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Wood
REVIEW
93

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- ROB COSMAN DOVETAIL SAW
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Australian Wood Review 93

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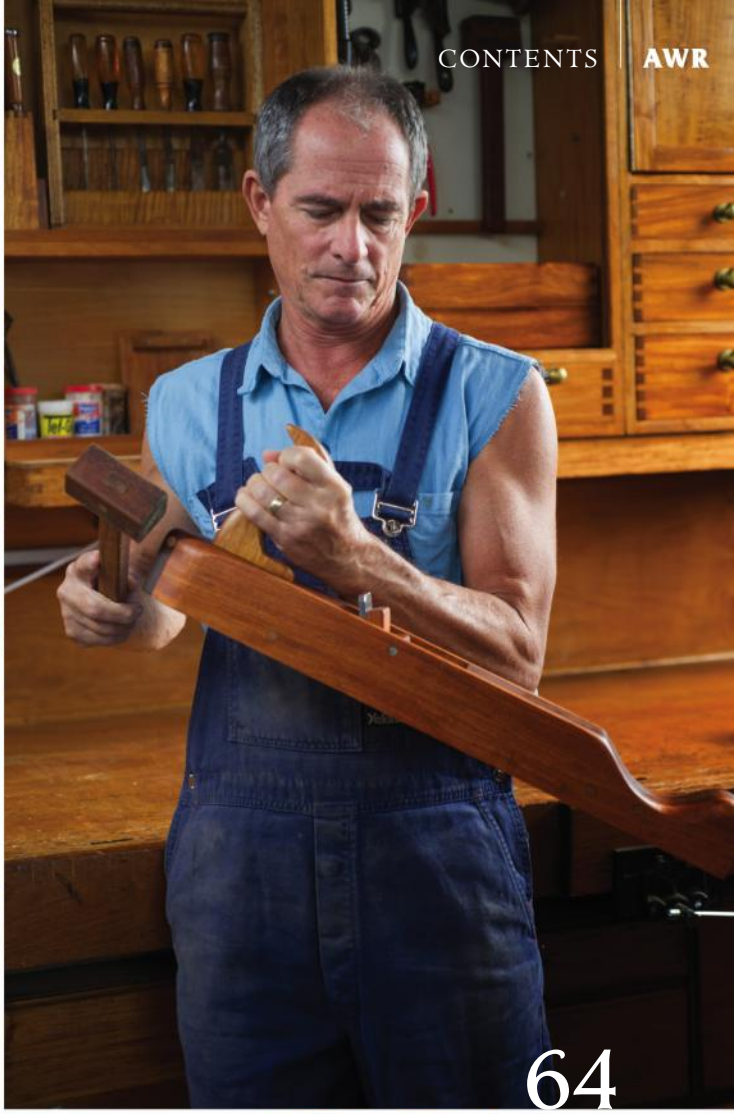

TOOLS & EQUIPMENT

Editor's Letter

To exhibit or not to exhibit

I hear a lot of debate from makers on the topic of taking part in exhibitions, mostly from professionals it has to be said. The negatives often surface first. Usually these revolve around that fact that it costs time and money to make and transport spec pieces for an uncertain financial return.

So what might the benefits be? Challenging yourself to freely design and make what you want can give you the space to dream and to develop new skills. Putting yourself out there can highlight your work to future clients, and also attract feedback that might channel positively into your work. Being part of a group show can also be prestigious, and networking with co-exhibitors and organisers can engage you with a community and lead to opportunities. These are only a few of the postitive outcomes – and there's always a chance you might sell something!

Looking at it from the outside, exhibitions have a social value which benefits communities. Telling stories is how we pass on our history, culture and values. A couple of issues ago we reported on the success of Create From A Crate and this issue we feature Treecycle, an exhibition held last August at the Royal Botanic Gardens Sydney.

Both exhibitions invoked themes that underline concepts of sustainability and maximising a valuable resource. Treecycle in particular showed how the heritage, environmental and aesthetic value of trees and wood can be celebrated and preserved. Both exhibitions had strong themes that resonated equally with the makers and the public, and both tipped the scales in terms of visitor numbers and sales.

Next year we can look forward to Double Take in Wood, which will combine two juried exhibitions hosted concurrently by the Victorian Woodworkers Association from October 18 until November 11, 2017. Australian Wood Review is proud to be a media partner for this event and will give online coverage leading up to the event and feature it in the magazine afterwards. If you agree with any of the above about the benefits of being part of a prestigious exhibition you can find out how to be part of this one from www.vwa17.org.au

Inspiration vs plagiarism

Taking inspiration from the things that other people design and make, and acknowledging that openly is a legitimate thing to do. Copying another person's work with acknowledgement can also be a legitimate thing to do. Copying without acknowledgement can amount to plagiarism, especially if that entails profit on a commercial level. Our authors choose to share their designs with you, however if you would like to produce any of these in volume you are invited to get in touch with the author concerned.

Younger woodworkers

Don't forget we're coming up to the December 15 deadline of our Year 11 and 12 Student Awards 2016. Entries will go live on our website soon after and Popular Choice voting will also commence on our Facebook page. Award winners will be announced in the March 2017 issue of Wood Review.

Big congratulations to Stuart Campbell from Coomera, Qld, winner of the I Wood Like Win a Workshop prize draw! If you missed out see p.32 for details of our next fabulous subscriber offer.

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Rob Cosman Professional Dovetail Saw

Reviewed by Robert Howard

Rob Cosman makes a statement about his saws, by presenting them in a wooden, finger-jointed box. No common cardboard box here.

The saw handle is made from a speckled, black, composite material, rather than the traditional wood. It is well shaped, and although it lacks the traditional sharp corner details of the best saws, it is very comfortable in the hand.

At 491 grams (17.5 oz), it is over 50% heavier than the Lie-Nielsen. This is partially because the brass back is made from heavier stock, but its balance point suggests that a reasonable amount of the extra weight is in the composite material of the handle.

The 9" (225mm) blade is secured in the brass back with a series of copper pins, so that it cannot work free and introduce a buckle into the sawplate. I know this has been a problem with some Lie-Nielsen sawblades.

In a previous review of dovetail saws, I wrote about the compromise involved between a saw that cuts quickly, and one that is easy to start in a cut. Introducing negative rake on the teeth makes the saw easier to start, but makes it less aggressive in its cut.

To help overcome this, the Cosman saw has two separate runs of teeth: at the tip, or toe, of the blade, there is a 2" (50mm) run of extra fine, 22tpi rip teeth, with a 30° negative rake. These are followed by the remaining teeth at 15 tpi (or 14 ppi), with around 4–5° of negative rake, which is, by today's standard, aggressive (Lie-Nielsen, for example, is around 18° by my reckoning, while Veritas is 14°). Once the saw is started with the fine teeth, I think most users will be able to handle the aggressive cut of this saw.

As with other, high quality saws, the teeth have only a minimum amount of set (about 0.003" each side), as they are designed for use in dry wood.

Above: The Rob Cosman dovetail saw comes presented in a sturdy wooden box which doubles as storage.

This is a beautifully presented and excellent saw, less complicated, and hence easier to maintain, than the variable pitch design. It feels good in the hand, and its weight is enough to carry it through the cut on its own. In particular, if you have difficulty beginning your cuts, then this saw is definitely worth trying.

Review saw supplied by Professional Woodworkers Supplies www.woodworksupplies.com.au

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AUTHORISED IMPORTER

From top:
HNT Gordon moving fillister plane in bull oak.

The plane features beautifully machined brass fittings and fixtures.

Detail of the mouth and blade.

HNT Gordon Moving Fillister Plane

Reviewed by Damion Fauser

HNT Gordon's new moving fillister plane is designed to cut fast and accurate rebates. Available in a range of species, the one shown is made from bull oak. Out of the box this is an exquisite tool. With beautifully machined brass fittings and fixtures, a 4.75mm thick 01 tool steel blade hardened to RC 62-64 and an M2 HSS nicker blade, it's clear no compromise has been made with regard to the quality of materials used. The brass sole will ensure a reduction in wear and therefore a longer working life.

The depth stop, nicker, fence and blade are all fully adjustable and one feature that I really like is the ruler scale on the depth stop and fence to give maximum accuracy when setting up for a precise cut. The threads on the adjustment mechanisms are tight and clean with very little play. As with all handplanes, make your final setting on the forward turn to avoid backlash. Blade setting is easy, and the blade is secured with a smooth and positive thumbscrew.

Optimised for cross-grain rebates, the blade is set at a pitch of 60° and has a 20° skew. When cutting long-grain rebates, the higher pitch means this tool will work better in trickier woods and on those occasions where you must work against the grain. The cutting action of the skew angle will keep the tool registered against the reference face of the stock. The maximum rebate dimensions that can be cut are 43mm wide x 16mm deep.

Moving fillisters, like all joinery handplanes, should be able to remove waste quickly and efficiently and this is no exception. It fits naturally and comfortably in the hand and at 267mm long and approximately 2.3kg (depending on the species of the body), this tool has an impressive heft that helps keep the tool registered and maintain momentum in the cut.

I tested the plane in both hoop pine and jarrah and the results were flawless. This is not a tool that will suit everybody's budget, but I believe it is extremely good value for what you are getting. Like me, if you have a small number of rebates to cut at any one time, you'll know that it can be done quicker with a handplane than the time taken to set up and use a machine. If this is your style of woodworking then this tool will be a superb investment.

Review tool supplied by hntgordon.com.au

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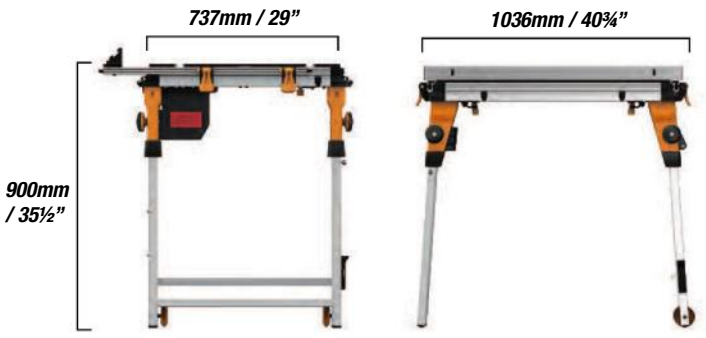

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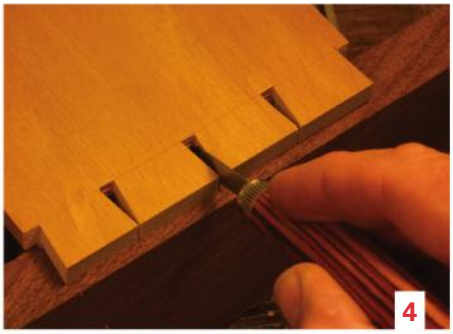
1. The kit comprises a kingwood handle with interchangeable blades.
2. Supplied in a suede wallet, all parts of the system are faultless in presentation.
3. Showing test cuts with each of the blades.
4. The flexible 0.5mm spear point works well in tight spots.



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Blue Spruce Marking Knife System

Reviewed by Troy McDonald

Blue Spruce has established an enviable reputation as a maker of premium quality tools since first entering the market more than 10 years ago. This system is their first attempt at producing a marking knife that has the ability to take interchangeable blades for varying woodworking tasks.

The tool is beautifully presented in a custom suede wallet that includes three spear point blades of varying thicknesses, a joiner's knife and a scratch awl. The blade holder is turned from a range of exotic timbers and includes a stainless steel ferrule with matching collets. All components of the system including the blades, collets and turned handle are faultless in both presentation and function. I found all blades honed and ready for use on removal from the packaging. So how is the system in use?

The handle supplied was in kingwood and fitted my hand perfectly when held in the manner of a utility knife or pencil. I prefer the traditional double bevel joiners knife over the more popular spear point blades so I was keen to test how both types compared in a range of applications. The photo above shows the results of blades and awls in standard cross grain marking.

For this application the two thicker spear point blades and the joiners blade were best. Whilst the flexibility of the thin 0.5mm spear point blade was a disadvantage when marking up against a rule it did shine when marking tight dovetails. The flexibility ensured it could be run confidently against even the tightest tail for accurate marking.

The awl has been designed for marking curves and it too performed this task quite well although I would prefer to have seen a square shafted bird cage awl supplied with the kit rather than the standard awl. Apparently there are additional blades to be manufactured for the system in future which could broaden the use of the tool even further.

Because the blades vary in thickness, you need to ensure its matching collet is used to allow the ferrule to tighten it in place. With this done correctly, I found the blades were firmly held with finger tightening of the ferrule.

Despite all blades performing their designed tasks flawlessly, there is a fussiness to some multipurpose tools that I dislike and I was questioning to some degree whether the modest task of marking with a knife had been overcomplicated. How often would I actually have the discipline to change blades? Fussiness aside, this is a beautifully made tool and the handle was one of the most comfortable I have ever used. For those that can justify the need for variable marking options the system will certainly provide years of enjoyment.

Supplied for review by Blue Spruce Toolworks, USA, www.bluesprucetools.com

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Veritas Bar Gauges

Reviewed by James Brook

Using a bar gauge lets you directly transfer and compare dimensions without conversion to numbers, theoretically reducing the chance of transcription errors. You can use it to quickly test an assembly, like a drawer or box, for squareness by checking the diagonals are equal. I find them invaluable for this process.

You can make up your own bar gauges or use this beautifully made Veritas unit which consists of two 6" steel rods fixed to aluminium clamp heads. The rods have threaded end holes that accept interchangeable brass tips or extension rods.

Three styles of tips are included: ball tips for inside measurements (the rounded ends tend to bruise softwoods less), pointed tips for inside corner measurements, and mushroom-shaped tips to hook over edges for outside measurements. The range of extension is about 190–1100mm so the unit is very versatile.

Whilst not necessarily an everyday use tool, for drawer and boxmaking bar gauges are essential for truly squaring things up.

The quality of build in the Veritas gauges is very good.

Review tool from Veritas, available from www.carbatec.com.au

$110

Above: The kit includes interchangeable ball and flathead tips.

$32.50

WoodRiver Corner Easing Plane

Reviewed by Raf Nathan

Made from high carbon steel, this mini plane takes the sharp edges off boards in seconds. You simply run it over the corner and the inbuilt cutters plane off the corner.

The tool is around 60mm long and weighs just 62g. Despite its mini size it works well and I found it ideal for de-edging things like shelves and cabinet corners.

It does not replace a neatly hand planed bevel, but you can use it instead of sandpaper for quickly easing a stack of say bookshelf edges or similar.

Running the tool over a sharpening stone will refresh the sharpness of the cutting edges.

Review tool from Professional Woodwork Supplies, see www.woodworksupplies.com.au

Above: Small but effective, this miniature plane serves its purpose to a tee.

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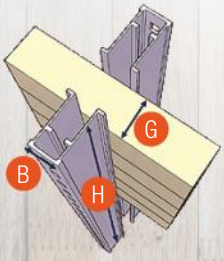

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Crown Turning Tools

Reviewed by Andrew Potocnik

Cryogenically treated tool steel is subjected to temperatures of minus 185°C when it is claimed to develop a molecular structure that improves wear and holds a keener edge that will stay sharp for up to 50% longer.

Out of the box these tools were very sharp and with a keen edge that cut wood with ease. Impressive black ash handles are coupled with smooth blades devoid of sharp side edges. They have a comfortable and balanced feel and nestle neatly between palm and fingers to allow seamless rolling and rotation while making cuts. All in all, a pleasure to use.

However it's only after hours of use that ergonomics and tool wear become apparent. Altering the square factory grind of bowl and spindle gouges to my preference on a finer stone left me with a keener edge that worked wonderfully in my tests. The tools provided for review performed really well, actually better than tools I've worked with in the past, but can I vouch for the 50% longer lasting tool sharpness? …time will tell.

Two tools from Crown's Revolution system were also supplied. These resemble traditional ring or hook tools but feature a keenly sharpened circular tip. A brass limiter restricts depth of cut, but allows generous shavings to be hollowed from end or side grain. The limiter also breaks shavings down for easy removal through small openings as well as preventing the cutter from clogging.

Presented to wood at a 45° angle, the tool slices fibres with ease, leaving a very smooth surface. The 'super ring' adjusts to fine or more aggressive cuts, and can also be replaced with a shear scraping cutter or other blades.

The Mini tool has a fixed shaft that extends to just over 160mm while the Midi tool has a telescopic shaft that extends to hollow up to 330mm into a vessel. Hollowing to this distance requires a lot of support hence the hefty handle aided by a solid brass side handle which can be removed and added to the end of the handle as either an extension or counterweight.

I found myself reaching for these tools not just for hollowing but for open bowl forms as well. The Revolution tools make hollowing easier and safer too as there is less chance of a catch, especially when working deep into a piece where a toolrest cannot provide ample support for the average turning tool.

Review tools supplied by Timbecon, call *1300 880 996 or see www.timbecon.com.au*

Above: Crown Cryogenic spindle, bowl and skew. A full range is available with prices from $65–$145.

Main: Crown Mini and Midi Revolution deep hollowers with cutter selection. The Mini is $139, Midi $175, cutters from $29 each. The full system includes five cutters and costs $399.

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www.bunnings.com.au

Product news

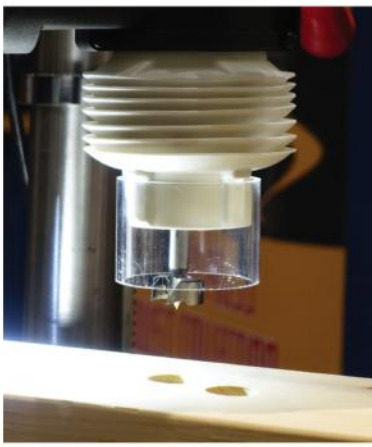
A round-up of tools and products to take notice of.

Walke Moore Tools

Some four years ago, US toolmakers Alan Walke and Aaron Moore established their business making hand tools and bench accessories. In August this year, Walke Moore Tools released their eagerly anticipated metal bodied router planes. Based on the Preston design, these planes have a sizeable and steady footprint and also the added feature of a cutter that mounts in four positions at 90°.
www.walkemooretools.com

Waste All Clear

Made for drill presses and now scrollsaws, Drillnado is a clever new expandable dust shroud that captures drilled waste and chips at the source. Connected to your workshop vacuum or dust extractor, work can proceed unimpeded.
chris@drillnado.com



Custom Carving

Flexcut Tool Company Inc was founded in 1986 as a custom carving shop and woodcarving school. Some eight years later Flexcut began manufacturing a new breed of woodcarving tools to address the needs of the modern hobbyist and professional. Originally Flexcut started with only four different tool profiles, but now the company, operating from its plant in Erie, Pennsylvania produces and distributes over 300 products for woodcarvers. In the past few years Flexcut have introduced The Carvin Jack Collection – folding jack knives designed for woodcarving, new specialty knives, sharpening products and a line of Micro Tools. Flexcut is available through all Carbatec stores.
www.carbatec.com.au

Tough Texan

For those who really like to look after their hand tools, these sturdy and lovingly stitched, rivetted and waxed tool rolls are worth checking out from Texas Heritage Woodworks, USA.
www.txheritage.net

Filling a Global Gap

Timbermate revolutionised the woodfiller industry with the launch of its unique water-based products in 1991 and currently exports to 20 countries throughout the world. Now, with the acquisition of Agnew's, another Australian-owned brand, Timbermate's range for local and overseas markets will expand. Agnew's multi-purpose fillers will dovetail neatly with the Timbermate and Earl's range, and all products will be manufactured at Timbermate's factory in the Melbourne suburb of Mitcham.
www.timbermate.com.au

Handmade Handplanes

Juan Vergara infill planes are made with beauty as well as function in mind. In fact Juan, a US toolmaker who started making handplanes some eight years ago, says that his aim is to improve on every single plane he makes. He claims the distinctive pistol grip handle design has ergonomic advantages, as it positions the hand higher above the blade for better balancing force.
www.vergara.net

Fantastic Fretsaws

A must-have for hand tool aficionados, not to mention jewellers and metalworkers, are the range of saws made by Knew Concepts. With their distinctive red aluminium honeycombed or grey-metal titanium birdcage frames, these saws offer the control of a tightly tensioned blade that can swivel 45° either way. In combination with fine kerfed Swiss-made Pegas scroll blades, pierced work or clearing dovetail waste is easier and faster and assisted visually by swivel knobs that align with the direction of cut.
www.knewconcepts.com

Colour For School Projects

Whittle Waxes currently have a special offer for schools and institutions. Teachers can obtain free sample kits comprising 750ml each of Hardwax Oil and Object Oil along with 100ml of red, yellow, blue, white and black natural colour pigment pastes. The kits come with info sheets and instructions. Mixing the coloured pastes with Object Oil gives a range of colours for creative project finishing solutions. Hardwax Oil is a clear finish and can also be used as a protective coating over coloured surfaces.
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Affordable Quality

Made by UK manufacturers Joseph Marples Ltd, these Euro beech hand tools offer a great entry level solution for those attempting to get a basic hand tool kit together. For example, the marking knives are under $10, sliding bevels around $20 and under, the round head mallet sells for $69.90 and the square head $38.70. More info from Beyond Tools.
www.beyondtools.com

Heaps of Heft

Based on the traditional Stanley bedrock design, Luban handplanes are made in China and offer affordabe quality. With heavy castings and 3.2mm high carbon tool steel blades the planes have the sort of heft that helps. The planes are well machined as evidenced by the close-fitting chipbreaker and blade. Attractive pricing makes this range worth checking out.
www.timbecon.com.au

Soy On, Soy Off

If you think soy beans are just the base for a host of tasty foodstuffs, think again. Apparently soy is one of the best solvents known to man. Safe to handle, biodegradable and economical, Soy Gel is said to remove layers of paint and surface coatings on furniture or floors. One litre gives five metres coverage and requires minimal elbow grease to remove with water.
www.woodcraftsupplies.com.au

All For Turning

From its base in Sheffield, England, Hamlet has for many years produced top quality woodturning tools for other brands in the industry. More recently this company launched its own brand of Hamlet Craft Tools, suitable for professional and part-time turners alike, and which the manufacturers claim match up well to other well known brands on the market. Timberbits is building up the largest range of Hamlet tools in Australia and will soon also stock Hamlet's unhandled chisels.
www.timberbits.com

Rockler glue spreader

For large surface areas, for example when veneering, these flexible spreaders ensure the 'Goldilocks' amount goes on, no matter if its PVA, epoxy or polyurethane, says furniture designer and maker Peter Young. When dry the glue simply peels off the spreader so it's ready for reuse.
www.rockler.com

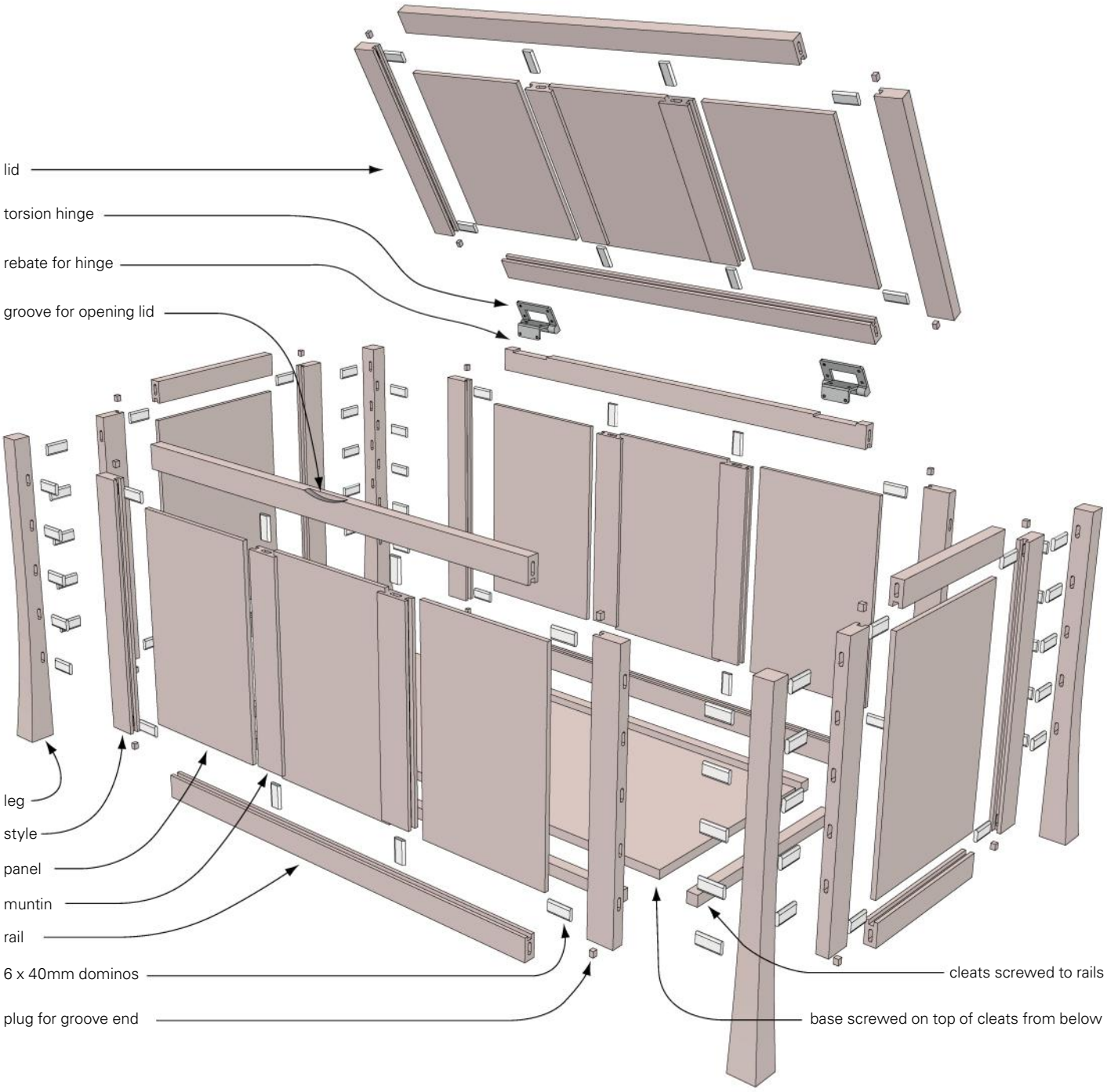
Hope Chest

Straightforward design and construction are the hallmarks of this elegant chest. Story by Damion Fauser.

