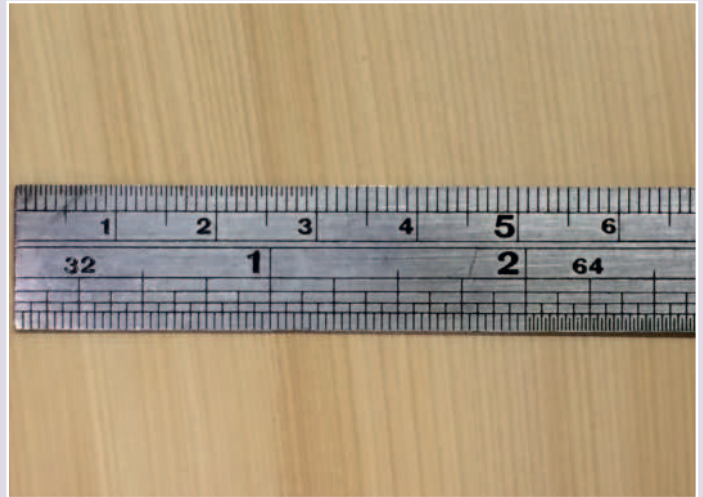
This wood is valued for its durability and how well it withstands exposure, especially when not in contact with soil. A tough wood, it provides a hardwearing surface for flooring and has an attractive, fine-grained appearance. Features such as knots and other figures provide character to furniture, and knots are sound and hard. The timber planes and sands well, accepts varnish and stains, and paints readily.

The wood of good-sized trees is straight grained and dense with a straw yellow colour. It is hard and strong with little shrinkage, bends and works well, and is very durable. It has been used for railway sleepers, flooring and ship masts in the past, but is now highly prized in the furniture making industry,

◀ Focus on the wood



End grain showing tightness of growth rings of this wood



Growth rings on face grain



End grain oiled and raw



Side grain oiled and raw, showing minimal change in colour once a finish is applied

TOOLS AND MATERIALS

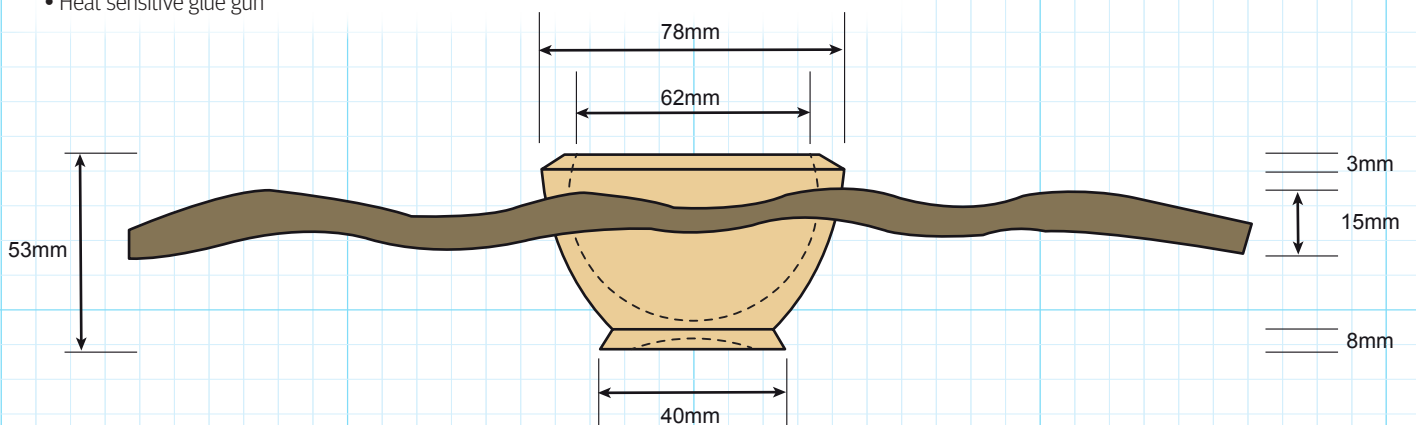
TOOLS

- 19mm bowl gouge
- 12mm bowl gouge
- Square ended scraper
- Vernier callipers
- Heat sensitive glue gun

- Parting tool
- 3/4in round nosed scraper
- Point tool
- Rasps, files and cabinet scrapers

MATERIALS

- Celery top pine (*Phyllocladus aspleniifolius*)





1



2



3



4



5



6



7



8

Making

1 Although this wood is available commercially, the timber I used came from a railway sleeper I acquired some time ago. This is an example of how often wonderful timbers are used in situations that are well below the level of appreciation they deserve, simply because they were available in abundance in a certain location and were used just because they were there. When timbers were found in abundance our forebears viewed them differently to how we see them now as they become harder to find.

2 A piece of about 220mm square and 45mm thick was mounted on the lathe, wedged between a scrap wood carrier and tailstock centre. The wood was chain sawn from the sleeper, retaining weathered edges along the side grain and rough sawn surfaces on the end grain.

3 Turning a square can be quite a hazardous operation, especially as corners of the blank are only seen as a 'ghost'. In an ideal situation, scrap material should be glued to the outer edges of the square so you are turning a full circle. Unfortunately this was not possible here as I was keen to retain rough rather than clean edges. A safer option is to attach masking tape to your toolrest and add pencil marks that indicate outer reaches of the square you're turning. At least this way you'll know where to begin cuts, and where to keep fingers clear of.

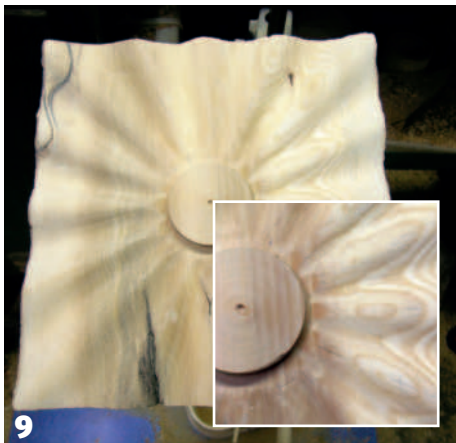
4 Working from the outer edges toward solid material near the centre of the blank, I cut a sweeping curve and then used the indexing guide on my lathe to divide the blank into 16 roughly uniform divisions ready for shaping into undulating, wave-like patterns.

5 The remaining central stub seen here shows how far the surface was cut into the blank.

6 The stub was then cut with a parting tool to form a tenon by which the square could later be held when reversed into a scroll chuck.

7 Removed from the lathe, the chuck and blank were fitted to a carving clamp so flutes could be rough carved with an Arbortech power carver. You could achieve a similar result with much less noise, dust and speed using traditional carving tools, which I too needed to use later.

8 A variety of tools, including micro files, rasps and scrapers, along with elbow grease, were used to refine ridges and hollows into a flowing wavy pattern.



9 Distinct growth rings towards the outer section of the tree are accentuated by the rippled surface.

10 Burning the surface further emphasises the hard and soft areas of grain.

11 While the wood was still hot, I applied a soft beeswax finish, which I later regretted as it was too shiny for my liking. Cutting it back with steel wool later should reduce the shine, fingers crossed.

12 Now for a complicated series of steps that will make sense once completed. First I needed to trim charred material away so I had a solid tenon to grip in a scroll chuck.

13 To reverse the wavy square I made a carrier from scrap wood in a scroll chuck, then fixed the square in place with heat-sensitive glue. I allow the heat gun to get so hot the glue bubbles. Next I warm both mating surfaces so as the glue is applied it doesn't cool and harden before surfaces mate. Working quickly, use the tailstock centre to drive the square into place in the carrier, and allow the glue to cool.

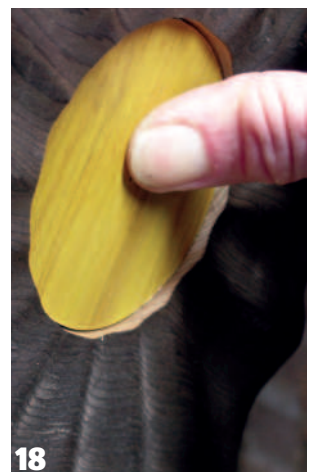
14 I added hot and fluid glue into openings between the carrier and the square surface. Allowing the glue to heat beyond recommendations enables it to squeeze into small gaps and act as a filling.

15 Once the glue had set and the tailstock was removed, I removed the central stub with a parting tool so interior edges could be refined with a finger pointed gouge before being...

16 ...trimmed to size with parallel sides using a square carbide cutting tool.

17 Vernier callipers were used to ensure walls of the opening were parallel.

18 I needed to reverse the carved square on to another chuck so a small recess could be cut into the underside for the yet-to-be-turned bowl to press into it. I needed a surface that would act as a registration, so a level surface was needed for another chuck to be butted up to, prior to reversal. Sounds complicated? The next few photos will help to explain. I turned a spacer of about 7mm thickness that fitted inside the opening.





19



20



21

19 Another chuck was pressed into the opening and expanded to hold the carved square, ensuring it was reversed and could run true. Now the carrier was no longer needed, and...

20 ...could be removed. A simple way of releasing heat-sensitive glue is to apply what I call methylated spirits, but is also known as denatured alcohol. After picking away excess glue I had clean wood ready for the next step, cutting a small step into the underside so the bowl section will fit snugly.

21 Using a square carbide-tipped cutter I made an incision of about 1mm wide and 3mm deep to receive the bowl section of this piece. Care was needed to not cut deep enough to make contact with the exposed jaws of the chuck.



22



23

22 Wood for the bowl section was mounted between centres and roughed down with a tenon cut ready to fit into a scroll chuck so the outer form of the bowl could be turned.

23 Reversed into the scroll chuck, I could begin refining outer dimensions so the bowl would fit inside the opening of the carved square top. A small step was needed so the bowl and top could meet neatly. At this stage I only removed as much material as was needed, hence three different diameters that would be trimmed and shaped later. Careful cutting and frequent measurements with Vernier callipers are vital in making a piece like this work.



24



25



26

24 Once I arrived at required diameters I could rough shape the outer surface of the bowl form.

25 A quick check to see if the shape and dimensions of the bowl suited the carved square section, including how far the bowl protruded from the carved section.

26 Pleased with proportions, I hollowed the interior of the bowl and sanded it, the outer collar and about two-thirds of the upper section through to 320 grit.

27 The bowl was reversed into a chuck, ensuring that any possible jaw marks would be in an area of the collar that would later be hidden when top and bowl were joined.



27



28

28 A foot was turned, sanded and a couple of detail lines added with a three-point tool, ready for my name and timber details to be added prior to the application of a finish. The bowl received a wipe-on, wipe-off polyurethane finish, while scorched areas were waxed and buffed prior to final assembly.

