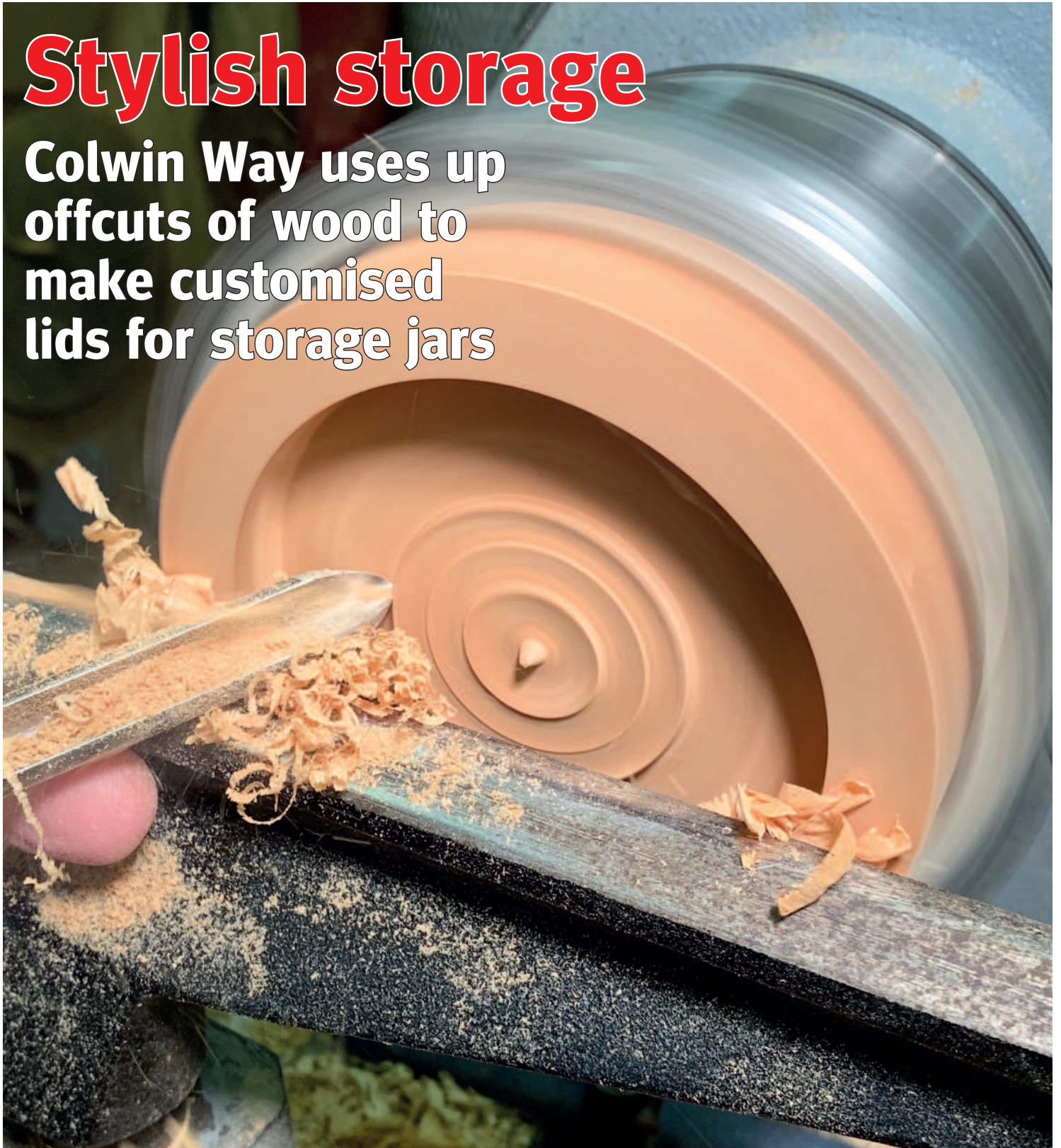


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**This month, *Woodturning* warmly welcomes the return of two authors who haven't been seen in these pages for a while. Janice Levi impresses with the techniques involved in making a see-through box and we raise a glass to James Duxbury's segmented wine glass bases.**

We also pay tribute to the practical and traditional sides of turning with Andy Coates's range of domesticware, Colwin Way's storage jar lids and the great-

grandfather of the craft, the pole lathe.

Steve Miller's colourful and creative work is celebrated in a showcase feature, and Richard Findley's monthly Editor's Challenge sees him revealing the hidden mysteries of his cryptex puzzle.

Stewart Furini continues his look at the use of colour on woodturnings, this time turning his attention to airbrushing, while Ian Woodford shares his techniques for making a decorative hanging pomander.

As if all that wasn't enough, there are the regular news and community pages, Kurt Hertzog's Clinic, Pete Moncrieff-Jury on common sense, and a look at the American Association of Woodturners' online symposium, including a glimpse of the instant gallery.

As always, we'd love to see your work, so keep us posted at [wteditorial@thegmcgroup.com](mailto:wteditorial@thegmcgroup.com)

*Happy turning.*

PHOTOGRAPH BY JAMES DUXBURY





COVER IMAGE: Colwin Way (see page 84)



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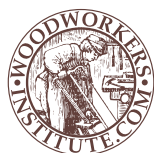
Find out what's in store in the next issue

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## HEALTH AND SAFETY

Woodturning is an inherently dangerous pursuit. Readers should not attempt the procedures described herein without seeking training and information on the safe use of tools and machines. All readers should observe current safety legislation when turning and wear appropriate personal protective equipment (PPE) and respiratory protective equipment (RPE).



### NEWS, LATEST PRODUCTS, MAGAZINE UPLOADS & EVENTS

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# Introduction to platters: part two

Mark Sanger further develops the design ideas for platters

**In my previous article we looked at the foundations, including wood orientation, work holding, tools and techniques, to produce a simple shallow platter. In this article I am going to expand on how we can develop the platter further by looking at the options available to us, such as design of the foot, rim and simple turned detail for adding variation and interest. While continuing in the main with the simple platter from the first article, here I am going to look deeper into design considerations and how the intended use of the platter can often dictate the overall design in use.**

After the turning of simple bowls the platter is a natural progression and enjoyable discipline to pursue that allows us a lot of freedom with regards to form

and design, especially if the platter is designed purely for display, to show off the beauty of the wood being turned, as with the wide rim platter. As with all turning disciplines it is a vast subject and, as such, I am only able to scratch the surface within this series of articles.

Previously I have mentioned the book *Woodturning Design*, by Derek Hayes (GMC Publications), which is dedicated to design within woodturning, as a great help to start your exploration in design. But don't forget, there are many sources available to us for platter design, such as libraries, museums and the internet, so tap into these too. Look not only at wooden platters but other objects from the many cultures around the world and how these are designed, decorated and

used, including those made in pottery, ceramic, glass, and metal.

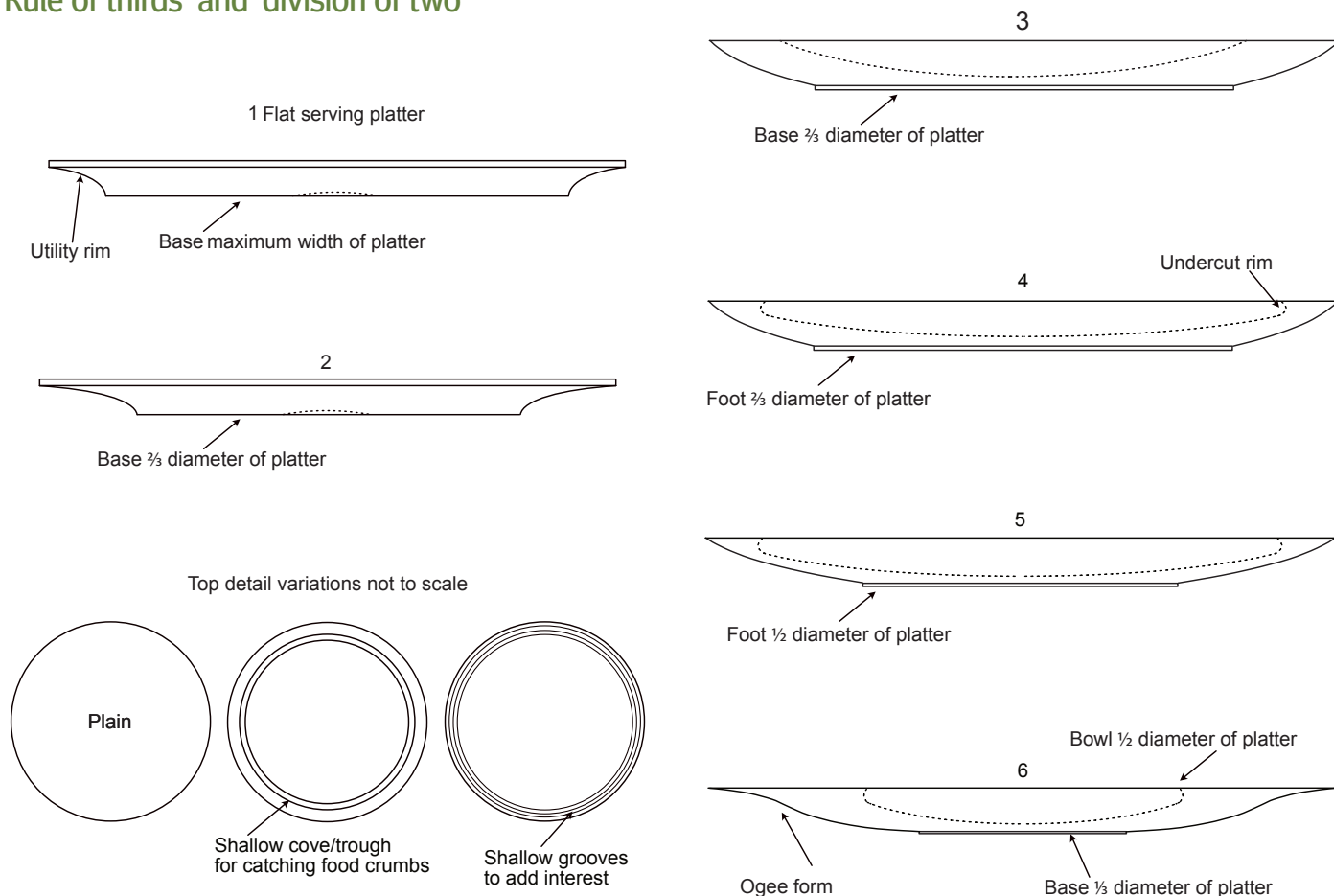
The turning of platters is an exciting and interesting subject to investigate, so keep your eye out and see what you can come up with. Through building up personal ideas from research we soon have a plethora of designs with just a few simple alterations to our base form. Eventually we can add texture, colour, and mixed media and take what originated as a simple platter and augment the natural beauty of the wood, finally developing further into a purely sculptural form, which will be covered in a subsequent article. It is my hope that this series will have you inspired by the diversity the humble platter offers as a canvas as well as a beautiful, pure wood form.



## Proportion

If we consider the platter purely as a utility item, then proportion and design can be discarded for the major part. If your platter is stable and fit for purpose, then we need consider little else other than the final finish to be applied. Any additional design, texture or detail should be applied sympathetically to facilitate ease of use and for easy cleaning.

## 'Rule of thirds' and 'division of two'



The 'rule of thirds' is a simple method by which we can mark out or visualise the projects we make at the lathe, and creates a proportion and appeal to the eye when viewed. It is used in photography and within graphic design where the points of interest or significant parts of what is being viewed, or is wanted to be viewed, are placed at the intersection of or on one of the lines of thirds grid. This can be used for proportions within our project. Illustrations 1, 2, 3 and 4 are a few examples of platters including variations of top detail. Example 1 is a flat platter intended for serving such items as cheese, breads, fruits and similar. The flat base produces a solid foundation across its surface to enable safe cutting of foods. This simple shape can be difficult to pick up, especially when laden, so here I included a simple outflow rim around the

outside edge for fingers to grip and lift.

A second option is to use the 'rule of thirds' to proportion the foot. In example 2, the foot is proportioned to be  $\frac{2}{3}$  the platter diameter. The foot lifts the platter slightly with the flowing-up curve of the form to the rim enabling it to be picked up and moved easily. In example 3, a wide rim is included to frame the shallow bowl with an outcurve internal profile. In example 4, this has been developed further to include an undercut rim, which acts as a physical stop to prevent smaller produce such as grapes and nuts rolling over the edge when carried, which can occur with a shallow outcurve rim.

Alternatively, if you feel the foot is overpowering the form, you could proportion the foot by 'division of two' so it measures half the diameter of the platter as in example 5. Finally, example 6 is a wide rim platter purely intended to show

off the wood's aesthetic appeal, although it could happily function as a utility form. However, the width of the rim removes a considerable amount of the available capacity and function within the central bowl. Here it can be seen that the foot has been reduced further to  $\frac{1}{3}$  the diameter of the platter, as has the base. A shallow ogee between the rim and foot lightens the look and feel of the platter. This is more suited to a design leaning toward the aesthetic as opposed to the purely utility.

Here I can only scratch the surface by showing a few simple forms. The important point when designing your platter is to keep in mind what the platter's intended use is. So, a pure utility platter should be produced with this foremost in mind, whereas with a platter intended for its aesthetics, such as example 6, emphasis can be placed on the aesthetic appeal over the constraints of utility.



## ◀ Maximising shallow blanks

When producing a platter with a flat profile, as illustrated in example 1, we have two main options available to us. The first is to use an oversize blank that is thicker than the final platter produced. Here the extra material enables us to mount the blank for turning using a faceplate, after which the waste and screw holes are turned away, a simple but wasteful option. Always aiming to minimise waste, my preference is to mount and drive the blank for turning of the base profile and recess via a friction drive held in the lathe chuck, with the tail centre being brought up for support. For this, first accurately mark centre on one face of the blank and mount against a friction plate, bring the tail centre up to the centre mark, apply moderate pressure to secure and drive the blank and check everything is locked and secure before starting the lathe. The base and recess are turned as outlined in my previous article in *WT347*, 'Introduction to platters'. Once the recess has been created, the blank is mounted for the turning of the front face as normal.

## Adding decoration

Primarily here we are looking at utility platters, although this does not mean we should not consider adding decoration and detail such as beads or coves to frame the platter, or add a sympathetic area of interest to complement the wood grain.



Blank mounted on friction drive

Again, the options available are many, so here I am showing just a few examples using standard turning tools and techniques.

## Utility rim/decoration

Large platters, particularly those that are designed with a flat profile as previously discussed, can be difficult to pick up, especially if laden with food. An option here is to create an up curve outer edge/rim that provides an area to grip, as shown in example 1. This is produced using a small bowl or spindle gouge and cutting from inside out in an arc up to the rim – so cutting with the wood grain – after which the surface can be refined further if required with a scraper.

Here I am using a shear scraper presented with the cutting edge at 45° to the wood surface, but a standard round-nose scraper can be used if you do not have one of these. Present your freshly sharpened scraper to the wood with the cutting edge on centre height and the tool blade trailing slightly down in scraping mode to prevent a catch occurring.

Fine grooves for detail are added using the toe of a skew chisel presented flat on the toolrest, with handle higher so the tool is trailing in scraping mode. Gently push the point of the toe into the wood until shallow grooves are produced.

An effective way of producing equally spaced grooves is to push the points of a beading tool partially into the surface, then line up one of the points with the previously produced groove. Any detail added to a utility platter is a potential trap for food particles, so for ease of cleaning I produce only shallow grooves of 1mm deep. The groove is then highlighted using a burn wire, which not only defines the grooves but, more importantly, burns and seals the base of



Cutting with the grain towards the rim



Cleaning the surface with a scraper



Conventional round-nose scraper in trailing mode



Skew being used for detailing

the groove to help prevent food particles accumulating in the open pores of the wood. This allows for effective cleaning by simply brushing out with a soft brush and mild soapy water.

Commercially produced wire burners are often too short to be effective on a large diameter vessel. In this instance, I produced my own burn wires, attaching

longer lengths of 20 gauge nickel chromium pyrography wire, available commercially, to pieces of dowel for holding. The longer the wire the higher the risk of potential injury if caught on the wood and snatched from the fingers, so never wrap your fingers around the wire and only run the lathe at the lowest speed required to burn.



Using the points of a beading tool to create equally spaced V-cuts



Creating burn lines

## Undercut rims

Undercutting the rim of our platters not only produces a physical stop to prevent items rolling out when the platter is in use, it also creates the impression that the bowl of the platter is deeper than it is, and frames the bowl by creating a shadow around the rim.

There are several ways of creating the undercut, here shown in producing a wide rim platter in sycamore (*Acer pseudoplatanus*). The first is to use a small bowl gouge to hollow out the rim. When creating an undercut, if the gouge is not

presented correctly it can skid out resulting in a catch and damage. It is important the tool is plunged gently into the surface with the bevel fully supporting the cut before proceeding deeper into the rim. First I hollow out the central waste section of the bowl, leaving the wall thick, and then the gouge is presented with flutes pointing at 3 o'clock, also known as closing the flute. Once this is achieved the handle of the gouge is pushed away from my body until the bevel is pointing in the direction of the desired undercut, with the gouge gently

plunged several millimetres into the surface until the bevel is fully supported before slowly opening the flute to point toward 2 o'clock. While continuing to plunge gently into the wood, shaping the undercut as the handle of the gouge is gradually arced toward my body, the cut proceeds deeper in and around the undercut.

This process is repeated until the desired undercut has been created, at which point I continue to hollow out the inside of the bowl to centre as described in my previous article in *WT347*.



Taking a cut with the flute pointing to 3 o'clock



Flute opened up to the 2 o'clock position



Progressing the undercut

## Alternative method to shape undercut

If you are not confident in the early stages of your turning, an alternative method of creating an undercut is to use a small, round-nose scraper. This is a very poor second to the gouge and, in essence, not the right tool for the job. The nature of a scraper on a cross-grain blank is that of a finishing tool, so when used for heavy material removal it often causes tear-out across the end grain. But this is the lesser evil than the gouge catching and damaging the rim, and a safe option when starting your undercut journey. So, while I urge you to use a gouge to shape the undercut, shaping with a scraper is achieved by first hollowing out the initial stages of the platter while leaving the section for the rim thick with an outflowing profile.

Present the scraper flat on the toolrest to cut on centre height, with the shaft of the tool trailing slightly down in scraping mode. The scraper is then plunged gently into the undercut, arcing gently left and right from the fulcrum/pivot point of the toolrest and fingers, while slowly plunging the tool into the wood until

the desired depth and undercut profile is achieved. Alternatively, if you want to create an undercut with a tight radius then a small round-nose box scraper can be used.

To frame the rim two fine grooves were added, approximately 5mm in from the router edge, using the toe of a small skew chisel as previously shown. To add interest, the section between the grooves was turned convex using a bowl or spindle gouge. Burn lines are added to the grooves by pushing a small piece of Formica into each groove. This material I collect from discarded tables etc., obtained from my local refuse centre. Alternatively, a small wedge of a dense timber such as African blackwood or similar can be used to achieve the same effect. The remaining internal profile of the bowl was then hollowed with the bowl gouge and the surface refined with the round-nose scraper before all surfaces were finished with abrasive from 120-320 grit. The foot/recess was refined and finished with abrasive as described previously in my article in *WT347*.





Round-nose scraper in trailing mode



Using a round-nose box scraper to create the undercut



Creating details with the skew



Cutting a convex detail



Burning the detail lines with Formica and hardwood wedge



Cleaning the surface with a round-nose scraper

## Finishing

A food-safe oil finish was applied to all surfaces as per the manufacturer's instructions, with the excess being wiped off. The platter design here has been turned with utility in mind, while looking at the undercut and simple detail. In the next article in this series I am going to investigate the methods and techniques available to us for decorating platters, including

texture, colour using stain and paint, as well as other media such as metal leaf for adding highlight and interest, so concentrating more on the aesthetic possibilities available to us. I hope you have enjoyed this article. Experiment and see what you come up with but, most importantly, stay safe and have fun turning. ●



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# Good With Wood:

**A new series from Channel 4 will showcase the skills of UK woodworkers**

**Our favourite craft is coming to the small screen later this year as the UK's most talented woodworkers are to be put to the test in a new, six-part series from Plimsoll Productions and Channel 4.**

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challenged to craft beautiful and ambitious builds to exacting briefs. Over a series of competitive rounds taking place in a stunning woodland setting, they will have their skills tested to the limits.

Each episode will centre around a 'Big Build' in which the contestants will create large and imaginative wooden structures and objects, as expert judges scrutinise their designs, techniques and skills. The competitors will be pushed to their limits, with only one crowned as winner.

Mel Giedroyc said: 'In the words of Ian Faith, the manager of Spinal Tap, "... in the topsy-turvy world of heavy rock, having a good solid piece of wood in your hand is often useful." I would add to that by saying that in the topsy-turvy world of 2020 IN GENERAL, having a good solid piece of wood in your hand is pretty much ESSENTIAL. So, if you go down to the woods today, you're in for a big surprise. Good With Wood is going

to be something we can all lean on. I can't wait to make like Edward Woodward and get WOODSWARD.'

Karen Plumb, head of factual entertainment at Plimsoll Productions, said: 'In a throwaway world, more and more people are turning to woodwork to connect them to nature and their creativity. We're delighted to be making this escapist and ambitious competition for Channel 4.'

Daniel Fromm, commissioning editor at Channel 4 Popular Factual, said: 'Joyous, insightful and entertaining, this series is feel-good factual entertainment and an antidote to our times, as it celebrates the extraordinary craftsmanship and artistry of the country's finest woodworkers.'

**To learn more about the series, and maybe even take part yourself, check @goodwithwoodtv on Instagram and Twitter.**



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# Turn a see-through box

Janice Levi turns an intriguing little item that always prompts the question:  
'How did you do that?'



PHOTOGRAPHS BY JANICE LEVI

**This little box always leads the viewer to ask how it was done, and that is exactly the question I asked Steve Leker of the Artistic Woodturners of Northwest Florida, US.** I was there to do a demonstration and was invited to critique entries in the

President's Challenge, boxes. Steve's little box was intriguing. I could see through it. After hearing a general explanation of how it was done, I decided to give it a try when I returned home.

Although the box itself is relatively

simple, I soon discovered that when it came to creating the see-through 'windows', great care was needed. The little ridges are quite delicate, so proceed slowly when sawing through the opposing sides of the box to create the openings.

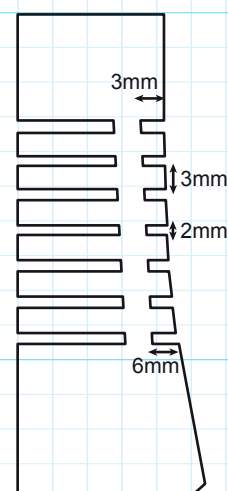
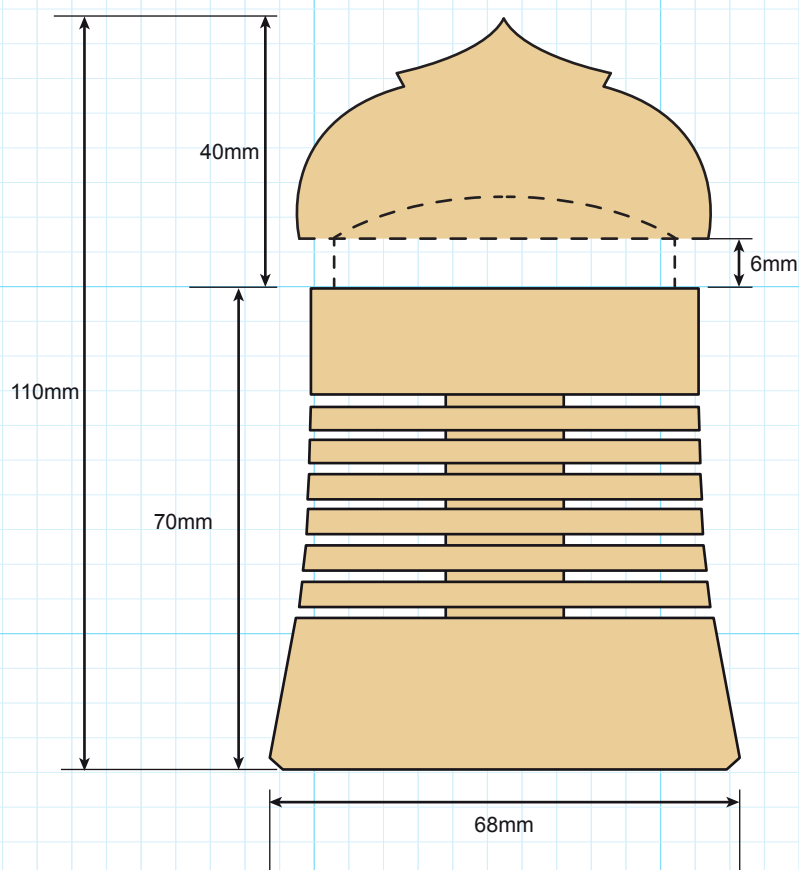
**TOOLS AND MATERIALS**

- Personal and respiratory protective equipment (PPE & RPE)
- Spindle roughing gouge
- Spindle gouge
- Bowl gouge
- 10mm parting tool

- 2mm parting tool
- 30mm Forstner bit or similar drill bits
- Hollowing tool
- Pull saw or mitre saw
- Fine-toothed saw such as a hacksaw blade
- Ruler

**MATERIALS**

- 150mm x 75mm end-grain poplar, mahogany, or other closed-grain wood
- Abrasives down to 400 grit
- Painter's tape
- Oil-based finish

**MOUNT AND TURN**

**1** As in turning any other lidded box, the wood needs to be dry, and because hand sawing is required, the exotic hardwoods might not be the best choice. Mount the blank between centres and turn to a cylinder. Next, turn a tenon on each end of the 150mm x 75 mm cylinder.