This is one of my most popular designs. Whilst essentially a box, the subtle curves of the legs and the elevated carcase add a simple elegance to an otherwise rectilinear piece.

Two processes are central to the construction of this piece. Firstly, the joinery at the corners of the frame and panel assemblies is made much faster by running the grooves through at the tablesaw, and then backfilling the exposed gap with a solid wood endgrain plug. Secondly, by making fully self-contained frame and panel assemblies I am able to utilise the solid long-grain stiles to cut fast and strong domino joinery to fix the legs to the four walls of the carcase.

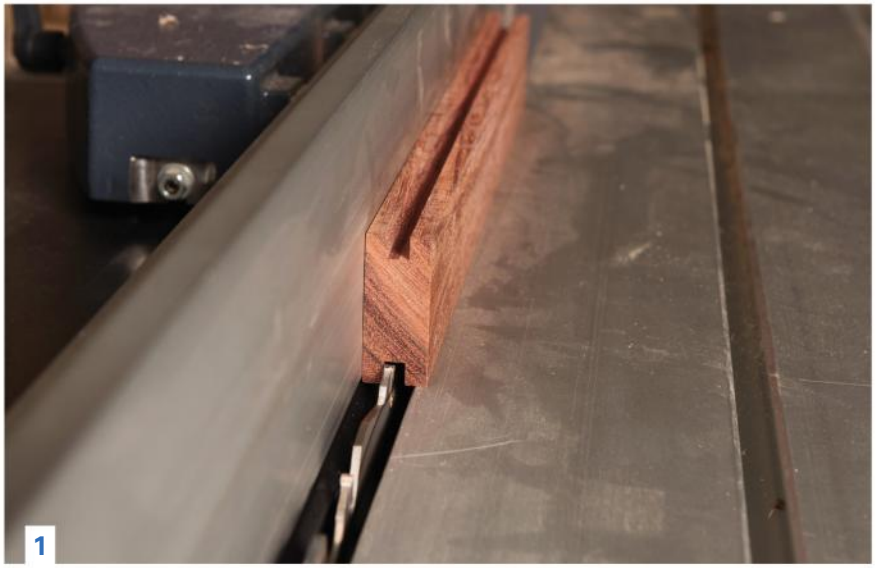
These two concepts make this design suited to limited production runs. Recently I made a batch of three, the two shown here from Tasmanian oak, and a third in jarrah.



Design

This project is very flexible in terms of dimensions and scale. Most of my clients use them as blanket chests at the end of their bed, so the ability to adjust their height and length is useful. The cutting list and diagram relate to the chests shown, but I've made this piece in four differing scales. When adjusting the dimensions, I always do a half-scale sketch to check that I'm happy with the overall proportions.

Be selective in your stock selection. When making frame and panel assemblies, I like to choose straight-grained stock for the frames. This ensures the frame is not visually competing with the centerpiece panels. Using veneer for the panels gives me two distinct advantages. Firstly, it allows me to glue the panels in, adding to the strength and rigidity of the piece. Secondly, it allows me to use decorative book and slip matches, wrapping the grain up from the front panels onto the lid as you can see in the photo opposite. If inclined, you could also easily incorporate parquetry or marquetry into your panel work.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CUTTING LIST (mm)				
PART	**LENGTH**	**WIDTH**	**THICKNESS**	**QTY**
Front/rear panel assemblies				
Rails	4	770	40	19.5
Stiles	4	446	45	19.5
Muntins	4	360	55	19.5
Panels (veneered ply)	6	373	232	7
End panel assemblies				
Rails	4	270	40	19.5
Stiles	4	465	45	19.5
Panels (veneered ply)	2	392	283	7
Lid panel assembly				
Rails	2	770	45	19.5
Stiles	2	398	45	19.5
Muntins	2	308	55	19.5
Panels	3	322	234	7 veneered ply
Legs (blanks prior to shaping)				
	550	45	45	
Base				
	1	860	360	16 veneered ply
7 x 7mm stock for backfilling grooves in all frame/panel assemblies				
19 x 19 stock for cleats to fix base to inside of carcase				

Frame and panel assemblies

The foundation of this piece is a series of frame and panel assemblies, so I usually start there. When I machine the frame stock, I leave the rails and stiles approximately 2mm wider than the final dimensions. This allows me to treat the completed assemblies as a single entity and trim to size post glue-up.

Ensure you also leave the stiles approximately 75mm longer. Doing this makes disassembly after a dry-fit much easier, and it supports the fragile short grain during cutting at the end of the mortises.

Set your tablesaw fence to run a groove on the inside edges of all the frame components, noting the muntins get a groove on each edge. As I use veneered panels that are around 6.8–7mm thick and my tablesaw blade has a kerf of 3.4mm, I set the fence to run two passes, one from each face of each component (**photo 1**). This ensures the grooves are perfectly centred on the stock, and the resulting double-kerf groove is perfectly sized for my panel stock. I set the height of the blade to cut the grooves 7mm deep.

Now lay out and cut the 6mm domino slots at each corner, as well as at the intersections of the muntins and rails. Dry fit the frames together and measure the windows to determine the size of your panels. Remember to add twice the depth of the grooves.

Cut the panels to size, being careful to centre any decorative effects in the frame windows. I then go through my regime of surface preparation and pre-finishing the panels prior to glue-up, as it is much easier now than post-assembly. I also run the machine marks off the inside edges of the frame components with a handplane.

Glue the assemblies together and while the glue is curing, mill down some 7 x 7mm stock from the offcuts of your frame stock. These will get cut into short lengths of

1. Twin passes on the tablesaw will centre your grooves.
2. Remove the plug excess when trimming the assemblies to size.
3. Completed frame and panel assembly.
4. Layout leg-to-carcase domino mortises with a story stick.
5. Completed legs showing staggered domino mortises.

approximately 10mm and glued into the exposed groove holes from the tablesaw at the corners.

Once these have been glued in and you have trimmed your assemblies to the final size, the excess will be trimmed off perfectly (**photo 2**). As you are gluing an endgrain plug into an endgrain face at the end of the stiles, the result will be seamless and not visible unless you are really looking for it. Whilst at face value this may seem an excessive process, the fact that I can avoid doing stopped grooves means that I definitely end up in front from a time point of view.

Take the time now to go through surface preparation and also pre-finish the inside faces of your frame and panel assemblies (**photo 3**). I like to use shellacs and waxes on the inside faces as it gives a wonderfully soft and odour-free finish. If you plan on storing anything perishable, such as antique silks or linens, you should probably go to the extent of using a specific conservators wax product, which will help contain the natural off-gassing of the timber as time goes by.

Shaping the legs

Now machine your leg stock down to blanks sized as per the cutting list. Design and use a pair of story sticks to lay out the domino slots for fixing the legs to the four carcase components. By staggering the slots you can avoid any conflict of opposing mortises, hence the pair of story sticks – one for fixing the front and rear assemblies and the other for fixing the sides (**photo 4**).

Because you want to end up with a seamless transition between each panel inside the carcase, ensure you reference and cut your domino slots from the inside faces of each component.

Once the domino slots are completed (**photo 5**), transfer the curved profile from your design to the leg blanks.

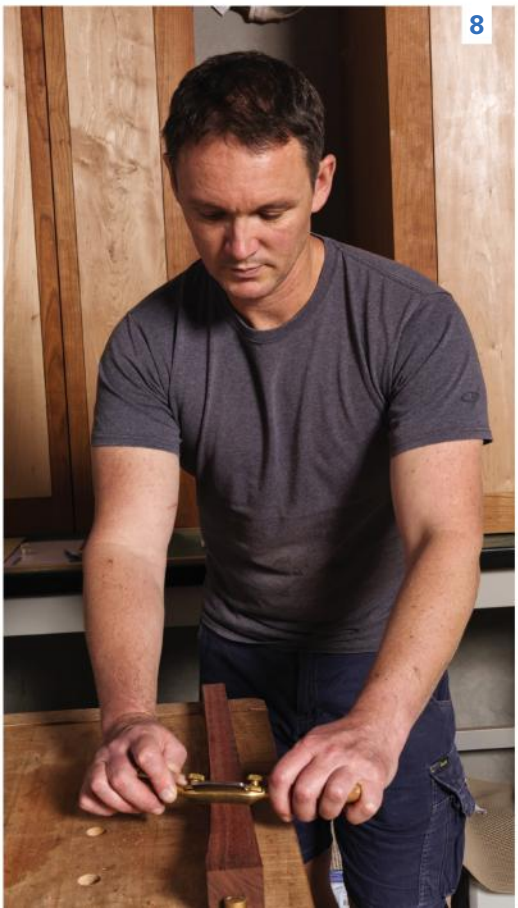
6

Cut these out at the bandsaw, noting you'll have to make the first cut on each leg blank, then fix the offcut back in place with some tape. This will ensure you maintain a square and flat blank to register on the table when making the second cut (**photo 6**).

There are two methods for removing the bandsaw marks and fairing the curved faces. Firstly, you can make a pattern-jig for use at the router table or shaper, as seen in **photo 7**. Note that you'll need to make the jig with a mirror-image of the profile on the opposite edge, to allow you to always have a square corner safely registered into the jig. Note also how I've used the toggle clamps to secure the piece in place and the large dowel handles for safety and control in use.

The other method is to do it by hand. I use spokeshaves to do the curved faces as well as softening the edges and find this to be an extremely cathartic process (**photo 8**). When deciding which method to use in my own work, I use a rule of 12 – if I have 12 or less to do, I use the handtools. More than that and it's off to the router table.

7



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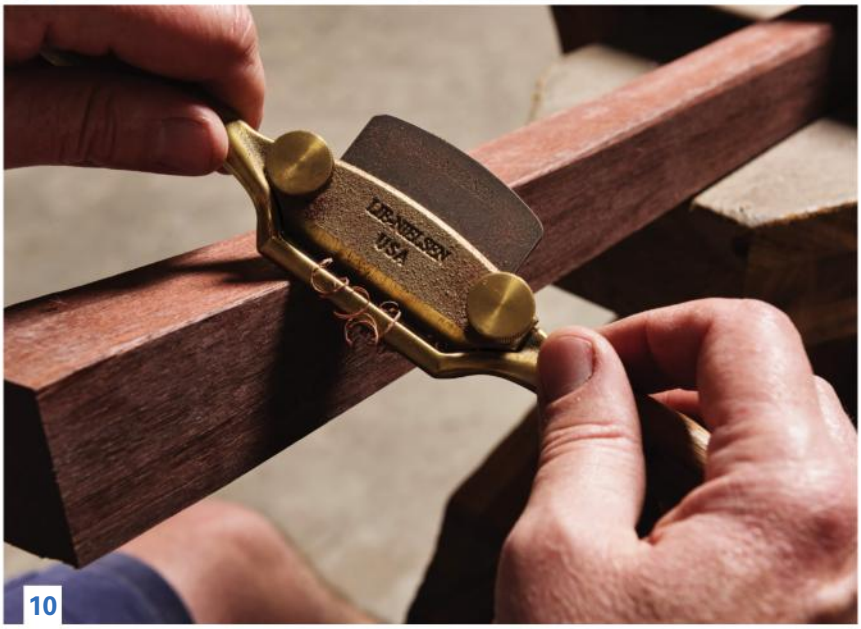
6. Cutting the curved legs at the bandsaw. Tape the offcut back to the leg blank for an easier and safer second cut.
7. Adjusting the toggle clamps for a secure fit. Use a pattern bit and template jig for production curved legs.
8. Using a spokeshave to remove saw marks and fair the curve.
9. A low-angle jack is used to smooth the remaining flat faces. A curved offcut serves as a platform caul when planing the flat faces.
10. Easing the edges with the spokeshave.
11. Clamp sub-assemblies using the curved offcuts to give square clamp surfaces.


9



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I also then run the machine marks off the remaining flat faces of the legs with a low-angle jack plane. To do this, I utilise a leg offcut as a profiled platform to rest the leg on and fix between the bench dogs (**photo 9**). Take the time at this point to add a small chamfer to the bottom edges of each leg (**photo 10**). This creates a delicate shadow line from the floor and also protects the fragile fibres from being chipped out if the piece is inadvertently dragged into position on the floor.

Assembly

When assembling this project, it is far easier to do it in stages. I usually join the legs to the side assemblies first and then do a subsequent glue-up to join the two completed end assemblies to the front and rear components to complete the assembly. Ensure you keep the curved leg offcuts for these glue-ups. By putting them back in place against the curved faces of the legs you'll give yourself square registration faces for your clamps (**photo 11**).


11

Fitting the lid and base

Cut your base component to size and machine some 19 x 19mm stock to use as cleats for fixing the base panel to the inside of the carcase. I like to use veneered ply for the base panel. Fixing the panel firmly in place adds enormous rigidity to the overall piece. Begin by screwing the cleats along the inside bottom edges of the four walls of the case, lower the panel into place and screw it in place from underneath.

12. Hinge mortising jig for a trim router with guide bushing.

13. The third chest in the batch was made from jarrah. Photo: Naman Briner.

For fitting the lid, you'll see how I've designed this piece so the two end assemblies sit 19mm higher then the top edges of the front and rear panels. This means the lid can simply nest into place and the top face of the finished piece is one seamless flat plane.

Scribe the as-yet slightly oversized lid assembly against the reality of the assembled carcase and handplane to a seamless fit, as you would fit an inset door. You will need approximately 1–1.5mm reveal at each end to allow for the seasonal expansion of the lid stiles.

For this piece I like to use the Rockler torsion hinges (**photo 12**), as they are very robust yet do not require any lid stays. Make a simple mortising jig to use with a trim router fitted with a guide bushing and straight bit, remembering to carefully calculate the offset from the outside edge of your straight bit to the outside of the guide bushing. I also trim the end off the jig to the exact dimension that enables me to simply register this reference end against the inside face of the end of the carcase and go to work. This eliminates any requirement for repetitive layout (**photo 13**).

Once the mortises are cut, lay the lid in place, transfer the mortise locations and drill the holes on the back underneath of the lid to accept the hinge screws.

When new, these hinges do have a little springback, so I find it necessary to install some double-ball catches to hold the lid in the closed position. To soften the closing action, I fix small circles of suede, felt or leather (whatever I can find that colour-matches the stock) to the top edge of the front face.

Finishing touches

To avoid having any visible external hardware at the front of this piece, I use a 5/20 gouge to carve a simple scalloped recess as finger placement to open the lid.

Soften all exposed edges, complete final surface preparation prior to applying an external finish. I like to seal the surface with a dewaxed shellac and then I usually choose between a top surface of wax or a wipe-on polyurethane.

This is an elegant and relatively simple piece from a design and construction point of view. Pay careful attention to your use of reference throughout and this will be within the capabilities of the average woodworker. Varying its dimensions and panel decoration also means you can personalise it to your space and style.

On a personal note, please understand that this is my design. I acknowledge that it is now in the public domain, and I am therefore more than happy for home-based woodworkers to have a go at one of these chests for their personal use. If you would like to discuss reproducing this design for your business or for financial gain, I would very much appreciate it if you would contact me in the first instance.

Main photo p.24: Naman Briner.
Process photos: Donovan Knowles

Damion Fauser designs and makes furniture to order in Brisbane. He also teaches woodwork from his Darra workshop. Email: damion@damionfauser.com

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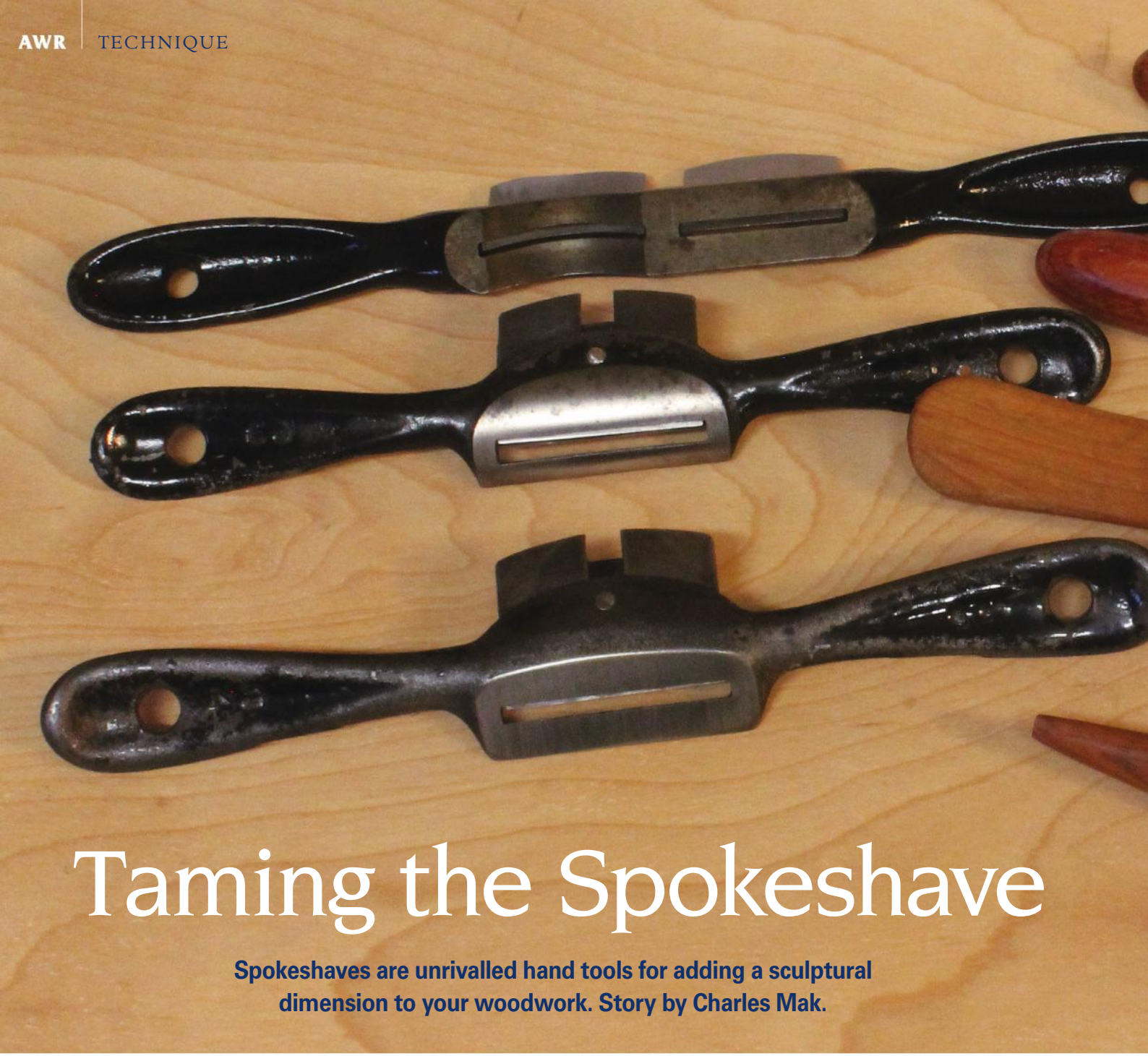


Taming the Spokeshave

Spokeshaves are unrivalled hand tools for adding a sculptural dimension to your woodwork. Story by Charles Mak.

Many woodworkers relate a spokeshave to chairmaking. In my workshop, a spokeshave is also a furniture edge tool that I can use to break edges, fair curves, remove machine marks, and even bevel the underside of a surface. You don't have to be a chairmaker to enjoy working with spokeshaves; you just need to learn how to use them skilfully and it is not as hard as you may think.