Conclusions

I had considered raising this form on four curved legs, but as I cut wood away from the bowl in photo 24, it became obvious that a tapered base would suit this piece, but as you can imagine, there are numerous design options according to your personal aesthetics and skills. ●

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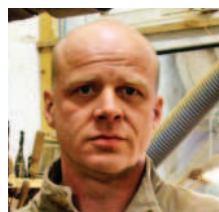


OUR CONTRIBUTORS



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Andrew sees inspiration around him every day. He 'arrived' on the Australian woodworking scene in 1983, and since then his work has developed into areas of sculpture, furniture-making and the odd bit of cabinet work.
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Andy is a professional woodturner and has a workshop and gallery in Suffolk. He makes one-off pieces, small-batch runs, antique restorations and other strange commissions. He also demonstrates and teaches.
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A woodturner since 2010, Brian creates non-round multi-axis works of art. His work has been selected for the East Tennessee Master Woodworkers Show multiple times. He has published articles in *American Woodturner* and demonstrated at the 2019 AAW International Symposium.
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Chris has spent a good deal of his time designing, turning and writing on the subject of salt and pepper mills. He has also published a book, *Adding Spice to Woodturning: 20 Salt, Pepper & Spice Shaker Projects for Woodturners*.
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After a career in teaching, Les developed his hobby of woodturning into a career. He is on the Register of Professional Turners and has a small shop and gallery in Bala in the Snowdonia National Park, where he displays and sells his work.
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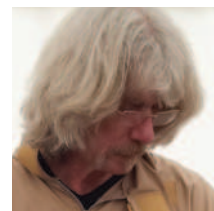
STEVE BISCO

Steve has been carving for 30 years, specialising in decorative carving in period styles, first in wood and recently in stone. His book, *Stone Carving for the Home & Garden*, is available from GMC Publications.
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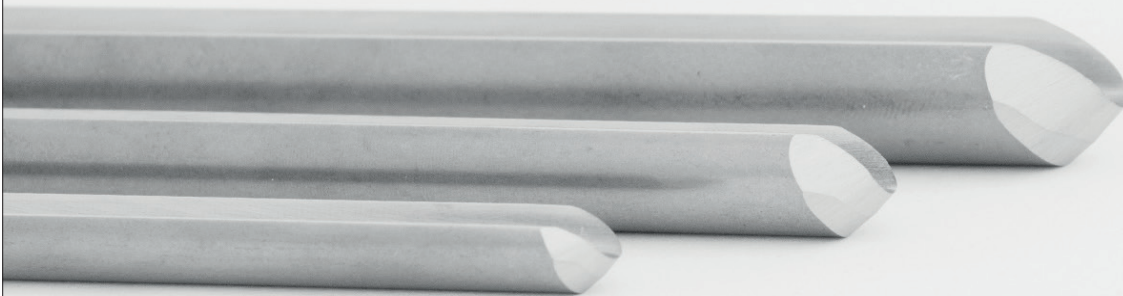
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Kendama

For his monthly Editor's Challenge, Richard Findley faces up to the task of making this traditional Japanese 'sword and ball' skill toy



My challenge this month is to make a kendama. I've seen them and the tricks people can do with them but have never made one, so this, and perhaps learning a couple of the tricks, should be a fun one.

A kendama is a Japanese skill toy, a little like the traditional ball and cup that some readers may have played with as children. Unlike the British tradition though, the kendama has three cups of different sizes, just to make it more of a challenge.

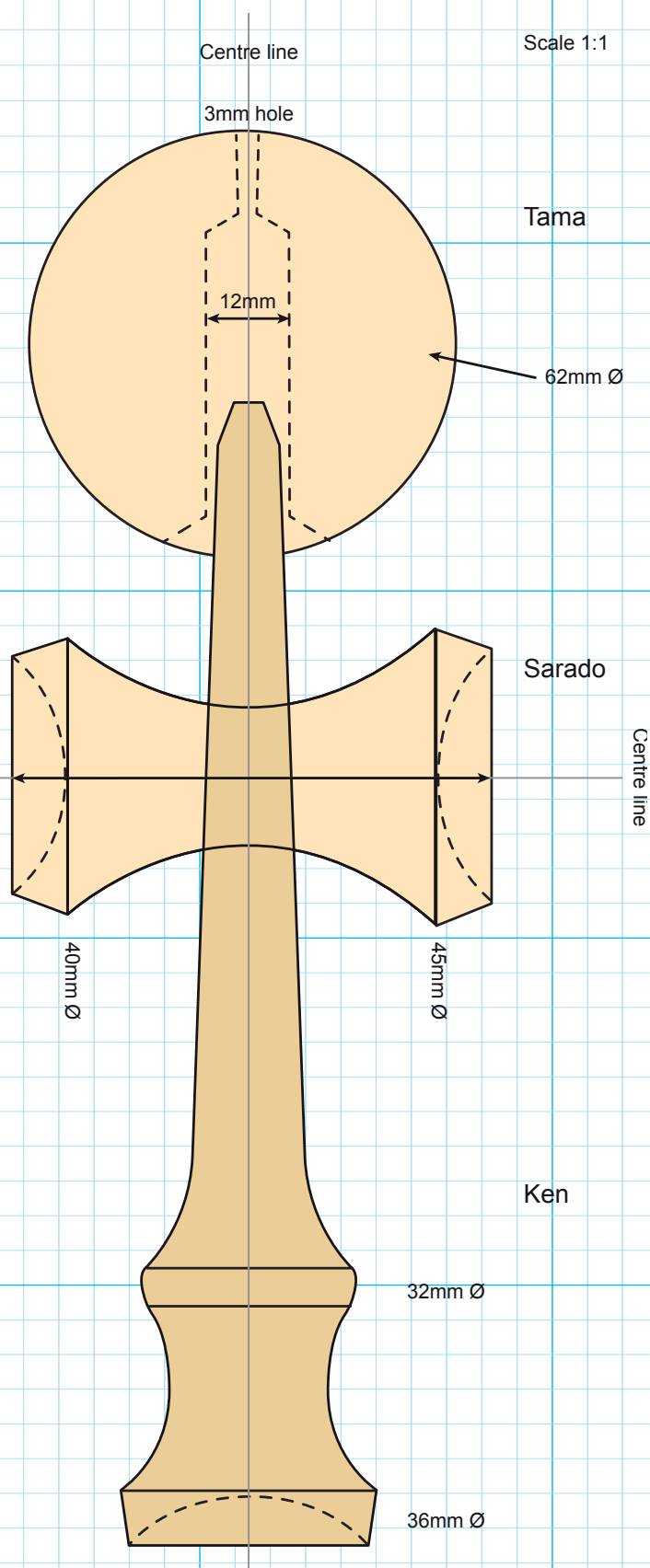
There are three parts to the kendama. The 'ken' roughly translates into 'sword' and is the central shaft with a rounded spike on the top and a small cup at the

base. The 'sarado' is the cross piece which sits on the shaft, locking in place with a tapered hole and features two cups of different sizes. The ball is called the 'tama' and the three parts are attached with a piece of string.

Research

I've seen these online and they seem to be available in a range of sizes. I assume that, as there is a Kendama World Cup held in Japan annually, along with various other competitions around the world, there must be a 'standard' or 'official competition size' that they are made to.

Perhaps it's me being British and liking rules and guidelines, or just that with every other sport I've ever been involved in, the main apparatus – whether that is a ball, bat or racquet – has to meet certain regulations to be allowed in competitions. However, after a considerable amount of searching online, I can't find any official dimensions for a kendama. So I find a couple of different sources and average out the dimensions – converting one from imperial sizes, written in decimals – and eventually come up with my own sizes for the kendama I create which, I think, look authentic.



There are lots of videos online showing how different people have made their kendamas – some are quite creative, others look decidedly dodgy. The main challenge, as far as I can see, is going to be making the sarado, which has cups at each end. After some thought I have a plan, so make a start.

Timber

The ball is the largest diameter at around 62mm and I find a block of beech which will suit. I also find a length of beech which was an off-cut from another board at 55mm square, which will do the ken and sarado perfectly. Most of the commercially available kendamas seem to be made of beech, so it seems a safe bet, although almost any wood could be used, I'm sure.

Materials

The blanks I use are:

Tama: 64mm x 64mm x 110mm

Ken: 55mm x 55mm x 180mm

Sarado: 55mm x 55mm x 75mm

Tama/ball

I begin with the ball as it seems to be as good a place to start as any. I have turned many balls over the years, some just as plain spheres, many more as part of finials. As the tama needs a hole drilling in it for the ken to fit in, I decide to hold it in the chuck and turn as much as possible before drilling, rather than turn a complete sphere and then try to drill it afterwards. For some jobs, an 'eye-balled' sphere is good enough, but as this is a very tactile object, being a hand-held toy, it needs to be accurate, so I cut an MDF template to help guide the shape as I turn. The blank is deliberately over-long to give me plenty of room between the sphere and the chuck. There's nothing worse than struggling for working space between a large spinning chuck and the project. I turn it by eye at first then refine it with the template. Before the connection between chuck and sphere gets too small, I drill a 12mm hole around 45mm deep into it using a drill chuck in the tailstock. I then add a chamfer to the edge of the hole with the wing of my gouge. I continue to refine the ball and take it round to the point where I can part it off.

If you manage to make a perfect sphere at this point you should sand before parting and then just tidy the small remaining pip. Annoyingly, I'm not 100% happy with the sphere I have turned so I decide to perfect it using a pair of wooden cups, which fit in my chuck and on to my Oneway live centre. By mounting the ball with the end grain pointing vertically I can take light shearing cuts and refine the shape. I rotate it and repeat a couple of times, only removing a tiny amount each time, but gradually improving it. I then sand it from 120 to 240 grit, changing the orientation of the ball between the cups several times during the sanding process, finishing it with a fine abrasive pad. My finished tama is 61mm in diameter, so a touch smaller than I'd aimed for, but well within tolerance.



Turning the tama/ball



Drilling the hole in the tama



Checking against the template before parting off



Correcting the shape between wooden cups



Checking the size of the finished tama

Sarado

The first thing I do with the block for the sarado is find the centre of one side and drill right through with a 10mm bit on my pillar drill. This forms the hole that allows it to sit across the ken. It makes sense to drill it before turning as, once it is turned with each end having different diameters, there seems very little chance of getting the hole central and straight. Here my greatest risk is the edges of the hole chipping out as I turn, but with such a small hole I don't expect any real issues.

I need to turn cups on either end of the blank but hadn't seen a method online that would give a perfectly smooth and

curved cup. My solution is to turn the blank into a cylinder and add a chucking tenon on each end. My Axminster 'C' jaws hold a 56mm tenon, but the advantage of a scroll chuck is that, although 56mm is the 'perfect' grip size, they will happily (and, perhaps more importantly, safely) hold 5mm or more in either direction, so holding my 55mm blank is no problem. The cups are both smaller than the timber at 40mm and 35mm so, with the blank held in the chuck, I mark the diameter with dividers and begin to turn out the waste material from the cut with my spindle gouge. I use the lower wing with the flute at the 10 o'clock position and swing the handle away from me in the same way that I might hollow a box. When I'm close to the shape I want, I switch to my curved negative rake scraper and perfect the curve.

When I made the template for the sphere I also made the opposite template, which allows me to check the curve of the cups. The only guidance I could find online is that the cup should be deeper than the ball, which makes it a little easier to catch it, so when I test it, I make sure it only touches at the rim. Satisfied, I sand the cup to the same standard as the ball. I reverse the sarado blank in the chuck and cut the other cup in the same way.