**2** Using any one of several tools – roughing gouge, spindle gouge, or bowl gouge – begin shaping the outside of the box. To accommodate the lid, turn a recess about 6mm wide and 3mm deep. A parting tool can be used.

**3** To create the recesses that make the box ‘see-through’, use a pencil to mark how many recesses you prefer to have. The box in this article has seven and a cut line is marked every 5mm. The turner may decide to make the ridges a bit wider, which will make them less delicate when the hand sawing is done.

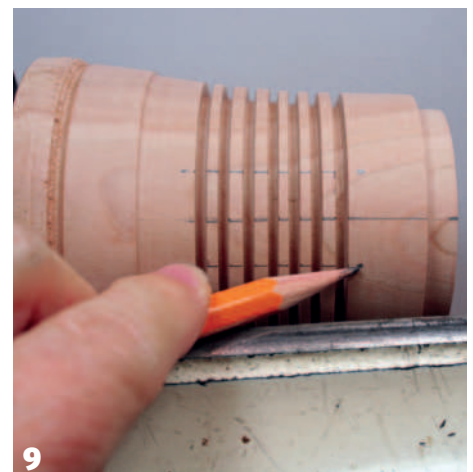
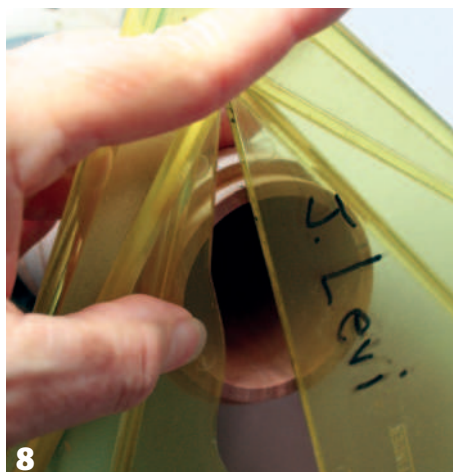
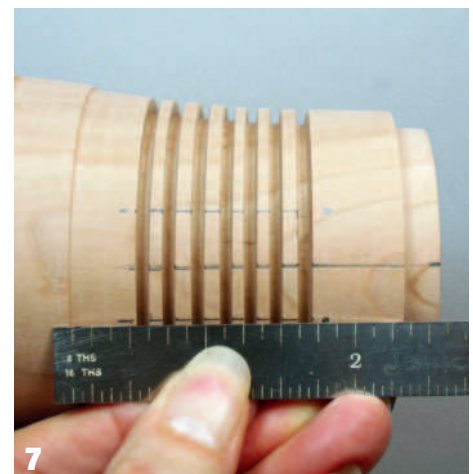
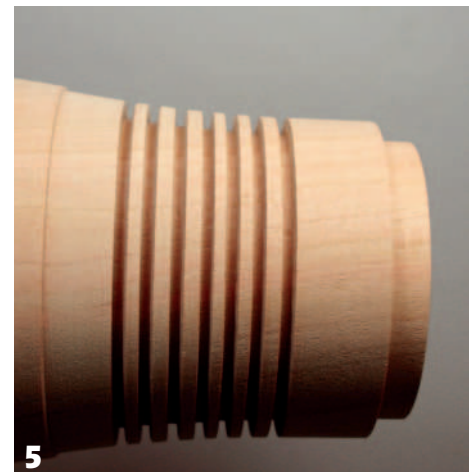
**4 & 5** Use a 2mm-wide parting tool with a curved kerf to create the recesses 3mm deep. The kerf reduces the possibility of tear-out but tear-out can also be avoided by using the tip of a skew or three-point tool to lightly pierce the wood to cut the fibres. Then a regular 2mm parting tool can be used. A line drawn on the parting tool with a marker helps keep the 3mm depth consistent.

**6** It is now time to hollow the box. This process can be accomplished in several ways. A Forstner bit can be used to remove much of the wood. Traditional drill bits of varying sizes can also be used to create a hole in the centre. Because the box is small, hollowing can be accomplished by drilling a centre hole with a spindle or detail gouge. A square-nosed scraper can be used to tidy up the sides and bottom. A wall thickness of about 6mm makes the sawing task easier than a thicker wall. Sand the outside and inside of the box to 400 grit.

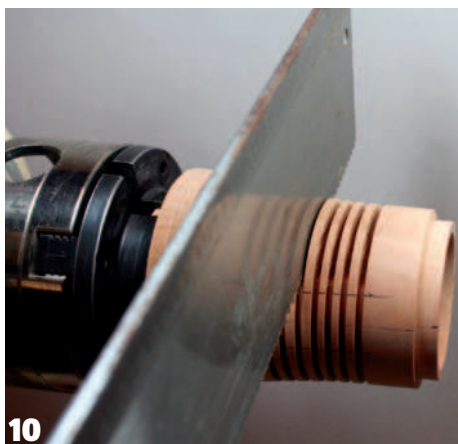
## SAWING THE RECESSES

**7 & 8** To prepare for creating the ‘windows’, you must determine how much solid wood you plan to leave on each side of the box to support the ridges that frame the windows. This may vary, but somewhere between 10mm and 15mm will be enough wood for the necessary support. Once the decision is made, you can use a centre-finder and ruler to mark the sides of the box.

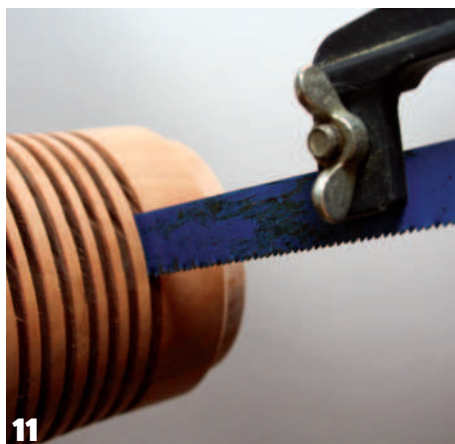
**9** If your lathe has an indexer, you can use that to mark the width of the solid wood on each side of the box.



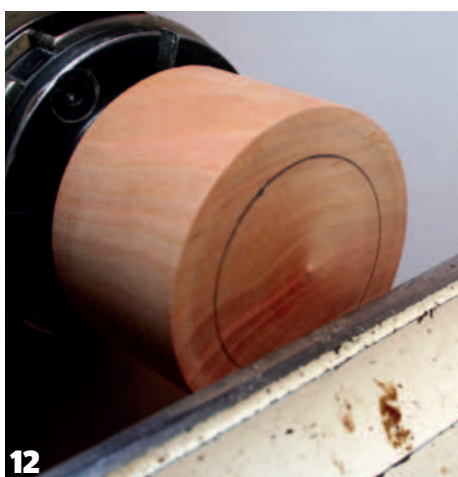




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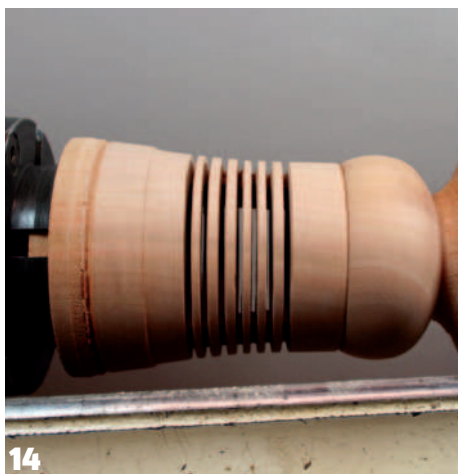
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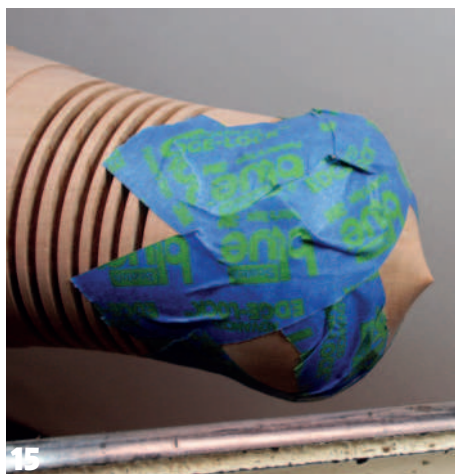
12



13



14



15

#### OPTION FOR FINISHING THE TOP

An option for finishing the top of the lid is to use small jaws on your scroll chuck and expand them with light pressure into the inside of the lid. Careful cuts are used to finish shaping the top of the lid.



Small jaws are required for expanding into the lid to make the finishing cuts



16

**10** To create the 'windows,' a pull saw or mitre saw with a 2mm kerf is preferable. A narrower saw can be used but two or three cuts to open each window may be necessary. Carefully saw until the blade has reached the pencil marks on each side. Use painter's tape to minimise possible tear-out inside the box.

**11** Squaring up the cuts with the box walls requires a small saw that can reach inside. A hacksaw blade or other small saw will work. Proceed carefully because there is the risk of breaking the delicate ridges. Use a small piece of 120-grit abrasive folded in half to sand inside the ridges. To avoid any tear-out inside the box, wrap the abrasive around your finger and sand with the lathe off. Support the delicate windows with your other hand. Without parting off the box, remove it and put the lid blank into the scroll chuck.

#### TURNING THE LID

**12** True the face of the lid blank. Measure the diameter of the outer wall of the box's bottom section and use a pencil to transfer that measurement to the trued face of the lid blank.

**13** Use a parting tool and plunge it into the lid about 3mm to 'sneak up' on the pencil mark, fitting the bottom section to the lid often. When the lid fits snugly, deepen the cut to 6mm then shape the inside with a slightly domed shape. Apply any decorative cuts now and sand through the grits to 400.

**14** Place the bottom of the box on to the lid and bring up the tailstock. When the lid has been shaped as much as possible, remove it from the scroll chuck and reinsert the box. Place the lid on to the box and bring up the tailstock to hold it securely.

**15** Proceed with shaping the top of the lid. To finish shaping that portion in contact with the tailstock, use painter's tape to secure the lid to the box. Remove the tailstock and take light cuts. Sand the lid.

#### FINISHING THE BOTTOM

**16** One option is to part off the waste wood from the bottom and hand sand the area. However, for a more finished look, use small jaws expanded lightly into the box. Bring up the tailstock for support and use a bowl gouge or spindle gouge to cut away the excess. Finally, remove the tailstock and take light cuts to finish shaping the bottom then sand it.

The open ribs in the box are fragile and will not stand up to a brisk buffing. One option is to simply dip the entire box into the finish, gently wipe away the excess and let it dry. Repeat as needed.

Once you have turned this little box, your imagination will find many other applications for the 'see-through' technique. ●



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# Understanding scrapers

Les Symonds progresses through his in-depth look at the tools we work with, completing his series with scrapers



**In this series of articles, which has already examined a huge variety of ‘cutting’ tools, I aim to give turners a better understanding of the tools they use. This month I am looking at the scraper, a tool used by the great majority of us and which, more importantly, is one that performs a different task to all other tools as it is not used for cutting, therefore it falls into a classification of its own. There will be an emphasis on understanding the dynamics of what makes scrapers work well and what can therefore make them fail, but essentially, I aim to give you a level of understanding of scrapers that will enable you to avoid the pitfalls and to use them to your 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 covering it are available. 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, plus some hints on safe ways to use them.

Thus, with this look at the scrapers, I will briefly consider the many versions of profiles and grinds that have been developed historically, but I will concentrate on the most popular in use today. I will consider how and why different grinds are formed and used, and how these variations can help or hinder your work. One important point to bear in mind when you buy a scraper is to choose one which has a heavy cross section for its shaft to reduce vibration. Lightweight scrapers simply do not work.



## ◀ What makes scrapers so different to all other tools?

Perhaps the best way to grasp the essential difference between scrapers and cutting tools is to consider this simple analogy: Pick up a pencil and a craft/Stanley knife, then sharpen the pencil – you will almost instinctively present the blade against the pencil such that its bevel is rubbing so it performs a cutting action. Then start again, but this time present the knife blade so it is perpendicular to the pencil and push the blade along – it now scrapes. It is also worth drawing a simple conclusion from this exercise, in that a cutting action will work rapidly, but a scraping action will work slowly. In both cases, a sharp blade will give the best results.

For those turners new to the craft, you will note that an essential aspect of the use of a scraper is that you do not attempt to rub the bevel; rather, you hold the tool horizontally on the toolrest, with firm pressure to keep it there, while you simultaneously let the edge of the tool simply glide across the surface of the workpiece. The gentlest pressure against the workpiece will give the best results.

Those turners who have formerly worked in the field of fine woodworking may have experienced the use of a cabinet scraper, a tool which bears many similarities to our own scrapers. For those unfamiliar



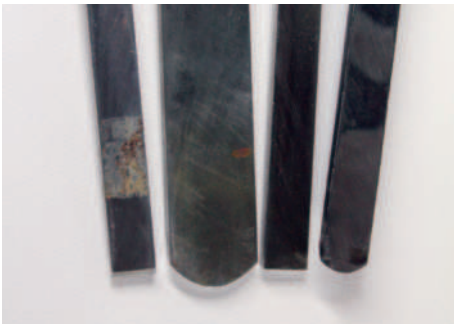
**Do not attempt to rub the bevel**

with this, the cabinet scraper is simply a postcard-sized piece of tool steel, of a thickness that allows it to be flexed very slightly. It is held with one long edge resting on the workpiece, the other uppermost. The fingers of each hand grip it at the outer (shorter) edges, while the thumbs put pressure on the back of the scraper, so as to flex it. When it is pressed down, then tilted and pushed forwards, it finely scrapes the surface of

the workpiece. The similarity between the cabinet scraper and a turner's scraper then becomes quite apparent.

Finally, the way in which a scraper works makes it well suited to cleaning cross-grained bowls, some end grain and even complex burrs, but scrapers simply do not give an acceptable finish on long-grained spindle turning work, so bear this in mind when you use one in future and keep your scrapers for faceplate work.

## Typical shapes of common scrapers



**A selection of traditional square and round-nosed scrapers**



**A diamond pattern scraper**



**A selection of box scrapers**

The scraper has a greater range of shapes and sizes than any other tool – there are dozens and dozens of them, either commercially available or as profiles adapted to by many of us. However, a basic tool kit, as provided by many manufacturers, concentrates on two fundamental shapes – the square end for use on flat and convex surfaces, and the rounded end for use on concave surfaces. These two shapes are further developed by most turners. Speaking personally, my square-ended scraper has a very slight convex curve, while my rounded-end scraper has what is loosely termed a 'French curve' ground on to it. The reasons for these two adaptations are simple, when using a true square-ended scraper on a flat surface such as the bed of a plate or platter, the two corners of the end of the tool can so easily make little tram lines, so I radius the end very slightly. The French curve is enormously useful inside bowls, in that its multitude of curves can be used to best advantage to 'fit' into

the curve of the bowl, whereas its long, left edge is excellent for drawing up along the wall of the bowl.

There is a third shape which became popular years ago and which featured in many turners' tool kits, and that was the 'diamond' scraper, although it would be fair to say that this tool is rarely used by the more experienced turner. Its shape, viewed from above, was of a simple, forward-pointing V, thus it was ground along two outward bevels to a central point. In much more common use these days is the range of scrapers shaped to fit inside turned boxes and lidded bowls. These tools vary considerably, according to who grinds them, but generally have some of a variety of features, including a French curve end, an undercut (bulbous) end, which allows it to scrape underneath an inward-projecting rim, or a simple square end, radiused slightly on the left corner, leading into a ground edge along the left-hand side.

## Other types of scrapers available



Various teardrop scrapers



A modern carbide 'cutter'



These all perform a scraping action

We should also consider the solid carbide scrapers, which are secured on to the end of a special tool shaft by means of a grub screw, and which come in a variety of shapes, such as teardrop, mushroom, French curve and square. These shaped scrapers can be acquired as complete tools, or as interchangeable tips, and are used for a variety of tasks, such as scraping clean the inner surface of small bowls like egg-cups, goblets and boxes.

A more recent adaptation of the above is the development of carbide or tungsten carbide tipped tools, again with interchangeable tips. These are frequently

sold as a set of three shapes – square, diamond and round – and marketed as cutting tools they can be excellent for roughing out. They are ground to a much sharper bevel angle than traditional scrapers, but still use a scraping action. They remove material much more rapidly than the traditional scraper, but they will rarely give a good-quality finish, so traditional tools or excessive amounts of sanding will be needed to complete each task. These tools are becoming widely available and are frequently bought by novice turners in the belief that they offer an inexpensive way of acquiring a tool

kit, and that the techniques involved in using them will be simple to learn, but this approach to the craft rarely pays dividends in the long term.

Extra to all of these is a range of tools not generally marketed as scrapers, but which only ever perform a scraping action, and these include a variety of tools designed to perform specific tasks, such as for cutting beads, for crush-grind mechanisms and for forming captive rings. While we are discussing such tools, I guess I should also mention thread-chasing tools as they fall quite conveniently into this group.

## Grinding traditional woodturning scrapers



The profile of a traditional scraper

As with all tools, woodturning and otherwise, there is no single correct angle at which to grind the cutting edge, but there are guidelines, especially for beginners. Follow these guidelines but keep an open mind and, when you are comfortable with what you have learned, experiment with different angles and see what works best for you.

Essentially, a scraper is quite a blunt tool, in that a typical grind will be in the order of  $80^\circ$  and we will use this guideline throughout this article, thus a traditional scraper, be it square or round ended, is very simply ground freehand on a platform set at  $80^\circ$  to the grinder wheel or finishing belt, but that is only the beginning of the process. What will give your scraper a much keener edge and cleaner scrape will be a burr, rolled up on the top edge. The aforementioned grinding process will produce a very small burr, but this lasts only seconds when scraping the surface of timber. If you are happy with this, and especially if your workpiece needs only very fine scraping, then that is fine, but if you wish to form a longer-lasting burr, then we look back



The grinding table set at  $80^\circ$



Using a simple burr-raising rig

to the way in which cabinet scrapers are prepared for work. The cabinetmaker would rub quite vigorously the shaft of something like a large screwdriver along the scraper's edge to cause a distinct burr to form, which performed its task admirably, and some turners now choose to make up a simple rig which performs this task on the end of their scrapers.

Scrapers burred in this way will produce shavings that break down into dust when rubbed between two palms.



## ◀ Grinding interchangeable carbide tips

Of the two types mentioned above, let's first consider the true scraper tips, such as the teardrop shape. These are frequently ground to a  $90^\circ$  angle, so they can be used either way up when set on to the end of their tool shaft. This makes them a very simple tool to grind and also gives a greater range of workpiece shapes that they can be used on.

Conversely, the carbide cutting tips (square, diamond and round) are sold pre-ground to a lesser angle and are not normally reground by the user, thus they tend to be treated as disposable.

Table set at  $90^\circ$  – simply rotate the cutter against the grinder



## Negative rake scraper

This natural development of the scraper is gaining in popularity. When using a traditional scraper, say for the finishing process inside a bowl, it should be held close to horizontal, with its edge just below the lathe's centreline. It is ground to  $80^\circ$  and this gives a safe working angle for this application. Many experienced woodturners discovered that a finer finish can be achieved, especially on complex grain, by lifting the handle and pointing the tool down into the bowl, but this method of holding the tool bears dangers for inexperienced turners.

Consider the three diagrams: in the first, the tool is held correctly and safely and its end touches the work-piece as shown at A in the enlarged section of the diagram. Lifting the handle, as you can see in the second diagram, changes the angle at which the tool now touches the surface of the workpiece. The angle A remains the same, but its orientation has changed.

While this can give improved results, the danger is that the tool, which is already pointing downwards, can easily be grabbed by the workpiece and pulled further down. The slightest catch or lack of concentration on the part of the turner becomes quite a danger and a serious dig-in might well occur; indeed, the tool can be pulled out of your hand. Essentially, this practice needs the delicacy of tool control which comes with years of practice and should not be tried by those of lesser experience.

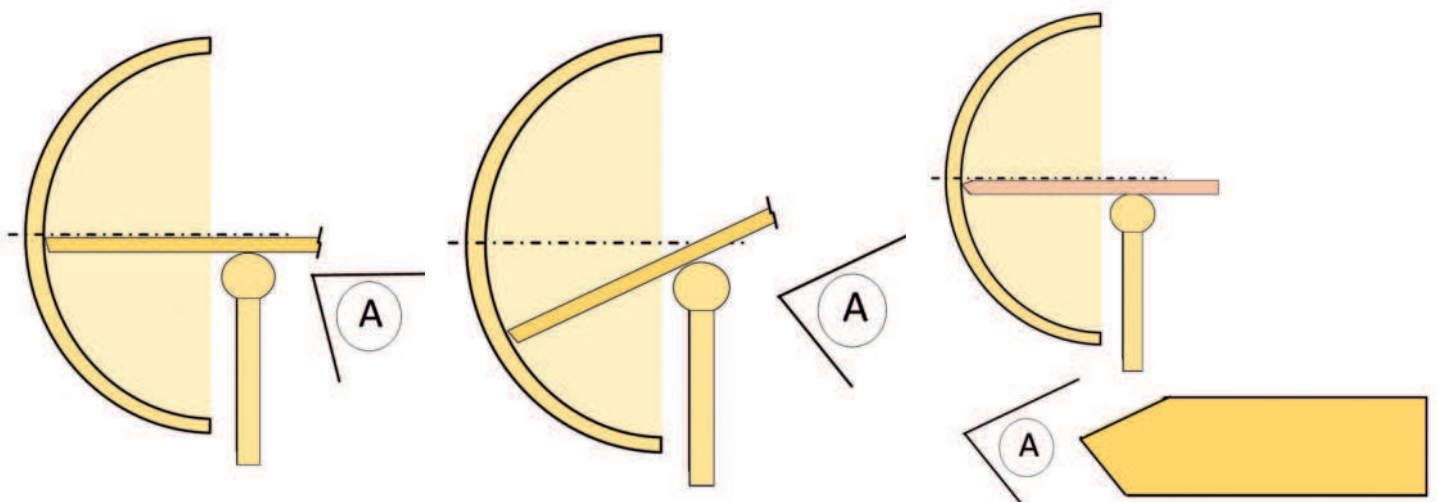
Now look at the third diagram and you will see a typical example of a negative-rake grind. Essentially, the tip of the tool now has a second grind (its rake angle), on its upper face, while the lower face (its bevel angle) is ground back at a sharper angle, retaining the combined angle at A of  $80^\circ$ , but allowing it to be presented in the efficient manner of diagram 2, while retaining the safe practice of diagram 1.

Please note that the grind angles for

both rake and bevel can be varied and really are a good example of how personal choice and experience can influence the way in which you prepare and keep your tools.

Some people use an upper grind of about  $20^\circ$  and a lower grind of  $60^\circ$ , this gives the combined angle at the tip of  $80^\circ$ . Others prefer a much sharper angle at the tip and use a rake angle of about  $20^\circ$  and a bevel of about  $70^\circ$ ; this gives what appears as the same angle to each of the upper and lower faces of the tool... it could well accidentally be used the wrong way up. It really is up to you to experiment and find the angle that suits you.

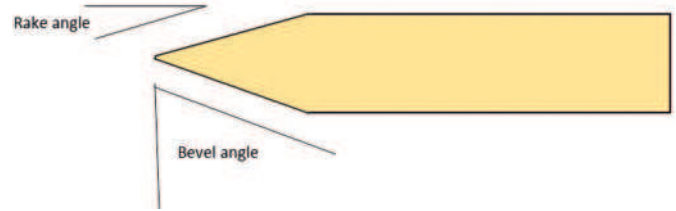
Note that when sharpening the tool during use, it is normal only to hone or grind the bevel angle. With time, this practice will result in the length of the rake gradually shortening, so after a while, both angles will need to be addressed.



Correct presentation of a scraper

Dangerous presentation of the tool

The negative rake grind, retains the angle at A and the raked presentation of the tool



Negative rake grinds can vary considerably



This grind can produce ultra-fine shavings



An interchangeable scraper being used as negative rake

## Shear scrapers

If you've read the rest of this series or just had plenty of experience of bowl turning, you will be familiar with the concept of shear cutting. This involves presenting a cutting edge at a shallow angle to the workpiece, such that material is sheared away from the surface, rather than chopped away. A similar approach can be achieved with scrapers, but if you are using traditional scrapers, then you need to approach this practice with caution.

In its simplest form let's say that we wanted to shear-scrape the flat bed on the inside of a large platter. In this case, shear scraping would involve holding the tool with its handle and shaft horizontal and its tip at the centre of the platter, but then the handle is twisted anti-clockwise, such that the end of the scraper, instead of being square to the workpiece as it passes the tool, is now at a shallower angle. The danger with this unsafe practice, as you will see from the image, is that only the bottom corner of the shaft of the tool is properly supported on the toolrest; if any other part of the end of the scraper makes contact with the workpiece, it will almost certainly be suddenly and violently pushed down on to the toolrest.