Tool types

Spokeshaves, like bench planes, come in wooden or metal version. Various sole patterns are available in metal spokeshaves: flat, convex/round and concave. Less common is the vintage double shave shown over the page in **photo 1** – loaned to me by Dave Darling for a recent project – which can work both flat and concave surfaces.

Flat spokeshaves can be low or high angle. A low angle flat spokeshave – in which the blade is mounted bevel-up – can take large shavings and is ideal for short grain and endgrain work (**photo 2**). The bevel-down (high angle) version, on the other hand, is a general shaping tool that also handles figure or reversing grain well.

Blade setting

To use a spokeshave, the first step is to set the desired depth of cut. For a wooden shave that uses a friction fit of the tangs for blade retention, we adjust the depth by tapping the tangs in or out (**photo 3**). Some modern wooden spokeshaves may use adjustment thumbwheels to advance or retract the tang-like blade.

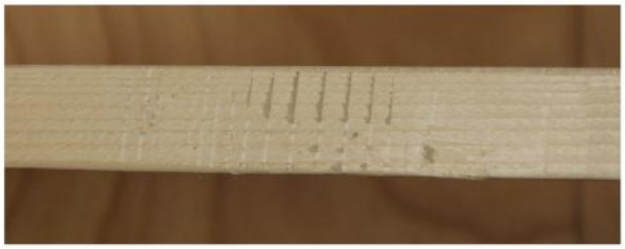
Many metal spokeshaves use a screw or thumbscrew with or without a cap iron to hold the blade. To set the depth of cut, set the blade flush with the sole and snug the screw down to bear on the blade lightly (**photo 4**). Then, tap the blade gently to set the cut and re-tighten the screw. For metal spokeshaves that control the depth of cut with adjusting

wheels, you turn each wheel an equal amount in the same direction to set the desired depth (**photo 5**).

A concave spokeshave can be tricky to set because the side-to-side position of the blade in the sole matters. I find it easier to start with the blade's edge set flush with the sole before adjusting the blade (**photo 6**). I confirm the setting with a test cut and fine-tune the depth and side-to-side positioning as necessary.

Using the spokeshave

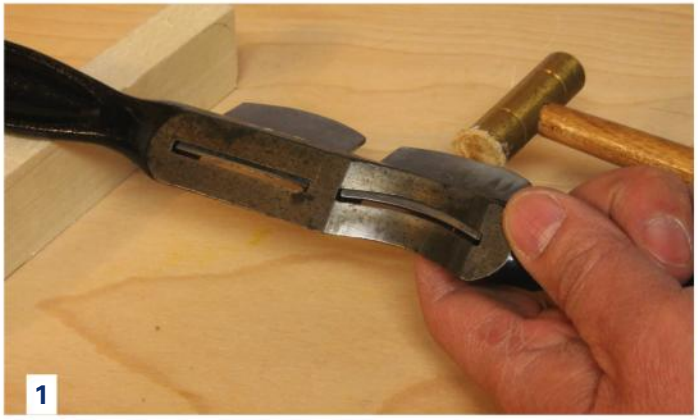
I use a spokeshave for finer shaping work, leaving the removal of bulk waste to a plane or a rasp for faster

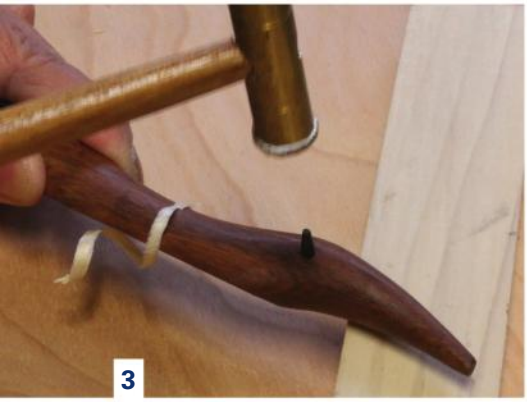


Main: Spokeshaves differ in their styles, sole patterns, blade bevels and functions. Opposite, top to bottom: Stanley double, round and flat shaves. Above from top: Veritas round and flat shaves, shopmade low angle and wooden low angle spokeshaves.

Left: Use both push and pull strokes to avoid breakouts at the endgrain.

Below: Chatters can be avoided using a few simple techniques.





1. Darling's unusual two-in-one shave can handle flat, hollow and concave profiles.
2. The blade in a bevel-up shave can be set to take very deep shavings.
3. A gentle tap on the tip increases the depth of cut while a light blow on the base reduces the cut.
4. For a very fine cut, I just press the blade down with finger pressure on a flat surface before tightening the screw.
5. In setting depth, always turn the screws to advance the blade to avoid any backlash or creeping.
6. To flush up the concave blade with the sole, I hold the shave against a tube or dowel.
7. Use the index fingers not the wrist to control the pressure on the toe as you push.

and better results. If you hog off bulk waste with a spokeshave, grip the handles as you would on a bicycle, for power. For all other cuts where control is important, you should go with a 'finger' grip.

For a push cut, put your thumbs on the back of the body, index fingers on the front edge directly in front of the thumbs, and all other fingers on the handles (**photo 7**). Start by placing the leading edge of the sole on the workpiece and, as you push, lower the blade onto the workpiece, with the trailing edge of the tool lightly gliding along. Keep your push strokes steady without hesitation to the end; this is not the time for timidity.

Pull strokes are very useful when working on long thin workpieces or when pushing would be against the grain. To cut with a pull stroke, reverse the hand position: the index fingers are placed on the back of the body and the thumbs on the front (**photo 8**). Again, exert pressure down on the front with your thumbs or through a slight roll of your wrists to make the fine cuts. However, don't rotate your wrists when removing a high or low spot; otherwise the tool will just follow the curve.

To climb out of a cut, reduce the downward pressure when you are close to the end of the push or pull stroke and roll the shave off the workpiece. Sometimes, depending on the grain, I may make short upward flicks of the wrist to finish a cut. On p.38, you'll find more usage tips on this versatile tool.

Sharpening the blade

Sharpening methods differ, depending on the type of spokeshave. For a tang blade, you can stand a sharpening stone on its side and rub the bevel on the edge of the stone, or clamp the drawknife-like blade in a vice and hone the bevel with a small sharpening stone. I prefer the British author and teacher Paul Sellers' diamond honing method.

Raise the tang blade above the workbench on a block at the right height and rub the bevel edge with a fine diamond hone (600 grit) until you can feel a wire edge on the back (**photo 9**). Repeat the same step with a very fine paddle hone (1200 grit)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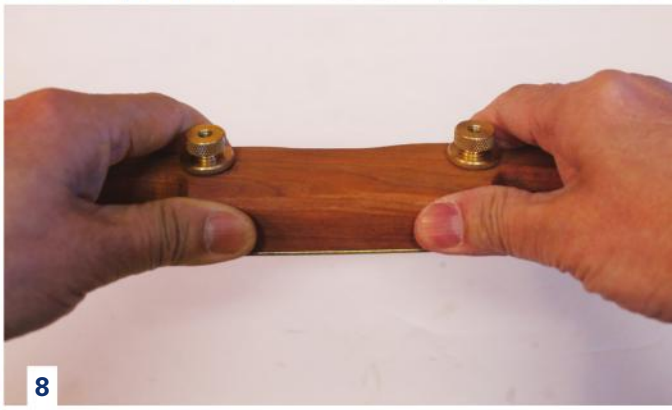
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and, if you prefer, again with a honing compound. Remove the wire edge with the very fine hone or compound and you have a super keen shave.

Metal spokeshaves have narrow blades with a straight or concave blade profile. For a straight blade, hold the blade in a kerfed block or in a commercial jig. You can then sharpen the blade freehand or with a honing jig (**photo 10**).

To sharpen a concave blade, we may use a round stone to hone the leading edge of the bevel. Or, simply wrap a sandpaper of 800 grit around a large diameter dowel and stroke the dowel along the edge of the blade to hone a micro-bevel (**photo 11**). Finally, lap the back of the blade on the 1000 or 4000 grit stones to remove the burr.

That's it. Hone the blade sharp, go with the grain, push or pull wholeheartedly with steady pressure on the toe, and you'll be having your first chatter-free shaping experience.

See over the page for some usage tips.
Photos: Charles Mak


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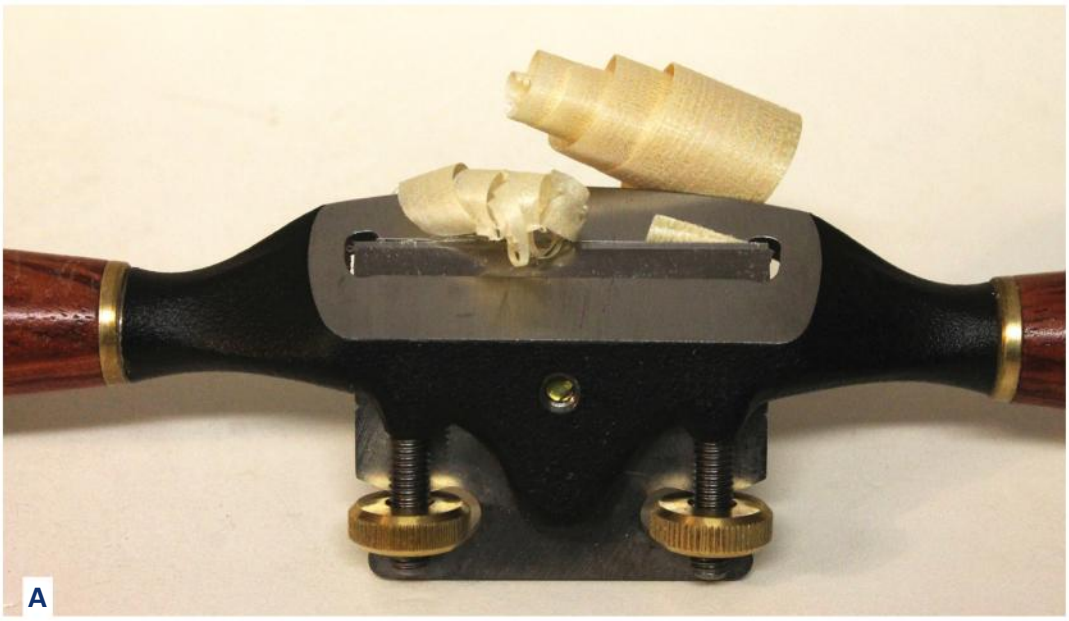
8. For a low angle shave, I adjust pressure on the front or back of the wear plate to vary the depth of cut.

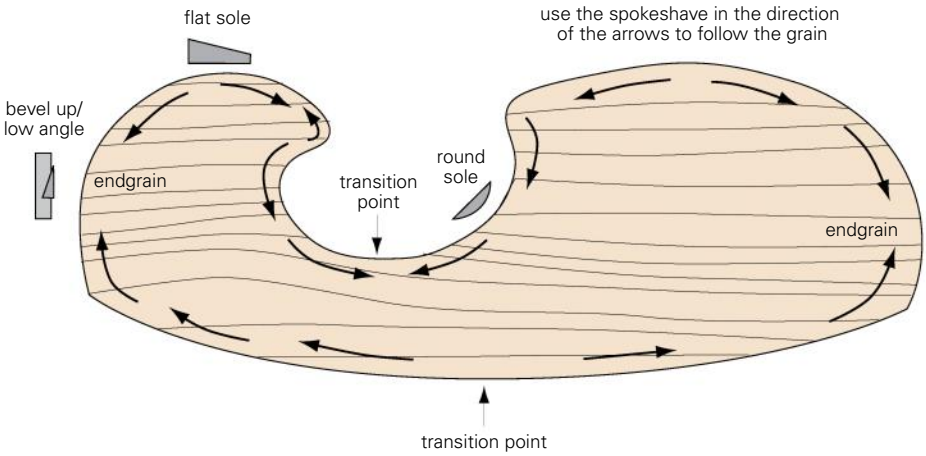
9. Rest one end of the hone on the bench and glide the hone in elongated elliptical rotations on the bevel until a burr is formed.

10. I press down on the blade's corners in my final strokes to remove the sharp corners, preventing them from digging into the workpiece.

11. Another way to hone a curved edge is to rub the blade against the abrasives in pull strokes.

Charles Mak, a semi-retired businessperson in Alberta, Canada, enjoys writing articles, authoring tricks of the trade, teaching workshops, and woodworking in his shop.
Email: thecanadianwoodworker@gmail.com





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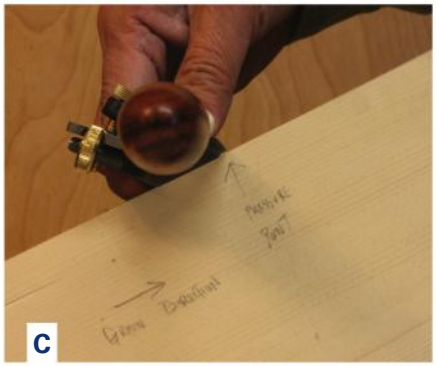

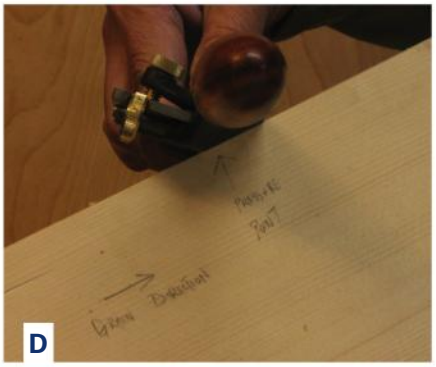

SPOKESHAVE TIPS

A. Use a canted blade Unless I need a consistent cut across an edge, I prefer to set the blade at a slight angle rather than parallel to the sole. This allows me to make cuts of varying depths by re-positioning the spokeshave rather than the re-setting the blade. You can make coarse cuts on the protruded side and shift the tool over to the other side for finer cuts.

B. Grain direction Most of the time when cutting curves, going with the grain means to cut down, from high to low. So, on a concave piece, you start downhill from both ends towards the middle while on a convex surface, you shave uphill from the middle towards the ends. The grain direction of a curve usually changes in the transition area which is prone to tearout. Approach the transition spot from both directions with a keen blade.

C, D. Pressure point Learn to start your cut with a steady pressure on the front of the tool to prevent skipping and transfer the pressure to the back for more aggressive cuts, if desired. Exerting pressure down on the front creates thinner shavings while pressure on the back makes a deeper cut.

E. Chatters A number of factors can cause chatters, including a dull blade, vibration, tricky grain and pressing too hard on the heel of the tool. If chatters still occur after taking measures to address those factors, try skewing the plane slightly across the direction of travel. Skewing produces slicing cuts and the shave is less apt to choke on its own waste.

Diagram: Graham Sands

How to Finish First

Pre-finishing components before assembly has benefits. Darren Oates shares tips on making this work.

Darren Oates with one of his Pi tables. Prefinishing components before assembly has delivered a better end result.


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About two years ago while making one of my signature *Parabolae* hall tables, I had a thought. Instead of gluing all the pieces together and then applying the finish, why not apply the finish first and then assemble the parts once they had cured?

The reason I wanted to try this is that once assembled, my tables are not the easiest pieces to spray. They have a lot of curved angles and I was getting a lot of overspray onto other parts of the table which left a rough surface that was a real pain to remedy. Spraying the elements separately would take longer but might save time in the end, and without overspray, deliver a smoother feel.

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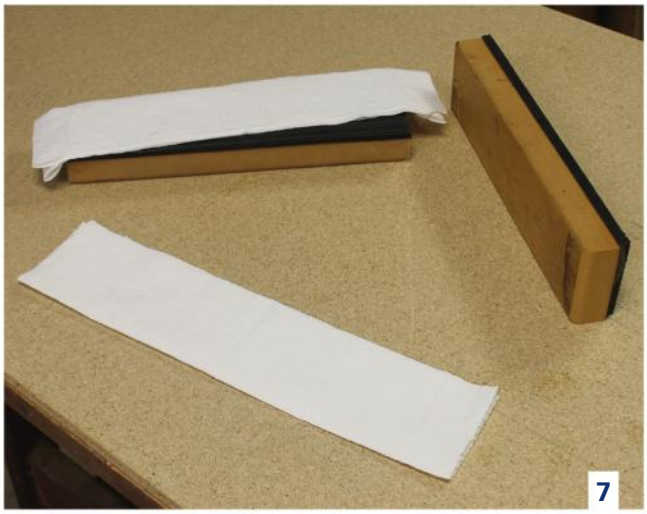
When building cabinets it's nearly impossible to apply a spray finish to the interior, as there is nowhere for the overspray to be evacuated by the action of the spray booth fan. In this instance I find that pre-finishing at least the inner carcase surfaces prior to assembly is the way to go.

The only downside is that it does add overall making time, but if, like me, you have other work to do while waiting for finishes to cure then this is not a problem. I save a lot of time sanding between coats on mostly flat surfaces rather than an assembled piece with lots of complex joinery and adjoining surfaces.



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Finishing before assembly is really suited to spray finishing but can also work for hand applied finishes as well, depending on how many coats you apply and the curing time.

One great advantage of finishing before assembly is that glue squeeze-out is no longer a problem. For complex joins I use Techniglue, a two-part epoxy that has a very long open time. The latter means you have plenty of time to clean up any squeeze-out and this glue can be wiped off a cured finish and will not mar it in any way. It also allows you to ensure you use the correct amount of glue for a joint as you are not worrying about squeeze-out as much as you would with raw timber.

The above works for PVA as well but you have less time to clean up excess glue. In the photos I'm making one of my Pi side tables. The table shown is the fiftieth I have made to date. I started using the process described above about two years ago and have not looked back. I believe the end result is of a much higher quality.

Photos: Darren Oates

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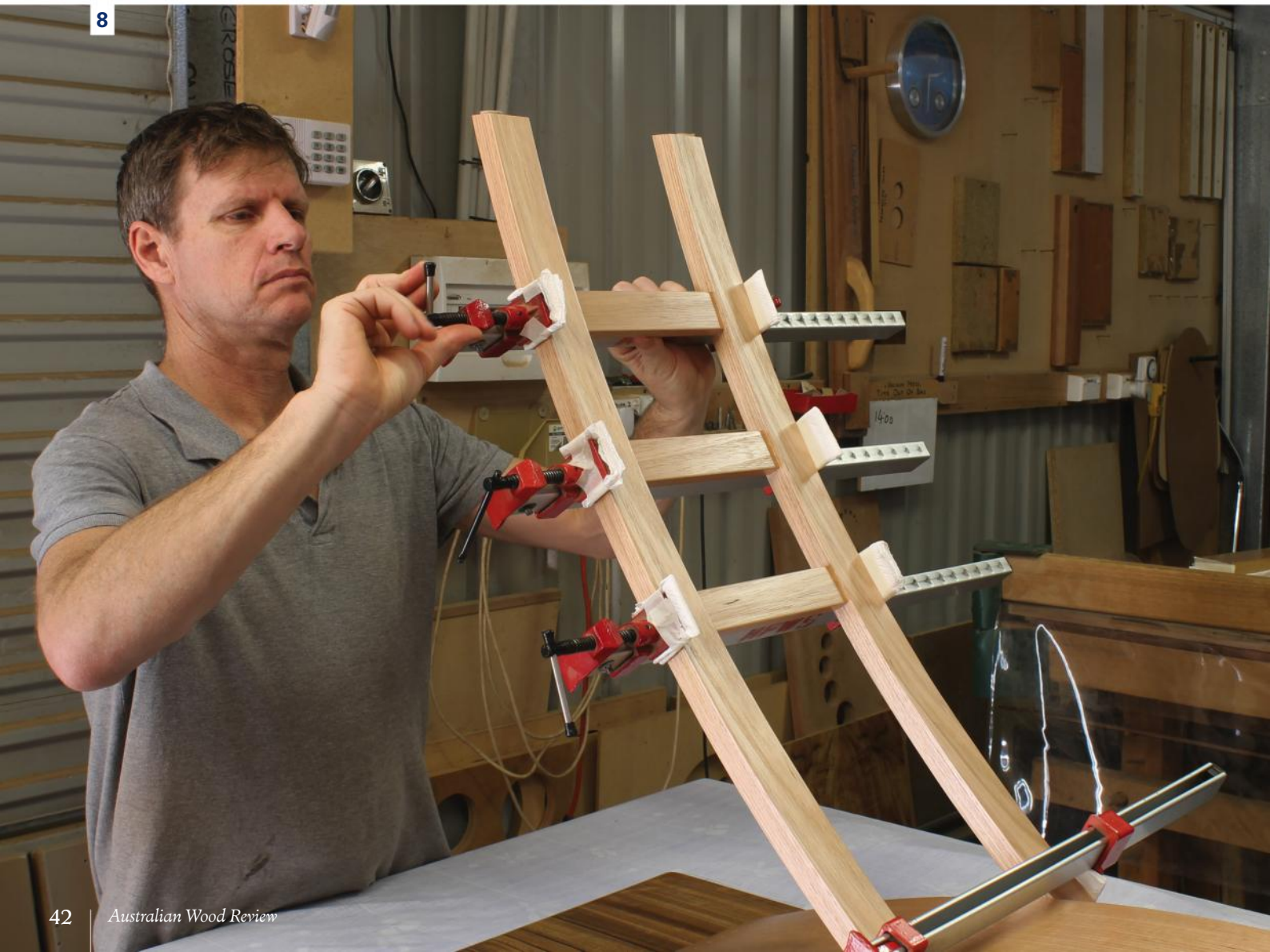

How To Make It Work

Photo 1: Mortises and gluing surfaces must be masked so the glue adheres to the timber and not the finish. These are the legs for my Pi table using Festool domino joinery.

Photo 2: Once again this shows how gluing surfaces must be masked. I have yet to mask the mortises at the ends of the drawer carcase base.

Photo 3: This is how I mask drawer components before spray finishing. I only spray the insides of the drawers at this stage, as once assembled the drawers are finely tuned to their respective housings.

The drawer slips have already been glued to the bases. Because I use veneered marine ply for bases, allowance for movement doesn't need to be made as you would have to with solid drawer bases.

In summary the following have been masked: front and back dovetails on the drawer sides, pins on the drawer font and back, bottoms of drawer sides where the slips will be attached to sides, the front lip of the drawer base that is glued into the drawer front rebate, edges of the slips and the rebate on the inside of the drawer front where the base is fixed. The dowel holes on the inside of the drawer front have been plugged with spare dowel pieces.

Photo 4: This is how I spray the masked legs. I have a chain running from one side of my spray booth to the other, and then screw in hooks to the tops of the table legs to hang these off. This allows me to spray one side and then flip the leg around and immediately apply the finish to the other side to eliminate any chance of overspray drying to a rough feel on either side. I am spraying from top to bottom on this piece with a horizontal spray pattern. This method also allows me to spray the foot of the legs.

Photo 5: The drawer housing shown here was glued earlier. The mortises as well as dowel holes used to attach the tabletop have all been masked.

Photo 6: It is much easier to sand between coats while components are still separate. I use 400 grit paper and simply sand over the top of the masking tape so I don't have to replace when applying successive coats.

