Woodturning

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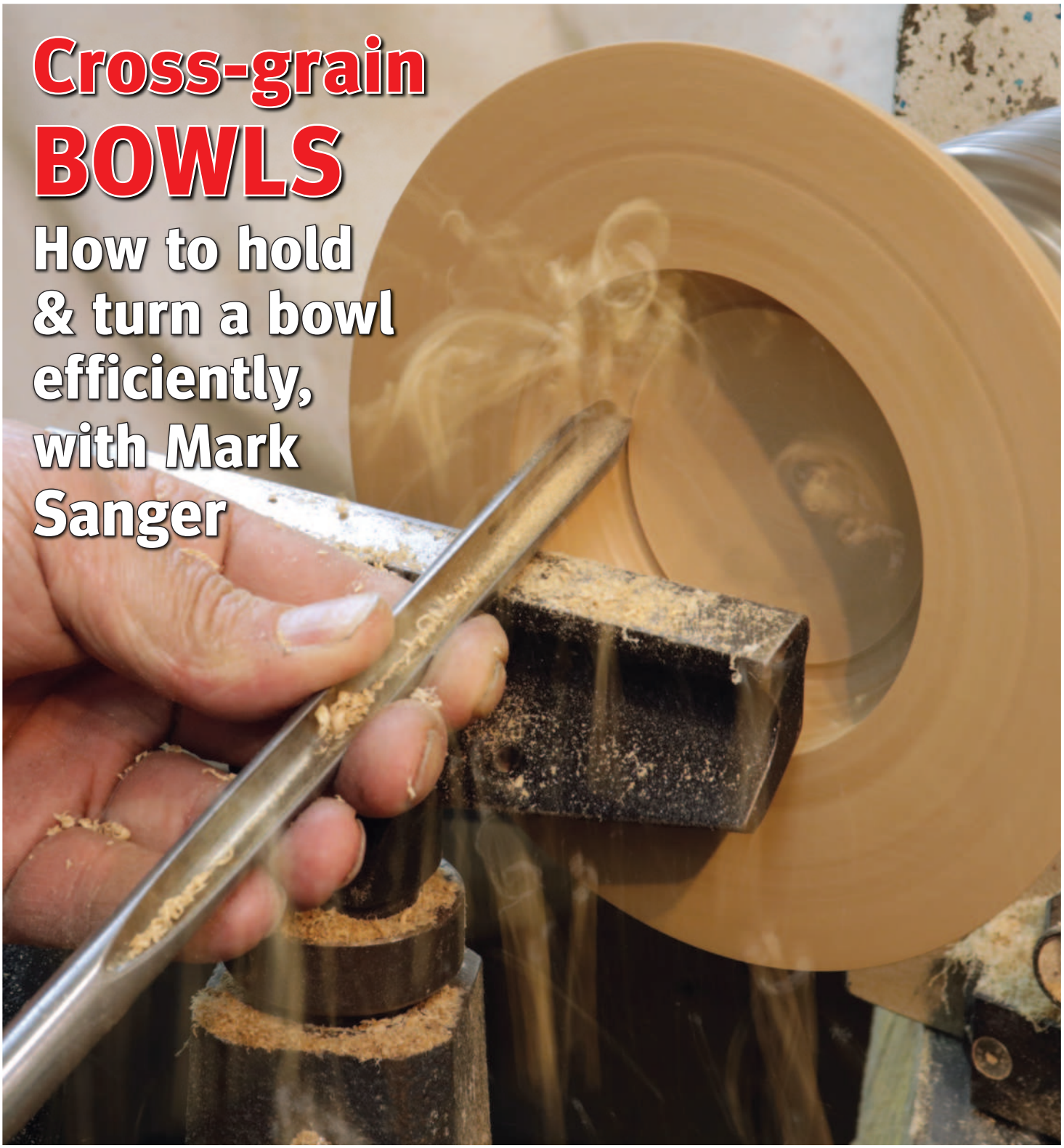

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PROJECTS Baseball bat • Holey-rim bowl • Needle case • Lidded vessel • Spinning tops **TECHNICAL** Experiments in airbrushing • Using parting tools • Eccentric crossover arcs

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Woodturning 317

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Oops!

PHOTOGRAPH BY ANTHONY BAILEY/GMC PUBLICATIONS

Everyone has an 'oops' moment, which will often turn out to be a defining point in time. The perpetrator of that moment is usually the person who was holding a piece of equipment and doing something with it when IT happened, or undertaking an action in the workshop, such as reaching up, over, or bending down to get something, stacking something, lifting something and so on. Now, some people could say that such things are just accidents. For instance, a cat or dog could randomly run under your feet and cause you to lose your concentration or your balance. But then, having said that, you should have shut the door so the cat, dog, family member, neighbour, pesky wasp, rat or other thing that does not belong in the workshop could not get in and cause you to lose concentration.

That sounds a bit harsh I know, but the workshop is your environment and it is down to you to keep everything in its place, keep it clean, keep the tools sharp but safely stored, make sure you have safety kit and so on in case something does go 'oops'. Even with the best planning something can go wrong. But it is interesting how many times I hear of something going wrong in the workshop and someone is not even holding a piece of kit.

How many people have tripped over a trailing lead or a piece of wood? How many of you have dropped a piece of equipment on your foot and were not wearing sturdy shoes or safety footwear? How many of you know that turning tools tend to fall sharp-edge down? If you do know that, did you avoid injury? Have you ever reached into a pile of tools and cut yourself? Are all your shelves perfectly stacked? What about your woodpile? Do you hump around timber that would be better tackled by two people? Is your timber pile safe from toppling? The list is myriad, but every workshop contains risks and that is before we even start using tools and ancillary equipment to make and shape things.

Now, talking of someone working, I heard a tale not so long back of someone reaching across some spinning work on the lathe to get something off the shelf behind the lathe. They got caught in the spinning work and pulled onto the lathe. Thankfully they escaped serious harm because they had the tension on the belt drive set to low to avoid the risk of nasty catches. So, when they got tangled on the underside of the arm of their tight-fitting jumper and wrapped around the work, dragging them into the lathe somewhat, the belt slipped instead, winding them in ever harder. The person escaped with some minor bruises, a very stretched jumper and a bruised ego. They vowed to reorganise the workshop to be able to have the things to hand they needed without reaching across the lathe. Now, that incidence is a sobering thought. I will leave it for you to ponder.

We might shrug off the little accidents and slip-ups, but if they are more frequent, does it mean there are bigger problems that need attention? Hopefully people will learn from the person who reached over the lathe too.

We should love our chosen hobbies and be thankful that we are able to do such wonderful creative things, but please do think and work safely.

Have fun, Mark

markb@thegmcgroup.com

COVER IMAGE: Mark Sanger (see page 21)

Techniques

Features

Projects

Community

Kit & Tools

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).

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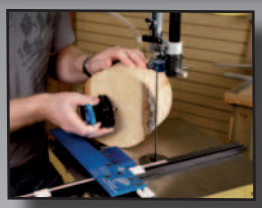

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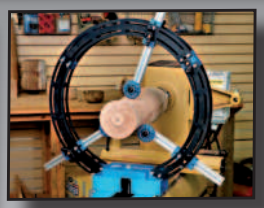

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The big hitters

Colwin Way shows how to make a baseball bat and a rounders bat for outdoor fun

I am writing an article on making baseball and rounders bats. But here's the thing, I've never played baseball or even been to a game. Rounders, however, I've played plenty. But in order not to get myself in real trouble by upsetting friends on my next trip to the US I feel I need to do this one justice and if any of my American friends I'll be visiting this year wish to educate me and take me to a game, it's on my wishlist please.

I've done a fair amount of research and, fortunately, have a friend who plays the game here in the UK and who's been advising me. I never realised that a baseball bat is actually quite a complex shape. Starting at the end, should it be round, flat or hollow? Then there is the taper through the barrel, handle form, grip and then it ends at the knob? I want to add a grip to mine as well as a good, hard, clear coat and while I create it, why not add some personalisation and decal?

I'm quite excited about this project and have tried to stay true to the materials by using ash (*Fraxinus excelsior*) as the timber for both the bats.

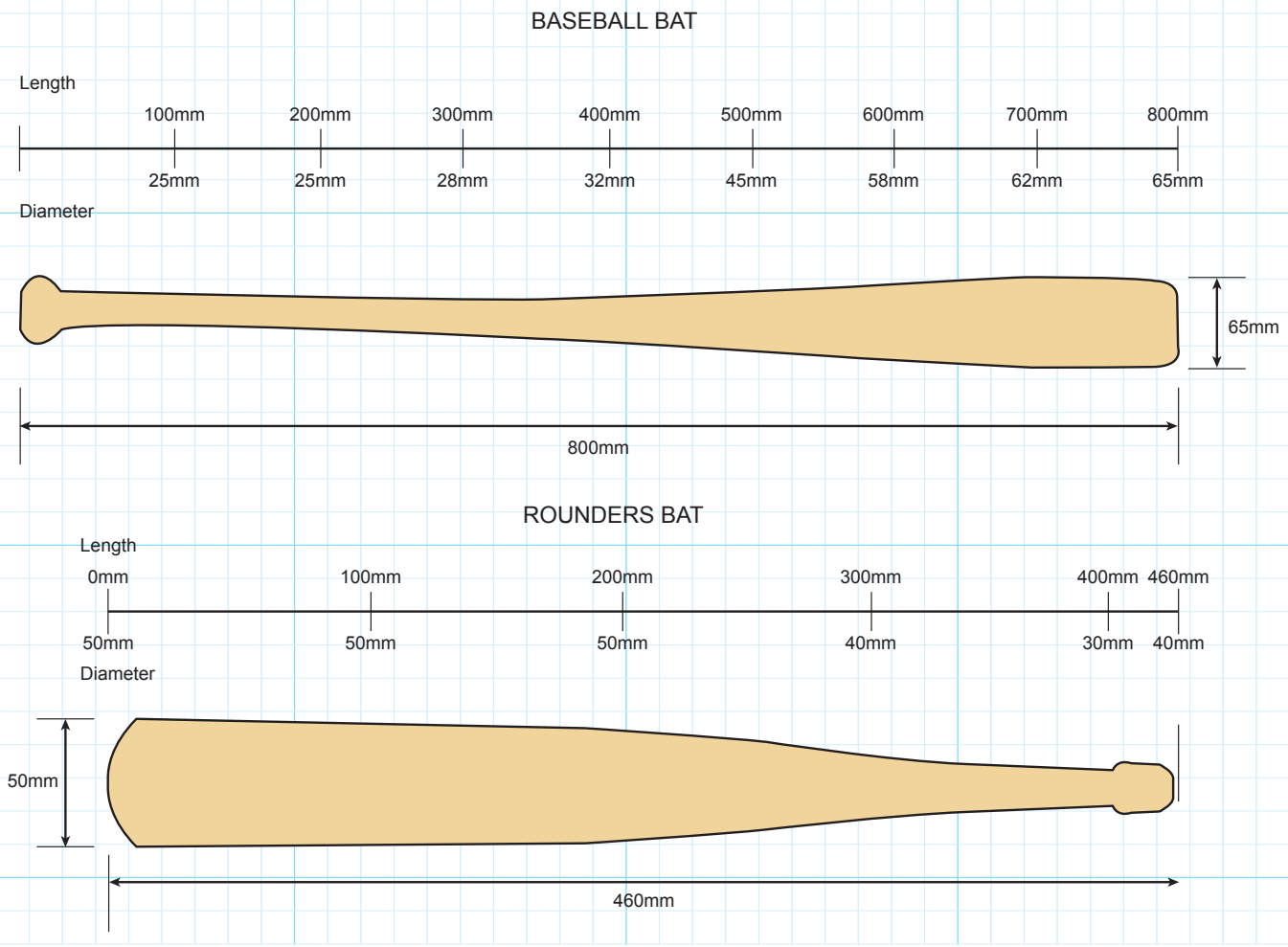
PHOTOGRAPHS BY COLWIN WAY

TOOLS AND MATERIALS

- Personal and respiratory protective equipment (PPE & RPE)
- Spindle roughing gouge
- Bowl gouge
- Spindle gouge
- 3mm parting tool
- Drive spur
- Revolving tailstock centre
- Drill chuck/chuck to hold sanding arbor
- Callipers
- Pullsaw
- Scalpel
- Airbrush
- Sanding arbor and abrasive discs

MATERIALS

- Ash to suit the dimensions of the drawings
- Masking tape
- Spirit-based woodstain
- Clear, hardwearing varnish
- High-grip tape for handle
- Abrasives down to 320 grit



Baseball bat

1 & 2 Because the dimensions of the baseball bat are so long I used a lathe bed extension and decided to cut the corners off the blank prior to turning to speed up the roughing down and shaping process. This step isn't essential. I've done this by using the bandsaw table tilted to 45° and putting the rip fence on the underside of the workpiece. Now, mark the centres of your wood and mount it between centres. Starting at the tailstock end, rough down to a cylinder in small sections, then stop the lathe, move the rest along to the next area and repeat the process until you have a long cylinder.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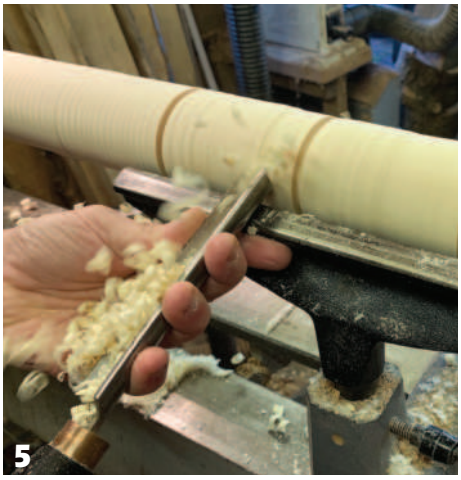
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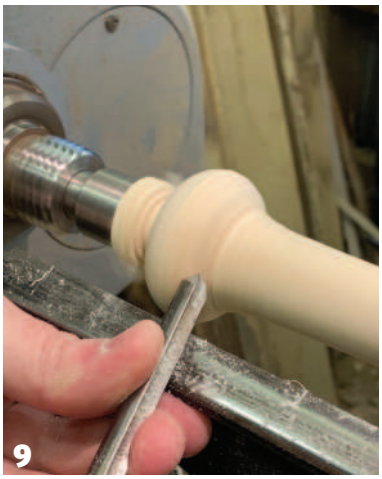
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3 To ensure you get the dimensions correct use a measuring tape to divide the blank into 100mm increments and mark with a pencil. I've researched baseball bat dimensions online to get this just right and it is a full-size adult bat. If you're making a bat for a child it's worth scaling down and you can find plenty of information online if you wish to keep it authentic.

4 Following the measurements on the line drawings provided, set your callipers to each measurement sequentially and mark the first set of three diameter cuts, starting at the revolving tailstock end. It's important you start this end in order to keep strength in the piece as you work towards the thinner headstock end sections turned to shape. Once the first three depth cuts have been made, turn the handle down to those points, creating the shape required in between each section. Use light cuts, especially when working on the thinnest sections to minimise any vibration risk that might occur with heavier cuts.

5 Once the parting tool cuts have been made, use your spindle roughing gouge to turn the waste timber away. Take a light cut when you get close to the final diameter. If you want you can clean up with a skew at this stage.

6 The end of the bat has a very slight radius on the top corner. Don't go too crazy here as the very end on most baseball bats is either flat or slightly convex. Here you can see I'm using a bowl gouge to round the corner and flatten the end, but a spindle gouge would work well too.

7 Once the taper on the first three marked sections is done and you're happy with the finish, move along the handle, marking and cutting three more 100mm-long sections to shape. Be careful at this stage – turn the lathe speed down a bit and make gentle cuts as at the narrowest point the handle is only 25mm. If you have a steady it would be a sensible time to use it, but it is not necessary if the cuts are carefully done. Once done, move onto the last three stages, repeating the marking and cutting processes as before.

8 & 9 Now the bat diameter has been taken care of you can deal with the knob. First trim any excess length down with the parting tool before moving to a spindle gouge to round over to the headstock drive centre end. Then, round over the knob on the handle side with the same spindle gouge. If you want to put any decoration, such as knurling on it, then sand first and add the texture just before using the final grit grade. It looks more defined and purposeful if you leave a flat fillet just after the bead on the handle side.

10 You are now ready to sand the bat. Start with starting with 100 or 120 grit and work down to 400 or 600 grit, stopping the lathe occasionally to sand with the grain. If you're adding colour as I do shortly, you need to get rid of all the scratches otherwise they will be magnified by paint or stains.

11 In preparation for the painting I added a little bit of detail. I don't think it would take you long to guess where I got the inspiration for the decoration I wanted to add to this bat. Of course, you do not have to add any decoration and can just seal you bat with a suitable finish, but personalisation is great fun. The main body colour of the bat will be blue, with stars shining through, so start by masking the whole of the area to be painted area with painter's masking tape.

12 Use different sized stars randomly placed on the bat. If you're not that artistic you can easily find free templates to download from the internet, which can then be cut out and stuck to the masking tape. This is a good, strong image to cut around with a sharp scalpel – don't worry about having a cut line in the bat as it will be covered up by the varnishing process.

13 When you've cut around all the stars, carefully remove the waste masking tape. Take your time here, using the scalpel to tease around the stars while checking for any missed uncut areas. When all the waste is removed, review your spacing – if you want to add an odd star to fill a gap you only need to add a small piece of tape to cut around.

14 If you have one, use an airbrush to apply spirit wood stain. I say that purely because this method means no waiting for things to dry as the stain or paint applied with an airbrush should go on dry. Make several passes with light coats until you get the depth of colour you want.

15 Here's how the bat should look so far – keep the masking tape on just for now until the ends have been sanded and touched up with more stain. Notice that down the other end on the knob red paint has been added to protect the handle this area has also been masked out.

16 Take the bat off the lathe and, using a small pullsaw, cut the waste ends off. These untidy areas can now be sanded back using a small sander and held in the lathe. Sand down to 400 grit before touching up with the airbrush and a bit more stain.

Rounders bat

17 Before moving indoors to varnish the baseball bat, let's make the rounders bat. You've just done all the processes needed to make this one so it should be a breeze. Starting with the blank held between centres and again in this case with the corners cut off, rough down to a cylinder.

18 Once again part down to the set sizes on the line drawings and rough away the waste timber. This time being shorter, it is less likely to flex at all. However you will still need to move the toolrest mid-project, but for safety, stop the lathe when doing so.


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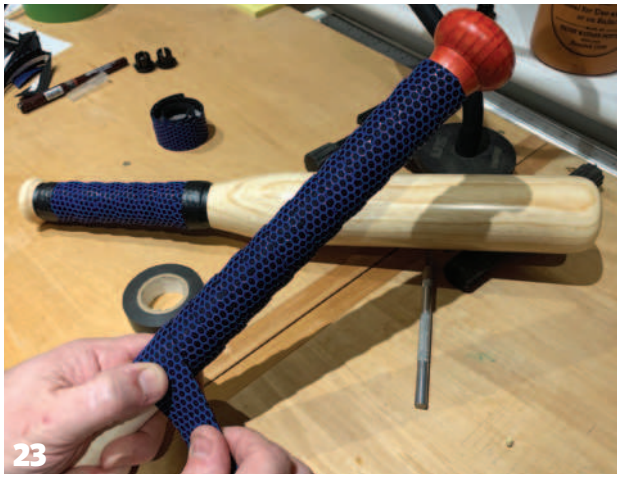
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19 The rounders bat has a slightly more curved end to it as you can see from this picture and once again a small bowl gouge or spindle gouge works well for this section. Notice the size of the waste timber left around the tailstock centre. Leaving just a small amount like this means a lot less work when off the lathe – just make sure you leave enough for it not to split while turning.

20 This is how the bat should look at this stage. You can now sand the piece down to 400-600 grit. Once done, remove it from the lathe and clean up the ends with the sanding disc as before. The design on both bats is, of course, entirely up to you but I decided to keep this bat completely undecorated, apart from the handles whipping we're going to add later.

Finishing the bats

21 Now on to the final section stages for both bats. I purposely kept one plain and the other bold with colour for you to get some idea of the differences so you can make your own decision. Before varnishing remove any masking tape and check the bat over for debris and dust. Also, prepare a stand to place the bat for drying.

22 Use a clear gloss, hardwearing varnish, coating one end at a time. You may have to leave the item overnight to dry so I've used a couple of wine coolers to stand the bats up while they dry before turning them over and coating the other end.

23 Moving on to the crowning glory – the handle whipping. An ideal material for this is handle bar tape. This is easily sourced either at your local bike shop or online. There are so many colours and patterns available that you will easily find something to suit your bat design. Any excess can be used as turning tool handle grip to pimp up your gouges.

24

24 The finished bats. ●

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Experiments with airbrushing

Richard Findley's Editor's Challenge is to use an airbrush for the first time

My mobile rang and 'Mark Baker' flashed up on the screen, it was the monthly call to check in and give me my challenge. 'Have you done any airbrushing?' was the question and I could see where it was going. 'No, but I do have an airbrush...' was my slightly hesitant reply. 'Perfect! You can make something with an airbrushed design then.'

I'd bought an airbrush a couple of years ago, partly on a whim when one came up on a special offer, but apart from a brief play with my new toy at the time, it had never left its box. It looks like it will see some action now.

PHOTOGRAPHS BY RICHARD FINDLEY

My airbrush kit with compressor and airbrush

Research

Using the tool itself is reasonably straightforward, but making it do something other than 'colouring in' is where the challenge really lies. I turn to YouTube to see if I can get some guidance and ideas. I find a good video in which a guy talks through the basic equipment and shows some useful exercises to practise trigger control. I then need some inspiration. Internet searches for airbrush paintings and airbrush pictures bring up some truly fantastic artworks. It seems the fine control and ability to layer paint really lends itself to some amazing images. There is one snag though: despite my great grandfather having been a talented watercolour artist, my talent pretty well stops at the rough sketches you will have seen in some of my previous articles. There is simply no way I would be able to recreate, or even get close to, some of this work, even if the deadline for this article were 10 years from now, let alone in a couple of weeks.

I've mentioned before that inspiration is a funny thing and can strike at almost any time, if you are receptive to it. Having drawn something of a blank I'd put it aside and that evening, watching the news, I saw a report about the terrible fires in Australia. News stories like that stay with you and somehow the inspiration was there: fire. Flames are abstract enough that there isn't a definite right or wrong to them and surely there would be a technique or knack to doing them that would be more achievable than some great artwork like I'd previously seen.

The paints, reducer and airbrush cleaner from Chestnut Products

I turn back to YouTube and find several videos which all describe the process. They vary slightly but the core of the information is largely the same.

PAINT

I go online and look for airbrush paint. There are lots of different options and, to be honest, I don't really know where to start. I decide to speak to one of my usual finishes suppliers and email my friends at Chestnut Products. Terry explains they do a couple of different paint products that can work with an airbrush, although they need slightly thinning to work properly. He agrees to send me some samples over to try out. As soon as they arrive I can start practising.

I receive a sample pack of metallic paints and iridescent paints, along with a bottle of airbrush cleaner and a reducer to thin down the paint. I've done quite a bit of spray finishing in the past so feel reasonably confident that I can achieve the correct consistency to spray through the airbrush. Actual airbrush paints are usually supplied ready to put straight into the airbrush.

Practising

The airbrush is a well-designed little tool. It fits the hand comfortably (whether you are right or left-handed) and the trigger mechanism is a two-stage operation. When the trigger is pushed down, air flows through the airbrush, but doesn't add the paint. It is important to keep the air flowing all the time to achieve smooth lines and fine control. Once the trigger is pulled back the paint begins to be sprayed, the further the trigger is pulled back, the more paint is applied. With practice and good finger control, this allows variation from a solid line to a very light shading to be applied. The small paint pot at the top of the airbrush means that it is quite simple to change the paint to another colour. There are different styles of airbrush which allow a bottle of paint to be fitted and easily swapped to another colour, although these seem to be a more 'professional' option.

I begin with some exercises, as recommended in the video online. I lean a sheet of ply against my lathe and use masking tape to fix a sheet of brown craft paper to it, forming a rudimentary easel. I always have a roll of craft paper and use it for wrapping parcels and for making full-sized drawings. It seems like an ideal surface to practise my airbrushing.

Knowing that I will need red, yellow and white for the fire, I keep those safely off to one side and start with green. I begin by making a series of dots, a good exercise to practise trigger control by making a line of the same sized dots, first small, then slightly larger.

The second exercise is to draw a line which goes from thick to thin and back again. As before, this is all about trigger control. I then practise smooth movement by making a continuous row of 'e's, which reminds me of primary school, but again is good control practice. I use up three sheets with these exercises and finish by signing my name at the bottom.


The airbrush fits the hand well

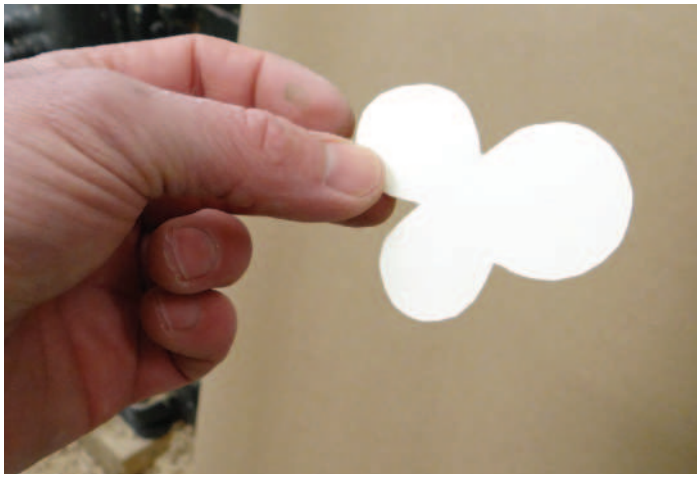

Practising my exercises


Signing my first work of art

Stencil template

Feeling increasingly confident, I decide to have a go at some fire. The videos I had watched all described using some sort of stencil template to give a little definition to the flames. I've seen stencils used with huge success by artists such as Nick Agar, who has used everything from leaves to sprockets to add flavour to his work. While the technique for fire is similar, I don't need a complete flame stencil (although I could if I wanted a more cartoon-like fire effect), but more a curve stencil, which allows for a stronger edge here and there and helps to achieve a fantastic natural fire effect – at least it did when someone skilled with an airbrush did it.

In the main video I watched, the guy had cut out a kind of clover leaf shape, with each of the round shapes being different diameters, allowing him to achieve different, yet controlled, curves. Using a sheet of thick paper I cut out a similar template. I make mine much smaller though as my fire will be smaller than the one he made in the video.



My clover-shaped stencil template

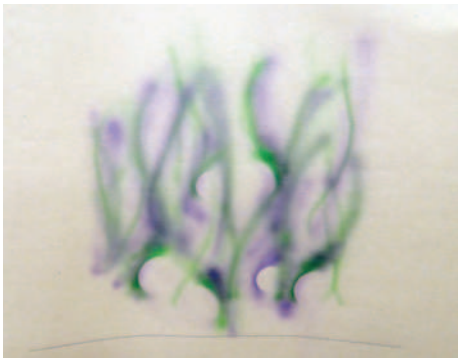
FIRE!

Aware that the sample bottles of paint I have are not very big, I continue to avoid the three main colours I will need so I stick with green for my first layer. I use largely upward strokes, adding my template in random places (which is much more difficult than it sounds), varying which curve I use. I try to do as the guy in the video had and add more weight behind the hard edge of the stencil curve and fade it out. I then randomly pick another colour, which happens to be purple, and add the second layer of colour. The video suggested around six layers are best to achieve real depth to the fire. After the purple, I decide that I can see where I should be aiming, but with the colours being so far from those of an actual fire, it is difficult to visualise, so I pick three colours closer to the red, yellow and white that I will need. I pick a copper, gold and pink. This allows me to layer it better and gives me a much clearer idea of how it will look.

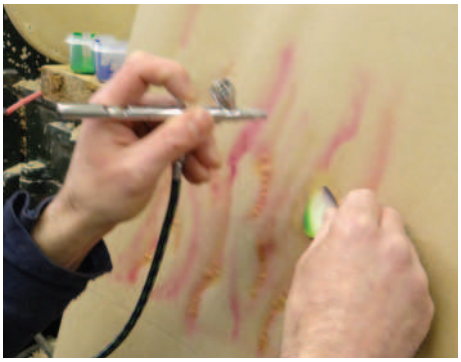
While the result is a million miles from the videos I had watched, I am encouraged that things are moving in the right direction and that there is definitely at least a suggestion of flames about it, even if they do lack the realism I would ideally love to achieve.

I decide it is time to do a practice run that will more closely simulate the final product, which I think will be a small, wide-rimmed bowl in a light wood. I will spray the rim black and add the fire before hollowing a small bowl from the centre. The way I see it in my mind, the fire will need to radiate from the centre, rather than from an imaginary source outside of the bowl, although I haven't completely ruled this out yet.

I cut a 200mm disc of thick paper and thin down a little of each of my three colours with the reducer. My earlier experiments showed that I only need to add a few drops of reducer to achieve a sprayable medium. In preparation I had bought some lidded containers from my local supermarket, which allow me to mix them thoroughly with lolly sticks and add the lids until I need each colour.