To overcome this danger, commercially made shear scrapers might have a square section shaft, with an interchangeable carbide tip such as a teardrop scraper, set on to the end of it.



This clearly shows the peril of tilting the traditional scraper

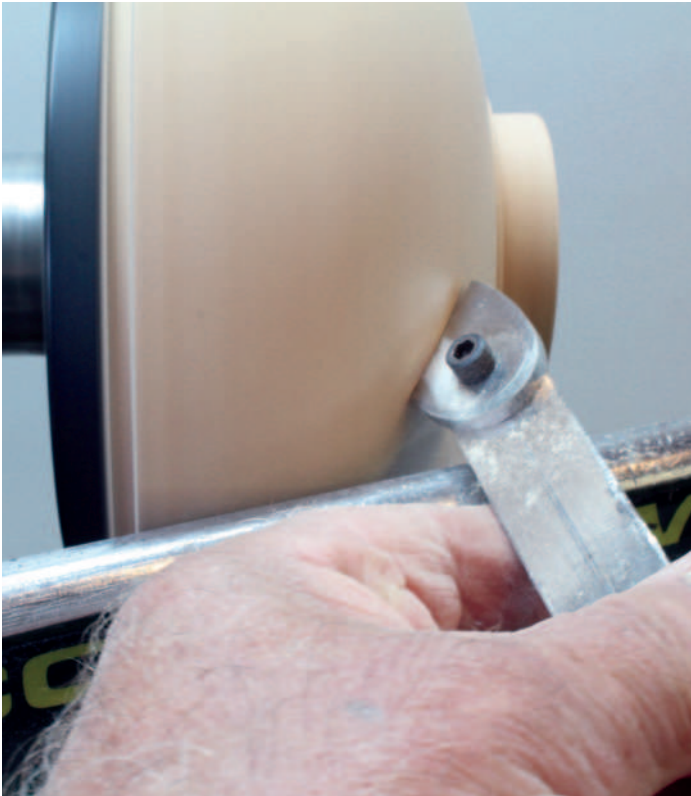
The end of the shaft will be factory ground such that the scraper tip is held at  $45^\circ$ , giving a presentation to the timber which will give a shearing effect. Alternatively, a half-round section shaft is manufactured by Robert Sorby; the radiused surface lying on the toolrest and the scraper set on top of it. Again, refer to the image. Each of these methods affords the tool an adequate fulcrum point to support the angled scraper-cutter.

A finer development of the basic commercial shear scraper is the Munro shear scraper. What sets this tool apart from others is

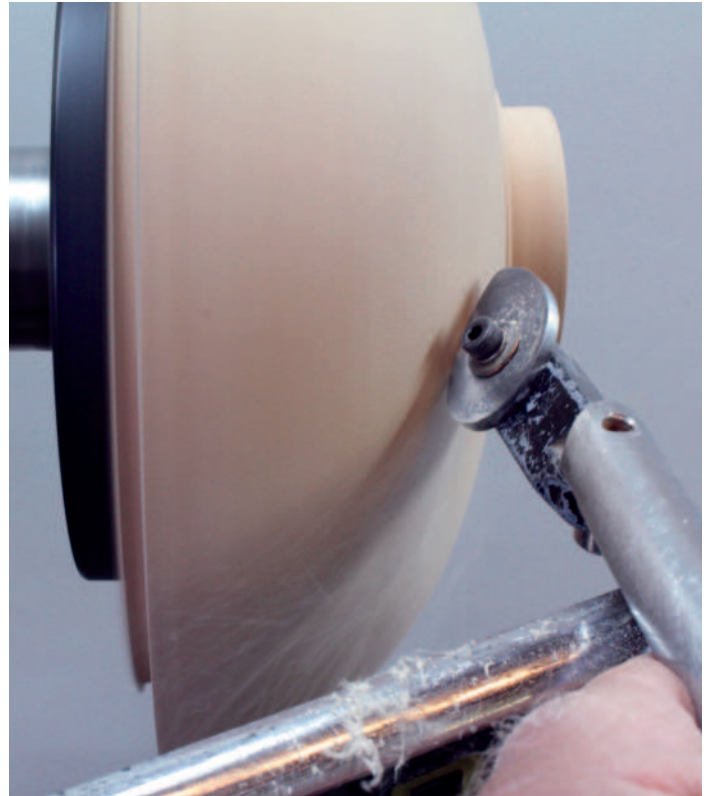


that the entire end of the shaft, to which the scraper is attached, can be swivelled and secured side-to-side, let's say from 9 o'clock through any position to 3 o'clock, while the scraper tip can be affixed either to the left side or the right side of the

tool. This tool can both shear scrape and act as a negative rake scraper, either independently, or concurrently, and can act in both a push cut, down into a cross-grained bowl, or for a pull cut through an end-grain bowl.



The Sorby shear scraper with half-round shaft



The Munro scraper set for shear scraping



The Munro shear scraper head, offset to one side

#### Fastening Carbide Scraper Cutters

Vibration is the enemy of all scraping tools, so if you're working with the replaceable cutters that we have mentioned, firmly securing the cutter in the tool-shaft is essential. Various manufacturers use such fixings as recessed grub screws or Torx screws, so be sure to have the appropriate tool to hand, but more importantly, keep an implement such as a dental pick to clean compacted wood-dust out the recess in the head of the fixing, before you insert the Allen key or Torx key. An ill-fitting tool will not sit deeply into its recess, damaging the head of the fixing and making it difficult to remove or replace.

#### HEALTH AND SAFETY

Due to the lack of complexity of their use, scrapers tend to be thought of as a very safe tool, but there are exceptions. As has been mentioned, there are two alternative methods of scraping, which need to be treated with caution. Using a scraper with an elevated handle is potentially dangerous and scrapers should not be used in this way. If you wish to experience the benefit of the negative rake, you must regrind a tool appropriately, otherwise a catch could pull your hand forward into the hollow of a bowl, with obvious consequences. Likewise, attempting to shear scrape with a traditional scraper is a practice to be avoided, so get the right equipment if you want to try this approach.

#### Conclusions

As we have seen, few tools in the turner's kit have undergone so many changes and have so many variations available today. While some highly experienced turners might be able to produce a fine finish directly from the gouge, which needs only the finest sanding to prepare it for a finish, few turners of both novice and intermediate level have such experience. Do not feel any sense of inadequacy or lack of skill if you use a scraper, they are there to perform a specific job and they can do it well. ●

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# Cryptex

This month's Editor's Challenge to Richard Findley is to make a portable vault



**My challenge this month came in the form of an email from the Editor. The challenge is to make a cryptex, which is a type of locking box. The idea of a cryptex seems to have been created by author Dan Brown in his book *The Da Vinci Code*.**

It works much like a bike lock, with a series of rings with numbers, letters or symbols marked on them. When the correct set of digits is lined up the lock – or, in this case, the box – opens. I have seen cryptexes but have never really

looked into how they work or are made, so this will give me the opportunity to do so.

As usual with this sort of challenge, my first port of call is YouTube. A simple search brings up a wide range of videos, from people making them out of plastic plumbing pipe and fittings, to high-level engineering projects with ball-bearings and adjustable codes. Of course, the videos I am interested in are the woodturning ones, and there are several, some better than others. I have to watch

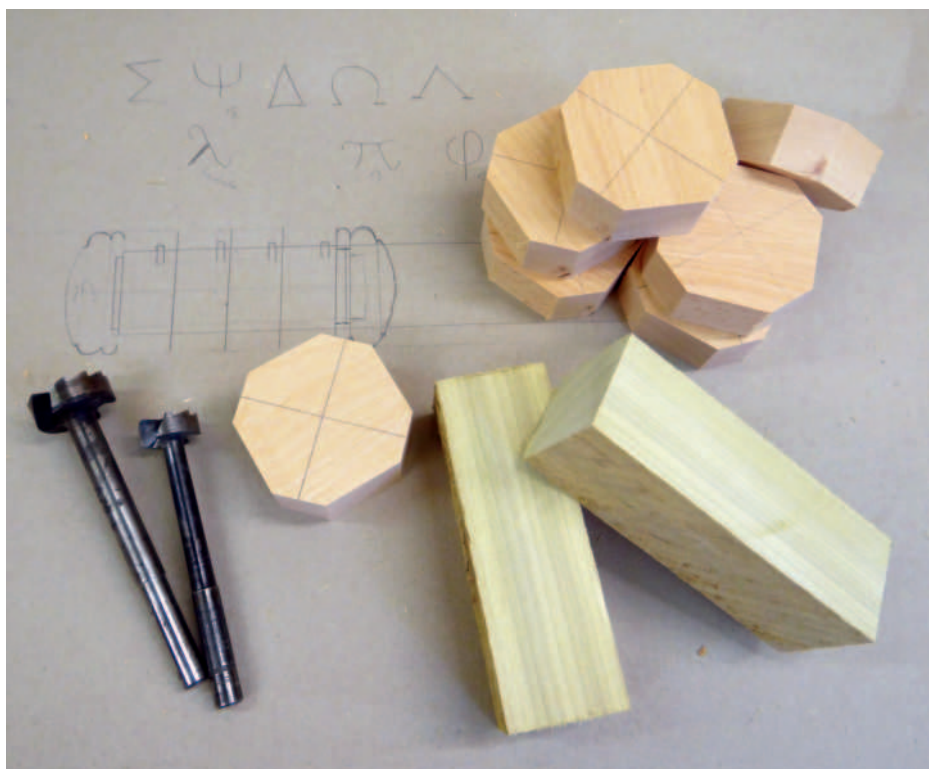
a few a number of times to fully get my head around what I will need to do. The concept is fairly simple but there are a lot of components, which each need several things doing to them, so it quickly becomes a complex project. Actually making the cryptex successfully for the first time is going to be tricky, but if that wasn't enough, I then have to get it down into an article that is easy to understand! So, there are several challenges involved in this one.

## Timber and drills

With the two tubes being the basis around which everything works, I decide to take a look at my drill bits and see what will be useful. After some thought, I choose two of my old imperial Forstner bits – a 1½in (roughly 38mm) and a 1⅛in (roughly 28mm). These allow me to keep the wall thickness of my tubes around 5mm, which seems like a good balance between strength and lightness.

With this decision made, I draw out my cryptex full size. This gives me the rest of the information I will need, such as the width and diameter of the rings, and allows me to pin down the design of my end caps and work out how to make the fixed ring that holds it all together part of the design rather than an afterthought. I am also able to work out most of my dimensions from the drawing. I hadn't taken any dimensions down from watching the videos (if any had been quoted) so the sizes I will use are entirely based around what I feel is right and the sizes of my drill bits.

A quick look through my timber pile leads me to use a board of beech for all the visible parts and tulip for the tubes. Rather than look for a large-diameter spindle blank to turn the rings and end caps from, I use a board of 40mm beech and plane it down to 30mm.



The timber, prepared with my drawing and drill bits

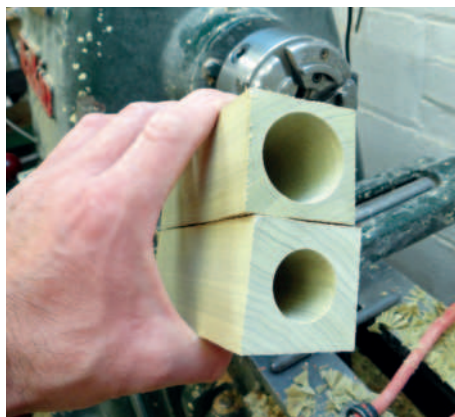
As I am reducing its thickness I cut off enough for one ring as soon as each face of the board is clean. This will be thick enough to form the end cap and fixed ring from a single piece, which will

give a perfect grain match and make it all look better at the end, hopefully.

Once the beech is planed to 30mm, I cut six squares and remove their corners on my saw bench, roughly making them into octagons. This is a technique I regularly use as a production turner for small discs, as it is far quicker than rounding each on the bandsaw and allows me to achieve a disc quickly and cleanly on the lathe. I then rip two spindle blanks of tulip to use for the tubes and I am ready to begin.



Drilling the tubes



Drilled and ready to turn



Turning to cylinders



Testing for fit

## The tubes

I have two pieces of sawn tulip, 50mm square and a little overlong at the moment at 160mm. My C-jaws grip a tenon of 56mm, so if I round them they won't fit in the chuck. Instead, I decide to hold them as squares. With the centres marked it is a simple case of lining them up with the live centre and gripping down with the chuck.

With the wood securely held, drilling goes without a hitch. Tulip works easily and as long as I clear the drill often, the hole is straight and relatively clean.

Once both pieces are drilled I turn the inner tube to fit snugly into the larger hole. I can then turn the larger one into a cylinder as well. Both are driven with a drive centre and a large cone fitted on the live centre.



## ◀ Rings

Next are the rings. I mark the centre of each, mount them individually between centres and turn them to an even 70mm diameter. As these are cross grain, like mini bowl blanks, I cut them using a slicing cut with a spindle gouge, which leaves a lovely, smooth finish. I then chamfer the edges with the wing of the gouge, which will hide any mismatch that might creep in during the making process.

Once I have my four discs, I need to hollow them and make them into rings. The easiest way for me to do this is to use my jaw plates, which are fitted with wooden jaws to grip work without marking it. Andy Coates wrote an article in *WT345* which shows ways to make similar jaws if you don't have jaw

plates. Each disc is mounted in the wooden jaws and I hollow them to fit the outer tube.

I keep using the word 'snugly' to describe how everything fits together. I realise this might be a little vague, but I'm looking for a fit that slides easily without being tight and without rattling around. There may be a more technical word for this type of fit, but 'snug' seems to fit the bill.

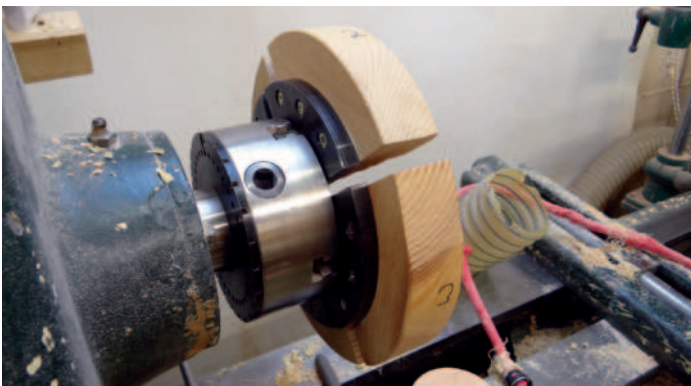
I will need to work on these again to allow the locking mechanism to work, but as it's my first attempt at this, I decide to leave them at this stage for now and return to them later, with a little more information (and confidence) in hand.



Turning the discs



Adding a chamfer with the wing of my gouge



Jaw plates fitted with wooden jaws



Hollowing the discs to make rings

## End cap

The end caps are a natural next step. I need to hollow the inside to fit on the tube, but I also need access to turn it on the end of the cap. The design I came up with in my drawing has two beads, which gives a natural break, allowing me to split it for the end cap

of the inner tube and the fixed ring. The end cap for the outer tube is a single piece, so I begin here.

Having turned it into a disc as I did for the rings, I then grip it in the wooden jaws. I select a 45mm Forstner bit and drill a stopped hole into the end cap.

This will allow me to turn the end of the outer tube to fit it. I then drill an 8mm hole further into the end cap. This allows me to mount it on to my screw chuck to securely hold it and turn the outside domed shape, giving me full access to the end of the cap.



Drilling the end cap



Turning the end cap



The end cap is mounted on my screw chuck

## Large tube



Test-fitting the rings on the outer tube

I'm calling them tubes, but they are only drilled to around 120mm deep with the end being solid, so 'tube' perhaps isn't technically correct, but it is probably the easiest way to refer to them.

I remount it between centres on the lathe and turn the closed end to fit the end cap. At this point, I can do my first test fit as a complete component. I dry-fit the end cap and slide the four rings on to it. I can now mark the final position for the fixed ring, which will hold the rings



Marking the position for the fixed ring

in place on the tube. Knowing that the smaller ring on the end cap, which will become the fixed ring, is 8mm wide, I can trim the outer tube to its final length. The inner tube can also be turned to its finished length, which is the same as the length of the hole in the outer tube, plus a tenon to fit the end cap.

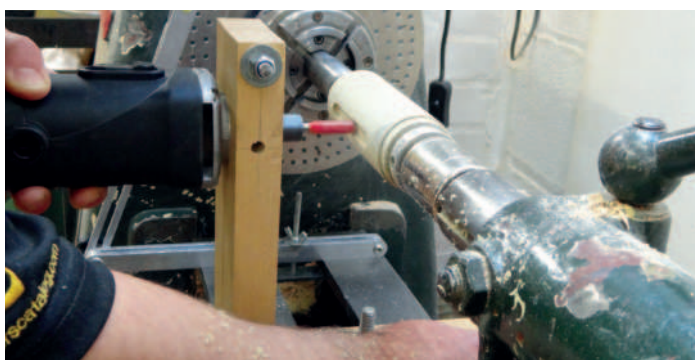
I am now ready to add the slot to the side of the outer tube. There are a few ways I could do this but, for me, the easiest and tidest way is to use my



Turning the tenon to fit the end caps

homemade router jig on the lathe in conjunction with my indexing jig.

I am aware that, with the tube held between centres, the live centre cone goes well into the tube. I mark this on the outside of the tube to ensure I don't hit it with the cutter. I run the router back and forth gently until I break through and extend the slot as far as I feel comfortable. I then hold the tube in my vice, complete the cut with my dovetail saw and tidy with a chisel.



Routing the slot in the outer tube



The slot cut



Opening the slot



The finished outer tube

## Other end cap

I realise I am jumping around in a slightly inefficient manner. If I was to make more of these I would be more confident with dimensions etc., but as I am literally building this as I go, I feel like I have to go a stage at a time. It's frustrating for me as I have to switch chuck jaws and drive centres in the lathe, which I generally avoid where possible, but for this prototype, this is likely to give me the best chance of success. So, the final part of the outer tube is to make the fixed ring, which

naturally leads me to make the end cap for the inner tube.

Using the thicker disc that I put aside earlier, I once again mount it between centres and turn it to a disc before holding it in my wooden jaws to drill an 8mm deep hole with the 1/8in Forstner bit. I then place it back between centres and turn the first, smaller bead. Once I am happy that it matches the other end cap, I sand it and part it off. This small, beaded ring will be my fixed ring, which will hold all of the other rings in place on



the outer tube, but when the box is closed, it should appear to be part of the end cap.

I pop the rest of the end cap back into the wooden jaws of the chuck and drill this to fit on the end of the inner tube. This time

there isn't enough wood for me to hold it on my screw chuck, so after thinking through my options, I opt to make a jam chuck from scrap softwood and push it on while I turn it to match the other end cap.



Turning the fixed ring



Completing the end cap held on a jam chuck



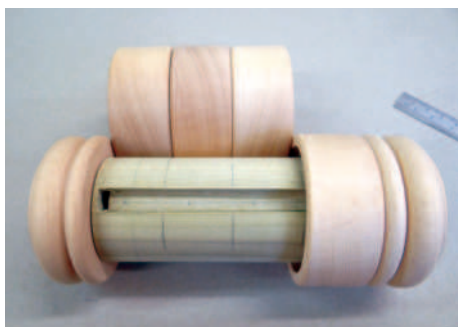
The end caps dry-fitted in place, including the fixed ring

## Dowels

With the 10mm slot cut in the outer tube, I can turn 8mm dowels to fit into the inner tube. This is simply a case of holding lengths of beech in my chuck and turning to 8mm, giving a light sand and parting off. Positioning them correctly into the side of the inner tube is another challenge though. I quickly realise that I hadn't routed the slot quite far enough along the outer tube, so

adjust this with my saw and chisel. It is far less tidy now, but as it will never be seen it isn't the end of the world, but I'll know next time to rout the slot right down to the base of the tube. I mark out the positions of the dowels by putting it all together, except for the rings, and laying it on the bench. I line the rings up with their actual position and mark them on the outer tube. From

here I can place the dowels so the rings will spin (once they are hollowed some more) but block the passing of the dowels until they are correctly positioned. Once I am confident with my marking, I take the tube to the pillar drill and drill a row of 8mm holes, taking care not to drill right through the tube. I can then glue the dowels in place in the wall of the inner tube.



Positioning the dowels



Drilling for the dowels

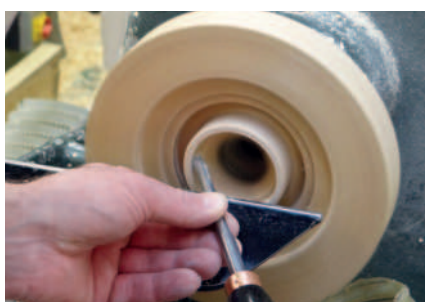


Gluing the dowels in place

## Finishing the rings

The internal diameter of the rings is still the same throughout so I need to make space for the dowels to sit beneath them. I need to hollow them to half depth and half wall thickness, so I put each one back in the wooden jaws, make a pushing cut with my spindle gouge directly into the ring and make it crisp with a square-ended negative-rake scraper.

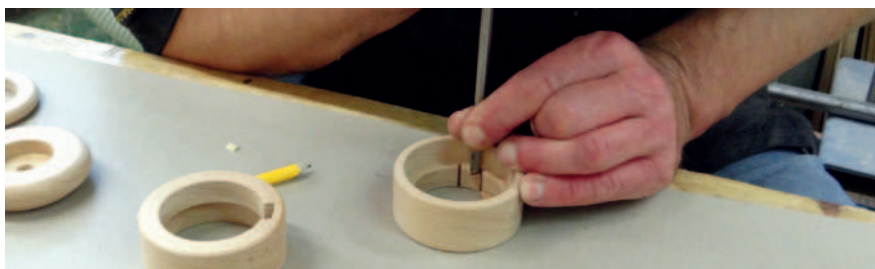
With the rings turned I can add the notch which makes them work. I have to fight my instinct to line up the grain pattern, as this will make the puzzle too easy to solve, so I mark random points on each ring to mark the position of the notch. By holding each ring in my little engineer's vice, which has wooden cheeks on the jaws, I use a Japanese keyhole saw, which is small enough to pass through the ring, to make a pair of cuts into the inside of the ring. I then use a narrow chisel to pare away the waste. The notch is cut out of all four rings and the fixed ring.



Turning the dowel space inside of the rings



Sawing the notches into the rings



Paring out the gap

## Burn time

I stack the rings together with the notches lined up and grip them in the lathe using cones at both ends. With my indexer in place, I mark six evenly spaced positions around the rings lightly with a pencil rested on the toolrest at centre height.

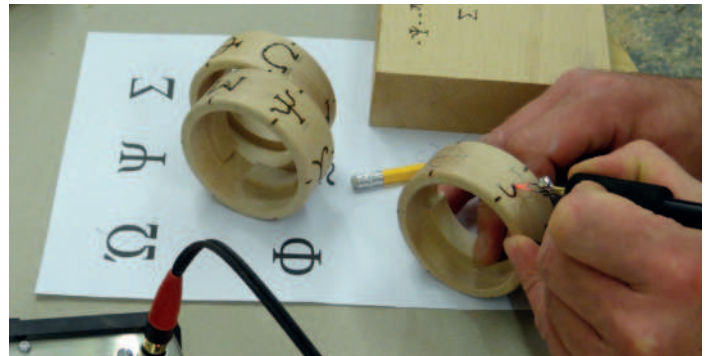
Now the positions are set I am ready to mark them with the symbols. Throughout the making process so far I've been trying to decide on the type of symbols I will use. I decided early on to burn them in with the pyrography kit I still have from a previous Editor's Challenge. My handwriting, while perfectly legible (most of the time) is a million miles from calligraphic, so I think some sort of symbol is going to be better.

I want familiar, but suitably abstract, which will excuse my poor writing and pyrography skills too. After some thought and playing around on my laptop, I settle on Greek letters. These are familiar yet exotic – at least to my eye – and with the word 'cryptex' coming from the Greek for 'hidden secret', it seems fitting. After scrolling through the Greek alphabet, I select seven that I feel look just right. I should be able to mix these up suitably. My only slight concern is that I don't want to offend any Greek readers, either with my poor writing or by accidentally spelling some sort of swear word. I'm going to press on though and offer a pre-emptive apology.

I print out the letters from my laptop at font size 100 and take them down to the workshop and do some practice, initially with a pencil on paper and then with my pyrography pen on some wood. After lots of practice, I lightly sketch the symbols on to the rings and, with a deep breath, go for it. I begin by marking a simple line in the chamfer of each ring to help line them up, along with lines on the end caps, then move on to the symbols. It doesn't take long to get through them all and I am pleased with the end result, although anyone with more practice with a pyro pen would do it far better than me.



Marking the six symbol positions on the lathe



Burning the Greek symbols on to the rings

## Final steps

Everything is now turned, sanded, dry-fitted and burned as required. All I need to do is finish them and make the final assembly. Oil is the easiest way to finish the complex parts and avoid the inside of the end caps, which will be glued and so need no oil. The only downside is that beech is known for being very absorbent, so it can be difficult to achieve a good, even finish. After four coats of hardwax oil it looks good, if a little matt for my taste, so I buff each part

with carnauba wax, which leaves a beautiful, soft sheen on the wood.