Photo 7: These shop-made rubber backed cauls are used for pressing various components together in the glue-ups. I also have several sheets of soft paper towel that I tape to the cauls. In the last two years after letting the finish sit for 24 hours I have yet to have any paper towel stick to the furniture.

Photo 8: Several layers of soft paper towel are taped to 3mm MDF. This is fixed to my sash clamps with double sided tape for the final glue-ups. Once again, using this method and an appropriate curing time, I have never had any of these stick to the finished piece.


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You can also see here how much more difficult it would be to apply a finish and sand between coats on a piece like this when assembled. There is no chance of overspray occurring on dried components using this method. I use domino joinery on most of my furniture and always glue the tenons into leg rails before applying the finish. Of course you have to mask the tenons (dominos) before applying your finish, so the glue adheres to raw timber.

Photo 9: This is the glue-up of the legs to the drawer housing using the rubber-backed cauls. I also use rectangular inserts in each drawer housing to ensure the front of the legs are glued square. The inserts are covered in packing tape so they don't stick to, or mar the finish.

Photo 10: The final glue up. A 32mm sheet of MDF sits on the tabletop protected by a bath towel, and the rubber backed cauls are once again used on the underside of the drawer housing.

This technique has improved the overall finish of my furniture and made the process a little less tedious, particularly when sanding between coats. I believe that if you give this a go you may be surprised at the results you will achieve.

Darren Oates is a studio furniture maker in NSW who also teaches at Sturt School of Wood. In AWR#90 he wrote about The Ultimate Chair Jig. Email darrenoates@gmail.com


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The New Triton Workcentre

The new generation Triton TWX7 workcentre has only just been released in Australia. Review by Damion Fauser.

Originally launched in 1976, the Triton Workcentre has a justifiable place as an Australian icon, with over 400,000 sold to 2001. The TWX7 is the latest version of this unique workcentre system.

The heritage of this machine is clear, but significant upgrades and improvements have been made. The TWX7 (RRP $799) is the primary component of the system and is basically a portable workstation.

Into this goes one of a number of modules which are separately priced. These include the CS001 Contractor Table Saw ($999), the RT001 Router Table ($495) or the CT001 Clamping Table (sold as a kit). Whichever module you need to use, you drop and lock it in place on the TWX7. With folding, locking legs and wheels, this station is easily stored away and transported when not in use. An accessory set of larger rugged wheels is available for better manoeuvrability on a jobsite.

Changing modules is easy – unlock the positive-lock stops at each end, reach into the convenient lifting recesses and lift the module out. Another module is then lowered and locked into place in the centre of the TWX7 with two solid indexing pins. Each module has leveling screws to ensure a flat worksurface.

At 1036 x 737 x 900mm this system will not take up much space in the small workshop and runs from a standard 10 amp outlet. It is rated for a maximum load bearing of 150kg. Outfeed and side extensions are also available as accessories to extend the safe working surface area when working larger components.

CS001 Contractor Table Saw

This is where Triton have made a lot of important changes. No longer a circular saw fixed underneath a flat table, this is more akin to a contractor's saw, with a saw carriage and arbor built into the module.

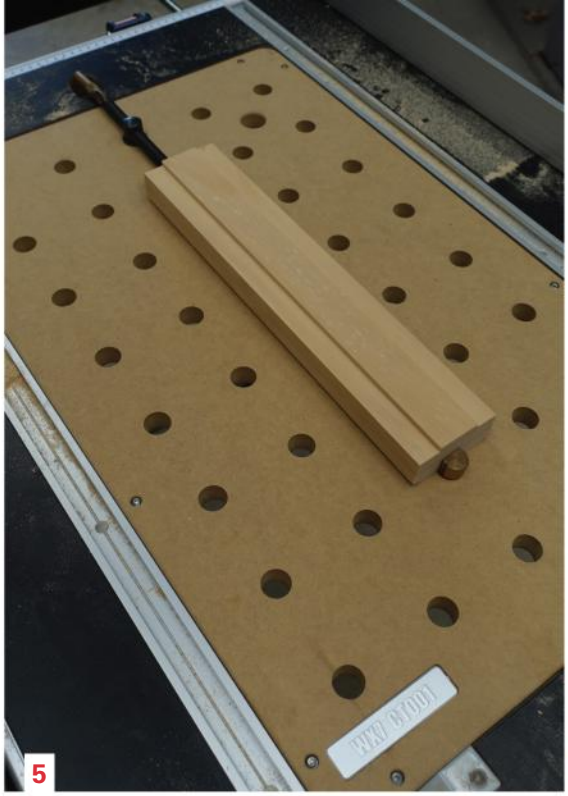
The 1800W motor runs a 254mm thin-kerf blade, which will minimise wastage and reduce strain on the motor. Whilst the maximum physical height of cut is 86mm, I would caution against making too many cuts of this scale with this motor.

Two significant disadvantages of the original workcentre were the lack of a mitre track and no ability to tilt the blade. The CS001 resolves both of those issues, with a tilting arbor with a range from 90–45°, and positive stops at both extremes. The mitre track is a standard size and Triton have made an acceptable little mitre gauge to go with this saw.

The rip fence remains true to the Triton legacy, with the ruler scales on adjustable tracks that run at both the front and back of the system. Care must be taken in this regard to ensure the setting at the back is not locked even a fraction narrower than at the front, or you will pinch the workpiece, causing scoring of the work and in extreme cases even risking kickback.

The supplied overhead guard and anti-kickback system, which includes a 32mm dia dust port, works sufficiently as a safety feature. Below-table dust control is also a major improvement, with a solid plastic moulding as a shroud leading to a 62.5mm dia dust port, with an adaptor for a 32mm port for fitting to shopvacs.

I ran a series of test cuts in 12mm ply, 38mm hoop pine and 50mm Tas oak and all cuts with the supplied 40-tooth combination TCT blade were clean and true. The motor did notice the 50mm hardwood and was audibly working harder to make this cut.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RT001 Router Table

Gone is the requirement for a separate router table workstation, just drop in the RT001 and you now have one. Compatible with all Triton routers, this tool also has several improvements over the original, including a significantly better featherboard system and an overhead guard for safety. With a fully adjustable extruded fence, 32 or 62.5mm dust ports and a number of supplied throat plates, this is a system that will allow for safe and effective routing operations with bits up to 50mm in diameter.

CT001 Clamping Table

A piece of 20mm thick MDF with a series of 19.5mm holes gives a flat work surface that, when combined with work holding devices such a bench dogs, provides a moderately useful workbench.

In conclusion, Triton has made significant improvements to the original, all of which will increase the safety, efficiency and accuracy of the user. This is a very good value system for the home or jobsite user and is a fitting descendant to continue the Triton legacy for many years to come.

Supplied by and available from Carbatec: www.carbatec.com.au

Damion Fauser is a Brisbane-based furniture designer/maker. See www.damionfauser.com


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1. The new TWX7 Workcentre looks and is significantly different from the original.
2. Showing sliding fence and large and easy to reach on/off control.
3. Crosscutting with the mitre gauge.
4. MDF clamping table for work holding and clamping purposes.
5. Thumb releases at each end allow modules to lift out.
6. Featherboards and pushstick are supplied.
7. The perspex dust port comes in 32 or 62.5mm diameters.

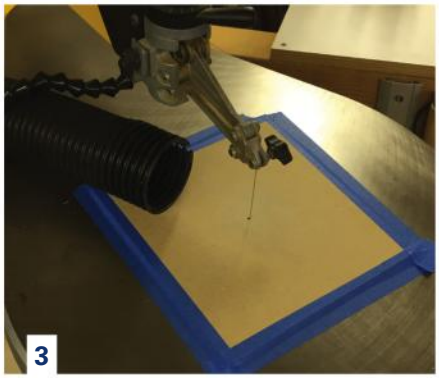
Butterfly Inlay

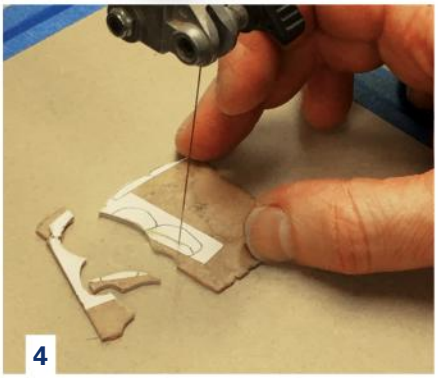
Craig Thibodeau shows how to incorporate stone and shell into your special marquetry projects.

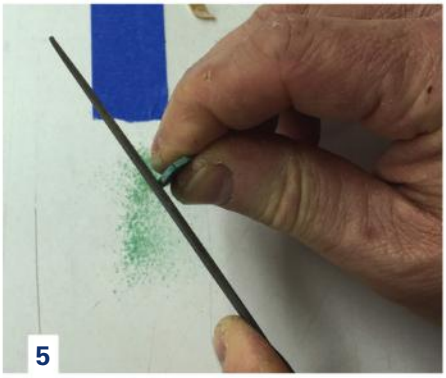
Many of my marquetry flower designs have butterfly inlays as an added detail, and typically these are done in a combination of reconstituted stone (**photo 1**), mother of pearl, wood, and abalone.

These materials can all be readily obtained in thicknesses of 0.050"–0.060" from sources like www.rescuepearl.com. Any variation in thickness between the different materials gets taken care of during the assembly process. I find reconstituted stone an ideal material for this type of inlay because it has a wide variety of colours and patterns that make for very interesting butterfly wings, and it can be cut with standard blades on a scrollsaw.

1. A variety of stone types and colours.
2. Parts of drawings glued to stone pieces and clear butterfly drawing.
3. Scrollsaw with zero clearance insert and vacuum hose in place.
4. Stone piece partway cut.
5. Filing pieces to shape.







Start with clean pencil or fine tip pen drawings of the butterfly you'd like to make and make sure each individual part is well defined.

The simplest method for cutting all the butterfly parts is to make multiple copies of the drawing and cut each individual piece of the butterfly out of the drawing separately. These are then spray glued onto the respective material that will be used for each part. This way you only need to cut through a single layer of stone at a time (**photo 2**).

To prevent breakage during cutting I make a small zero clearance insert for my scrollsaw using a piece of 1/8" MDF about 6" square. Drill a very small hole in the centre of the square and carefully feed the scrollsaw blade through the hole. Tighten the blade and the board should drop down onto the table. Tape the perimeter of the board to the table with some masking tape to prevent it from moving during cutting (**photo 3**).

Stone and mother of pearl tend to dull sawblades rather quickly so run your saw on low speed and cut the parts slowly, and also plan to replace the blade if you have a lot of pieces to cut. I usually have a small shop vacuum hose taped to the arm of the saw to collect the dust while cutting; you could also wear a dust mask during cutting and clean up the dust later.

Start cutting the first pieces, slowly working your way around the perimeter of each part, trying to follow the drawn lines as closely as possible. If you aim to cut along the outside edge of the lines your parts should come together with minimal gaps after cutting. As each piece is cut, set it aside on another copy of the drawing in its appropriate location (**photo 4**).

Once all the parts are cut, begin assembling the butterfly. I lay down a piece of clear packing tape sticky side up and do my assembly directly onto the tape so the small parts don't wander around. As you are assembling, check the joints and use small jewellers files to adjust the fit piece by piece.

Try to keep the file perpendicular to the face of the stone so the joint line is vertical. It shouldn't take long to fit each set of stone parts. Test the fit repeatedly as you file to ensure the fit is improving (**photo 5**).

Once all the parts are fitted properly assemble the entire butterfly face up on the tape, use more tape to hold it down on a flat board. Once you are happy with how the butterfly is assembled, drip superglue on each of the joints so it flows into and along the joints. Try not to overdo the amount of glue as it will continue to flow out of the joints and need to be filed off later. Spray a light coat of superglue accelerator over the entire assembly and set it aside to dry (**photo 6**).

Gently peel off the packing tape, trying not to break any of the joints. Use jewellers files and a scalpel to clean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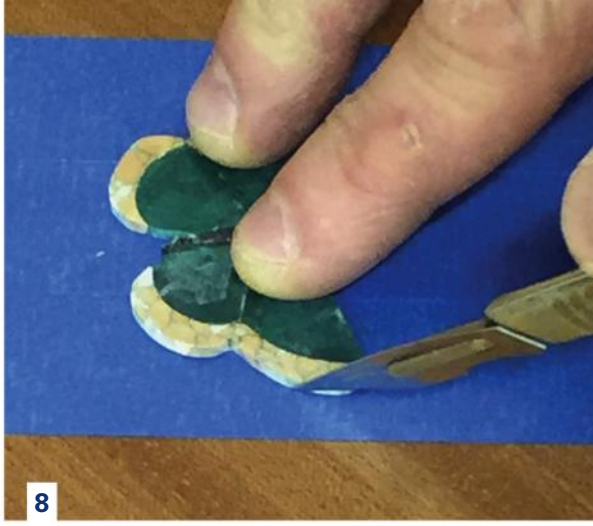
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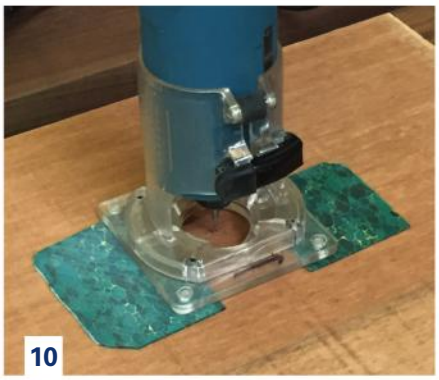
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out any superglue that is visible in the corners of the joints as this would prevent the inlay from seating into the routed cavity if left in place. Don't worry about the glue on the show face of the butterfly. The back or glue face needs a quick scuff sanding to remove any glue though. Clamp a hard block with some 100 grit sandpaper to your bench and gently rub the butterfly back and forth to sand off the excess glue. Once you start seeing the coloured stone dust appear you've gone far enough (**photo 7**).

At this point you're ready to begin the inlay process. Start by deciding on the final location of the butterfly on your furniture piece. First wipe the inlay area with several wash coats of shellac to seal the grain and keep the next steps from discolouring the wood.

Cover the inlay area with a layer of blue tape and rub the tape down firmly onto the wood surface. Place one or two drops of superglue on the back of your butterfly and press it in place on the taped wood surface, hold it until the glue is dry. Scribe around the butterfly with a sharp scalpel being careful to not cut away from the edge of the butterfly (**photo 8**).

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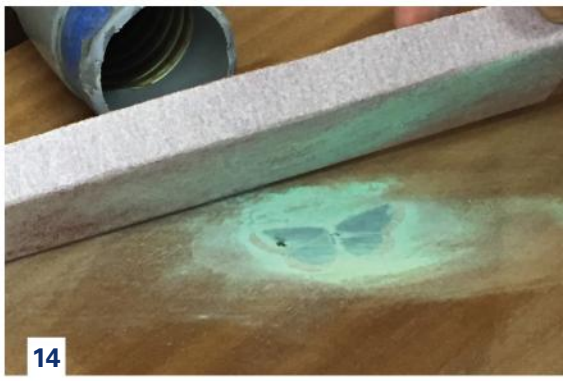

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6. Applying glue to an assembled butterfly.

7. Sanding the back flush.

8. Scalpel scribing around the inlay.

9. Completed scribing with tape removed.

10. Setting the depth of the trim router.

11. Test fitting the inlay in the recess.

12. Mixing coloured epoxy.

13. Inlay clamped in place.

14. Sanding inlay flush.

15. Touching up epoxy fill.

16. The finished inlay.

Using a thin putty knife, gently pry the butterfly off the wood, you should be able to remove the tape inside the scribe lines as well and leave a clear outline of the area to be routed (**photo 9**).

I use a trim router with a spiral carbide downcut bit to cut all my inlays. They make very clean cuts with no tearout on the wood surface. To set the router depth place two pieces of the thinnest material in your inlay on your bench and place your trim router on top of them. Set the router depth to have the router bit just touch the benchtop and you should end up with perfectly flush inlays (**photo 10**).

Rout the inside area of the tape outline trying to get right up to the edge of the tape, but not over it, as any overage will show as a gap in the final inlay. Start in the centre of the opening and slowly rout outward toward the edges. Once all the material is removed, clean up the edges with some small chisels. Do a quick test fit of the inlay at this point and chisel away any areas that interfere with the inlay going into the recess (**photo 11**).

I use dyed epoxy to glue in this type of inlay. Two-part epoxy takes Mixol universal colourants well; typically it only takes a drop or two of colour in a small batch of epoxy to get the required colour. I try to match the colour of the epoxy to that of the surrounding wood surface so any routing errors are harder to find.

Mix the epoxy first and then add the colour (**photo 12**). Spread a thin layer of epoxy over the entire routed recess then press the inlay down into the epoxy making sure it goes in completely. Cover the inlay with a layer of plastic and place a cork-covered block over it. Clamp the block firmly in place and leave it until the epoxy has cured (**photo 13**).

Start by sanding the inlay material with a hard block covered with 100 grit sandpaper. Sand the inlay until it is flush with the wood surface. Try not to sand into the wood while sanding the inlay material and be sure to use a vacuum to remove the stone dust while sanding (**photo 14**). Once the inlay is flush with the wood you can switch to your regular sanding technique prior to finishing.

Occasionally there will be small holes in the glue line around the inlay that need to be filled with another layer of dyed epoxy. Mix up a small batch of the necessary colour of epoxy and mask around the area to be filled to prevent glue seeping into the woodwork. Drip small quantities of the dyed epoxy into the holes and repeat the sanding procedure from above once it has dried (**photo 15**).

By mastering techniques such as these you can add unique details to your furniture projects.

Photos: Craig Thibodeau

Craig Thibodeau is a furniture designer and maker who lives in San Diego, USA. His work has been featured in AWR#68 and 73. In issue 89 we featured Craig's mechanically operated Automoton Cabinet. Email: info@ctfinefurniture.com

Treecycle 2016

An exhibition to celebrate the Royal Botanic Gardens Sydney bicentennial, and the trees that grow in it, was a success on many levels. Story by Linda Nathan.

Three years in the making, literally from tree to fine finished object, Treecycle 2016 was an exhibition of over 450 pieces of furniture and artworks created from wood salvaged from the Royal Botanic Gardens Sydney (RBGS).

At their stage of life, woodworkers Leon and Ginny Sadubin were hardly looking for another major project that would absorb a great deal of their time, but creative people can attract and engender work that is driven by passion rather than pecuniary benefits.

The name coined by Ginny represents a clever combination of concepts which this project and exhibition now embody. Treecycle is the direct descendent of The Kauri Tree Project (2010), both of which took inspiration from Garry Olson's seminal One Tree Project in the UK that spawned similar events and exhibitions all over the world.

Curated by Leon Sadubin, the Kauri Tree Project was all about utilising wood from trees that fell victim to the destructive nesting habits of flying foxes. The seed for Treecycle came about in 2013 when Ginny, a long-standing guide at RBGS, enquired on the fate of some branches which had to be removed from a massive red cedar that was planted in 1823.

When Ginny learned that senior arborist David Bidwell had already created a stockpile of prunings and wood that 'was just too good to chip' from trees at the end of their life cycle, it set in motion a project which would take three years to come to fruition. Wood utilised in the exhibition was also sourced from Mt Tomah Botanic Gardens in the Blue Mountains.

The milling of logs and branches into slabs, flitches and sawn sections was undertaken by Richard Parsons of Canalpie Timbers who specialises in milling urban salvage. The wood was left to air dry and finally, in September 2015, groups of the 45 selected artists were able to visit the timber yard and select the wood they would convert into an array of furniture, sculptures, turnings, musical instruments, toys and artworks.

As co-curators, Leon and Ginny made a decision to select a range of artists – established, mid-career and emerging. 'We knew their work and what they were capable of and wanted to give a window across levels at this point,' said Leon. For reasons of practicality mostly local artists were chosen, however two UK makers were also included – Garry Olson of One Tree Project fame, and Isabelle Moore who at that time was artist-in-residence at Sturt Craft Centre, NSW.

As well as celebrating values of sustainability, place and craftsmanship, for Leon the project has had another more personal meaning. In 1970s he benefited from support from a then-existing Crafts Council of Australia which fostered projects, commissions and craft expos. Being able to support others, especially those at the start of their career, was a way Leon felt he could give back to the community.

Curatorial involvement didn't end with instigating the project and selecting participating woodworkers. Ginny and Leon have supervised and documented the milling and distribution of the wood, and attended regular committee meetings with RBGS Foundation and Friends, chaired by fellow organiser, Hugh Springford. They have kept in touch with the artists along the way, even providing feedback when sought.

For Ginny it's been a joyous process, much like trees themselves when milled, 'full of surprises' which can lead woodworkers to explore and create new work, although undoubtedly there have also been many challenges along the way.

Will there be another Treecycle? ' I certainly hope so', said Ginny, who remarked that one important factor in making it happen again would be the provision of a storage facility at the gardens for salvaged resource. On a broader scale for Leon however, it's now a proven concept that he feels can be handballed to the next generation of woodworkers to adopt and adapt.

Treecycle 2016 had all the right environmental credentials as it showed how urban trees are a valuable resource whose historical and heritage significance could be preserved in a way that highlights and expands those values.

On top of that, it has stimulated the interest of the public in handmade furniture and wood art while spotlighting a younger generation of makers. With over 60 per cent of items sold collectively for around $140,000, it's also proved to be commercially successful for the makers and as a fundraiser for the Gardens.

As a model for creating, presenting and selling handmade furniture and artworks, Treecycle has demonstrated success on all fronts. Congratulations are due to the Sadubins for driving the project and to the RBGS Foundation and Friends for supporting the concept.

Leon Sadubin is a studio furniture maker, designer and sculptor who was instrumental in the formation of the Woodworkers Association of NSW and Studio Woodworkers Australia. Ginny Sadubin is a woodworker and toymaker. See also www.leonsadubin.com.au

Clockwise from main:
A view of Sydney's Botanic Gardens.

African olive lifted onto the saw carriage at Canalpie Timbers, North Richmond NSW.

Richard Parsons, sawmiller, measures stripped out Outaniqua yellowwood boards.

Leon Sadubin carving his river sheoak platter.

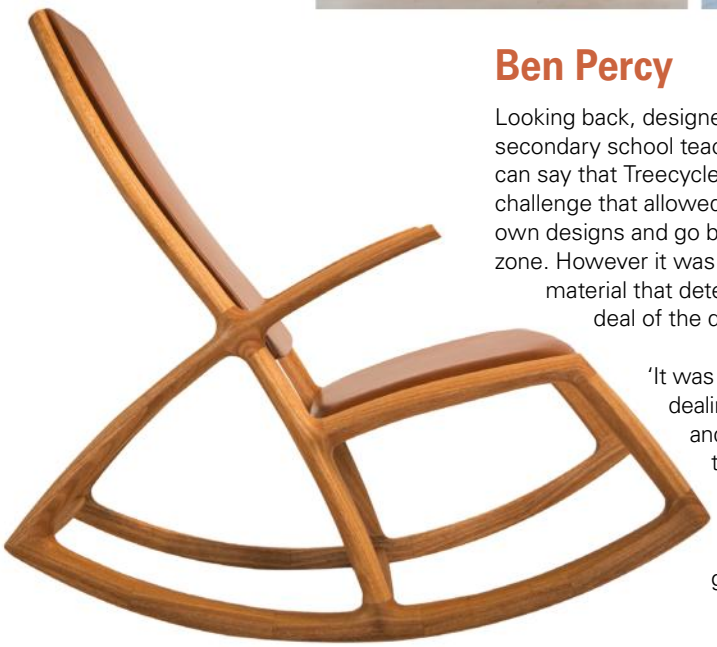
Ginny Sadubin, toymaker, RSBG guide and curator.