My first attempt is the wrong colour but shows hints of fire



Using the stencil template to give some random definition

Second attempt is an improvement, but still lots to learn

Thinning the paint with reducer and mixing with a lolly stick

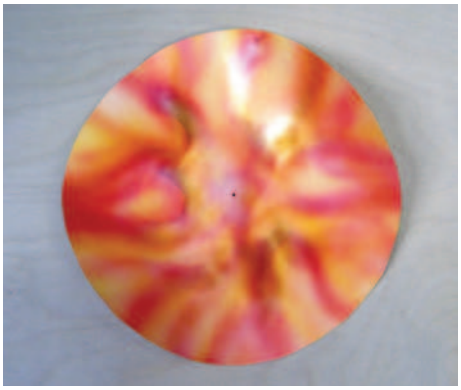
Having thinned the three main colours I seal them in the boxes

FINAL EXERCISE

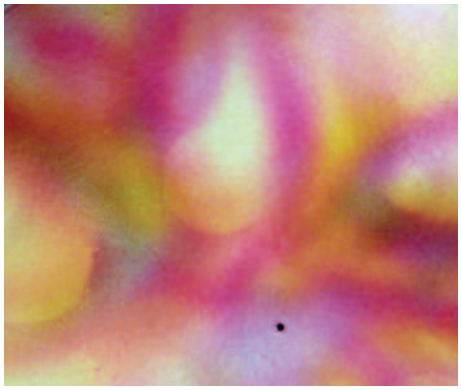
The beauty of a big sheet of paper is that a really fluid, long, licking flame can be produced, but I am very aware that on a 200mm disc I need to achieve the same effect but in a far more compact way. I begin with red and immediately realise that the iridescent red in the Chestnut sample pack is actually quite pink, rather than red, so I add a little black to it. I know from my restoration work that black will tone down the red – so if a mahogany stain is too red then a few drops of black can take it to where it needs to be.

I add some black and mix it with the lolly stick and try again. This is a much better colour. I use the template curves randomly around the disc. I add shading and weight to the lines. I follow up with yellow, then more red, some white, yellow red and white, just as recommended on the videos.

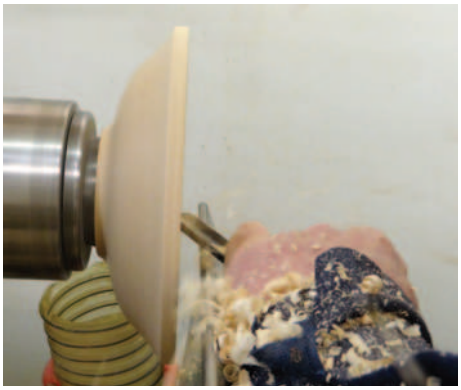
The end result is... shall I say interesting? It isn't quite what I am after, looking far more like an accident in a paint factory than a blazing inferno, but I feel like I learned a huge amount from it. There is too much red and not enough layering, so I probably used too much red too early. I just need a little more restraint. On the positive side, the colours are good and there are definitely some areas that scream 'fire' at me, which is what I want. If I can't achieve realism (which I suspect I won't with only a few hours of practice), then I at least want it to be easily recognisable as fire and I can just tell people it's an abstract representation of fire. I also feel that, once applied to a solid black background rather than to cream paper, then the flames will look far better.



The final fire practice



Certain areas show promise



Beginning to turn the top surface after turning the underside

Shaping the top face of the bowl

Spraying the first coat of ebonising lacquer

The main project

I rummage through one of my timber stacks and find a board of light-coloured beech, around 50mm thick, which looks promising. I will be able to achieve a 200mm bowl from it, which is roughly what I have in mind. I mount it on a screw chuck, true it up and turn the underside into a simple, fluid ogee shape, which I always prefer with wide-rimmed bowls. I sand to 400 grit and re-chuck the bowl to shape the top. I turn the gentlest of curves across the surface. Too much of a curve on this type of bowl can make it look like it's drooping, which isn't a good look, but likewise dead flat isn't interesting, so it is a fine balance to strike. Once happy I sand to the same 400 grit as the underside and apply a light spray of sanding sealer. After about half an hour I lightly cut the surface back with a fine abrasive pad and take it to my spray booth to apply a coat of ebonising lacquer. After a couple of hours I lightly cut it back with 600 grit abrasive and re-coat, leaving it overnight to fully cure before I begin the airbrushing work.

HEALTH AND SAFETY

The paints I am using are water based so don't have the strong chemical smell of most lacquers, but after a while of spraying them through the airbrush I can feel the overspray in the air on my chest. I realise I should have worn a spray mask but foolishly, because I was only doing small work, I hadn't bothered. I really should know better by now. As I carry the bowl upstairs to my small spray booth to spray it black I have a 'Doh!' moment. Why hadn't I done all of this spraying in the booth? The rest of this project will be done in the spray booth and I will wear my spray mask. I will let it be a reminder that even for a small amount of work like this, good ventilation and a suitable protective mask are needed.

AIRBRUSHING

Naturally, I feel a certain amount of pressure to get this right. I try to remind myself that if it all looks terrible, I can lightly sand it back, re-spray it with black and start again, with nothing lost but time. It is important to relax – tension and stress are poor companions when trying to achieve your best work.

I start with red, spraying around the template and trying to achieve natural, flowing curves. The second coat is yellow, which lightly goes over the red. Third comes a new series of strokes with white. Between each paint I run airbrush cleaner through the tool and thoroughly clean it with paper towel to minimise contamination.

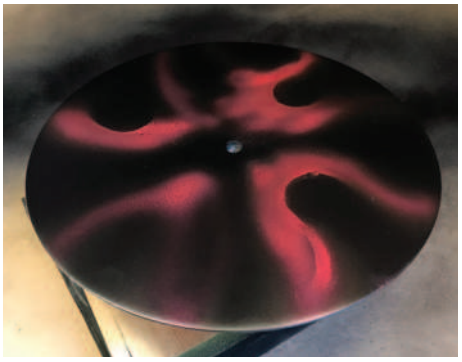
I feel that there is a lot of wet paint on it at this point so step away for half an hour to let it dry and to allow me to come back to it with fresh eyes and re-evaluate where it's going. There are definitely the beginnings of something but it's hard to know if it's right at this point.

When I watched the videos I'd made notes about which colours were used and when. Looking at my work so far, I feel something is missing. I look at my notes and see orange on the list. I don't have an orange, but I do have yellow and red – surely yellow with a few drops of red will give me orange? I reach for the last unused lidded box and mix it up. The result is a vibrant orange which, when sprayed on some white paper towel, looks very promising. I work over the flames so far, this time not using the template, but highlighting some of the other flames as naturally as possible. This is what had been missing and I feel there is definitely more of a fire look to it now. Next I add some white to highlight the hotspots of the flame. Once again I leave it for a while to dry. I really don't want to rush it and spoil it at this point.

The centre area is a bit of a mess at the moment, but I'm not worried as this will be cut away – I'm just not sure yet exactly how big the bowl in the centre will be. This is a decision for later, on the lathe, but I don't expect to be able to fit much into it.

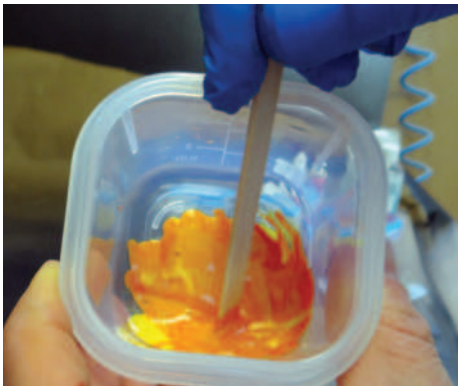
Next I add some quite quick but definite strokes of yellow. The final colour is more red, just to calm those yellows a little. It would be so easy just to keep going, but I feel now is the point I need to stop. I hope there is enough about it to convey the idea of fire, which was my initial idea. I will now just leave it for a few hours to dry before taking it back to the lathe.

Applying red and using the stencil template

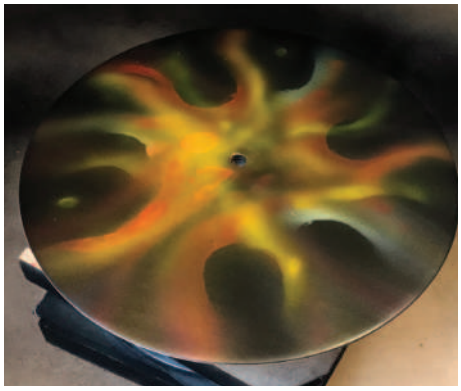


The first red flames in place

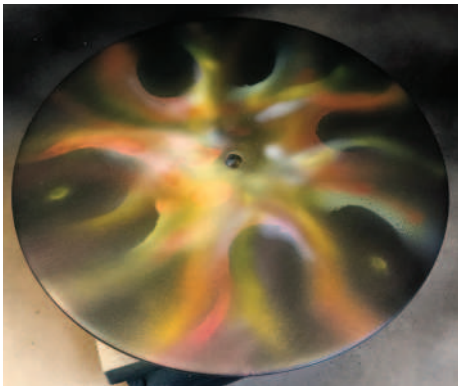
Yellow subdues the red and white adds highlights



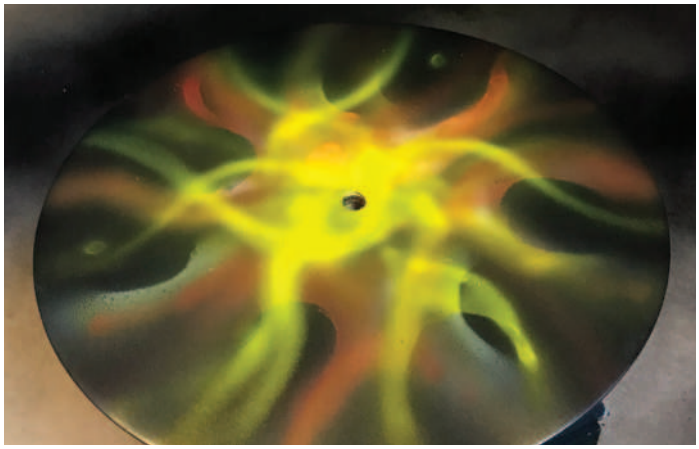
Making orange by adding red to yellow



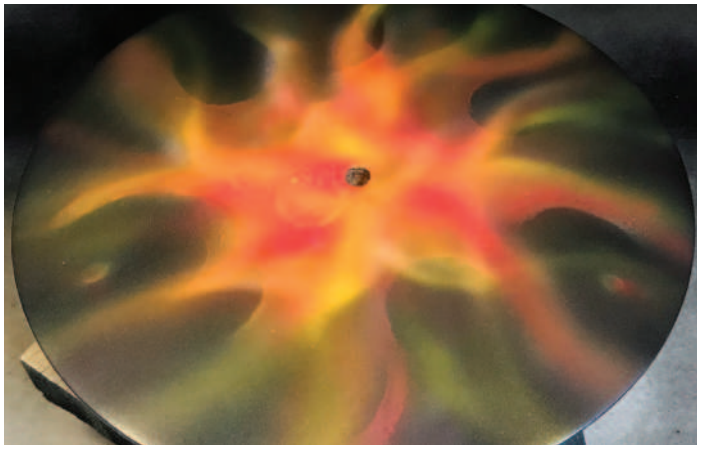
The orange is really effective



More white 'hot' highlights are added

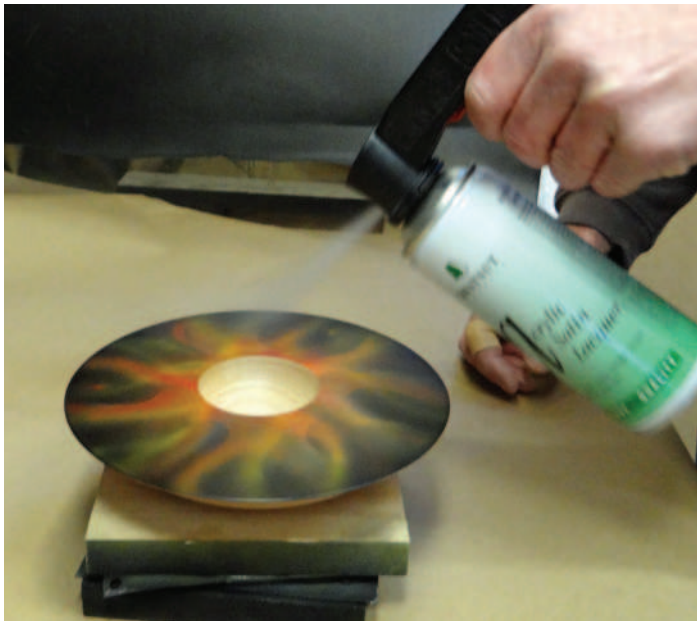


Quick strokes of yellow add real life to it



A little more red and it is time to stop

Turning the tiny bowl



Satin lacquer completes the job

Re-mounting in the chuck is no problem and I study the flame design to try to ensure that I remove the area in the centre, which is mostly a blob of colourful paint, but not remove any of the base of the fire. I score a line with the tip of my skew, cautiously small, and stop the lathe to check. I increase it slightly and, satisfied, I continue to hollow the tiny bowl, which is only about 70mm across, adding a slight undercut for further interest. Throughout the process I am incredibly careful of the paintwork because, although it is touch dry, it isn't fully cured, due to the number of layers involved.

I remove the tenon to leave a flat base, take it back to my spray booth to apply a couple of light coats of satin acrylic lacquer, and the 'fire bowl' is finished.

Conclusion

Despite my early reservations (painted work is not really my thing), I have enjoyed the process of learning a new technique. The Chestnut paints worked really well, although I think the correct opaque airbrush paints may have given a more realistic fire, especially in the hands of a more competent airbrush artist. The paints I used were metallic so my fire has a sparkly quality, which I don't mind at all. I am pleased with the finished bowl and, considering this is only my fourth attempt at fire (two on brown paper, one on a disc of cream paper, and this one), I am feeling very pleased with myself. The internet, used correctly, is such a fantastic tool for learning and without it I would have struggled so much with many of these challenges.

The finished 'fire bowl'

Next month: Richard tries using alternative ivory for a project

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CARTER AND SON TOOLWORKS

Cross-grain bowls

Mark Sanger reveals the fundamentals of turning a bowl

PHOTOGRAPHS BY MARK SANGER

This article is the first in a series looking at the turning of cross-grain bowls. Cross grain is also called faceplate grain – this is were the grain of the wood is running at 90° to the axis of the lathe bars when the blank is mounted on the lathe in line with the tailstock.

I will cover the tools and techniques used, including work-holding methods; direction for cutting the wood for the outside and inside; and simple, low-cost, effective methods for reversing the bowl for finishing. In this article I am stripping everything down to the foundation for turning a simple curve bowl.

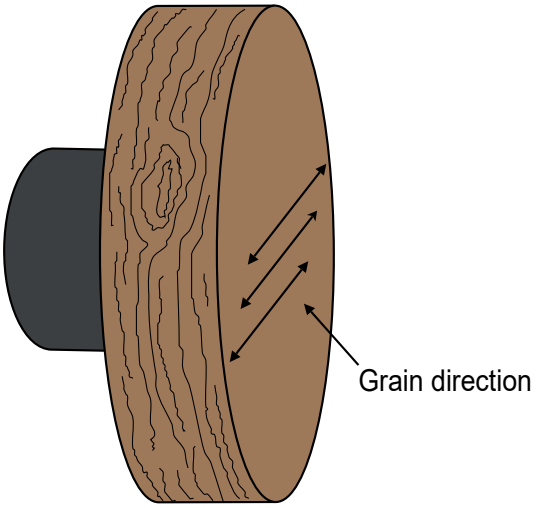
You will see a plethora of techniques, methods, tools, hints and tips within woodturning but, by having knowledge of the core foundation of wood and techniques, you will be able to apply these to a bowl of any shape. My own ethos is that every cut is a practice cut and my aim is to achieve the perfect cut every time. Of course, the pursuit of this perfect cut is elusive but if we strive for this by practising 'good techniques' then our skill set will develop far more efficiently and in a shorter time. Often, I hear the term 'practice, practice, practice' – I add the word 'good' prior to this as we are wasting our time, making life difficult and, on occasions, putting ourselves at risk by practising poor technique.

Any turning technique is about connecting with the tool, process and material being turned. As I turn, I feel the cut, listen to its sound, and observe the shape of the shaving that is produced from the cut. When all three of these are optimum, then I will achieve the best finish from the tool. These points and many others I will touch upon here. Bowl turning can be studied forever and still we will be learning and there are many books dedicated to bowl turning alone that are worth investigating.

In subsequent articles I will be introducing how to develop the projects from this simple bowl to more complex designs covering feet, rim designs, and forms that can be included to develop our bowl turning further. I hope you will enjoy this series – there will certainly be lots of information you can learn from but, most of all, stay safe and have fun.

WOOD BLANK SELECTION

In this article I am turning a purchased, seasoned, cross-grain blank, the grain of which when mounted on the lathe runs perpendicular to, or 'across', the lathe bed. This 'cross-grain' orientation provides good strength, an interesting grain pattern and removes the issue of the bowl cracking if the pith is included. This can occur when turning an end-grain bowl processed with pith included, which will be covered in subsequent articles.



Orientation of the grain when the wood is mounted on the faceplate

SELECTING THE BLANK

Our choice in selecting a commercially processed blank is limited but there are a few points to consider.

Most blanks will have the outer edge covered in end-grain sealer or wax, so check carefully around the edges for any cracks that could render the blank waste wood and which can be inherently dangerous when turned if the bowl was to split apart, potentially resulting in injury. The picture shows a burr oak bowl I turned that split due to an unseen crack, so check your blanks before turning thoroughly.

Check all faces of the blank, making sure that it is not cupped as this can prevent good seating against the faceplate or screw chuck when mounting on the lathe. If the blank has a knot or other inclusion you may be able to turn this away when hollowing out, or it may be better to choose another blank instead. Best policy is, if you are just starting out turning, choose the cleanest blanks you can.

A piece of wood that broke off when turning

A typical cross-grain bowl blank

Mounting the blank

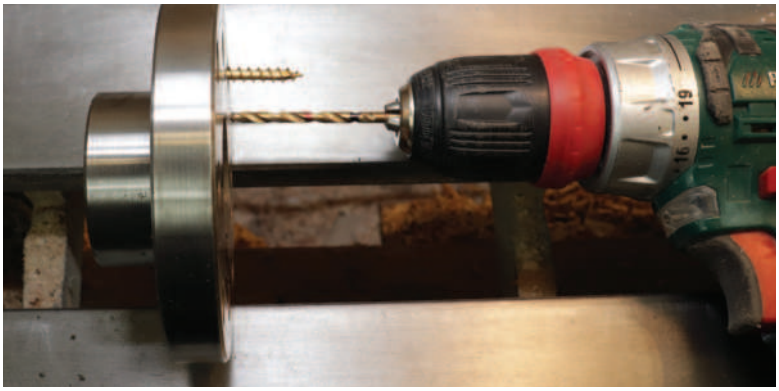
The methods I use to mount a blank for turning are faceplates, screw chucks and between centres. All are discussed here, along with the benefits and negatives of each.

FACEPLATES

Faceplates are the safest, most secure method of mounting a cross-grain blank for initial shaping of the base. There is a wide selection of diameters available for various-sized projects, but to start with a 100mm plate will suffice. As a guide, the faceplate should be no smaller than 1/3 of the project being turned. Screw the faceplate to the blank using all the holes of the faceplate and the largest good-quality screws you can for the length so the protrusion into the blank is least 20 mm. Here I am using M5 x 40mm. Faceplates enable the base of the bowl to be shaped without the need for the tailstock centre being used for support, however I always bring up the tailstock centre and only remove it to gain access to the base of the bowl for final working.

Below is a selection of faceplates for various projects. For dense timbers it is best to pre-drill the screw holes for fixing to the faceplate to prevent the heads snapping off when tightened. To gauge the depth of the pre-drilled holes, offer up the drill used to a screw in the faceplate, mark the length on the bit with a permanent marker and note for future use. The faceplate can now be centred on the blank and pilot holes to the correct depth drilled through each hole before tightening.

Faceplates of various sizes



It is important to use the right drill bit size for the gauge of screw selected

SCREW CHUCKS

Screw chucks are purchased to clamp into your chuck jaws, onto which the pre-drilled blank can mounted. The benefit of a screw chuck is speed of mounting the blank in comparison to a faceplate, due to only one screw being needed for tightening. The negative is that the blank is only secured by this one screw and any excessive force during turning may result in the screw loosening. So, for added security when using a screw chuck, I always bring the revolving tailstock centre up into the base of the blank. The image shows a small selection of screw chucks and a homemade screw chuck.

Screw chucks of various sorts

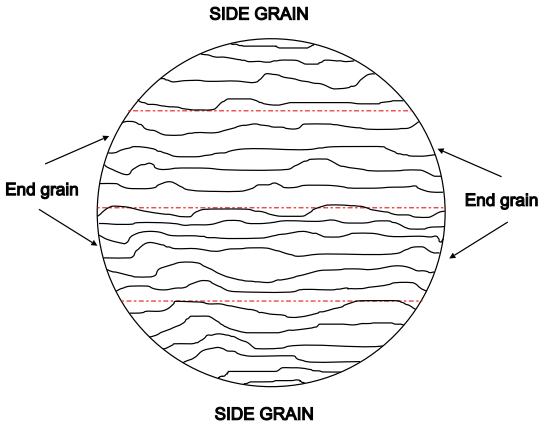
BETWEEN CENTRES

Mounting a bowl blank between centres is something I normally only do when mounting natural-edge blanks, which is not covered in this article. However, mounting between centres is an effective option if you do not have a faceplate or screw chuck. To mount between centres, mark the centre of the blank and drive the point and prongs of the drive into the face of the blank with a mallet. The blank is mounted with the drive held in the spindle of the lathe and rotating tailstock centre brought up into the base, with moderate pressure applied and locked off to prevent movement. For extra security on large, heavy blanks, I drill out a hole to a few millimetres larger than the drive x 20mm deep on a pillar drill. The blank is mounted in the same way as before but now the drive is encased within the hole, preventing lateral slippage if forces become excessive.

Drive spur seated into a pre-drilled hole

Cutting with the grain

Cutting with the grain is a common woodworking term, but how does this apply when turning a cross-grain bowl? The grain orientation of a cross-grain bowl means that in one revolution of the blank being turned there are four orientations of the grain cut – two end grain and two side grain, as shown below. Due to this change in grain orientation in relation to the blank's rotation, it is imperative that the tool is sharp and presented with the bevel supporting the cut, with the cut being in the correct direction when shaping the outside and inside of the bowl to produce the optimum finish from the tool. If the tool is not sharp, presented correctly or the cut is in the wrong direction, tearing out of the end grain fibres will occur, in turn resulting in excessive finishing with abrasive required to establish the surface finish. If your tool is blunt or incorrectly presented, you will induce tear-out on opposite sides of the bowl as shown here marked with a permanent maker.



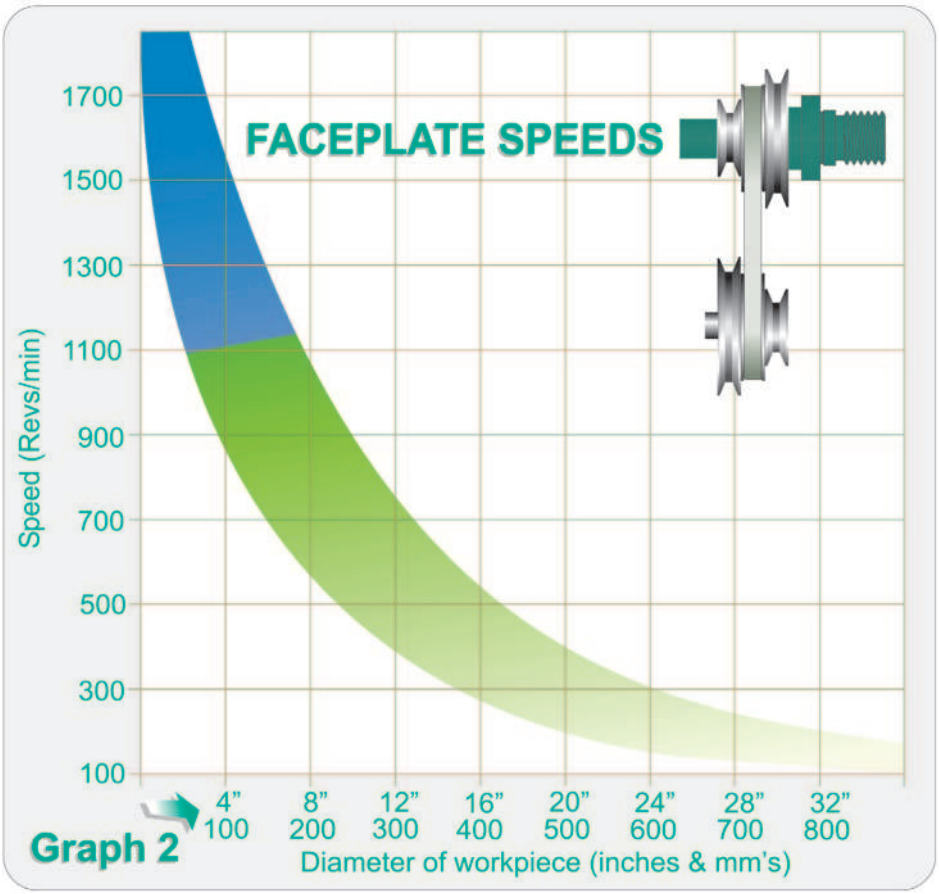
Cross section of the bowl blank showing side and end grain

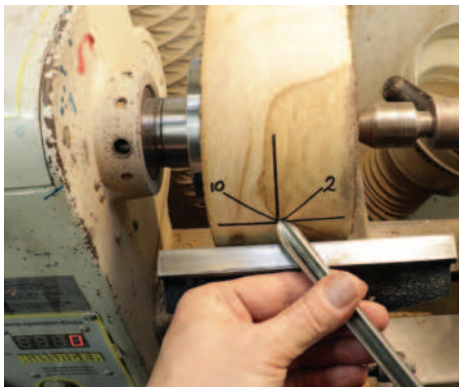
Torn end grain

TOOL PRESENTATION

Tool sharpness, the correct presentation of the tool handle and cutting edge to the wood is essential for an efficient, safe, clean cut. In the images below, the toolrest is set close to the blank and the height adjusted so the gouge cuts on centre height. The gouge is placed on the rest with flute pointing toward 10 o'clock for cutting from right to left towards the headstock, and 2 o'clock when cutting from left to right towards the tailstock. In both instances the gouge is fully supported by the toolrest beneath it. The gouge handle is lowered until the bevel is fully supporting the cut by gently rubbing the wood immediately behind the cut. These 10 and 2 o'clock presentations are the optimum to achieve the best finish with most efficient wood removal.

For a more in-depth look at using the bowl gouge refer to my article in *WT* 315.





The angle of flute of the gouge and handle when cutting towards the headstock

The angle of flute of the gouge and handle when cutting towards the tailstock

Cleaning up the face of a bowl blank at the tailstock end of the lathe

Stages of turning a bowl

BALANCING BLANK

With the blank securely mounted on the lathe, toolrest set, everything secured and your personal safety equipment fitted and worn, the first process is to balance the blank by cleaning up the outside edge and face to ensure it is concentric and balanced.

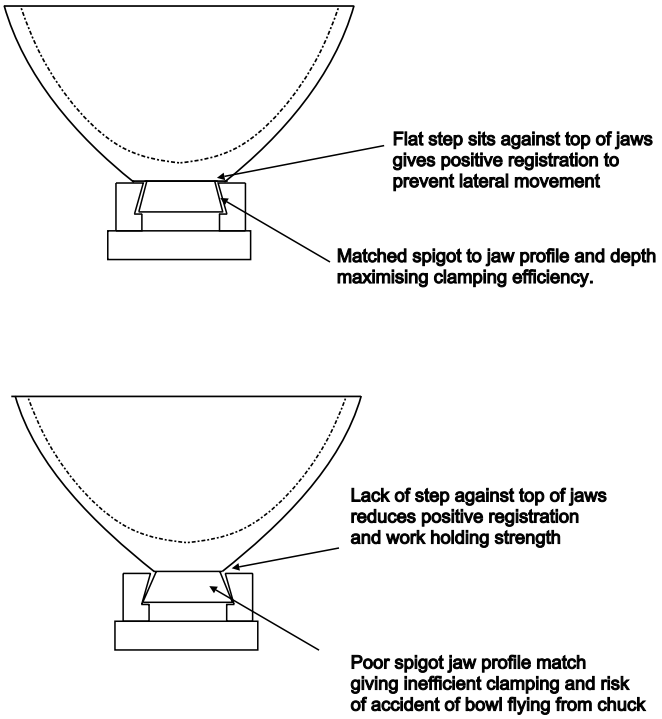
Always start at a low speed and then adjust to a moderate speed suitable for the size and condition of the blank until the blank becomes out of balance, then back off the speed until it runs smoothly. The speed selected will depend upon the type of wood, the condition of the wood, the size of blank being turned and the lathe used but for a guide refer to the speed chart above.

Next clean up the front face with a push cut using flutes pointing towards 2 o'clock and bevel rubbing, removing the tailstock centre for cleaning up of the centre when required.

PRODUCING SPIGOT OR RECESS FOR TURNING

Spigot or recess? A spigot provides that the chuck jaws clamp around it, is a solid method of work holding and provides versatility of the final design of the foot as preferred. It can be used on large and small projects taking into consideration suitable jaw size for the project. As a guide the spigot should be no less than ⅓ the diameter of the bowl, however, this work holding can be further reinforced by including a flat waste section to mate up against the face of the chuck jaws, which helps prevent lateral movement of the blank when clamped and turned. Spigots are ideal for deep bowls and vessels but for shallow platters producing a spigot can mean having to reduce the blank thickness. The profile of the spigot is critical and must match the profile of the jaws being used. A poor match can result in a reduction in work holding or excess force and breakage in the cross grain at the join with the body of the bowl. Accurate marking of the spigot diameter to match the chuck jaws is critical for good work holding and exact dimensions can be obtained from the manufacturer's instructions. A simple rule and pencil can be used or, as here, marking jigs can be made from scraps of wood with a pencil and metal tack being set to the radius of the jaws, offered up to centre with lathe rpm set low for accurate, efficient repeatable marking.