The final job is to assemble the cryptex. The end caps are glued to each tube, the rings are threaded carefully on to the outer tube before the fixed ring is glued into place. I take great care to ensure no glue is squeezed out to accidentally stick the rings in place, as they need to spin freely. I test the cryptex and it is finished.



The components ready for assembly





## Conclusion

This has been a fun puzzle – in every sense of the word – to make and I have thoroughly enjoyed it. The main area that lets it down is my lack of skill and practice with pyrography, but otherwise, I am very happy with the look and feel of it. With my combination of four rings with six symbols on each, there are 2376 possible combinations ( $6 \times 6 \times 6 \times 6$ ) and by adding an extra ring, or even seven symbols rather than six, the number of possible combinations shoots up massively. I'm sure my sons will have great fun playing with it and trying to crack the code. ●

Gluing the end caps and fixed ring in place



The finished cryptex



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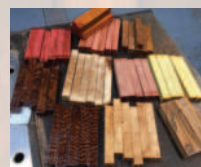
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# Pushing the boundaries

Steve Miller outlines his journey into the artistic side of woodturning

**I am a retired police sergeant from Miami, Florida, who moved to the mountains of North Carolina in 2009. I have been a woodturner since 1998, currently specialising in highly carved, textured, and coloured wood vessels sculpted from local trees. When first seen by many people, my pieces often appear to be ceramic or glass, and it gives me great satisfaction to explain that everything I make is wood.**

My fascination with wood began at local art shows, where I became intrigued by the idea of working with a natural, readily available, raw material. In 1998, I attended a meeting of the South Florida Woodturners Guild and was immediately captivated by the process. With a lot of guidance and mentoring from several members, I was completely hooked on the process of 'log to bowl'. After turning

several small bowls on my own, I threw them into a grocery bag and took them to a local art show to be critiqued by my mentors, who were exhibiting at the show. They advised me to 'put them on the shelves with their pieces. Although this was not my intent and I was embarrassed, all of my bowls sold in a short period of time. I was shocked, but the seed was now planted.





Initially, I was attracted to the beauty of the wood itself, and for many years I made bowls and vessels that celebrated the colour, grain, and feel of the natural material. During this time, woodturners around the world were actively pushing the boundaries of traditional woodturning as a craft into the art world. Their work was much more complex than anything I was used to seeing, and I was intrigued enough to start pushing my own limits. I stepped well outside my comfort zone and began experimenting with the carving, burning, and painting of wood forms, which was (and still is) frowned upon by some traditional turners, who believe the beauty of the wood should speak for itself.

In July 2016, after spending two weeks at the Arrowmont School with world-renowned woodturning artists and teachers Jacques Vesery and Nick Agar, a completely different experience and direction in woodturning began for me. The classes were intense as I had no carving experience, and often frustrating as I struggled with new concepts in design and technique. Eventually, the total experience came together for me, and was a life-changing event. At the end of the course, Jacques was kind enough to allow me to be his assistant at a week-long class he was teaching in embellishment and design at the Center for Furniture Craftsmanship in Rockport, Maine, in August of 2016. I learned so

much more during this class, further refining my newly acquired skills learned at Arrowmont. Since then I have seen enough progression in my finished pieces to realise this new direction for my work is permanent.

I now treat the wood, after it comes from the lathe or chainsaw, as a blank, three-dimensional canvas. The majority of my pieces are hollow vessels, turned from plain wood with little or no figure, which I like for the large surface areas for embellishment. After completing a finished form, the real work begins.

My process begins with pencil or chalk sketches on paper or on the vessel, often erasing and starting over multiple times until I commit to actually





removing material. I use both electric and pneumatic powered tools, often followed by pyrography for unique textures. I prefer organic textures that are at least loosely based on those found in nature. The last step in this process is multiple layers of carefully applied acrylic paints, dyes, or stains to bring the contours and textures to life. The end result is, hopefully, a form

or vessel that has the warmth and tactile qualities of wood, with the visual punch of a painting.

Some of my attempts end up in the fireplace – it's my quality control department. Since I am often under time constraints and deadlines for art shows and exhibitions, I may abandon a piece that is not turning out as I had planned,

so it gets to be firewood and keeps me warm in the winter. I have found that it is simply faster for me to make another vessel rather than waste time on an unsatisfactory design or form.

My vessels and sculptures are never functional; they are meant to hold only your attention, purely celebrations of colour, texture, and form.











**Artistic training:** I have attended numerous workshops and seminars since 1998, and have spent a great many hours with some of the best teachers in the woodturning world, a unique group of artisans who helped and encouraged me to explore and refine my appreciation of wood as an art form. Some of the artists I have had the opportunity to study under are:

Nick Agar, England  
Glen Lucas, Ireland  
Dixie Biggs, Florida  
Stuart Mortimer, England  
David Ellsworth, Pennsylvania  
Graeme Priddle, North Carolina  
Melissa Engler, North Carolina  
Christophe Nancey, France  
J Paul Fennell, Arizona  
Avelino Samuel, US Virgin Islands  
Doug Fisher, Washington  
Steve Sinner, Iowa  
Clay Foster, Indiana  
Al Stirt, Vermont  
Mike Hosaluk, Canada  
Jacques Vesery, Maine  
Mike Lee, Hawaii  
Andi Wolfe, Ohio

By far the single biggest influence in my work is Jacques Vesery, an amazing artist and very patient teacher. He taught me so much, in such a short period of time, that my biggest regret is not having sought formal teaching sooner. The learning curve is shortened dramatically by schools such as Arrowmont and the Center for Furniture Craftsmanship. One of my teachers, Graeme Priddle, stopped by Arrowmont while I was in class, and told me that 'a week at Arrowmont will change the way you do things; two weeks will change your life'. That statement has proven to be spot-on. I have since attended Arrowmont again, and I see several more classes there in my future. In addition to the instruction, the exchange of ideas with fellow students is invaluable, and leads to new friendships with people from around the US and other countries.

My lathe is a Oneway 2436. I use flex-shaft tools from Foredom and Mastercarver; micro-motors from OZ Plus, and my preferred pyrography tool is Graeme Priddle's converted car battery charger, which is sold commercially and is the only one that works for the type of texturing I prefer.

I truly love the woodturning world; the people, the fans, and enthusiastic collectors. My best advice for turners, either new or experienced, is to seek formal training from someone whose work appeals to you, and do it sooner rather than later. It just might change your life.



# Sharpest, Longest Lasting Carbide Inserts

## WOODTURNING TOOLS



U.S. Patent No. 10,493,651

**Love turning, but hate sharpening?** You're among thousands of turners, many of whom have changed to carbide insert tools. The learning curve is much shorter and you don't have to buy (*and learn to use*) complicated sharpening equipment. When Woodpeckers® introduced our line of carbide insert turning tools, we didn't want them to just be easier to use, we wanted them to deliver the kind of flawless finish professional turners get from a traditional tool.

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**Ultra-Shear Woodturning Tools Come in 3 profiles** (*Square, Round & Detail*) and 3 sizes (*Full, Mid & Pen*) for a total of 9 unique tools. Pick the size that matches your work and start completing more projects in less time with less sanding and no sharpening.



 **MADE IN USA**

Patent Pending

**Once you've turned your masterpiece,** you need to get it off the lathe with a clean cut and as little waste as possible. Ultra-Shear has now put the advantages of carbide insert turning into a thin-kerf parting tool. The Ultra-Shear Parting Tool Ci uses a small fluted carbide insert to deliver razor-sharp parting lines with no heat build-up and minimal cutting resistance.

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# From design to a functional item

Chris West discusses the choices of drills available to woodturners for drilling into end grain



This series is all about considering the decisions that should be made when designing a woodturned item. In the last article we looked at turning a prototype for a pepper mill.

A drawing of the blank with its associated spigot and dovetails and a line drawing were created. The choice of wood was considered alongside the question of whether the mill should be coloured or textured. Before drilling can start the question of whether the CrushGrind Shaft mechanism should have its lugs removed and the pros and cons of doing this were thought about.

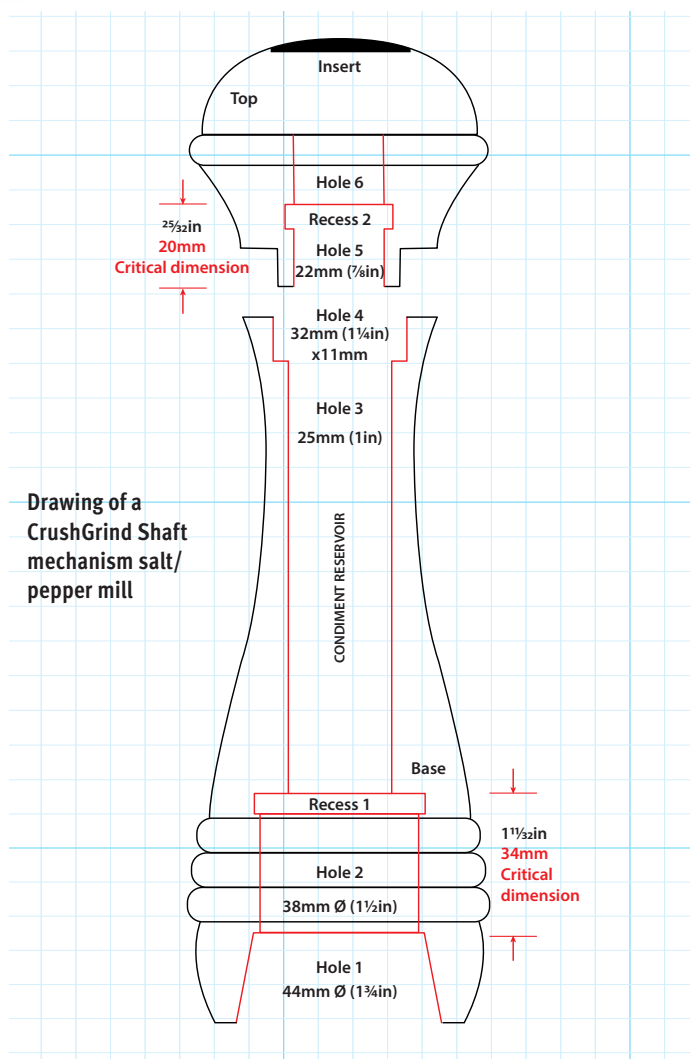
## CHOICE OF DRILLS

This phase discusses the choice of drills available to woodturners for drilling into end grain with a project such as a salt and pepper mill. I use a number of different drill bits and methods to complete all the necessary holes. So, here I plan to go through the range of drills I use, those I avoid, and why.

The objective of drilling into end-grain wood is to obtain a clean, accurate and straight hole. Whenever a long hole is drilled, the grain of the wood wants to take the drill on a journey which often is not the one you want, i.e. it wanders. Regardless of the drill you use, the centres of the headstock and tailstock must be aligned – this is something we all easily forget. Safety must be under consideration at all times, but is something we sometimes get blasé about.

Shown is a drawing of a mill I have made. The mill uses a CrushGrind salt/pepper shaft mechanism. I have chosen to use a CrushGrind mill as the focus of my comments with respect to the use of a number of different drills that can be used to form the holes. The base is drilled first. The blank has a dovetail formed on its top and held in chuck jaws. There are several methods available to form holes 1 through 4.

A mill drill can be used to drill out sections 1, 2 and recess 1 in a single action. The advantage of this is that it cuts an accurate hole to the right depth, but it is an expensive purchase if you only make few mills.



Drawing of a CrushGrind Shaft mechanism salt/pepper mill



**Hole 1** requires a  $1\frac{3}{4}$ in (44mm) hole. This would need an expensive sawtooth bit. It would be a good investment, given that the drill bits can be used in a number of turning projects. However, if the budget is tight or you are just starting out on mill turning, a 1in (25mm) bit can be used. Opening the hole 1in to  $1\frac{3}{4}$ in (44mm) is not critical. It can be achieved using a  $\frac{1}{2}$ in (12mm) skew chisel laid on its side on the toolrest.

**Hole 2** is a different story. While there is only a relatively small diameter of wood to be removed, using a 1in-diameter sawtooth bit then opening it up with a skew chisel would require the skew chisel to be at least  $2\frac{1}{2}$ in (63mm) away from the toolrest. That is a lot of uncontrolled tool steel overhanging the toolrest and control of the tool opens up safety problems for the mill, the drill and yourself. A  $1\frac{1}{2}$ in (38mm) sawtooth drill is the best option.

**Hole 3** can be drilled with a 1in (25mm) sawtooth bit, which has a cutting depth of approximately 4in (100mm) and is the minimum that can be used. Based on a depth already formed only  $1\frac{1}{4}$ in (46mm) is left to be drilled from the top end of the mill. To complete the drilling the blank will have to be reversed, the  $1\frac{3}{4}$ in (44mm) hole being held in expansion jaws or a jam chuck shaped to hold this and the  $\frac{1}{2}$ in (38mm) hole with the tailstock initially supporting the blank while the dovetail is removed. The base's overall height is measured and marked prior to being parted. The 1in (25mm) drill can now be used to drill through to meet the existing hole.

**Hole 4** This can be opened up with a skew chisel as before.

**Holes 5 and 6** A  $\frac{7}{8}$ in (22mm) diameter sawtooth bit is required to drill these holes.

### MILL DRILL

A mill drill is one way of drilling holes 1 and 2. It is not a cheap option for just a pair of CrushGrind mills. Its advantage is that it gives a good, clean, accurate sized hole to the right depth, in one go.

### CENTRE DRILL BIT

A centre drill bit gives an accurate countersunk pilot hole for subsequent drill bits to follow. I start all drilling tasks by using the centre point.

### STANDARD TWIST DRILL

An HSS engineering twist drill is one drill that should always have a centre point countersunk hole used prior to drilling. These are used mainly for hole sizes up to  $\frac{1}{2}$ in (13mm).

### SAWTOOTH DRILL BIT

A sawtooth bit is ideal for drilling the



Dedicated salt/pepper mill drill



Centre drill bit



Standard twist drill



Sawtooth drill bit



Forstner bit

mill. Remember to withdraw the bit approximately every 1in (25mm) of depth cut to remove the shavings. The outcome if you don't is likely to be a bit that becomes clogged with shavings and cannot be easily withdrawn from the hole being drilled. Failing to withdraw the bit can also overheat the bit, causing it to expand in the hole and potentially jam there. This can be dangerous and catastrophic when the lathe is running.

### FORSTNER BIT

Forstner bits could be used. They create a flat-bottomed hole with clean sides and are used for drilling a shallow hole. Normally they are used with the speed set low. If a deep hole is being made, they do tend to get hot and jam in the hole.

### BRADPOINT BIT

Brad bits are a great addition to the range of drills you may have. The drill's 'brad point' will pick up on a punched point.

The result is a good, clean hole. As with the sawtooth bit, back off frequently to clear the shavings. Highly recommended.

#### FLAT BIT

A flat bit, also known as a 'spade' bit, is available. However, the reason for rejecting this drill for use on the lathe is that the hole it leaves is one that is extremely ragged. It scrapes rather than saws. It is also liable to wobble. Only two narrow sides are in contact with the wood. It is generally used by carpenters to drill holes for electrical cable, and is better used for manual drilling operations rather than powered.

#### AUGER BIT

An auger bit is an extremely long drill and in theory would work well for tall mills.

However, the centre point is basically a screw which wants to pull the drill into the wood. All very well, but at the same time it wants to pull the holding chuck out of the tailstock where it is being held. Auger bits are far more suited to manual drilling operations.

#### EXPANSIVE DRILL BIT

An adjustable drill bit sounds like the answer to the expense of a number of sawtooth bits, but the same problems are likely to occur as with the auger bits.

#### DRILL BIT EXTENDER

Drill shank extender. These hold sawtooth or Forstner bit drills. They normally allow an extension of up to 10in (25cm). Two grub screws hold the ½in (12mm) diameter shank of a sawtooth or Forstner bit. Other shank-sized extenders are available, usually from ¼in (6mm) to ½in (12mm).

A great deal of emphasis is put on the importance of keeping our woodturning tools sharp in order to get a clean cut. Keeping drills sharp is something we all easily overlook. The most appropriate drills should be kept sharp, making the task of drilling into end-grain wood so much easier.

#### JACOBS CHUCK

A Jacobs chuck is the device used to hold all types of drills safely in the tailstock of the lathe. The keyed 1½in (38mm) Jacobs

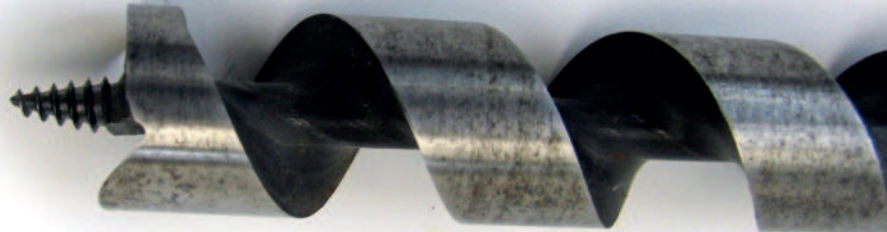
Bradpoint bit



Flat bit



Auger bit



Expansive drill bit



Drill bit extender



chuck shown is holding a sawtooth bit, one of many used in drilling holes for a CrushGrind mill. The masking tape and pencil line indicate the depth needed. A centre point bit will have already made a 60° countersunk hole before beginning

drilling at a lathe speed of around 500rpm and a slow feed. This speed and feed will prevent extreme heat being generated and the drill clogging up with excess chippings. Wind back the Jacobs chuck every 1.2-1in of depth to remove this build-up. ●

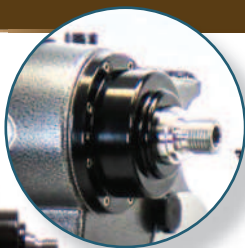
Jacobs chuck





# Features you'll love about Robust Lathes

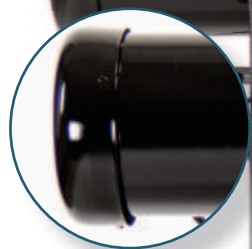
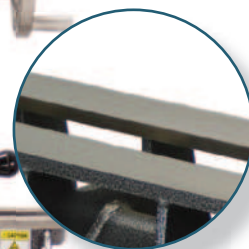
Pre-hardened  
spindles with heavy  
duty bearings.



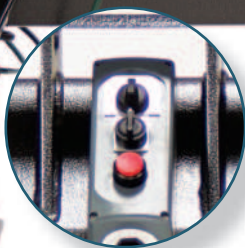
Heavy duty  
banjos that  
slide freely and  
lock securely



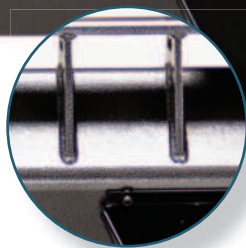
Stainless steel  
ways and a  
rugged bed that  
lets the chips fall  
away



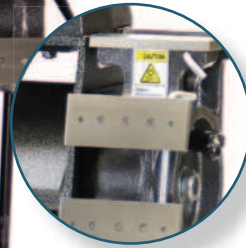
Industrial  
grade motors,  
drives and  
switches.



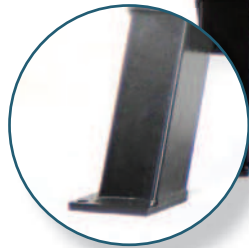
Magnetic backed  
controls (Scout is  
fixed with stop-bar)



Durable Powder  
Coating 'Silvervein'  
and Black



Add a Tilt-Away  
for the American  
Beauty and  
Sweet 16



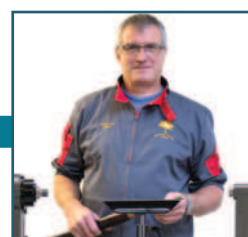
Adjustable  
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The **American Beauty**, a premium bowl and vessel lathe setting a new standard for woodturners around the world. Available with a standard bed (as shown) or long bed. Either way it's hard to outgrow.

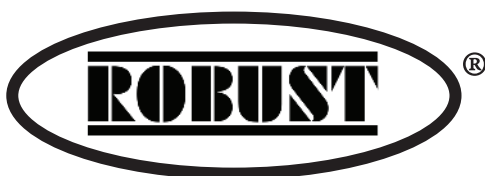
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# Let's toast a new design

James N Duxbury creates a segmented wine glass base

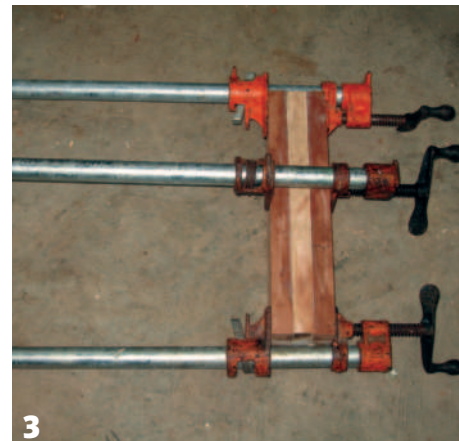
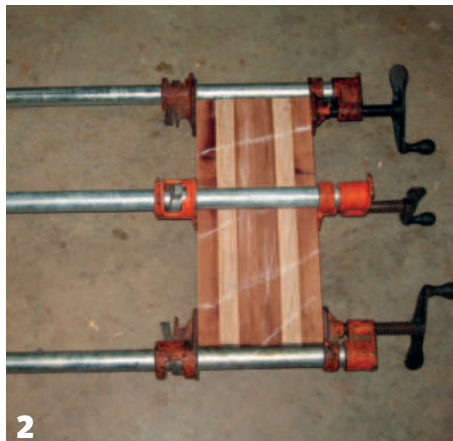


**Over time, the wine glass has become an art form, specifically created for the finest of connoisseurs. Every part of its design has been perfected over thousands of years to allow it to function as a vessel that not only contains the liquid but enhances the experience of drinking fine wine. Actually, not just fine wine, but any wine. The glass is in harmony with the liquid.**

The base of a wine glass is small and in proportion to the vessel itself. The stem is long and fairly thin to minimise transmission of body heat to the wine. Topping off the stem is the wine vessel itself. An entire article could be written about the size, shape, material and design of the vessel. Different wines require different shapes and sizes. Around the first

century, wood, leather, pottery, pewter, and even lead were used. Much of the wine and beer in those days was consumed because of the contaminated water supply, which fermentation greatly improved. Today wine has become a science and the vessel is a major part. To appreciate the finer qualities of wine and enhance the experience, a glass globe has become the favoured choice. Clear glass is shaped and sized differently to allow for the expression of various types of wine. Glass allows the colour and clarity of the wine to be viewed, while the larger globe with the narrower neck allows the wine to be swirled, releasing the aroma. The rim of the finer glass vessels does not have a bead around it, allowing the lips to seal better.





## Design

Thoughts of designing a new turned wooden base occurred when a number of wine glasses got overturned. Just the slightest bump or shake of the table tips the top-heavy glass over. Outdoor gatherings and parties where people are walking around are a sure hazard.

We all know that woodturners can fix anything, even this centuries-old design. It is top heavy and could use woodturner's revision. This turned wooden design has a slightly larger, lower base and almost no stem. The stem is not needed since wood is an insulator, minimising the heat transfer to the wine. The shape of this base makes it easier to hold and a much more stable vessel.

A set of four glasses would be nice to have and, since the bases are not very tall, all four can easily be turned as one spindle on almost any size of lathe. The bases could be turned from a solid piece of most straight grained hardwoods, however glue-ups – although they take a little more time – add colour and interest to the design. In this case, I am using cherry contrasted with hard maple.

## Tools and equipment

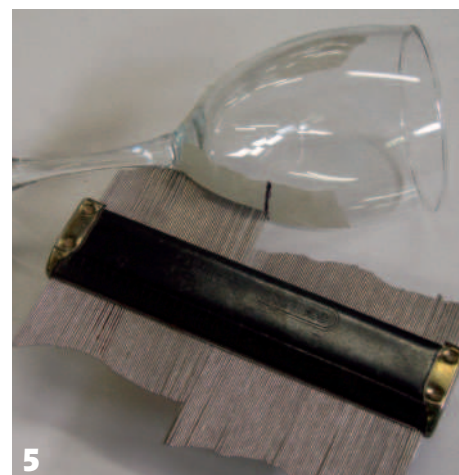
- Parting tool
- Slim parting tool
- 10mm spindle gouge
- 6mm skew chisel
- Glass cutter
- Clamps
- Jacobs chuck and twist drill
- Profile gauge

## Materials

- 1 piece maple, 75mm wide x 25mm thick x 305mm long
- 2 pieces maple, 25mm x 25mm x 305mm long
- 4 pieces cherry, 25mm x 25mm x 305mm long
- Water-resistant wood glue

## Glue up

**1** Start with all your blocks planed and clean ready for gluing and clamping.



**2** Take two small pieces of cherry and glue one small piece of maple between them with good water-resistant wood glue. Two of these assemblies, 75mm wide x 25mm thick x 305mm long, are required so glue up the other three small pieces and clamp together as shown.

**3 Note:** Do not glue the two cherry pieces together. When the glue has cured, surface one side of each piece and glue these together with the 75mm-wide strip of maple between them.