Clockwise from right: Showing the frame and detailing of Ben Percy's *Undergrowth Coffee Table* made from African olive and Pacific kauri.

Ben Percy with his *Mantis Coffee Table* in Monterey cypress. 'This wood was great for steam bending.'

The Rocker, brown barrel (*Eucalyptus fastigata*).

Photos: Carol Gibbons



Ben Percy

Looking back, designer/maker and secondary school teacher Ben Percy can say that Treecycle was an enjoyable challenge that allowed him to push his own designs and go beyond his comfort zone. However it was the nature of the material that determined a good deal of the direction he took.

'It was quite challenging dealing with really raw and rugged timber that had been cut as slabs', he said. 'The African olive tree had grown as a mess of branches; there weren't any straight sections, so the grain, shapes and even bark occlusions dictated the designs.'

For at least two months Ben left sections of the wood laid out and periodically rearranged them. 'In the end I took inspiration from oil paintings and water colours and decided to let the wood do the talking.' A further complication was that the sawn wood was not kiln dried, explained Ben. 'I left it virtually until the last minute to make the pieces, first cutting the wood into smaller sections, then leaving it to settle'.

www.benpercydesigns.com

Warwick Wright and Isao Takezawa

Kishi-Kaisel table, sugi (Japanese cedar). Sugi is traditionally used in Japan when a charred finish (*shou-sugi ban*) is employed. 'Isao prepared the original Japanese-inspired design which was modified as we developed our relationship with the material', said Warwick Wright. *Kishi-Kaisel* means to wake from death and return to life.

Photo: Isao Takezawa
www.grainwoodworks.com.au

Aidan Morris

The dimensions and design of Aidan Morris' striking *Credenza* were to a degree set by the nature of the material he had access to.

Water oak (*Quercus nigra*) was the main species used. The slab used for the top was 'not very thick or flat' and so was carefully machined to remove the least amount of material before sectioning for the configuration was chosen.

The original pinky colour of the water oak 'didn't go well with the wild looking hackberry', so Aidan opted to ebonise it, using a traditional vinegar and steel wool solution. The grain of the oak was further emphasised by wire brushing beforehand, a technique which gives an effect similar to sandblasting, but less extreme. The cabinet sold on the first night.

Photos: Kristina Morris
www.aidanmorris.com

Melissa Allen

When colour consultant, interior designer, stylist and woodworker Melissa Allen created her luminous chandelier she had no idea the concept of her delicately patterned marquetry leaf forms would 'grow legs' and lead to orders for earrings, brooches and more.

Timber lighting solutions usually focus on the transparent qualities of wood and veneer, however *The Leaf Chandelier* dazzled with its reflective surfaces and copper detailing.

For the many layers Melissa bandsawed nine species of logs, slabs and chunks into 0.6mm thick veneers.'The thing about marquetry is that you always need odd numbers of layers so there has to be at least three to give support and you need to be able to craft it well and make it look pretty.'

Photos: Linda Nathan, Melissa Allen, Leon Sadubin
www.thewoodfiles.com

Elise Cameron-Smith

'I have a lot of fun crafting whimsical wooden treasures to share with the world. For Treecycle, my works were made in beautiful kauri pine which looked so lovely in my dreamy ocean inspired pieces, made to spark the adventurer in all of us!'

www.elisecameron-smith.com.au

Elise Cameron-Smith, *with her Miniature Boats and Starfish* all made from Pacific kauri (*Agathis macrophylla*).

Christian Timbs

'Many years ago Christian Timbs completed a degree in furniture design in UTAS studying with woodworking luminaries such as John Smith and Kevin Perkins. The degree course was a wonderful however at the end Christian felt himself to be largely untrained in traditional furniture making techniques.

Nowadays Christian regards this as an advantage because it has freed him to pursue unorthodox constructions such as for the table he made for Treecycle. For this piece, three laminates for each leg were fed into an organically curved frame structure somewhat reminiscent of buttress roots that blend into the trunk of a tree. The top featured an inlay of the same species patterned to mimic the curves of the sub-frame. The table was an incredible blend of structural and decorative elements which resulted in a steady stream of people crouched and peering underneath it.

Photo: Stephen Reinhardt
www.japanesetools.com.au

Above: Christian Timbs, *Dining Table with Laminated Legs*, Outeniqua yellowwood.

David Upfill Brown

Inspired by oak chairs and benches designed by Antoni Gaudi, David Upfill-Brown's *Güell* stools were designed to address issues of wood movement by separating the seat components with stainless steel bars which at the same time added a visual element. The use of catenary arches also alludes to Gaudi's architecture.

Photo: Jon Harris
www.davidupfillbrown.com

David Upfill-Brown's *Güell Stools* were made from fumed brown barrel (*Eucalyptus fastigata*).

Mikey Floyd

On the opening night of Treecycle 2016, visitors were held back from entering Moore Hall and the Palm House until the welcoming speeches had been made. After that, the sound of Mikey Floyd's violin, as played by Susie Bishop, filled the room, in essence becoming the voice of wood that had been rescued from the Botanic Gardens and converted into an array of artworks that numbered in the hundreds.

Making the violin was challenging in many ways, said Mikey. Selecting the wood was made harder by the fact that slabs and chunks had gone grey as they air dried.

Japanese cedar is not an uncommon choice for an instrument top but the wood used was wide grained and harder to work than normal. Usually the back, neck and sides are made from the one species, Mikey explained, however the first neck made from Monterey cypress broke just near the end of carving the scroll, so a second from African wild plum was made.

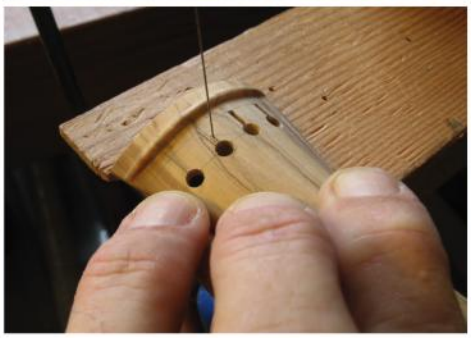
Violin fingerboards are traditionally made from ebony or a hard species. African olivewood was the only species available that had the hardness and durability required for the fingerboard, nut and tail piece, so that was the species used. The pegs were also initially turned from olivewood, however tallowwood was eventually used.

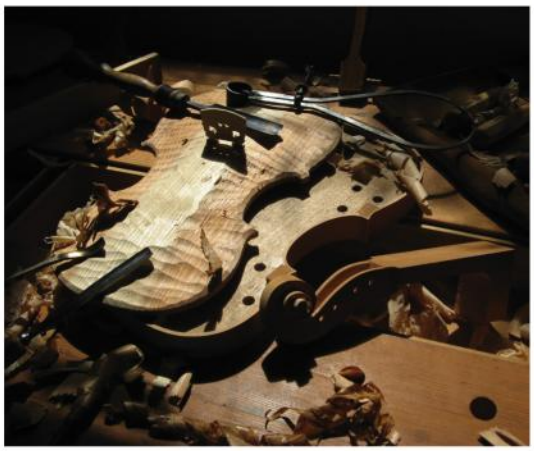
Instead of a stained finish, a clear mix of shellac, sandelac, rosin and spirits was used. Around 40 coats were brushed on over a period of several days.

The final affirmation of the instrument's beauty came when it was purchased by a professional musician on the last day of the exhibition.

Photos: Mikey Floyd
www.mikeyfloydluthiery.com

Above: Mikey Floyd at work on the Treecycle *violin* he made from Japanese cedar, Monterey cypress, African olivewood and wild plum.





Left: Howard Archbold's *Botanica Suite* made from Outeniqua yellowwood, firewheel tree, and brown barrrel.

Botanica Suite

A proponent of traditional foot and hand powered woodworking who lives in a secluded out of town location, Howard Archbold was delighted when invited to be included amongst his city 'brethren' as a maker for Treecycle.

Although along the lines of Windsor design, the way he made the suite was 'incredibly different'. The wood supplied for Treecycle was not green and therefore could not be turned on a pole lathe. 'It didn't take me long to get used to it, but I had to use a power lathe, and a lot of sanding was required. I normally burnish surfaces with a handful of shavings off the workshop floor, then follow up with a coat of shellac and then wax.' In other ways too it was 'seat of the pants design', said Howard, as the timber 'dictated the outcome'. Halfway through the making, Howard switched to a comb back rather than a continuous arm design for the settee and chairs because steambending the brown barrel proved so problematic.

Photo: Rarechairs
rarechairs.com.au

Tim Noone, *Hall Tables*, Outeniqua yellowwood, Chinese elm.

Tim Noone

Tim Noone's hall table design came to him as an offshoot of another. Inspired by the hoya flower with its five petals Tim produced sketches for what he planned would be a design for a platter. For a while he felt he wasn't getting anywhere, but over a progression of sketches ended up with a shape that he used for the understructure of the hall tables. Both tables were made from the one slab with bookmatched tops and base components.

Photos: Saskia Wilson, Linda Nathan
timnoone.com

Grant Vaughan

Although Grant Vaughan's *Carved Mirror* and *Gingko Forms* displayed the fluid lines and curves we're used to seeing from this master carver and sculptor, the journey of carving the kauri and yellowwood was a difficult one, he said. 'The endgrain tears like you wouldn't believe. To get a clean cut you've got to have razor sharp tools and be so careful, which makes things a lot slower.'

Last year Grant took part in the Centre for Art in Wood International Woodturning Exchange in Philadelphia. 'There were gingko trees everywhere and the leaves of a gingko tree outside the room I was staying in were virtually coming in through the window', said Grant, noting his inspiration.

Photos: David Young
www.grantvaughan.com.au

Above: *Carved Mirror*, Pacific kauri (bleached), 700mm dia.

Left: *Gingko Forms*, Outeniqua yellowwood bleached and ebonised, 270 x 230 x 75mm.

Gayl Leake

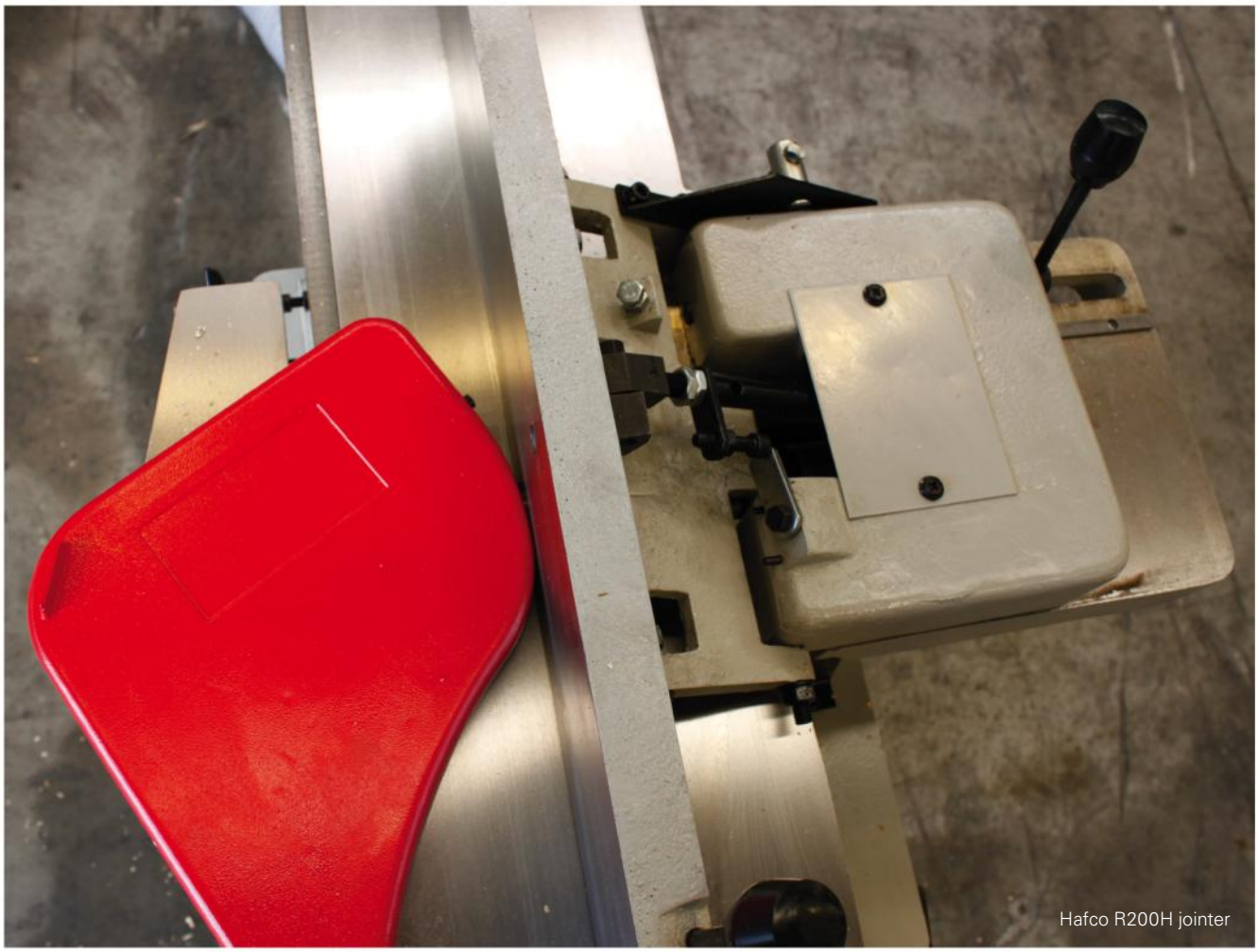
Gayl Leake trained in furniture design and making under George Ingham at the School of Art, ANU. The gingko leaf motifs of coloured epoxy resin on the seat surfaces of her stools were inspired by an earlier trip to China, when she returned with ideas that flowed from Asian symbols and imagery. It also seemed appropriate to have a botanical reference within the context of the exhibition, she commented.

Photo: Greg Piper

Above: Gayl Leake's Treecycle *Stools* were crafted from Monterey cypress, Pacific kauri and Outeniqua yellowwood with coloured resin inlays.

Jointers and Thicknessers: A Survey

Raf Nathan went searching for the best 8" surfacing and 15–16" sizing options.



Hafco R200H jointer

To truly machine a piece of wood you first flatten and straighten it on a jointer and then thickness down to finished size. The end result is a straight, evenly dimensioned piece of wood.

A combination machine performs both these functions admirably and offers money and space saving. One machine has a single footprint and an almost two-for-one deal dollar-wise compared to buying a separate jointer and thicknesser. The trade-off is time and effort.

For example, to convert from jointing to thicknessing mode you needed to raise the guard, release any locking levers, raise the tables and install dust extraction. Some manufacturers have streamlined this changeover time, but the fact is you are always limited to either planing or thicknessing.

If, halfway through thicknessing a stack of boards, you realise you missed one board and have to go back to jointing, then the whole changeover process has to be performed twice, once to jointing mode and then back again to thicknessing.

A more streamlined way is to have separate machines for jointing and thicknessing. Also, in 2016, it's probably time to forget straight knives and get a helical cutterhead. Everyone raves about them so resistance is futile. Lowered sound levels and cleaner cutting, particularly in woods with wild grain, make helical heads the go. Yes they cost more initially than straight knives, however the carbide teeth offer longevity and can be rotated to show a new edge if a tooth gets chipped.

15–16″ THICKNESSERS	LAGUNA	HAMMER A3-41D	POWERMATIC MP-15HH	HAFCO T-380S	CARBATEC TH-X381C	WOODMAN TH 410HH	RIKON 23-400H
Width	16" / 400mm	16" / 406mm	15" / 380mm	15" / 380mm	15" / 380mm	16" / 408mm	16" / 410mm
Infeed/outfeed tables	solid	solid optional	solid	rollers	solid	rollers	rollers
Max planing height	153mm	225mm	152mm	150mm	205mm	225mm	225mm
Cutters	108	62	102	68	75	72	72
Speed [m/min]	4.8/6	6	4.9/6.1	4.9/6	5/9	5¬7 Variable	5–7
Digital height gauge	yes	option	yes	yes	yes	yes	option
Hp	3	4	3	3	3.5	3	3.3
Kg	258	330	228	230	260	230	175
Origin	Taiwan	Austria	Taiwan	Taiwan	China	China	China
Rrp	$4750	$6066	$4000	$2850	$3299	$3345	$3660

8″ JOINTERS	LAGUNA PARALLELOGRAM	LAGUNA WEDGE	POWERMATIC	HAFCO R200H	CARBATEC JNH X200C
Width	200	200	200	200	200
Table Length	2108	1803	2083	1785	1950
Helical Cutters	54	54	54	45	40
Hp	3	2	2	1.5	1.5
Kg	248	231	277	194	230
Mobility [Inbuilt]	yes	yes	yes	option	yes
Origin	Taiwan	Taiwan	Taiwan	China	China
Rrp	$4190	$3185	$4400	$1925	$2299

The set-up

The common package available in Australia is an 8" (200mm) wide jointer and a 15–16" (380–410mm) thicknesser. These are standard machine sizes pitched at the smaller workshop. Of course you are immediately limited to buying wood no wider than 8" or you accept ripping and re-gluing wider boards.

With many of the thicknessers a downside is the limited maximum thickness they can handle, some are 'only' 155mm. 'Only' because some people will not be bothered by this but for me it is limiting. Bed rails for example can commonly be 180mm or 200mm wide. Another point is the fitting, or lack of, infeed and outfeed tables. Personally I think it better to have no feed tables rather than a roller bed where, particularly on the outfeed side, there are gaps between the wood and roller where your hands may be.

In the 8" jointer and 15" thicknesser category many of the machines look the same. Apparently the deal is that Geetech in Taiwan make up to order variations on their range. Dealers can then spec up as they wish for their version of the machine.

The design of these thicknessers has not changed much over more than 25 years. This is good and not so good, they have proven their staying power so even the lowest price machine should give you reliable service. Some design foibles however remain. All the 15-16" Taiwanese style thicknessers have the need to loosen two hand knobs that lock onto the shafts to raise or lower the height. To me this is old school. As is your hand hitting the switch box when tightening these knobs with the table raised near the top. These machines show their older design!

They all seem to have a side-mounted gearbox running in an oil-bath with a sliding knob to change feed speeds. There are also Chinese versions of similar machines that look pretty much the same.

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Thicknessers

Compare the Hafco to the Powermatic or Laguna and the key differences in appearance are colour, finish and detailing of surfaces, and an open versus a closed base. They have the same basic design with often identical looking castings.

Inside is what counts so expect variations in motor power, quality and of course the cutterhead. They do have similar looking cutterheads but vary in the number of teeth and quality of the carbide used. All the machines I saw had cutters with a similar looking edge curve. Some say the screw fixing of the teeth is critical, a flat recessed hole for the screws being far better than countersunk, offering a more secure method that is stronger.

Theoretically the more cutters you have the better and longer lasting will be performance. Cuts should be smoother with better tear-free surfaces and good edge holding ability from


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1. Hafco T-380S
2. Digital height is standard on the Hafco
3. Rikon 23-400H
4. Hammer A3-41D
5. Carbatec TH-X381C
6. Powermatic MP-15HH
7. Woodman TH 410HH
8. The Laguna has a triple belt drive.

the cutters. Having said that I used different new machines and achieved identical results on planed Tasmanian myrtle. But of course that was planing with brand new cutters. To be honest I thought the cutterheads in most machines looked identical.

Definitely the higher priced machines are better finished on surfaces and castings and this is important; you want a well assembled machine. A digital height gauge is a great help and some machines come standard with one of these. Another point is that some have built-in castors offering easy mobility. Being able to quickly wheel a heavy machine around around your workshop can be a great advantage.

There is also a selection of closed cabinet type thicknessers which, well, look the same. Again I believe these all come out of the same factory in China depending on who you ask.

The Rikon and Woodman have a fully enclosed cabinet giving what is called a European style. I like the fact theirs is not a 25 year old design with an open frame. Best of all, they have a 225mm thickness capacity. They have what appears to be a strong build and seem to be preferred by schools (according to dealers). My only query was the fitting of roller feed tables.

The only other thicknesser in the sub $7000 league is the Hammer machine from Austria. This is a fully enclosed cabinet affair with Felder's own helical Silent Power cutter. You can expect high quality with this machine as the Hammer and Felder come off the same assembly line. The downside is that only one feed speed is offered and the fact that you need to option up digital gauges and outfeed tables. Thickness height capacity is a generous 225mm.

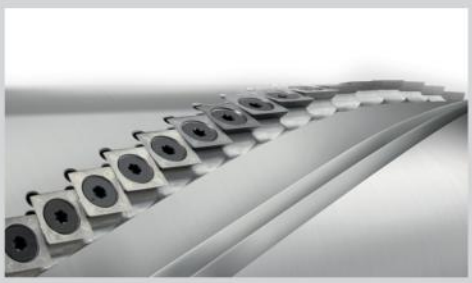
Spiral Selection


Hafco


Laguna


Rikon


Woodman


Hammer

Jointers

Lower cost jointers use a machined slideway to mount the tables. Simple knobs lock the tables in place and rise and fall is lever or wheel operated. My experience with these is an occasional readjust and tune will always be needed with the table alignment. There is a large amount of cantilever of the tables with this design, so it is inevitable they will go 'out' over time. The way the tables mount varies with different machines. Once again the higher price gives more quality.

The top of the range Laguna has a superior parallelogram table system that maintains gap between the table edge and cutter. This gives much better support to the tables as it reduces the cantilever. Powermatic and Carbatec jointers also offer good table support with reduced cantilever on the tables and appear extremely well made.

The fences on all jointers look very similar as does in most cases their attachment assembly. The fences are solid castings with good machining. Variations on a somewhat agricultural assembly include knobs instead of levers and better angle setting bolts.

The latter I found under-engineered on some of the machines. However they all worked well and lock down securely. The Powermatic has probably the best fence assembly, looking more refined.

Used machines

These are always an option and nowadays it is relatively easy to convert an older straight knife head over to a helical cutter. In fact you can buy a Shelix/Byrd helical head to suit pretty well any older machine ever sold in Australia. You will need the tools and skills to do this though and previous issues of this magazine* have detailed the process very well.

Judgement

Thicknessers: If the maximum thickness wood you will be planing is not more than 150mm then any of the thicknessers I looked at will be an option. This is a case of the more you spend the better finished and more refined is the machine.