Drilling the sarado blank



Beginning to turn the cup with a spindle gouge



Refining the cup with a negative rake scraper



Checking the cup is deeper than the ball with a template

◀ Tapered hole

I now have a cylindrical blank with cups turned at each end. Before I go much further I feel that I need to address the tapered hole. The great advantage of using tapers is that they lock securely in place, but are totally knock-down in nature, so the kendama can be taken apart if something gets damaged or the string needs replacing. For me, it isn't a great problem as I have a pair of tapered reamers which give me a perfect 6° taper, a small one ideal for this purpose and a larger one that I use for chair work. The reamers I use are known as cello reamers as they are designed for instrument work, but can obviously be used for any woodworking application. I simply hold the blank in my vice and twist the reamer through the hole until the hole is tapered

along its entire length. But what if you don't have a reamer? Tapered drill bits are available, as are stepped drills, which may well work. One YouTuber drilled a stepped hole through his using a series of different sized drills, which seemed to work. This could possibly be improved slightly using a small carving gouge and smoothing the taper. One online source shows the sarado being mounted in the lathe with the hole on centre and the tapered hole being turned, which is more complex, but definitely an option. Alternatively, a straight hole could be drilled and, so long as the fit on to the ken is tight and the taper of the shaft of the ken begins in the correct place, it should still lock the sarado in place. Glue wouldn't be an option as the sarado does need to be removable.



Reaming the hole in the sarado



The small cello reamer

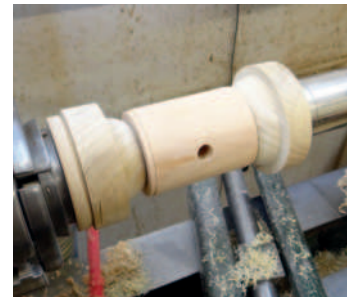
Turning the sarado

Having reamed the tapered hole through the sarado, I need to mount it between centres, holding by the cups in such a way that I won't damage them. My solution is to turn a dome for my chuck, using the sphere template to ensure a good fit. I then drill and tap a piece of cross-grain tulip so that it screws on to my Oneway live centre. Once I have it running true, I cut a chucking tenon into the back of it and mount it in the chuck to turn another dome. I can then screw it back on to the live centre and I have a pair of wooden domed drive centres to drive my sarado. If you have a standard live centre, a wooden cup could easily be turned to fit over it and a dome cut into this to work in the same way.

With the sarado firmly held between the wooden dome centres, turning it is fairly straight forward. I make sizing cuts at each end with callipers to achieve the desired diameters, adding the 8mm-wide taper down to the cup at each end. I can then turn the flowing cove in the centre. This needs to roughly match the shape of the tama as it needs to all slot and sit together neatly when not in use and when spiking the ball. Satisfied with the shape, I sand it to the same standard as the rest of the kendama. When I remove it from the dome drives I notice that the edges of the cups are very sharp, so I give them a thorough sanding to smooth and round them.



The wooden driving domes



The sarado held between dome centres



Turning the sarado



Sanding the sharp edges of the cups



Beginning to turn the base cup in the ken

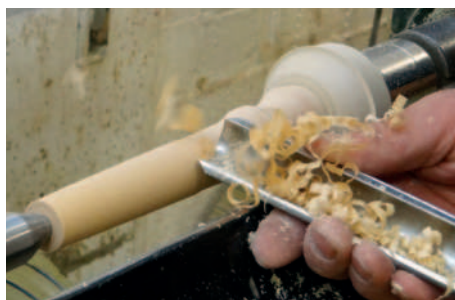
Turning the ken

The ken is possibly the most simple of the three parts to make. As I had with the sarado, I turn it to a cylinder between centres and add a chucking tenon at one end. With it held in the chuck, I can turn the cup in the base of the ken in the same way I had for the sarado. At 180mm long, I am working a little way away from the chuck but don't suffer from any vibration issues. You could use the fingers of your front hand to support the work if needed.

Happy with the cup, I remount it between my smallest drive centre and the wooden dome still fitted to my live centre. I make a sizing cut at the base and cut the 8mm-wide taper down to the cut, just like on the sarado. I can then turn the shallow cove at the base and begin to turn the taper which allows the sarado to fit tightly in place.

I know that the end needs to be around 10mm in diameter to easily fit into the 12mm hole in the tama. This gives me points of reference to work to as I refine the

shape of the taper, using my beading and parting tool as a skew. By using the small drive centre I am able to remove the ken from the lathe, test fit it into the sarado and adjust until I am happy. The sarado should sit around 65mm above the fillet on the lower part of the ken. I mark this, adjust until everything sits just right and sand. I add the taper to the tip before parting off the ken and hand sanding the tip.



Beginning to turn the ken



Refining the taper to fit the sarado

Drilling

Happy with how it all slots together, I need to drill some holes for the string. It is at this point that I feel a bit of pressure as everything had gone so well up until now. It would be very easy to mess it up by drilling holes in the wrong place. I have some black waxed cord in one of my odds-and-ends boxes from when I made a couple of items of jewellery for a commission a few years ago and decide this should do the job. I suspect it is a little stiffer than is ideal, but sometimes you have to use what you have. Checking with callipers, it is a little less than 2mm in thickness. I test it compared to a 3mm drill in a thin scrap of wood and it slots through nicely, so I'm ready for drilling.

I begin with the tama. This is simple enough; I just need to continue the existing hole right through. I suppose I could have done this when I drilled it earlier, but I hadn't. The drill is just long enough to reach right

through, thanks to the chamfer on the ball.

Next, I drill the ken. This is the next easiest hole as it needs to be straight through the shaft in the centre of where the sarado sits. I mark the position and carefully drill through into a cork sanding block, which prevents damage to the ken and my bench. I countersink the reverse of the hole, which allows the knot in the end of the string to sit neatly out of the way.

The final two holes are in the sarado. They don't simply go straight through the side into the ken, but are drilled at an angle. As with most other aspects of the kendama, I am guessing as to their exact position based on pictures and videos. I drill around 5mm away from the top of the tapered hole in the sarado, aiming to exit into the hole about halfway down. A hole needs drilling each side as the kendama is strung differently for left and right-handed players.



Drilling the ken



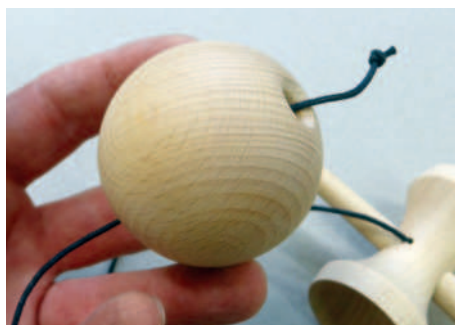
Drilling the sarado

Stringing the kendama

Now would be the time to apply the finish of your choice, whether that is a simple oil to show off the wood or some sort of paint to add a bit of 'je ne sais quoi' to your kendama. For the purposes of the article I am leaving mine unfinished for now, but may get creative later, so for now, the next step is to string the kendama.

I start at the tama, threading the string through the 3mm hole, tying it off and pulling it back. Technically, there should be a little bead inside the ball which, I think, helps the string to move without twisting. I haven't added one, but I think I could either turn or buy something if I find the need.

I am left-handed, so I hold the sarado with the big cup facing left – a right-



Stringing the tama

hander would hold it with the big cup facing – the right, and thread the string through the hole closest to me. This then goes on to the hole in the ken and is tied off and the knot pulled back to sit in the



Making sure it goes through the correct hole in the sarado

countersunk hole. The sarado can then slot on to the ken, keeping the string neatly in place. Everything goes together amazingly well and it feels good and solid.

◀ The final thing to check before trying some tricks is the length of the string. Advice online suggests that, with the tama on the spike, the loop of string should be either two or

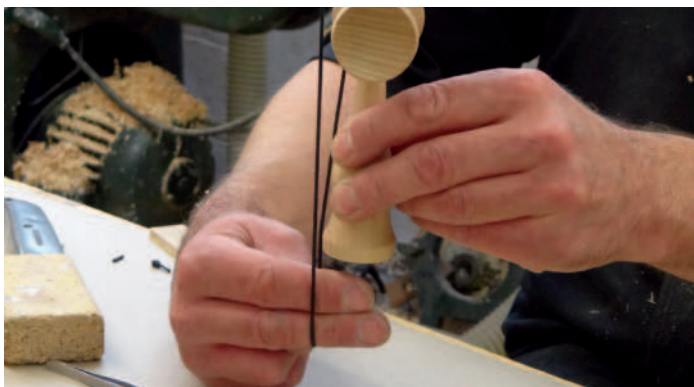


The knot sits in the countersink on the ken

three finger-widths longer than the length of the kendama, so I cut a little off the string until it sits just right. All I need to do now is learn a few tricks.



With the sarako and string in place



Checking the length of the string



Trying out a basic trick

Conclusion

This has been a fun little project. I always enjoy problem-solving, so working out how to hold the different parts to turn them was an enjoyable challenge. I will probably give it to my boys to play with and hope they don't smash anything with the swinging ball. They will probably enjoy adding some

stickers or paint to personalise it, although with two boys, I can see I might need to make a second. Take a look online for 'kendama basic tricks' to find out how to get started with a kendama and 'advanced kendama' to see what is actually possible. ●



The finished kendama



Graeme and Mel with their Sweet 16

Every Lathe Tells a Story



Ask any woodturner about their lathe and you'll hear a story; who they got it from, when and where they picked it up, and perhaps even the reasons they chose it. We doubt you'd hear the same affectionate response about a belt sander.

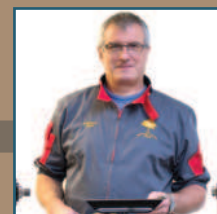
Why is that? We think that, much like you play a musical instrument, you "play" a lathe. You use all your senses to turn and you alone control the path of the tool. In contrast, you only "operate" a table saw. A lathe is a tool you create a lasting relationship with.

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What's your lathe story?



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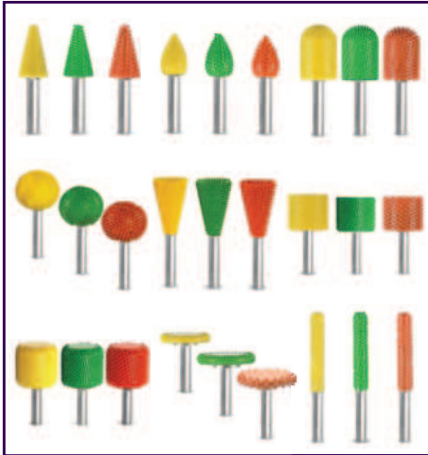


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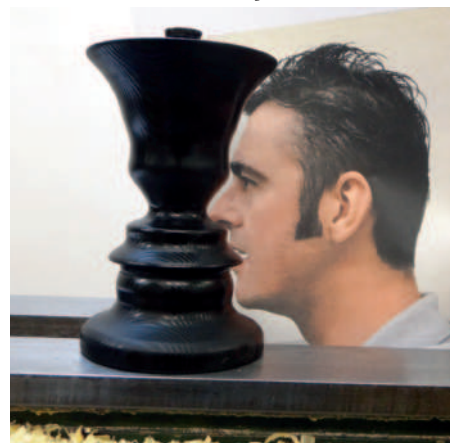
Woodturning

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Richard Findley experiments with a silhouette illusion piece from his profile



Colwin Way concludes his three-tier Christmas extravaganza



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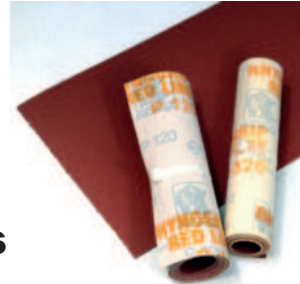
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Three-tier Christmas pyramid

Colwin Way makes a carousel to impress and surprise

It's so exciting as we prepare for the big day; we makers have to start in earnest making the gifts for our loved ones to receive. If you're anything like me, it's getting harder to find something to make that's different, that the family hasn't already seen. I mean, I can already hear them all saying: 'Please don't let him give me another bowl.' Well, I thought we could surprise them all this year and create a real talking point and a prompt of the famous line: 'YOU never made that did you?'