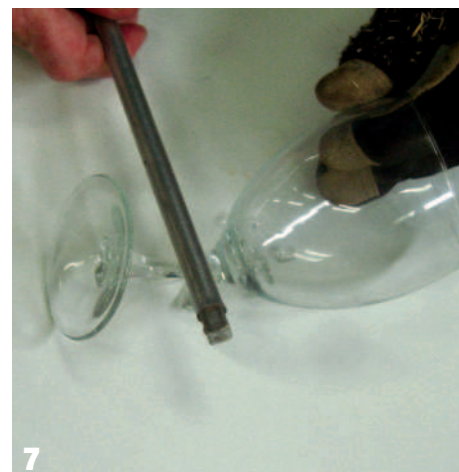
## Contour duplication

**4** While waiting for the glue to cure it's a good time to contour the glass and make a template for use later. Turn one wine glass over and put a piece of masking tape on it.

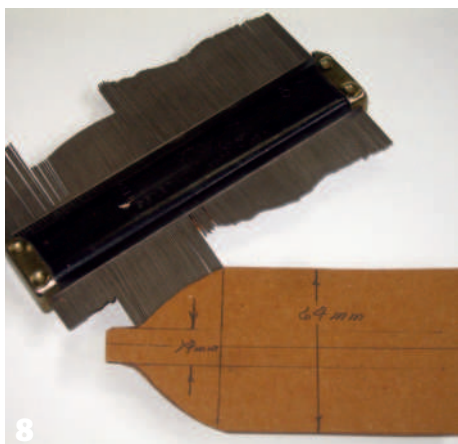
**5** Mark a line where you would like the wood base to terminate on the vessel, then set the callipers so they will lay level at that mark. This will show the inside dimension of the top of the base. Record that dimension. Lay the glass down and use a contour gauge to get the shape of the glass from the line down to the top of the stem.

**6** Remove the stem – wear a full face shield. I use a glass cutter to score a line.

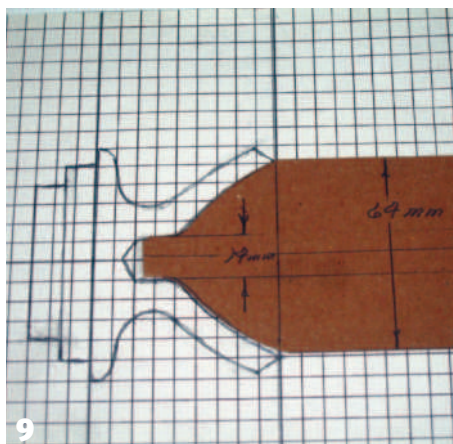
**7** Use a steel rod to snap the stem off. This can also be cut with an abrasive cut-off disc on a small rotary tool. Again, wear a full face shield.







8



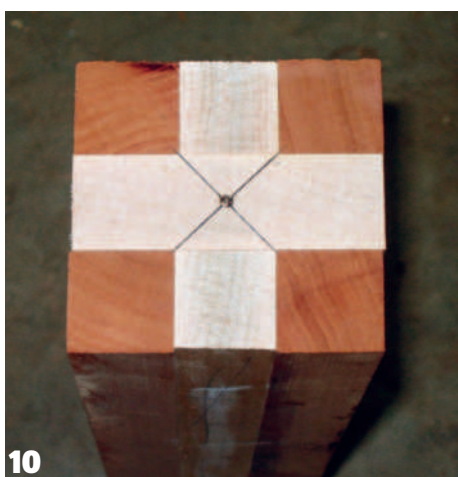
9

## Template design

**8** From here a template can be made using a thick piece of paper, this one being from the backing of an old note pad. Using the calliper dimension of the top of the base, in this case 64mm, cut the template to width.

**9** Measure the base of the glass at the stem, in this case 14mm, and draw two lines of that width centred on the template. Come up from one of these lines about 13mm and make a dot. Lay the contour gauge base on that dot and swing it over to the large dimension. Be sure the gauge is the right way up as in some cases the shapes can look quite similar – just ask me how I know that. Do this on both sides and cut out a template. From here lay the template on a sheet of graph paper and draw to scale the shape of the desired base.

**Note:** A 5mm segment of waste wood below the finished base and a 13mm tenon are also shown so you will know exactly what the total wooden blank will look like. Dimensions will be taken at different points from this drawing. This may seem time consuming but I have found it very useful on other occasions and extremely exacting.



10



11

## Measuring up

**10** When the wooden blank is ready it should look like photo 10. Mark the centre on both ends, mount the blank on the lathe, and turn it down to 64mm.

**11** Lay out four equal spaces and use a narrow parting tool to part down about 13mm for reference. For efficiency while turning multiple matching shapes, I find it easier to place the like shapes next to each other. This simplifies layout and gives a good visualisation of the pieces. That being said, two bases are going to be in the centre of the blank, end to end, and one base on each end of the blank so that the tops are adjacent to each other.

**12** Mark 13mm and 5mm lines. The 13mm will be a tenon and cut to a diameter to fit the chuck being used.

**13** The 5mm segments are cut down about 13mm. Using the template set a sharp pair of dividers to the height of the base. Then, with the lathe running at a low speed and the dividers lying flat on the toolrest, hold the point on one side by the 5mm cut, bottom of the base, and scratch a line for the top of the base. Dividers used this way are fast, repeatable and eliminate error. Do the same for the other three bases.

**14** With the template, set the dividers from the top line of the base to the deepest cut just above the base bottom and scratch this line into all four pieces.

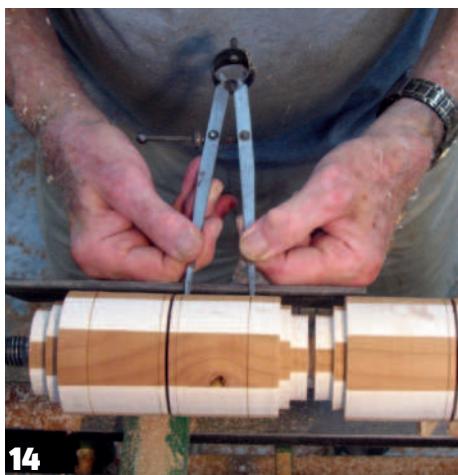
**15** Again from the template set the callipers to the diameter of this surface and, with a 3mm parting tool, cut down to this diameter.



12



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15



## Production turning

**16** Here is where the fun starts. With a 10mm spindle gouge remove the large amount of wood to get the stem design and, with a newly sharpened gouge, round off edges to form the final design.

**17** When all four bases are turned, sand the finished areas to about 400 grit.

**18** At this point I like to give this surface a coat or two of finish to keep it clean and protected. The finish can be done on the lathe but it is usually better to remove the entire piece and apply a finish while it is hanging. A coat or two of clear spray lacquer or polyurethane will work great.

**19** Once the finish is dry cut the four pieces apart. This can be done by hand or with a V-shaped sled on the bandsaw.

## Individual bases

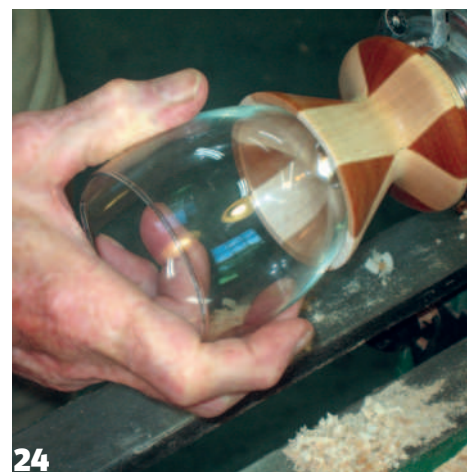
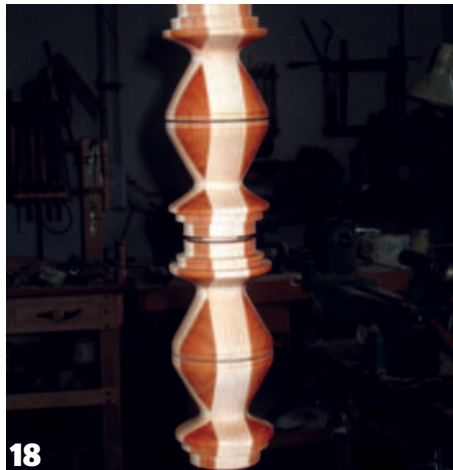
**20** Mount the first piece in a chuck with the use of the tailstock for centring.

**21** Face off the top of the base. From the template you can see that the deepest cut is 14mm. I use a 14mm drill bit and use the template to mark the depth with a piece of tape. Drill to the final depth.

**22** Set your digital callipers to 64mm and, with the toolrest at the height of the centre, turn the lathe on low speed, put your face shield on, and lightly touch the left-most tip into the wood. This will score a light line. Move the point back and forth until the right-hand tip is in line with the scored ring. When it is exactly lined up press the left tip in and score a deep ring.

**23** This upper ring and the 14mm stem hole show the two reference points required to remove the interior of the base. Use a 10mm spindle gouge and check often with the template to get the exact fit for the glass.

**24** Just to be sure, check with the glass itself.







25



26



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28



29

**25** With a 6mm skew laid flat on the toolrest, cut about four or five glue rings into the finished interior surface.

**26** Remove the piece and, using a centre finder, mark the centre on the tenon end.

**27** I have cone centres that fit into the chuck, but if you do not have one they are easy to make and very handy to have around. The cone does not have to exactly fit the concave and should not be so large that pressure is exerted on the thin upper surface of the base. With the aid of the tailstock mount the base in the lathe and turn the bottom down to about 10mm.

**28** Sand this surface.

**29** Remove the piece from the lathe and use a sharp chisel or a flat, fine-toothed blade on a vibrator saw to trim off the nib.

## Finishing

**30** Carry out a final sand and finish of all surfaces. Now you are ready to mount the glass vessel in the wooden base. Since wood and glass have very different expansion rates and other characteristics, I use E6000, a clear silicone-type adhesive. Put a small ring of adhesive in the lower part of the wooden base and a ring of adhesive around the glass about halfway up. Press the two together, making sure the top of the glass is exactly parallel to the base.

The next day it will be ready for wine and you can celebrate your success.



30



## Superior Design, Legendary Quality



- 24" swing over bedway
- 36" between centers
- Inboard & outboard extensions available
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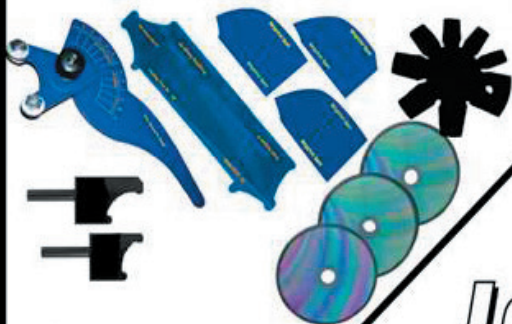
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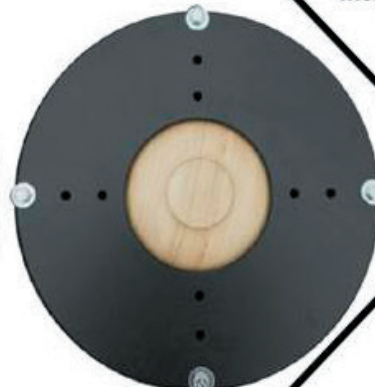
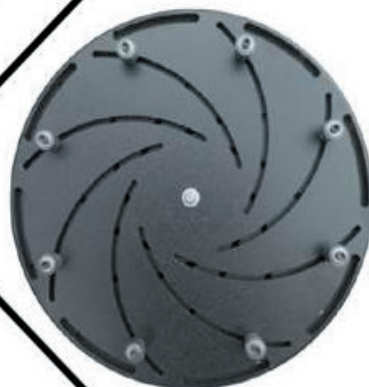
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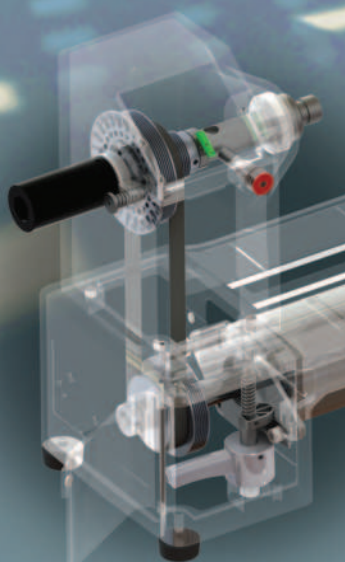
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We know these are different times to visit retailers and see new machines. But with over 30 specialist independent Laguna stockists in the UK, Ireland and Europe we recommend visiting our website to find your nearest stockist then contact them directly to check if they are open and have the new Laguna 12|16 Revo on display to view. Many of our retailers are experienced lathe specialists and this is indicated on our website.



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# Virtual Symposium

The American Association of Woodturners held its annual symposium online in response to the Covid-19 pandemic



Glenn Lucas demonstrated turning beaded salad bowls

PHOTOGRAPHS COURTESY OF THE AMERICAN ASSOCIATION OF WOODTURNERS

**The American Association of Woodturners' annual symposium is usually a highlight of the woodturning calendar. This year the 34th event was due to take place in Louisville, Kentucky, in July. However, at the end of March the organisers decided to cancel the event due to the seriousness of the Covid-19 pandemic. Fortunately though, they were able to find another way to bring the event to turners by staging the symposium online.**

## An exhibition in your own home

The Virtual Symposium took place on 10-11 July and featured live educational woodturning demonstrations, panel discussions, special interest sessions, live auctions, a gallery of woodturning work and a trade show. All the aspects of a normal woodturning exhibition but

this time they could be enjoyed from attendees' own homes.

'We're excited to present an AAW Symposium in a format that makes it available to as many people as possible,' said AAW executive director Phil McDonald. 'The virtual format enabled our members and others to enjoy an affordable learning experience from the comfort and safety of their own homes. It's a perfect opportunity for people interested in woodturning to get a feel for the craft at a low cost.'

The demonstrations, which were broadcast live from the turners' studios, included making a beaded salad bowl with Glenn Lucas, turning a thin-stemmed natural-edge goblet with Rudy Lopez and turning a finial box with Cindy Drozda, among others. Panel discussions covered

topics such as evolving a body of work and turning for profit, and the Women in Turning committee presented A Journey in Woodturning from Beth Ireland's Florida workshop. Three live auctions of turned work were held to raise funds for the AAW's grant, outreach and educational programmes.

The Instant Gallery Critique, a regular part of the Annual Symposium, was also held virtually, featuring pieces chosen from online submissions. The critique was provided by Kip Christensen, Suzanne Kahn and Kirsten Muenster.

The 2021 AAW Symposium is currently scheduled to take place in Omaha, Nebraska, from 15-18 July. See the AAW's website for details.

[www.woodturner.org](http://www.woodturner.org)



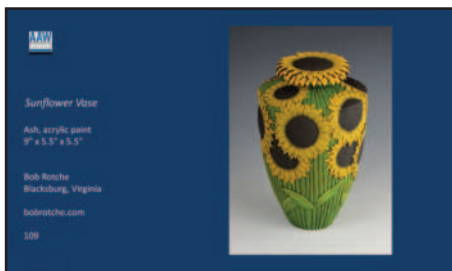
Trent Bosch demonstrated turning hollow form vessels



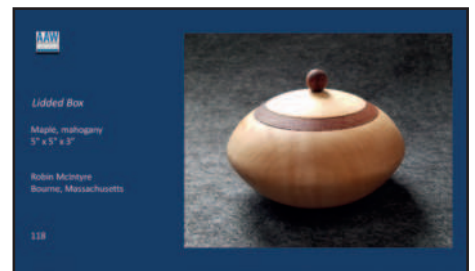
Cindy Drozda demonstrated her signature finial box style



Instant Gallery: Segmented Urn by Gerald Jensen



Sunflower Vase by Bob Rotche



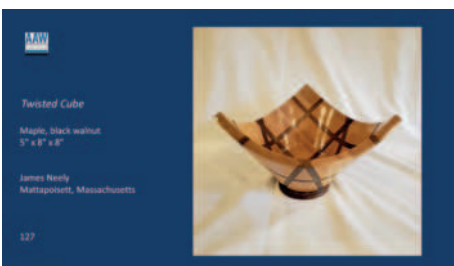
Lidded Box by Robin McIntyre



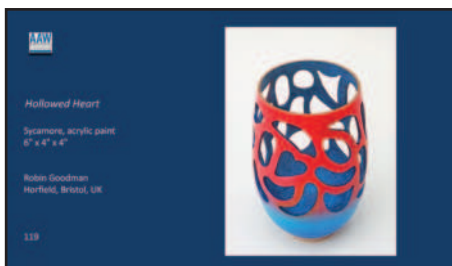
Craig Timmerman showed how to make an arch bowl



Rob Wallace discussed different gadgets that woodturners have designed to enhance their work



Instant Gallery: Twisted Cube by James Neely



Hollowed Heart by Robin Goodman



Ripples by Ian Ethell



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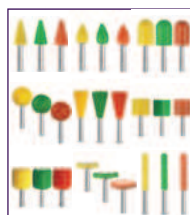


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# Kurt's clinic

Kurt Hertzog answers some readers' questions

## Assembly press recommendations

**Question:** As I shop for a pen assembly press, the more advice I read on the internet or hear from friends, the more confused I get. Do you use a pen assembly press? Whose press would you recommend?

**Answer:** Yes, I have an assembly press. Actually, I think I have every one that has ever been made. Over the years I've evaluated the various presses available and often written reviews about them. Some are useable and some are pretty useless. There are three problems I see with any dedicated pen assembly press product. First, to be of much value they must be rigid and therefore pretty heavy. Most are too flexible and flimsy. Unless they are firmly mounted to a base and clamped to a bench, they usually slide around, making operations awkward.

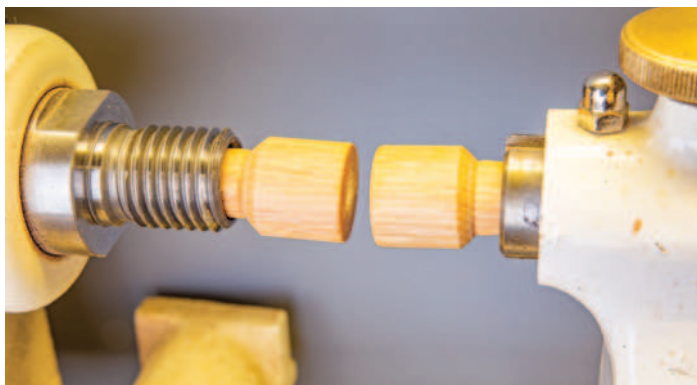
The presses have an arm that must be levered through an arc during the compression process and, for the most part, it does its real work at an inconvenient part of the rotation of the arm swing. There are ways around this issue but it takes fiddling with the settings to position the arm for best operation. For repeated assembly of the same mechanisms this is okay, but to just walk up and assemble something, it is inconvenient.

Finally, the pre-sets, or end stops that can be used to assemble to a pre-set point, are inconvenient and a pretty coarse adjustment. With the typical screw, adjust and locking nut it is difficult to perform fine adjustments precisely. Personally, I'd suggest you bypass the discrete pen assembly press and use that money for some other turning items on your wish list.

I think you can do quite nicely with one of my favourite assembly tools that you already own – the lathe. It is the best pen assembly press available. It provides inherent stability and incredible force as desired, yet superb resolution when needed, a convenient mechanism that uses rotational operation rather than a lever arm – and you already have it in your shop.

A couple of wooden plugs to slip into the tapers, costing virtually nothing but a few moments' turning, are all you need. By positioning the tailstock as needed with the plugs in the headstock and tailstock tapers, you have the best assembly press available with the quill advancement adjustment being forceful, precise, and with resolution and touch.

You also have a press with incredible length range. My suggestion is that you don't make the turned tapers on your wooden plugs fit tightly. Sloppily loose still works great and they can be removed by hand. There are even commercially available plastic plugs that work on this idea. These two simple plugs will work in your shop, deliver all the benefits of a superb assembly press, travel well if you need them elsewhere, and fit the other lathes you'll encounter on your travels. You can get as simple or as fancy as you like and when the faces become too tattered, simply clamp-turn them again or make another set.



Since they will reference and perfect align on the tapered face on the shoulder, I make my plugs removable by hand with a very sloppy taper diameter fit



PHOTOGRAPHS BY KURT HERTZOG

Your lathe is the greatest pen press you can ever have. It is already there and exhibits all the attributes of a press



You can turn a couple of plugs simultaneously between centres using scrap wood. Here I'm making my tapers from a length of white oak



Lop off the scrap at the ends of the tapers on the bandsaw and these plugs will provide years of service

## Damage limitation

**Question:** Should I charge a customer for repairs to a turning that has been damaged? It was perfect when they bought it but now they expect me to repair some damage. Should I fix it for free or, if not, how much should I charge?

**Answer:** You've asked about a very touchy subject. My best answer is, 'it depends'. Only you can really answer this, but let me give you some thoughts. I don't think woodturnings come with a warranty like most consumer products. However, let me pose these questions to you. First and foremost, is it a good customer you hope to continue with or is it someone you'll probably never see again? How long ago did they buy the turning? Was the damage caused by an accident, by the customers' improper use, storage or handling? Did it happen because you did something poorly? Is the damage easily and quickly fixed or will it consume a fair amount of time and effort? Is the damage really repairable? Has the customer been back before asking for some kind of repair? Like return privileges at the store, this can be overdone. Is the turning a one-of-a-kind piece of art or a functional piece? What was the selling price versus the cost to you, time and materials, of repair?

A long-time customer or collector will deserve more lenient consideration than the one-time purchaser from an event. The more recent the purchase was probably fares better than one from many years ago. If the customer's cat knocked a fragile artwork from their fireplace mantel to the far-below floor then you certainly can deal with it in a different way to how you would if your grain orientation at a join is the cause of the damage. Scratches to a table centrepiece bowl requiring a total sanding and refinishing probably will fall lower on

the obligation scale than a custom, high-end jewellery display requiring only a small replacement spindle. That time of repair with respect to the original sale price can certainly have an impact on the decision. How expensive it was might sway your feeling of obligation to the owner.

Sometimes, regardless of the owner of the fault, it is easier and less painful to just get it done. Chalk it up to good will and bite the bullet. Do it and move on. Often, it is far better to do it for nothing than to charge some minimal sum. There are occasions when the damage

really is beyond any repair that will be successful. Doing a repair that will always be mediocre and having something that can be an embarrassment out in public really doesn't help your brand. Perhaps this is a good occasion to sell a different piece to them at an attractive price so you can keep the beyond repair piece in your possession.

With all of that said, you need to decide whether the repair is feasible, and an appropriate charge or not, dependent all the factors mentioned. Good luck with your decision.



A replacement egg being test-fitted for a repair. The owner's glass shelf that was above my ornament accidentally slipped from its mount



An eggshell ornament that arrived needing to be 're-egged'. The owner's cleaner accidentally dropped it while dusting the display shelving

## Contract query

**Question:** I've been asked to demonstrate and been sent a contract to sign. Is this normal? Do I need to sign it? Do I need an attorney? If I do it myself, what should I look for?

Most, but not all, woodturning events I've demonstrated at over the years have used a contract for demonstrators. It is rare at club meetings or their events but common at region, national, and international symposia. I can't dispense legal advice about contracts and what you should do but I can tell you that I've personally never retained an attorney for these types of contracts.

Also, if the event has sent you a contract and you can't or won't sign to its terms or mutually agreeable amendments, it will usually 'uninvite'

you to demonstrate. I do read contracts thoroughly to understand what I am signing up for. The contract typically spells out all the details about what will be paid, such as rotation fees, travel reimbursement, hotel and meal allowances, complimentary event admission, etc. The contract also details what is expected of you in the way of number of rotations, duration, pre-event publicity materials, video capture at the event rights, fundraising donation request, and other miscellaneous items.

For the most part, the contract isn't

used as a big legal hammer but more as a way to capture what both sides have agreed to. I'm certain if you decided you were going to change the rules, the event could have recourse based on your signed contract.

Over the past 20 years of my experience demonstrating at and running events, from regional to international, I've never been party to any of these issues from the legal aspects, although on occasion using the contract as a reminder of agreed arrangements has been appropriate.

Send your questions to Kurt's email: [kurt@kurthertzog.com](mailto:kurt@kurthertzog.com)



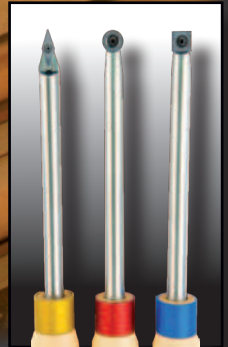
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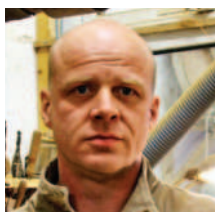


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# OUR CONTRIBUTORS



## 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**



## 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.

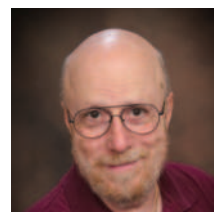
**colwinway@btinternet.com**  
**www.colwinwaywoodturner.com**



## 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**



## KURT HERTZOG

A professional woodturner, demonstrator and teacher, Kurt writes for various woodturning and woodworking publications in the US.

**kurt@kurthertzog.com**  
**kurthertzog.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**



## 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.



## JIM DUXBURY

He makes a variety of items, including kaleidoscopes, wooden hats, pens, and even a working Foucault pendulum. His fine wooden objects and plans can be found on his website.

**www.cyberdux@bellsouth.net** **www.duxterity.com/ec**



## JANICE LEVI

After Janice retired from a career in public education, she has spent the last several years demonstrating at various symposia and for clubs across the United States. She also contributes woodturning articles to several turning magazines.