Marking a spigot or recess width to suit a set of specific chuck jaws



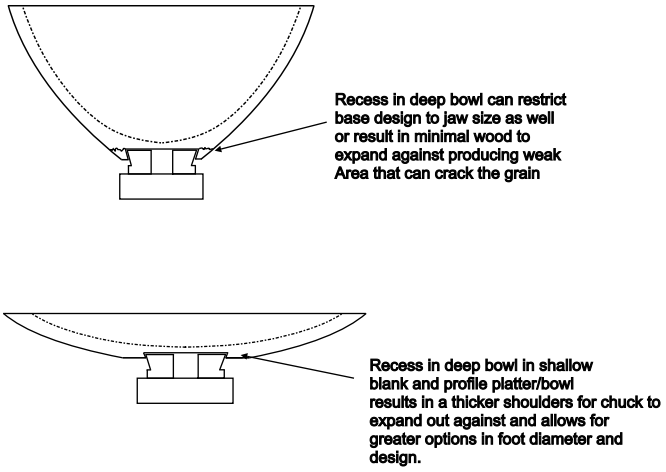
Things to consider when creating and using spigots

A RECESS

A recess is my preferred method of mounting platters or where I want to maintain as much thickness in the blank as possible for the design being produced. The shallow profile provides a good amount of wood for the jaws to expand into and allows maximum versatility from such a blank. A recess for mounting also provides scope for the foot to be produced to various designs and diameters. A recess used within a deep vertical form can restrict the size of the base and may compromise the composition of the final piece, as well as compromising security of hold due to the minimal material around it for expanding the jaws against, which can fracture if excess cutting force or a catch is exerted on this narrow area.

CHOICES

At the end of the day, you are the one making the item, so you choose. There are pros and cons in both methods and you need to work out what your design will be and how best to hold it in order to bring about your chosen design. Just remember to work slowly and safely and never compromise your safety at any time when turning your chosen item.



Things to consider when creating and using recesses

TURNING THE SPIGOT AND WASTE SECTION

The spigot is produced here with a parting tool in scraping mode, with handle presented higher than the cutting tip presented to the wood surface. This is by no means the only way to produce the spigot but it is a simple method when first starting bowl turning. Plunge the tool gradually into the face of the blank to the desired depth for the chuck jaws. Next, the waste is removed using a bowl gouge with a push or pull cut down to the base of the recess produced by the parting tool. Repeat the process 10 mm larger in diameter or larger to suit final foot design/size outside of the spigot diameter. Remove the waste down to this as before, producing the spigot and stepped waste section. Refine the spigot profile to match the chuck jaws with the toe of a skew chisel in scraping mode, as with the parting tool. This held flat against the chuck jaws is an important part and without it there is a reduction in the quality of work holding as clarified in illustrations on page 25. The step also gives a relief area enabling safe access to the foot for finishing down to this area if required once turned.

Points to remember

1 Spigot must be optimum diameter for jaws being used, as per manufacturer's guidelines.
2 Spigot profile must accurately match that of jaw profile.
3 Flat/step produced to give optimum positive contact with front of jaws, restricting lateral movement during heavy cuts.

A parting tool making the initial cut for the spigot width

A pull cut being used to remove waste wood

Skew chisel used as a scraper to refine the spigot

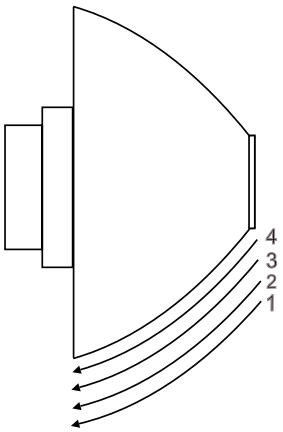
Turning the bowl

OUTSIDE FORM

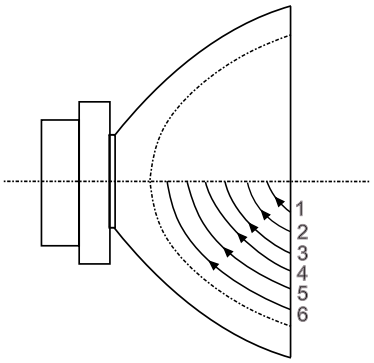
The outside of a cross-grain bowl is cut from what will be the bottom base of the bowl up to the rim so that the fibres of the end grain are sliced diagonally and supported through the cut, while making sure that the flutes of the gouge are pointing towards 10 o'clock. This is to ensure there is always a longer fibre behind the one being cut to ensure a clean cut. This is also often called cutting downhill.

The bowl is mounted on a faceplate with revolving tailstock centre support in place for maximum security and is being shaped with the push cut. You can see in the lower picture that the handle fouls the tailstock assembly, thus restricting access and preventing full bevel contact throughout the cut. This is one of the issues when turning a bowl between centres or on a single screw chuck with revolving tailstock in place and the very reason why the pull cut with a long grind bowl gouge is often used in bowl turning. Options here are to mount it on a faceplate so the tailstock can be removed, or you can use the pull cut.

On occasions, cutting with the grain when getting access for turning the base of a bowl close to a foot can be difficult and an option is to cut against the grain from outside in towards the foot, this is called cutting uphill. There is nothing wrong with this as long as the final finishing cut is made with the grain to ensure a clean surface. Leave a fraction of a millimetre for the final finishing cut, refining the surface with either a shear cut or scrape using the long grind bowl gouge. Or make a shear scrape using a freshly sharpened scraper.



Order of external cuts



Order of internal cuts

The gouge handle fouling the tailstock assembly

Using a pull cut

Cutting against the grain, also called uphill

Shear cutting with the long edge of the gouge

Shear cut with a scraper

TURNING THE INSIDE

Mounted securely in the chuck the bowl is hollowed by cutting in the opposite direction than shaping the base and cut from outside in an arch to centre, with the end-grain fibres being sliced diagonally. Here the gouge flutes point towards 2 o'clock with the handle being swung confidently around, while the cutting edge is plunged gradually into the wood producing a smooth curve. Starting in the centre of the bowl gradually work out in steps as shown, arching each cut to produce a smooth transition from rim down into base. With the bowl hollowed the surface can be refined using a round-nose scraper, but after some practice with the bowl, gouge scrapers will become obsolete

Handle low & flute pointing in the direction of travel to form the top of the opening

Handle more towards the horizontal to reach the bottom area

Cutting the very bottom of the inner area

Finishing

For finishing I aim to start at 120 grit moving through to 400 grit abrasive. It is my preference to finish the base and inside the bowl at the same time and stage. The reason for this is that if I finish the base while it is still on the faceplate and I subsequently drop it or knock it against the lathe while re-mounting, then I would potentially have to rework and finish again. Whereas by finishing in one stage I have found there is much less risk of this happening and, due to a step initially being produced, this allows access into the base area. Here I am finishing by hand with the addition of a foam pad that the abrasive is attached to, but you may prefer another method, such as power sanding.

Sanding using a pad to keep fingers away from the chuck

Reversing refining base & foot

There are various ways to mount the bowl to finish the base and foot. We could use a vacuum chuck, which holds the bowl in place via a vacuum – a quick method for production turning but comes at a cost compared to other options. We could use Cole jaws that replace the chuck jaws and have eight rubber buttons that can be set at various diameters to suite the bowl being finished. There are various options of each to suit various sized projects. My preferred method for turning low-batch or one-off projects is a simple friction drive made from waste plywood with a spigot attached. Soft rubber is stuck to the face and fits into the chuck jaws of the lathe. It is a quick, simple, low-cost, effective

solution for reversing bowls that can be made from scraps in the workshop. The image below shows the homemade friction drives I use.

With the bowl reversed onto the friction drive and the revolving tailstock centre brought up into the previous indent, the waste is removed and blended by working from the desired foot rim. This restricted area is why the long grind and pull cut is one of my favourite and most-used techniques.

Once the foot is turned the underside needs to be hollowed using a small bowl gouge or spindle gouge so that it will sit flat and stable. For this a 6mm bowl gouge with long grind is an ideal tool. Finally, the waste close to the revolving tailstock centre is reduced in diameter to as close to the centre as possible, using a small spindle gouge. Note the revolving tailstock centre being used has a cone/ring-shaped centre. The cone-shaped centre encapsulates the wood fibres around the point and prevents splitting the small remaining waste section.

The last process is to remove the final waste and blend this with a small abrasive arbor held in a waste block in the chuck. To remove the remaining waste on a cross-grain bowl I simply push/snap it off or, as here, snip it off with a pair of wire cutters. Alternatively, it can be cut away using a fine-blade saw while being held securely on the lathe. This area is then finished with abrasive from 120-400 grit, follow by the application of a few coats of my preferred bowl finish, Danish oil, which is left to dry and then be buffed.

In the next article I will be looking at how to develop this simple bowl further with the addition of various feet, beads, coves and other design considerations for you to experiment with as you develop your bowl turning.

Friction drives

Refining the foot area

Creating a hollow in the base foot area

Refining the hollow

Cleaning up

The finished bowl

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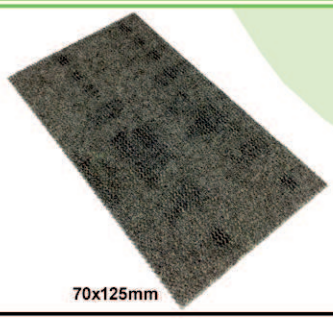

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Understanding the parting tool

Les Symonds takes an in-depth look at the tools we work with, starting with the humble parting tool and some of its many variations

PHOTOGRAPHS BY LES SYMONDS

This is the first in a series of articles aimed at giving turners a better understanding of their tools, so we will be looking at specific tool types over subsequent months. We will consider the various patterns of tools available, their primary function and the many other, different ways in which they can be safely used. There will be an emphasis on understanding the dynamics of what makes them work well and what can therefore make them fail, but essentially, I aim to give you a level of understanding that will enable you to avoid the pitfalls and to use your tools to the best advantage.

The series is aimed at those turners who are beginning their journey into the craft and those who have intermediate skills. There will be many experienced turners who may well know other patterns of tools and other ways in which to use them, but it is not my intention to offer a comprehensive list of these – indeed, the subject is so vast that many books are available covering it. Rather, I will cover those tools which all of us use regularly and similar versions of them that some of us will be familiar with.

I will start the series with the humble parting tool. You could well be forgiven for wondering just how much information we can find to dedicate a whole article to this tool, but I think you will agree, by the time you reach the end of this piece, that there is more to this simple tool and its many variations than you might have thought.

Parting tool patterns available today

Let's begin with the 'standard pattern' parting tool, the one we must surely all be familiar with and probably the one that is most commonly used. The shaft of this tool will typically be in the order of 4-6mm thick and 18-25mm wide, with a grinding profile as shown. The typical 20-25° angle of the grind is not critical and, as with many tools, a shallower angle gives a cleaner cut, but the edge wears away more quickly and therefore needs honing more frequently.

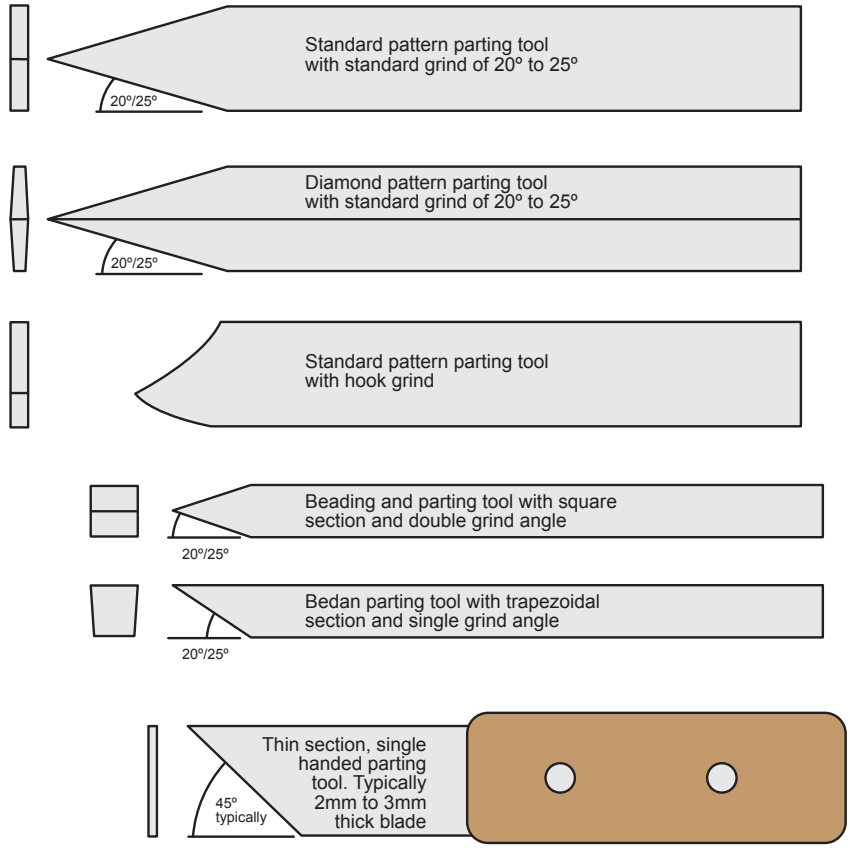
The diamond pattern differs very little in profile, but much more so in section. It is at its thickest along the centreline of the shaft, thinning out slightly both above and below that centreline. It doesn't form a true 'diamond' shape as there are flats to the top and bottom edges; without these, it simply wouldn't sit safely on the toolrest. The purpose of this section is to relieve friction on the sides (cheeks) of the tool when it is embedded in a groove – see the section of this article dealing with plunge cuts.

The 'hooked' profile simply refers to the shape of the tip and can be applied to many of the various patterns of the parting tool. It uses a convex grind on the edge below the cutting tip, with a concave grind above it. This creates an upward sweep of the cutting edge, allowing it to perform peeling cuts without having to drop the handle excessively.

The beading and parting tool is, as the name suggests, a multi-purpose tool, being capable of rolling a bead shape as well as parting timber. It has a square section shaft, generally of about 9mm, and both top and bottom-edge grinds, giving a similar profile to the standard pattern, although with very different proportions.

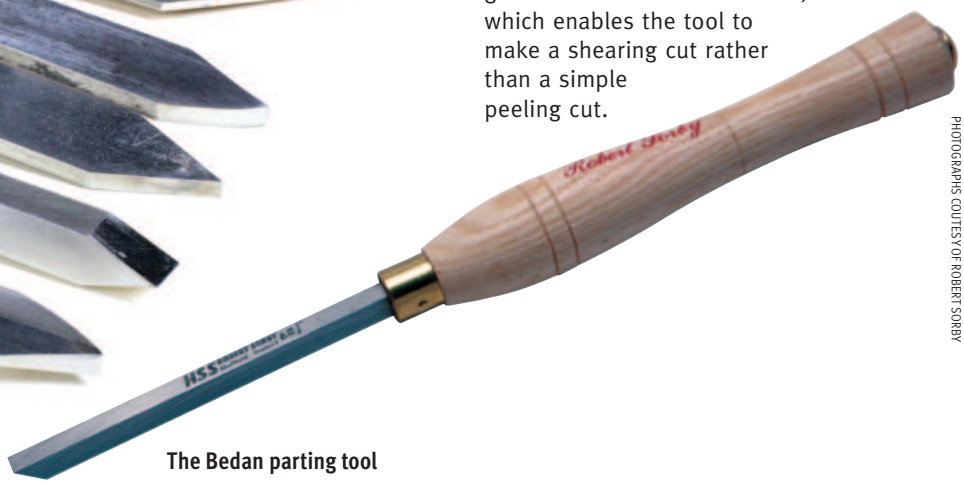
The Bedan parting tool is rarely seen in the hobbyist's tool collection. It has two principal features which set it apart from most other parting tools – the single grind and the trapezoidal section of the shaft, which helps to reduce friction in plunge cuts. Our illustration shows the 'English' pattern, which is used with bevel downwards, unlike its French counterpart, which is usually used bevel uppermost.

The thin-section parting tool generally has a blade (rather than a shaft) of just 2mm or 3mm thickness, but of considerable depth, thus helping to compensate for any possible loss in rigidity of the blade. While our image shows a single, long grind to form the bevel, some users create a second bevel, bringing the point of the tool down closer to the toolrest. There is also a version of this tool commercially available, supplied with a shallow flute ground into one of the bevels, which enables the tool to make a shearing cut rather than a simple peeling cut.



Some of the tool profiles available

A selection of parting tools



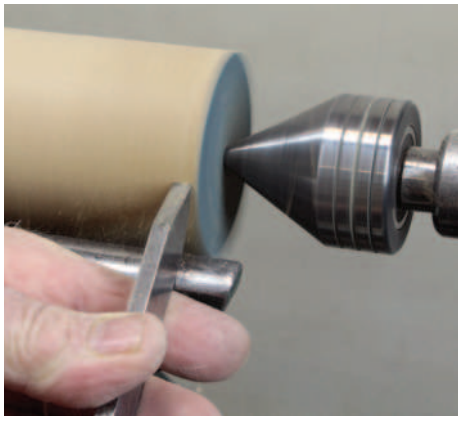
The Bedan parting tool

PHOTOGRAPHS COURTESY OF ROBERT SORBY

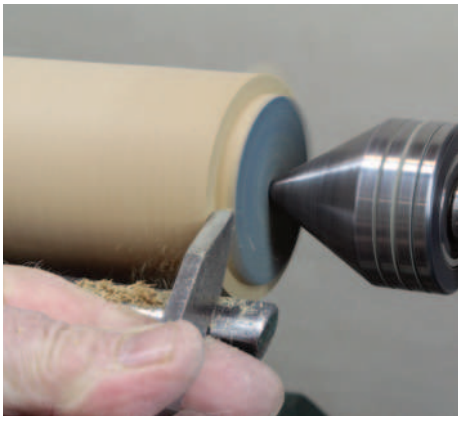
The basic parting cuts – trimming end grain

Most of the patterns of parting tool are capable of two types of cut, in that they can make a true, bevel-rubbing cut, or a scrape; for this operation we will use the former. Across end grain, set the tool on the toolrest with the handle low and the heel of the bevel rubbing. If the end of the workpiece is out of square, very gentle pressure will be needed to start with, otherwise the tool might rattle against the wood.

Raise the handle gradually until the cutting edge makes contact with the workpiece, then apply gentle pressure along the line of the tool's shaft. Once the cut is underway, be aware of the fact that, with the cut taking place against the tip and one side of the shaft resting against the end of the timber, while the other side of the shaft is free to move, the tool may well try to drift sideways. Therefore, take care to keep gentle pressure on the tool to counteract this; tipping the tool very slightly, into the cut can help, but only very slightly.



Achieving the bevel rub



A little sideways pressure prevents drift

If you are making this cut to set the overall length of the workpiece, avoid cutting too deeply at the tailstock end and therefore leaving a weak, small stub of timber adjacent to the live centre. Rather, make an initial cut to the length that you need, finish whatever work you need to do on the rest of the spindle, then finish the cleaning of the end grain as the last process.

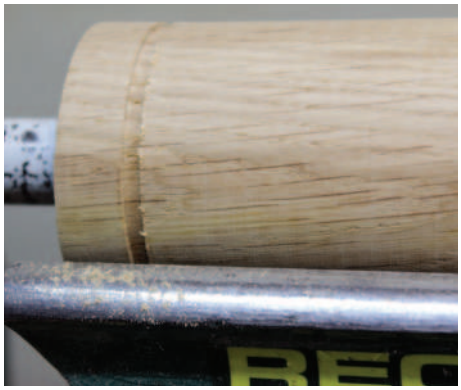
The basic parting cuts – plunge-cutting grooves

The plunge cut can be made in two ways, either with the handle low down and the bevel rubbing, giving a true cut, or with the handle horizontal, giving a scrape. Undoubtedly, the bevel-rubbing cut will give the better finish at the tip of the tool (the bottom face of the groove being cut), however, there is a downside to this. On entry into the face of the workpiece, with a bevel-rubbing cut, superficial wood fibres are inclined to break out of the surface. If the outer corner of the groove is going to be reshaped, then this will not matter very much, but if it is necessary to maintain a clean, crisp entry into the groove, start the cut very gently with a scrape and as soon as the first millimetre or two have been cut away, slowly lower the handle and continue cutting with the bevel rubbing.

Next, I issue a word of warning. Consider what is happening as you plunge the parting tool increasingly deeper into the timber. It is cutting a groove into which it fits quite snugly, therefore the timber on the side faces of the groove is going to be rubbing on the side faces of the tool's shaft. Initially, this may not matter, but sooner or later excess friction will become an issue and the speed at which this will happen depends upon a number of factors, such as the density of the timber and the sharpness of the tool. Wood fibres and possibly even the tool shaft may swell, making everything tighter still. It is essential, therefore, that a second groove is step-cut, alongside the first, to relieve friction.

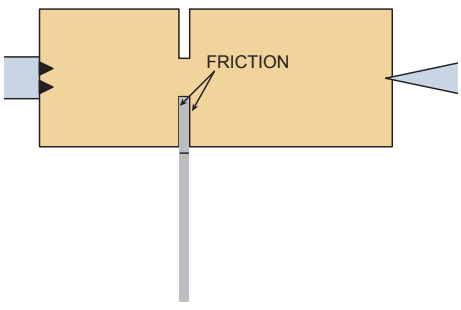
HEALTH AND SAFETY

As I have mentioned, the parting tool is generally considered to be one of the safer tools to use, but beware – plunge cuts, whether on a spindle or on the face of a bowl, must be carried out with due consideration. Even those patterns of the tool that are designed to minimise binding in the cut can catch when they are plunged too deep. Take care.

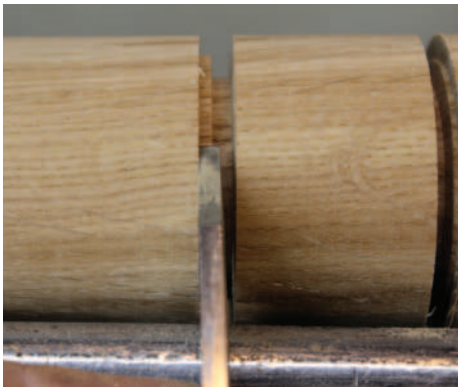


Torn grain at the start of a peeling cut

An improved surface achieved by a gentle scraping cut



Friction will build up on the cheeks of the tool



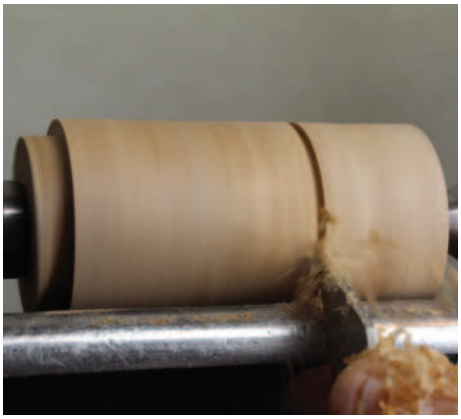
Cut a second, adjacent groove to relieve friction

Maintaining grain alignment

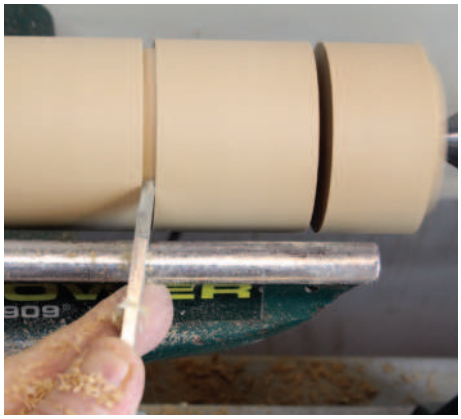
Sometimes, such as when parting a lid from the body of a turned box, it is important not to lose too much of the continuity of the grain pattern, especially where a complex grain pattern is present. In such cases, the thin-section parting tool can be very useful. Typically just 2 or 3mm thick, very little material will be lost in the cut, but, of course, care needs to be taken if you are performing a deep parting cut, otherwise friction on the cheeks of the tool's shaft becomes an issue once again.

There is a compromise cut which can be used, demonstrated here, purely for the sake of clarity, with a standard parting tool. Make the first cut in the usual manner, commencing with a light scraping cut and then converting to a peeling cut, to a depth of a centimetre or so, but once the cut is started, draw the handle to one side, pointing the tool into the timber at an angle of just a few degrees. Withdraw the tool until it is just inside the cut by a couple of millimetres, then draw the handle to the other side, again by just a couple of degrees, and cut a second groove.

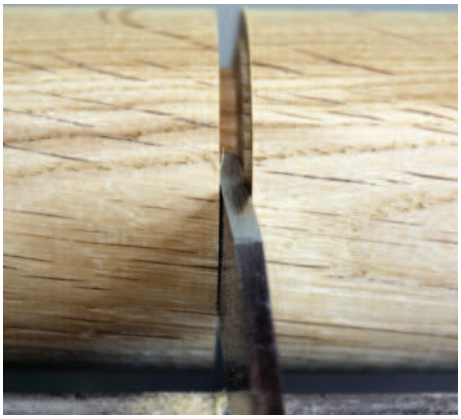
The start of the cut will be only very slightly wider than the thickness of the blade, but as the groove deepens it will also gradually become a little wider. This will not compromise the inside of the box as this will all be hollowed out; the important thing is that only the bare minimum of timber is lost from the surface.



The thin-bladed parting tool helps to maintain grain alignment



A pair of angled cuts can relieve friction on the cheeks of the tool...



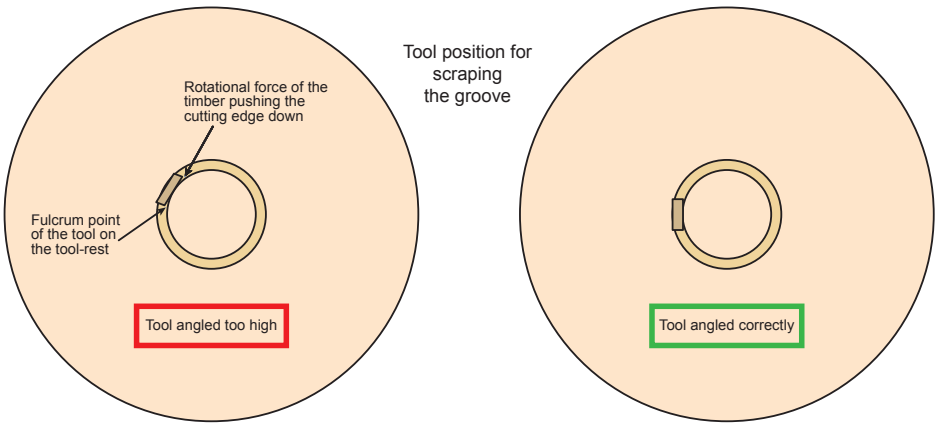
...without cutting away too much of the outer surface

Cutting a chucking tenon or socket

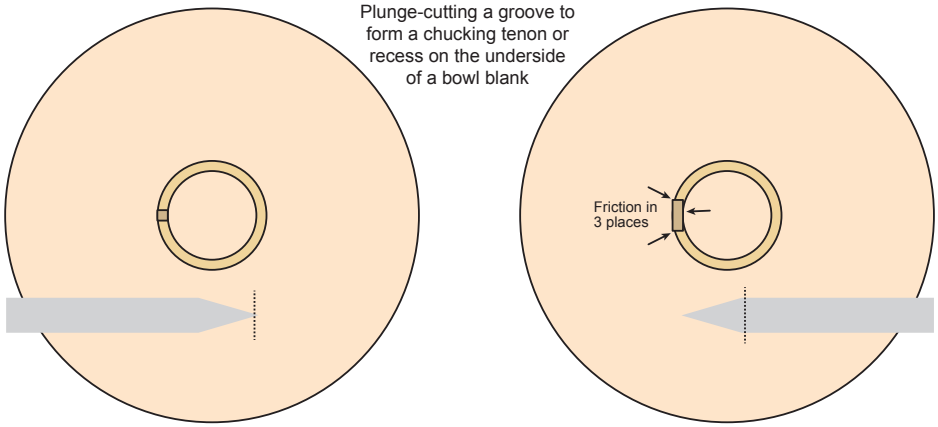
Whether you need a chucking tenon or a socket on the underside of a bowl, using a parting tool to cut the initial shape is perfectly acceptable, but a few ground rules need to be followed.

First, the orientation of the tool is important. A peeling cut simply is not possible because you just could not drop the handle sufficiently on most lathes to achieve this. Also, if the handle is too low the cutting edge will be high and the tool will not align itself well for the groove that is about to be cut. To remedy this, the tool can be twisted clockwise by a few degrees, as shown in the diagram, bringing it back into the correct position as a tangent to the edges of the groove. However, you must be aware that, in twisting the tool, the cutting edge will begin to move out to the right and will no longer be directly above its fulcrum point; that is the point at which it is supported by the toolrest. With the tool sitting firmly on the toolrest, its cutting edge is directly above it and any downward force from the rotation of the timber will safely be transferred into the toolrest, but the more the tool is twisted, the further the downward force moves away from the fulcrum point and, therefore, the more likely it is to suddenly catch and twist.

On the other hand, using a scraping



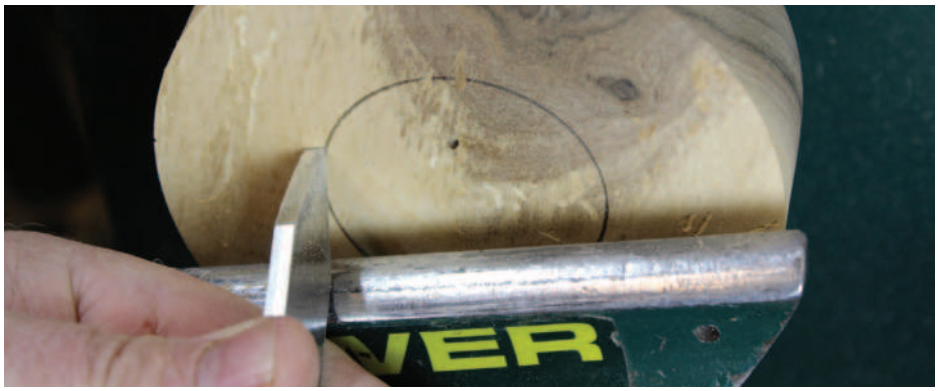
Achieving the correct tool angle



The need to cut a second groove

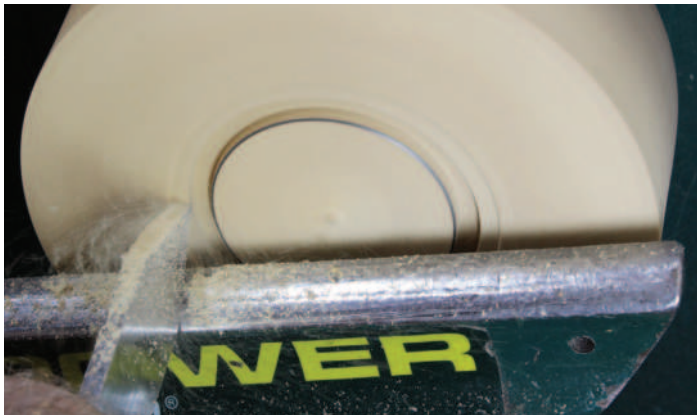
cut allows the tool to remain perfectly upright, giving it optimum support.