The Hafco T-3805 is totally value for money. We should not assume things, but the Hafco and Laguna cutterheads look identical although the Hafco cutterhead has fewer teeth so there is an important difference. Either way the Hafco seems a good, safe choice and has the lowest price. Across the full width of the cut it dimensioned virtually perfectly.

The Chinese built Carbatec machine adds in a closed base, mobility and importantly solid feed tables for not much more outlay. Budget may be the decider between these two. But the big difference between the Carbatec and all the other similar machines is maximum depth of cut, 205mm.

The Powermatic and Laguna machines are pretty well head-to-head except for price, and the fact the Laguna offers a wider cut. Either of these will suit you well.

In the fully enclosed cabinet style machines obviously the Hammer is the winner. It costs more but you are buying the Felder cachet. If you have the budget this is the one to get. Of the Chinese, Rikon and Woodman machines they appear so similar I could not make a call between them.

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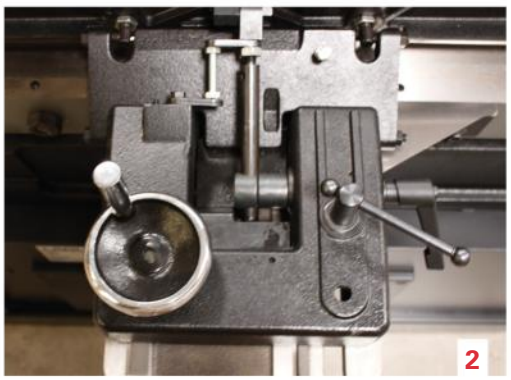

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1. Laguna Parallelogram
2. Detail showing Laguna Parallelogram fence assembly
3. Powermatic jointer
4. Powermatic fence adjustment.
5. Powermatic spiral cutter detail
6. Carbatec JNH X200C
7. Hafco jointer

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Jointers: The entry level Hafco is great value. It was I thought let down by the table to bed attachment. It's an older design with some shortcomings. There is one large main switch raised above the tables with another off-button at knee height on the base. The machine I tried was very well set-up ex-factory with the tables aligned straight and performed well. The Laguna Wedge is a much more refined version of this jointer in looks. The $1200 price difference between the two is visible.

The Carbatec has a more modern design than the two latter machines with better table support. As mentioned above, the fences on all of them look pretty similar. The extra spend to get the Carbatec over the Hafco seems worth it.

The Powermatic and Laguna jointers look great and appear rugged and refined. Again either one will be a good buy.

The budget priced decision is to get the Hafco thicknesser with a Carbatec jointer. The deluxe decision is the Hammer with a Powermatic or Laguna jointer.

Raf Nathan is a Brisbane furniture designer/maker. Email: raf@interwoodshop.com.au

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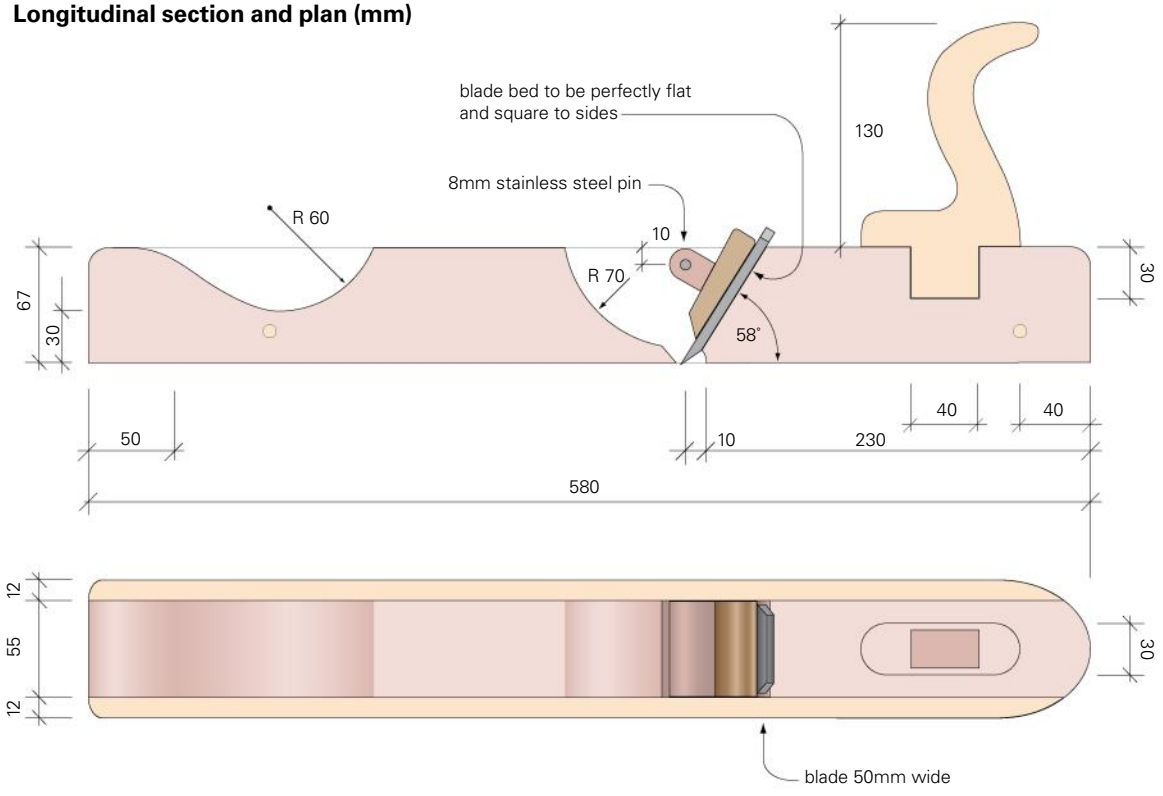
Longitudinal section and plan (mm)



Above: Now a favourite tool. John Kennedy demonstrates the finished plane.

Right: Mark 1. The test bed plane had kwila as the main body and rosewood sides. The body was made extra wide so extra wedges could be inserted to vary the dimensions.

Building a Custom Handplane

Through trial and error John Kennedy builds an all-wood handplane that gives a tear-out free finish on cranky grained woods.

For a long time I had assumed that handplanes had reached their peak of development in the form of metal-bodied planes like Lie-Nielsens and other top end handplanes. Because these planes could never quite give me a tear-out free finish I believed that Australian hardwoods and some imported timbers like New Guinea rosewood were just too cranky and grain rich to be tamed by any handplanes or jointers without the inevitable patches of tear-out and splinters. Cabinet scrapers and sandpaper were the only way to deal with this problem. How wrong was I?

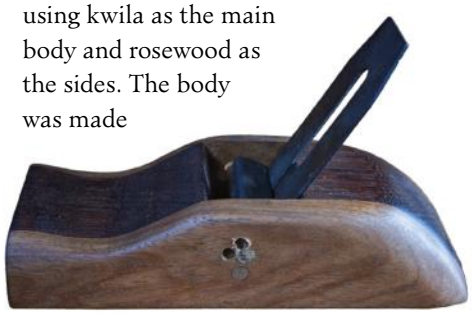
During a furniture woodworking workshop one of my students asked me if she could build a wooden handplane, mostly to learn the skills required and also end up with a really cool looking, useable tool at the end of the exercise. Thinking this was a great idea I decided to make one myself so I could work through any pitfalls and problems before any student started asking embarrassing questions. How hard could it be?

From the start

A little research revealed a plethora of designs and ideas from all over the world and I began to realise that making a plane out of timber wasn't as simple as it looks. Sure, it is possible to copy someone else's design but there are no guarantees it would actually work and, more importantly, that it would perform as well as a bought metal-bodied plane.

The only way to really find out was to make one and, by trial and error, see what worked and what did not. To this end, a test bed plane body that could be modified and re-modified (and thereby avoid having to build a new body from scratch every time something had to be changed) was made.

The obvious design was one based on the famous James Krenov style. The 'fast back' model was appealing because it was so simple, without totes or any bells and whistles so this became the model test bed using kwila as the main body and rosewood as the sides. The body was made

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extra wide so extra wedges could be inserted between the blade bed and the blade itself. This would allow me to increase or decrease the blade angle as testing proceeded, and with repeat testing, determine the best angle to use on the timbers I commonly use.

Starting at the recommended 45°, planing tropical timbers resulted in tear-out that was horrendous even with a razor sharp blade. As wedges were added and the angle increased, tear-out began to decrease significantly. However, just as the angle reached 60° and tear-out had all but vanished, the tear-out problem was replaced by severe blade chatter as the thin blade seconded from an old metal handplane reached the limit of its endurance.

Some of this was undoubtedly due to the less than perfect bed arrangement due to the extra wedge in place between the blade and the fixed bed. Shifting the position of the wedge bar and increasing wedge pressure helped but could not eliminate this problem.

A thicker blade

The search for a better plane blade started. I had seen some of Terry Gordon's beautiful handplanes in display cases but hadn't noticed until now just how incredibly thick the blades were compared with the blades in most of my metal planes. A phone call to Terry and, on his advice, I bought a 50mm wide HSS 6mm thick blade from him. This turned out to be the best advice anyone had offered during the whole process.

The new blade soon arrived in Cairns and it was immediately obvious it was far too thick to fit through the existing mouth on the test body so yet more modifications were made to allow the new blade to sit in the now battered test bed body. Not only did the mouth need opening up, but also the wedge bar had to be shifted yet again.

In most of the wooden bodied planes I have seen the wedge bar is made out of square timber with the ends

1. Handplane components showing the curved cross-section in the plane body.
2. The relationship between the blade wedge and the bar.
3. Gluing up the sides and plane body.
4. Set up for mortising the plane body.

rounded over so that it can swivel around in the planes sides and so self-adjust to the plane blade. This type of wedge bar becomes fixed in place once the sides are glued on and makes it all but impossible to change or modify it once in place.

Making a composite bar out of a piece of stainless steel rod that went through the timber wedge bar allowed me to drift the pin out of the body, plug the resulting hole in the side of the plane body with a dowel and redrill the hole in a new spot. It also meant I could replace the wooden bar if I had to. As it turned out, the wooden bar was also modified and replaced a number of times before I was happy with how it performed, but both the steel pin and the test body were recycled every time.

After yet another rebuild, the first few strokes with the new blade were a wonderful revelation. At a 58° angle on the blade bed and the wedge sitting a lot higher than before, the plane sliced through the toughest piece of hardwood in the workshop effortlessly. The finest shavings began to curl out of the plane and the timber was tear-out free. During the ensuing glow of success, many different pieces of timber were reduced to shavings before I had convinced myself I wasn't dreaming. Time to start building the long bodied plane I had in mind all along.

With a long body

I had wanted to make a long bodied plane with a tote at the back which encouraged a strong downward force on the back of the plane rather than the usual tote angle which tends to lift the back as you push forward. Secondly, I wanted to be able to grip the front with my whole hand rather than hang on to a relatively small knob which is what you usually find on the toe of planes and which, in my opinion, offers surprisingly little directional control.

I wanted it to be the go-to plane for flattening wide glued up boards for tabletops and so on. I have never had the courage to use a plane for this job since a tear-out disaster ruined a beautiful top I had laminated for a very special project. Theoretically though, a long, well-tuned plane taking out the finest of cuts should be the tool to use.

Design features

From the photos you will notice that instead of the usual flat face in front of the blade I have bandsawn out a curved area. This was to allow my fingers to reach inside the cavity to clear any jammed shavings and also had the unexpected and beneficial side-effect of acting as a shavings bucket where shavings can collect rather than spill out all over the job and generally get in the way.

Another lesson I learned during the trial and error phase was that in order to set the blade accurately, it is essential that the back of the body against which the blade itself rests, be absolutely flat with no bumps or high spots. If there are high spots, the wedge puts more pressure in that one spot and when the blade is tapped down or up, instead of rising or falling parallel to the base, the blade tends

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7. This is where the spokeshave excels.

to swing around the tight spot. The end result is a blade that is a pain to reset. Better to take the time during construction to ensure the back is perfectly flat.

The rear tote was mortised into the body and has a dowel going through its tenon for security. The front of the body has been shaped so my palm rests easily in the hollow and my fingers wrap around the fore grip. This allows me to rest my weight down on to the body, gives good directional control and all with ergonomics which suit my hands perfectly. No blisters or cramps even after prolonged use.

Test results

Did it work? We have a piece of rosewood in the workshop which is aptly named the timber from hell. It has grain running in all directions and no matter where or which direction you plane it, you always end up going against the grain somewhere. There is not a plane in the workshop that can plane it without at least some tear-out. Until now. This old fashioned wooden block plane with a modern super blade not only planed it without even the tiniest tear-out, it also left it dead flat with a burnished, polished appearance.

In the process of preparing a lesson for students I have discovered so much more about the how and why of planes and, armed with that knowledge, I find I can better tune my metal-bodied planes although none of these can be made to perform as well on tropical timbers as this latest addition to the workshop. A shorter, lighter version is definitely on the 'to do' list.

Photos: John Kennedy

Diagram: Graham Sands

John Kennedy lives in Cairns, Qld. His philosophy is that if someone goes out into a forest and kills a tree on his behalf, it's then his responsibility to turn that timber into something that will last at least 50 years to give nature a chance to replace what was taken. Email John at meggjohn@tpg.com.au

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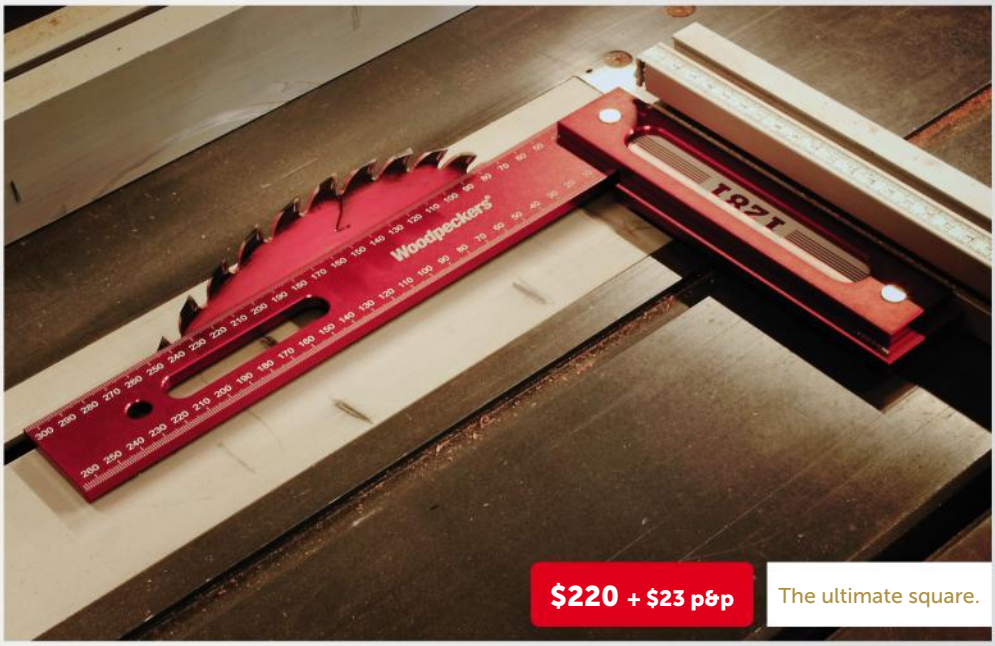

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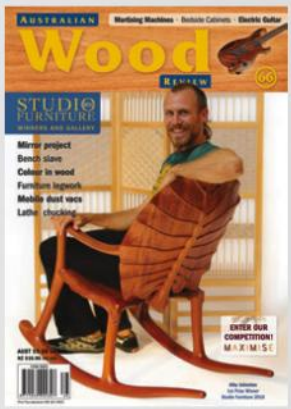

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Road Map to Learning

Diverse life lessons have taught Stuart Faulkner how to be a good teacher. Story by Linda Nathan.

Seems like all over Australia centrally located industrial areas are being repurposed into hi-density residential developments, and sometimes before that eventually happens, populated with makerspace communities and trendy outlets.

Around nine months ago Heartwood Creative Woodworking took up residence in what used to be the front of house and office rooms of a large factory in Marrickville, Sydney. What takes up less than 300sqm is now a fully resourced facility for teaching fine woodworking. Most of the teaching is done by Stuart Faulkner, who owns and runs the school along with wife Carol, however a team of teachers is at the same time being built.

It's obvious that great care has been given to designing the layout of the school. One end of the main bench and handwork area is filled with purpose built tool cabinets that contain sets of all kinds of hand tools.

The cabinetry, storage, partitions and workbenches have all been built by Stuart. The workbenches in particular are of his own proprietary design. CNC-cut from Lamiply, Heartwood's Mybenches have been designed with multi-functionality and convenience in mind.

Glassed off from the hand tool area, the noise from the machine room is muffled but Stuart can still see what's going on, and also hear if the sound of a machine should deviate in any way from the norm.

The machine shop has a Felder panel saw and bandsaw, Hammer thicknesser and jointer along with a custom made router table that Stuart made some 18 years ago. A Felder Clean-Air dust extractor evidently does its job as the place is immaculate. Heartwood's secondary machine room contains a compressor, linisher, thicknesser sander, drill press, disc sander, hollow chisel mortiser and some storage racks. There's not much more to wish for.

Stuart's approach to teaching beginner woodworkers is a well tested

Stuart Faulkner in the machine room at Heartwood Creative Woodworking.
Photo: Linda Nathan

Left: Each class of eight has two teachers. Here Stuart Faulkner is teaching in conjunction with Nick Teply (second from left).
Photo: Carol Faulkner.

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and integrated one. Beginners may enrol in an 8-week course, during which they will learn hand and machine skills as they make two projects, a serving board and a box. Each class of eight students has two teachers for a low 4:1 ratio.

Stuart is not only an expert woodworker and designer, he is a consummate teacher, passionate about the connection that facilitates the transfer of knowledge and fosters the development of skills and confidence in others. 'I was primarily a maker to start with, but you keep coming back to what you're good at or what you know. Teaching has become what I know.'

It's obvious Stuart enjoys the challenges that teaching presents, which is fortunate because there are many. 'At any one time students can be making a kayak, a surfboard or a Japanese-inspired light – they just come in with a photo and it starts from there. Everyone who comes here wants to learn – is mad to learn. I can't even get them out at the end of the class'.

Asking Stuart about his past is like peeling back the layers. Before establishing his own school he was the full time Wood School Director for the Sturt School for Wood, a position that entailed managing the curriculum and assessments in addition to tutoring and maintaining machinery and equipment.

Before teaching at Sturt, Stuart taught industrial and furniture design at Lidcombe TAFE in Sydney for eight years. Before that he worked as a custom maker, sharing space in the Splinter Group collective in St Peters.

Back in the UK, over 25 years ago Stuart was a scientific (technical, medical and botanical) illustrator. 'I didn't have the patience to remain as an illustrator so I became a graphic designer.' After travelling the world and then settling in Australia he started a graphic design business which was ironically so successful that he had to step away from it as his role became more and more managerial. 'It became nothing but meetings and accounts, and that was not what I signed up for,' he said adding that in a increasingly digital environment, graphic art had lost the tactile appeal it had once had for him.

By this stage Stuart had started attending woodwork classes a couple of nights week, but it was seeing a newspaper article about Sturt School for Wood that prompted him to drive out there the very next day and sign up for the one year course.

'Growing up, drawing was my thing', said Stuart, going even further back in time. 'As a child I was considered educationally substandard because I was deaf – until they worked out it

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was connected to my sinuses and they could cure it. I had an operation when I was about eight and then started to read and write. Up until then my only expression had been through drawing.'

Drawing and model making is still where it's at for Stuart. 'I think computers are limiting people because in the early stages you're so busy worrying about how the program generates shapes that there's too much focus on the computer how-to and not the idea. It's not about that when you make a model and use string and matchsticks or whatever to get at an idea. I just don't see CAD as a creative tool. It doesn't allow for happy accidents, it doesn't allow for interpretation, it really doesn't encourage play. I think mock-ups are the number one thing that most people ignore.'

Stuart's attitude to teaching and learning, possibly rooted in his own early struggles, is not an elitist one. 'For me it's not about fine furniture… as long as (students) enjoy it and do the best they can with the skillset they have at that moment and they let go of the outcome – it's the journey'.

Heartwood currently offers short courses for beginner and intermediate woodworkers, and a place for those to continue learning beyond those levels, but the plan is for the school to eventually become a centre of excellence and a registered training organisation. 'When you get students for a year you can really get the best out of them because once you've got the fundamentals nailed down you can go on to the bigger picture. During that time we can give them a road map, that says "if you follow this map you will get great looking work at the end of it"'.

Learn more about Stuart Faulkner's woodworking school at www.heartwoodcreative.com.au

1. The design of Stuart's Mybench has evolved from the early model shown here.
2. 'Everyone who comes here wants to learn – is mad to learn.'
3. Stuart setting up the panel saw for a student during a class.
4. Entertainment Unit, 2001. Made from solid jarrah and veneered marine ply, this unit features 'pocket' doors, pull-out shelves and internal electrical fittings, as well as custom made stainless frame, handles and drawer pulls.
5. One of two single beds with trundles made in 2002 from American white oak, solid and veneered blockboard.
6. Shoe Box, 1997, Qld maple and walnut, solid and hand pressed veneers. A concealed mechanism operates the tambour. The brushed aluminium feet were also made by Stuart Faulkner.

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A Simple Bowl

Terry Martin writes about the technique of achieving good line and form.

When I started woodturning in 1983 I soon realised that I enjoyed making bowls more than anything else. I remember one turner saying to me, 'Don't you get bored making the same thing all the time?', but I have never been bored with bowls.

The possible design variations – use of grain; open or closed form; base or no base; rims that flare, roll or dip; foot or no foot; and more – these are enough to challenge me for a lifetime, never mind the challenges of improving my technique to make it easier. But of all the things that make a good bowl, the *line* of the piece is the most important. By this I mean the line that defines the outside profile and the complimentary sweep of the inner line, and for me the simpler that line is the better. I also prefer no sudden changes of direction and it must be smoothly continuous, with no bumps or dips.

There is something else which makes a bowl really sing, and that is how it feels when it is nestled in your hands. A good bowl is the reflection of the cupped human hands. If you watch someone pick up a well made bowl, they will cradle it in their hands and invariably lift it to their face. It is the echo of something that our species has done for thousands and thousands of years – drinking water from our cupped hands. So I believe that the warm feelings that come from holding such a bowl are buried deep in our psyche. These are big thoughts for a simple bowl to hold, so I set out to make just such a bowl to illustrate what I believe.

I chose a piece of camphor laurel with a soft grain pattern, then mounted it on the screw chuck and trued it up till it was 165mm dia., and 90mm deep (**photo 1**). There were some deep cracks, but they were at the outer edge of what would be the base, so I turned them away with slicing cuts, rolling the tool into the wood by lifting the handle of my bowl gouge (**photo 2**).

After marking the spigot diameter for my chuck, I roughed it out with the gouge, then used my dedicated spigot

The finished bowl sits on the headstock. Job well done.

scraper to finish it. I have ground the angle of the scraper to match the dovetail on the chuck jaws (**photo 3**). I always leave a second step to give me room to part off the bowl or, in this case, to allow me to sand right up to the chuck jaws when I reverse it later.