**jlevi@rightturnonly.net**  
**www.janicelevi.com**



## 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 batch work, one-off commissions and turning for furniture and restoration. He also offers demonstrations and a range of woodturning supplies through his website.

**richardfindley.uk**



## 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**



## STEWART FURINI

Stewart loves colouring bowls and platters, demonstrating at woodturning events, and making YouTube videos. By day he teaches English.

**www.stewartfuriniwoodturning.co.uk**  
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# Community news

We bring you the latest news from the world of woodturning

## Win a Zebrano lathe in charity raffle

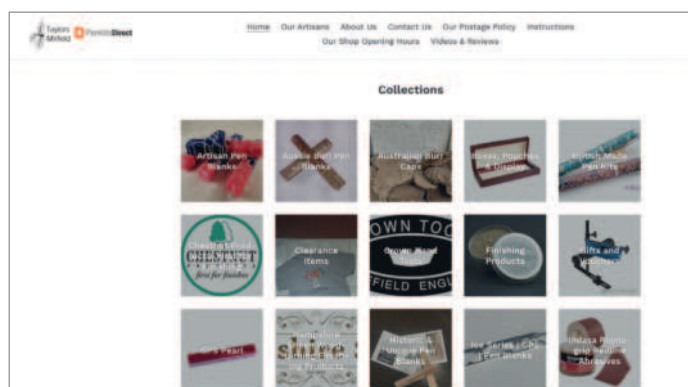
You could win a Zebrano ZX600 2HP lathe worth £5,500 by entering a charity raffle organised by pen-turning suppliers Taylors Mirfield. The West Yorkshire-based company had planned to sell the raffle tickets at trade shows this autumn but unfortunately these events were cancelled due to the coronavirus restrictions. Determined to raise money for charity, the company put the tickets on sale on their website.

The Zebrano lathe is first prize, second prize is a £100 Taylors Mirfield voucher and third prize is a £50 Taylors Mirfield voucher. The delivery of the lathe can be arranged at cost for the winner. Tickets can be purchased here:

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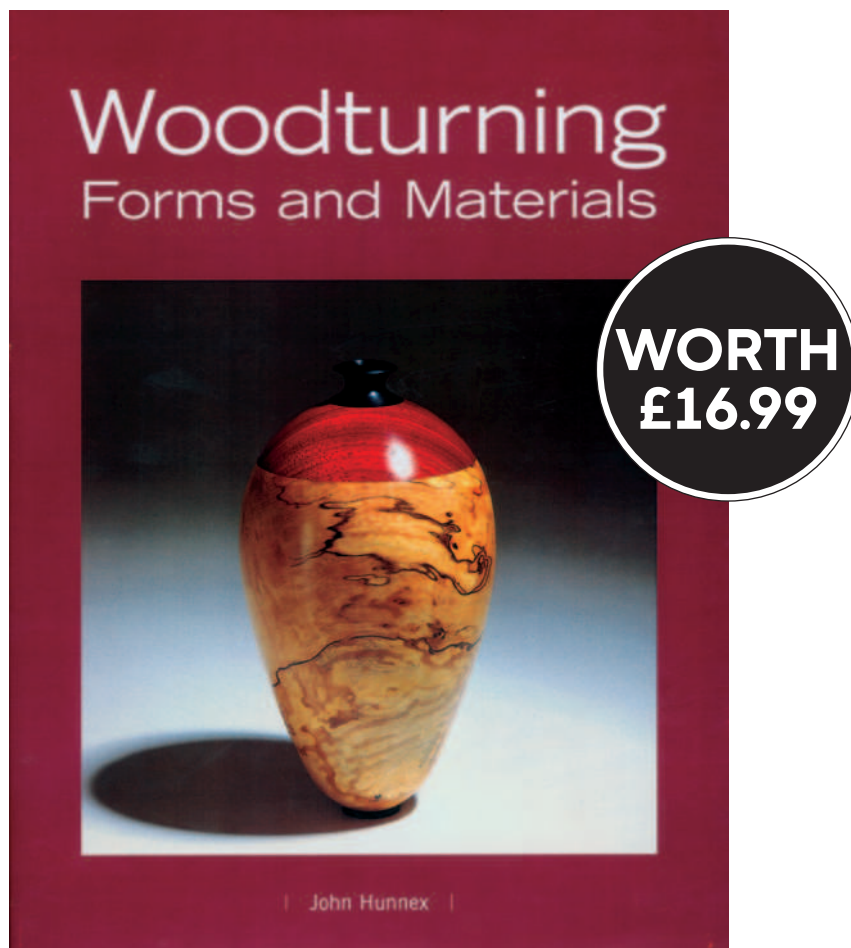


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# All you need to know about turning domesticware

Andy Coates looks at objects intended for everyday use

## Introduction

In the spring of 2006 I attended the Craft Meeting of the Register of Professional Turners at Skinners' Hall in London. After the morning session in the Great Hall the members and officers streamed out to head for lunch. Sitting on the stairs was Robin Wood, a well-known greenwood worker and pole lathe bowl turner. Robin was selling copies of his recently published book, *The Wooden Bowl* (Stobart Davies, 2005). I wanted a copy and took my place in the queue to purchase one.

When my time came I said hello and went to hand over the money. 'Just a minute,' said Robin, 'before I let you buy my book let me ask you a question.' Somewhat flummoxed I said, okay then, go ahead.

'How many wooden objects do you use at home on a daily basis?' he asked.

After I admitted to a bowl that I dumped keys and pocket change into, a fruit bowl, and maybe a weed pot gathering dust on a shelf, Robin pointed out the fundamental failing of trying to make a living from selling turned wooden objects and not using them more myself. Then he kindly allowed me to purchase his book, which, incidentally, is a magnificent work on the history of the wooden bowl and should be in every turner's collection.

I went back to Suffolk on the late train (after a traditional post-meeting session in The Blackfriars pub in London) and I couldn't get his question out of my head.

He was correct; it was mad that I didn't use more of what I made.

The next day I turned plates, side plates and bowls for use at home. I'm still using them today... unlike the probably half a dozen or so crockery dinner services that have come and gone due to breakages over the same period.

I turned them in ash and beech, because that's what I had to hand at the time, but ash, elm, sycamore, maple or, more traditionally, beech are perfect for domesticware. Using them felt like a win.

So, let me ask you, how many wooden objects do you use on a daily basis?\*

\*NB: I don't have a book to sell you, so relax.

## Wood for domesticware

When planning to make domesticware the species of wood we use is fundamentally important. There are several basic considerations:

- Species should be non-toxic
- Species should preferably be close grained – although I make an exception for ash and elm
- Species should be durable and robust

If we look at species that were used historically, then beech is probably the primary species. It is a close-grained, strong and durable wood and has natural antibacterial properties that lend it to being used for domesticware. Personally I prefer to use clean beech and avoid spalted wood for domesticware. While the spores that lead to the spalting are long-since inactive by the time we get to use the wood for turning, planes of weakness can occur along black zonal lines, these can be opened due to swelling and fractures can occur.

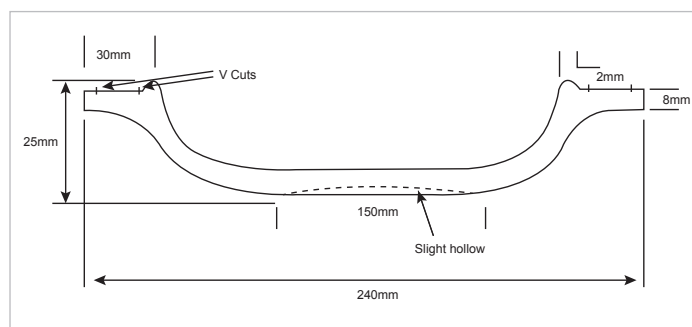
## Design considerations for domesticware

Simple design is key to domesticware for several reasons. First, domesticware will need to be washed after each use, so you want to reduce excessive design elements that might produce likely sites for the build-up of food particles, which could encourage bacterial growth. Second, domesticware will not command the high prices possible for other, more speculative, 'artistic' work, so you will want to turn them as quickly as possible to maximise the potential profit from making them to sell.

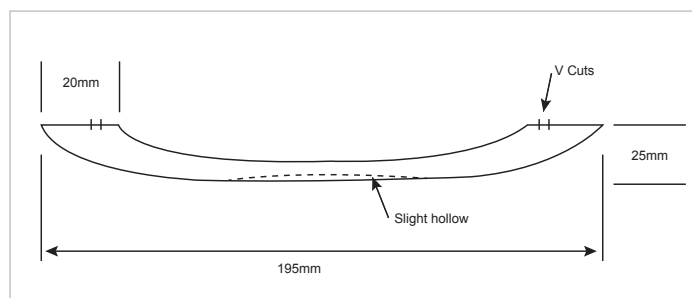
Domesticware also needs to be ruthlessly functional. A soup bowl with a beautiful curved form that tapers to a tiny foot is utterly pointless as it will very quickly deposit the soup over you and the dining table. Bowls need to be stable. Dinner plates, similarly, need to have a base that is wide enough to facilitate the cutting of food. If the plate tips every time you cut into a steak the plate will not get used for very long.

Bowls might seem the easiest of domesticware items to turn, but there are pitfalls that would make them impractical in use. Most domesticware bowls are intended to be used in conjunction with a spoon – probably metal, but wooden spoons can add a further dimension to the use of domesticware – so the design of the shape relative to this function is very important. The interior shape should lend itself to its contents being taken with a spoon.

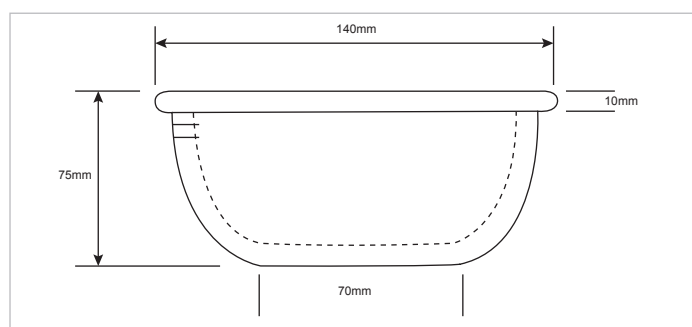
Wall thicknesses are also important. Most of us who turn bowls tend to turn them with the aesthetic as the primary concern – we want to make beautiful bowls that will sell, and in all truth I suspect very, very few turners make bowls – other



Simple dinner plate design



Simple side plate design



Simple soup/cereal bowl design

than fruit or salad bowls – with a view to them being for daily food use. As a consequence of this we tend to turn bowls with a thinner wall thickness than is perhaps advisable for domesticware, so you will need to resist the natural urge and turn slightly thicker-walled bowls. The thicker wall serves several purposes – it makes the bowl stronger, and therefore more durable when dropped or banged about in a washing bowl. It also provides more thermal insulation, which will keep your soup warmer and your ice cream cooler for longer.

## Other considerations for domesticware

Two questions I have been asked with what borders on pathological regularity are: 'Is wood okay to put liquid in? Won't it leak?' The answers are yes, and no, not necessarily. Wooden boats anybody? I make coffee/tea mugs and cups and I do seal the interior of these for various reasons, but in truth it is not necessary. I have a wooden coffee mug in the workshop that I have used for nearly 15 years and it was never sealed. And never leaks. The same is true for the bowls I use at home for soups, stews, etc.

The next questions I am invariably asked are: 'How do I clean them? Can they go in the dishwasher?' I always advise against putting wooden domesticware in the dishwasher. Average operating temperatures are between 120°F and 150°F, which in itself is not a problem – wood can withstand this as the coffee mugs prove – but the prolonged exposure and the chemical cleaning agents used in the detergent may be



Selection of domesticware in regular use



a problem. I do not own a dishwasher (I fulfill that role in my home) but suspect that, in truth, they would survive the process, but advising against it seems sensible. A bowl of warm soapy water is sufficient to keep domesticware clean and sanitary. How do you wash your wooden chopping boards anyway? Simply wash them and immediately towel dry and then place upside

down to thoroughly dry. When I sell domesticware I always include a care sheet with this advice.

The bowls and plates shown on the previous page are all in regular, if not daily, use, and were perhaps finished with oil at the time I made them, but never again since. Some of them I made back in 2006 and are used daily.



Food bowls



Dinner and side plates

## Finishing for domesticware

Before discussing the actual finish on the completed domesticware I would like to discuss the tool finish on the wood. If the making of wooden domesticware has a rightful place then it is surely in the lean-to, barn, or workshop of the pole lathe turner. All wooden domesticware would have been produced on a pole lathe back in the mists of time, and it is only in relatively recent years that the craft has seen a resurgence. Pole lathe turning is, perhaps obviously, fundamentally different to powered lathe turning, but there are aspects of the finished items that also differ significantly to those produced by powered lathes.



Elm bowl by George Lailey, 1930



Porringer in spalted beech by Robin Wood

There will always be exceptions to any 'rule', but in the main the surface left on a finished object produced on a pole lathe will be a tooled surface, and will not have been worried by the application of abrasives through a range of grades as is the norm for us electrically-driven makers. There is something about the honesty of that surface that I personally find very appealing, and I feel it adds something to the finished item. My experience of nearly 20 years proselytising for this type of finish on domesticware tells me that I am preaching to the not-interested who, perhaps understandably, prefer to eradicate the last vestiges of their tool marks with the judicious application of 80 grit abrasives.

While there is nothing actually wrong with this approach I feel it does ignore the possibility of the added value that a tooled surface texture can bring to a domesticware object, and is perhaps something you might wish to experiment with. It is worth noting that pole lathe turners will almost without exception make their bowls and plates from greenwood and put them aside to season for a period after turning, accepting any slight distortions as part of the aesthetic. Powered-lathe turners may be less inclined to take this approach and the use of pre-seasoned wood does have an impact on the ability to leave a suitably fine-tooled finish on the wood.



Tool marks

One of my most cherished possessions is a bowl made by ‘the last bowl turner’, George Lailey. He made wooden bowls on a pole lathe in a hut on Bucklebury Common, Berkshire, until his death in 1958. Lailey’s shed was on land owned by a ‘commoner’, Olive (‘Ov’), and she allowed Lailey to use the shed at the house. The bowl was given to her by Lailey and it passed on to an art teacher friend with an interest in craft skills and then to his daughter, Jacqui, and from her on to me, and it is a glorious object. Lailey, like all pole turners before and after him, used homemade tools and no abrasives, and the marks of the tool remain on the bowl as witness to his precise control of the cuts made to produce the bowl. Lailey became something of a celebrity after appearing in H V Morton’s popular 1927 book, *In Search of England*, and began signing and selling his bowls to a much wider customer base. Perhaps the first of the super-star woodturners.

Another cherished domesticware piece I own (and use) was made by the English turner responsible for rediscovering Lailey’s process for producing nests of bowls from a single blank of wood on a pole lathe, Robin Wood, and is a porringer in spalted beech. This bowl too has the tool marks that add such a pleasing aesthetic. The tool marks also serve a practical, if indirect, function, in that a tooled surface is far less likely to produce raised grain when wetted than a finely abraded surface,. A useful characteristic for domesticware.

## On to the finish

Having produced your domesticware object, with or without abrading, the next question that is often asked is: ‘What finish should I put on it?’ The answer is quite simple – a foodsafe finish. Today that usually means some version of paraffin oil, commonly referred to as mineral oil, which is a derivative of the petro-chemical industry.

Two basic types of oil are of interest to us as turners of domesticware – those that cure and those that do not cure. Non-curing oils, such as olive and vegetable, can become rancid over time, so are best avoided, while oils which cure, such as walnut or raw linseed, will cure after a few days and help to keep the

wood sealed and the surface less absorbent. Walnut oil should, of course, only be used when nut allergies are not an issue, so raw linseed is perhaps the best option.

**NB:** Boiled linseed oil should not be used because it has metal drying agents added, which are poisonous.

The object should be liberally coated. Allow the oil to penetrate then wipe off the excess with paper towel and allow a few days for the oil to cure. The process can be repeated several times to build up a robust and durable finish. Over time, repeated washing will remove the finish and a reapplication will revive and reseal the bowl, but this is not something I do routinely.

## Size matters

Domesticware bowls, plates and platters should be of an appropriate size, and if in doubt you can simply use the dimensions of their more common crockery equivalents. Making a range of sizes can also be useful. I make eating bowls in three sizes 4-8in, dinner plates in two sizes, 9-11in, and side plates in 7-8in. Plates tend to be no more than 1in high at the rim, and eating bowls can range from 3-4in, depending on proposed usage. Small side bowls from 3-5in in diameter are useful for pickles, nuts, or accompaniments on the table.

## Making in small batches

Domesticware has the advantage of usually being ordered or purchased in multiples, which is ideal if you are selling them, but perhaps not so ideal if the thought of making two or more of something the same fills you with dread. However, if you keep your design simple and take things slowly, it really isn’t such an onerous task, and making in small batches is an efficient method of production that can also serve as technique practise. If it’s the first time you will try it, cut two more blanks than are required and turn all of them, selecting only those that are closest to each other to fulfil the order. The others can always be sold as oddments or seconds.

## Simple dinner plates

When making in batches it is important to ensure that your blanks will each produce the same item to the same dimensions. One of these blanks had a fault that would mean reducing it down, and a consequent reduction was required on the second blank, but ultimately it resulted in two plates of the same size.



Selecting suitable stock



Gluing on sacrificial mounting blocks



## ◀ Shaping the underside of the plate

The blank is mounted on the tenon of the sacrificial block and, using a bowl gouge, taken down to 240mm diameter. The first 30mm of the headstock side of the blank is trued flat, and the back face is then trued flat. The diameter of the effective foot area is marked at 150mm.

A mark is made 10mm in from the front edge of the blank and a pleasant curve is turned between this point and the mark for the foot. A push cut or a pull cut can be used, but keep the cuts light and gentle. Keep in mind that you want repeatable shapes.

If you are not making the plate from greenwood and there are tool marks you are not prepared to leave then finish the surface with a scraper and abrasives as you might ordinarily do.



Pull cut to shape



Push cut to shape



Refining with a negative-rake scraper

## Reversing the plate

Turning a tenon or recess on such a slim blank would result in significant loss of usable wood for the plate, so a second sacrificial block is used to remount the plate. First ensure that the area inside the foot marking is slightly dished, with a flat centre to accommodate the sacrificial mounting block. The slight dishing ensures that the plate sits flat on the table when completed. Mark the diameter of the sacrificial block on the base of the plate and cover the surface of the scrap block with double-sided tape. Using the mark left on the sacrificial block by the revolving ring centre as a guide, bring the tailstock up to help line the block up on the plate. Unlike the first sacrificial block we used this one needs to be trued to the plate, so re-cut the tenon so that it runs concentric to the plate.



Checking the hollow



Mounting with double-sided tape



Truing the tenon



## Reversing the plate

A flat rim area is marked 25mm in from the edge of the plate, and another mark made 5mm beyond this. The 5mm section is to form a raised beaded edge in. The rim thickness is taken down from 10mm to 8mm up to the 25mm mark. The interior of the plate is turned away, leaving as flat a bottom as possible, but with a gentle curve at the wall as it rises to the inner rim. A bead is formed from the upstanding 5mm section on the rim and it is gently feathered into the plate base. The surface should be left as clean as possible, and if you are scraping

and abrading, it can help to wet the surface with water spray between grades to raise and knock back the grain in preparation of its ultimate use. Otherwise simply burnish the surface with a handful of shavings. A couple of V-cuts are made to define the rim and the cuts are scorched with Formica.

Raw Linseed Oil is applied and left to soak in before buffing off. The plate can now be prised from the sacrificial mounting block and the base oiled. A second plate is now turned to match, and then repeat as required.



Turning the bead



Burnishing the surface



Raw Linseed oil is applied



A matching plate is turned

## Conclusions

Domesticware may be viewed as being a little bit dull, a little unglamorous, or maybe even a little low-skilled by more advanced turners, but frankly, that's their loss. The objects are made with care, often with love, but always with the intention that they will enhance the life of the user in their own small way. And they do. They must do. I know this because people

invariably come back for more when family and friends have seen them. And if you add size options, side plates, eating bowls, salad bowls, condiment pots, egg cups, wooden spoons and spreaders, salt and pepper pots or mills, you have a collection for people to aspire to. So, let me ask you: How many wooden objects do you now intend to use on a daily basis? ●





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# Get started with airbrushes

Stewart Furini has all the information you need to get started with these tools

**Last month we looked at the low-tech end of colouring equipment. This issue we dive into the world of airbrushes and a look at the pros and cons of the different types available. Using an airbrush in your colouring work allows you a wider range of creative, decorative and artistic possibilities, and it's a natural progression from some of the equipment and techniques we looked at last time.**

It can be a bit daunting for the new airbrush user, with different types brushes available and a wide price range, from under £20 for a brush to well over £100, with some costing in excess of £400. Then there's the need for a compressor and cleaning supplies, as well as the range of different media you can use in an airbrush. Is gravity-feed better than siphon-feed? What's the advantage of dual-action versus single action? Does needle size matter? How is an airbrush cleaned? We'll cover all of these topics in this article.

## Gravity or siphon?

There are two basic types of airbrush – gravity-feed and siphon-feed (which is also known as suction-feed and bottom-feed). Gravity-feed brushes have the paint or stain or dye added to a cup on top of the brush, making use of gravity to help pull the fluid into the airstream through the nozzle. They work on lower pressure than siphon-feed airbrushes, though a compressor can, of course, handle both types of brush. Siphon-feed brushes have the colouring medium in a glass or plastic jar or bottle under the brush and as the air is fed past the airbrush nozzle, a siphon effect pulls fluid into the body of the airbrush and through the nozzle. This requires a higher air pressure from the compressor than a gravity-feed brush.

To blur this distinction, there is also a side-feed airbrush. However, this airbrush will either be gravity-feed or siphon-feed as it can be fitted with a gravity-type cup, where the paint level is above the nozzle, or a bottle, where the paint is below the nozzle. ►





A gravity-feed brush at the rear, a siphon-feed at the front



Siphon-feed brushes can use open cups or bottles for the colouring media

## Gravity vs siphon – pros and cons

Siphon-feed brushes are useful for covering large areas with colour and have the advantage of needing less cleaning if you have separate jars for each colour. For me, this is a big advantage of the siphon-feed brushes. I seldom use just one colour on my platters, so being able to swap colours quickly is a distinct plus for this type.

One advantage of a gravity-feed brush is that it can be used for finer-detail work. Working with lower pressure from the compressor, the airbrush's nozzle can be placed closer to the surface being painted. Siphon-feed brushes can be trickier to use if you want to get in close to your work for some fine detail as the higher pressure needed can cause your paint to splatter if the nozzle is placed too close to the surface. With practice you can avoid this, as you develop a more sensitive trigger-finger. Another positive is that you can spray with very little paint being added to the cup. If you only have one airbrush, gravity-feed is considered more versatile because you can use it for both fine detail and for covering larger areas. However, the disadvantage is that you will need to clean more thoroughly between colours; I find this a bit of a nuisance as it slows me down too much for my own low levels of patience.

I mostly use siphon-feed brushes as I have built up a collection and have separate brushes for the main colours I use. This means I can work quickly without stopping to wait for cleaning

a brush out. Clearly, if you wanted to build up a collection of several airbrushes, you would be making a big investment in equipment if you bought at the higher end of the market.

A top tip for siphon-feed airbrushes is to put the bottle into the airbrush with a twisting motion – this seems to give a more secure grip to the airbrush body than just pushing the bottle in.



A single-action external mix brush in the front, dual-action internal mix in the rear

## Getting the paint out – dual-action vs single-action

There are two factors to consider with regard to getting the paint out of your airbrush, regardless of whether it's gravity-feed or siphon-feed.

The first of these is where the paint mixes with the airstream. This can be outside the airbrush tip or inside the tip after the paint has passed through the nozzle. The external mix airbrushes are generally cheaper and are not as common as the internal mix

brushes. I found the finish from these brushes was somewhat coarser and there was less control with applying the paint. For me, and it may be different for you, I find the dual-action brushes preferable. These mix the paint with the air before the paint has left the airbrush. This allows for a finer atomisation of the fluid, which allows for a better finish to the spraying.



A double-action airbrush: control sequence – from left to right: air/paint off, air on, paint on, paint off

PHOTOGRAPHS COURTESY OF STEWART FURINI

The second factor that determines how your paint comes out of the airbrush is whether it's a single-action or a dual-action brush. A single action airbrush means that pushing down the trigger releases both the air and the paint at the same time, whereas double-action airbrushes have two different trigger movements to separate the air and paint: down for air, back for paint, thus allowing you much greater control over both the amount of air released and the amount of paint released.

There is some control of the amount of paint coming out of a single-action airbrush as higher-end brushes have an adjustment knob at the back that determines how far the needle is set back from the nozzle opening. Single-action brushes are good for putting down uniform layers of colour, but if you want to be able to vary the spray pattern and intensity of colour, a dual-action brush is more versatile. However, single-action brushes are simpler to use and can be cheaper, so if you want to have an airbrush for covering your turning with paint or stain and aren't interested in being able to have the same level of control with shading and application, then a single-action brush might be the one for you.