Next, we need to consider what happens as the groove grows deeper. At the commencement of the process, with just the tip of the tool starting to cut the groove, there will be little resistance. However, as the tool cuts deeper into the timber, friction will build up as shown in the above diagram, causing the tool to catch; thus a second groove is needed to relieve the friction, just as it does in a plunge cut on the long-face of a spindle.



Tool angled too high

Tool correctly angled

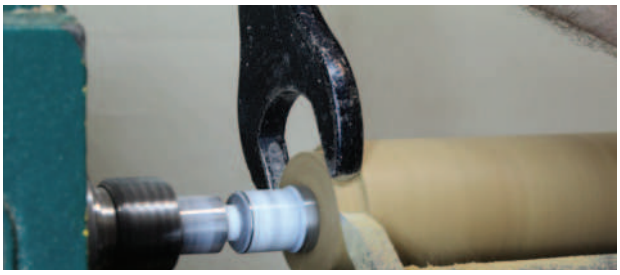


Cutting a second groove to relieve friction

Checking spindle diameter when parting to a set diameter

We frequently need to check the dimension of a spindle that we are performing a parting cut on, and for anyone producing a batch of spindles, especially such as stair components or chair legs, stopping and starting the lathe can be a major cause of delay over time. There are many ways frequently in use, but it is very important to note that only measuring equipment with gently rounded points should be used when the lathe is in motion. Many of the callipers on the market are supplied with quite sharp points and there is the obvious implication that these could catch on the revolving timber and be pulled out of your hand. Thus you should either purchase callipers that are supplied specifically for woodturners, in that they have rounded points, or you should round over any that are supplied with sharp business ends.

Whatever system you use, one critical point is that you hold the item in your open hand; never place a finger through any opening in your measuring equipment.

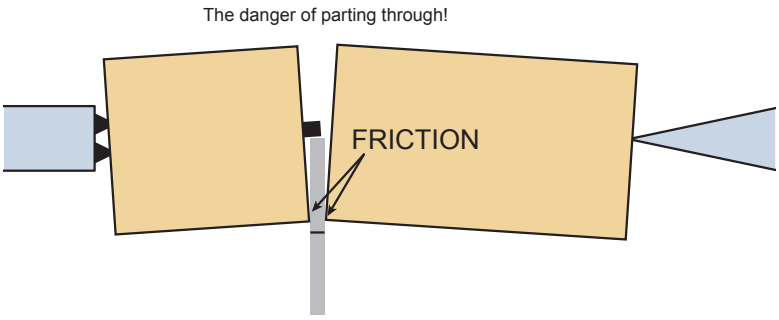


A spanner the right size with rounded ends can be handy

The danger of parting through

Occasionally we have to part-off right through a workpiece held between centres. Under no circumstances should this be done while the lathe is running. When parting off has reduced the centre of a spindle to little more than a few millimetres, the remaining stub of timber will suddenly fracture, the two halves of the workpiece will flex and bind on the shaft of the tool. Rather, the central stub should be left strong enough to support the workpiece, the lathe stopped and the remaining stub cut through by hand.

Callipers must have rounded ends



Part right through at your peril

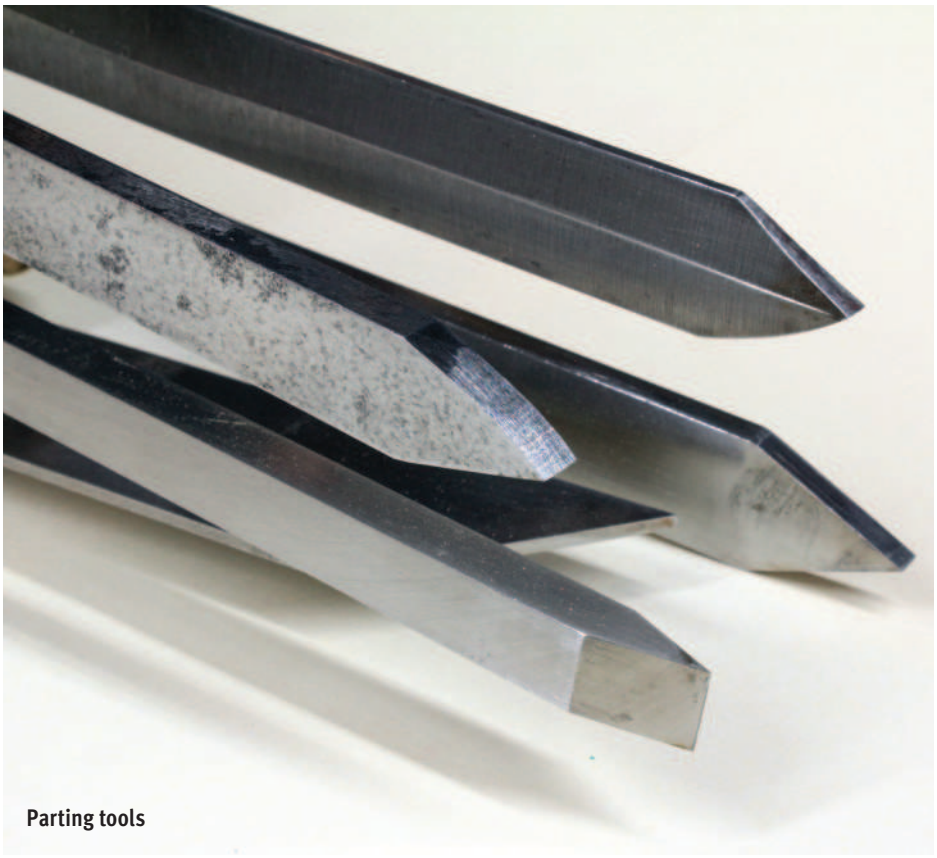
Using the parting tool's long edges as a scraper

Each time we sharpen a parting tool we create crisp, square edges along the sides of each grind. This can be used to your advantage to gently clean-up side-to-end grain on a convex surface. Many inexperienced turners encounter a problem when cutting a convex surface involving end grain, getting ring-marks on the surface, generally caused by inconsistencies in tool pressure, speed and depth of cut around the curve.

The long edges leading to the cutting point of a standard pattern parting tool can be used quite effectively to clean such a surface. To do so, set the tool perfectly upright on the toolrest and move it sideways until it touches the surface to be scraped. Now twist the tool by just a few degrees and feather-light shavings will be scraped from the surface. Gentle movement of the tool across the surface may well remove all the toolmarks and leave it clean enough to abrade successfully.

Caution: the amount to which the tool needs to be tilted is minimal, just a degree or two; excessive tilting will result in the tool being driven down onto the toolrest.

Scraping produces ultra-fine shavings



Parting tools

Conclusion

So there's more to the simple parting tool than one might at first believe. A generally very safe tool to use, but not without one or two issues that we need to be aware of. I have kept the text related to the tools themselves, but there is also a host of ancillary equipment designed for use with parting tools, especially for when it comes to sizing-cuts. Production turners who batch-turn spindles often use an arrangement of 'fingers' set parallel to the spindle and just behind it, the fingers resting against the spindle at pertinent points, then dropping free when a predetermined diameter is cut at each point. For hobby turners there are gadgets that clamp to the tool shaft, designed to guide the tool into cutting a set diameter, although I must admit that I don't like this arrangement because it forces the turner to scrape the cut when he/she might prefer to bevel rub.

I trust that you found a few facts and ideas new to you in this article. Next, we'll be looking at the spindle roughing gouge.

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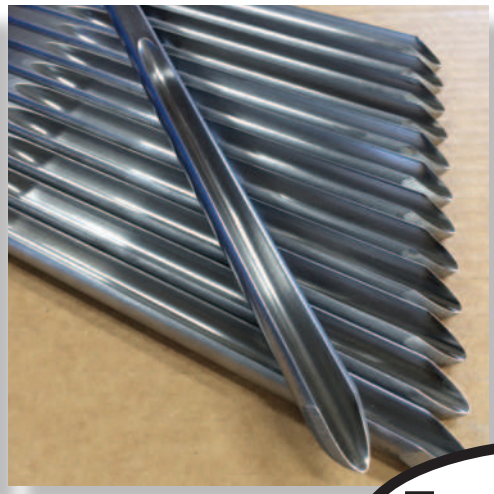

Brent English-Owner of Robust Tools and Turner's Edge

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Mountain ash lidded vessel

Andrew Potocnik on how to make this an unusual piece

PHOTOGRAPHS BY ANDREW POTOCNIK

This project has been on my list of things to do for quite some time and I just needed a reason to get the wheels in motion. I have an abundance of projects my quilting wife refers to as UFOs (unfinished objects), which can consist of trials, half-made pieces or just sketches set aside with materials that might suit the concept. They're ideas that deserve to be explored further; they just need the right prompt to bring them to the fore of my mind's working.

I assume there are many more of you out there whose minds work the same way. We're not strange, we just need to band together. I've come to accept that I must suffer from a creative aspect of my being where distraction is part of daily life.

Initial sketches were for a flat doughnut shape supported by four turned, slender, tapering feet bent to a sweeping curve with a sympathetic lid and finial which I hadn't decided on.... There was plenty of development available in this project, especially as the theme of this series of projects is based on exploring variations and potential of Australian timbers.

Mountain ash (*Eucalyptus regnans*) seemed the perfect wood for this project, but I didn't have any burl material large enough for the body of the vessel, so I needed to source timber, which eventually led me to a supplier in Tasmania. Unfortunately, the wood had only recently been harvested and was what we consider 'green', which means it has not been dried and stabilised, so I needed to speed the drying process up as a publication deadline loomed, and when there's a deadline, there's a way of speeding the process up.

Mountain ash in focus

- **Mountain ash: (*Eucalyptus regnans*)**
- **Grows:** Australia and Tasmania
- **Average dry weight:** 680kg/m3.

Mountain ash (*Eucalyptus regnans*) is a hardwood of the mountain regions of Victoria and Tasmania. It is the largest of eucalypts and is the tallest flowering plant in the world, growing to as much as 120m. Generally heights range from 55-75m, but higher individuals have been recorded in the 100m range. However, most of the taller trees have already been logged. One specimen more than 132m high was recorded in the mainland state of Victoria. Currently the largest living specimen is about 98m high, 5.2m in diameter at the ground and about 350 years old.

Mountain ash is one of the tallest forest species in the world and only exceeded by Californian redwood. However, it is known variously as mountain ash, swamp gum, or stringy gum, and also marketed in the timber industry as Tasmanian oak.

The trunk is straight and most often two-thirds or more of the tree height is free of branches, with an open crown which is relatively small. The tree's straight grain made it a popular choice of wood for structural purposes such as housing frames, flooring, and anything that required clear and consistent grain.

Even though it mostly grows in pure stands, it also grows alongside manna gum (*Eucalyptus viminalis*), shining gum (*Eucalyptus nitens*), myrtle beech (*Nothofagus cunninghamii*) and silver wattle (*Acacia dealbata*).

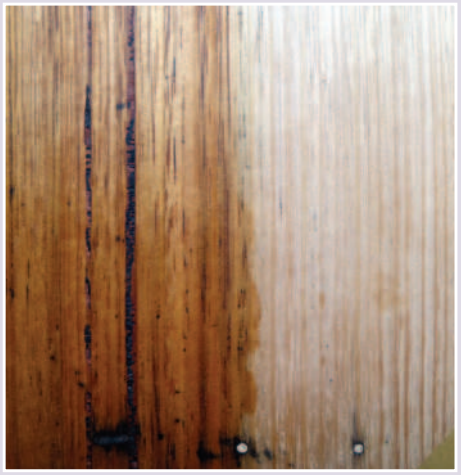
Although it is often killed by bushfire, *Eucalyptus regnans* regenerates from seed and has a lifespan of several hundred years. Mature *Eucalyptus regnans*-dominated forests have been found to store more carbon than any other forest known. *Eucalyptus regnans* is logged for its wood, and grown in plantations in New Zealand and Chile as well as Australia.

The heartwood is pale pink, but more often pale straw and sapwood not clearly differentiated. Generally straight grained but gum veins are common. This wood was relegated to low-level uses such as fence palings or garden stakes, but since the 1990s has been re-branded as 'feature-grade' material celebrating the unique grain that can be found in the wood.

The wood is relatively easy to work, good for steam bending and glues satisfactorily. It is used for furniture, joinery, plywood, cooperage, flooring, panelling and construction.

Sir Richard Attenborough presented some magnificent footage and information about this species in his 1995 programme *The Private Life of Plants*, which is worth viewing, not just for information about the tree but the complete environment it grows in.

Clear face grain which is fine, straight and even

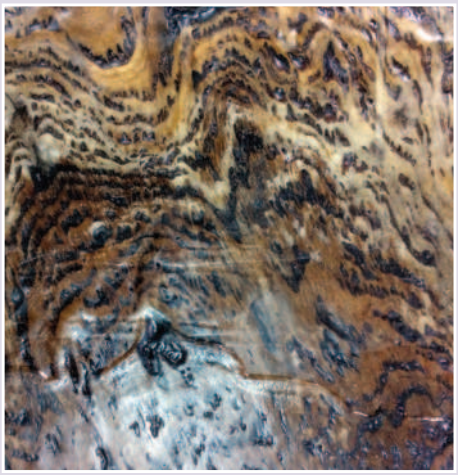


Feature-grade face grain showing insect holes and gum vein, previously considered low-grade wood and used for fence palings, structural material and garden stake

Two levels of fiddleback figuring

End grain of regrowth wood (approximately 80 years old), top, and old growth below

Side view of the waxed burl this project was made from



Face view of the same burl

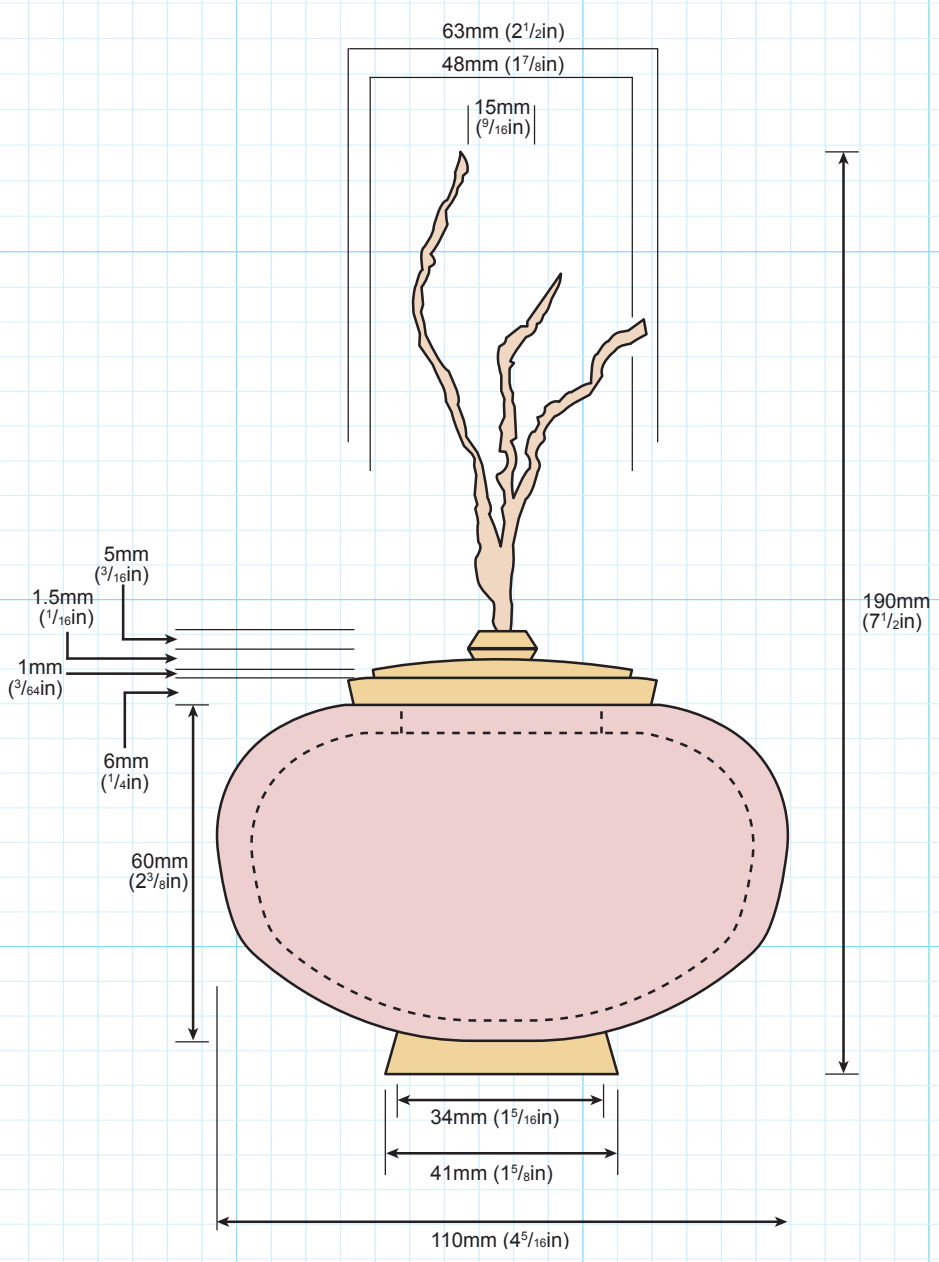
*** Samples shown sanded through to 240 grit with one half raw and the other half oiled.**

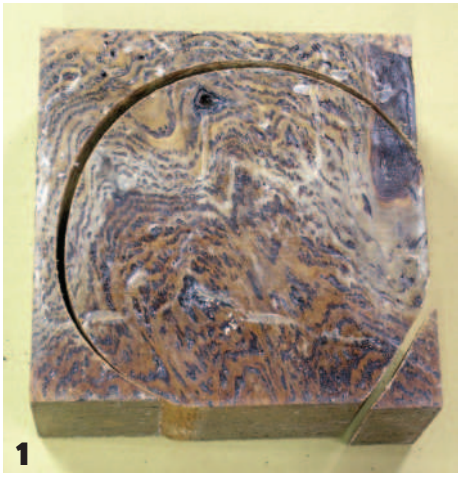
TOOLS AND MATERIALS

- Personal and respiratory protective equipment (PPE & RPE)
- Bowl gouge
- Spindle gouge
- 3mm parting tool
- Beading and parting tool
- Granny-tooth scraper
- Hollowing tools of your choice
- Chuck
- Revolving tailstock centre with ring end
- Drive spur
- Drill chuck
- Drill bit
- Fine-toothed saw
- Knife/craft knife
- Hot-melt glue gun
- Callipers

MATERIALS

- Timber of your choice for body, lid and finial
- Cyanoacrylate adhesive (CA)
- Hot-melt adhesive
- Abrasive down to 320 grit
- Ultra-fine non-woven abrasive pad
- Finishes of your choice

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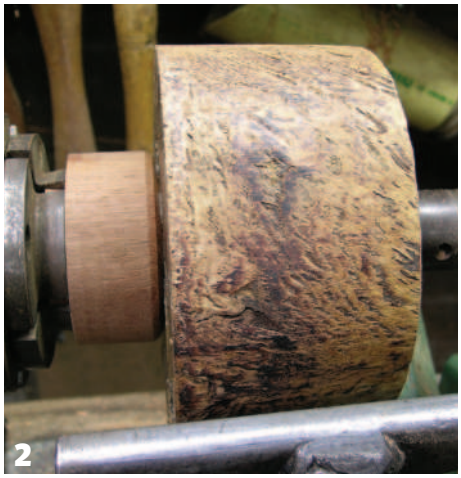
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Body form

1 The block shown here had recently been cut and was still very wet or 'green', and not your common bird's eye, but a lined gummed formation. Working within proportions I felt suited this piece, I cut a disc on the bandsaw ready to begin the project.

2 Since the wood was flat, I chose to mount the blank securely between a scrap block of wood held in a scroll chuck and the tailstock centre, so it could be roughed down to shape. You could use a drive spur, or screw chuck, instead of the friction drive used by me. Just be sure your wood is secure and turn at a lathe speed suitable to the size and condition of the blank used.

3 Since I wanted to have a stable finished form and the blank was wet, there is no option but to rough turn the piece first, leaving about 10-15% of the overall width as wall thickness. Once it's rough-shaped, set it aside until the wood is stable and then rework it to finial shape. So, if your selected timber is wet, you are likely to have to do this process too. If you are using dry wood, you may not have to, but remember, even dry wood can move after turning so a lid may not fit after a while if it is a tight fit.

Use a bowl gouge to rough shape the overall form and, using a parting tool, cut a tenon to go to the maximum size of your chuck jaws.


3

4 Now, remove the piece and mount it securely in your chuck jaws on the lathe. Using an appropriate hollowing tool to reach safely into the shape of the form you create, rough out the internal form, leaving the wood thick enough to move and then have enough wood to be able to get the shape and wall thickness you need for the finished piece. The form here has quite a pronounced undercut shoulder, so I used an offset scraper.

The method of drying I opted for involved 'zapping' it in a microwave oven, where I weighed the wood, 'zapped' it on a low heat for about four minutes, removed it from the microwave and allowed steam to evaporate. Once weighed, the process was repeated until the weight stabilised, indicating that the wood was close to dry. There was still a chance that the wood could distort a little more as turning progressed and internal stresses were released.


4

5 You can see how much the timber distorted.


5

6 Once your piece is dry, remount it on to the lathe. The easiest method is to mount it once again between centres, using a friction drive that fits in the hole, support it with the revolving tailstock centre and reshape the tenon. Once done, mount it in the chuck and trim the burl back to a circular form. I was glad that I'd allowed plenty of thickness because I hadn't expected this much distortion.

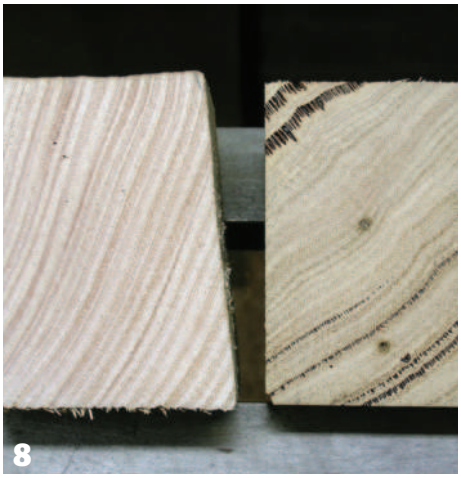

6

7 Once the outside is done, refine the inside. With a suitable tool, again, I used an offset scraper to create a uniform wall thickness of about 6mm.


7

The collar & lid

8 Now find appropriate material for a collar. I opted for variations of mountain ash but you could use a contrasting timber. The piece on the left is clear grained, but it shows how quarter-sawn material distorts as it dries. It can also suffer from internal checking due to cellular collapse. The sample on the right shows what is now marketed as feature-grade timber, which has gum veins and borer holes.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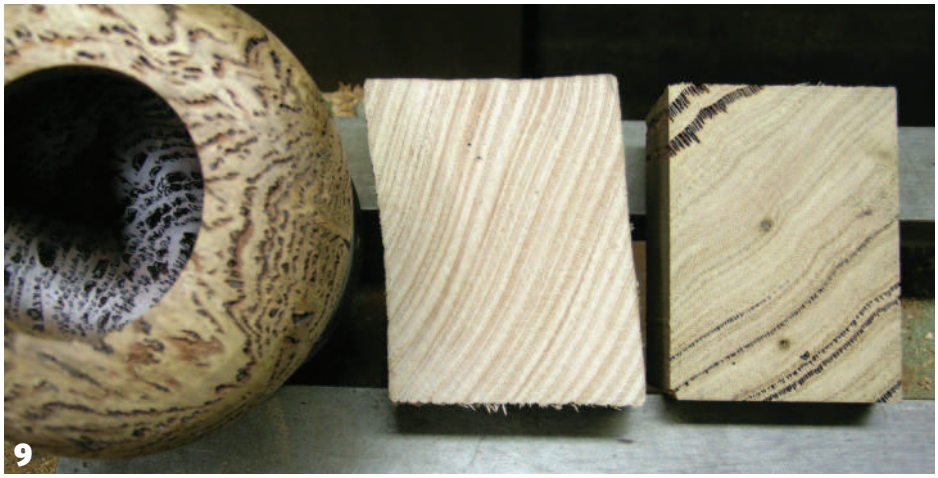
9 Here you can see colour variation between two possible collar options and the burl vessel.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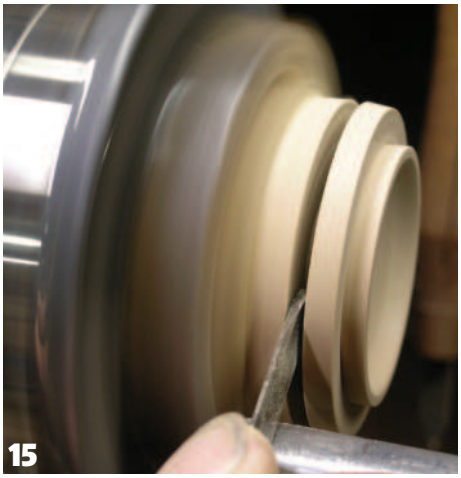
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18

10 Aiming to create harmony in colour while maintaining subtle contrasts, I settled on the feature-grade option, which would create a sympathetic contrast to the colour of the burl. To create a recess that this collar could fit into a granny-tooth scraper is ideal, but you could use a parting tool or a square-ended scraper, cutting about 2mm into the wall thickness while enabling ample surface for both components to bond.

11 Use Vernier callipers to ensure all components are turned to correct dimensions and fit snugly in preparation for gluing.

12 For the collar, remove as much interior material as possible so it can be shaped and sanded, leaving minimal work once it's glued into place.

13 Part off the collar ready for gluing, further shaping and sanding.

14 The lid is a simple drop-in type, so a tenon needs to formed first. A spindle gouge is ideal for rough shaping. It can then be reduced to a final diameter using a parting tool, followed by the inner surface being hollowed with a scraper and sanded...

15 ...and then parted free with a narrow parting tool.

16 Now remove the piece, mount it on the chuck on the tenon just cut and, once secure, cut a recess to accept an insert of timber, in this case figured fiddle-back mountain ash. To create definition between adjoining surfaces, cut a chamfer on the rim of the opening.

17 Mount your section for the insert securely between centres and turn it to size using a beading and parting tool, checking frequently with Vernier callipers to ensure you get the right size. Once correct, clamp it into place with glue, a scrap of plywood and tailstock support. Here's where it's handy to have several chucks at your disposal, so you can swap between one and another.

18 Unwanted insert material can be parted free and trimmed down but left proud of the main portion of the lid to create clear visual definition between the two components.

19 Deciding on a suitable finial left me scratching my head, until I realised something organic could top this piece. It's always important to keep an open mind, not just with shapes you create, but existing forms you can draw into your work. To create the finial I glued together three sections of palm material that is left after the fruit is released. Fitting the finial neatly to the lid needed its base to be roughly round so it could be secured into a drilled hole; hence a bit of knife work was in order.

You can, of course, turn a suitable finial of your choosing or carve one that suits your style.

20 To hold the finial, you could drill a small hole directly in the lid. However, I opted to create a small button that would accommodate the finial and raise it from the surface of the lid. For this a slightly paler piece of mountain ash was used, but use whatever material you want. It needs to be turned to the conical form, as shown in the plans, using a parting tool. Once rough shaped a 2mm-diameter hole needs to be drilled to accept the palm material. The underside needs undercutting slightly and the 4mm-wide tenon can be cut with a parting tool.

21 Drill a 4mm hole in the centre of the lid to enable a button and palm finial to be glued into the lid. I like to apply a finish to all components prior to assembly, simply as it makes the finishing process less messy and quicker in the long run, but you can apply finishes once everything is assembled.

The base

22 I considered a number of possible forms for the base, from tall, spiralled, skeletal structures to short, four-legged carriers. But what looks good on paper as a two-dimensional concept may not always work when applied to a three-dimensional form, especially when highly figured timber dominates the piece, hence I settled on a simple, tapered option made of feature-grade material. Sometimes less is more. For this select your wood, mount it in the chuck and shape the foot with a gouge to the required form. Shape and sand what you can then part it off from the waste wood.

23 Create and use a jam chuck to hold the base section so you can finish off the underside.

24 To complete the bottom of the vessel, mount a wooden friction drive that fits in the opening of the body, place the body of the vessel on to the friction drive and bring up the revolving tailstock centre for support. Remove most of the tenon on the body, leaving just a little bit. Sand the area just turned, remove the piece from the lathe and sand away the section of tenon left. Next, mount the opening of the form on to chuck jaws and hold the body lightly but securely. Then apply a thin layer of thick CA glue on to the base section to be bonded to the body and, using the quill of the tailstock centre at the base, apply gentle pressure to hold the foot to the body while the glue sets.