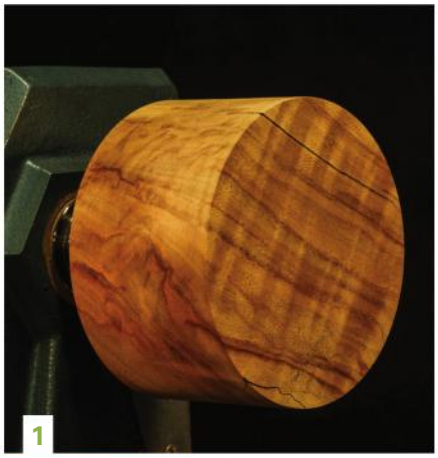
Next I wanted to finish-cut the bowl, avoiding pickout, which happens when grain is plucked out by poor cutting, leaving holes in the surface. Pickout is the deadly enemy of good sanding as it means you have to sand away the entire surface to the depth of a few small holes.

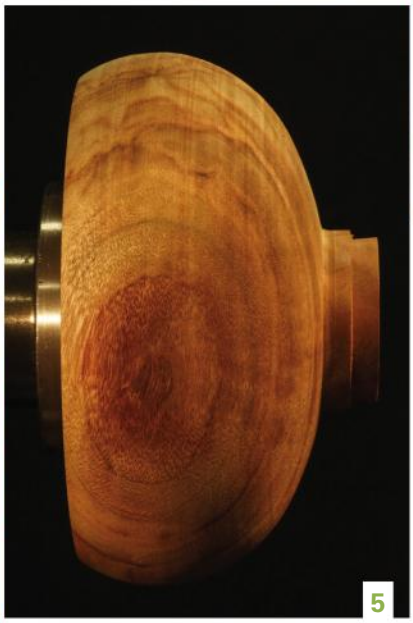
I always use my favourite cut with the tool almost fully on its 'back'. I take very fine slices with the edge at about 45° to the wood as it comes down onto the blade. This cut is safe, as long as you don't let the tool roll into the wood and only take very light cuts. You can hear the two kinds of grain orientation as they pass across the tool: endgrain/side grain/endgrain, which translates as hard to cut/easy to cut/hard to cut.

If you apply pressure to the bevel, this can cause an oscillation of the tool that gets worse the more you cut. The solution is not to 'rub the bevel' as most turners say, but to just 'float' it while keeping downward pressure on the toolrest as you move your body through a constant curve – the intermittent sound will lessen and the tool will cut a true line.

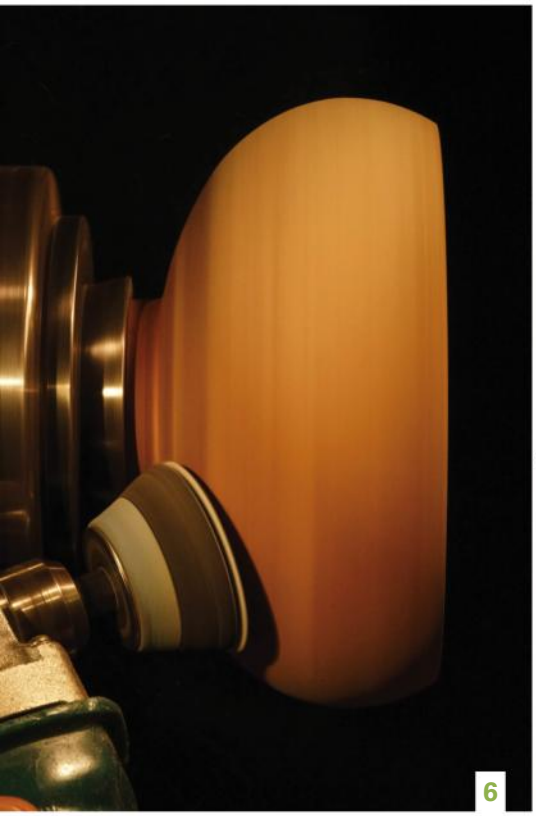
Towards the foot it was possible to ignore the rule of always cutting 'uphill' because the endgrain there was at such a flat angle to the tool that it resisted the cut less. That meant I could finish-cut right up to the spigot (**photo 4**).

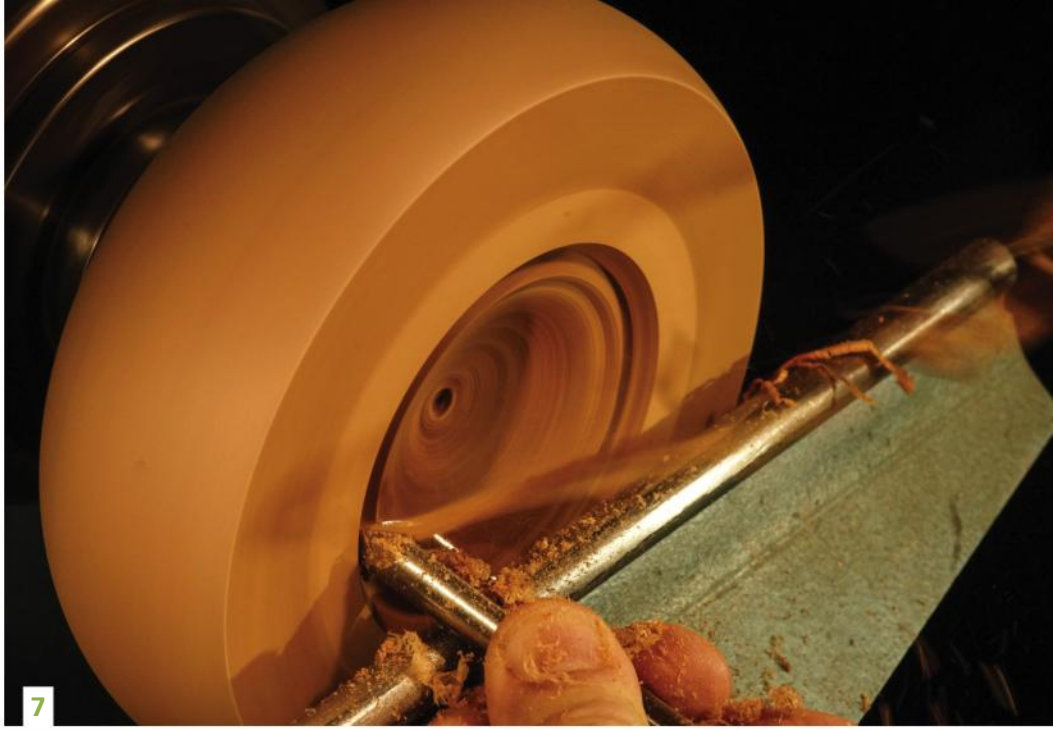
When this part of the curve was cut, I changed direction to continue the curve towards the top of the bowl, stopping about one third of the depth of the bowl from the rim, then used a pull cut towards me to shape the top third of the bowl. The result was still not finely finished, but the form was established with no pickout (**photo 5**). Small toolmarks are easy to sand out.





1. The blank trued up on the screw chuck.
2. Rounding over the base of the bowl.
3. Using the scraper to cut a dovetail on the spigot.
4. My best cut – floating the bevel.
5. The basic shape is achieved – no pickout, only light tool marks.





I did not sand the bowl before reversing it into my scroll chuck because with soft wood like this there can be slight compression of the spigot when you close the jaws, even if you don't overdo the pressure. I wanted to see if I needed to lightly recut to make it run true again. As it happened, this bowl ran perfectly true, so I was able to finish sand with my trusty 30 year old Makita angle drill (**photo 6**).

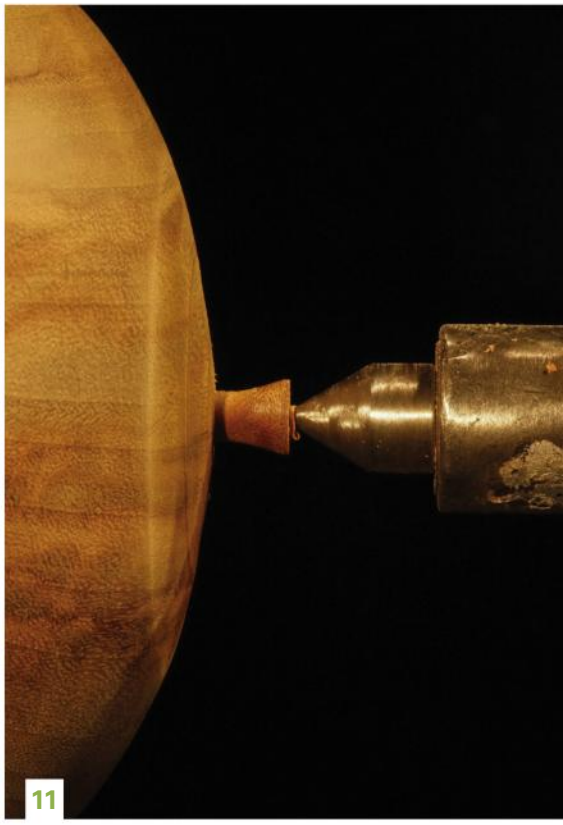
While removing the tiny imperfections in the surface, I refined the line until it was perfect. Beginning with 180 grit I worked my way through to 500 grit, reversing the lathe each time to ensure the best finish. This is also where I have my dust extractor hose placed very close to the bowl to back up my room air filter and my Racal helmet, which I always wear. After more than 30 years, my body reacts badly to wood dust and such precautions make it possible for me to continue.

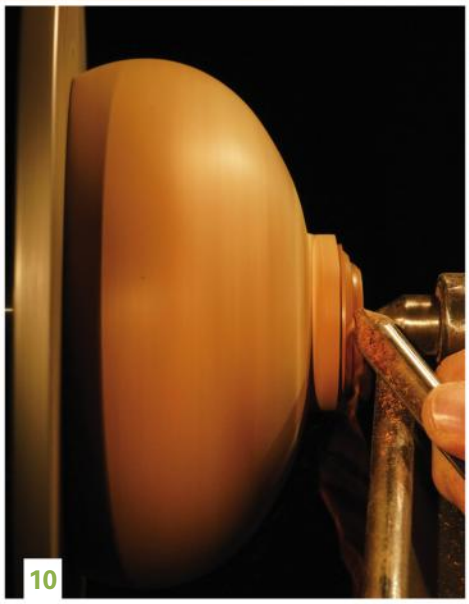
Sometimes when I have finished the outside I remove the chuck with the bowl still in it and stand it upright on the headstock to look at the form in a more natural position. In this case all was good.

The next step was to remove the bulk of the interior wood. With a really sharp edge and good tool presentation you can make ribbons of wood fly – one of the most satisfying parts of turning for me. For years I used a more traditional cut, pushing the tool with the handle in line with the direction of the cut, but I have been influenced by Glenn Lucas, the fastest bowl turner I know, and now I take a swinging cut using the right edge. The shavings were sweet (**photo 7**).

I cut a rim at 90° to the outside wall because the way the light falls on this kind of rim enhances the sense of 'enclosure'. I then used the same swinging cut to establish the thickness of the wall, in this case 5mm (**photo 8**). My thumb prevented kickback and with a sharp tool I was able to plunge straight in. Tentative poking at the edge is more likely to result in a mistake.

It is possible to continue the same gouge cut all the way to the bottom, but the grain at the bottom of a bowl accepts a scrape well and it is easier to swing the scraper to match the arc of the gouge cuts higher up (**photo 9**). I wanted this bowl to have a round bottom, so I turned the wall to





6. Sanding after reversing into the scroll chuck while watching the top of the bowl to make the line perfect.

7. First cuts into the bowl.

8. The final cut with the tool very sharp to establish the wall thickness.

9. Finishing the bottom of the bowl with a heavy scraper.

10. With the bowl mounted on Cole jaws the spigot is carefully turned off.

11. The tailstock provides support while I turn down to a tiny nub of wood.

the same thickness all the way to the middle, checking with calipers, then sanded to 500 grit.

The enclosed form allowed secure mounting on Cole jaws, but I kept the tailstock up for extra safety. Expanding the jaws inside a thin-walled bowl like this requires a delicate touch. I gently opened the jaws till it wasn't possible to rotate the bowl on the rubber stoppers, then tweaked the chuck a touch more. Open the jaws too far and you will split the bowl. I removed the spigot by rolling towards the headstock, which helped keep the bowl on the chuck (**photo 10**). With the lathe rotating at around 500 rpm, I turned down to a tiny nub, then sanded the base to blend the curve (**photo 11**). The nub was easy to remove with a small saw and I sanded the last few mm very gently at around 100 rpm. With the bowl sitting on the headstock, I was very satisfied. It felt just right in my hands, the rim caught the light and the line was as good as I can do.

But now comes the twist in the tale. For some time now I have been collaborating with my good friend Zina Burloiu, a wonderful Romanian carver who I have known for 20 years. Over the last two years we have started what we call 'deep collaboration', and we agree that is has resulted in some of the best work both of us have done. This bowl is intended for her to perform her magic on, so I will send it to the other side of the world for her to complete and when she sends me her photographs we will be writing a follow-up to this story. We will tell how we have learned to work together and you will see how a simple bowl can be made even more beautiful with thoughtful decoration.

Photos: Terry Martin

Terry Martin is a Brisbane-based wood artist, author and curator. Email: eltel@optusnet.com.au

Making Wood Screw Threads, Part 2

Last issue Ian Wilkie showed how to make a tap for cutting internal threads. Here he shows how to cut a matching thread on a screw blank.

Last issue I described how to make a tap to produce large threads in wood. Traditionally, this tap would have been used to make the matching threadbox, with which to cut the external threads of wooden screws. Pairing the two would be a great 'low-tech' combination, but unfortunately, Australia is not blessed with an abundance of woods which thread well by that method.

There are some, most of which are not easy to obtain in the dimensions required to make large screws, and in any case, threadboxes are quite challenging to make and maintain. However, many of our hardwoods can make excellent screws, and the way to get them to cooperate is to use the cutting ability of a high-speed router bit. With the help of a simple jig, you can easily make screws in just about any wood known.

Almost any router, large or small, will do the job. You will need a bit that matches the profile of the tap used (in my case 60°), and carbide bits are the best choice if you happen to have one at the matching angle or if you plan to make quite a few screws. If you are only intending to make one or two screws for a single bench, a perfectly serviceable bit can be made by grinding the required angle on an old 1/4" high-speed steel twist drill (**photo 1**). It is not a difficult procedure, but if you have no drill sharpening experience, it might be a good idea to get someone who is used to sharpening drills to help.

You will need another jig, which is even easier to make than the tapping jig. Select a piece of wood 40–50mm thick (thick enough to accommodate at least five or six turns of thread), 80–90mm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1. Old 1/4" high-speed steel twist drill bits can be re-ground to the required angle.
2. By now y ou should now have two concentric holes in the two blocks.
3. Drill a hole 16–19mm dia from the bottom, centred on the junction of the two blocks.
4. You may need to fit the router bit to match the thread land profile.


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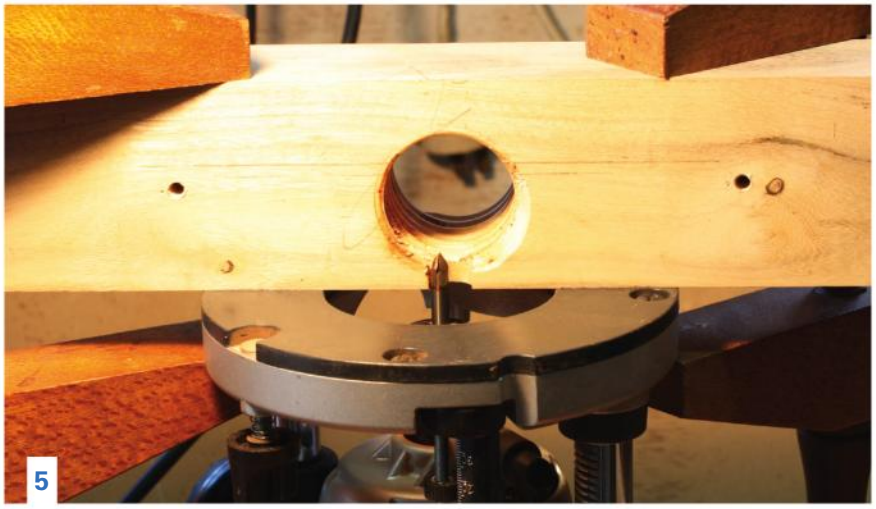
wide, and long enough to fit comfortably across the base plate of your router (i.e. about 250mm long). Just about any wood will do, but a wood of medium-hardness will be easier to work with. Square up your block and attach a matching block of similar thickness with a couple of screws. This second block is simply a guide and can be any wood you have available, pine will do.

We now need to drill a hole that is the full diameter of the screw through the first piece. Mark out a point at the centre of your jig, which will leave about 15–20mm of wood between the edge of the hole and the base of the jig. This allows a collar or boss on the screw you are threading to clear the base of the router, so it can thread right up to the guide, but the hole must be close enough to the base for the router bit to reach through.

Drilling is best done on a drill press, but you could do it by hand if you wish. Start with a bit that matches the full diameter of your screw (50mm in this case) and drill through the first piece of wood. A piece of paper placed between the two blocks will show you when you are through the first. Without moving the blocks, switch to a drill bit of the smaller 'minor' diameter (the diameter of the tap shaft), and drill through the second block. You should now have two concentric holes in the two blocks (**photo 2**). Tap the rear block as previously described.

To provide access for the router bit, re-attach the front guide block, and drill a hole around 16–19mm diameter, from the 'bottom', centred on the junction of the two blocks (**photo 3**).

Now comes the only tricky part. The router bit must be set so that it matches the thread land profile, just in front of the first full turn of thread. You may need to enlarge the access hole a little to get the bit in place. Make sure there are no remnants of thread forward of the starting point. This may require whittling or gouging out a bit of thread (**photo 4**).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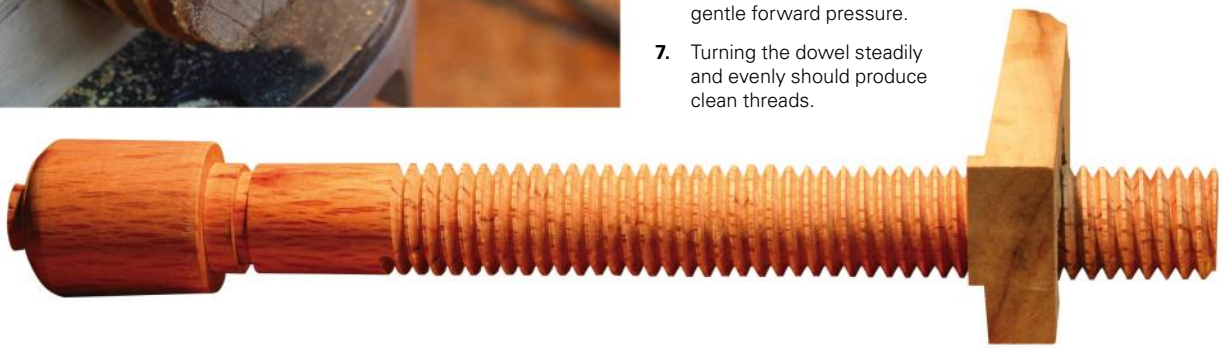
5. Position the bit and clamp the block to the router base.
6. Switch on the router and insert the dowel in the jig, then twist while maintaining gentle forward pressure.
7. Turning the dowel steadily and evenly should produce clean threads.



With the bit set in the right position (**photo 5**), clamp the block tightly to the router base and re-attach the guide block. If the bit you are using is pointed like mine, it will have to protrude deeper than the top of the truncated thread, in order to 'cover' the full profile of the thread.

You need some way of securing the router during threading – you could use a router table, but it would be very awkward to feed the screw blank over the table. I clamp the router lightly between a couple of blocks on the benchtop, which allows much easier access.

Turn up a short length of dowel for a test piece, making sure it is a loose fit in the guide hole of your jig (a bit less than 1mm undersize is about right for a 50mm screw, and allows for some expansion and contraction with seasonal humidity changes). Switch on the router and insert the dowel in the jig until you feel the slight crunch as it contacts the bit (**photo 6**). As soon as you feel the contact, twist the dowel clockwise, whilst maintaining some gentle forward pressure.

If all is right, the bit will cut a groove that fits over the thread in the jig neatly, and pulls the dowel in as you turn it. The dowel should be quite easy to turn with little resistance, so if it starts to bind and become difficult or impossible to turn, either the cutter isn't protruding enough to cut the full thread profile, or it is not positioned correctly fore and aft. Remove the guide piece, determine the most likely problem and adjust accordingly.

After you have made any adjustments, whittle away any of the first bit of thread that has been mangled. It may take you several tries and a few inches of chewed-up dowel to get your jig cutting properly, but when you do, the results are gratifying; the dowel will turn easily as you feed it through, and a nice clean thread will emerge on the far side (**photo 7**). Turning the dowel steadily and evenly, should produce a clean thread with no chatter or burn marks.

Once you are satisfied you have your jig working properly, you can turn up a blank or two and cut yourself some monster bench screws.

Selecting the right wood for making wooden screws is a bit of a lottery at first. Just about any wood, soft or hard, can be tapped satisfactorily (across the grain, not along it), but you need to be a little more selective in choosing material for screws. For these, the wood should be tough, because the threads on a screw are all cross-grain, which is the weakest conformation.

Individual trees vary, of course, but of the many species I've tried threading, the following seem to be fairly reliable: Any of the eucalypt species marketed as Victorian ash or Tasmanian oak, crows ash (*Flindersia Australia*) bull oak (*Allocasuarina leuhmannii*), sheoak (*A. torulosa*), river redgum (*Eucalyptus camaldulensis*), penda (*Xanthostemon sp.*), and spotted gum (*Corymbia maculata*). Species I haven't yet tried, but should make satisfactory screws include brush box, jarrah and blackwood.

Soaking the completed screw with a penetrating finish like 'Danish oil' helps strengthen the threads, and of course, don't try to use it until the oil is properly dry, or it may seize. Waxing the threads before assembly helps them to operate smoothly, but don't overdo it, just a light application is enough. When made well, wooden threads are amazingly durable – the screw on the tail vice of my bench has been in operation for 30 years now, and looks to be good for another 30, at least.

Photos: Ian Wilkie

Ian Wilkie is a Brisbane-based woodworker and handtool maker. In AWR#78 he showed how to make handsaws, and in issue 91 he wrote about choosing and using small handsaws. Email iwwilkie@bigpond.com

Wood Diary

For more events and news sign up to AWR fortnightly newsletters at:
www.woodreview.com.au

Diary listings are free. **Mail to:** Wood Diary, PO Box 3893, Loganholme DC, Qld 4129 **Email to:** linda@woodreview.com.au
Note: Listings are correct at time of publication but may be subject to change. It is advisable to check details with the organiser before visiting.