There's no denying that this might be one of the most ambitious projects I've tried to pass as an 'easy' one, but hear me out for a minute. The project this month is a Christmas carousel.

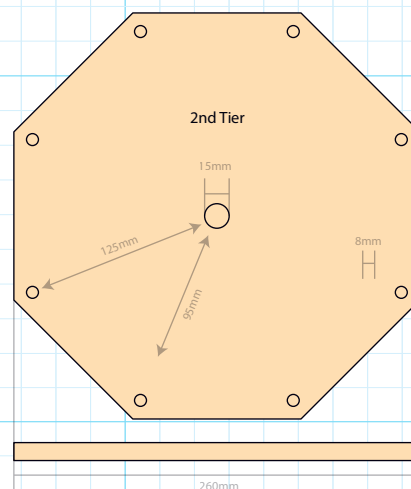
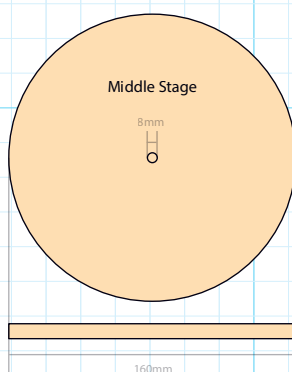
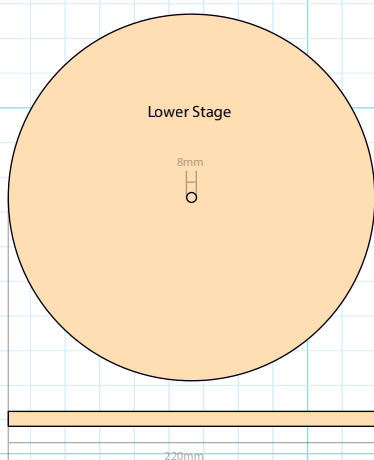
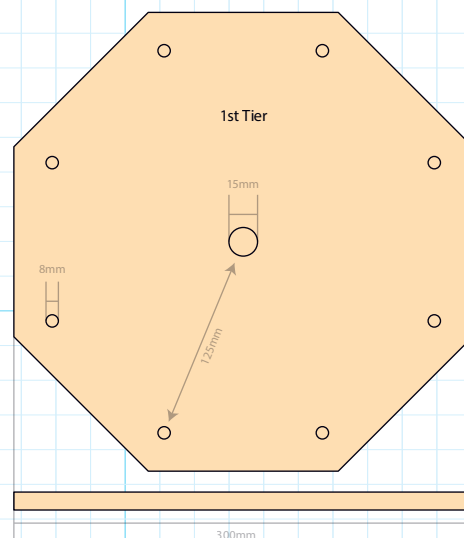
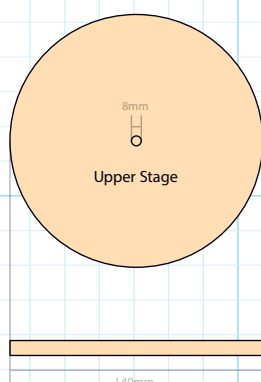
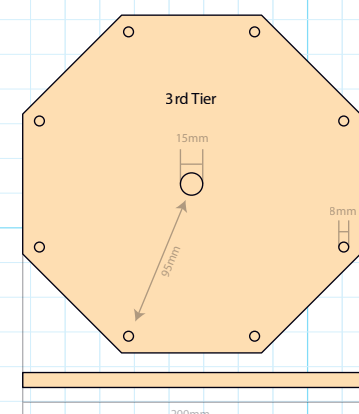
If you remember, three or four years ago we made a single-tier version of this project. Back then I was saying the same thing in the introduction – that the project is easy if you break it down to its individual parts, and this is exactly what we're going to do. We're going to make this over two articles as, although the individual pieces are relatively simple, there are a lot of them.

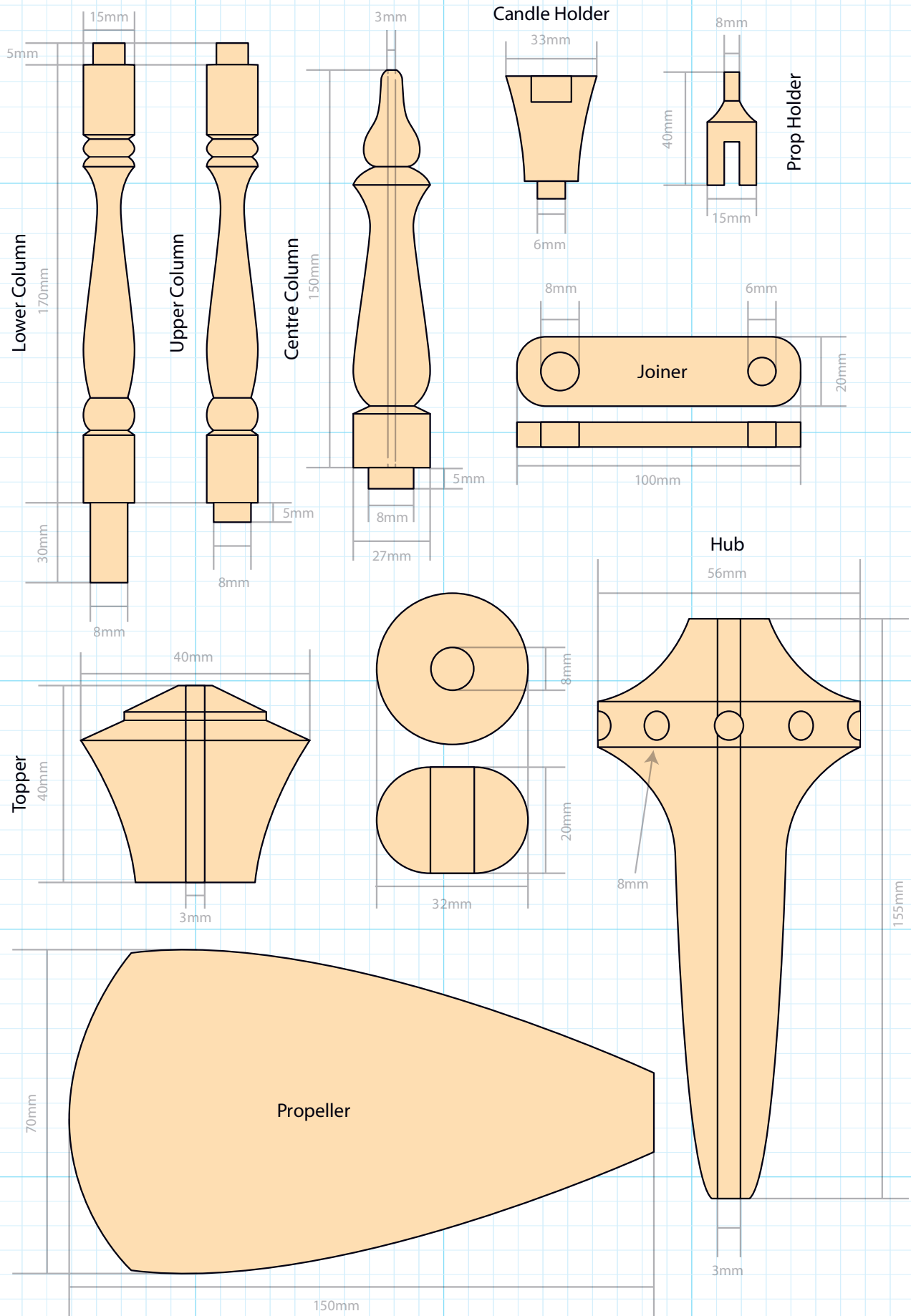
Believe it or not this main picture shows the unfinished carousel, there are a lot of

adornments to add yet, such as the figures that rotate around each of the three tiers, the star at the top and the fences around the edges, so if you think it looks a bit plain at the moment, you're right. There are also some pieces on the drawings and this main picture that we won't cover until next time, but if you want to go ahead and give these a go the measurements are explained.

The idea of the Christmas pyramid is, as the heat from the candles rises the impellers are given energy to turn and this rotation brings life to the nativity scene underneath.

So let's get started, and as we are creating a pyramid we had better start at the bottom.





1 The first job is to make the main structure for the pyramid, which takes the form of three stages, each supported with columns. The stages are made from 6mm birch-faced ply, which I sourced from my local hobby store. Ply is the best material as it's unlikely to move, cup or bow. I've decided to go for an octagon instead of the more common hexagon, with each of the three measuring 300mm, 260mm and 200mm.

2 After measuring, marking and cutting out your octagons you will need to sand the edges clean. It's also worth just taking a moment to hand sand the edges to tidy them up a bit. I use a sanding disc attached to my chuck and a sanding platform in my toolrest saddle, which turns my lathe into a great disc sander. Note the close proximity dust extraction.

3 Here's what you should have so far: all three octagons, sized, cut and sanded ready for marking and drilling to accept the columns. The spare piece of ply is going to be used later for the little scene supports that the nativity characters will sit on.

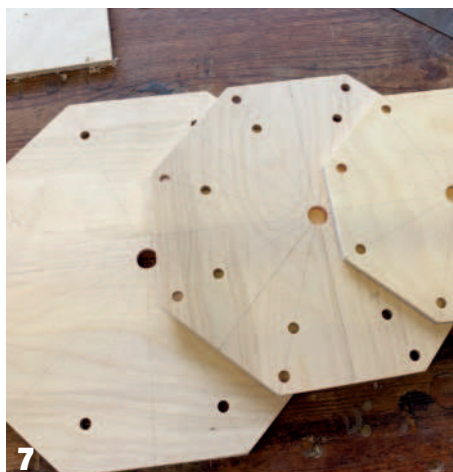
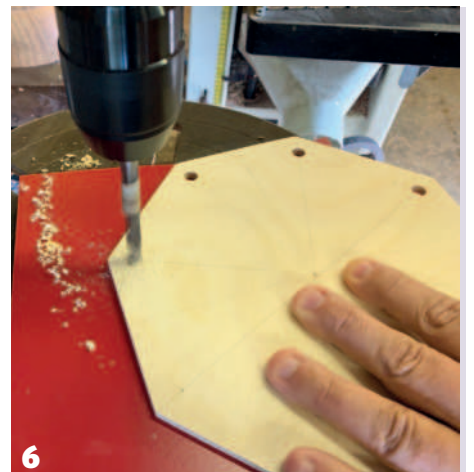
4 Time to start prepping the stages for drilling. I want to be able to drill cleanly through the ply so am using lip and spur drill bits. We are going to use 8mm drill bits to take the tenons on the columns so measure in 15mm from each of the eight corners of your 200mm and 260mm octagon, and make a small mark with a bradawl.