25 The finished item with lid off. ●


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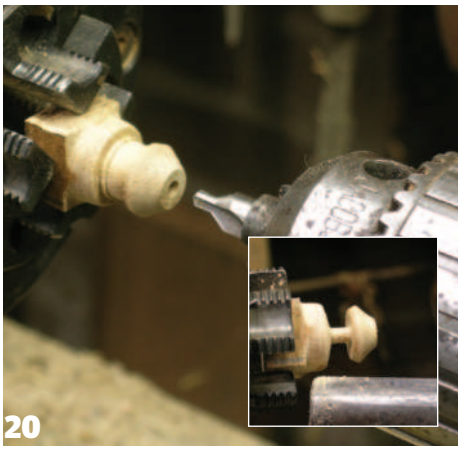
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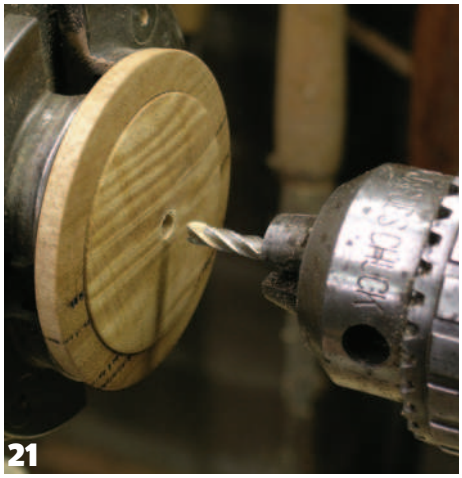
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Pencil tops

In this extract from *Turning Vintage Toys,* Chris Reid shows how to create a wonderful variant of a spinning top that will delight adults and children alike

It would be hard to imagine a toy book without a chapter or two about spinning tops. There are literally hundreds of different shapes, sizes and designs of tops and no doubt you will probably have made one at some time. You will almost certainly have been given a top of some description as a child and have spent many happy hours playing with it.

The top I have chosen for this project not only spins, but also performs a second function. By fitting a pencil, crayon, felt tip or gel pen, the top will create intricate and colourful patterns according to the pen used.

It is compelling watching the patterns appear as the top spins its way across the page. There is almost no limit to the number of different shapes and styles that can be used, in addition to the huge range of pens and pencils that can be fitted in all colours.

Another decision to make before starting this project is what you are going to use for the drawing point. A stroll round any good stationery department will show you just how many different types of media can be obtained, from standard pencils to mini gel pens and tiny felt tip pens. All of these can be used in these tops by simply modifying the design to accommodate the size of pen you want to try (see Variations).

For this project, I am going to use a standard pencil and leave the wood a natural colour with a finish of burnishing oil.

The main requirements for any top are a low centre of gravity and to be concentric; although with these tops the way the pencil is sharpened (a little off-centre for example) can result in some extraordinary patterns.

When buying coloured pens, make sure the inks are non-toxic and safe for children. Watercolours are generally more suitable.

CUTTING LIST

Body

- 1 piece 2 11/32in x 2 11/32in x 1 3/16in (60mm x 60mm x 30mm) thick

Finial (optional)

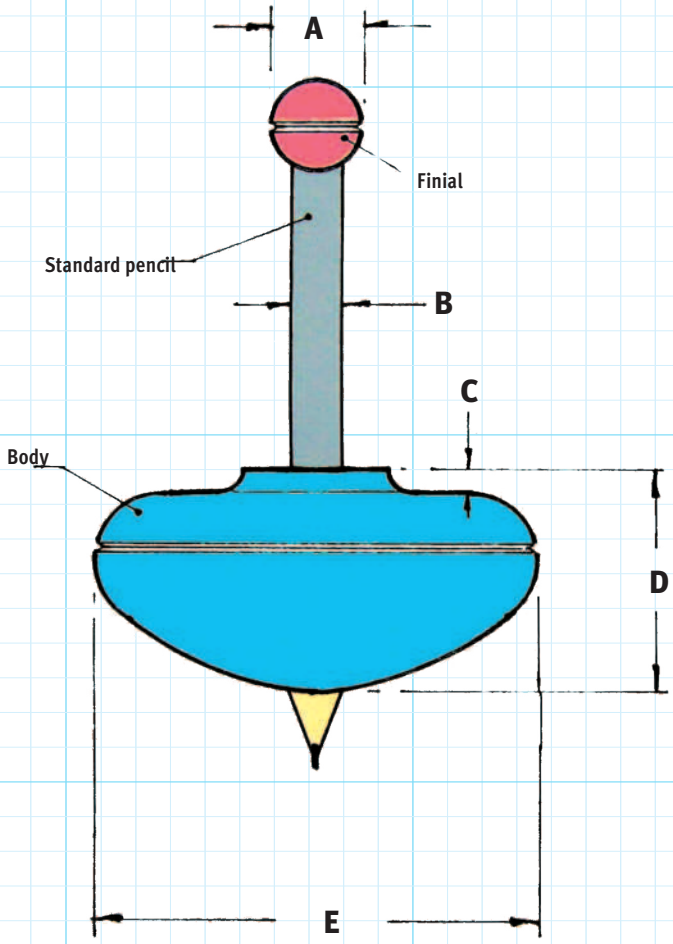
- 1 piece 19/32in x 19/32in x 19/32in (15mm x 15mm x 15mm)

The finial makes the top easier to spin for small fingers.

In addition to the above you will need a standard pencil or crayon about 4in (100mm) long.

The choice of timber is yours and will depend on the type of finish you have in mind. I have chosen to use European olive (*Olea europaea*) for three reasons: it's hard and will withstand a few knocks in use, it's heavy with a specific gravity of 0.80, it will spin well giving a good definition to the pencil line. It's also a lovely timber, both to look at and to turn. Okay that's four.

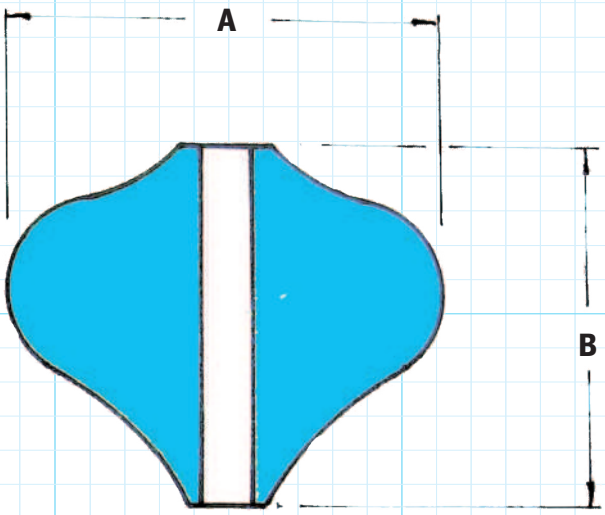
Anatomy drawing of a pencil top

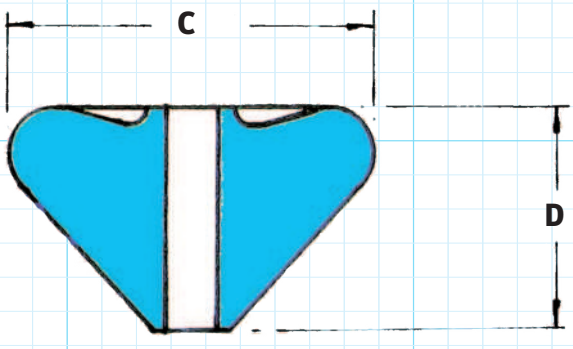


PENCIL TOPS
A 15⁄32in (12mm) diameter
B 9⁄32in (7mm) diameter approx.
C 1⁄8in (3mm)
D 13⁄16in (30mm)
E 2 9⁄32in (58mm) diameter

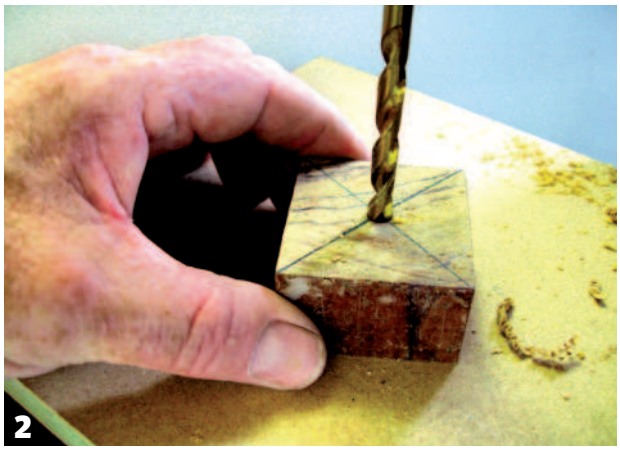
ALTERNATIVE SHAPES
A 2 11⁄32in (60mm) diameter
B 1 3⁄8in (35mm)
C 1 31⁄32in (50mm) diameter
D 13⁄16in (30mm)

ALTERNATIVE SHAPES





This shape is very easy for younger children to use and produces the biggest circles



Body

1 Mark the diagonals on just one face of the blank and make a detent in the centre.

2 Scribe a 2 11/32in (60mm) diameter circle around the centre point to act as a guide when cutting off the corners on the band saw. Measure the diameter of the pencil. If it is hexagonal, measure across the corners and then drill a hole through the blank. The pencil needs to be a fairly tight fit, but not so tight that it is difficult to move. Try drilling a test piece first to check the fit. A smaller hole rather than one too large is preferable, as this can be eased with a file or sandpaper. If you do drill a hole too big, wrap some tape around the pencil to compensate. Cut off the corners.

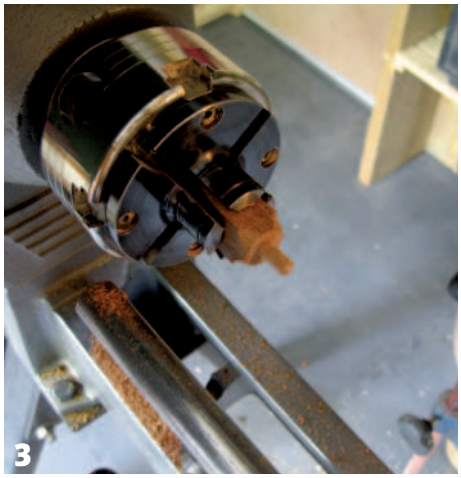
3 Mount a piece of scrap timber into the jaws of a small chuck and turn a spigot to provide a tight fit in the hole you have just drilled. The spigot should be approximately 19/32in (15mm) long. This little jig will be used for mounting both the body and the finial (if used), so leave it in place until all the turning is completed.

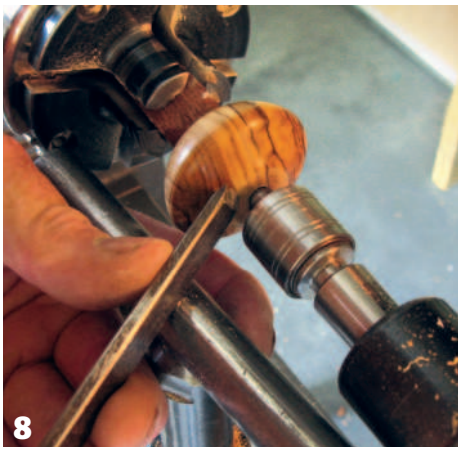
4 Mount the body blank onto the spigot and bring up the tailstock centre for support. With a very sharp spindle roughing gouge, turn the blank down to a cylinder, just removing any flat surfaces. A light touch and a sharp tool are needed.

5 Square up the ends and mark a line 25/32in (20mm) from the tailstock end.

6 Form a radius or cone shape from the line down to the hole (see anatomy drawing).

7 Turn the top of the profile and make a decorative feature with a skew or three point tool around the waist (optional).

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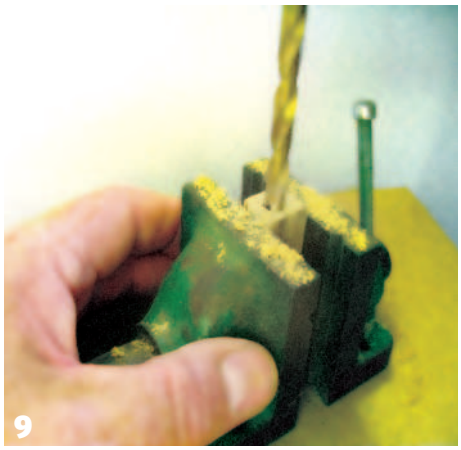
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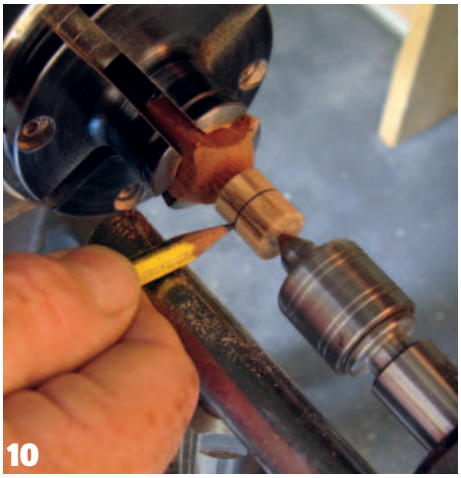
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8 Sand as necessary and reverse the blank on the spigot to finish the top surface with the long point of a skew. Keep the left side of the bevel parallel with the surface being cut and arc the skew down toward the centre line. Apply a coat of oil and leave it to soak for about 5–10 minutes. When the oil has lost its stickiness, burnish using a kitchen paper towel with the lathe running.

Finial

9 Mark the diagonals on one end of the cube and hold the piece in a drill table vice. Drill a hole the same size as drilled in the body blank x 13⁄32in (10mm) deep. Mount the blank onto the spigot and bring up the tailstock centre for support. Turn down to a cylinder and square up the ends.

10 & 11 Mark a line in the centre and, using a spindle gouge, form the radius ends. Finish to match the body.

Assembly

12 Fit the pencil into the body, do not glue on the finial yet. Ease the diameter of the hole with a round file if necessary to allow the pencil to fit tightly but still be adjusted or removed as required.

Tuning

Try spinning the top by flicking the pencil between your thumb and middle finger onto a clean sheet of paper. The top should be just above the surface when released. Adjust the height of the top on the pencil to achieve different patterns. If the top will not spin or is top heavy, cut a short length off the end on the pencil and try again. Repeat this procedure until the top is well balanced. If you are using the finial, remove more of the pencil's length to compensate for the weight, then glue the finial in place.

Variations

An assortment of different shapes and styles can produce a wide variety of patterns, as shown in the photographs. You can also turn a hardwood spindle to replace the pencil and use it as an ordinary top. ●

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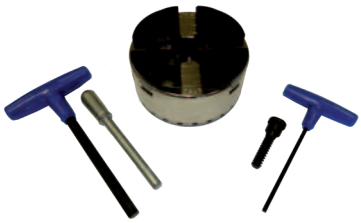

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Community news

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

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

2020 SHOWS AND EVENTS

The Midlands Woodworking Show
When: 27-28 March 2020
Where: Newark Showground, Lincoln Rd, Winthorpe, Newark, NG24 2NY
Web: www.nelton.co.uk

Turnfest
When: 27-29 March 2020
Where: Seaworld Resort & Water Park, Main Beach, Queensland, Australia
Web: www.turnfest.com.au

Totally Turning
When: 28-29 March 2020
Where: Saratoga Springs City Centre, 522 Broadway, Saratoga Springs, NY 12866, US
Web: woodworker.org/about-totally-turning

Snainton Woodworking Open Day
When: 4 April 2020
Where: Bakers Lane, Snainton, YO13 9BG
Web: www.snaintonwoodworking.com

Turners Retreat Open Day
When: 18 April 2020
Where: Unit 2 Faraday Close, Harworth, Doncaster, DN11 8RU
Web: www.turners-retreat.co.uk

Les Forgaxes Woodworking Festival
When: 24-26 April 2020
Where: Pravia, Asturias, Spain
Web: www.forgaxes.com
www.tornyfusta.com

Makers Central
When: 2-3 May 2020
Where: North Ave, Marston Green, Birmingham B40 1NT
Web: www.makerscentral.co.uk

Woodworks@Daventry
When: 15-16 May 2020
Where: Daventry Leisure Centre, Lodge Road, Daventry, NN11 4FP
Web: www.tudor-rose-turners.co.uk

AAW Symposium 2020
When: 4-7 June 2020
Where: Kentucky Exposition Center, 937 Phillips Lane, Louisville, KY 40209, USA
Web: www.woodturner.org

Doncaster Woodturning club 2020 Sue & Graham Harker all day demo
When: 6 June 2020
Where: Finningley Village Hall Finningley, Doncaster, DN9 3DA
Email: plumbob67@talktalk.net

Handmade Oxford
When: 25-28 June 2020
Where: Waterperry Gardens, Waterperry, Oxford, OX33 1LA
Web: www.handmadeinbritain.co.uk

Kent Woofturners Exhibition & sale
When: 27 June-5 July 2020
Where: The North Barn Aylesford Priory Kent, ME12 7NX
Web: www.kentwoodturners.com

Saskatchewan Woodturners Symposium 2020
When: 17-19 July 2020
Where: Regina Trades and Skills Centre, 1275 Albert St, Regina, SK, S4R 2R4, Canada
Contact: James (Bryan) Milne
Email: jbmilne@accesscomm.ca

Turn-On! Chicago 2020
When: 24-26 July 2020
Where: Crowne Plaza Chicago-Northbrook, 2875 North Milwaukee Avenue, Northbrook, Illinois 60062, US
Web: turnonchicago.com

Woodturning Weekender 2020
When: 1-2 August 2020
Where: Orchards Event Venue, New Road, East Malling, Kent, ME19 6BJ
Web: www.chestnutproducts.co.uk

SWAT 2020
When: 28-30 August 2020
Where: Waco Convention Centre, 100 Washington Ave, Waco, Texas, USA
Web: www.swaturners.org

Yandles Woodworking Show
When: 11-12 September 2020
Where: Hurst, Martock, TA12 6JU
Web: www.yandles.co.uk

WoodFest at Hatfield Forest
When: 4-6 September 2020
Where: Bush End Road, Takeley, Bishop's Stortford, Essex, CM22 6NE
Web: www.nationaltrust.org.uk

AWGB Seminar
When: 9-11 October 2020
Where: Yarnfield Training and Conference Centre, Yarnfield, Stone, ST15 0NL
Web: www.awgb.co.uk

Wizardry in Wood
When: 14-17 October 2020
Where: Carpenters' Hall, 1 Throgmorton Ave, London, EC2N 2JJ
Web: www.turnersco.com/turning/wiw

Virginia Woodturning Symposium
When: 7-8 November 2020
Where: Expoland, 277 Expo Rd, Fishersville, VA 22939, US
Web: www.virginiawoodturners.com

North of England Woodworking Show
When: 13-15 November 2020
Where: Gear Yorkshire Showground, Harrogate, HG2 8QZ
Web: www.skpromotions.co.uk

DIARY

An extraordinary journey

Lisa Chemerika talks to Mark Baker about her work and inspirations

My grandfather had an old pipe lathe in a little coal-heated shop at the farm we all lived on in rural Manitoba, Canada. He was a very patient man and allowed me to use the lathe and turn spindles. He made whatever tools he thought we needed on a coal-fired forge, out of old files and other scrap metal. I don't have anything I made with him so I think it probably fed the forge... But it also fed a life-long enjoyment of working with wood and turning. When faced with what I wanted to do with my life I picked carpentry and went to college to learn.

This led to many jobs over the past 40 years. First working in a cabinet shop, then working in my own shop, getting my journeyman's papers, working with at-risk students in a school carpentry shop, teaching building and fire code courses, and finally as a building inspector.

Through all my life I have always had a shop of my own and have collected hand and power tools as I needed them for the next project my brain wrapped its way around. I have a long commute to work and I use that time to think about what I want to make in my shop on the weekends. If I see something I like – it could be the lines of an object, the shape, the colour, anything – I think about how to incorporate it into some woodwork. I love big voluptuous curves, everything I make has them, even flat case work. Art Nouveau is a favourite look for me.

PHOTOGRAPHS BY LISA CHEMERIKA

Cherry (*Prunus* spp.) scrollsaw shell 300mm

Workshop & changes

A few years ago my husband and I built a 14m x 14m pole building. We divided it so that one side is my wood shop and the other side is my husband's garage. My side has a raised wooden floor that I hope someday I can get all my dust collector pipes under. It is white-painted drywall with lots of windows and well insulated for our -40°C days in the winter. Usually my husband and I don't share tools as it is hard enough for me to find the tool I just had in my hand without wondering if it is in my husband's shop. We do share some large equipment bought for each other on holidays and anniversaries.

There have been so many changes in woodworking and turning over the years. The styles that were popular are now vintage. New, exciting work pushes what we understand our hands and machines can achieve. I can work much faster and more efficiently now, and I also have a much bigger specific tool selection than I ever did before. Not that you need the biggest and best, you just need ambition and to be willing to try out your ideas.

I never stop learning, and that keeps me interested and taking on new challenges. I do not consider myself a woodturner. I have no specific training and there is no club nearby. I am not as good as I would like to be with a lot of lathe tools, but I do what I can do and try not to make any more holes in the ceiling or walls – or me.

Learning

I am mechanically minded thanks to coming from a whole family of tradespeople, so usually I am good with equipment and tools. It's just the damn gouges that are still not talking to me. I would love to get them listening to me and making cleaner cuts. I am not intimidated, though, by the lathe. I look at every piece of wood to see if it has possibilities on the lathe. I have turned a lot of things that are not the usual clear wood blanks; those have little interest to me unless I am going to carve the piece later. I like wild grains and colours and bark and knots in my turnings. Nothing I make is going to be perfect, so starting

Curly cherry corner cupboard 2100mm x 500mm

with very imperfect wood is a passion. My favourite thing to do is to think of an idea that I have not seen before and prove to myself I can do it, and then show others.

I think the biggest thing I have learned is that some careful thought and planning makes the best work. I think through a project from mounting it to finishing it, so that I have no surprises, or so that I know the best way to deal with surprises. For projects that need special mounting requirements I try them out first and make sure they are safe. The biggest aid to my turned pieces was a variable-speed lathe that goes down to zero rpm. I am always mounting wonky wood so the variable speed keeps me safe, and somewhat in control. I also like big pieces so having a lathe that has a large swing was also a big help.

Before I had my present lathe I was turning outboard on an old general with an outboard toolrest my father built for me. I was turning a 600mm wide, 50mm thick, bloodwood (*Brosimum rubescens*) saueracker shell. Every time I shut off the lathe, if I did not stop the shell from turning the faceplate would turn off the lathe and go rolling across the floor. That noise brought my husband running in from his garage to see if I am okay.. .and I started wearing better footwear and buying faceplates with locking screws on them.

Listen to your gut. If you are uneasy about what you are attempting to do, listen, it is usually correct in its assessment. Sometimes you have to stop and reassess what you are trying to achieve and reassess the safest and easiest way to do it.

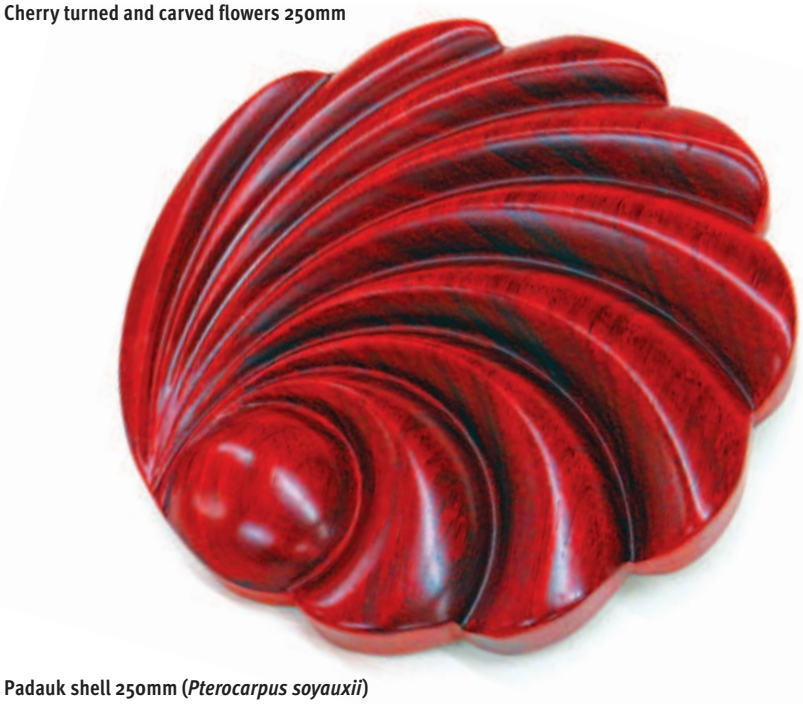
Maximising usage of workshop and sharing

Thinking about what tools you have and the best use of them can save a lot of time and effort. Making holes the same size as your drum sander, hogging out material with a chainsaw to make your blank more balanced, having the right tools for any job. These things all make for a better experience. If I can ever find out the secret to keeping shavings out of my underwear, I will be very happy.

I love teaching people in my shop on my equipment. I am sorry that it seems like the majority of woodturners I see are grey hairs, like me. Young people love a chance to get on a piece of equipment such as a lathe and within a short time have achieved something. We all love the almost instant gratification that can be obtained by woodturning. I know more experienced turners push the limits of their project far beyond the lathe but we

Diamond willow (*Salix* spp.) and barn board box. 300 x 300 x 200mm

Cherry turned and carved flowers 250mm



Padauk shell 250mm (*Pterocarpus soyauxii*)

Turned crotch of chokecherry (*Prunus virginiana*) 500mm x 300mm

Turned and carved frilly bowls 250mm

all started with spindles and dog dishes. I would love to see community access to shop equipment, for anyone to learn who wants to. Giving some else the confidence to try it is a gift.

A WONDERFUL COMMUNITY OF PEOPLE

The internet and Facebook have opened up the world to woodturners in every country. No longer is there any great distance to sharing our ideas and skills. I signed up to be a mentor on a woodturning site and met a young Tunisian man who wanted to turn so badly he had made himself a lathe and tools and was turning out lovely work. In spite of our lack of a common spoken language, we became very good friends and I went to visit him and his wife in Tunisia last year. I think that is what I love most about woodworking and turning. The people you meet from all over the world are so kind and enthusiastic and generous with their knowledge. Playing off of each other's ideas, with due credit of course, and elevating our skills is everyone's goal. We are like one big family who have just not met yet. Our common love of woodworking unites us even when we are alone in our shops.

Lisa can be contacted via Facebook: www.facebook.com/lisa.chemerika

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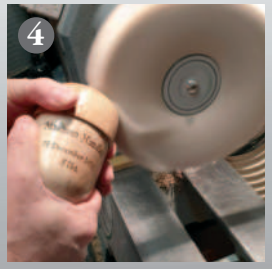

4 Use one of our many toy safe finishes to polish the rattle. We used the Buffing Wheel System, with Microcrystalline Wax buffed to a bright shine on the C Wheel. Microcrystalline Wax is tough and hardwearing, and a good choice for an item like this.

5 The finished Acorn Rattle, ready to be boxed up and presented to the proud parents!

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sharing expertise

Orbital arc box part 2

In this issue, Jason Breach adds the finishing touches to his box

Having made the main body of the box, now for all the fiddly components. I like these additions to contrast with the main body. I am lucky to have some old ebony (*Diospyros* spp.) that I have treasured for many years. Its dark colour creates a good contrast with most timbers, alternatively, it is possible to stain or use an ebonising lacquer to achieve a similar effect on timbers such as sycamore (*Acer pseudoplatanus*).

As always for this type of work the timber needs to be dry. This, however, can be problematic with timbers such as ebony or African blackwood (*Dalbergia melanoxylon*), as they do not dry easily.

I can remember with the first box that I made like this getting everything finished with the lids fitted finger-twist tight, which was very pleasing, but two days later the lid would fall off. What happened? I checked the lid size on the scrap block chuck which held these on the lathe. The lids still fitted beautifully, so the only other part that could be the problem was that the blackwood rings had shrunk. It was timber I have had for more than 15 years as a 50mm square. So, to get over this issue, I now part-turn these and set them a side for a few days to settle down.

I also I don't like wasting timber, so the wood to make the lid rings is turned to a cylinder with spigot cut on both ends, and with a plug cutter drill bit held in a tailstock drill chuck, I am able to cut, by reversing the timber part-way through the cutting process, a hollow tube and also a 25mm-diameter length of usable timber. The dust from this process is also kept as the filler material for the boxes with inlaid rings; this allows these to dry and saves the material.

With any drilling like this it is important to lower the lathe speed to about 300-500 rpm, this will reduce the heat build-up which can split the damp timber; the lower speed puts you in control and allows time for you to react. Extraction is important as this will cause a little bit of smoke and, of course, dust.

When I started making the lids for this style of box, I can remember thinking how tricky it was to cut the blocks out, mount them on the lathe and turn them down to a cylinder to hold in the chuck. The size of what was being cut created the issue. So I wondered how I could make it easier. A pre-cut cylinder blank to load straight into the chuck would be great, but how?

I had a number of bi-metal hole saws, and wondered if these could be used. The arbor these run on were no use as they wobbled, but holding the holesaw in the chuck jaws worked well. I then made up an MDF disc to use on a tailstock centre – this had a location on the disc to fit into the toolrest to stop the MDF table rotating in the tailstock when drilling.

Securing the work with clamps allowed the lid material to be accurately cut out to a round cylinder that would load straight into a set of chuck jaws. The speed and use of extractor apply here as well. The use of the hole saws for this project is optional. They save me time and make a better use of the valuable materials one has. The blanks can be cut out and turned between centres to then mount in the chuck.

The lid fitting rings and lids need to be turned accurately, using callipers and a Vernier to measure makes this easier, the internal depth of the lids need to be the same. The fitting of the lids takes time. This is different in that the lids are being made to fit the lid fitting spigot on the boxes we have already made.

When I have been asked about the name, orbital arc, I said the box was on the lathe and went around. It was orbital, arc because there are two sides, two rings, two lids, and in some boxes there are two boxes. This simple idea has grown as a range of style over years. Two boxes have won competitions, and have been featured in different magazines around the globe. It would be nice to think you will enjoy making this. The techniques used and the shape can be adapted to various projects. I still enjoy the challenge of making these and looking at ways to develop the idea.