17 NOVEMBER–3 DECEMBER
Bowls: An exhibition of work by Terry Martin
Gallery Shin
354 Montague Rd, West End, Brisbane
terrymartinwoodartist.com

19 NOVEMBER–4 DECEMBER
Shift: Graduating Exhibition
Sturt School for Wood
Mittagong, NSW
www.sturt.new.edu.au

26–27 NOVEMBER
Barwon Valley Woodwrights
26th Annual Woodcraft Exhibition
Masonic Centre Hall
25 Regent St, Belmont, Vic
barwonvalleywoodwrights.com

27 NOVEMBER
Planes: Tuning and Using
The Traditional Tools Group
Brush Farm House
19 Lawson Street, Eastwood, NSW
www.tttg.org.au
Enrol: www.macquarie.nsw.edu.au

27 NOVEMBER–
Spatial Curvature
Work by Darren Oates
Bungendore Wood Works Gallery
Kings Highway, Bungendore, NSW
www.bwoodworks.com.au

29 NOVEMBER–30 JANUARY, 2017
Annual Exhibition
Woodgroup SA
Atrium Space
Burnside Civic Centre
www.woodgroupsa.org.au

2 DECEMBER
40 Years : 40 Designers
Design Tasmania, Launceston, Tas
www.designtasmania.com.au

9–11 DECEMBER
Snowy River Roundtooit
Inaugural annual woodturning weekend
NSW Sport & Recreational Centre
Jindabyne, NSW
Richard Nutt nuttworks@bigpond.com

15 DECEMBER
Deadline for entry AWR Student Awards
www.woodreview.com.au/student-awards

2017

7–8 JANUARY
Woodwork Exhibition
Bellarine Woodworkers Inc
St James Anglican Church Hall
Collins St, Drysdale, Vic
Email: bellarinewoodworkers@gmail.com

17–22 JANUARY
Woodturning in the Barn
Peninsula Woodturners Guild
The Barn, The Briars
Nepean Hwy, Mt Martha, Vic
www.pwguild.org.au
pwgshowdir@gmail.com

27 JANUARY
AWR Student Awards
Facebook Popular Choice voting closes
www.woodreview.com.au/student-awards

10–13 FEBRUARY
MyState Australian Wooden Boat Festival
Hobart waterfront, Tasmania
www.australianwoodenboatfestival.com.au

18–19 FEBRUARY
Tools & Techniques Festival
Sturt School For Wood
Mittagong, NSW
www.sturt.new.edu.au

19 FEBRUARY–2 APRIL
Alumni Exhibition: Selected Graduates 1985–2005
Sturt School For Wood
Mittagong, NSW
www.sturt.new.edu.au

26 FEBRUARY
2017 Sydney Tool Sale
The Brickpit Sports Stadium
1A Dartford Rd, Thornleigh, NSW
www.tttg.org.au

11–12 MARCH
Lost Trades Fair
Kyneton Racecourse, Victoria
www.rundellandrundell.com.au

11–12 MARCH
27th Annual Shepparton Woodwork Show
Woodturners of the Goulburn Valley
Eastbank Centre,
Welsford St, Shepparton, Vic
Len Taylor 0458 777 901
www.woodturnersgv.com

30 MARCH–2 APRIL
Timber & Working With Wood Show
Newcastle Exhibition Centre
www.timbershows.com.au

29 APRIL–1 MAY
Maleny Wood Expo
includes Wootha Prize exhibition
Maleny, Showgrounds, Qld
www.malenywoodexpo.com

12–13 MAY
Cooroora Wood and Craft Show
Cooroora Woodworkers Club
8 Lowermill Road, Cooroy Qld
www.cooroorawoodworkersclub.com

19–20 MAY
HandWorks:
Woodworking Tools & Traditions
Amana, Iowa, USA
www.handworks.co

22–26 MAY
LIGNA 2017
Hannover, Germany
www.ligna.de

26–28 MAY
Timber & Working With Wood Show
RNA Showgrounds
Bowen Hills, Brisbane, Qld
www.timbershows.com.au

8–10 JUNE
Den Fair
Melbourne Convention and Exhibition Centre
www.denfair.com.au

23–25 JUNE
Timber & Working With Wood Show
Sydney Olympic Park, NSW
www.timbershows.com.au

10–27 AUGUST
Work by Simon Parsons
Gallows Gallery
53 Glyde St, Mostyn Park, WA
www.spfurniture.com.au

8–10 SEPTEMBER
Timber & Working With Wood Show
Caulfield Racecourse, Vic
www.timbershows.com.au

18 OCTOBER–11 NOVEMBER
Double Take in Wood, featuring Create From a Crate and Fine Woodworking
Victorian Woodworkers Association
Manningham Gallery, Vic
www.vwa17.org.au

The Great Myth of Bandsaw Drift

Adjust the blade, not the fence, explains Peter Young.

Bandsaws are one of the most useful machines in the workshop. Some experts even suggest that a bandsaw purchase should precede a tablesaw.

There has been an enormous amount written about 'bandsaw drift' and many articles describe how to make elaborate changes to allow the fence to be re-aligned to the mysterious constantly changing drift. Some experts even go to the extent of discarding the fence because it's just too difficult to keep it aligned to the blade.

But anyone who has worked with Michael Fortune will know there is a very simple, easy way to solve this dilemma. You just align the blade to the fence, not the other way around. There is even an adjustment on the machine to do the job so you don't need to make any jigs or tricky pivots to get your machine working perfectly.

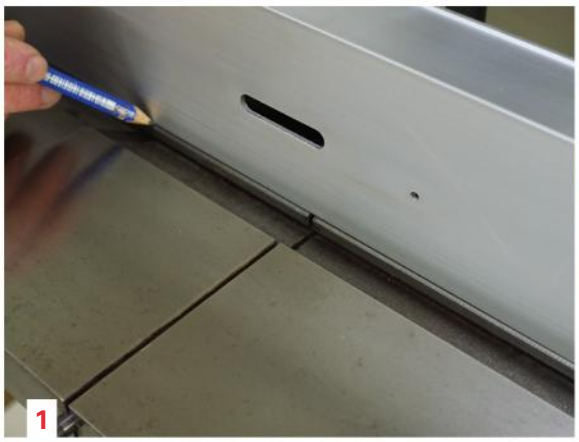
The bandsaw blade runs on a cambered wheel. If the blade doesn't sit centrally it will track either left or right. Adjusting the control at the back of the upper housing will tilt the wheel slightly either way so you can centre the blade.

In my experience, you will only need to go through the steps described opposite when you change blades. Some people do report that another adjustment will be required as the blade wears and loses sharpness. And re-sharpening a carbon blade in situ with a grinder as some people do will certainly throw the blade alignment out of whack.

You can see Peter Young carry out this process on our YouTube channel, search for Wood Review TV.

Photos: Linda Nathan

Peter Young is a Brisbane based studio furniture designer and maker who sometimes also teaches short courses in woodwork. Email Peter at info@divergentdesigns.com.au.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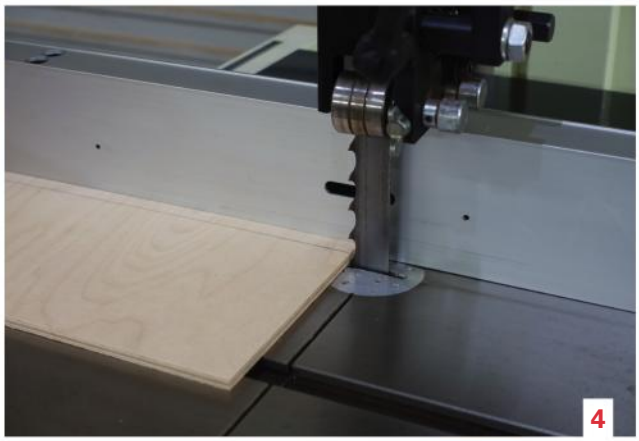
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Aligning Your Bandsaw Blade

1. Align the fence to the mitre slot by bringing the fence to the slot and sighting along one edge.

2. Loosen off the upper and lower guides so they are not touching the blade.

3. Mark a pencil line parallel to the edge of a jointed board. The board should be at least as long as the fence and not too thick.

4. Set the fence so the blade will cut very close to the pencil line.

5. Make a cut and check if it follows the pencil line.

6. If the cut doesn't follow the pencil line, adjust the blade by using the adjuster at the back of the upper wheel housing. In this photo the adjuster is the black knob up near the top.

7. Make a new pencil line parallel to the edge of the jointed board and make a new cut. Continue by trial and error until the blade follows the pencil now. Now you can adjust the upper and lower guides so that they are close to, but not touching the blade. Check the alignment once again and re-adjust the guides if one of them has pushed the blade out of alignment.


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Folium

Developing a design means resolving aesthetic preferences with structural requirements. Story by David Haig.

I first thought of using a leaf shape for a chair backrest many years ago, and once tried it on a rocking chair but it was not that successful because the leaf ended at the seat, and the arms I made didn't blend in very well. However, it was wonderfully comfortable and had a very strong and light backrest, so I just squirrelled the thought away.

After I'd made quite a few of my (effectively three-legged) V chairs and realised what a strong and surprisingly stable configuration it was, it struck me that the stem of a leaf could be extended downwards to form a back leg just like the V chair. Then one day, when the ideas had clarified, I did a careful sketch and there it was…one of those especially exciting moments.

I made the first version out of English walnut, which hand works beautifully, but didn't make much of the graphic potential of the leaf-back, however the chair was very comfortable and felt strong. The recurve and inward angle of the leaf-wings stiffened the back structure and

Above: David Haig's Folium chair in maple and black walnut.

Top: Perfect match: Folium chair with the author's recurved walnut and maple desk.

allowed the stem to taper down to a very small cross-section, which had been my main structural concern.

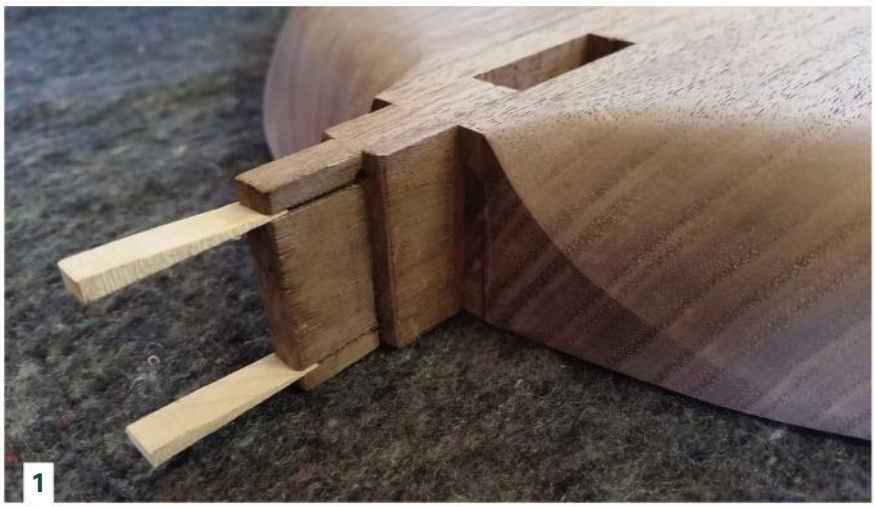
Then some of my past customers saw the new chair and commissioned a version to accompany a desk I'd built for them ten years ago. Matching the desk, the rippled maple was a perfect choice for the two halves of a leaf, contrasting beautifully with some rich dark Pennsylvania black walnut which I'd air dried myself.

The leaf stem was attached to the seat by cutting out the solid seat allowing for a tenon protruding from the back. It's the full depth of the seat thickness (40mm) and is stepped, so it runs through the seat at 18mm for half its length and then down to 9mm where it comes through the back of the stem (I didn't want to weaken the stem by cutting away too much). I widened the mortise by 2mm top and bottom and wedged the tenon, so it's held very securely. I also incorporated a bracket beneath the seat to add surface area to the seat/back joint.

The leaf stem was made from a solid recurved piece of steam-bent walnut. A small rebate was cut on each side of the front face to take the two leaf pieces. The angle is cut on the leaf edges rather than in the stem, to give the leaves their roughly 6° inward angle each side. The leaf sections are bookmatched front and back laminates with a cross-grain ply in the middle for lateral strength. Total thickness is just less than 6mm.

The most difficult part was attaching the leaves to the stem, which I did by holding the leaves unshaped in their respective moulds facing downwards and then clamping the stem down between them registering along the back edge of the rebate. So it required clamping across and down at the same time.

I used Epiglue epoxy and shielded unglued areas from squeeze-out using Waxilit paste. I did all the profile shaping afterwards, bandsawed the outline then hand-shaped the edge detail.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The curved cross-section of the stem, being tapered in both directions top to bottom, was also hand shaped, and I kept the centre line as a ridge to give definition. I carved a slight hollow into the front face at the bottom end below where the leaves join (an elegant detail you can actually find on many leaves).

The seat is formed from four pieces, slip-matched (or endgrain bookmatched) with the two outer segments angled a little upwards, Sam Maloof style.

There are no rules for the shape of a leaf, and it's been fascinating looking closely at many different types. No two are the same, and neither are they ever perfectly symmetrical. I've shied away from trying to include veining though, or going too 'elvish' looking. I'm not trying to recreate an actual leaf, but more use the 'Platonic' idea for its structural and aesthetic potential as applied to a chair. It's difficult to make so I don't think it'll sweep the design world, but it's a wonderfully satisfying form to build.

Studio photography: Digby Shaw

In 2017 David Haig is Lead Tutor of the Furniture Maker's Program at the Centre for Fine Woodworking in Nelson, New Zealand. See www.cfw.co.nz and also www.davidhaigrockingchair.co.nz


2


3

1 Clamping the stem to the leaf sections was the hardest part.

2 Showing the seat to stem joinery.

3 Final fitting the backrest to the solid walnut seat.

The Woodwright's Coffin

Kerryn Carter learns how to make a coffin, and why Roy Underhill is a woodworking legend.

The coffin making class at the annual Woodworking In America conference (WIA) has been on my woodworking bucket list for, well, as long as I've felt the ever-present possibility that someday someone will ask me to make one (touch wood no time soon). So this year I signed up for WIA and flew to Kentucky to see a man about a coffin.

I arrived at the Covington Convention Center with a bad case of jetlag which was compounded by a sticky Kentucky heatwave that even Western Sydney would be proud of.

WIA is, like most things in America...big. There is simply too much to do and not enough time. There is a two stage offering: the marketplace is a showcase for the best woodworking gear in the country; and the classes offer an all-star teaching lineup of dream team proportions. And yes you have to choose between classes.

Warning: If you are accustomed to high levels of certainty when making a choice you will struggle here.

Example: on day one at 9am... do I want to learn the carving basics from Mary May, or some repro tricks from Alf Sharp, or do I build a chair with Chris Schwarz? And it's no better at 11am because then you will have to choose from George Walker, Marc Adams and Raney Nelson. If your head isn't spinning Exorcist-style at these choices you deserve a medal.

Leaving the registration desk, I was finally on my way to coffin class and hoping to quietly nurse my jetlag from the back of the room. Prior to WIA I had minimal knowledge of Roy Underhill. Not many other figures in modern woodworking are so enigmatic to non-Americans. He has no social media accounts (that I know of) and he has no television presence in Australia. But judging from a tidal wave of anecdotal evidence he has a loyal fan base from his 30 plus years on the PBS TV show 'The Woodwright's Shop'. What I found when I finally met him was that he was no mysterious figure, but quite the opposite.

To borrow a boxing term, Roy Underhill embodies the Marquess of Queensbury rules: stand and deliver. He is clearly an accomplished woodworker, but his real gift is his ability to entertain and completely engage an audience. Not one to hide failings in the shadows, Roy excels in saying everything exactly how it is. Any mistakes that occur while he is dangling off a sawbench, which is itself teetering on a workbench, are fodder for his own form of observational humour. Roy presents his triumphs and failings in stark relief and you can only conclude that that level of honesty is what binds him to his audience.

Coffin class started out with Roy calling for volunteers (of course). No one volunteered (of course). And as such, it is a truth universally acknowledged that anyone hiding at the back of any class will be the first to be called to the front of the class in the case of a vacuum of volunteers. So I found myself standing at the front of the class.

I was given a straw broom (a giant representation of straws in wood) and asked to pretend I was a saw (and this is long before happy hour). I had to demonstrate a rip cut followed by a cross cut on said broom straws. I obviously looked like a flummoxed kangaroo caught in the headlights, as Roy, ever the professional, quickly answered his question himself while giving me all the credit for it. And so coffin class began.

He started the coffin by ripping the sides of a board to make a base in the Southern Counties coffin shape (the one you see at Halloween). The head and foot of the base were cross cut on a slight angle (all done by eye) such that the head and footboards would splay out when attached. Two sidewalls were prepared oversize by length and a number of kerf cuts are made at the point of the intended bend. Boiling water is poured over the site of the intended bend and one end is secured with nails. The board is then bent and secured at the other end. Brute force and hot wood are the key to the bend. More nails shore it up and all overhangs are then cut to fit. Saw cuts were hand planed in situ.

At the end of the two hour class we had the better part of a coffin and Roy Underhill standing proudly drenched in sweat. It goes without saying that Roy made it look easy. From what I understand he's made quite a few by following Paul Hasluck's book 'Coffin Making and Undertaking' (*Lindsay Publications 2009*), which uses the same procedure Christopher Schwarz outlined in 'The Anarchist's Design Book' (*Lost Art Press, 2016*).

In conclusion, I took three main things away from coffin class at WIA. First, coffin making is not as hard as I thought. Second, the amazing Roy Underhill is indeed a legend, and finally, never sit up the back of any classroom...ever.

Popular Woodworking in America is an annual event on the American woodworking show calendar hosted by Popular Woodworking Magazine. Full conference registration (which included the marketplace access) was USD$485.

Kerryn Carter @toolschool teaches woodwork classes for kids in Sydney. She was profiled in the last issue of AWR.
Email: kerryn@toolschool.com.au

Quality Control

Striving for quality at every step of the way is Vicmarc Machinery's point of difference. Story by Linda Nathan.

This year Vicmarc Machinery celebrates 32 years of manufacturing premium quality woodturning lathes, chucks and accessories. This truly is a success story about a company that relies on innovation and a passion for quality to punch way above its weight on a local and global scale.

If this sounds over the top, consider the fact that as a country our manufacturing base is shrinking before our eyes. Vicmarc is an Australian-owned family business with a workforce of 11 which employs CNC machinery and CAD in processes that are nevertheless hands-on and subjected to rigorous quality checks at every step of the way.

Victor Verrecchia founded the business in 1984, but before that built the forerunner of the company's signature VL150 not long after emigrating to New Zealand. Buying furniture for his then young family was financially out of reach, so Victor, who trained as a toolmaker in Switzerland, decided to make it himself. But first he built a machine to build it with.

The next incarnation of the future VL150 was built after the family had relocated to Australia. Vic is a straight talking man who doesn't mince words. Asked why he made it he replied: 'I couldn't find a job. Everywhere I applied

Clockwise from opposite page: In one of the CNC milling areas stand Marco Verrecchia on the left with Victor Verrecchia far right.

Lathe bodies in a pre-assembly area prior to being fitted with motors.

Vicmarc VL 150 lathes, ready to be packed and despatched.

came back with the same answer: "overqualified". I think they were just making excuses', he said.

With the sample lathe loaded in the back of the van Vic 'knocked on retail stores' and it was Brisbane based Gregory Machinery who gave him a chance. 'They said leave it here and we'll see what we can do, we might sell some.' And things literally seemed to snowball from there. 'On Monday he rings me, "make me three"', recounts Vic, 'then he rings back, "make it five", and then later, "make it ten". "Make up your mind!", I said, "how many do you want?". So my first order was for ten, and that's how it started.'

For the first two years Vic and his wife ran the business from a 250 square metre shed in Redcliffe. After Vic started employing people he eventually moved the company to the Clontarf factory where it continues to operate.

After seven years in business, Vicmarc Machinery started exporting overseas. Once again, it was a story of Vic not waiting for success to find him, but doing the required legwork, visiting trade fairs in France, Germany and the US, networking and talking to retailers. Now as then, there is an unshakeable faith in the product. 'I knew because of the quality I was offering that people would come back', Vic said. Currently Vicmarc fulfills orders from Germany, USA, France, Spain, Denmark, UK, Japan and South Korea.

Achieving so much with a tight team of nine on the factory floor can only happen with employees who are capable of doing more than one task. Walking through the factory, staff can be seen moving back and forth between areas for CNC milling, electrical work, welding, acid etching and spray painting into assembly, packing and storage spaces.

There are currently 16 lathe models in the range, in addition to all the chucks and accessories that add specialised functionality. A relatively new addition to the range that is proving popular are Vicmarc's bench grinders, which feature long-life CBN wheels that don't require coolants or dressing.

From top: Large amounts of metal swarf are carved away as cast iron components pass through a large CNC milling machine, one of only few of its kind in Australia.

Designs for machinery and components are fully resolved in CAD before prototypes are made.

Vicmarc's bench grinders have CBN wheels which run at slower revs and don't require coolants or dressing.

There have been 'massive improvements in products over the last 10 years', said Marco. 'I enjoy finding better ways of doing things, streamlining our manufacturing processes and even stock control'.

Current output is around 250 lathes per year however a lower Australian dollar has increased both orders and competitiveness. Accordingly, Vicmarc is currently expanding and looking to achieve higher stock levels to reduce supply times.

Way back the name 'Vicmarc' was chosen to combine the names of father and son. In the manifestation of what may have been Vic's vision, Marco Verrecchia now manages all aspects of the business. 'I'm supposed to be retired,' says Vic, who added that he would probably die of boredom if that really were the case.

'Quality is first and foremost for us', says Marco, 37, who started part-time in the business when still at school. 'We control it here by checking things regularly. We have systems. I personally check every lathe that leaves the factory. Every process along the way has a quality check and is either passed or rejected. I enjoy being meticulous, I like to do things right. I enjoy the fact we can create. I don't remember the last time we had return or a warranty claim.'

Striving for quality at every step of the way is Vicmarc's point of difference. Competing with overseas lathe manufacturers on labour and materials costs is virtually impossible nowadays, Marco explained, so the quality of the product is its selling point. Manufacturing their own Australian-made product ensures Vicmarc can maintain its quality. 'Companies that bring product here and ship it out probably have issues with quality. I don't need those issues because I haven't got time for them.'

I asked Vic again what his business motivation was, knowing pretty well for certain that it wasn't about money. 'I was in it for love. He (nodding to Marco) got given the job. It's my own business and I like to succeed. Passing it on to my family is also a big plus for me.'

When Vicmarc started there were around ten other companies in Australia making lathes but that number has now dwindled to only a few. The company has survived and prospered by strictly adhering to its own manufacturing standards and backing up sales with good service. In this country it's often a case of not appreciating our iconic brands until they disappear, something that those who buy local products need never feel responsibility for.

See Wood Review TV on YouTube for a short tour of the Vicmarc factory.
Photos: Linda Nathan
More information from: www.vicmarc.com

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