5 Using a set of dividers, measure from the centre of your 200mm octagon to the mark you previously made. This measurement can now be transferred to your 260mm octagon, giving it two marks in line with each other between each corner and centre point. Repeat this process from your 260mm octagon to your 300mm one.

6 These marks are going to be the positions of your columns and will ensure each column stands up straight. You should only have two sets of holes on your 260mm octagon, each of which should line up with the holes of the octagon above and below them. After double checking this you are ready to drill.

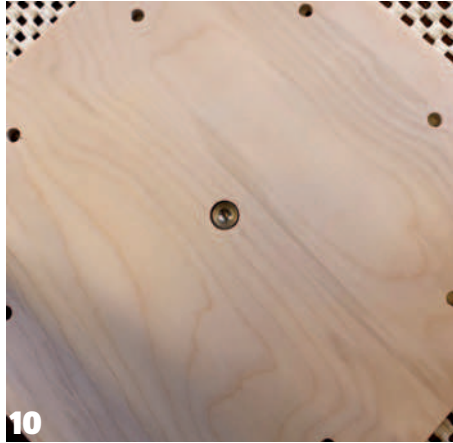
7 Once drilled you should have three stages looking something like this. Note there is an extra 15mm hole in the very centre, which is used to hold the cup bearing on the bottom stage and for the centre pin to pass unimpeded through on the second and third tier.

8 Because the pyramid is going to be rotating by candle power alone, there needs to be very low friction between all the touching parts so the bearing is a simple cup bearing made from polished steel. In this will rest a sharpened needle carrying the moving scene holders, which we will look at later.





9

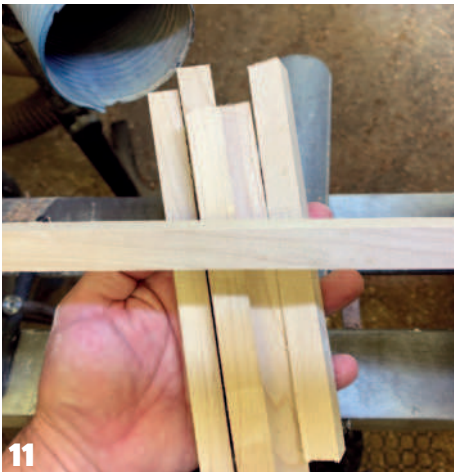


10

9 To mount the bearing into position, use an offcut from the plywood you used earlier to make a rectangle large enough to cover the 15mm hole in the bottom octagon and glue it to the underside with quick-curing epoxy resin.

10 Once the glue is dry, turn the platform over and affix the steel bearing with the same epoxy glue. Make sure you position the bearing as upright as possible; this will help with the smooth rotation of the pyramid and should look something like this when finished.

11 Let's start looking at supporting the platforms and making some of the columns. The design of the columns is very much down to you but, like all other measurements, you will find them on the drawings. The idea of this project is to use up scraps, and the timber I'm using for these spindles is maple.



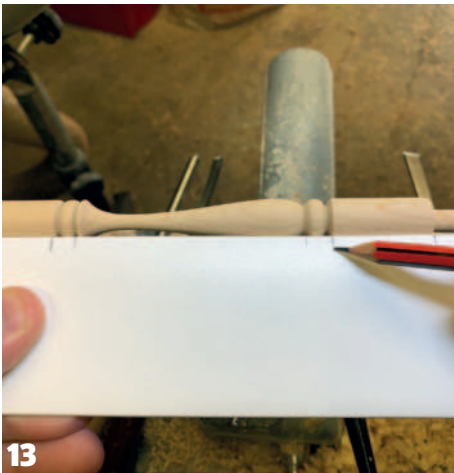
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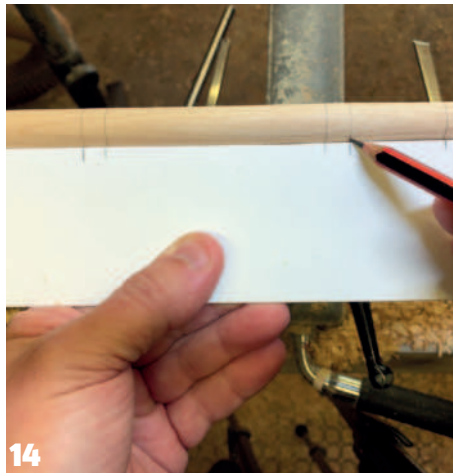
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12 In total 16 spindles are going to be needed for the eight-sided pyramid, but don't forget you can make a six-sided version if you want to keep the work load down a bit. This is my design and in this picture the skew is being used to finish the body before sizing the tenons to 8mm.

13 After the design of the first spindle is completed it's important that the same design is carried through all 16 turnings, so use a piece of card to make a storyboard so you can carry the feature measurement over to your next one, and so on.



13



14

14 Once you've roughed down and sized for diameter, you can mark off your features nice and quickly. You're now ready to start your V-cuts and bead rolling again. Because the template is card it's safe to offer on to the moving piece in order to mark with a pencil.

15 Here are the 16 columns all ready to support the structure. I wanted to show this picture of them all together to highlight the difference between the lower supports and the top. The lower ones have a longer bottom tenon, which is used to push through the stage into the candle holder support and into the foot, tying everything together.



15



16

16 Moving on to the feet next, eight of these are needed and start off as short blanks with an 8mm hole drilled through them. This hole will be used to join into the long tenon of the lower columns. Again using scraps from the workshop, these were made from some maple offcuts.



17

17 Turning the feet is a fairly simple job if you are doing the same design I've used here and involves a roll from either the spindle gouge, skew chisel or even shaping with a scraper. To mount them between centres use a friction drive like a light-pull centre and a single pointed live in the tailstock.

18 Here are the feet all turned and ready to be fitted. Once the outside shape has been created don't forget to true both ends clean before sanding to a good finish. Of course, if you wanted you could make these more elaborate to suit your own style.

19 Let's have a break from the turning for just a moment and look to the central scene supports. These can be made from the offcuts from the 6mm ply we used to make the main octagonal structure and once again three are needed, measuring 140mm, 160mm and 220mm.

20 Mark the diameters with a set of dividers and cut them out. The dividers leave a centre mark, which can be used to drill a centre hole 8mm in diameter. This hole is going to help us mount the disks on the lathe to turn as well as to join them into the centre column via a tenon.

21 To mount the plywood discs on the lathe make yourself a simple push plate from a scrap piece of wood and some anti-slip mat. Hold the scrap wood in your chuck and face the end grain off flat. On this face use some contact adhesive to glue on a small piece of router matting.

22 Take your first disk and use the centre hole to position the tailstock centre through it and clamp the disk to the push plate. Tighten the tailstock until the disk is fully clamped with enough pressure to stop it turning independently of the push plate. All you have to do with these disks is clean up the outside edges with a light cut then sand gently, repeat on all three sizes.

23 The next parts to make are again a side-step from the turning and are the candle holder supports or bridging pieces between the feet and the candle holders. Once again, use the offcuts from the 6mm ply. To start with, roughly cut the blanks to 100mm x 20mm pieces.



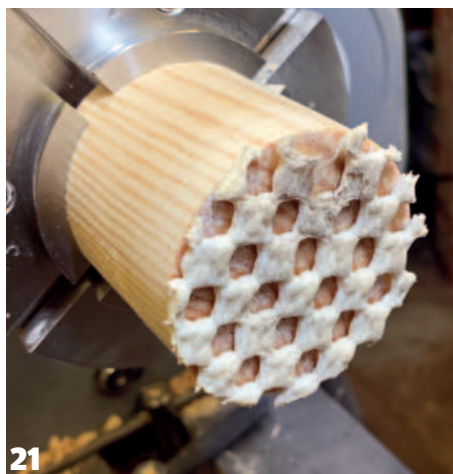
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25

24 Shaping these pieces starts with a coin to mark around both ends, giving you a radiused edge. Once marked, set your disk sander up on the lathe and sand the radius in. Lightly sand all the edges, softening them ready for fitting.

25 After sanding these will need to be drilled, one end at 8mm and the other to 6mm. These holes need to be positioned central to the width but 15mm from either end. Once again, hand sand any untidy edges.



26



27

26 The ideal fit for the tenons would be firm but not too tight. Trying to fix all of this structure together with the number of joints is time consuming, but spend a bit of time tweaking the joints. This picture shows the longer tenons of the lower columns and how they fit through the bridging pieces and into the feet.

27 Moving on to the candle holders themselves, there's a fair bit of prep to do here for such small pieces so start by drilling a 15mm hole in one end to a depth of 15mm and a 6mm hole inside that hole to a depth of 15mm. Now hold these between centres using a friction drive and single pointed centre and turn them all down to a cylinder.

28 Now hold them individually in your chuck and clean both ends, in the end with the 15mm hole slightly chamfer into the centre. This will take the brass candle holder flame barrier that is essential and a legal requirement.



28



29

29 The brass flame barrier is also part of the decoration and protrudes past the diameter of the timber. The one I'm using measures 40mm across and takes a 15mm candle. These will later be glued in position with good-quality epoxy glue before the candles are lit to ensure they don't topple out.

30 Turning the outside shape of the holder is fairly simple and for me is a simple taper finished with the skew before sanding to a good finish. You can see here how the pieces are held between the two centres securely, the drive centre is a light-pull drive, but to be honest any friction drive will do.



30

That's it for this month, Next time we will tackle the centre columns, hub, impellers and all the decorations, including fences, finials and, of course, the nativity scenes. Several pieces of hardware are needed, including the candle shields, centre pins, candles and metal cup bearings. All of these can be sourced online.

Until next time, happy turning and enjoy this great project. ●

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End of an era at The ToolPost

Felix Hemsley, general manager at The ToolPost, explains why the company is sadly closing after 23 years of trading:

The changing economics of retail and the increased cost of importing, along with fierce competition from larger organisations, have hit us hard. Trading has been incredibly challenging, especially over the past five years, and we have relied heavily on personal investment and community support to try to stay here for you.

However, as you will no doubt understand, the additional and very sudden impact of Covid-19 on top of these other factors has further weakened our position, where stock availability was (and in some instances still is) at its worst ever, especially from our overseas colleagues. The economic outlook is now too uncertain, especially with the changes expected in January next year, so it's with a very heavy heart that I must tell you we will be winding down The ToolPost.

Please know we explored every possible avenue to continue trading, but the combined financial impact of the past five years means the business is no longer sustainable for the family in a way we would like to see it run.

I understand how disappointed you may be to receive this

news, and I don't think it's an overstatement to say that, after 23 years of trading, it really is the end of an era.

I'd like to say a heartfelt thank you for your custom over the years and can wholeheartedly say that without you, we wouldn't have had the energy to keep pressing on.

On a personal note, it's been my privilege to serve The ToolPost (in all its forms) on and off for the past 23 years since my father, Peter, founded the company from our home and garden shed in 1997 – look how far we've come. I couldn't be more proud of the brand, the team (including Jen and Faith), the community and the incredible reputation we've built in the industry alongside so many great people, suppliers and brands.