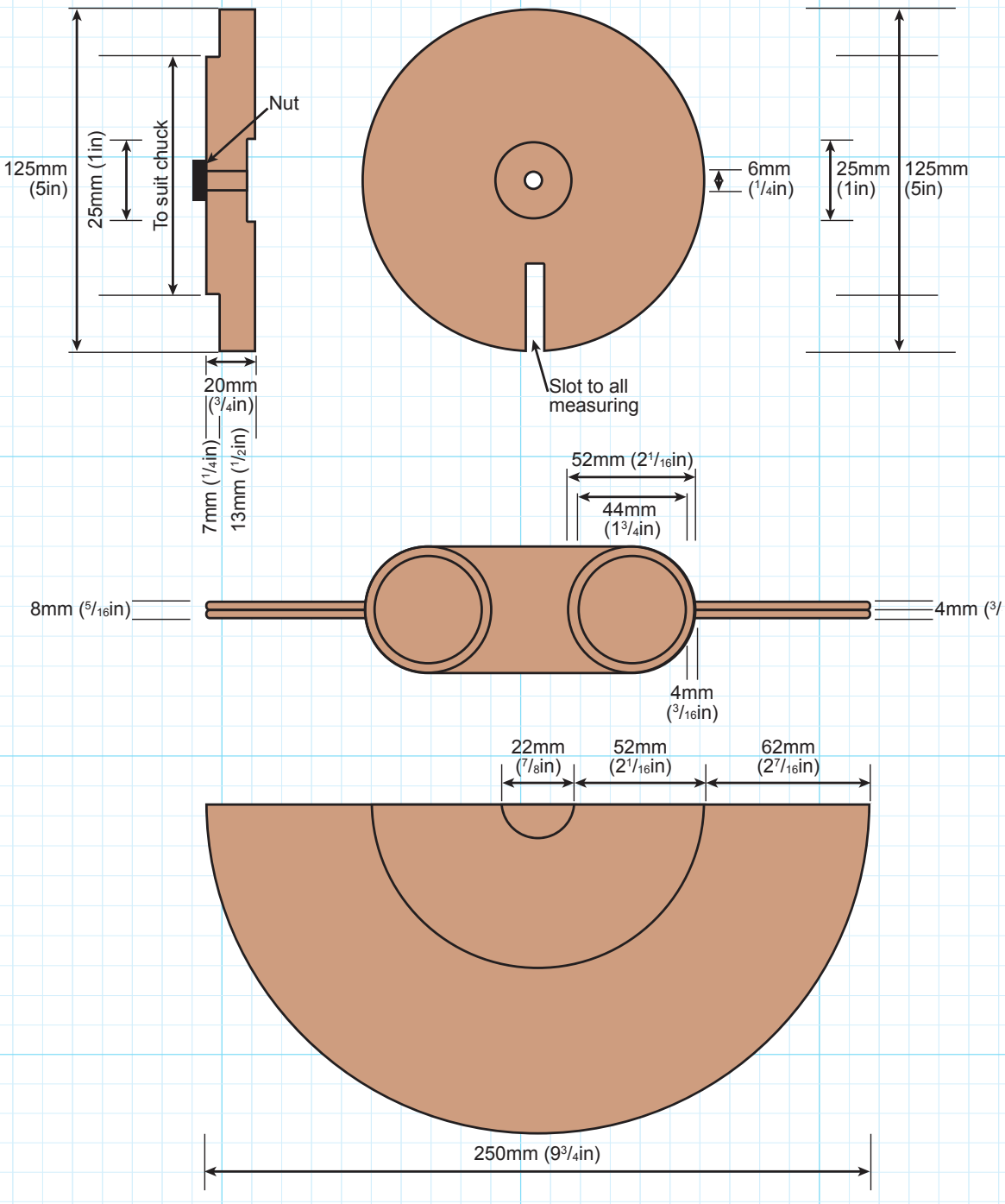
PHOTOGRAPHS BY STEPHANIE SNOOKS

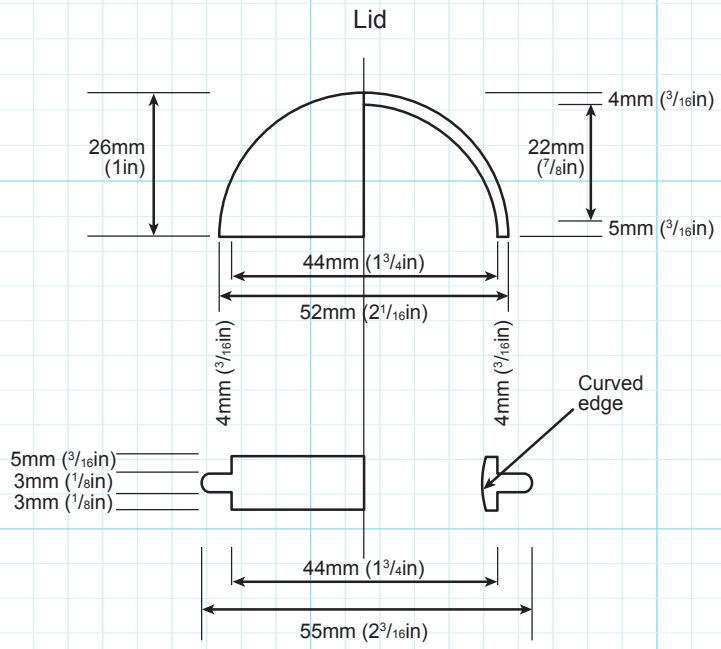
TOOLS & MATERIALS

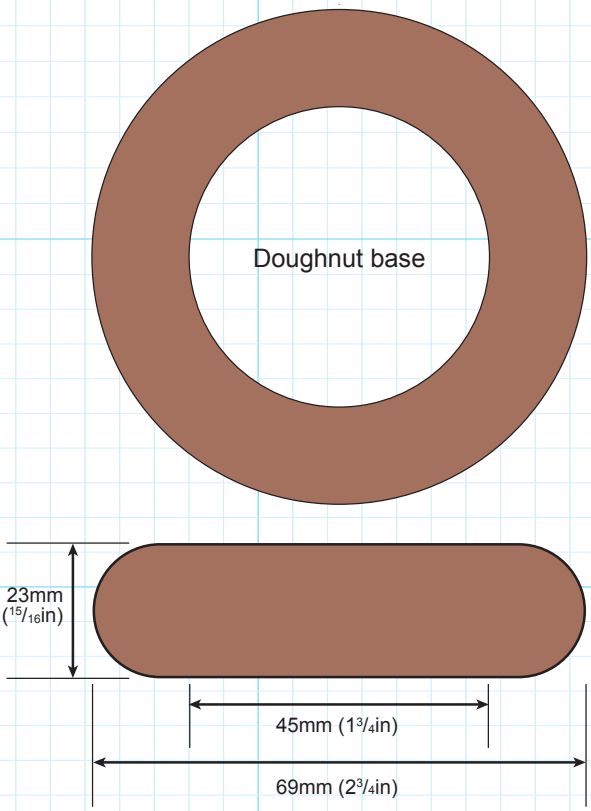
- Personal & respiratory protective equipment (PPE & RPE)
- 6mm spindle gouge
- 6mm bowl gouge
- NR round-nose scraper
- 12mm skew chisel
- 10mm beading tool
- 3mm fluted parting tool
- 2mm parting tool
- Callipers, Vernier & depth gauge
- Chuck and jaws
- Button jaws
- Tailstock drill chuck
- Rotary carving unit & assorted burrs
- Half round and round 4mm file
- 25mm plug cutter for lid fitting rings
- 57mm bi-metal holesaw lids
- 63mm bi-metal holesaw base

MATERIALS

- Lids 2 off 50 x 50 x 30mm
- Lid fitting rings 55mm sq x 50mm long
- Doughnut base 115mm dia x 25mm thick
- Scrap blocks to make, collar for rotary tool, and a chuck collar to hold lids
- Abrasive 150-400 grit
- Glue and finishes







Refinement of main body

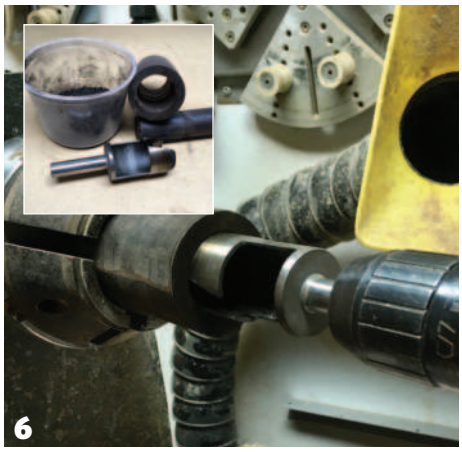
1 It is very unlikely that when the two halves have been cut and glued together the top face is dead level. To level this off use a sanding board. It might appear slow, but it allows you to control what is happening,

2 To remove the material in the centre, use a rotary carving unit fitted with a straight fine burr. This is very effective. Half-round files work well too but are slower. Start with a pencil to draw on the wall thickness and remember to follow the curve's shape. Use fingers to gauge the thickness, but of course only when the rotary carving unit is turned off.

3 Holding the box can be fiddly, so I use the lathe as a vice. To do this I made up two simple wooden jaws with foam mating on the face, one loads into the chuck and the other uses a small faceplate to screw onto the thread on my revolving tailstock centre. Note the groove running along the join. I will show you what that is and why it is there in step 5.

4 Having done the bulk removable with the rotary burr, refine the shape with a half-round file, or use a file, then refine this again with a sanding stick, blending the shape together to complete the two circles.
The sanding stick is made of a dowel with self-adhesive hook and loop taped on the rod to hold the hook and loop abrasive in place.


5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5 To extend the two beads on the outer extended edge across the flat face I use a V-shaped diamond burr. To maintain the cutting position turn a simple collar to fit onto the end of the rotary headpiece – this helps steady and control the cut. Files and abrasive follow this to clean up.

Lid collars

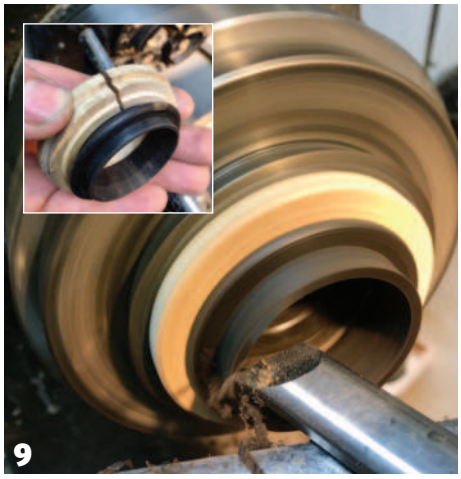
6 To create the lid fitting rings, drill out the selected blank with a suitable cutter. It is important to lower the lathe speed to reduce the heat generated. Also have good extraction. Drill halfway into the blank and then reverse the work holding in the chuck and drill from the other end until you meet in the middle and the core is loose.


7


8

7 Now, using a beading tool, cut a straight lip to fit inside the hollow tube. This needs to be about 4mm long and fit firmly. Then, using a bead forming tool, create the decorative bead, which is the visual break between the lids and the main body of the box. These beads need to be the same.

8 On the chuck side of the bead, use the 9mm beading tool to cut a parallel straight section of about 16mm long – this is cut to the same diameter as the diameter of the lip that fits inside the tube. Cut the decorative bead on the chuck side of this and then the lip to fit into the tube, sand, then part the 16mm lengths into two equal parts using the 2mm parting tool, this creates the two rings of the same size.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10

9 To allow for any adjustments to be made to the rings without marking them, make a simple waste-wood collar to fit into the chuck jaws, cut a recess that the lip of the lid rings fits into. With a saw, cut a groove in one point of this collar, this allows the collar to compress when held in the main chuck jaws.

Lid covers

10 To cut out the lid blanks, I use a bi-metal holesaw held in the lathe chuck, and a table to fit in a drill chuck in the tailstock. The MDF board on the tailstock also locates on the toolrest to stop any rotation. the work is clamped in place and the blanks are cut out.


11


12

11 Turn the insides of the lids in the same way as all the other lids, initial depth hole, bulk removal of waste with a bowl gouge, then refine with a round nose scraper, sand and then cut the recess to fit on to the lid fitting rings. Care needs to be taken with the fitting. Sand and polish.

12 To turn the outer profile of the lids, hold a scrap block of wood in the chuck and use a beading and parting tool to cut a spigot that fits the size of the recess cut inside the lids. These need to fit firmly to allow the lids to be shaped safely.

13 Shape the exterior of the lids using the bowl gouge. The height of these is half the diameter; the shape should mirror the interior. Lightly refine the shape until you have the required form.

14 Making one is easy, making two the same size and shape is a little more problematic. It is important to put these side by side to check the height and then the diameter. When you are happy that the match, sand to a fine finish.

Base

15 To hold the ebony I use a set of button jaws with a set of metal stackers to grip around the edge of the blank. This is done for speed but you could do this with a screw chuck.

16 By holding in this way I can use the bi-metal holesaw held in a drillchuck in the tailstock to cut the centre out of the blank saving the material. The drilling is done at low speed halfway into the blank and the blank is then reversed in the button jaws so you do not drill right through into the button jaws themselves.

17 Hold this ring by expanding a set of jaws into the central hole – this allows the shaping of three quarters of the overall shape. Use a bowl gouge to remove the bulk and then refine with a scraper. Sand at this stage.

18 Use the button jaws to grip onto the curve shaped edge, the rubber buttons won't mark the timber. Have the last unshaped edge face pointing outwards and then refine the shape to blend into the overall doughnut shape. Once shaped, sand through the grades.

19 To cut the required slot it is possible to use the button jaws as a vice. This allows the doughnut to be held easily to enable a slot to be cut into the edge to accept and grip the edge of the box.

20 Carefully, using a round file, create a slot to accept the box. This needs doing with care. I line the slot with leather so that it grips but will not mark the edge of the box. This slot allows the box to be held at different angles.

21 With the slot cut and tested the leather can be glued into place. To hold this in place and to provide pressure on the leather until the glue has dried, cut a small block of timber and secure with a clamp until cured.

22 Trim the leather using a sharp carving tool. Keep the small block in place as this provides something to cut against and also improves the safety when doing this.

23 Before gluing the lid fitting rings into the main body of the box, check things over, clean up any issues, and then glue the lid holding rings into place. I use an elastic band and three small strips of timber to hold in place.

24 Polish the box to a finish. You can use whatever you like; I used a polishing mop set up. The carnauba wax I use produces a hard-wearing glossy finish. For the interior I use a soft wax.

25 The finished box. ●

Needle cases

Ian Woodford shows how to create a delightful home accessory

I have been making needle cases for a few years and they are easy to turn and sell well at craft events. A friend asked to make one and, after searching the web for ideas, I settled on one which I tweaked a little so that it would have, in my opinion, more appeal. Most are bought by women, but at Christmas men also buy them as stocking fillers.

The turning is straightforward and requires only a few tools and small, close-grained spindle blanks. I tend to use nicely figured yew, laburnum, walnut and olive wood. The blank is 145mm in length by 30mm in diameter. The drilled hole down the middle of the main case needs to be 70-75mm in length as most needles are 65mm long. The cap is a push fit and the only part that needs accurate turning.

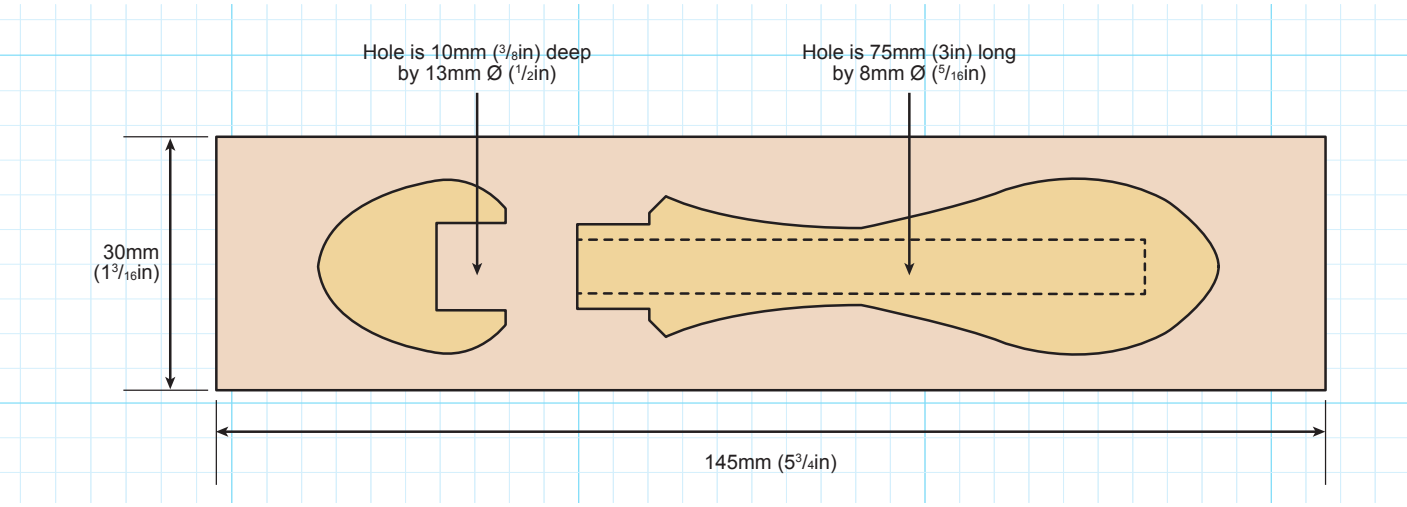
In the diagram I have purposely not given outline dimensions as you may need to turn your own style. The most important part is the size of the hole.

TOOLS AND MATERIALS

- Personal & respiratory protective equipment (PPE & RPE)
- Spindle roughing gouge
- Spindle gouge.
- Parting & beading tool
- Chuck
- Revolving tailstock centre
- Tailstock drill chuck
- 8 & 13 drill bits

MATERIALS

- Wood blanks 145mm long by 30mm diameter
- Abrasives down to 400 grit
- Sealer
- Lacquer
- Carnauba wax

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PHOTOGRAPHS BY IAN WOODFORD

1 This shows a yew blank held in a chuck, turned to round and marked where it has to be parted off, leaving a section in the chuck that will make the cap.

2 The end has been faced off and a 13mm hole is being drilled to a depth of 10mm for the main case to fit in. Drill this at a slow speed to avoid scorching.

3 Shaping of the end cap can now be started. Don't shape down too far toward the end as this will be done when the cap is in place on the main case body. Sand the turned area down to 400 grit and remove from the chuck.

4 The main case blank is held as far in the chuck as possible so that it is really secure and won't vibrate at all. Drill an 8mm hole down the centre, 70-75mm deep, then turn a 10mm-wide spigot at the cap end down to a fraction more than 13mm in diameter. Test the cap for the fit and adjust the spigot diameter as necessary so the cap is nice and tight. Finish shaping the cap, sand, seal then finish with lacquer.

5 The case blank can now be repositioned and held toward the end and with tailstock support the main shaping can be undertaken. Shape down as far as possible then part off from the blank.

6 Place some waste wood in the chuck and turn a long dowel 8mm in diameter so the case can be reverse-held on the dowel. Make this a firm fit so the end of the case can be finish turned. Sand and seal then finish with spray lacquer.

The turning is now complete. When the lacquer is stabilised buff with carnauba wax. You can, of course, apply a wax coating by safety cloth.

The cap is still a tight fit and I leave this for a few days to allow any slight wood movement to take place. To make a good but firm fit rub 240 grit paper over the case spigot until you get the required fit. The lid should be fairly easy to remove but firm enough not to fall off. The needle case is now finished and ready for use. ●

NOTE: The main images show the needle case turned in this article, the other is a group of yew, olive and laburnum. I sometimes use a small inset bead and this can be seen in the top left needle case.

Kurt's clinic

Kurt Hertzog gives some answers to readers' questions

Thread chasing

Question: I am interested in adding threads to my lidded boxes. I've seen high-priced threading tools to mount to my lathe as well as hand tools. They all seem to require a lot of special skills. What species are recommended for threading? What is the best way I can get started?

PHOTOGRAPHS BY KURT HERTZOG

Hand chasing threads is an easy skill to master with a bit of practice. Like the skew, there are only a couple of rules

Answer: Putting threads into the wood itself does much better in certain species of wood. In my experience, harder, denser woods such as African blackwood or boxwood are better for durable threading results. Other species work and most can be made to work with stiffening through chemical means. If you insert threads, then your parent species is important only in the manner it receives and keeps your inserted thread mechanisms. An overview of threading turnings can be found in *WT262* – January 2014. If you are in it for the long haul, I suggest you learn to hand chase threads. Not the easiest method to begin with but I believe it is the most versatile for the long term. It is the most modest investment and the flexibility of your results is tremendous. Skills needed to hand chase threads can be developed with some practice and, once learned, can be called on as needed during your turning career. Some warm-up and practice is helpful if you've let the skills go dormant but I believe it is a valuable skill you can add to your turning repertoire. There are a few companies that make a variety of hand chasing threading tools, including a recent addition with newer metallurgy.

Flawed work

Question: Does anyone sell their reject turnings for a reduced price? Do people want them? What are the pros and cons?

Answer: I have often seen turnings that I think are 'rejects' offered for sale. I can't tell you whether they were intentionally sold as lower quality or just the state of the skills of the creator. With quality of results varying, what do you do with the less than the best? People will buy anything provided the price is commensurate with what they perceive as the correct value. That said, you can certainly cost the lesser pieces at a lower price for those who value a bargain. The typical consumer at craft outlets rarely has a turning background and buys on price and the appeal of the piece to them. Galleries have a different consumer but, other than the skilled eye of certain collectors, the situation is still price and appeal, although the level of perfection is required to be higher. Do people want 'rejects'? I don't think they want rejects called as such but can be enticed to buy pieces that aren't top shelf if the prices are appropriately set. Obviously, the pros are that you can market your entire output rather than have saleable and a burn pile. Much better from the financial standpoint of receiving something at a lesser amount than nothing for some of the work. If selling all and maximum receipts are your goal, go ahead and sell all. If making a name for yourself, including your creativity and quality, then I recommend you never let lesser results see the outside of your shop. Only you can decide why you are in the game. Make your own decision and even that may change or waver back and forth over time.

Rejects that can't be readily fixed are pretty obvious. Do you really want your name associated with poor work?

Coloured effects

Question: I want to add some colour to my woodturnings. I'm not much of an artist so what do you recommend for someone new to the process?

Answer: There are many ways to add colour to your woodturnings. These can include species selection, dyes, stains, paints, decals, inlay, stabilisation with colours, and more. With your comment about not being much of an artist and starting from new, a simple way to begin your colour exploration is milk paints. These will allow you to dramatically change the colour of your work with a relatively simple paint job. Traditional milk paints, while nostalgic, are far more demanding than the modern acrylic versions. A primer on the subject of milk paints can be found in *WT284* – October 2015. There are a variety of effects and 'looks' that can be created with milk paint and the durability of it as a finish is superb. After you've experimented with those, you may wish to try some of the effects available with alcohol dyes then move on to the myriad artistic opportunities there are. Don't be afraid to collaborate with someone who has the artistic skills you may not currently have.

Available milk paint colours and techniques offer a wide selection of options for your colouration wishes

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

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OUR CONTRIBUTORS

ANDY COATES
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.
cobwebcrafts@btinternet.com
cobwebcrafts.co.uk

ANDREW POTOCNIK
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.
andrewpotocnik@telstra.com

CHRIS WEST
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*.
www.westwoodturnery.co.uk

IAN WOODFORD
Since retiring from the pharmaceutical industry Ian has enjoyed concentrating on his love of woodturning. As well as belonging to two Hampshire clubs he has written articles for both *Woodturning* and an American magazine.

JASON BREACH
Jason started turning at the age of 12 and has built up a reputation as a tutor and demonstrator that has taken him around the world. He produces a range of items, but is best known for his unusual turned boxes.
jasonbreach@hotmail.com

KURT HERTZOG
A professional woodturner, demonstrator and teacher, Kurt writes for various woodturning and woodworking publications in the US.
kurt@kurthertzog.com
kurthertzog.com

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

LES SYMONDS
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.
www.facebook.com/pren.bala

MARK SANGER
Mark pursued woodturning full time in 2004, making one-off sculptural pieces that include colour and texture as well as pure woodturned forms. He demonstrates and teaches in the UK and abroad.
www.marksanger.co.uk

RICHARD FINDLEY
Richard is a full-time production turner specialising in small production runs, one-off commissions and turning for furniture and restoration work.
richardfindley.uk

PAT CARROLL
As a builder/carpenter, Pat has always loved working with wood. In 2002 he took a woodturning class and was very quickly hooked. He is keen to explore the combination of texture and colour in his work.
slievebhui woodturning@gmail.com

PETE MONCRIEFF-JURY
Pete learned turning in school and, when made redundant 12 years ago, became a full-time woodturner. He focuses on making for high-end shows. He also demonstrates and teaches.
bodrighywood@bodrighy.co.uk


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Richard Findley explores turning a complete project from alternative ivory for the first time

Les Symonds looks at using a spindle roughing gouge

PHOTOGRAPH BY EMILIANO ACHAVAL

Editor Mark Baker
E: markb@thegmcgroup.com
Editorial Assistant Karen Scott
T: 01273 477374
E: karensc@thegmcgroup.com
Designer Oliver Prentice
Illustrator Mark Carr
Chief Photographer
Anthony Bailey
Advertising Sales Executive
Lawrence Cooke
01273 402841
lawrence.cooke@thegmcgroup.com
Advertisement Production
Production Controller
Kate O'Neill
Tel: 01273 402807
E: repro@thegmcgroup.com
Publisher Jonathan Grogan
Production Manager Jim Bulley
Subscriptions
T: +44 (0)1273 488005
E: pubs@thegmcgroup.com
Marketing Anne Guillot
T: 01273 402871
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Perforated rimmed bowl

Pat Carroll makes a holey bowl

PHOTOGRAPHS BY PAT CARROLL

I have made variants of this type of work before, based on work I have seen by Irish turner Thomas Adlum. He literally drills holes in everything he makes and creates some great effects. I thought I would further enhance my piece with texture, pyrography, colour and holes. Adding so much to the piece is very time consuming and far outweighs the work on the lathe.

As woodturning moves further into what some would call artistic creations, many frown on decorating wood with colour and texture. The addition of enhancements can create wonderful, visual, tactile items which give an element of exploration to the piece. The beauty of exploring the route of embellishment and enhancing work is that you can do as little or a much as you like according to your needs and preferences.

A lot of the work carried out on this piece was done on the lathe – a majority was done by removing the piece off the lathe while it was still held in the chuck, and fitting it to a carving vice fitted into the lathe banjo. As with all things, safety is the biggest deciding factor in carrying out any of these procedures.

SAFETY PANEL

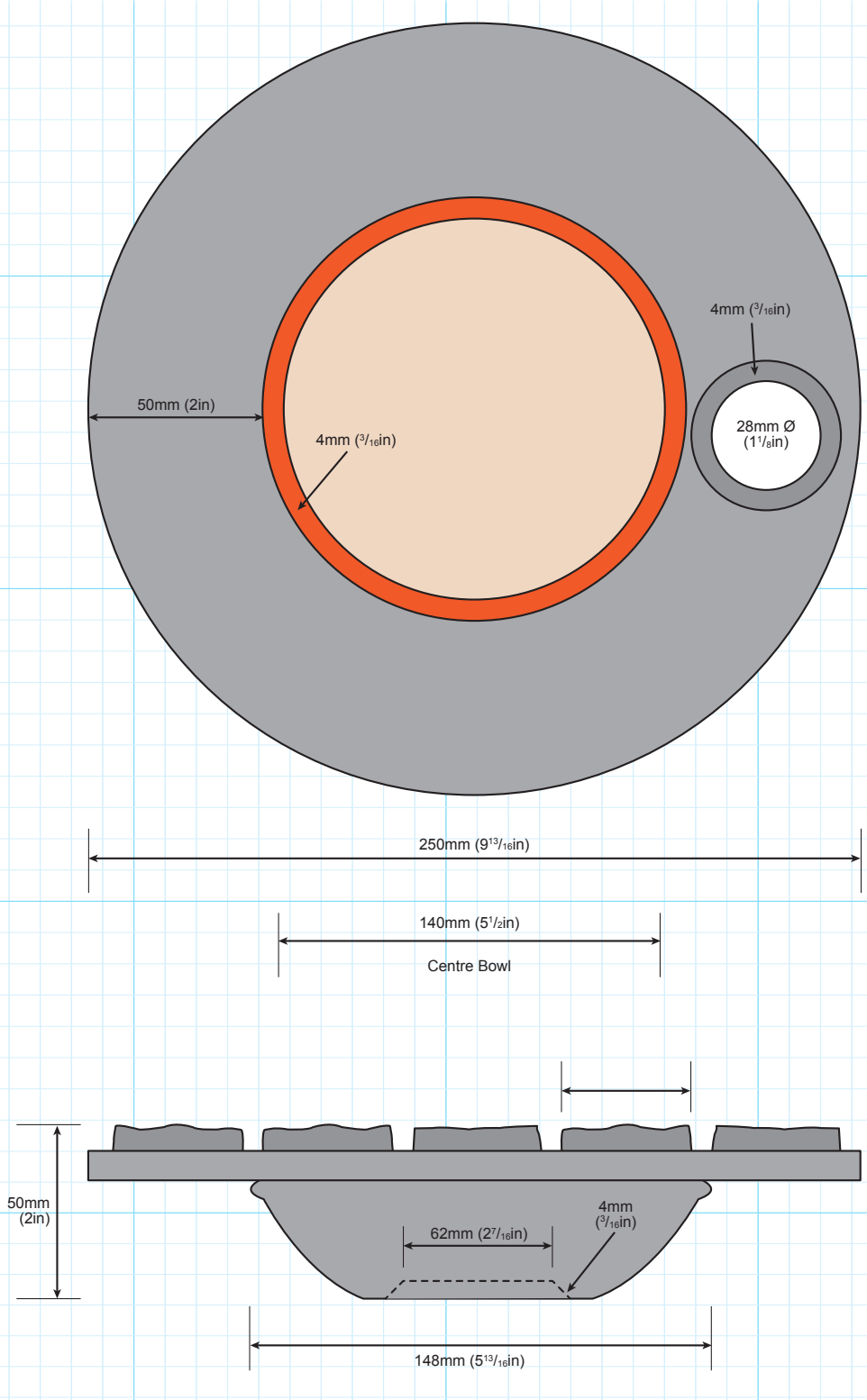
This project involves drilling and routing. It is imperative that when you do such processes you ensure the work is perfectly stable and clamped securely when you drill or cut. Do not attempt any such operations if you cannot secure the work properly.