### Needle size

When buying an airbrush, you will discover that needle size is another variable to consider, with sizes ranging from 0.1mm up to 0.6mm. If you are going to be spraying stains and paints as blocks of colour, a needle size of 0.5mm is probably the most versatile. The finer needle sizes are for more precise, detailed work, which is not really my forte. The needle size should also be determined by the medium you are spraying, with fine needles such as 0.15 or 0.2mm for very thin media like ink and watercolours. Some manufacturers supply a range of needle sizes to use with the same brush, so you can spray with a wider range of media.



Partially disassembled airbrush with a 0.4mm needle

## Getting air to your airbrush

There are several ways to get air to your airbrush. If you already have a compressor, you can use this. You may have to fit a water/moisture trap to your airline to stop any water coming from your compressor into the airbrush and mixing with the paints. My compressors have them at the compressor end of the air hose, but you can buy smaller ones to fit just before the airbrush. The second option is to have a small airbrush compressor, which will often contain a water trap on the compressor. This is the type I use for demonstrations, but in my workshop I use a bigger compressor as I have it set up to use every day.

A significant advantage of the smaller airbrush compressors is that they are considerably quieter than a bigger workshop compressor – I struggle to hear anything over the sound of my bigger compressor. The final option is to use cans of compressed air, which may be a way to see if airbrushing is for you, but would not be the way I would want to work regularly. My top choice would be a smaller dedicated airbrush compressor. Airbrush compressors can be supplied with or without an air tank. I have one without, as it only gets used at demonstrations for short times. The advantage of having an air tank is that the compressor is only running when the pressure in the tank drops. Conversely, the ones without a tank need to run all the time the airbrush is being used for spraying. This means the compressor can get hot if used for a long period, say about 15 minutes without a break, though it would be a very large woodturning that needed spraying for that long without a pause. As a rule of thumb, I tend not to run my airbrush compressor

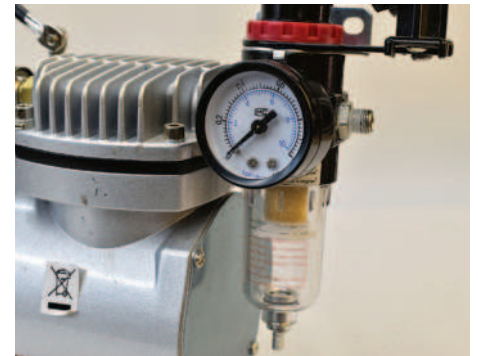
for more than five minutes in a 10-minute period. If you have a compressor with an air tank it is important to ensure you empty it of air at the end of every session, otherwise you run the risk of water forming in the tank which can lead to corrosion and a weakening of the tank, a potentially serious hazard that could lead to the tank cracking and shattering when under pressure.

From the compressor to the airbrush you need an air hose. Some compressors

come with a curly air hose, but this is not the best type to use with an airbrush. A straight braided hose is my choice, as shown in the photo. Different sized connectors are available, usually in imperial measurements. My larger compressor has a hose with a 1/4" in connector at the compressor end, and 1/8" in at the airbrush end. This seems standard for airbrushes. If you have a compressor already but it has different sized connectors, adapters are readily available.



A small tankless compressor and larger workshop compressor



Water trap filter fitted to the compressor's regulator



Ensure your compressor's air tank is empty at the end of each session



Braided air hoses and a selection of air hose adapters



### Quick-release connector

If you only have one airbrush, then a quick-release connector is not needed as you can keep your airbrush connected to the air hose. But if you become a compulsive airbrush collector, like me, then a quick-release connector is definitely a useful addition. This allows me to swap my siphon-feed airbrushes very easily, with minimum down time between changing colours. There are two parts to the connector – one part, fitted with a spring-loaded sleeve, attaches to the end of the hose, then each airbrush needs to be fitted with a short male fitting that clips into the female end of the hose attachment. When the airbrush is disconnected from the hose, the air supply is shut off. Some quick-release connectors also feature a small knob you can use to reduce the air pressure coming to the brush, which may be useful to help control the flow of the fluid you are spraying.



A quick-release connector with several airbrush connectors

### What to put in your airbrush

I've used the word 'fluid' pretty much exclusively throughout the article so far, mainly because there are several different fluids you can put in an airbrush. Of course, there is paint, but you can also use stains, dyes and inks. One common factor across these different media is that they need to be thin enough to spray from your airbrush. You can buy paints ready-thinned for airbrush use, and for those that are not thin enough, you can buy airbrush reducer fluid and mix them to the appropriate viscosity. My preference is for ready-thinned, for ease of use, but even here it might sometimes be necessary to add a little reducer. I regularly use stains in my airbrushes, and whether these are alcohol or water-based makes no difference. They don't need reducing as they are already very thin, especially when compared to paint. I also use some metallic and iridescent paints in my airbrushes – there is quite a variety in the viscosity of these paints, with some suppliers selling paints that can be used in an airbrush without any reducer fluid.

We'll look at airbrushes in use on projects in a later article, as there are many ways to use them to bring a decorative or artistic flourish to your work, as the close-ups of some platter rims show.

### How much to spend?

There is a saying I've heard regarding buying cheap tools: 'Buy cheap, buy twice.' It is certainly the case that higher-end branded airbrushes from an established maker are manufactured to a higher standard, have smoother control and will have better seals than cheaper ones. And I have bought cheap airbrushes that have been difficult and frustrating to use and wasted my money. However, you also need to consider what you are going to put in the airbrush and how you are going to use it.

If I wanted an airbrush for fine, detailed work that I needed to be fully in control of, a high-end branded airbrush would be my choice. If I wanted to have this high level of control and predictable use even if I wasn't intending to create such detail, then this would still be my choice, but I would probably only have one airbrush and need to clean it out between colours. Similarly, if I was producing work that was more than colour washes and patterns, I'd go for a quality airbrush. Most of my airbrushing though is of stains and is designed to be decorative rather than artistic and such a fine level of control is not needed. This is one reason why I use airbrushes at the lower end of the price scale, usually around

£20 each. Another reason I do this, is because I can then afford to have a brush dedicated to each main colour I use and, as my preference is for siphon-fed brushes, I keep a bottle of stain attached to each brush. This suits my somewhat relaxed approach to cleaning and maintenance, as I only need to run some cleaner through each brush periodically to keep it working well. I have to stress that the same approach if using paints would be very unsuccessful, and this is why I would probably restrict myself to one airbrush as I would have to clean it after each use and for each change of colour. No doubt, you would all be more conscientious than I choose to be!



A selection of colouring media for airbrushing



Higher-end airbrushes have better seals

### Cleaning your airbrush



Using a cleaning pot



A new filter fitted to the cleaning pot

## Gravity-feed brushes

When you need to change colours in your gravity-feed airbrush follow these steps:

- Empty any remaining colour, but not back into the paint bottle; you need to discard it to avoid any possible colour contamination
- Add cleaning solution or solvent to the cup and wipe round with a paper towel
- Add more cleaning solution and spray through the airbrush, preferably into an airbrush cleaner pot with a filter fitted
- Spray until the airbrush is clean
- Empty any remaining cleaner
- Spray until the airbrush is dry

## Siphon-feed airbrush

For a siphon-feed brush cleaning between colours is a little more straightforward.

- Remove the paint bottle
- Attach a bottle filled with cleaner or solvent
- Spray until cleaner comes out clear, again ideally into a pot or at least into a towel or paper towel to absorb the spray
- Remove the bottle of cleaner and spray until dry

## Using an airbrush

A comprehensive coverage of how to use an airbrush is outside the scope of this article, but there are some general principles that are useful to know. The closer the airbrush is to the surface being sprayed, the finer the line you can paint. As you move the airbrush away from the surface, the line gets wider and somewhat fuzzier with less definition and sharpness. To help avoid 'tip-dry' when paint dries on the needle and interferes with your spraying, follow this routine with a double-action airbrush: press down for air, pull back for colour, shut off colour, shut off air. It's important to use this approach not just to help avoid or limit tip-dry, but also because you will then be in full control of the paint application. If you have the trigger pulled back for paint before you have pressed down for air, as soon as the air is released you are likely to get a blob or paint or possibly a spattering, which is only good if that is what you were meaning to do. By finishing with just air coming out of your airbrush you are also helping your paint dry a bit quicker. I also find it helpful where possible to start spraying just off the workpiece and then bring the colour on to the wood to avoid a build-up of colour at the start of the spraying. It can be helpful to support your spraying hand with your other hand for a steadier delivery of paint.

Like turning, practice is needed to be proficient with an airbrush – and the advantage of practising on a piece of wood is that you can just sand off your practice sprays and have a clean



Support your spraying hand when airbrushing

## Health and safety

You must use appropriate safety equipment when using airbrushes.

This means eye, skin and lung protection – regardless of whether you are spraying water or solvent based media. A dust mask isn't adequate – you need a suitably rated vapour respirator. Ventilation is also very important: a spray booth with extraction is ideal, but if this is not part of your set-up you will need to have fresh air entering your spraying area and a means of dispersing overspray from your workshop. I have windows at the opposite end of the door in my workshop and also have a fan to help move any fumes and overspray away from where I am working to outside the workshop.



Essential  
PPE and RPE

surface to do it on all over again. It won't take long before you develop a sensitive trigger finger – a common beginner practice exercise is to make a series of dots which you then join up with lines. This can really help to get you familiar with your airbrush and feel confident using it. Or you can go more freeform and just do some wavy lines and shading. It's a useful habit to get into before each spraying session and helps to warm you up and tie in your hand and eye co-ordination. Have fun. ●



Do some 'doodling' to practise your airbrush skills – it's useful to see how much pressure is too much sometimes

## Airbrushing in action



Airbrushed platter rim



# Woodturning

Coming next issue...

## Brian Horais introduces a three-part series on multi-axis turning



Les Symonds demonstrates  
this exquisite troika box



Andrew Potocnik creates  
a picturesque floral  
arrangement from a  
banksia pod

Richard Findley sets up next year's  
home for the avian community  
with a bird nesting box

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Turning and images by Brad Herrington



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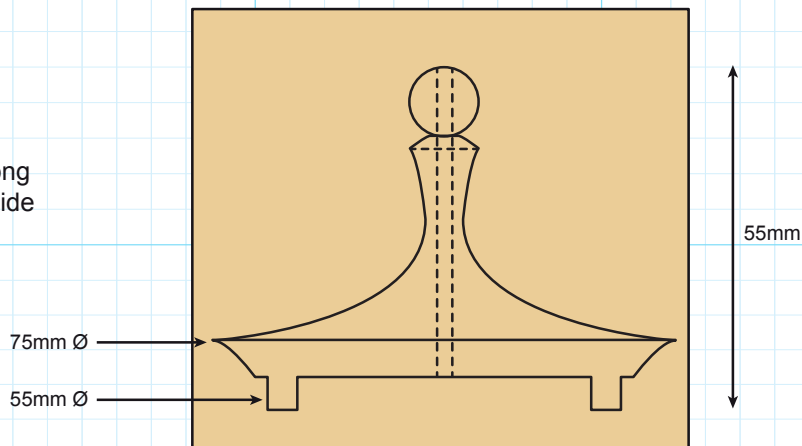
# Hanging pomander

Ian Woodford creates  
a scented ornament

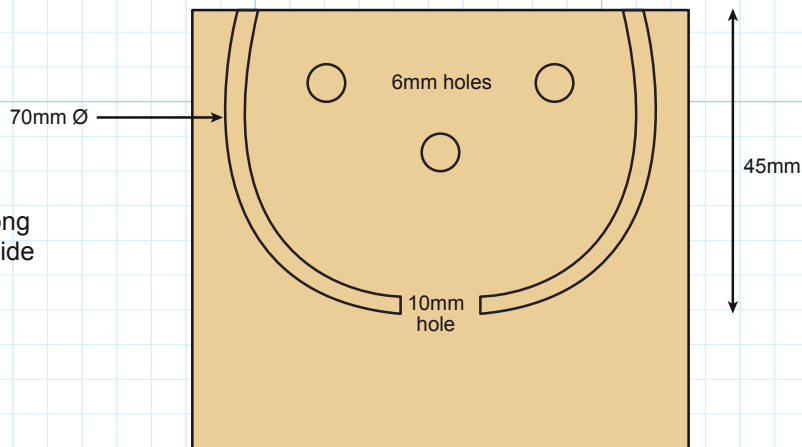
Pomanders have always sold well for me at craft events and my bestseller with women was a hanging pomander. These consist of three sections – a top lid, the main body and a bottom finial, all spindle turned. Pomanders are similar to hanging Christmas ornaments in design, are easy to make with simple shapes and the overall effect is very appealing. They are intended to hang in a wardrobe but can be placed anywhere. I prefer to make the middle section in a different wood from the lid and finial as this, to me, makes it more attractive. I find it best to make the middle section first then follow with the finial and finally the top (lid) section. Doing it this way makes it easier to fit the lid and finial accurately and aesthetically.



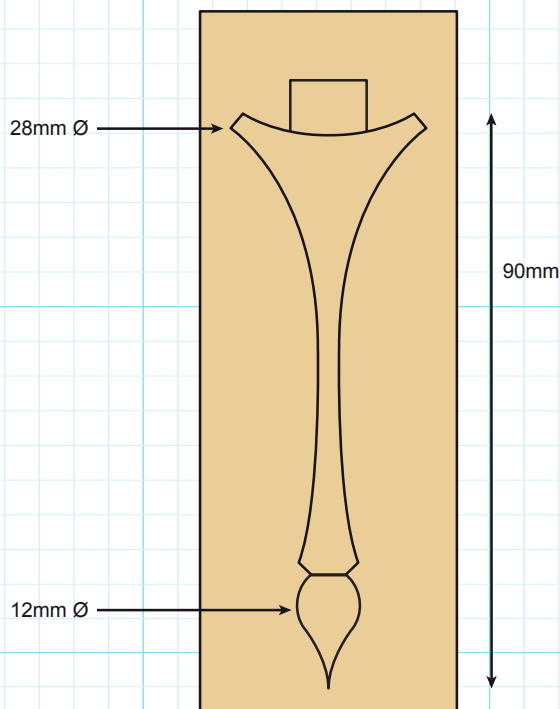
BLANK  
75mm long  
80mm wide



BLANK  
70mm long  
75mm wide



BLANK  
1100mm long  
35mm wide



## TOOLS AND MATERIALS

- PPE & RPE
- Spindle roughing gouge
- Spindle gouge
- Thin parting tool
- Skew
- Tailstock drill chuck (Jacobs)
- Four-jaw chuck
- 3mm, 6mm, 10mm drill bits
- Vernier callipers
- Sanding sealer
- Buffing wheel
- Carnauba wax

## MATERIALS

- Maple 75 x 80mm wide for lid
- Bubinga 70 x 75mm wide for main body
- Maple 110 x 35mm for finial

## Making the pomander

**1** From left to right this shows the three blanks of maple (lid or top), bubinga (middle section) and maple for the finial. Sizes can be seen in the diagram and both top and middle sections are longer than required because the excess is used for a jam chuck in the turning process.

**2** Mount the bubinga between centres and turn to round. The basic shape has been formed and two lines are drawn approximately 10mm apart from the top. Mark six positions along each line (using the indexing system) with the second line positions alternating from the first. Centre punch each marked position and then remove from the chuck.



**1**



**2**



**3** Using a 6mm drill bit mounted in a Jacobs chuck in the headstock, drill holes to a depth of about 5mm into each point as shown in the photo. I find this method both speedy and accurate. When all holes are drilled remount in the chuck.

**4** Hollow out the inside to a wall thickness of about 2mm and this can be gauged accurately by looking in the drilled holes. Turn both the outside and inside as far as possible and sand both to 400 grit. Seal with sanding sealer both inside and out then part off.

**5** A jam chuck has been turned on the waste wood and the hollowed section has been fitted on. Finish turn the bottom area and then drill a 10mm hole into the base using a Jacobs chuck in the tailstock. Sand and seal.

**6** Mount the finial blank and turn to round. Unconventionally, I started shaping the section to be fitted to the bottom of the bubinga section first as this enabled me to temporarily hold the middle section in place while assessing that the fitting and shape are aesthetically correct. This can be seen in the next photo.

**7** Shaping of the finial is almost complete and I am pleased with the flow. Remove the middle section from the finial and bring up the tailstock for support while the end of the finial is completed. Sand and seal before parting off.

**8** Mount the lid section and turn the area that fits into the middle section. Again, you can submit the middle section to determine fit and shape. The fit should be snug, neither too tight nor too loose. With a 3mm drill bit held in a Jacobs chuck in the tailstock, drill a hole most of the way through. Carry on shaping as much as possible before parting off. Sand and seal this area.

**9** From the remaining waste in the chuck, make a jam chuck and attach the lid. Finish the shaping and complete the drilling of the 3mm hole from the top. With the point of a skew I like to form two decorative lines near the outside edge. Sand and seal, all turning is now complete.

Before gluing the finial into the base, buff all sections on a wheel loaded with carnauba wax. Also screw a small eye hook into the top of the finial to enable the hanging cord to be fixed. The cord will pass through the middle section and then through the lid. This can then be used to tie wherever you want to hang the pomander. The lid section can be slid up the cord to fill with potpourri (a mixture of dried flowers scented with essential oils).

**10** Assembled and finished hanging pomander. ●







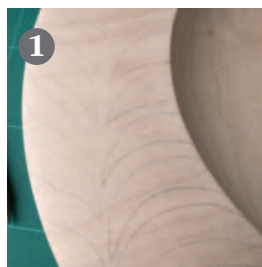
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PRODUCTS

## FINISHING SCHOOL

### Flaming Feathers Platter

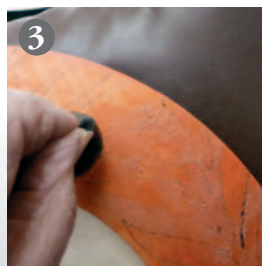
WITH SHEILA AND STEVE



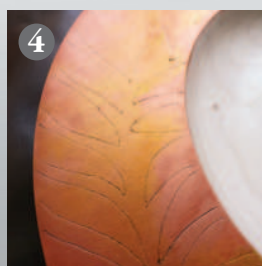
① This platter was turned in Maple, then the design was drawn around the edge of the rim. Using pencil allows an eraser to be used if needed, but take care not to press too hard as this could leave indentations in the wood.



② A coat of Orange Spirit Stain was then applied using a small piece of foam. The whole rim was covered, but the stain was deliberately left with a patchy effect. This also removed the pencil lines.



③ After enhancing the pattern with a pyrography pen, Copper Metallic Paint was applied using another piece of foam. Areas to be burnt later should be left unpainted.



④ Before the paint is dry, apply Yellow Iridescent Paint randomly over the rim with a clean sponge, allowing it to mix with the Copper Metallic Paint. Once dried the pyrography design was burnt into the rim.



⑤ The finished platter, with three coats of Acrylic Gloss Lacquer. Each coat was cut back lightly with Red, Orange and White NyWeb before the application of the next coat.

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# Storage jar lids

Colwin Way creates some bespoke closures for handy containers

This month's project started as a bit of an accident really, as many of my projects do, with a snowball effect from doing something else. I had just finished a trio of shelves in beautiful quartersawn oak for the kitchen, along with some equally nice hand-forged hangers. Standing back with a smug look on my face I called my wife to say: 'All finished, what do you think?' Of course she said she loved them and started to fill the shelves with our

upcycled old coffee, jam and pickle jars. These jars have had the labels washed off and are now used to store our spices, pasta and rice. However, the lids still had all the advertising on and were a multitude of colours. To be honest, they detracted from the shelves that I was so very proud of.

Then, out of the blue, my wife said: 'Wouldn't those jars look nice with wooden lids?' I immediately thought yes,





what a great idea for an article, plus I had some timber left over from making the shelves. I've also mixed the timbers up and included some offcuts from the workshop. This is such a simple idea and a project that anyone just starting out can give a go with good success.

Do as many or as few as you want – you don't have to limit these to kitchen jars, you could take the idea into the workshop as storage jars.

#### TOOLS AND MATERIALS

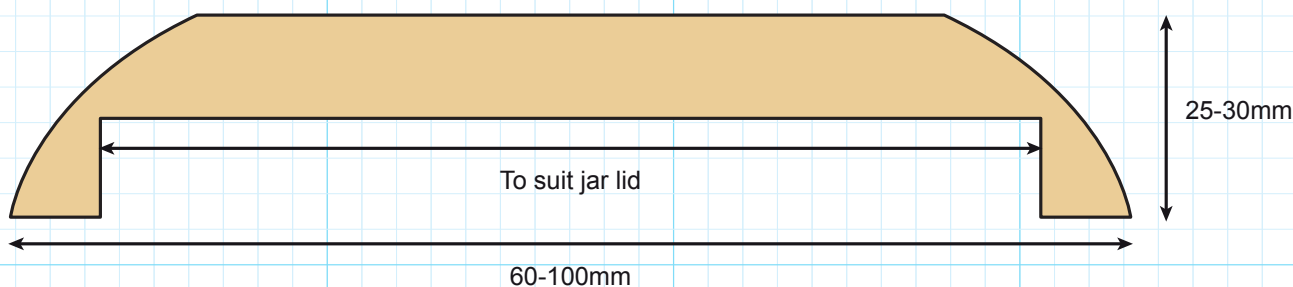
- Personal and respiratory protective equipment (PPE & RPE)
- 6mm bowl gouge
- Spindle gouge
- 6mm flat scraper
- 3mm parting tool
- 6mm beading and parting tool
- Angled scraper or skew chisel
- Chuck
- Tailstock drill chuck

- 8mm drill bit
- Male thread chaser/point tool
- External callipers
- Dividers
- Hot-melt glue gun

#### MATERIALS

- Abrasives down to 400 grit
- Finishing oil





## Initial planning

**1** Time to get started and, like I said earlier, I had some of the oak left over and have added some of the workshop scraps, which include beech (*Fagus sylvatica*), chestnut (*Aesculus hippocastanum*), walnut (*Juglans* spp.) and cherry (*Prunus* spp.). They've been cut using a bandsaw in a mixture of diameters from 60-100mm.

**2** We need to start by measuring the jar lids we are going to cover. This measurement is going to be used later to cut a recess for you to glue the lid into. When it comes to this measurement, don't worry too much, it's not a vital piece of engineering and as long as the lid fits in the hole it will be fine.

## Underside of the lid

**3** This is the largest jar I had to upcycle and contained the south west's best pickled eggs, given to me by my sons as a Christmas present. The eggs are long since gone, but the jar is perfect for storing pasta. Here I'm sizing up a cherry blank ready to be transformed.

**4** Pick a set of jaws large enough to do a good span of sizes and make sure on each blank that you're not getting too close to the chuck's maximum capacity, either by marking the jaw or checking physically by hand. Here I'm using a set of large dovetail jaws which actually made all the lids.

**5** Take the measurement of the jar lid and mark the diameter on to the face of the blank using a set of dividers. When doing this ensure the dividers are resting on the toolrest like any other tool and that you present them horizontally and not at a sloping angle where they tend to catch.







**6** You're now ready to cut the depth of the recess using a narrow, flat scraper, but first measure the depth of the lid you're fitting and use a permanent marker to make a depth line directly on the scraper. Don't worry, you don't need to have a dozen lines for different lids, just use this first line as a guide as it is easy to work a little deeper or shallower with this as a reference point.

**7** After you've cut to the correct depth with the scraper, rough out and clean up with a 6mm bowl gouge. Two cuts work well here. First, point the flute toward the blank and cut through the side grain, then follow up with the flute facing the centre of the blank and the bevel rubbing to give a clean, flat bottom as in the picture.

**8** Now the inside is recessed you can turn your attention to the outside face. I learnt on the first couple I made that it is very easy to make the lid look out of proportion to the jar, so make the wall nice and thin, no more than 5mm. To do this use the same 6mm bowl gouge. You only need to cut down 5-6mm, which is enough to sand to later on.

**9** This is how the lids should look after this face has been done. It is always worth checking the lids to make sure they're going to fit, but also that the lid is in deep enough and not showing above the edge. Get all your lids to this point before moving on to the next section.

### Top face

**10** Swap over your jaws to something the correct size to expand into the recess previously made. I'm using my C jaws on my chuck. These have a measurement of 70mm external when closed to the perfect circle, known as the optimum size.

**11** Make sure you don't overtighten the jaws and split the lid. When asked 'how tight to tighten the chuck?', I usually say you should stop just before you hear the first crack. This means tight but not too tight. You're now ready to shape your lid, remembering you have a recess so be aware of the thickness and remember that not all are the same.

**12** There's no scraper snobbery here, in fact I find it a tad quicker to use a sharpened skew chisel and a very fine scrape when making these in large numbers, and sand from 100 to 400 grit. Because it's mainly side grain we're dealing with it works just fine.



**13** After sanding you're ready to apply your finish. I'm using a single coat of finishing oil for a satin finish, which is a nice quick way of finishing straight off the lathe. Apply the oil and wipe off the excess, remove from the chuck and wipe off any areas that the chuck was covering, being careful not to get any oil on the areas to be glued.

**14** As an option this picture shows one of the lids being textured with a thread cutting tool, which works especially well when the grain is a bit plain and gives a bit of character to the lid. You could, of course, stain, paint or embellish the lids to suit your kitchen and taste.

### Another option

**15** Another idea for the larger pickled egg jar we looked at earlier is to add a knob to it. To do this, drill a hole half way through the lid with an 8mm drill bit while the lid is held in the chuck. A lip and spur-type drill bit is best as it centres itself much better than a regular twist drill.