Of course, none of this would have been possible without my father's vision and tenacity to bring the best of the woodworking world to a small part of south Oxfordshire, making products/brands accessible which had never been offered before and working with manufacturers to further develop those that were. I hope you will join me in your own way to raise a glass to Peter for all he has contributed to the industry (more than many will ever know) – perhaps now he can actually enjoy his retirement...

On behalf of the entire team here at The ToolPost, thank you for joining us on our journey – and enjoy the sale.



The ToolPost

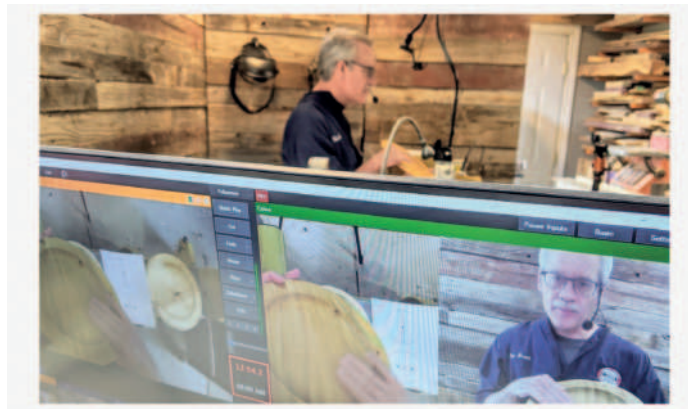
QUALITY TOOLS & ACCESSORIES FOR WOODTURNING, WOOD CARVING & FINE WOODWORKING

Woodturners Worldwide holds online symposium

As so many events in 2020 had to be cancelled due to Covid-19, Woodturners Worldwide's response was to organise an online symposium so that turners across the globe could 'get really close to the action'.

The event took place from 22–26 September and featured 45 full demonstrations, plus additional mini demos; an interactive vendor hall with 'booths' for 30 companies; and a series of networking events. The demonstrators included *Woodturning* authors Emiliano Achaval and Pat Carroll, as well as many other turners from around the world. Most of the demonstrations were pre-recorded, but live Q&A sessions were held after they were transmitted.

The organisers hope to make this an annual event as part of their vision to 'create a global woodturning community'. To find out more, visit www.woodturnersworldwide.com.



Woodturners Worldwide featured over 45 demonstrations of turning techniques



Award-winning turner showcases new collections at London Craft Week

Woodturner Darren Appiagyei exhibited two new vessel collections during London Craft Week, which ran from 30 September to 10 October in various locations across London.

Darren received the Cockpit Arts/ Turners Award in 2017, which afforded him a studio space at the Cockpit Arts studio, where he is currently based. In 2019 he was selected for the Crafts Council Hothouse programme.

His work embraces the intrinsic beauty of the wood, be it knot, crack, bark or grain. As a craftsman, Darren has a passion for discovering and exploring new woods and is highly inspired by Ghanaian wood, carving the rawness and exploration of texture.

This love of texture is explored in his two new collections, featuring turned banksia nut vessels and oak burr vessels. Darren's aim was 'to embrace each layer of the banksia nut' and celebrate the 'unpredictability' and the 'character' of the oak burrs.



You can see more of Darren's work at inthe grain.co.uk. For more information about London Craft Week, see www.londoncraftweek.com.

TOP LEFT: Pair of banksia nut vessels
LEFT: Darren Appiagyei with one of his oak burr vessels

Just another pen kit?

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Turning and images by Brad Herrington

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Kurt's clinic

Kurt Hertzog answers some readers' questions

Knot in a pen blank

Question: I just received this pen blank. I contacted the supplier and said this blank is defective. The supplier said it is normal to have a knot in a pen blank. Is it though? Thoughts?



Sometimes flaws are evident on the blank surface and sometimes become visible after turning. Is this a flawed blank or a natural piece of wood with some character?

Answer: Your question pertains to a pen blank but I'd like to expand it to blanks in general. Personally, I like included 'flaws' in my woods whether a bowl, pen or other blank. As long as they are flaws which are safe to turn, these can offer a natural beauty and unique look. Of course, internal deviations such as knots, bark inclusions, twisted grain, and other natural occurrences can present drilling, cutting, turning, and finishing challenges. All of these can be overcome without too much difficulty. If you don't feel you can succeed with these wood deviations or don't like the look, petition your vendor to replace



While knots, inclusions, and flaws can add some difficulty, avoiding them prevents some great turnings. This red Cedar scoop has interest with the branch inclusion

it. They may or may not. Remember, wood is a natural product and often contains variations both internal and external. Unless you paid a very premium price for a special pen blank, I'm guessing your supplier will hesitate to take the time to accept a return, select a piece to be certain to please you, and then eat the cost to send your new blank to you. A couple of advantages of shopping locally vs mail order or internet are: you help support your local retailer who helps you (and your club) in many ways; and you get to select each and every blank that you buy, whether a pen blank, a bowl blank or flat stock.

Trouble with Olympian kits

Question: Does anyone else have trouble with Olympian kits? The smaller tube of the lower barrel is a little undersized for the drill bit it recommends. It seems I can never get enough glue between the tube and the blank. There is always a little space. I've tried CA glue and epoxy. Every other pen I've turned has a better fit. A $\frac{15}{32}$ is too small and $\frac{31}{64}$ (came with the kit) is too big. Any advice out there?

Answer: Welcome to the world of dissimilar materials. Your pen parts are metal and typically are screw machined or extruded through tubing dies, accurate and repeatable to thousands of an inch, and will not change size or shape within your means of use.

Your wood, grown in some part of the world, is a natural product undergoing various drying methods and has some dryness state or relative humidity equilibrium as you use it. Here are some truths you should accept. First and foremost, depending on your



You don't do much drilling with the shank of a drill. Measure the real drill size at the working end across the flutes



In my opinion, one of your best investments. With a letter, number, and fractional drill index you can always find the actual size you need

PHOTOGRAPHS BY KURT HERTZOG



Regardless of the kit spellout, pick the drill sizes you want based on your desired clearances for your selected adhesive



My adhesive of choice is polyurethane, the small gap-filling foaming cure. Its forever pliability eases the wood cladding's life of movement

method, feeds and speeds of drilling, orientation of the grain relative to your drilling, and species of the wood, your holes as drilled will vary in dimension. Also, consider that, unless you own a relatively high-priced drill index, your drill size might deviate some amount from the indicated size. We won't even talk about drill sharpness and drilling process, i.e. polishing your way through things with force and speed, or no debris exit. Another consideration is when you drilled your holes and when you decided to glue things up. Was it in short order, later in the day, the next day, or longer?

My suggestions to solve each and every one of these issues are pretty simple but specific. Do not drill any block of wood you need to remain sized, shaped, and true until you are ready to use it. I mean drill your blank and get your tubes glued and inserted pronto. I do mine in less than an hour, regardless of the quantity I'm processing. It might not be that time-critical but letting things sit around drilled is borrowing trouble. Gluing soon removes the time for your wood to move, shift, stress, relax, change internal moisture content, or twist much. Check your actual drill size against the tube you will be using. Get out (or buy) your inexpensive set of dial callipers or micrometer to measure the tube and measure the drill to see what amount of clearance you'll have for glue.

You need not have expensive measuring gear since absolute accuracy is not important. We are making a relative measurement of tube and drill. Regardless of the drill values spelled out by the kit maker, you can allow the amount of glue clearance you desire based on your adhesive selection. Thin viscosity CA requires virtually no clearance, while medium or thick require a small amount. Epoxy can require more and polyurethane perhaps more. We're not talking a lot of space but you'll want enough room not to squeegee off the adhesive as you insert the tube, as well as not enough clearance that you require the adhesive to fill big gaps around the tube.

A wise investment for your shop is a drill

index that contains letters, numbers, and fraction sets of drills. That will let you select a drill with your desired clearance. Remember, the stamped indication is a lie. Measure the drill across the flutes to determine the real size. The shank does no drilling so don't measure there. When you are dealing with species you have little experience of, drill the waste material you are cutting off the blank in the same manner that you will drill the blank. Test fit that for hole for your clearances. That will tell you the real situation about how your final hole sizes up when all the factors are considered. My process, right or wrong, is to drill the blanks just prior to gluing, use my same shop drill press after checking the drill size flutes against the tube, and using the same adhesive for everything (except laser-cut kits).

I use polyurethane since it foams and fills the gaps nicely, yet remains somewhat pliable forever. Wood will take on and give up moisture for the rest of its days, along with the three different coefficients of expansion. The brass tube never moves in size. Having a rigid adhesive bond seems like a recipe for wood failure, so I opt for an adhesive with a bit of compliance. Necessary? Perhaps not, but polyurethane works as well as anything else and it is my regularly used adhesive, so it is part of my standard workflow. I know the clearance I want and plan accordingly.



Regardless of the brand name on the handle, there will always be a price difference between the quality brands and the cheaper poorly made imitations

Saving money on tools

Question: I'm new to woodturning and am smitten. I want to start buying my tools but find everything so expensive. Why is everything so expensive? Recommendations on how I can save some money?

Answer: Congratulations on beginning your journey. I'm sure you'll find it very enjoyable. As for why everything is so expensive, I can give you many reasons but, in short, quality does command a higher price. You can certainly buy lesser-quality tools, but I recommend against it. Of course, there are many additional costs that you can avoid. Some mark-ups by merchants are higher than others and obviously excessive, glossy advertising is costly – and guess who ultimately pays for it?

That said, buying quality tools once and enjoying them for a lifetime is a goal. Should you decide to exit the hobby/craft sooner, quality tools will bring a far better resale than lesser-calibre tools.

To save money I can give you these recommendations. Buy only what you need as a very basic kit depending on your initial interests. Whether a spindle or bowl turner and whatever size of work, you'll only need a few tools to accomplish it. Get those basics and skip the rest for now. Avoid the packages of everything in one box – you'll get stuff you don't need, don't need now, or that won't be to your liking when you do get there. Don't be ashamed to buy used tools. Other than ruining the temper on old-style carbon steel tools, modern high-speed tools and beyond can't be permanently damaged by ugly grinding. There is a lot of money to be saved buying tools that are used but still have plenty of life left. My best advice is to have a trusted turning friend help you pick out and negotiate appropriate pricing. They can keep you in quality brands with sizes and types you'll need now at a fair price.

Send your questions to Kurt's email: kurt@kurthertzog.com

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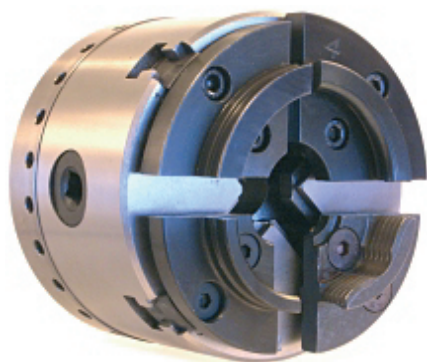

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Kit & Tools

A collection of press releases and tests 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

Prokraft Ayres pen kit



Prokraft UK has launched a pen kit that gives woodturners the chance to customise each kit individually. While its classic design may look familiar, a lot of styling and engineering has gone into making this unique kit.

It is based around hard-wearing chrome components with premium-quality plated accent colours in either 24ct gold, gunmetal or antique gold. The premium rear twist mechanism is also bi-directional for that extra wow factor.