TOOLS AND MATERIALS

- Personal and respiratory protective equipment (PPE & RPE)
- Specialist extraction unit for pyrography with flameproof carbon filter system
- Bowl gouge
- Parting tool
- Texturing tool
- Screwchuck or faceplate
- Chuck
- Revolving tailstock centre
- Indexing unit
- Articulated chuck clamp
- Lathe mounted drilling table
- Pillar drill for the holes
- Router, baseplate, guide bush and 3mm router bit
- Drill chuck
- Sanding arbor
- Pyrography unit
- Pyrography wire to create suitable nibs

MATERIALS

- Beech (*Fagus sylvatica*)
- Abrasives down to 400 grit
- Black dye
- Red permanent marker
- Gold spray
- Satin lacquer




1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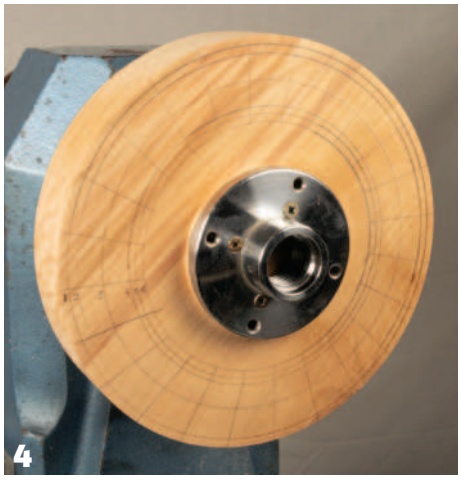
Initial shaping

1 Using a faceplate, mount your bowl blank securely on the lathe using screws large enough to hold it securely, but not so long as to go past the waste wood in the hollow of the bowl. The face you place the faceplate on will be the top of the bowl. Pay attention to grain direction and any possible defects and make sure everything is secure before turning commences.

2 & 3 Using a bowl gouge, true up the face and edge of the blank, which will be the base area of the bowl. The base of the disc should be kept relatively flat/straight for when drilling of the holes occurs. Mark a recess to suit your jaws and, using a parting tool, cut a suitable recess. Now remove the work from the lathe and mount it securely on the chuck in the recess just cut, but leave the faceplate in place. Using a low lathe speed, skim the top surface with a gouge and scraper to just shy of the faceplate to create a dead-flat top face.


3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Drilling & routing

4 Unplug the lathe as powered rotation is not required. Using an index system, divide the rim area into 24 sections. Planning is based on your drill bits and size of wood. Also, the method of boring may impact on your personal design. In this case 12 holes will be drilled for the design required. Numbers on the lines give indicators to the borders and hole centres and also give an indication of the proportions the piece will have.


5


6

5 & 6 The safest method for drilling the 12 holes required – mine are 28mm in diameter – is to use a drill press. The wood is positioned and clamped for safety and to maintain alignment. It is not necessary to drill all the way through to the timber. You just go far enough to be able to turn into the holes from the bottom later.

To create a raised rim on the holes on the top of the bowl use a router with a baseplate and guide bush fitted with a 3mm router bit. But you need to have a template/guide to cut around, so mount a scrap piece of wood into a chuck and create a tenon that fits nicely into the hole size drilled, but not so tight that you cannot remove it. The hole size I used was 28mm, and to create a rim around the hole, a shoulder/collar with a 4mm edge is created for the router guide bush to run around.


7A


7B

7 Now the routing collar template/guide is created, take a small router fitted with a guide bush to run around the wooden template and fit a 3mm drill bit in the router. The faceplate will be in the way of the router so remove it. Before routing, a recess needs to be cut in the top face of the wood so turning of the underside can be done later. Remount the blank on the chuck in the recess cut earlier and turn a recess deep enough and wide enough to hold the work securely later the top face. Once done, mount your work securely on a chuck, or clamp it in a vice and use the router and template to create a cut around each hole about 3-4mm deep. Once each hole rim is cut, remove the waste wood in the gaps between each hole.

8 With the routing complete, mount the work securely on the lathe using the bottom recess. Use a parting tool to remove the excess timber left at the outside rim diameter to the depth cut with the router. This creates the outer rim line and space for decoration.

9 Now reverse the piece and shape the bottom to the required shape and thicknesses. The first thing to do is define the thickness of the rim using light cuts. Care must be taken as it is easy to chip the edges of the holes, which you do not want. The outside of the rim is very gently rounded over to decorate. Once the rim is done, shape the underside with a nice up-sweep-curve and create a little step at the juncture of the rim and curved section. I also decided to make a small V-cut just below the juncture, see step 10. Once done, round over the rim edge and sand it and the underside. Since there are holes in the rim area, use a Velcro pad to hold the abrasive and you hold the pad to keep fingers away from the holes. Alternatively, power sand with a sanding arbor in place to keep fingers away from the holes.

Decoration & adjustment

10 Working in an area free from extraneous flammable materials, and in conjunction with a fireproof carbon filter dust and fume extractor and a suitably rated carbon filter fume mask, decorate the rim using a pyrography unit fitted with a curved nib which matches the radius of the rim. As I did, you can easily make one at home from suitable nichrome wire.

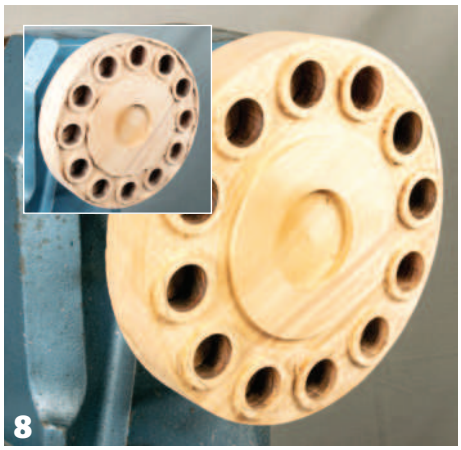
The decoration being applied isn't delicate, it is chunky and is better called branding. Really heavy branding might not be able to be done on all pyrography units, some will not have the power. Just adjust the decoration applied to the work to suit the unit you have.

11 & 12 At this point I cut a bead where the bowl body meets the rim section so I could mimic the rounded edge and the pyrography decoration on the outer rim.

13 & 14 The insides of the holes are now decorated with a longer homemade tip that is shaped to reach inside the hole and burn the wood with the side of the tip.

It is also an option to leave natural and sand back to the natural wood. Once the sides of the holes were done, I used a small circular cylinder tip to decorate the outer rim area and of the circumference of the holes. Again, you can do as you choose decoration-wise. This was followed by using a straight tip to create a random pattern to fill in the remaining areas.

15 Once the underside of the bowl is done, reverse the bowl and decorate the front surface area. I used the same patterns and markings as those on the back.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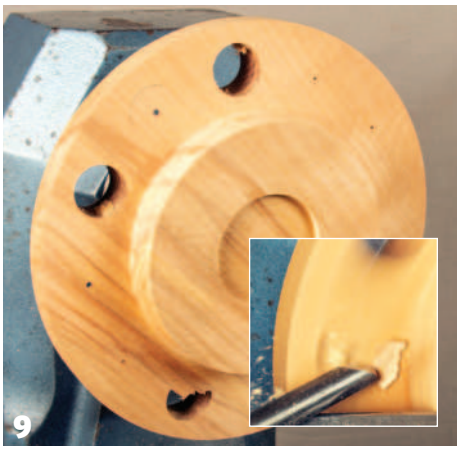
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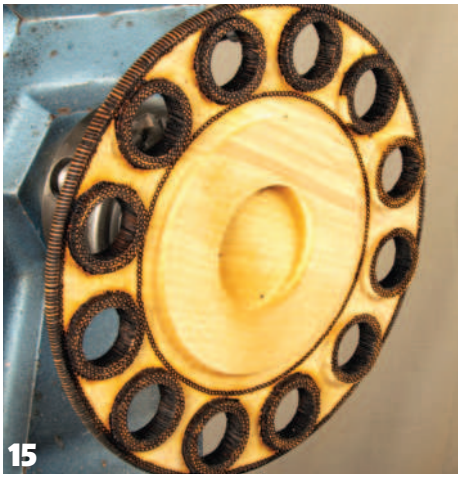
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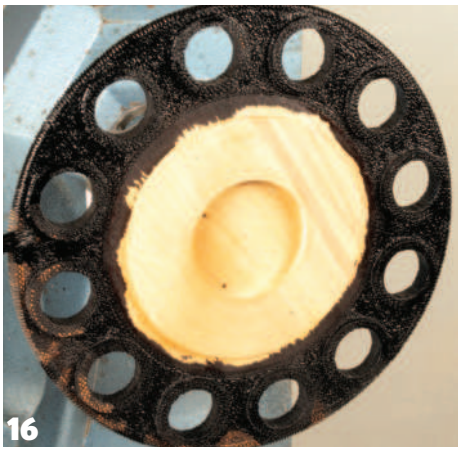
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Colour & finishing touches

16 Apply black spirit stain to the front and back of the rim. I was not concerned with the colour bleeding through the grain as this is a design which would develop further as it progressed.

17 The outer rim is already done, decorated and dyed, so now it is time to deal with the internal bowl section. Using a parting tool, define the inner rim extent by cutting a small shoulder right into the blackened rim. Don't go too wide as you have to remember the underside shape and work within those parameters. Then, using a bowl gouge, make light, careful cuts and hollow out the internal form, mimicking the external form. Stop the lathe regularly to check the wall thickness so you don't cut the wall too thin or, heaven forbid, cut through the side wall. Once shaped sand the internal section.

18 Now, sand the internal form and, with the lathe stopped, clean off all the dust on the inner face and rim section. Apply several light coats of gold aerosol paint to the piece, giving ample time to dry between coats. Overspray of the gold onto the black was something I knew would be an issue, but with an easy solution to fix it later on as I will be applying black spray over it.

19 A recess needs to be cut on the inner rim about 4mm wide and 4mm deep and it has a dual purpose. The first is to accept a disc of wood turned to fit neatly into the recess, which will be held in place with the revolving centre, while the rim, both front and back, can be touched up with black spray paint. The other purpose of the recess is to be able to add a red accent line, creating a transition between the black and gold colours.

20 With the wooden disc secure in the recess apply black spray to the rim section. Once dry, remove the wooden plug. Now reverse the bowl. I held mine on a vacuum chuck, but you can use a friction drive – do cover this with tissue paper to protect the painted surface, in conjunction with the revolving tailstock centre to hold the work in place.

21 Before you go too far in, it is wise to seal the black with clear lacquer. This gives you the option of leaving the lower section of the bowl natural timber or colour it as with the top. I took the decision to texture the bottom of the bowl and also in the recess and add and colour the underside completely black. Once completed the piece receives several light coats of satin lacquer.

22 & 23 Here you can see the back and the top of the finished bowl. ●

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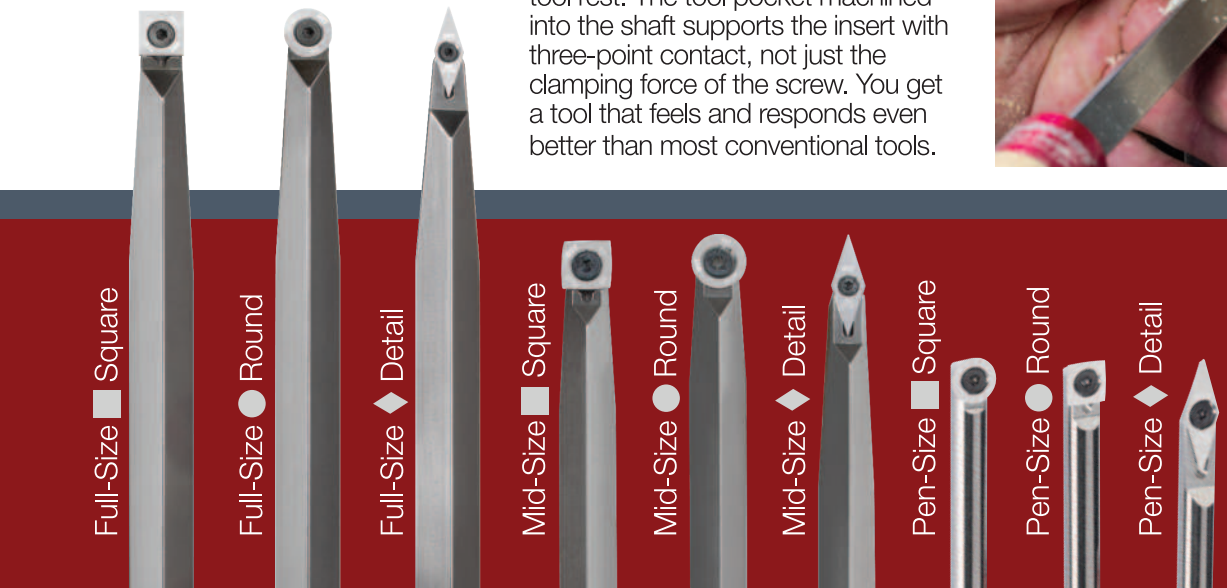

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Alternative chucking

In part two of a series Andy Coates looks at some more unusual methods of holding work on the lathe

PHOTOGRAPHS BY ANDY COATES

Introduction

I have frequently heard it claimed that starting out in woodturning is relatively cheap. I have never been able to quite figure out relative to what. Knitting? It's true that you can begin with a small, secondhand lathe, three or four tools and some means of sharpening them, but very quickly you will come to realise that you need, and probably want, many more things – the first, and most pressing, being a scroll chuck. And they can be quite expensive. Often we are delighted to find somebody selling a 'perfectly usable' old chuck at an apparently bargain price, only to later discover that the old collett chuck that requires four hands to hold the jaws, rubber bands and twin tommy bars in order to close it around a piece of wood was not perhaps the suggested bargain after all, and the very unwieldiness of it is probably the reason the seller upgraded to a shiny, easy-to-use scroll chuck. Thanks for that bargain, pal.

Having finally bought a scroll chuck the neverending cycle of acquisition continues. The chuck is a real boon... but wouldn't it be handy to have some different jaw sets? But, my, aren't they expensive? And so it continues. And during this protracted period of acquisition we are forced to quell our burning desire to make certain things by virtue of the fact that we have no means of holding them safely in the chuck. It need not be that way.

Making alternative holding devices without some form of chuck can be challenging to say the least, but assuming you have some form of four-jaw chuck it should not present too many problems, and even without it is not an unachievable task providing you have access to a pillar drill and can think outside the box.

Assuming you do have one, but lack the full range of jaw options, there are things you can make to supplement and improve your holding capabilities. And even if you are blessed with every jaw set under the sun, there are times when a shop-made set can be an advantage – wooden jaws don't damage cutting edges (as a rule), for instance, and having a second chuck allows you to leave a workpiece in the actual chuck while turning a second component.

But, perhaps the biggest advantages of homemade chucks is that they can replace expensive specialist chucks, or hold awkward shapes.

Mandrel-mounted scrap chucks.

A second holding device can be a real benefit. For instance, when making boxes the top can be mounted on a wooden jam chuck while the bottom remains in the scroll chuck, saving misalignment issues later. However, while some wooden holding devices can be made to mount in the scroll chuck, such as jam chucks etc., it can be very convenient to have a secondary holding method that can be mounted directly on to the headstock mandrel – like a real chuck.

There are a couple of ways of doing this. You could simply purchase nuts of the same thread size as your mandrel and inset them into a block with epoxy glue. I tried this years ago when making a vacuum chuck, and while it worked to a degree it was a far from perfect solution.

The ideal is to purchase a tap to suit your lathe mandrel thread. Ten or 15 years ago when I first wanted to try this out the cost of the tap was beyond off-putting; they were incredibly expensive. However, the cost of the M33 3.5mm tap to suit my Oneway and Wivamac lathes has been brought down considerably, and you may find the same applies to a tap suitable for your lathe.

Having acquired a tap you are then in a position to make as many alternative chucks as you require – the procedure is relatively simple and the materials can often be sourced from waste or scrap stock.

Making a mandrel-mounted jam chuck

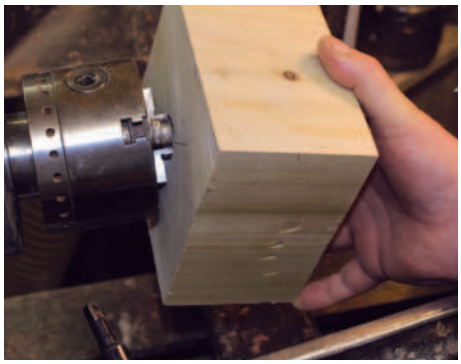
You can use wood, composite material such as MDF, or even hard plastics to make this kind of chuck. I used a scrap offcut from a recent job, laminated poplar (*Liriodendron tulipifera*), about 150mm square by 120mm deep, but you can use whatever you have to hand. The only proviso is that the material is free from faults and cracks and dense enough to take a coarse thread.

The scrap block needs to be held securely in order to tap it, and the most simple solution is to hold it on the lathe. In order to tap the block a pilot hole of a specific size is required. Check what this is for the tap you require. For an M33 x 3.5mm tap a pilot hole of 30mm is required, which is convenient because a 30mm hole can be used as a recess for engineering jaws. The scrap block is mounted on the engineering jaws with the tailstock brought up for support and trued to a cylinder, and the face edge trued to reveal the pilot hole. The block is then removed from the chuck.

Thin cyanoacrylate (CA) glue is applied to the whole of the inner surface of the pilot hole to strengthen the fibres of the wood. Allow this to fully cure without accelerator.

The block is then re-mounted with the clean face towards the headstock. Cut a small chamfer on the edge of the pilot hole to ease the entry of the tap.

Drilling a pilot hole



Mounting on engineering jaws

Truing the scrap block

Applying thin CA glue to the wall of the pilot hole

Cutting a chamfer on the edge of the pilot hole

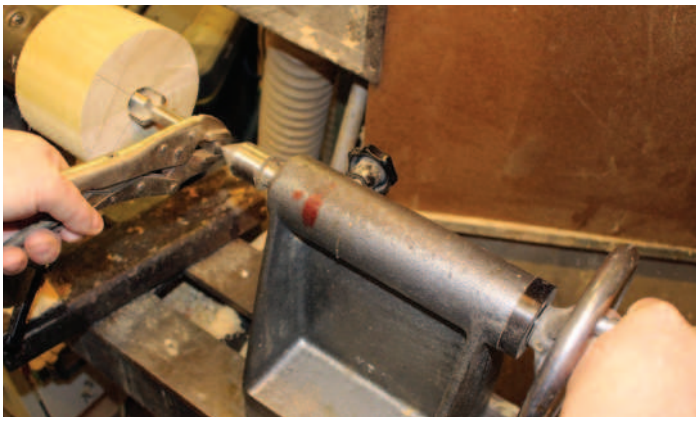
Tapping the thread

The next step is to lock the headstock spindle, and for safety, cut the power to the lathe. Fit a revolving cone centre into the tailstock and bring the tap to the pilot hole. The tap should have a central locating divot that the revolving centre can locate in. Bring the tailstock up so that the tap just enters the pilot hole to the depth of the chamfer. At the back of the tap there will be a square section that is used to drive the tap either with a dedicated tap drive bar or a set of locking grips.

The next stage can be tricky at first. Drive the tap clockwise while slowly driving the tailstock wheel clockwise. The tap does the cutting but the tailstock pressure needs to be continuous to prevent drift or slip. Reverse the tap nearly fully out at regular intervals to remove the swarf. Continue until the tap bottoms out in the pilot hole. Once finished the threads can be toughened by a second application of CA glue, and once cured the tap can be quickly re-run into the thread to clean it up.

Setting up to tap

Alternatively a good soaking with cellulose sealer will also firm up the threads. A spray of silicone lubricant on to the threads will help the chuck screw effortlessly on to the mandrel.



Cutting the thread

The thread cut

NB: It is worth mentioning that the tapping procedure is achieved by hand. The lathe is NOT running at any point during this procedure.

Finishing the chuck

One thing I did not specify was the depth to cut the thread. This will differ from lathe to lathe, and need not be the full depth of the thread on your mandrel.

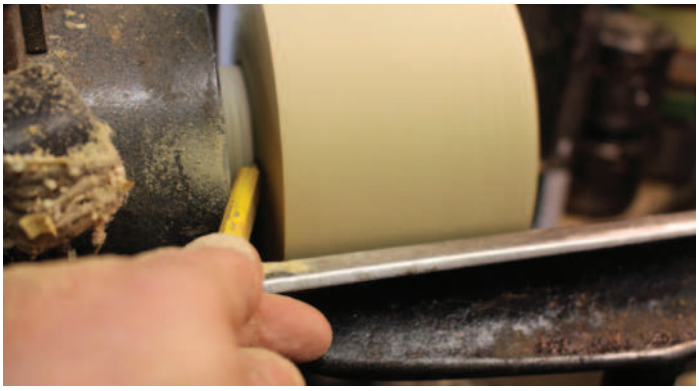
The next step is to make a ring from scrap wood (I tend to use plywood) the exact diameter of your mandrel. Screw the scrap chuck on to the mandrel and measure the gap between the back face and the mandrel's register. Make the ring the same thickness. The hole is drilled on the pillar drill and the scrap then mounted on a simple jam chuck and turned true.

Push the ring on to the mandrel and then screw the scrap chuck on to the mandrel until it clamps up against the ring tightly. Scribe a pencil line on the back of the scrap chuck around the ring. This simply shows where to apply glue.

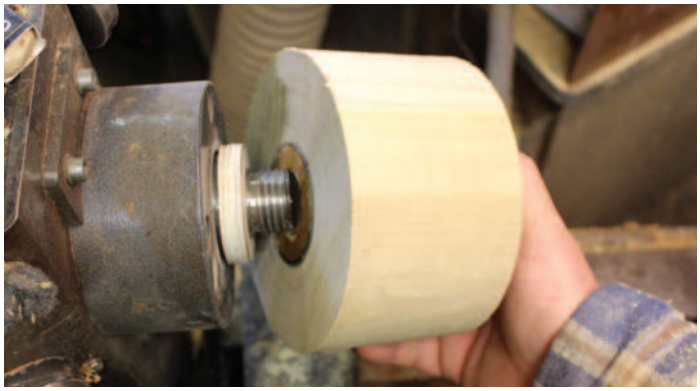
Apply thick CA inside this marked ring and then re-mount the chuck and screw down to the ring. Leave to cure naturally. The ring locks the chuck down at the mandrel's register face, ensuring it runs true and stable.

Your scrap chuck is now complete and can be used in myriad ways. The most obvious one is perhaps as a jam chuck. A tapered tenon can be turned on the face to take the rim of an almost completed bowl. The bowl is then mounted on the taper tightly, the tailstock could also be employed for safety if required, and the foot of the bowl completed and abraded. This function is the same as that provided by a number of expensive commercially available re-mounting devices, but has cost virtually nothing to produce, and owning the tap means you can produce as many variants as you desire.

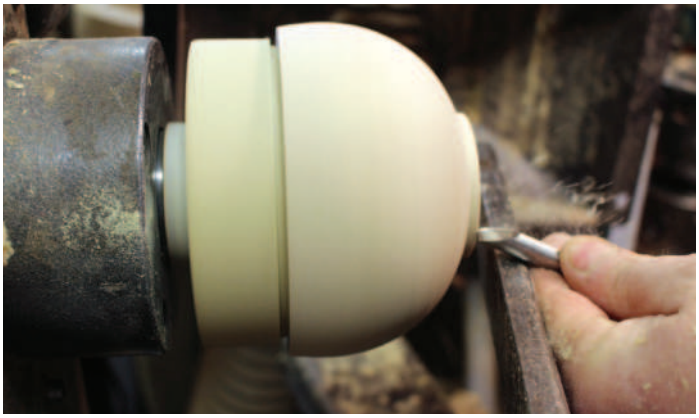
The scrap chuck can have multiple uses multiple times, and when it is eventually all but turned away simply true the face off and glue another scrap block to it and start again.



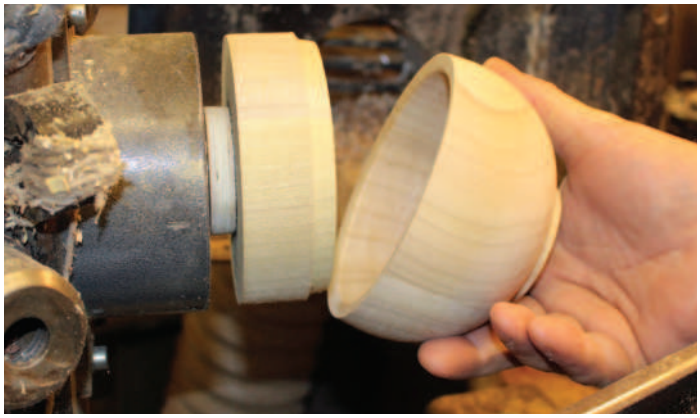
Marking the register ring diameter



Gluing the register ring in situ



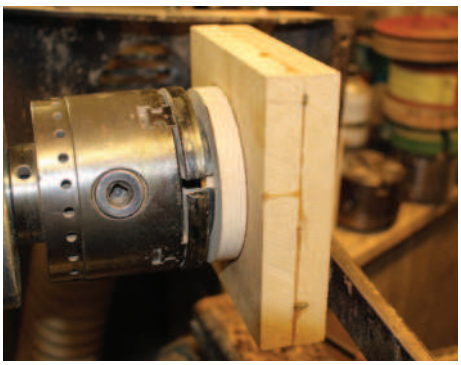
Bowl mounted on tenon turned on jam chuck



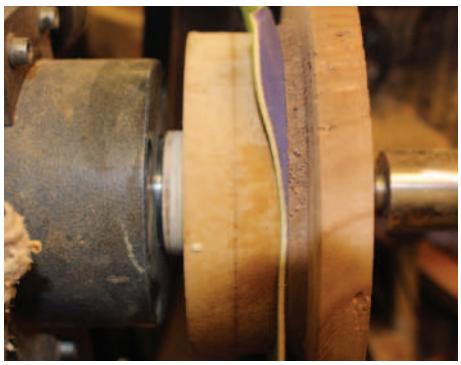
Foot re-turned

Variation on the theme

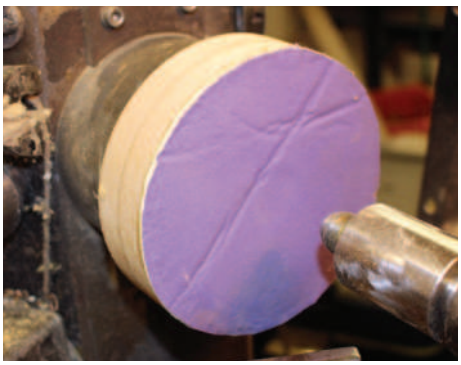
A simple variation on the theme is to make a neoprene-faced jam chuck. For this version I simply laminated two pieces of 18mm MDF and glued on a scrap tenon to allow for the tapping procedure. A register ring was added as previously and the tenon then removed for future use. A piece of recycled neoprene from an old, cheap wetsuit was fixed with spray adhesive and clamped until cured. The result is a quick, simple, and cost-free soft jam chuck that will serve you for many years.



Laminated MDF scrap block



Faced with Neoprene and clamped for gluing



Simple neoprene-faced jam chuck

Making scrap wood drive chucks

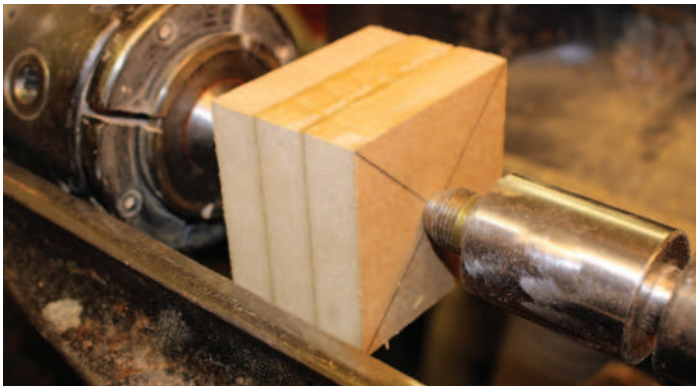
One commonly turned item that requires a specialist holding method to turn and/or finish is a sphere. Once again, there are commercially available devices for this holding method, but using the same procedures a simple solution is available.

Three squares of 18mm MDF are glued and clamped until cured. The resulting block is mounted between centres, trued to a cylinder and a tenon is turned on one end. Because this will be reused a number of times the tenon is soaked with repeated applications of thin CA glue, and then gently trued with a parting tool. This ensures the tenon is as tough as can be.

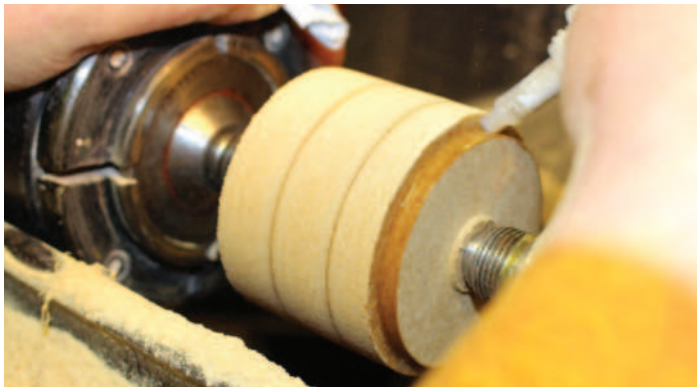
Alternatively, you could tap this block to fit directly on to the mandrel as detailed previously, but in this case the block is made to fit into standard C jaws.