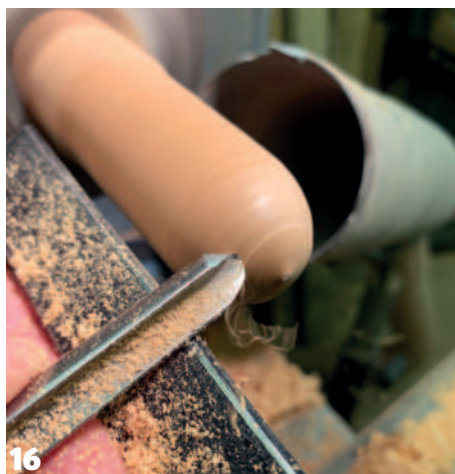
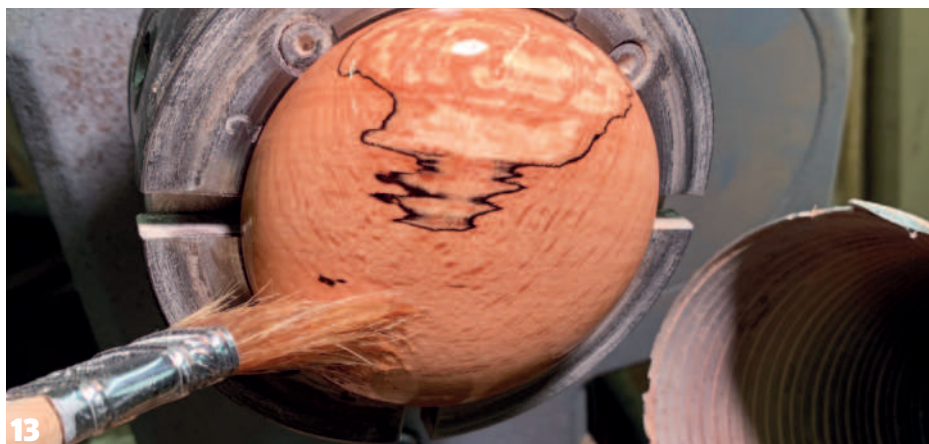
**16** To make the knob, hold a piece of sized timber in a set of pin jaws in your chuck; I'm using 30mm stock and will make several knobs from this one length of timber. Using a spindle or bowl gouge round over and shape the knob to your liking.

**17** Use a set of external callipers to measure the drill bit used to drill the lid. Now, using the callipers, cut the tenon to the same size with a parting and beading or regular parting tool. Now sand and finish to match the lid before parting off.

**18** There we have the finished lid. You can mix and match the knobs to lids until you find the right combination you like.

### Fitting the turned lids to the metal or plastic lids

**19** Once all the lids are finished you can fix them together. I found that hot-melt glue works best for this and is very quick. I think it is the cold metal lids that cool and set the glue down nice and quick, so there's no waiting for setting times.







20



21

**20** Be a little bit careful when pressing the lids in as the glue is hot and that heat passes through the lids and can burn your fingers, so holding the outer edge is a little less painful.

**21** A couple of the finished lids. You may notice that the knob on the large jar is different to the one shown being made earlier. I thought the first was a little too large so swapped it to a slightly smaller one with a more angular shape to suit the square-sided lid.

**22** Jars about to have the wooden lids fitted.



22

**23** The finished jars. I think you'll agree that they're a massive improvement on the clutter before. I'm much happier that they go with my nice new shelves and my wife is much happier that all the jars are back out of the workshop and in place. ●



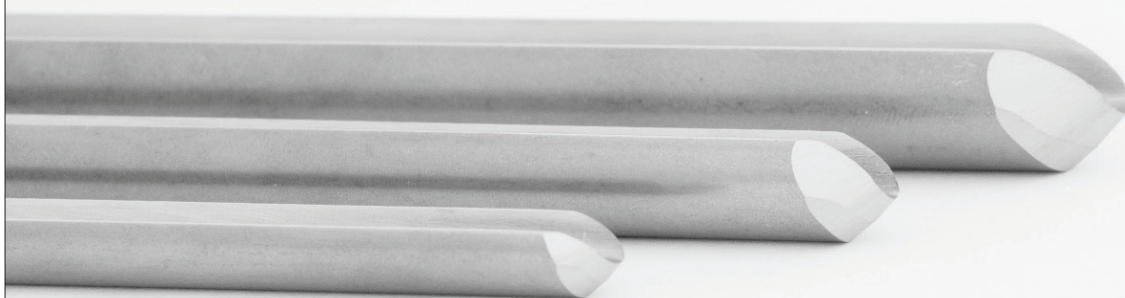
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PHOTOGRAPHS BY GARETH IRWIN

# Pole lathe bowl turning: part one

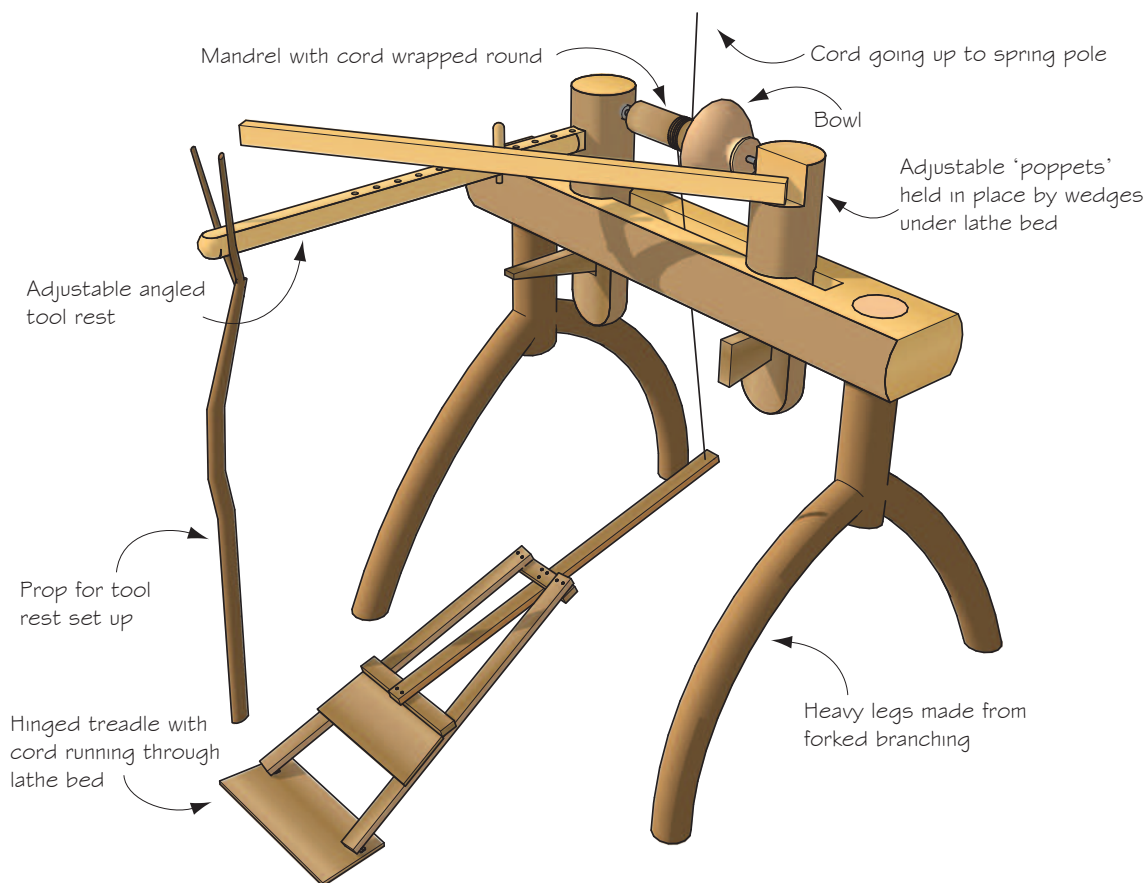
Fancy having a go at bowl turning on the pole lathe but still ‘a bit green’?  
Gareth Irwin has the answers

**All forms of woodwork require a certain level of understanding of the different properties and characteristics of wood – species of tree and their different textures and densities, moisture content, speed of growth, position of growth, grain direction and the way different tools can be worked in various situations. Of all the types of woodwork I have tried, from green woodwork in the woods to cabinetmaking at the bench, I have found**

**bowl turning on the pole lathe to be the most demanding of this understanding.**

Historically, many types of woodturning lathe have been used, including water-powered and hand-powered flywheel, but the pole lathe is unique in that it does not continuously turn the work, but turns the work back and forth as the foot is depressed and released.





**1** Bowls that are turned on the pole lathe will have a slightly grooved, but hopefully not rough, finish and because they are often turned from partially green timber, they will distort but not split as they dry and yet be full of character.

### TIMBER

The blanks from which the bowls are turned are made from logs cleft in half and oriented in such a way that the grain runs through the bowl from side to side, which means the tools will cut across the fibres at opposite ends of the blank and along the fibres at the sides. The way the cutting edge of the tool meets the fibres also varies at the different parts of the bowl's shape.

**2** Just about all species of native hardwood can be turned successfully, but some are better than others. Sycamore, alder, fruitwoods, beech, birch, elm and box have a huge variety in their densities, but all have quite short fibres and a 'carrot'-like quality to the grain, which means they cut cleanly in any direction and turn well. Ash and oak, on the other hand, have long 'stringy' fibres which, although strong and flexible, don't allow them to cut so cleanly across the grain, so they don't make such easy bowls.

### LATHE

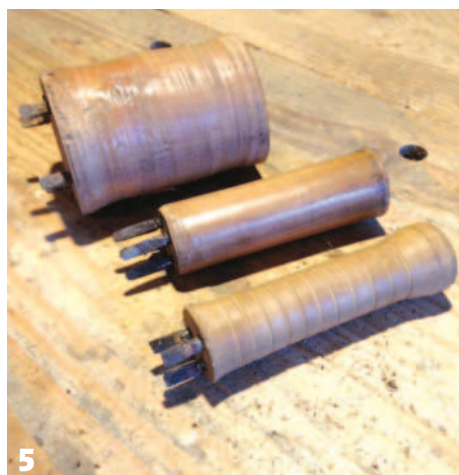
**3** A pole lathe for turning three-dimensional shapes such as bowls and plates is principally the same as a lathe for spindle turning, e.g. chair legs. There are a head and tailstock with metal centres, a cord wrapped around the work, a treadle to push





with the foot, a spring pole to return the motion and a toolrest. The differences in the lathe are that the whole thing needs to be beefed up to stop it vibrating or moving around as the blank, which may be 5kg or more, turns.

**4** The toolrest needs to be able to angle away from the tailstock to allow the wider blank to turn but still allowing the tool some close support. The foot treadle will need to hinge from further back to allow the turner's foot to be nearer the string, achieving greater leverage, although a shorter stroke. This means the end of the treadle will be under the lathe and the cord will run up through the bed rather than it being out the front as with spindle turning.



5

**5** The final difference is that the blank will have a 'mandrel' fitted into it. This short, wooden cylinder allows the cord somewhere to wrap around when it, and the blank, are held between the lathe's metal centres. The width of the mandrel will determine the gearing of the turning. A narrow mandrel will allow the work to turn more times per stroke but will be harder on the leg. As a rough guide, the mandrel should be about  $\frac{1}{5}$  to  $\frac{1}{4}$  the width of the bowl.

### TOOLS

**6** The tools for pole lathe bowl turning do not look like the turning tools used by machine turners, although they work in the same way. Machine



6

turners' tools look like elongated bench chisels with the cutting edges at the end, and the tool is offered to the work straight on. Pole lathe bowl turners' tools are also long-handled for leverage but the metal shafts are hooked at the end with the cutting edges on the side of this hook and are offered to the work more from the side.

These hook tools can be bought but I prefer to make my own from recycled old chisels or files. A piece of this high-carbon steel is welded to the end of a 16mm-diameter mild steel rod then the tip is heated in a forge and hammered out to a thin, bevelled flat. The edge of the tip is then ground to form the cutting edge and, once reheated, curved round to form the hook. The mild steel shaft is then fitted to a long handle.

**7** A multitude of different sized and shaped hooks can be made to serve many very particular needs, but the three main hooks needed are the outside bevel roughing-out hook, the inside bevel finishing hook and the curved coring hook. The roughing-out hook will remove waste quickly but might not leave the best surface. The finishing hook won't take a deep cut but will leave a refined finish and the curved coring hook will undercut the waste core near the bowl's completion.

### PREPARING THE BLANK

The log from which a bowl blank can be obtained should be of a suitable species and not too green but not too old. If the wood is too fresh, the fibres are too soft and come apart easily. This will make the cut across the grain difficult to get clean because the fibres will want to flex away from the tool before they cut.

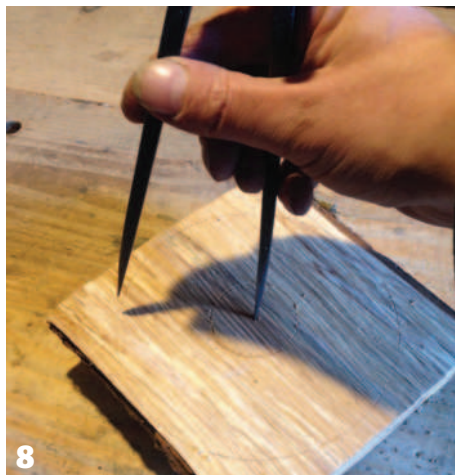
It might also mean the fibres tear away as the cut becomes parallel with the grain. If the log is allowed to 'mellow' for a few months, the fibres will stiffen slightly and therefore stay rigid as the cut passes across them.

If the wood becomes too dry, the fibres become brittle and may break before they are cut through. This will show itself as a 'pecking' in the end grain.

The log should be cut to the same length as its width and then be split in half. The inner surface that has been revealed can then be trimmed flat with an axe or saw.



7



8



9



10

**8** Using a compass or sharp dividers, find the centre of this flat face then use it to mark the largest circle that will fit and another of 50mm diameter.

**9** Using an axe or bandsaw and paying attention to grain direction, you can chop away the corners outside the larger marked circle.

**10** Again with the axe, the outer surface of the blank needs to be shaped roughly into a dome. The bark surface is already the correct shape and the ends of the log need to be shaped similarly. It is easier to start chopping away at the corners, finishing at the end grain. ●



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# Community letters

Here are some letters the Editor has received from readers

## Sculptures for first responders



Hello,  
I have been retired for 21 years and turned an average of 10 acceptable pieces a year, which were gifts for family, auction items for my church and for bragging rights at one of the four woodturning guilds within an hour's drive from Port Hope, Ontario, Canada.

Over the past three months, however, I have been turning and assembling one completed piece a day on average.

The background to these two pieces and four others is the story of work partially completed and then a loss of interest.

Five years ago I turned two large lamps

from segmented black cherry. A lot of it grows in Ontario. The lamps were about 18in tall and were composed of a half ball base then three stacked balls with another half bowl top.

The work was supposed to be an anniversary gift but my wife suggested that I bench them, which I did, and we took a cruise to Rome from Miami.

My daughter is a first responder, triage emergency room nurse in one of the Vancouver hospitals designated for Covid-19 care.

The first sculpture with the black walnut



## Staining wood

Hello,  
I know that a number of (mainly UK-based) turners think that staining wood is abhorrent but I have been experimenting on (perhaps) a different approach to colouring wood. I have been using Procion Dyes to stain wood and this is the finished result. The goblet may be a simple shape but it was just for an experiment. The wood used is walnut.

*Yours, Graham Burford*

base goes to my daughter Michele, my three grandchildren (one of whom has had a YouTube channel including among other things a video of him turning a bowl when he was eight years old).

As you can imagine I have a number of people interested in buying one of these sculptures for a first responder.

*Be safe. Cordially, John Morand*





## Turning for charity

Hello,

As you can see from these photos, most of my recent woodturning has been to raise funds for HMS *Ganges* [a veterans association for those who served at the former Royal Navy training base at Shotley Gate, Suffolk].

The exceptions are the quirky pieces of yew [at the back of the photo], which are virtually as grown and are a talking point at the shows we attend. I hope we can get back to going to the shows again soon.

*Kind regards, Stan Moody*

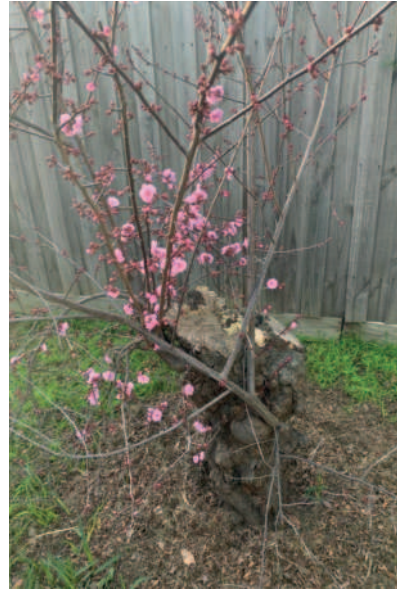


## Saving a plum tree

Hello,

I just read the Leader in *Woodturning* 344. I also enjoy seeing trees with the changing of the seasons. I have a double flowering plum tree that unfortunately started to die after 45 years of producing beautiful flowers. To save it I cut the rotted branches, and fortunately there was a small part of the branch that I was able to mount on the lathe and very carefully got a beautiful hollow form out of it. I named this piece Broken Planet. Another good result was that the tree recovered and now has new flowers, as you can see.

*Regards from down under,  
Antonio*







## Making gifts

As we head towards autumn, our thoughts are turning to Christmas and the presents we might make for loved ones. Jean Tomlins sent us these photos of a charming little hedgehog, which would make an ideal gift for a nature lover.

We'd love to see what gifts our readers are making, drop us a line to let us know what you've been up to.

## Jazz band

Hi,  
Due to the lockdown and having no meetings at my club, The Gloucestershire Association of Woodturners, I have been busy organising online demos and online video meetings for the members to get together and 'show and tell' what they have been making.

I was asked to 'show and tell' my latest turnings. I thought I should make something a bit different and remembered a trumpet player I had seen a photo of some months back and I thought why not make a whole band. I worked out that 1in diameter branch wood would work best and luckily I had pruned a euonymus shrub a few days earlier, which had produced some ideal branch wood.

I made the trumpet player first and the rest just evolved from there. I was going to give the drummer a vertical drum on his chest but changed to a floor-standing drum at the last minute, as with the guitar player being changed to a banjo player. All the instruments are made from boxwood.

It was a fun project to make and I hope it gives people as much fun looking at them!

*All the best,  
Les Cooper*



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# Sharpening drill bits

Randall A Maxey shows how to restore dull, old drill bits

**Step into almost any workshop and you're sure to find a box or drawer full of old drill bits. With a little patience and practice, some of those old drill bits can be brought back to life.** Sometimes it makes more sense to throw away a dull bit than to spend time sharpening it, especially for the smaller, less expensive, bits. We buy complete sets of drill bits because they cost less than buying the bits individually. Sometimes those sets consist of lower-quality bits that won't hold an edge

for very long. The strategy I use in this case is to upgrade to a higher-quality bit as one wears out and becomes unusable. Replacing bits in the set one at a time like this upgrades your collection with better-quality bits.

If you wish to tackle sharpening your own drill bits, it's not difficult if you have the right tools and use proper techniques. I'll show you how to sharpen a few of the more common types of bits. Old drill bits can often be brought back to life. ►



## ◀ Twist drill bits

Twist drill bits are the most common type of bits. They are readily available at any hardware store or home centre. They are designed to drill metal and other materials.

Twist bits are not the best for drilling wood, however, if you want the hole to have smooth edges without splintering. There are other bits that are better for drilling wood.

If you look at the end of a twist drill bit, you'll see two or three cutting edges where the bit bites into the material you're drilling. The function of the flutes (spiral channels) is to pull chips out of the hole as you advance the drill bit. As a twist bit begins to dull, the lip becomes rounded or deformed.

You'll know the bit is dull when it takes a lot of effort to get the bit to engage the material. You may also see the tip of the drill bit getting hot and turning blue or black.

Sharpness is defined as the intersection of two planes. To sharpen the cutting lips of a drill bit, you need to grind away metal at the point. Those with a lot of experience can do this easily on a bench grinder.

When grinding drill bits, it is important to maintain the same tip angle around the circumference of the bit. Two common angles are  $118^\circ$  and  $135^\circ$ . The higher-angle bits are designed for cutting harder materials. Even more importantly, the point of the bit must remain centred on the diameter of the bit. Otherwise, the bit will 'walk' across the material when drilling instead of cutting into it at a defined point. Some bits, especially those with a  $135^\circ$ -angled tip, feature a 'split point'.

Experienced machinists have learned how to quickly sharpen a twist drill bit by hand using a benchgrinder. Because of the considerations I mentioned above, those of us with less experience are better off using a grinding jig or drill-sharpening machine.

A mechanised drill bit sharpener is great for restoring twist drill bits. Versions are available for the home hobbyist that won't break the bank. If you wear out a lot of drill bits, this is a great option. These machines work so well because they are designed to maintain a consistent angle as the drill bit is sharpened. It takes the guesswork and frustration out of sharpening drill bits.

Most machines accommodate different point angles on twist drill bits by adjusting the bit's angle of attack against the sharpening abrasive. This makes the machine more versatile and able to sharpen a much wider range of bits.



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The cutting edges on a drill bit often become dull. Use a grinder to sharpen these edges



A split tip (top) offers two additional cutting edges to cut faster and reduce wear on the primary cutting edges versus a standard bit (bottom)

A mechanized sharpener is a great tool for maintaining your collection of drill bits. You can restore those old bits you've been throwing in a box because you couldn't bear to throw them away. These machines take the fear and fuss out of sharpening drill bits.

A note about brad-point bits: brad-point bits are a form of twist bit that have been specially ground for drilling in wood. They feature two outside cutting spurs that leave a clean hole. The small centre point helps keep the bit from wandering

off-centre. Because of the special shape of the tips of these bits, they can be difficult to sharpen without specialised equipment. As with standard drill bits, I replace the dull bits in my set with new ones as they become dull.



This machine utilises a chuck that holds a twist drill bit in the proper position during the sharpening process



A diamond-coated wheel inside the unit grinds the tip of the drill bit at the proper angle as you rotate the chuck in the sharpening port



You can sharpen any twist bit in just a few seconds. A drill bit can be sharpened many times before it needs to be replaced



Brad-point bits (right) have a special geometry designed for drilling in wood. This makes them difficult to sharpen



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# The most important thing

Pete Moncrieff-Jury considers safety equipment



PHOTOGRAPH COURTESY OF SHUTTERSTOCK

If you were to pose the question ‘what is the most important safety equipment in a woodturning club?’, the chances are you would get answers such as face visor, goggles, dust extraction etc. Actually, although these are all important, they are far from the most necessary in any workshop. The single most important thing needed is common sense – sadly a much underrated and often missing ingredient. Common sense would surely tell us that if we have never turned before or used a chainsaw or equally dangerous equipment, it might be a good idea to get some experience and perhaps decent tuition before risking our health and possibly even our life. I find it frightening that anyone can go to a store, online or physically, and purchase over the counter tools and equipment with the potential to grievously harm and even cause death.

You need a licence to drive a car but can buy and use a chainsaw, bandsaw or lathe with no experience or knowledge. Lately there has been an increase in images and videos online of people with injuries caused not by lack of PPE but misuse of equipment and lack of experience. Wood is a natural material that needs to be treated with respect. Yes, accidents happen, wood can have hidden faults, we all have catches, but knowing this means we need to take precautions and a plastic face shield is not the answer. What we need is experience, common sense and respect for both the machinery and the materials we are shaping. In days of yore, when apprenticeships were common, you wouldn’t be allowed near this sort of equipment for a good period of time. You built up the experience and learned to respect the tools etc. Many modern lathes will go up to and beyond 3000rpm but that is far too fast for most turning jobs. I have been turning for more than 50 years off and on and, as yet, have never been seriously hurt. I have had things fly off, wood shatter on me, catches that throw the wood out of kilter but so far have never had a serious accident. Not because I am clever or lucky but because I respect my materials and my machinery. I rarely go faster than 2000rpm and that is with smaller items. Bowls and larger spindle work are closer to 1000rpm or less. Using our common sense do we honestly believe that turning a piece of wood at 3000rpm will make our work quicker? Are we honestly unaware that if we have a catch or a piece shatters on

us at a lower speed it is far less likely to cause serious damage?

Common sense tells us higher speeds aren’t always a good idea and loose clothing is dangerous. It tells us most face masks aren’t going to protect us from lumps of wood that fly off and using blunt tools is not only a waste of time but potentially dangerous. Common sense tells us that a ‘potential’ danger, as in the toxicity of woods, is something to take note of, not disregard. I am all for promoting the craft and it is great seeing so many taking it up, but I do hope common sense will be the main PPE in every workshop. However long you have been turning, common sense is the most important PPE you can have and there isn’t a turner alive who can’t learn something new. In the workshop ignorance isn’t bliss, it is potentially lethal.



PHOTOGRAPHS BODRIGHY WOOD SUPPLIED BY PETE MONCRIEFF-JURY

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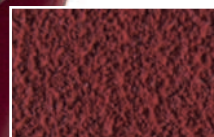
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