Supplied as standard with a chrome front ring there, are four other designs to choose from – Gothic, Celtic, Music & Ying Yang. A further two designs of pocket clip, including one with a small wheel fitted at the tip, are also available. What makes the Ayres really stand out is the ability to change the accent colours and ring design after assembly.

Price: from £7.25 Web: www.prokraft.co.uk

Turning tables

Steve Bisco turns a solid oak chairside table

There is something very satisfying about working with oak. It is hard, it is heavy, and you have to keep re-sharpening your tools, but at the end you have something that looks and feels like it is built to last. Despite its bulk it will not tax your woodturning skills too heavily. If you find skew chisels difficult to control (as I still do) you can easily make this without touching a skew chisel. A bowl gouge, and few 'scraper' chisels ground with a 45° bevel, will give a good finish with little risk of 'dig-ins'. Any lathe that will handle 10in (254mm) diameter for the top and base sections, and at least 324mm (12¾in) between centres for the 'baluster' stem section, will be sufficient.

Sourcing & laminating oak

For this project you need 'furniture-quality' oak. Find a hardwood supplier and see if you can obtain some offcuts – this will keep the cost down as they normally sell 'furniture' oak in 2.5 metre (8ft) lengths at prices you won't want to hear. You will probably have to laminate thinner sections (see photo 1) – laminating gives the oak extra stability as it has a natural tendency to warp. Only use planed boards with a clean face and use a good adhesive such as Evostick Resin W PVA Wood Adhesive. Coat each surface thoroughly with adhesive using a brush or spreader, then compress the sections in a vice until the glue is completely set.



1 Make up a block of oak 324 long by at least 127 square (12¾ x 5 x 5in), by laminating thinner planks together if necessary. In this case I used three lengths from a plank 133mm wide by 44mm thick by 972mm long (5¼ x 1¾ x 38¾in). Align the grain in the same direction, apply a complete covering of glue on the joined surfaces, and compress while the glue sets. Mount the block between centres on the lathe (if you like you can cut the square edges off on the bandsaw to form an octagonal section)





From left to right: parting tool, round nosed scraper, bowl gouge, spindle gouge, spindle roughing gouge

You'll also need a 1in (25mm) flat scraper and ½in (13mm) flat scraper. If you don't have scrapers of the right size and shape, try grinding a flat chisel to shape. If you are skilled with skew chisels and spindle gouges, you should be able to do this job without the scrapers and bead former.

The stem section

2 With the lathe set at a low speed (about 750 rpm), turn the block to a 127mm (5in) diameter



cylinder using a spindle roughing gouge. Cut a 10mm (¾in) spigot or tenon at each end, so that the main section of the cylinder is exactly 305mm (12in) long. The diameter of the tenon depends on the size of your chuck. It will need to fit into a corresponding mortise in the top and base sections later, and your chuck must fit into this mortise in expansion mode. With my 80mm chuck a tenon diameter of 55mm (2 ½in) was about right. Square off the ends of the



main cylinder with a parting tool so they will form a close joint with the top and base sections later.

3 Using the measurements from the drawing, mark the positions of the two beads, the end pieces and the widest point of the baluster. Use a spindle roughing gouge to work the wood down to about 6mm (¼in) more than the finished diameters. Work the two 10mm (¾in) beads down to their finished diameters – first round off the sides by 'rolling' a square-end scraper from side to side then, if you have one, finish off with a 10mm (¾in) bead forming tool. (If you are a whizz with skew chisels and spindles gouges, use those instead.) Turn the two end flats to size with a parting tool, then use a bowl gouge and a half-round scraper to shape and finish the 'coves' that curve into the beads. Form the main baluster with a bowl gouge, held at an angle of about 45° to the vertical to give an angled cut. Work both ways from the widest point of the diameter so that you are always cutting 'downhill' against the end grain. This will give you a smoother finish.

4 Finish the stem section by sanding down through the grits from 120 to 400 grit. I find the best finish for oak furniture is a good furniture wax such as Antiquax. Apply it by cloth with the lathe turning (safety first – don't wrap the cloth round your fingers). Buff it up with a dry cloth, again with the lathe turning. The friction of the spinning lathe melts the wax into the wood and gives an excellent finish.



The base section

5 The base section is made up by laminating a 165mm x 38mm (6½in x 1½in) blank onto a 254 x 51mm (10 x 2in) blank. Ensure they are centred correctly and the faces are flat when gluing. Fit a faceplate to the underside of the 250mm (10in) blank and mount on the lathe. Turn a mortise 10mm (¾in) deep on the top face of the 165mm (6½in) blank to fit the tenon on the bottom end of the stem section. True up the blanks to eliminate vibration.

6 Create the mouldings with a bowl gouge to about 6mm (1/4in) more than their finished sizes. Form the top convex moulding by 'rolling' a square-end scraper from side to side. Keep your tools sharp and go very gently on the final cuts to get a good finish on the end grain. For the small cove moulding you will need a 6mm (1/4in) round end scraper (unless you are good with a skew chisel or spindle gouge, in which case use those). If you don't have a 6mm (1/4in) round end scraper, make one by grinding down a 6mm (1/4in) flat scraper to shape. Shape the large cyma-recta moulding (a double convex and concave curve) on the 250mm (10in) section with a bowl gouge. Finish with a 25mm (1in) half-round scraper for the concave curve and roll a flat scraper round the convex curve. When finished, sand and polish it the same as the stem.

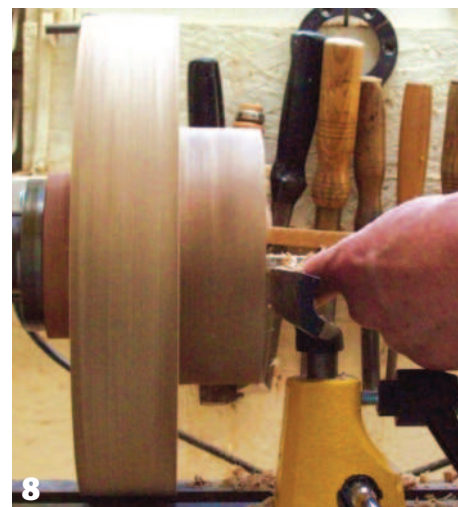
7 Remove the faceplate, turn the piece round and remount it on the chuck using the mortise in the top face. Now pay attention because this is important! – the top and bottom faces of the base need to be exactly parallel otherwise the table will not stand straight! Mount the top face very squarely on the chuck, preferably by unscrewing the chuck from the lathe, placing it face down on the wood, tighten it, and screw it back on the lathe. Now hollow out the underside of the base to a depth of about 10mm (3/8in) leaving a rim of about 32mm (1 1/4in) round the outside. Use a scraper to turn this rim exactly level and parallel to the top face. This will give you a firm level base that should not rock or tilt.

The table top

8 The top section is made up by laminating a 133 x 38mm (5 1/4 x 1 1/2in) blank onto a 254 x 51mm (10in x 2in) blank. Because the top face must not be damaged by screw holes, glue a waste block securely to the 250mm (10in) blank and screw the faceplate to that. Turn a mortice and true up the blanks the same as for the base section.

9 The table top must look lighter than the base to give it balance (both visual and actual). For this reason the table top has a wide and shallow cove or cavetto moulding on the underside. The convex moulding on the 135mm (5 1/4in) blank is also smaller in diameter than the corresponding moulding on the base. Rough out and turn down the mouldings as for the base, using a half-round scraper to finish the wide cavetto. Finally, turn the outer rim by first rolling a square-end scraper around it, then finishing off with a 10mm (3/8in) bead forming tool. Roll the bead forming tool round about 3mm (1/8in) into the upper surface of the table to form a rim that goes round the top surface as well as the side.

10 Reverse the piece onto the chuck (using the mortice) as before, and cut off the waste block with a chisel or parting tool. Use a 25mm (1in) square-edge scraper to reduce the top surface of the table to about 3mm (1/8in) below the top of the rim. Keep the chisel sharp and go very



carefully when you get near the finished surface. This will be the most visible part of the table, so work it to a good finish. Sand and polish as before. Finally, glue the three sections together. If you have cut your tenon and mortices correctly, and your joining surfaces are flat and square, the whole thing should fit cleanly together and stand perfectly upright. Give the joints a good coating of the same adhesive you used for the laminations, fit the three sections together, place some weight on the top to compress the joints, then wipe off any surplus glue. When the glue has fully set, I think you can sit down and treat yourself to a drink with your new table! ●





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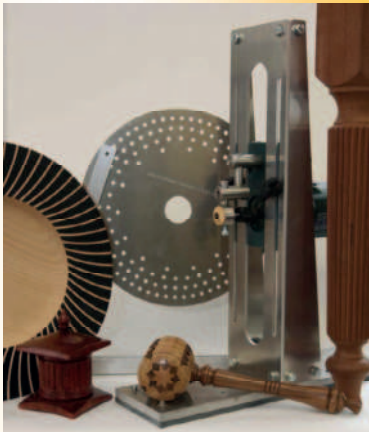
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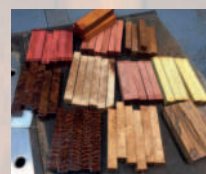
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A fast, easy and durable finish

If you are not entirely happy with the finishing of your pieces, or want to learn a new technique, Emiliano Achaval has a recommendation

If you ask 10 woodturning friends what they use to finish their work, you will more than likely get 20 or more answers. There are many finishes out there, not just for turned pieces in general – we use a lot of the ones developed for furniture making, musical instruments, and even wooden floors. Some are just re-labelled for us woodturners. Some finishes are highly volatile, even toxic. Lacquer gives me a terrible headache; I make sure to wear the right PPE when I spray some of my work. Then you have to consider the intended use of the piece. A salad bowl would need a different finish to, say, a hollow form with a finial.

About a year ago, a friend called me to ask me if I wanted in on an order of the slow-curing CA (cyanoacrylate) glue Parfix

3408. I can always use CA, so I said yes. I did not know then that the intended use of this CA was to finish our work. When my friend dropped off the 8oz bottle, he explained what he was planning to do with it. I had already used CA as a finish when working with Australian woodturner Guilio Marcolongo, but since it was not slow curing, it was rather messy work, but with excellent results.

With a slow-curing CA, you now can cover a more significant piece, without having to worry about the CA curing before you can apply it – you have about 40 seconds to work it before it cures. Another great advantage of Parfix is that it's odourless. If you decide to try this type of finish, you will be surprised by the results you can achieve even on your first try.

Vonax compound

Vonax is a polishing compound made to polish plastics. You will need to purchase a new polishing wheel so you don't mix it with the other compounds used with the buffing system.



PPE

To be able to apply the Parfix, you will need gloves – nitrile or latex will not work and in this Covid-19 era, any PPE is hard to come by. I found a box of inexpensive vinyl gloves at the hardware store, and they work great to apply Parfix; the CA will not stick to them. If you don't use gloves, you will get CA on your fingers, which will clean up with acetone. If you use fingerprints to open your phone and/or computer, it will not work if you have some CA. (don't ask me how I know this). Make sure you spin the lathe slow enough so the CA doesn't fly out and get on your faceshield or goggles. I cut up my old T-shirts and use the small rags to apply the CA. Also, I have a friend who runs a bed and breakfast place, and if bed sheets have even a tiny stain he retires them. He has given me several, and they are perfect for applying CA, for covering something in the shop that you do not want to get dusty and many other uses.