A number of commercially available revolving centres have removable cone heads that reveal a revolving ring centre, and often come supplied with various alternative cones. While these may be useful, it is the threaded end of the centre that is of interest here. On the centre I have, the thread is ¾in x 16tpi, and I have a tap of that size available.

A second block is prepared as previously, but this time a pilot hole of 11⁄16in is drilled through after the block is trued to a cylinder. The hole is firmed with CA glue as before and the block is then tapped to ¾in x 16tpi to the depth of the thread on the drive centre. A shallow tenon is turned on the same end as the tapped hole.



Laminated block of MDF



Firming the tenon with CA adhesive

Drilling the pilot hole

Truing the face

Finishing the drive centres

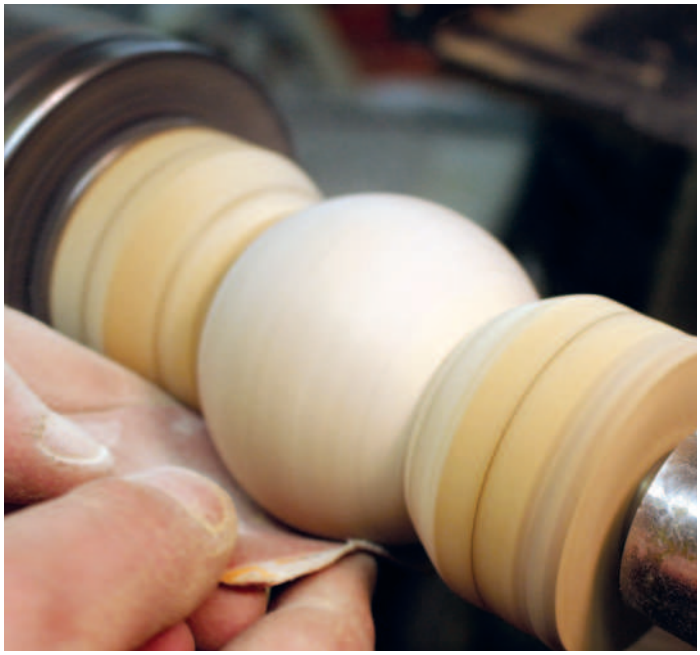
Both blocks are individually mounted in the jaws of the scroll chuck and have concave depressions turned to suit a specific radius. Block number two (¾in 16tpi) can then be screwed onto the revolving tail centre. The tailstock is brought up to the other block mounted in the chuck and wound in tight. A deep V can be turned between the two blocks to facilitate increased access.

The centres can now be used to hold spheres securely between them for finish turning or abrading. Being made from MDF means they are not going to mark any spheres you turn, and tools will not be damaged if you cut into them. Because they are quick and cost-free to create you can make them to specific and accurate radiuses, leading to far greater certainty of hold.

Shaping the drive centre

Fitting the tailstock drive head

Shaping the matched pair



Abrading a sphere

Conclusions

The tap may prove to be one of the most useful additions to your peripheral tool set that you ever purchase, as it offers many options for producing useful jigs and devices. The first device produced here, which is essentially just a mandrel-mounted scrap block, has uses far and above the simple jam chuck detailed here, and I have no doubt you can already think of half a dozen things you could use it for. Its advantage over something you could simply mount in the jaws of your chuck is that it frees the chuck up, providing the opportunity to leave a primary workpiece in the scroll chuck rather than remove it and risk losing concentricity. Contrary to what you might imagine, MDF proves to be a very useful material for tapping in this way – its homogeneity is a distinct advantage. It is worth noting that polyethylene block is just as useful, and far more durable, but unlikely to be found as scrap in the workshop. ●

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Community letters

Here are some letters the Editor has received from readers

A difficult day

Mark,
I just wanted to say that I had my greatest misfortune the other day. I went to my wood store, which I grant you had not been inspected for a while due to my having enough bits to work with in the workshop, and found that some of my prized burrs, some blanks and some of my logs, had become riddled with woodworm. I also found a hedgehog in the wood, which was a lovely surprise, but I was gutted about the timber. I am sure I am not the only one to have gone to the timber pile and found critters, bugs and woodworm have taken residence. I guess I should have taken more care checking and sorting out the timber.

Best wishes, David Smith

A fine burr

Hi Mark,
Recently I found a burr by accident, on the day before a recent storm. I was moving logs from the bottom of my garden to the back door when I came across said burr. It was soaking wet, covered in leaves and looked ready for the fire. However, I cleaned it up a bit, cut it round on the bandsaw, screwed a faceplate on it and, without much hope of success, started to carefully turn it. As it was still a bit damp I carefully dried it with a hair dryer on a low heat setting. There were areas of loose bark so I glued those back in place then sanded and polished it and job done.

As you see from the photo, it turned out lovely.

Best regards, Jim Harris

From the forum

Here is this month's selection of postings and work from the Woodworkers Institute:
www.woodworkersinstitute.com

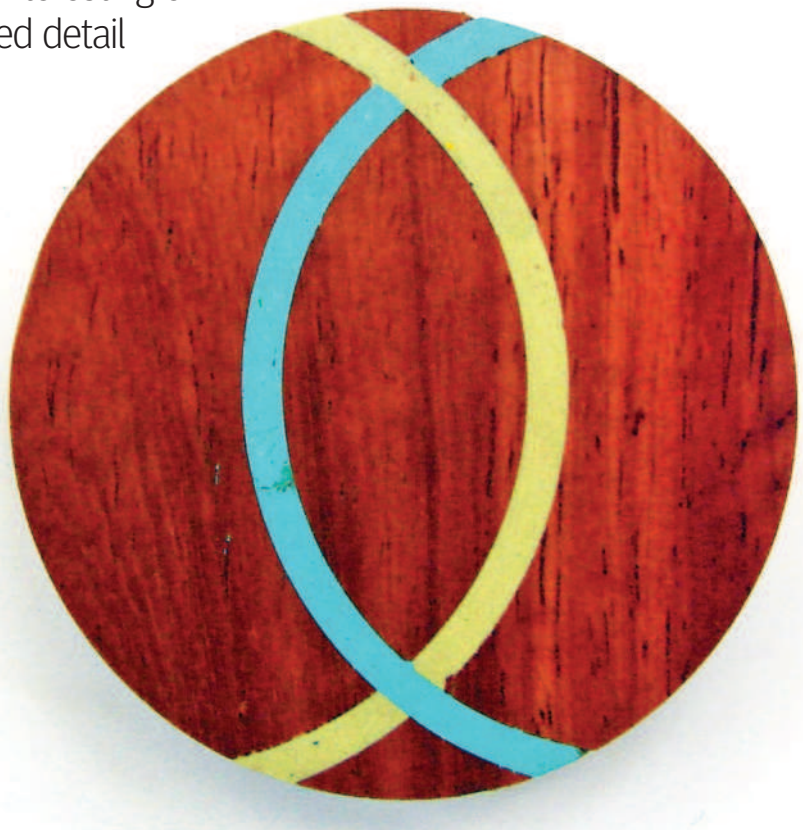
LIDDED POT ON CHERRY

https://bit.ly/2HntZ1b

CHL Posted: Cherry that has been in drying store since 2006 finally made it to the lathe, finished with cellulose sanding sealer, three mop buffed and finished with microcrystalline wax. 114mm high overall.
Les Symonds commented: That is very, very pretty and the quality of the segmented work is top-notch. It reminds me of a drum.
Les

Crossover arcs with a circular inlay

Chris West is on the mark with this interesting off-centre turning technique and coloured detail



This technique article is similar to the previous one, except that one part of an arc appears to pass underneath half of the next arc, i.e. they are interleaved.

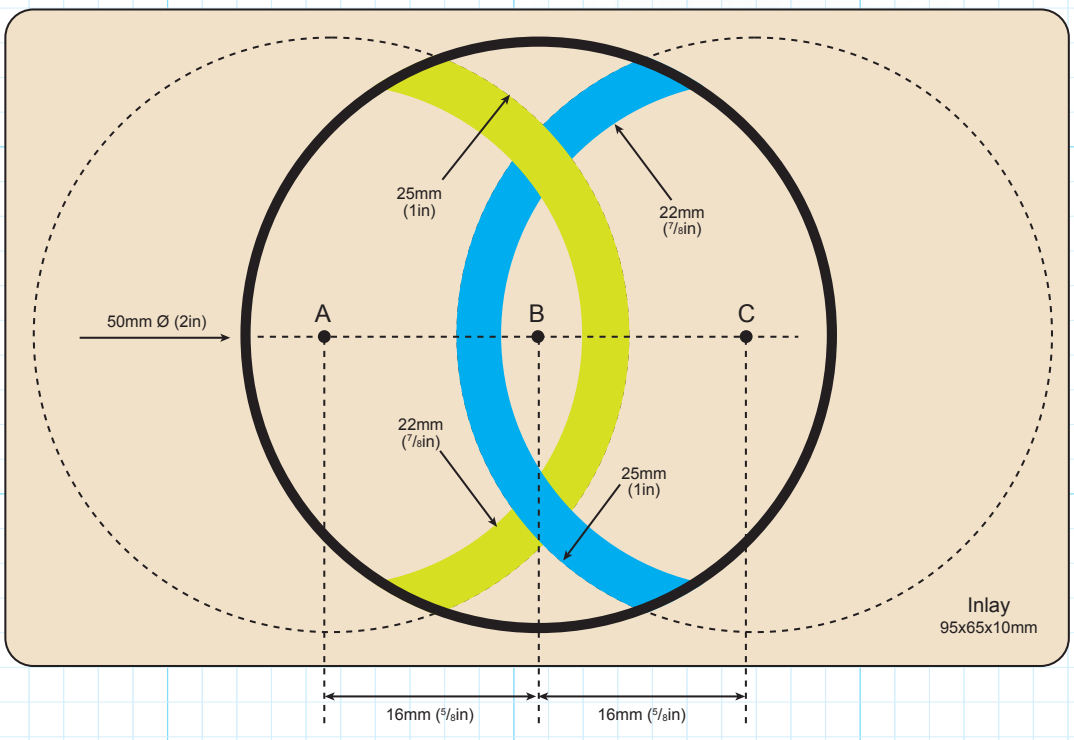
The inlay consists of two 3mm-wide arcs. One will be filled with Milliput's standard (yellow/grey), two-part epoxy putty and the other, its turquoise putty.

The diameter chosen is 50mm, but you can choose any diameter you like and the arc diameters can be proportioned accordingly.

Given that I am unsure of the reader's level of expertise, I have chosen to turn the arcs using a rectangular piece of hardwood. 100% of the wood will be cut instead of an estimate of 40% if a 50mm diameter disc had been used instead. That leaves 60% of 'air' being turned. It could lead to potential safety problems – something I'm trying to avoid at all costs.

The drawing below contains the necessary information to prepare the 10mm thick inlay for turning.

The object is to have A appear to pass under B. Conversely, B appears to pass under A at the other end



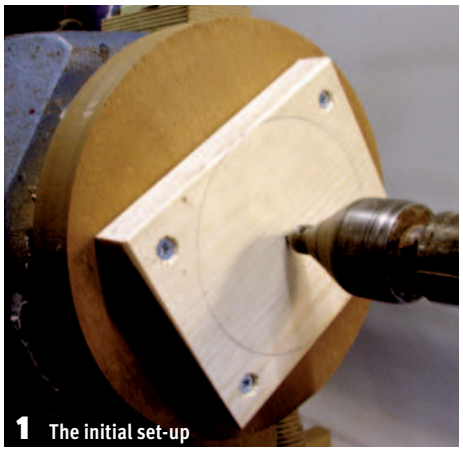
PHOTOGRAPHS BY CHRIS WEST

The turning process

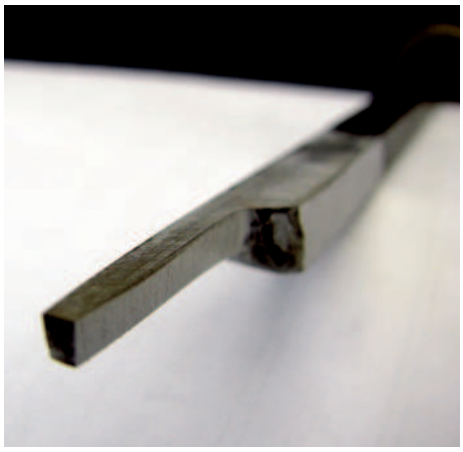
A piece of 175 Ø x 25mm hardwood was screwed to a 6in faceplate. A scrap block 100 x 70 x 10mm was formed, its centre punched and four screw holes drilled. Both sides of the scrap block should be flat and parallel. The centre was lined up using a live centre and screwed on to the faceplate wood. Double-sided tape was applied to the scrap block to cover the area where the rectangular inlay blank will be fitted.

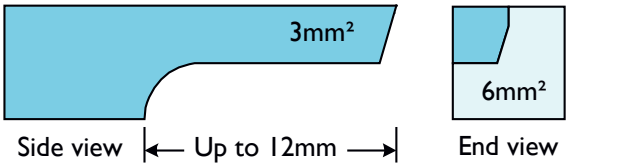
3MM BEDAN

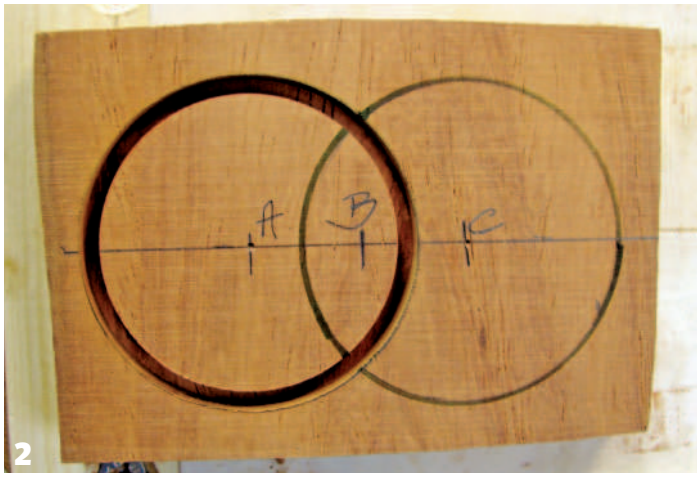
The 3mm Bedan tool is formed from 6mm square x 300mm tool steel (HSS). This is a homemade tool created from shop-bought, appropriately hardened and tempered high-speed steel. A 1mm flat surface can be seen in the diagram. This is to avoid any side cutting of the arc's recess.



1 The initial set-up







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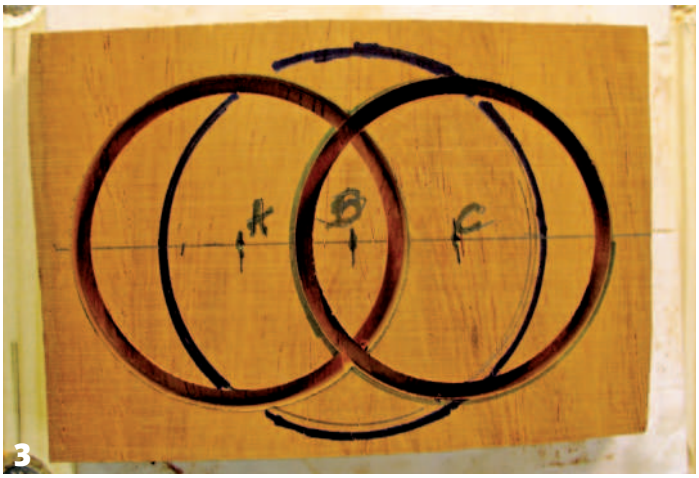


3

4

STEP 1

So, the first task is to prepare an inlay 95 x 65 x 10mm from a wood of your choice. Cover the horizontal line with masking tape to cover all of the inlay. Measure and mark with a pencil points A & C, 16mm from B as shown. Mark out the two arcs on a radius of 25mm. There is no need to add the inner lines. This can cause confusion when you about to start turning the circle.

STEP 2

The 50mm outside diameter of circle A is drawn on the inlay. It is now time to place the inlay on to the scrap block. A live centre is placed in the tailstock. Line up centre point A with the live centre and slowly wind in the tailstock revolving centre. Note, the live centre should NEVER touch the inlay. As they come together and are lined up, the inlay is pressed with your fingers against the double-sided tape. The Bedan scraper is then lined up on the INSIDE of the outside circle A and cut as shown above.

STEP 3

The inlay is then carefully levered off the scrap block using a wood chisel. The double-sided tape is replaced if necessary. The centre point C is then lined up with the revolving tailstock centre as with A and the inlay pressed on to the tape. The inner line of circle C will be cut using the 3mm end scraper again.

STEP 4

Cut four 10 x 30mm strips from the tub of your favourite low-fat spreadable butter. Given the thickness of the material of the tub I used, folding two pieces filled the 3mm gap I had created. Place the shiny inside part of the tub strip against the putty. The putty adheres to paper. For the rest of the article this will be known as the 'tub strip'.

STEP 5

Plug the mixed two-part putty, colour of your choice, in the following recesses – the order of action is: B1 outer edge to the tub strip. B2 between the two tub strips. B3 from the tub strip to the outer edge.

Next, repeat with R1 to R3 with a different colour putty

Tip 1: When using two putty colours and filling the recess with bare hands or wearing nitrile gloves, wash hands or change gloves between colours. Result – no contamination between putty colours.

STEP 6

Two ways of cleaning away the dried excess putty are:

A. Remove the excess putty by using a 13mm rectangular skew laid on its side and use as a negative rake scraper. Take fine cuts, trying not to remove any wood. If necessary use a craft knife to ensure that the putty is level along the adjacent arc and ready to receive the final infill of putty.

B. Hold the inlay down on a belt sander to remove the excess. Final sanding can be carried out by rubbing the inlay on higher-grit paper on a flat surface.

STEP 7

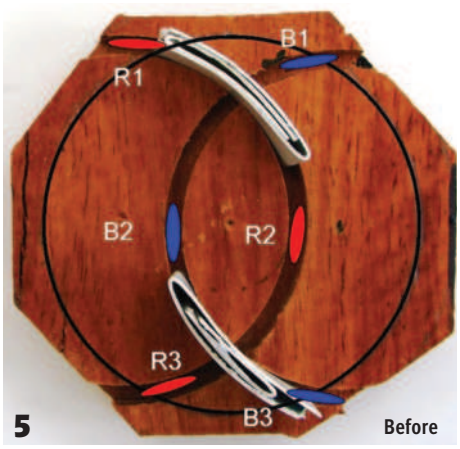
The next stage is to fill in the gaps left from removing the tub strips. Finally, both arcs are cleaned up using either methods detailed above. A circle is drawn ready to be turned down to 50mm Ø.

Tip 2: 'Clean' sandpaper helps reduce contamination by lowering the risk of other wood types being introduced to the inlay.

STEP 8

The inlay's diameter is being reduced to 50mm using a bowl gouge, which is being pushed towards the scrap block. The bearing revolving centre, which featured in the article in issue 342 (February 2020), is being used here with a scrap piece of wood to ensure the inlay stays on the scrap block. Reducing the diameter does create forces which are trying to push the inlay off the double-sided tape, but the pressure from the revolving bearing will keep things in place when you make your light cleaning cuts. ●

HINT: Keep the tub handy. The follow up article also uses the tub material.



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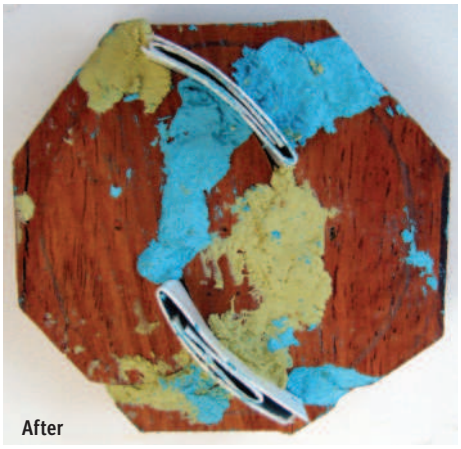
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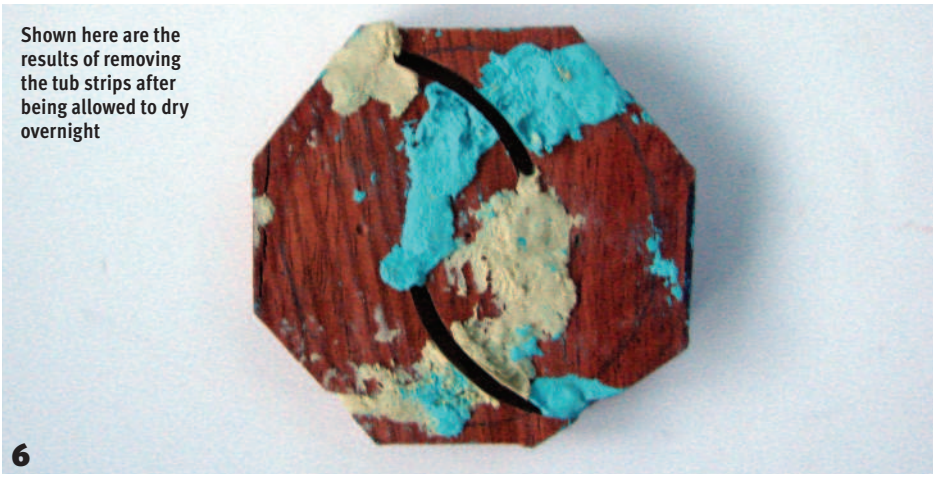
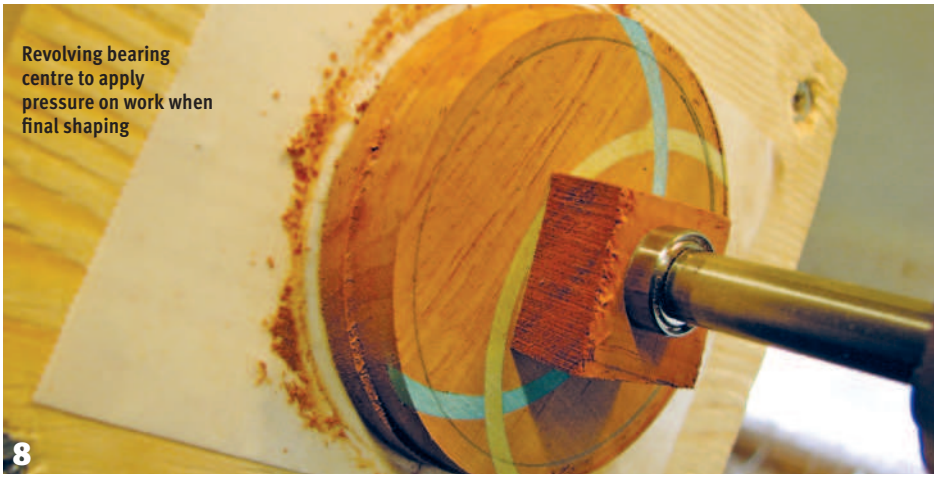

Shown here are the results of removing the tub strips after being allowed to dry overnight

6


7


Revolving bearing centre to apply pressure on work when final shaping

8

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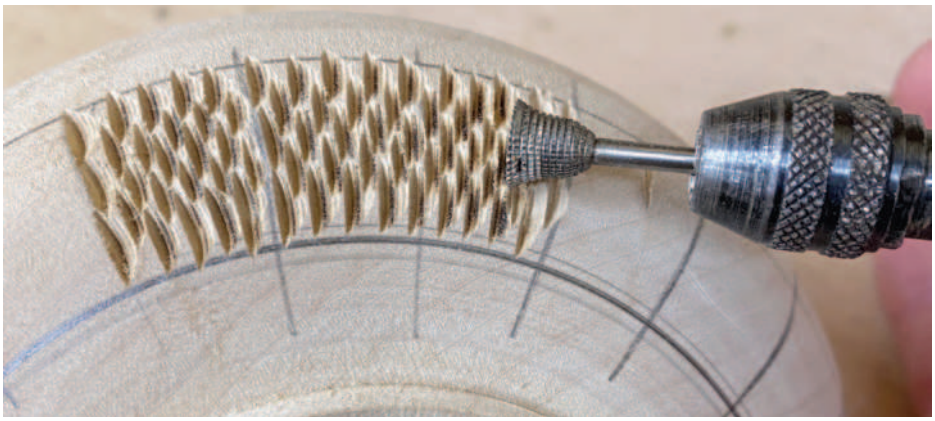
Burrs, cutters and much more

ON TEST

Mark Baker tries out an assortment of cutters from MDI Woodcarvers Supply



PHOTOGRAPHS BY MARK BAKER/GMC PUBLICATIONS

The cutters and burrs tested: cup cutters and stump cutters

It was a visit to the AAW symposium that alerted me to a company called MDI Woodcarvers Supply. It had a large array of carving burrs of numerous types, shapes, sizes and materials, as well as other shaping and enhancement products that formed a great display.

At last year's event, I spied cutters of different head profiles and sizes that I had not come across before and some I had not seen in ages. I spoke to Wayne about what else it stocked and found him to be a fount of knowledge – and he had a great sense of humour. I found out that the carving burrs and cutters MDI stocks come from various countries including Germany, the US, Italy, the Far East and many more countries. Intrigued by what I saw I went away from the event with a few different cutters to test.

On test

Before testing the cutters I had, I checked out the MDI Woodcarvers Supply online store and found it features a huge number of items to suit carvers and enhancers of all kinds, including: bits, burrs, sanding items aplenty, carving knives and tools, bird carving accessories, micromotors, power carving units, pyrography machines, paints and other mediums, to name but a few categories on the list. So don't be surprised if you find yourself having spent lots of time perusing there. I only had a few of cutters to test.

Eye cutters

The eye cutters did just that – create wonderful little round, raised semi-hemispheres below the surface of the item being worked on. The nature of the cutter teeth and the gentleness of cut means it often chars the surface of 'eye' cut. Rather than approaching the work square on, which is likely to result in the cutter skidding, it was best to start with the lower edge of the cutter making contact with the work and arcing it in until I had the cutter vertical to the surface being cut.

Inverted taper, bell and cylinder fine-tooth stump cutters

I found these to be an absolute delight in fine shaping. Roughing cuts are not possible with these fine-toothed cutters, but delicate work and creating decorative textured patterns is very easy with them.

Carbide stump cutters

These come in various shapes and sizes. The ones I had were able to rough shape work very quickly, but in a very controlled, gentle manner, and left quite a fine finish considering they look very aggressive. They also have the ability to create medium to coarse textured patterns. I found them to be ideal when shaping feet on bowls and vases too.

Conclusion

I have used the cutters extensively and found them to be of excellent quality, easy to use and they performed exactly as they were intended to. I love it when I come across such excellent items and if you are into any form of carving or enhancement, do take a look at the online store.

Prices from: $3.00
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Web: www.mdiwoodcarvers.com

The effect obtained, including skid mistakes, from the first tries of one of the eye cutters tested

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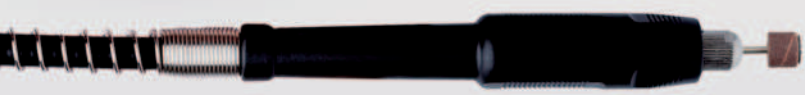

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Teaching from a tutor's point of view

Pete Moncrieff-Jury shares some thoughts on education in turning

Most professional turners I know earn a living not just from the things they make but also demonstrations and tutoring. Of these, teaching is perhaps the area that is most fraught with problems. Ideally you have a student who is keen, listens to your advice, understands what you are saying and follows instructions to the letter. Oh yes and has a natural ability. Sadly, this is a daydream. Working with students with learning difficulties in a mainstream college has proven a blessing and taught me a lot of things about working with some of the students I have had over the years.

Picture the scene. You have cleaned up the workshop, your tools are all sharp and you have all the wood you need prepared. The student arrives full of enthusiasm with a bag of tools they want you to look at, all blunt and some definitely not fit for purpose. On one occasion they were their father's and several were ground from files, bench chisels, etc. It took a while to explain that, just because their father never got hurt wasn't a good reason for using them now.

Another student arrived with a lovely lump of old oak from a beam in their cottage that they wanted to make something with. They had never been on a lathe before and couldn't quite understand why the oak was perhaps not ideal to start with, especially as there were several black stains on it suggesting possible buried nails.

The worst students are those that attack the wood, ignore your instructions, try to turn the lathe speed up full rpm and try to hack as much off as possible.

Students come in all shapes and sizes and mine have been as varied as a woman who had never even used an electric drill, a brain surgeon, a lad with Asperger's and a man who had been 'swotting up on YouTube' so needed to unlearn a lot before he hurt himself.

Like many crafts, woodturning has a language of its own and telling a novice to 'rub the bevel' can get you some odd looks. Think about it – when using the tools, you are often twisting, bending and moving them in three different planes at once. Try to explain that in simple terms.

This is why having worked with students with learning difficulties comes in useful. Not because the students are stupid – far from it – but because we all take things that we do regularly for granted and when teaching we need to use language the student can understand, descriptions that make sense and, if necessary, repeat in several different ways.

Other considerations are also varied – dietary, for example. I always provide lunch and had a student who was seriously lactose intolerant. The homemade soup we had provided was out of the question.

Partly due to the size of my workshop and partly for safety reasons I only ever teach one-to-one and when, as happens occasionally, someone turns up with a parent or partner I need to find something for them to do as well.

I am 1.93m tall and few of my students are that height, so I need to be able to adapt the lathe height to suit. Turning with the centre of the lathe at eye level isn't really a good idea.

PHOTOGRAPHS BY PETE MONCRIEFF-JURY

Teaching is very fulfilling. Having someone go home with something they have made themselves and are proud of gives me a sense of achievement, but it does have its moments. If nothing else each session makes you take a good, hard look at your own practice and habits. I would encourage anyone interested in turning to seek out some tuition – but if you do, try to be gentle with the tutor.

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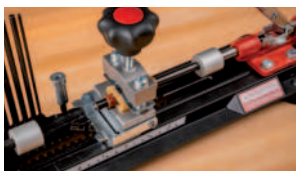

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