Starting the finishing procedure

Finish your piece as you usually would. Make sure it does not have any scratches, or they will be highlighted. For the best finish, I recommend you go up to at least 600 grit – some people prefer to start at 240 and go up to 800. I prefer to use a random orbital sander, or an inertia one. A good, strong light above your lathe is a must to be able to see your progress. I like to look at my pieces in the sunlight, too, before I declare sanding done.

Applying the Parfix CA

You can apply the CA while the work is on the lathe. Spin the work at a very low rpm, hold the bottle of CA in one hand and the paper towel in the other, and apply liberally and evenly as it spins. Do not forget to put something on the ways of the lathe or you might have CA dripping down.

You can also apply it off the lathe, as you can see here. On this shallow footed koai'a (*Acacia koaia*) bowl, I will be doing it in two steps: first the top then the bottom. I recommend you do big pieces on or off the lathe in two or more steps, so you do not have to rush. Soak the work with CA. Move the paper towel in a circular motion. Alternatively you can use a small piece of wadded cotton rag; I save my old T-shirts and cut them up.



Wiping off the excess CA, in a circular motion, with the bowl on the lathe



Applying Parfix with the lathe running slowly



Applying off the lathe

Working the CA glue on to the bowl

Now you have applied the CA liberally. You have between 40 and 70 seconds (check specific open times in the product information) or so to dry it. Have several paper towels ready. As they become soaked, pick up a new one. Dry the piece rubbing the paper towel in a circular motion to avoid any streaks and or lines of CA. This step is the same if you do it on or off the lathe. Wait at least 20 minutes to turn over the piece and do the other side. If you rush and lay it on a paper towel or cardboard, it might get glued.



Spreading the Parfix to cover the bowl



Using wadded clean paper towel to spread the CA

◀ Sealing the underside of the bowl

Turn over the piece and use the same procedure to finish applying the CA on the bottom. If you are applying the CA while the work is on the lathe, you can complete the unfinished portion by following the same steps described above after you have parted the bowl and reverse turned the foot to completion.



Applying CA to the base



Applying the CA



Removing the excess to allow curing

Completing the finish

Next, you have to polish the piece. We just applied a durable layer of medical-grade, slow-curing CA, and it soaked deep in the fibres. You will be using buffing wheels. The most common commercially available wheel buffing system is from Beall. You are not going to use the first step, Tripoli, as it will leave

scratches. For the first step, I use Vonax, which is used to polish plastics and works excellently in CA. If you don't have Vonax, start with the White Diamond, the second step in the Beall system. Completely buff the piece with Vonax or White Diamond and move to the final step.



Loading the mop with compound



Buffing the CA to a finish

Waxing the polished bowl

The final step is buffing the piece with carnauba wax. If you are not familiar with the Beall system, be careful here – a little bit of wax goes a long way. If you load up too much on the wheel, it will build upon the surface in blotchy, visible spots. Apply the wax to the buffing wheel sparingly.

And that's it. I said it in the title, easy and fast. For your first piece, I recommend you do it on something small, under 8in. Maybe a small hollow form to practise applying it while the lathe is slowly spinning, then finish the bottom, and a small open bowl, off the lathe.



Buffing with wax

Applying Parfix accelerator

If you have limited time in your shop and want to speed things up a bit or simply want to make sure that the Parfix is set, you can spray your piece with the Parfix accelerator. I have not tried my regular CA accelerator – I was told the Parfix accelerator wouldn't whiten the way conventional accelerator can sometimes do.



Applying Parfix accelerator

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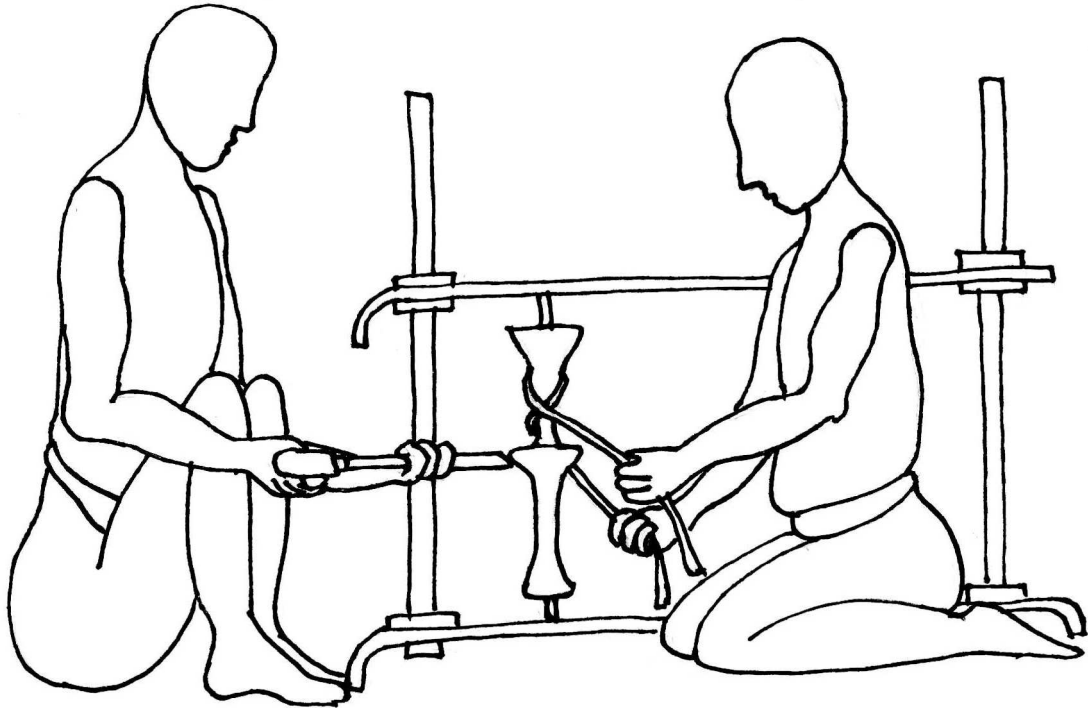


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Modern technology — good or bad?

Pete Moncrieff-Jury looks at the development of tools over time



For millennia things didn't change much in the world of woodturning. People used manually powered lathes, tools were basic scrapers and wood tended to be whatever was available locally. Ideas and inspiration seem to have come in spurts rather than as gradual growth, as someone would come up with a new idea and that would spread locally. As travel became more accessible, ideas started to move wider, spreading the advances in design and technology. Over a period of some 3000 years, from the first recorded incident of the two-man lathe in Egypt until the development of the motorised lathe in around the mid-18th century, things didn't really change much. From then until the mid-20th century, the means of powering the lathe developed and, along with metal lathes, became more and more sophisticated. The next big change came with the development of electronic control and new steels.

Some parts of the world seem to have continued with the older style of turning. In Japan the use of chucks and gouges as we know them is less common, with jam chucks, hook tools and scrapers more common. Pole lathe turners also adhere to the more traditional types of tools and equipment,

but these are perhaps the exception and most woodturners today use electric lathes and modern steel tools. Having said that, it is interesting that many are actually going back to the use of scrapers with the modern carbide tools.

The advent of the computer brought in a new technology that has changed our world in the past 50 years. The effect has been accelerated with the pandemic and the closure of clubs, cessation of demonstrations and tutoring across the world. I can't help wondering where this will take us in the future. Access to knowledge and ideas has never been so easy and the availability of new tools and equipment is now so much greater for many. When we think of how, just over the past few months, the use of online videos, shopping, social media etc. has grown, I can't help wondering if this all points to a new revolution in the craft. Just as during the Reformation in the 16th century the established ideas, styles and thinking were turned upside down, so, in our present day, people are being made to see things differently, use technology that perhaps they were ignoring, and questioning some of the deeply embedded ideas and habits that we have all taken for granted.

Clubs have shut, but more and more are using online conferencing platforms. Online tuition

and demonstrations are becoming more the norm. The question is not if this will happen – it already has. The question is surely, is it a good thing? During the original Reformation there was a massive backlash against the modern ideas and thinking and, though we have yet to see any indication of an inquisition happening, there are always going to be those who stick to the 'old ways' and insist that the new ways are bad and will undermine the craft.

Personally, I think that the online conferences, demonstrations etc. are here to stay. They existed to some extent prior to the pandemic and have come into their own because of it. I don't believe, however, that they will replace what is essentially a human trait – the desire to communicate personally, in groups, or one to one. Despite the amazing advances in the technologies there is nothing, as yet, that can supplant that personal touch you get at a club or a traditional teaching session. We should look on the 'new' technology as something that adds to the craft, not something that undermines it. The increase in younger people taking up the craft is partly due to modern technology and that can only be to good.

It is up to us to make sure that the modern ideas and ways add to the craft and do not supplant things.

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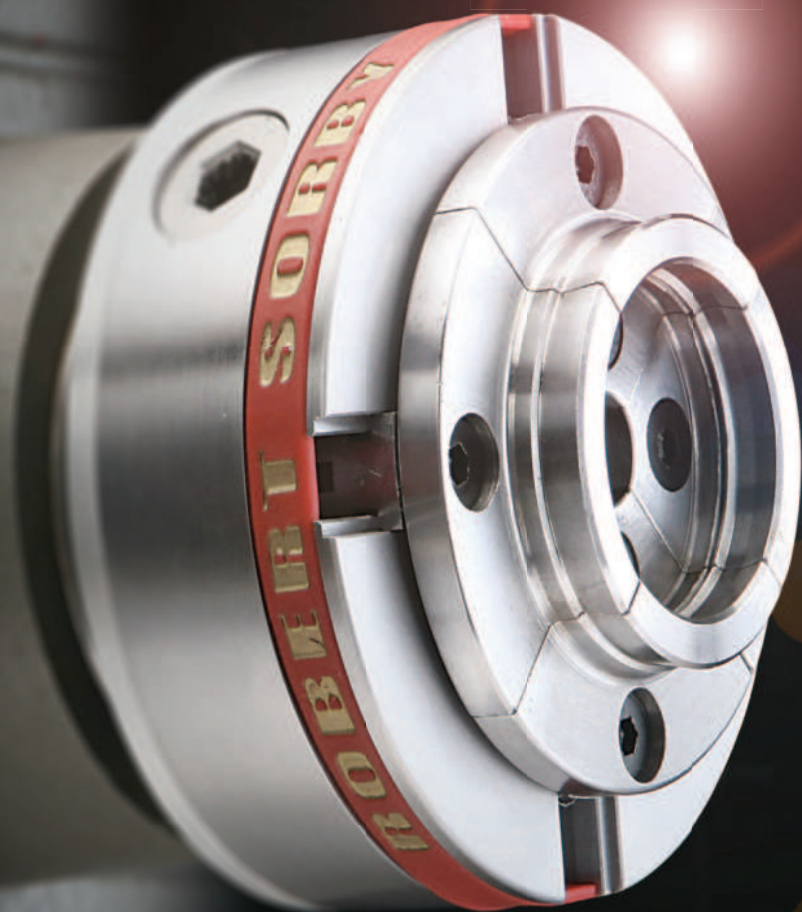
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